REPORT

Best Management Practices Plan for the Control of Fugitive Dust

Proposed Caledon Pit / Quarry

Submitted to:

CBM Aggregates (CBM), a Division of St Marys Cement Inc. (Canada)

Submitted by:

WSP Canada Inc.

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Distribution List

1 e-copy: CBM Aggregates (CBM), a Division of St. Marys Cement Inc. (Canada)

1 e-copy: WSP Canada Inc.

Document Version Control

This Fugitive Dust Best Management Practices Plan (BMPP) has been prepared for CBM Aggregates (CBM), a Division of St Marys Cement Inc. (Canada) to manage fugitive dust associated with the proposed Caledon Pit / Quarry in Caledon, Ontario (the Pit / Quarry). The BMPP should be reviewed periodically and updated if required. Therefore, it is necessary to have appropriate version control. This version control will allow facility personnel and compliance auditors to track and monitor changes to the BMPP over time.

Version	Date	Revision Description	Prepared By	Reviewed By (Facility Contact)
1.0	December 2022 (Revised July 2023)	Original document to support Aggregate resources Act Application	Golder Associates Ltd.	D.H.
1.1	Revised April 2024	Document updated in response to a request from the Town of Caledon to be included on complaint notifications	WSP Canada Inc.	D.H.
1.2	Revised March 2025	Document updated to include commitment to dust monitoring during operations	WSP Canada Inc.	D.H.

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1 INTRODUCTION

This Best Management Practices Plan for Fugitive Dust (the Plan) has been prepared to manage the fugitive dust associated with the proposed Caledon Pit / Quarry located in the vicinity of Charleston Sideroad and Main Street/Regional Road 136 in Caledon, Ontario (the Site).

This Plan follows the Plan, Do, Check, and Act cycle described in the "*Technical Bulletin: Management Approaches for Industrial Fugitive Dust Sources*" (updated April 26, 2019) guidance (Fugitive Dust Guidance Document) published by the Ministry of the Environment, Conservation and Parks (the Ministry). The "Plan" section includes a review of facility processes and operations, and identification and characterization of the anticipated fugitive dust sources at the Facility. The "Do" section includes the BMPs that are currently in place at the Facility, as well as those to be implemented, complaints protocols, and administrative controls such as training. The "Check" section includes a description of monitoring procedures, a record keeping system, and accountability. The "Act" section includes guidelines for periodic review of the BMPs to promote continuous improvement of this Plan.

In preparing this Plan, WSP has relied on information provided by CBM Aggregates (CBM), a Division of St Marys Cement Inc. (Canada), the Ministry and information on standard best practices for fugitive dust generating activities.

2 REQUIREMENTS OF A BMPP FOR FUGITIVE DUST

Table 1 lists the suggested content and requirements for a BMPP for Fugitive Dust as per the Fugitive Dust Guidance Document and the corresponding section of this Plan that addresses each requirement.

Table 1: Requirements of BMPP for Fugitive Dust

Requirement/Suggested Content	Section of This Plan
Identify and characterize the sources of fugitive dust emissions within the facility.	s.3.3, Table 3
Identify nearby potential receptors that may be impacted by dust emissions.	s.3.1, Figure 1
Develop a site map and/or figures to identify the locations of fugitive dust sources (such as storage piles and roadways) and potential receptors.	s.3.1, Figure 1
Characterize applicable fugitive dust monitoring parameters such as silt loading, silt content, moisture content, metal content, dust fall, etc.	s.3.4
Review the composition and particle size distribution of fugitive dust generated by each significant fugitive dust source where available.	s.3.4
Identify the contributing factors for each significant source that favour the generation of fugitive dust emissions (e.g. predominant wind direction, location of storage pile, frequency of activity, process operating parameters, control efficiency, etc.).	s.3.3, Table 3
Prioritize the use of resources based on the relative contributions of fugitive dust sources.	s.3.3, Table 5
Describe how fugitive dust will be controlled from each significant source (e.g. the application of dust suppressants such as water or chemical suppressants).	s.3.3, Table 4

Requirement/Suggested Content	Section of This Plan
Document how the control measures will be implemented with timelines (e.g. frequency of road cleaning or water application, etc.).	s.3.3, Table 4
Describe proper operating, monitoring, sampling, record-keeping and best practice procedures of control and monitoring equipment (e.g. how to minimize drop height, etc.).	s.3.3, Table 4, s.5.1, s.5.2
Include a program for site-wide training for facility personnel and contractors.	s.4.3
Implement a regular inspection, maintenance and calibration program (e.g. visual inspections of storage piles, maintenance of water sprays, etc.).	s.5.1
Describe methods of reviewing information collected from inspections, monitoring, sampling and record-keeping to verify, and document ongoing implementation of the plan and to determine when to take additional action, if needed.	s.5.1, s.5.2
Periodically review the effectiveness of control measures using available data from site inspections, silt loading and silt content analysis, dust fall jars, etc. on a regular basis to identify opportunities for continuous improvement.	s.6.0
Update the BMP plan as required.	s.6.0

