



Air Quality and Dust Management Plan for the Montrose Aggregate Site

A Report to: Capital Paving Inc.
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1. INTRODUCTION

ORTECH was retained by Capital Paving Inc. to provide an Air Quality and Dust Management Plan for a proposed aggregate pit operation southwest of West Montrose, as indicated on Figure 1.

This Dust Management Plan was developed by P. Piersol of ORTECH Environmental (ORTECH), in consultation with Capital Paving staff. ORTECH is a leading atmospheric science and air quality consulting firm providing expertise in environmental science and engineering to government, industry and financial institutions. Mr. Piersol has over 20 years experience at ORTECH in managing and conducting a wide variety of air quality projects and assessments.

The objective of the study was to evaluate the air quality compatibility with regard to dust and other air quality impacts from the operation on the existing land uses in the vicinity and provide a management plan to minimize air quality impacts. The evaluation was based on readily available information (primarily from Capital Paving) and direct observations during a site visit to the area.

This study references the Ontario Ministry of the Environment (MOE) Guideline D-1 on Land Use Compatibility and D-6 on Compatibility between Industrial Facilities and Sensitive Land Uses. Guideline D-6 recommends a 1000 metre Study Area for land use proposals and defines three classes of industrial facilities: Class I, Class II and Class III. It also defines Minimum Recommended Separation Distances and Potential Influence Areas and Actual Influence Areas between industrial facilities and sensitive uses for each Class (see Attachment A).

The D-6 guideline also provides definitions and examples to illustrate the three classes (see Attachment A). The definitions and examples in the MOE Guidelines relevant to air quality concerns were used to characterize the proposed aggregate extraction and processing operations.

2. IDENTIFIED AGGREGATE OPERATIONS WITH DUST EMISSION POTENTIAL

The proposed Capital Paving Montrose site operations will consist of active aggregate area and a processing operation on the site. Aggregate will be extracted according to a schedule of working a total of 8 excavation cells over the projected life of the pit, 7 to 10 years. For each excavation cell, the land will be cleared and grubbed, topsoil and overburden removed, followed by extraction and then returned to agricultural use. While one cell is being worked the others will be rehabilitated or be in agricultural use.

Mobile equipment on the site will include extraction equipment and haul trucks for final transport of processed aggregate from the site. Internal transport of the aggregate material from the cells to the processing areas, and within the processing area will be by conveyors.

The processing area will include aggregate crushing and screening equipment, a diesel generator to provide electrical power, ponds for silt management, a weigh scale and administration support trailers. The processing area will be at the west boundary of the licensed area. The processing equipment will be separated from the Grand River by 150 metres, which includes a 15 metre high forested buffer and a 3.5 m high berm.

The hours of operation during peak season are 7 am to 7 pm on weekdays and 7 am to 3 pm on Saturdays. The hours of operation would decrease significantly during the off-season period.

Potential air emissions from the aggregate pit and processing operations include particulate matter (dust) and nitrogen dioxide (NO_x). Dust may be emitted from aggregate extraction, material handling, crushing and screening and road dust. The predominant source of NO_x will be the diesel generator.

Although the D-6 guideline industrial class definitions are representative of industrial manufacturing facilities, the elements of the definitions can also be applied to aggregate extraction and processing operations. The cell extraction and the aggregate processing both exhibit characteristics of Class II facilities.

3. DUST MANAGEMENT PLAN

The following dust control measures are recommended to control particulate emissions in order to maintain suitable off-property air quality and satisfy environmental regulatory requirements.

3.1 Aggregate Extraction and Processing Operations

- The inherent moisture content of the aggregate of 6 to 7% will minimize the release of dust from handling and wind erosion.
- The aggregate extraction site plan shows retention of the natural vegetation around the perimeter of the site and in the non-extraction areas on the site. The tall mature trees and other vegetation will act as wind breaks to reduce wind erosion from the stockpiles and on-site roads.
- Dust from aggregate transported from the excavation cells to the processing operation area will be minimized by using conveyors rather than haul trucks.
- The processing area is located at the west boundary of the site. This area is the furthest distance from the Village of West Montrose, and is separated from the Grand River by the forested buffer and a berm.
- Aggregate processing equipment dust will be controlled with water sprays.

3.2 Vehicle Traffic and Road Dust

- The access road from Katherine St. to the license property, and across the property to the processing area, will be paved.
- Trucks traveling on the paved access road shall be restricted to 30 km/hr. Speed limit signs will be posted and this limit will be enforced.
- The paved access road will be watered and swept as needed.
- The entrance/exit of the access road to Katherine St. will be watered and swept, as needed, to prevent dirt track-out to Katherine St.
- Portions of the unpaved extraction cells will be covered with crushed asphalt, as required, to control road surface dust.
- Equipment traveling on the unpaved extraction cells shall be restricted to 20 km/hr. Speed limit signs will be posted and the limit will be enforced.

