

4. <u>Cultural Heritage</u>

D. Technical Recommendations

e. Deciduous trees shall be planted with approximately 10 m spacing on either side of the water infiltration trench, within 1 year of issuance of the licence. The trees shall include the following species and percentage mixture: Sugar Maple (Acer saccharum) - 50%

 Red Oak (Quercus rubra) - 50% f. Trees and shrubs shall be planted as seedlings in the visual planting areas (see plan view on this drawing for locations) with approximately five metre spacing. The tree seedlings shall be approximately 50 centimetres in height. The tree and shrub mix

shall include the following species and percentage mixture: Trembling aspen (Populus tremuloides) - 10 %

 Gray dogwood (Cornus racemosa) - 10 % Alternate-leaved dogwood (Cornus alternifolia) - 10 % • Eastern red cedar (Juniperus virginiana) - 10 %

e.b. The following short-term conservation actions, shall be implemented prior to relocation of the farmhouse:

 White pine (Pinus strobus) - 30 % White spruce (Picea glauca) - 30 %

g. Planting of the visual planting areas for the Main Area shall occur within 1 year of issuance of the licence, and for the North and South Areas within 5 years of issuance of licence.

h. Monitoring of trees survival shall be conducted within the first year following planting and equivalent replacement planting shall be carried out if more than 20% of the trees did not survive. If replacement trees are required, another year of monitoring is

a. The maximum predicted groundwater table, based on groundwater levels monitored over a 12 month period from January to December 2021, are as follows:

 North Area - Ranges from 407.0 to 397.3 masl (northwest to southeast) South Area - Ranges from 405.3 to 391.0 masl (northeast to south)

b. Prior to below water extraction, the licensee shall complete a follow-up door-to-door survey of private wells for properties within 1,000 metres of the licence area, to supplement and verify the MECP Water Well Information System (WWIS) information, to confirm neighbouring water users and confirm baseline conditions prior to below water extraction commencing. Landowner participation in this private well survey is voluntary.

c. Prior to below water extraction, the licensee shall obtain and operate in accordance with a Permit To Take Water and Environmental Compliance Approval under the Ontario Water Resources Act to permit the water management activities needed

 Pumping, collection, storage and discharge of pit and guarry water; Operation of a groundwater infiltration trench; and

results of the assessment shall be provided to the resident

d. The approved monitoring programs defined in the Permit to Take Water and/or Environmental Compliance Approval shall, at a minimum, include all groundwater and surface water monitoring requirements as outlined below:

• On-site monitoring shall include the wells, surface water stations and mini-piezometers listed in Table 1 on drawing 1 of 4, and shall include the scope and frequency specified in Table 1. • Off-site monitoring shall include the wells, surface water stations and mini-piezometers listed in Table 2 on drawing 1 of 4,

e. In the event a well complaint is received by the licensee for a private (domestic / farm) well located within the estimated zone of influence (1,000 metres), the licensee shall implement the following Well Complaint Response Protocol:

the licensee shall contact a local well contractor, and the resident shall be immediately supplied a temporary water source within 24 hours if the issue cannot be easily determined and rectified (see steps below) e.b. If the issue raised by the resident is related to a loss of water supply, the licensee shall have a consultant / well contractor determine the likely causes of the loss of water supply, which can result from a number of factors, including pump failure, extended overuse of the well or lowering of the water level in the well from potential aggregate operations interference. This assessment process would be carried out at the expense of the aggregate operator licensee and the

e.c. The consultant / well contractor will be able to readily determine if pump failure or extended use of the well is the problem and, if so, it is not the licensee's responsibility to remedy. is the problem and, should the resident choose to have the pump repaired or replaced at their expense, the well contractor would correct the situation for the resident. If well capacity in relation to the demand being placed on the well by the resident (i.e., extended overuse) is determined to be the issue by the consultant / well contractor, recommendations shall be provided to the resident for their ementation of which would be at their expense