3 PLAN

3.1 Facility Description

The Site will be located in Caledon, Ontario. The Site is approximately 261 hectares (ha) and is composed of three pit / quarry areas: Main Area, Northern Area and the Southern Area. The intent is to extract, process and transport 2.5 million tonnes of aggregate annually from the Site. The proposed extraction at the Site will be undertaken in seven phases and involves the initial excavation in the Main Area and subsequently the advance of workings in a counter-clockwise direction. Works will progress to the Northern Area in the initial operation phases and the Southern Area towards the latter phases. Further detail of each operational phase is provided below. As part of the overburden removal, sand and gravel will also be extracted from the site.

- **Phase 1** – Operations will commence north of Charleston Sideroad and an entrance to the Main Area satisfying sightline and access spacing requirements will be installed. This entrance will be located on a designated haul route and may be signalised for additional safety.

  Topsoil and overburden will be stripped from the operational areas for access to the underlying aggregate resource. All topsoil and overburden on site will be stripped and stockpiled separately in berms or stockpiles and replaced as quickly as possible in the progressive rehabilitation process. Berms will be constructed on the southern, eastern and northern boundaries of the Main Area to attenuate noise and provide visual screening. Surplus overburden materials will be stored in a designated storage area to the south of the Main Area which provides a short haul distance from the initial stripping in Phase 1.

  Controlled blasting will be undertaken in order to extract material from extraction faces. Following each blast it may also be necessary to break down the blast rock further using an excavator with an hydraulic rock breaking attachment. Rock form blast piles will then be transported to a temporary mobile crushing and processing plant. Processed materials will be stockpiled for off site transportation.

A permanent processing facility will be installed north of Charleston Sideroad and adjacent to the entrance once workings have progressed to the final quarry floor level in this area.

The permanent processing plant will include screening and crushing operations, capable of processing up to 2,000 tonnes of material per hour. A wash plant will also be used to clean and sort material.

- **Phase 2A** – Extraction operations will continue in a counter-clockwise direction in the Main Area. Controlled blasting and hydraulic breaking of blast rock will be undertaken at each active face. Rock form blast piles will then be transported to the permanent processing facility north of Charleston Sideroad. In-quarry backfilling will be carried out at appropriate quarried faces where extraction is complete.
- **Phase 2B** – The Northern Area will be accessed with a tunnel under Main Street. The area will be stripped and topsoil will be used for perimeter berms, while glacial in this area will be placed in the Main Area as in-quarry backfill. Extraction activities will be the same as that carried out in the Main Area with the extracted materials being transported the permanent processing facility. Once extraction in the Northern Area is complete overburden from the Main Area will be used to finish rehabilitation.
- **Phase 3, 4 and 5** – Extraction operations will continue in a counter-clockwise direction in the Main Area. In-quarry backfilling will be carried out at appropriate quarried faces where extraction is complete.
- **Phase 6** – The Southern Area will be accessed with a tunnel under Charleston Sideroad. The area will be stripped and topsoil will be used for perimeter berms, while glacial till will be placed in the Main Area as in-quarry backfill. Extraction operations will proceed southwards and materials will be transported the permanent processing facility in the Main Area.
- **Phase 7** – Extraction operations will continue in a southward direction in the Southern Area and materials will be transported the permanent processing facility in the Main Area. Once extraction has been completed overburden will be deposited to rehabilitate the quarried faces.

In each phase, overburden and topsoil stripping, sand and gravel extraction activities will precede drilling, blasting and rock extraction activities.

Figure 1 shows the Site location, nearby receptors and a wind rose from the Environment and Climate Change Canada Meteorological Station located in Mono, Ontario illustrating the predominant wind directions for the area. Table 2 presents general information about the Facility relevant to this Plan.

