

## Schedule 'B'

### Best Management Practices Plan for Dust Oak Bay Developments

RWDI#2303989

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## 1 Introduction

### 1.1 Overview

This Best Management Practice Plan (BMPP) for dust was prepared for Eden Oak Communities (Eden Oak), to be implemented at the Oak Bay Development (OBD), located in Port Severn, Ontario. This plan includes dust control measures that meet and/or exceed the current industry standards. Implementation of these measures will ensure that dust is effectively controlled and potential impacts to neighbouring residents are minimized.

### 1.2 Components of a Best Management Practices Plan

A BMPP is a detailed document that outlines the fugitive dust sources at a given site and describes the measures that shall be used to control emissions from these sources. The BMPP is used to manage fugitive dust emissions from sources such as vehicle movement along paved or unpaved on-site haul routes and wind erosion. The Ontario Ministry of the Environment, Conservation and Parks (MECP) recommends that the BMPP be based on a process of Plan, Do, Check Act (PDCA), as described in the Technical Bulletin: Management Approaches for Industrial Fugitive Dust Sources<sup>1</sup>. This BMPP is designed to meet the recommendations of the MECP in a form that provides clear and concise procedures for site personnel.

### 1.3 Size and Composition of Fugitive Dust at Sand & Gravel Operations

The dust generated at construction sites consists primarily of aggregate and road dust, which has the following characteristics:

<sup>1</sup> Standards Development Branch, Local Air Quality Section, Ontario Ministry of the Environment and Climate Change (MOECC)

- a. Primarily composed of natural stone and sand used to construct both paved and unpaved roads; Fraction of dust smaller than 10 micrometres (PM10), 19-55%<sup>2</sup>;
- b. Fraction of dust smaller than 2.5 micrometres (PM2.5), 3-14%<sup>2</sup>; and
- c. Crystalline silica content of onsite material, estimated at less than 67% for granitic material.

#### **1.4 Overview of the Best Management Practices Plan**

This document provides a separate section for fugitive dust sources at the site, including a description of each source, complete with control measures applicable to each particular source.

## **2 Definitions**

### **2.1 Dry Conditions**

Where the BMPP refers to "dry conditions", this is defined as a period before which there have been more than 2 consecutive days without total rainfall over 1 mm.

### **2.2 Precipitation**

Where the BMPP refers to "sufficient precipitation", this is defined as:

- a. Greater than 1 hour of rain;
- b. Greater than 2 hours of drizzle;
- c. Shorter periods of rain or drizzle are not regarded as "sufficient precipitation"; and
- d. Periods of fog are not regarded as "sufficient precipitation".

<sup>2</sup> Based on data from the AP-42 Compilation of Air Pollutant Emission Factors, published by the United States Environmental Protection Agency.

## **2.3 Visible Fugitive Dust**

Where the BMPP refers to observations of fugitive dust, it refers to the MECP definition of fugitive dust:

- a. Fugitive dust means any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of the activities of any person.

## **3 Construction Activities**

### **3.1 Activities Included**

- a. Drilling and blasting operations.
- b. Handling of material at the stockpiles using haul trucks, loaders, and excavators.
- c. Placement of material using haul trucks, loaders, excavators, graders, and bulldozers.

### **3.2 Controls**

- a. All construction activities shall be monitored such that any visible dust plumes shall immediately trigger dust mitigation in the form of watering and/or limiting operations.
- b. If visible fugitive dust is observed under these conditions, these operations shall be reduced, or additional mitigation measures shall be undertaken, such that visible fugitive dust is prevented from leaving the site.
- c. These additional mitigation measures could include, but are not limited to:
  - i. Application of water using a spray cannon mounted on the water truck.
  - ii. If operations allow it, shifting operations to another area of the pit to reduce the potential for dust to migrate to residential areas.

## **4 Aggregate Processing**

### **4.1 Activities Included**

- a. Transfer of stockpiled shot rock to the portable crusher.
- b. Crushing of aggregate in the portable crusher.
- c. Aggregate stockpile area and loading of trucks around the stockpiles.

### **4.2 Controls**

- a. The crusher shall be equipped with a water spray system.
- b. The water spray system shall be operated at all times while the crusher is in operation, except when precipitation is sufficient to offset the operations of the water spray system.
- c. The crusher shall not be operated when water is not available. The water application rate shall ensure that no visible dust is generated by the operation of the crusher.
- d. The crusher shall not be operated when temperatures are below 4°C to ensure the water sprays do not freeze.
- e. Crushing shall not exceed 1000 tonnes/day.
- f. Crushing activities shall be avoided when winds are blowing toward homes.
- g. Crushing activities shall be avoided during July and August.

## **5 Unpaved Haul Routes**

### **5.1 Activities Included**

- a. Movement of heavy equipment and trucks on the site.

### **5.2 Controls**

- a. A watering spray truck and water supply shall be available to provide water to all significant unpaved traffic areas.
- b. The watering system shall be able to deliver the water evenly over the

haul route surface and shall have the capacity to deploy water on all active haul routes at a rate of at least 1.5 L/m<sup>2</sup>/hour.

- c. The actual watering rate shall vary, depending on surface moisture conditions and traffic conditions, but shall be sufficient to prevent visible dust plumes.
- d. A speed limit of 20 km/h shall be posted near the site entrance. Heavy equipment and truck operators will be directed to observe the speed limit.
- e. If watering is not feasible (e.g., when temperatures drop below 4°C), alternative mitigation measures shall be applied, including, but not limited to:
  - i. If operations allow it, shifting operations to another area of the pit to reduce the potential for dust to migrate to residential areas.
  - ii. Application of chemical dust suppressants, in accordance with O. Reg. 244/97.