3.3 Dust Control Program Procedures

- A “Dust Management Checklist” will be established and shall be maintained daily.
- Facility personnel will be trained in the dust control measures and the use of the “Dust Management Checklist”.
- The Dust Management Plan will be reviewed from time to time to assess the success in controlling fugitive particulate releases.

4. SURROUNDING LANDUSE AND AIR QUALITY IMPACT RECEPTORS

The surrounding land use is primarily agricultural. Residential areas and other potential air quality impact receptors within 1000 metres of the licensed area are presented in Table 1, and Figure 1.

North of the site is the village of West Montrose, with the closest residences located along Rivers Edge Road. These Rivers Edge Road residences are typically 150 to 200 metres from the closest extraction cell (Cell #2). The closest residence is 100 metre from Cell #2. These Rivers Edge Road residences are at least 300 metres from the processing area.

5. SUMMARY OF POTENTIAL AIR QUALITY IMPACTS

The closest residence located along Rivers Edge Road is 100 metres from the closest extraction cell, which is beyond the minimum separation distance for a Class II facility. It is also just beyond the 300 metre potential influence area for the processing equipment. With these separation distances, a wooded buffer zone at the edge of the extractions cells and the dust control measures of the Dust Management Plan it is not expected that the aggregate extraction and processing operations would cause air quality complaints at these River Edge Road residences.

With the exception of one farmhouse, the other receptors, Table 1 and Figure 1, are at greater distances form the pit and processing operations than these Rivers Edge Road residences, and would not be expected to be adversely impacted by poor air quality.

The farmhouse, immediately south of the licensed area on Letson Road is a minimum of 30 metres from the closest extraction cell area, and 600 metres from the aggregate processing area. Based on the D-6 Guideline, the distance from the closest extraction cell to the farmhouse would meet the minimum separation distance for a Class I facility, but not for a Class II facility. If the farmhouse remains occupied, exemplary efforts to control dust may be required to ensure that the extraction cell achieves the equivalent of a Class I facility to minimize the potential dust impact on this farmhouse.



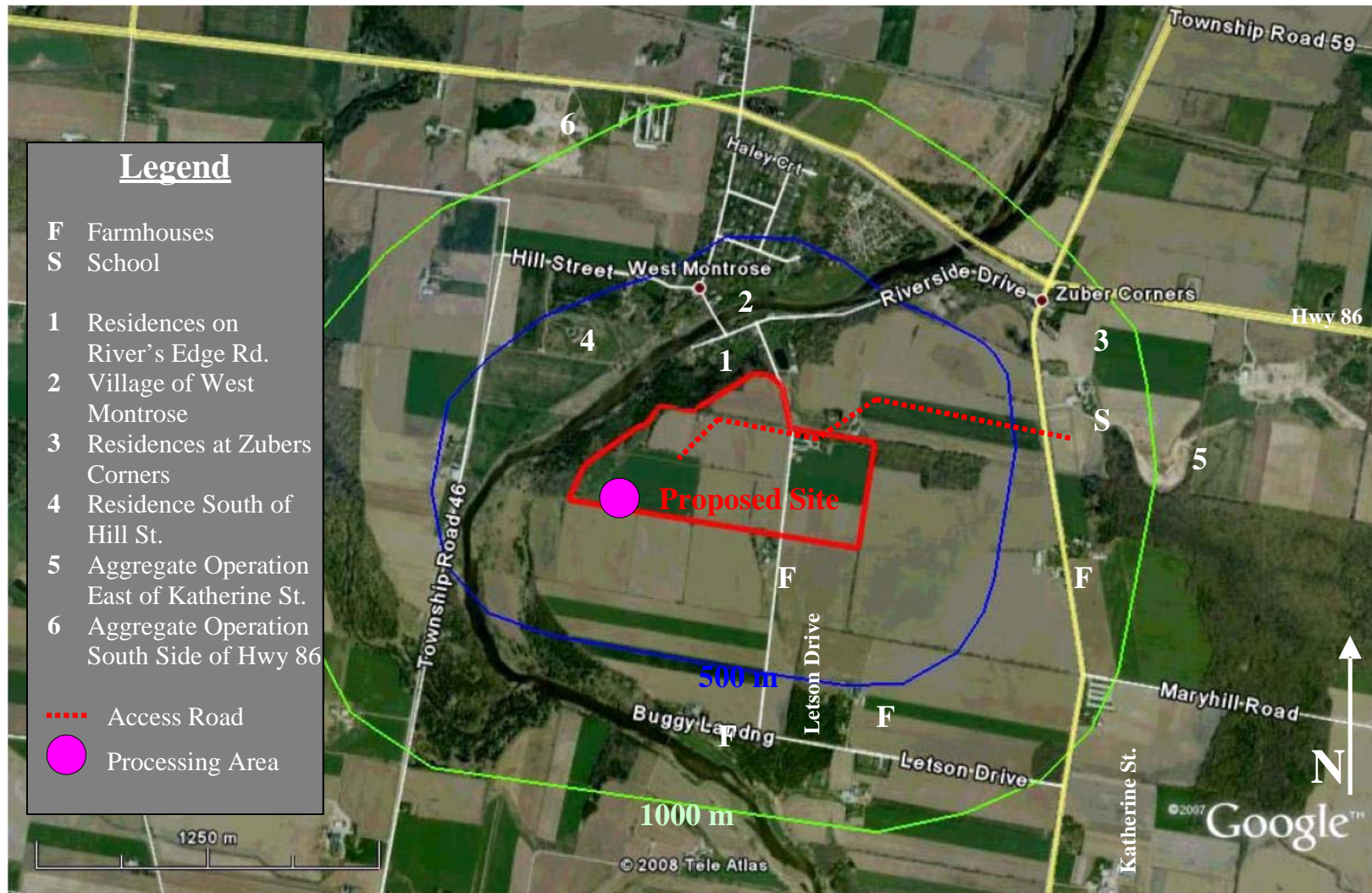
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Table 2: Summary of Surrounding Air Quality Impact Receptors