Table 2: Facility Description

Legal Name of Company and Site	CBM Aggregates (CBM), a division of St. Marys Cement Inc. (Canada) Caledon Pit / Quarry
Location	Caledon, Ontario
Address	Located in the vicinity of Charleston Sideroad and Main Street/Regional Road 136 in Caledon, Ontario
Main Activities	Drilling and blasting to extract material, material handling and haulage, crushing and screening of extracted material.
Hours of Operation	The CBM Caledon Pit / Quarry is proposed to operate (extraction, processing and drilling) 7:00 am to 7:00 pm Monday to Saturday, excluding statutory holidays and shipping is proposed from 6:00 am to 7:00 pm Monday to Saturday consistent with other mineral aggregate operations in Caledon. CBM is also proposing to permit limited shipping in the evening (7:00 pm to 6:00 am) to support public authority contracts that require the delivery of aggregates during these hours to complete public infrastructure projects. These activities will be limited to only highway trucks and

Legal Name of Company and Site	CBM Aggregates (CBM), a division of St. Marys Cement Inc. (Canada) Caledon Pit / Quarry
	shipping loaders and no other operations will be permitted during evening hours. Site preparation and rehabilitation is proposed to be permitted 7:00 am to 7:00 pm Monday to Friday.
Predominant wind direction	From the west southwest (Figure 1)
Nearest receptor	The individual residences closest to the Pit / Quarry in all directions are illustrated on Figure 1. The town of Cataract is also highlighted, which contains numerous residences.

3.2 Responsibilities

The following identifies the responsibilities held by each of the employment levels at the Facility as they pertain to this Plan.

3.2.1 Owner

The Owner is responsible for:

- reviewing the effectiveness of the current dust control measures at the Facility and assessing the need for improvements;
- ensuring the training of site personnel and contractors on the Plan and the best management practices to be implemented;
- ensuring the required resources are in place to execute the Plan;
- reviewing the dust control inspections to ensure adequate measures were taken to address issues;
- scheduling and coordinating the implementation of fugitive dust control measures;
- completing the Dust Control Inspection Form and Dust Control Activity Log (i.e. sweeping) as required;
- maintaining documentation of schedules and logs;
- ensuring dust control logs are transferred to the Facility's on-site filing system; and,
- receiving and handling complaints.

3.2.2 Site Personnel and Contractors

All Site Personnel and Contractors are responsible for:

- reviewing the effectiveness of the current dust control measures at the Facility and reporting issues to the Shift Supervisor; and,
- following the dust control procedures that are currently in place.

3.3 Identification of Fugitive Dust Emission Sources and Factors Affecting Dust Emissions

Fugitive dust emissions are a result of mechanical disturbances of granular materials exposed to the air. Dust generated from these open sources is termed "fugitive" because it is not discharged to the atmosphere in a confined flow stream, such as emissions from an exhaust pipe or a stack (USEPA 1995).

The mechanical disturbance may result from equipment movement, the wind, or both. Therefore, some fugitive dust emissions occur and/or are intensified by equipment use, while others (i.e., wind erosion emissions) are independent of equipment use.

The main factors affecting the amount of fugitive dust emitted from a source include characteristics of the granular material being disturbed (i.e., particulate size distribution, density and moisture) and intensity and frequency of the mechanical disturbance (i.e., wind conditions and/or equipment use conditions). Precipitation and evaporation conditions can affect the moisture of the granular material being disturbed and, therefore, have an indirect effect on the amount of fugitive dust emitted.

Once dust is emitted, its travelling distance from the source is affected by climatic conditions, specifically wind speed, wind direction, precipitation, and particle size distribution. Higher wind speeds increase the distance travelled while precipitation can accelerate its deposition. Finer particulates can travel further before settling and, therefore, deserve greater attention.

Table 3 provides a list of the main sources of fugitive dust at the Facility.

Table 3: Sources of Fugitive Dust Emissions at the Facility

Source Category	Source Description	Source Location	Potential Causes for High Emissions and Opacity from Each Source (Parameter/Condition)
Unpaved Areas	Vehicles will travel between the working face and the processing plant and/or from the processing plant off-site	Pit floor	Number of vehicles/large Weight of vehicles/large Silt content/high Wind speed/high
Material Handling/Storage	Loading to haul trucks	Working Face	Moisture content/dry Silt content of the material/high Material size/fine Material transfer rate/high Material drop height/high Wind speed/high
	Loading/unloading at Processing plant	Processing Plant	
	Stockpiling	Stockpiles – various	
Extraction	Drilling and blasting	Working Face	Moisture content/dry Material size/fine Material transfer rate/high Wind speed/high Blast zone area/high
Processing	Crushing and screening of extracted material	Processing Plant	Moisture content/dry Material size/fine Material transfer rate/high Material drop height/high Wind speed/high

Control measures to reduce fugitive dust emissions should take into account the sources of the dust emission, the dispersion conditions and the location of sensitive areas. Control measures are in place to minimize one or more factors leading to the generation and/or dispersion of fugitive dust emissions. These control measures can be classified as follows:

- **Preventative Procedures**: Measures pertaining to the design and installation of structures and the operating procedures which are implemented on a regular basis in order to prevent the generation of dust and/or the dispersion of dust emitted reaching sensitive areas.
- **Reactive Control Measures**: Measures which are implemented in the event of unexpected circumstances which can lead to the generation of dust and/or the dispersion of dust emitted reaching sensitive areas.