## **6 Administration**

### **6.1 Implementation Schedule**

- a. All operational control measures such as speed limits and watering shall be in a state of readiness as soon as practicable.

### **6.2 Implementation Plan**

- a. Formal training on new and existing operating procedures shall be provided to relevant new and existing staff at a minimum of once every 3 years, and in the event of changes to the BMPP.
- b. The company's management shall communicate the BMPP to responsible supervisors, who shall ensure personnel are following operating procedures defined in the BMPP.
- c. The Site Manager or their delegate shall be responsible for ensuring the BMPP is followed.
- d. Management shall ensure the controls described in the BMPP are

reviewed annually to ensure operations will not have a negative environmental impact on the surrounding area.

- e. The BMPP shall be kept on file at the site office (or with other health and safety information and procedures on site).

## **7 Inspection and Monitoring**

### **7.1 Inspection and Maintenance**

- a. Under dry conditions, visual inspections will be carried out periodically throughout the operating day to ensure that no visible fugitive dust is observed migrating off-site.

### **7.2 Visual Monitoring**

- a. The Site Manager or their delegate will be responsible for monitoring current conditions and weather forecasts from Environment & Climate Change Canada, to subsequently help plan for current and next day watering needs and other measures, especially if dry weather conditions are expected.
- b. Throughout the operating day, on-site personnel shall report to the site manager any observations of visible fugitive dust blowing towards residences adjacent to the site.

### **7.3 Air Quality Monitoring**

An Air Quality Monitoring Program will be in place prior to and for the duration of operations at the site.

- a. The program will consist of two (2) E-Samplers equipped with gravimetric filters.
- b. The equipment shall collect continuous data on airborne PM10 concentrations as a surrogate for other particle fractions and potential levels of crystalline silica.
- c. Calibrations and maintenance as per manufacturer's instructions.
- d. Locations will be determined through consultation with the Township of Georgian Bay, as well as local property owners if required.

- e. The E-Samplers will be connected to RWDI's data acquisition system.
- f. This system shall be configured to send alerts and reports to relevant users and stakeholders.
- g. Alert settings:
  - i. If measured concentrations of PM<sub>10</sub> exceed 50% of the Ontario Ambient Air Quality Criteria, on a 24-hour rolling average, while operations are underway at the site, a notification shall be sent to the site manager to increase dust control measures.
  - ii. If measured concentrations of PM<sub>10</sub> exceed 100% of the Ontario Ambient Air Quality Criteria, on a 24-hour rolling average, while operations are underway at the site, operations shall cease immediately.
  - iii. If operations are not underway at the time, this shall be recorded, and an attempt shall be made to identify the source of the particulate (e.g., local forest fire smoke, other construction activities, etc.).
- h. Summary memo reports shall be produced and filed on a monthly basis.

#### **7.4 Record Keeping**

- a. Records shall be kept of when and how dust control measures are implemented and when complaints are received, if any. As a minimum, the following activities or events shall be recorded:
  - i. Water is applied on unpaved roads.
  - ii. Visible dust is observed and the control measures implemented to stop this from occurring.
  - iii. A complaint is received.

#### **7.5 Reporting**

ODB shall submit quarterly reports to the Township of Georgian Bay confirming compliance with the following:

- a. Operational limits including:
  - i. hours of operation;
  - ii. crushing rate (tonnes/day);
- b. Only on-site materials have been crushed.
- c. All crushed materials have been only for on-site construction purposes;  
and
- d. All requirements of the Best Management Plan are met.

## **8 Complaint Tracking and Resolution**

### **8.1 Complaint Tracking**

- a. A sign posted at the site entrance, and on the Company website, shall include a phone number and an e- mail address for neighbours to call if they have concerns.
- b. The Company shall request that the local MECP office and the Township of Georgian Bay notify them immediately if they receive a complaint, to allow for prompt response and follow-up.
- c. Complainants shall be requested to identify the location of the incident as well as the time of day that it was detected and any other information that they feel is relevant.

### **8.2 Complaint Resolution**

When a complaint is received, the Site Manager shall ensure the following steps are undertaken:

- a. Inspect the site and surrounding area to identify possible sources of visible fugitive dust;
- b. Obtain weather data for the time of the event;
- c. Note all on-site activities at the time that the complaint was made;
- d. If the information indicates that the facility is not the source of the dust complaint, the complainant shall be notified of this finding;

and

- e. If it is determined that the complaint may, in fact, have been related to the facility operations, the following response procedures shall be followed, in the order provided below:
- i. **Level 1** - Correction of operations as soon as practical. The Site Manager shall ensure that all elements of the BMPP are being followed. Control measures shall be stepped up or operations may be curtailed, as required;
  - ii. **Level 2** - Review of Best Management Practice Plan. If the Level 1 response does not adequately resolve the problem, the BMPP shall be reviewed to look for additional control measures to address the source of the dust complaint; and
  - iii. **Level 3** - Operational modifications. If the Level 2 response does not adequately resolve the problem, the operator shall commit to making physical changes to the facility to address the source of the dust complaint, such as additional enclosures, relocation of equipment, or additional paving.