Vicinity	Receptors	Address/Location	Minimum Distance From Extraction Cells (m)	Minimum Distance from Processing Area (m)	Comments
North	Residences	Rivers Edge Road	100	300	Extraction cells >70 m minimum separation distance Processing area >300 m potential influence area
	Main Village of West Montrose	North of Grand River	300	620	Both operations >300 m potential influence area
North-East and East	Residences	Zubers Corners, Katherine St. and Hwy 86	750	1500	Both operations >300 m potential influence area
	School	Katherine St (Reg. Rd 23)	700	1500	Both operations >300 m potential influence area
	Aggregate Operations	East of Katherine St.	980	>1500	
South	Farm House	Letson Road	30	600	Processing area >300 m potential influence area
	Farm House	Buggy Landing	670	830	Both operations >300 m potential influence area
West	Farm House.	Jigs Hollow Road (Twp, Rd 46)	500	550	Both operations at >300 m potential influence area
North-West	Residence	South of Hill St.	300	500	Both operations at >300 m potential influence area
	Aggregate Operation	South side of Hwy 86	900	1100	

Figure 1: Site Plan



ATTACHMENT A

**Definitions of Industrial Classes from Guideline D-6
and Recommended Minimum Separation Distances
(1 page)**

Definitions of Industrial Classes from Guideline D-6

The class designations are based on the potential for noise, dust and odours.

A Class I Industrial Facility is “A place of business for a small scale, self contained plant or building which produces/stores a product which is contained in a package and has low probability of fugitive emissions. Outputs are infrequent, and could be point source or fugitive emissions for any of the following: noise, odour, dust and/or vibration. There are daytime operations only, with infrequent movement of products and/or heavy trucks and no outside storage”.

A Class II Industrial Facility is “A place of business for medium scale processing and manufacturing with outdoor storage of wastes or materials and/or there are periodic outputs of minor annoyance. There are occasional outputs of either point source or fugitive emissions for any of the following: noise, odour, dust and/or vibration, and low probability of fugitive emissions. Shift operations are permitted and there is frequent movement of products and/or heavy trucks during daytime hours”.

A Class III Industrial Facility is “A place of business for large scale manufacturing or processing, business characterized by: large physical size, outside storage of raw and finished products, large production volumes and continuous movement of products and employees during daily shift operations. It has frequent outputs of major annoyance and there is a high probability of fugitive emissions”.

Table A1: Industrial Class, Minimum Separation Distances and the Potential Influence Areas from Guideline D-6

Class	Recommended Minimum Separation Distance	Potential Influence Area
I	20 metres	70 metres
II	70 metres	300 metres
III	300 metres	1000 metres

Although the D-6 guideline suggests that distances are normally measured from property line to property line, there is allowance for measuring from specific sources to sensitive receptors