Table 4 lists preventative procedures and reactive control measure for fugitive dust emissions that are associated with the Facility.

Table 4: Preventative Procedures and Control Measures for Fugitive Dust Emissions at the Facility

Emission Source	Preventative Procedures/ Control Measure	Description	Frequency
Unpaved Areas	Watering	Water shall be applied as a dust suppressant during non-freezing conditions.	At least 2 litres/m^2/hour
	Application of Chemical Dust Suppressants	Chemical dust suppressants shall be applied during freezing conditions (temperatures less than 4ºC)	As required, during winter season
	Speed Limits	Speed limits of less than 25 km/hour shall reduce speed and dust production.	Permanent control
	Re-grading	Applying coarser material to surface of roadways.	Annually in Spring and whenever necessary as determined through visual monitoring
Material Handling and Stockpiles	Stockpile Placement	Stockpiles shall be placed below grade where possible to minimize wind erosion.	Continual
	Maintain Minimum Drop Height	Material shall be dropped from the shortest possible distance If material is on the ground, it shall be pushed up with a loader to prevent the material from being dropped.	Continual
	Good Housekeeping	Minimize dust accumulation in material handling areas, reducing the probability of re-entrainment and generation of fugitive dust emissions.	Continual
	Cease Activity	Material handling activities shall be stopped in high wind conditions.	When sustained winds are greater than 40 km/hr
	Progressive Rehabilitation	Stockpiles shall be developed in stages and the pit / quarry progressively closed off (i.e., capped) to minimize the area susceptible to wind erosion.	Continual
Extraction	Location	Blasting shall be completed below grade reducing the susceptibility of emitting fugitive dust.	Continual
	Procedure	Drills equipped with dust suppression systems shall be used at all times.	Continual
	Cease Activity	Drilling and blasting activities shall be stopped in high wind conditions.	When sustained winds are greater than 40 km/hr
Material Processing	Equipment placement	Permanent equipment shall be located below grade as early as possible to reduce the susceptibility to wind erosion.	Continual
	Maintain Minimum Drop Height	Material shall be dropped from the shortest possible distance.	Continual

Emission Source	Preventative Procedures/ Control Measure	Description	Frequency
	Spray bars	Crushers and screens shall be equipped with spray bars to reduce fugitive dust generation	Continual
	Good Housekeeping	Dust accumulation on equipment and in material processing areas shall be minimized, reducing the probability of re-entrainment and generation of fugitive dust emissions.	Continual
	Cease Activity	Material processing activities shall be stopped in high wind conditions.	When sustained winds are greater than 40 km/hr

* 1 - ChemInfo, 2005

Each fugitive dust source at the Facility was assessed using the risk management tool described in the Centre for Excellence in Mining Innovation guidance document “Guide to the Preparation of a Best Management Practices Plan for the Control of Fugitive Dust for the Ontario Mining Section, Version 1.0” (CEMI 2010) to assess if the BMPs that are in place adequately manage the risk associated with each source. See Appendix A for the risk factors used in the ranking process. As the Working Face will move over the lifetime of the Site, the worst case has been assumed, where it is closest to residences. Table 5 identifies the fugitive dust sources with their respective relative risk score for the Facility.

Table 5: Fugitive Dust Sources and Associated Relative Risk Scores

Source Description	Relative Risk Score	Relative Risk Level
Unpaved Areas	45	Low
Material Handling – Working Face	25	Low
Material Handling – Processing Plant	11	Low
Stockpiles	22	Low
Extraction	27	Low
Processing	18	Low

There are no sources that are considered to be “high” risk after the implementation of the BMPs, therefore it is reasonable to assume that the BMPs in place adequately manage the risk associated with each fugitive dust source.

3.4 Fugitive Dust Characterization

Particle sizes can be divided into the following categories:

- Fine: < 30 µm in diameter;
- Medium: 30 to 100 µm in diameter; and,
- Coarse: > 100 µm in diameter.

As the majority of fugitive dust from the Pit / Quarry results from mechanical disturbances from vehicles travelling on unpaved roads, the diameter of the dust particles can be categorized as medium (30 to 100 µm in diameter).

4 DO

4.1 BMPs for Sources of Fugitive Dust Emissions

The BMPs listed in Table 5 will be implemented at the Facility when activities commence, therefore no implementation schedule has been specified.

Dust generating work performed at the Facility, whether it is completed by CBM or under contractual agreements, must conform to the requirements of this Plan.

4.2 Procedures for Handling Complaints

The Facility has procedures in place to address complaints related to fugitive dust. All workers should be familiar with how to direct a complaint to the Owner who is responsible for receiving complaints (see section 3.2) should the need arise. The following steps should be taken by the Owner if a complaint is received:

- Complete copy of dust complaint form (Appendix C) and ask the complainant for the information required on the form (contact information, time of occurrence, etc.).
- Notify the Ministry of complaint (Spills Action Centre, 416-325-3000).
- Notify the Town of Caledon of complaint.
- Conduct a Facility and, if needed, off-site inspection to determine the source of the dust and whether the dust is still causing an issue.
- Carry out fugitive dust mitigation procedures, if needed, and summarize the measures that were taken in the complaint record.

4.3 Training

Site personnel and contractors will be informed about the requirements of this Plan. The Senior Management Representative will administer training prior to working on the property, so that staff have reviewed this document and activities on site are carried out in such a way to minimize dust. Training records specific to this Plan will be kept with all other training records. Appendix D contains information sheets that can be displayed around the site identifying the relevant controls associated with different activities.

5 CHECK

5.1 Maintenance Procedures and Inspections

As per section 3.2.2, all Site Personnel and/or Contractors should monitor the Facility for dust emissions/generation on a daily basis. Records of dust observations shall be noted on the Dust Control Inspection Form in Appendix B. If Site Personnel and/or Contractors observe high dust emissions/generation, the following steps will be taken:

- notify owner of high dust emissions/generation;
- owner to complete entry in Non-Conformance Log (Appendix B);
- owner to determine and implement the necessary corrective action.

In addition to the schedule in procedure above with respect to dust observations, a weekly inspection will be conducted by the Owner using the Dust Control Inspection Form in Appendix B. If the Owner observes a non-conformance, the following steps will be taken:

- owner to complete entry in Non-Conformance Log (Appendix B);
- owner to determine and implement the necessary corrective action.

5.2 Record Keeping Practices

The Facility retains copies of maintenance and inspection records in the onsite filing system. Examples of the dust control logs can be found in Appendix B.

The records should be stored in the Facility's on-site filing system.

5.3 Monitoring

An air quality monitoring plan will be developed for the Site, which will include both upwind and downwind monitoring of dust concentrations during operations.

6 ACT

The following will trigger reviews and updates, if needed, of this Plan:

- When there are significant changes in the Facility processes or equipment that introduce potential dust emission sources.
- When there are verified repetitive complaints associated with dust emissions from the Facility.
- When there are noticeable dust emissions occurring and/or an increased dust level (excluding seasonal conditions).

7 LIMITATIONS

In preparing this fugitive dust BMPP, WSP has relied on information provided by CBM regarding proposed Pit / Quarry procedures, as well as information on proposed Pit / Quarry operations and equipment.

Standard of Care: WSP Canada inc. (WSP) has prepared this report in a manner consistent with that level of care and skill ordinarily exercised by members of the engineering and science professions currently practicing under similar conditions in the jurisdiction in which the services are provided, subject to the time limits and physical constraints applicable to this report. No other warranty, expressed or implied is made.

Basis and Use of the Report: This fugitive dust BMPP was prepared for the exclusive use of CBM. The BMPP is based on discussions with CBM about Facility practices, fugitive dust sources and review of information provided by CBM. This BMPP cannot account for changes in Facility conditions and operational practices completed after it has been finalized.

The information, recommendations and opinions expressed in this report are for the sole benefit of CBM, subject to the limitations and purposes described herein. Use of or reliance on this report by others is prohibited and is without responsibility to WSP. The report, all plans, data, drawings and other documents as well as all electronic

media prepared by WSP are considered its professional work product and shall remain the copyright property of WSP. If CBM gives, lend, sell, or otherwise make available the report or any portion thereof to any other party, it does so at its own risk and liability. CBM acknowledges that electronic media is susceptible to unauthorized modification, deterioration and incompatibility and therefore CBM cannot rely upon the electronic media versions of WSP's report or other work products.

When evaluating the Facility and developing this report, WSP has relied on information provided by CBM, the regulatory authorities, and others. WSP has acted in good faith and accepts no responsibility for any deficiencies, misstatements, or inaccuracies contained in this report resulting from omissions, misinterpretations or falsifications by those who provided WSP with information.

Physical sampling of atmospheric emission sources was not completed as part of the scope of work.

Signature Page

WSP Canada Inc.

Bonnie Field, BSc, BASc, PEng
Air Quality Engineer

Katie Armstrong, BSC, MSc
Team Lead - Air Quality Modelling and Permitting

SLC/BF/KSA/sg/mp

https://wsponline.sharepoint.com/sites/gld-114392/project files/6 deliverables/ph 3200-air quality/updated bmpp/2025 update/19129150-r-rev1-vcna caledon dust bmpp-18mar2025.docx

FIGURES

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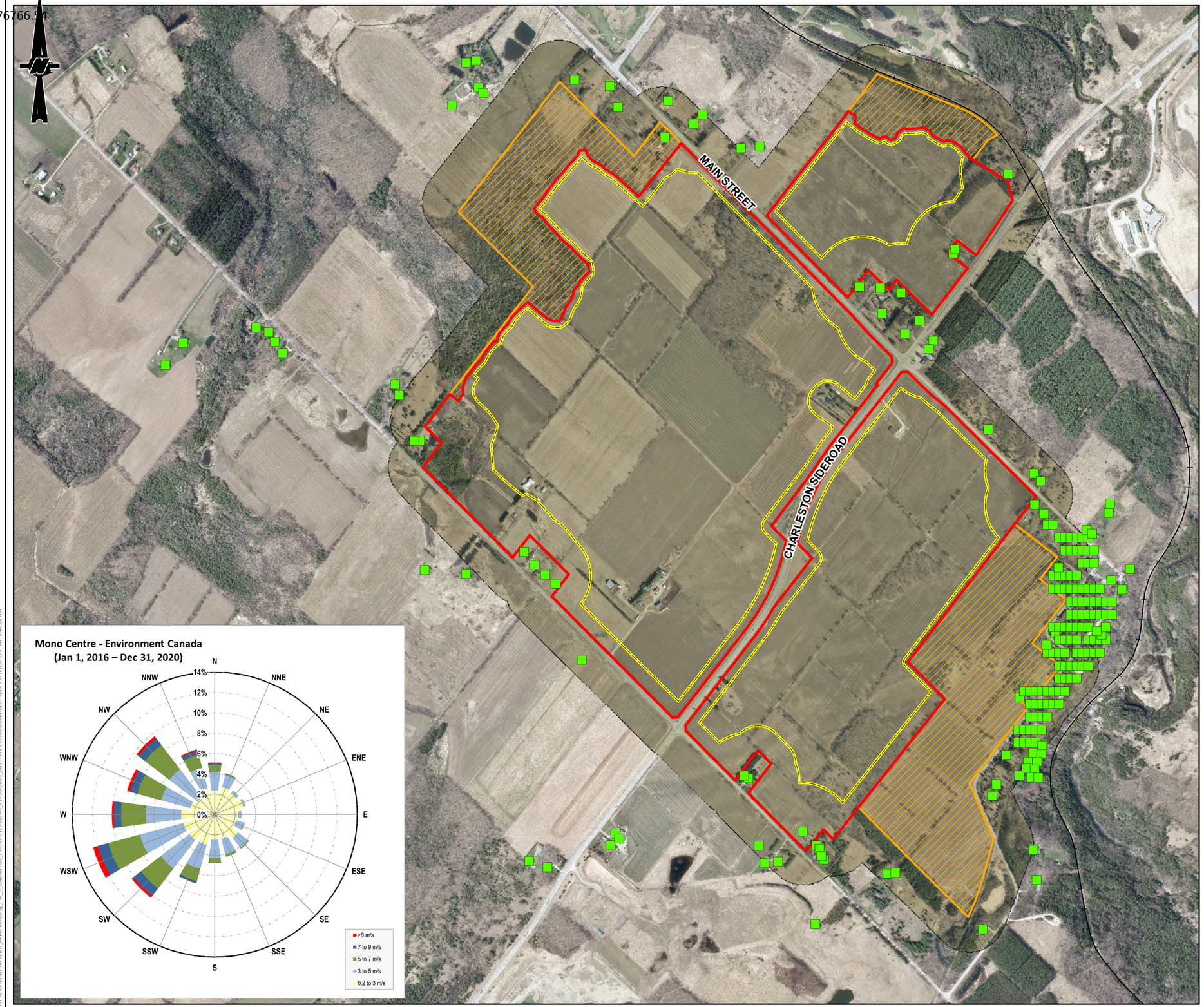

LEGEND

- RECEPTOR LOCATION
- LIMIT OF EXTRACTION
- MEASUREMENT LOCATION
- POINTS OF RECEPTION
- LICENCE BOUNDARY
- ADDITIONAL LANDS OWNED / CONTROLLED BY CBM

0 500 1,000

1:12,500 METRES

REFERENCE(S)

1. BASE DATA MNRF LIO OBTAINED 2020
2. IMAGERY FIRSTBASE SOLUTIONS SPRING 2021, SPRING 2019 (15CM RESOLUTION) AND WORLD TOPOGRAPHIC MAP: CITY OF BRAMPTON, REGION OF PEEL, PROVINCE OF ONTARIO, ONTARIO MNR, ESRI CANADA, ESRI, HERE, GARMIN, USGS, NGA, EPA, USDA, NPS, AAFC, NRCAN
   WORLD IMAGERY: DUFFERIN COUNTY, PEEL REGION, MAXAR
3. LICENSE AND EXTRACTION LIMIT PROVIDED BY MHBC IN JUNE 2023.
4. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: UTM ZONE 17N

CLIENT
CBM AGGREGATES, A DIVISION OF ST. MARYS CEMENT INC. (CANADA).

PROJECT
CALEDON PIT / QUARRY

TITLE
SITE LOCATION PLAN AND WIND ROSE

CONSULTANT

wsp

YYYY-MM-DD	2024-07-16
DESIGNED	CGE
PREPARED	CGE
REVIEWED	KA
APPROVED	HM

PROJECT NO.	CONTROL	REV.	FIGURE
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APPENDIX A

Fugitive Dust Risk Management Tool

Description of the structure / equipment	Category	1 Frequency of process / activity that generates fugitive dust:	2 Position of the source related to sensitive areas (e.g.: communities, working areas):	3 Predominant wind direction is from the source to the closest sensible area?	4 Relative amount of visible dust generated in the process / activity:	5 Dust composition	6 Dust size range (higher mass percentage)	7 Is there some wind barrier (e.g.: trees, buldings, landscape) which can prevent the emissions from this source to reach the closest sensitive area?	8 Is there some measure applied on regular basis to prevent dust emission from this source (preventative)?	9 Is there some measure applied to this source to reduce dust emission once it occur (reactive)?	10 Is there some monitoring procedure applied to this source related to fugitive dust control?	11 Monitoring data / information trigger some control measure?	Risk Total
Worst Case Scenario	Unpaved road / area	Continuous	Close	Yes	High	No metals	Fine	No	No	No	No	No	100
Unpaved Areas	Unpaved road / area	Continuous	Medium	Yes	Medium	No metals	Medium	Yes	Yes	Yes	Yes	Yes	45
Material Handling - Working Face	Material transfer (drop	Intermitent	Medium	Yes	Medium	No metals	Medium	Yes	Yes	No	Yes	Yes	25
Material Handling - Processing Plant	Material transfer (drop	Intermitent	Medium	No	Medium	No metals	Medium	Yes	Yes	No	Yes	Yes	11
Stockpiles	Material stockpile	Continuous	Medium	No	Medium	No metals	Medium	Yes	Yes	No	Yes	Yes	22
Extraction	Process	Sporadic	Close	No	High	No metals	Medium	No	No	No	Yes	Yes	27
Processing	Process	Intermitent	Medium	No	Medium	No metals	Fine	Yes	Yes	No	Yes	Yes	18

APPENDIX B

Sample Dust Control Logs

Dust Control Inspection Form

Date:

Inspector Name:

Weekly Inspection

Unpaved Roadways				
Inspection Items	**Response**	**Requirement**	**Conformance (Y or N)**	**Description of Non-Conformance**
Is visible dust observed from any section of roadway?		N		
Are appropriate load sizes maintained on haul vehicles?		Y		
Are roadways well maintained? (ie good housekeeping)		Y		
Has the watering log been maintained?		Y		
Has the non-conformance log been maintained?		Y		
Have previous non-conformances been rectified?		Y		

Material Handling / Storage				
Please list all areas that were inspected:				
Indicate which areas were not inspected, if any, and the reason why an inspection was not completed.				
Inspection Items	**Response**	**Requirement**	**Conformance (Y or N)**	**Description of Non-Conformance**
Is visible dust observed from any material handling location?		N		
Are low drop heights maintained?		Y		
Are material handling locations well maintained? (i.e. good housekeeping)		Y		
Has the activity log been maintained?		Y		
Has the non-conformance log been maintained?		Y		
Have previous non-conformances been rectified?		Y		

Dust Control Inspection Form

Date:

Inspector Name:

Weekly Inspection

Processing Plant				
Please list all areas that were inspected:				
Indicate which areas were not inspected, if any, and the reason why an inspection was not completed.				
Inspection Items	**Response**	**Requirement**	**Conformance (Y or N)**	**Description of Non-Conformance**
Is visible dust observed from the processing plant?		N		
Are the spray bars operational on the crushers and screens?		Y		
Is the processing equipment/area well maintained? (i.e. good housekeeping)		Y		
Has the activity log been maintained?		Y		
Has the non-conformance log been maintained?		Y		
Have previous non-conformances been rectified?		Y		

All non-conformances must be documented in the Non-Conformance Log

Inspector Sign Off: _____

Material Handling and Storage
Dust Control Activity Log

Site Area	Date	Description of Activity	Start Time	End Time	Employee Name	Employee Signature

Unpaved Roads
Watering Log

Section of Roadway (Source ID)	Date	Description of Watering (Equipment used, amount of water applied)	Start Time	End Time	Operator Name & Company	Company Sign Off

Non - Conformance Log

Date	Time	Inspector Name	Potential or Actual Non-Conformance		Cause	Action	Recommendation	Corrective Action Sign Off
			Location / Source ID	Activity / Process / Condition				

APPENDIX C

Complaint Response Form

Dust Complaint Form

Date:

Time:

Complainant Information	
Name	
Address	
Contact Number	
Callback completed (if required)	

Complaint Details	
Date and time of dust event	
Description of dust event (describe where dust was detected, amount of dust, wind direction and any other items to help characterize the event)	
Summary of measures taken to address complaint:	

APPENDIX D

Information Sheets

DUST CONTROL MEASURES AND PREVENTATIVE PROCEDURES - UNPAVED AREAS

Preventative Procedures / Control Measure	Description	Frequency
Watering	Water shall be applied as a dust suppressant during non-freezing conditions.	At least 2 litres/m^2/hour
Application of Chemical Dust Suppressants	Chemical dust suppressants shall be applied during freezing conditions (temperatures less than 4ºC)	As required, during winter season
Speed Limits	Speed limits of less than 25 km/hour shall reduce speed and dust production.	Permanent control
Re-grading	Applying coarser material to surface of roadways.	Annually in Spring and whenever necessary as determined through visual monitoring

DUST CONTROL MEASURES AND PREVENTATIVE PROCEDURES - MATERIAL HANDLING AND STOCKPILES

Preventative Procedures / Control Measure	Description	Frequency
Stockpile Placement	Stockpiles shall be placed below grade where possible to minimize wind erosion.	Continual
Maintain Minimum Drop Height	Material shall be dropped from the shortest possible distance If material is on the ground, it shall be pushed up with a loader to prevent the material from being dropped.	Continual
Good Housekeeping	Minimize dust accumulation in material handling areas, reducing the probability of re-entrainment and generation of fugitive dust emissions.	Continual
Cease Activity	Material handling activities shall be stopped in high wind conditions.	When sustained winds are greater than 40 km/hr
Progressive Rehabilitation	Stockpiles shall be developed in stages and the pit / quarry progressively closed off (i.e., capped) to minimize the area susceptible to wind erosion.	Continual

DUST CONTROL MEASURES AND PREVENTATIVE PROCEDURES - EXTRACTION

Preventative Procedures / Control Measure	Description	Frequency
Location	Blasting shall be completed below grade reducing the susceptibility of emitting fugitive dust.	Continual
Procedure	Drills equipped with dust suppression systems shall be used at all times.	Continual
Cease Activity	Drilling and blasting activities shall be stopped in high wind conditions.	When sustained winds are greater than 40 km/hr

DUST CONTROL MEASURES AND PREVENTATIVE PROCEDURES - MATERIAL PROCESSING

Preventative Procedures / Control Measure	Description	Frequency
Equipment placement	Permanent equipment shall be located below grade as early as possible to reduce the susceptibility to wind erosion.	Continual
Maintain Minimum Drop Height	Material shall be dropped from the shortest possible distance.	Continual
Spray bars	Crushers and screens shall be equipped with spray bars to reduce fugitive dust generation	Continual
Good Housekeeping	Dust accumulation on equipment and in material processing areas shall be minimized, reducing the probability of re-entrainment and generation of fugitive dust emissions.	Continual
Cease Activity	Material processing activities shall be stopped in high wind conditions.	When sustained winds are greater than 40 km/hr

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