e.d. If, however, well interference is determined to potentially have been caused by aggregate extraction and dewatering activities relating to this licence, then water well supply mitigation shall be reviewed with the resident and the best course of action to restore an equivalent water supply to the resident shall be implemented at CBM's the licensee's expense. For instance, if the water level in the well is lowered to a point where it has interfered with pumping, then potential solutions shall be evaluated including adjusting the pump pressure and / or lowering the pump level in the

e.e. In the event that the well is incapable of providing an adequate supply of water (i.e., the water level is too low in comparison to the depth of the well), or the repair to the pumping system will be more than a day, the consultant / well contractor shall continue to supply a potable water source to the resident (until restoration of the well is complete) These actions would be carried out at the expense of the licensee. In rare cases where the water level in the well has been lowered significantly, the well may have to be deepened, widened or relocated (also at the licensee's expense). Any replacement well shall be constructed in accordance with O.Reg. 903, as amended Standards

e.f. If the issue raised by the land owner is related to water quality, the licensee shall have a consultant/contractor determine the likely causes of the change in water quality, and review monitoring results at the quarry and background monitoring results from the baseline well survey to determine if there is any potential correlation with the quarry. If it has been determined that the quarry caused a water quality issue, the quarry shall continue to supply water at the licensee's expense until the problem is rectified. The licensee shall be responsible for restoring the water supply by replacing the well or providing a water treatment system. Only at the request of a landowner would a cistern be

f. The licensee shall submit an annual water resources monitoring report to MNRF, MECP, Town of Caledon and Credit Valley Conservation (CVC). The annual report shall also include a summary of any water related complaint and the actions taken by the

g. During operations, the sump in each pit and quarry area shall be located near the lowest point of elevation on the current pit and quarry floor. The position of the sump at a given point in time will be dictated by direction of extraction and elevation of the base of the current pit and quarry floor within each quarry area, and shall generally be as follows:

supplied. The licensee shall be responsible for the expense to restore the water quality.

• Main Area - the sump shall be located in the most southwestern area of the current pit and quarry floor, at the point of lowest • North Area - the sump shall be located in the most southwestern southeastern area of the current pit and quarry floor, at the point of lowest elevation. • South Area - the sump shall be located in the most southeastern area of the current pit and quarry floor, at the point of lowest

. Subject to an agreement with the Osprey Valley Golf Course, the licensee shall construct a discharge pipe from the licence area to the irrigation system infrastructure at the golf course to convey the water from the settling pond to the golf course for irrigation, with the excess water stored or discharged through the existing pond system to the Credit River.

Subject to an agreement with the Region of Peel, the licensee shall construct piping under Main Street and Charleston Sideroad for the transfer of water from the Main and South Areas to the North Area. The licensee shall construct a slurry wall / grout zone prior to the start of Phase 3 and infiltration trenches prior to the start of Phase 4 as a groundwater mitigation system in the west setback of the Main Area, and similarly, a slurry wall / grout zone and infiltration trenches in the west and south setback of the South Area prior to the start of Phase 6. Water to supply the infiltration trenches shall be collected from the pit and quarry sumps during operations and stored in an up to 1 to 2 ha sized pond located in the Main Area or North Area. The system shall be operated in accordance with the Permit To Take Water and Environmental

the storage of wash water in a closed-loop system. Wash water will be sourced from the pit and quarry sump, and top-up water will be added to the wash pond as needed during operations, in order to maintain sufficient water for the operation. Aggregate washing operations shall be completed in accordance with the Permit To Take Water and Environmental Compliance Approval under the Ontario Water Resources Act All fuel storage and handling on-site shall be completed in accordance with applicable Technical Standards and Safety Authority (TSSA) standards. The on-site storage and servicing of machinery shall be carried out in accordance with established best

hazardous materials regulations, including Ontario Regulation 860/93, as amended. m. Once operations in the North Area, South Area and Main Area have been completed and the rehabilitated landform has been created, pumping will cease and allowed to flood and to form the Main, North and South ponds. The Main, North and South pond

water levels post-rehabilitation are predicted to reach a level of approximately ~400, ~399 and ~393.5 masl, respectively. The South pond would be self contained and not require an overflow outlet:

• The Main pond overflow shall be directed via a culvert under Main Street to the North pond with its outlet invert at ~400 masl; • The North pond overflow shall be directed via main outlet to the Osprey Valley Golf Course irrigation pond system with its

outlet invert at ~399 masl. n. All rehabilitated pond levels and outlets will be passive and not require pumping.

a. On-site equipment shall meet the following noise limits as indicated in the table below: Quantity Overall Sound Power Level [dBA] Temporary Processing Plant - Screen Temporary Processing Plant - Jaw Crusher Jaw Crusher emporary Processing Plant - Cone Crusher Cone Crusher Loader PP Loader EX Extraction Loader Permanent Processing Plant - Screen Screen 1-7 Jaw Crusher 1-2 Permanent Processing Plant - Jaw Crusher Permanent Processing Plant - Cone Crusher Cone Crusher Wash Plant Screen 1 Haul Truck Unloading

1. Values presented in table do not include adjustments that were considered in the modelling (i.e., time weighting) where applicable 2. Average sound power level representing various loader activities

3. Number of round trips in a given hour

Table 3: Receptors Within 500m of Licence Boundarie 77 William Street 18130 Cataract Road

Noise Mitigation Schematic $\nabla \nabla \nabla \nabla$ **Permanent Processing Plan** 13 metre high barrier on east and west side Temporary Processing Plant 7 metre high barrier on west side and 6 metre high barrier on east side Area 1 Operation of a Single Unmitigated Drill Area 2 Operation of a Single Mitigated Drill **Processing Plant** with 4.5 metre High Local Barrier 13 metre high barrie Area 3 Operation of Two Mitigated Drills on east and south side One Mitigated Drill with 4.5 metre + Area 5 Operation of Two Extraction Loaders Area 6 Operation of Two Extraction Loaders (With Lower Sound Power Level) 5 metre High Property Line Barrier 5 and 7 metre High Property Line Barrier to be Constructed Before Temporary Processing Plant is in Operation. See plan view for the location of the 7 metre high berm. est and updated the berm according

daytime period (i.e. 7:00am to 7:00pm) Monday to Friday except statutory holidays

f. The temporary processing plant shall be mitigated by noise controls in the form of barriers or acoustically equivalent treatment

a 6 m high, approximately 80 m long barrier located east of the temporary processing plant shall be installed.

(e.g., equipment mounted) to reduce the noise emissions. A 7.5 m high, approximately 117 m long barrier located 20 m west and

g. The permanent processing plant shall be mitigated by noise controls in the form of barriers or acoustically equivalent treatment

(e.g., equipment mounted) intended to reduce the noise emissions. A 13 m high, approximately 108 m long barrier located 20 m

north and east and a 13 m high, approximately 56 m long barrier located at 20 m west of the processing plant shall be installed.

In addition, a 13 m high, approximately 69 m long barrier located at 20 m east and south of the processing plant equipment

h. Proposed Barriers can shall be constructed of earth berms, product stockpiles or other suitable acoustic barriers such as trailers

i. Extraction loaders shall be generally operating operate within 30 m of the active working face to maximize noise screening by the

Drills procured for the Site operations shall be mitigated (e.g., manufacturer installed noise controls) resulting in a sound power

level of 116 dBA. In addition, when operating within the identified areas on the Noise Mitigation Schematic on this drawing or

drawing 2 of 4, the drills shall be equipped with a 4.5 m high "C - shaped" and 22 m long local barriers located at the distance of

5 m from the equipment (or acoustically equivalent). In addition, operational restriction shall be considered for drills operating in

k. The number of extraction loaders shall be reduced from three to two units when equipment operates in the areas identified as

m. The licensee shall utilize an alternative to narrow band back up alarms that meet Ministry of Labour safety requirements for

n. Prior to operations commencing, sound measurements of the equipment used on the Site shall be undertaken by a qualified

o. To confirm that sound levels from the Site operations are in compliance with the MECP noise guideline limits, an acoustical audit

p. Proposed mitigation may be substituted through equipment modification, other control measures and/or local barriers if an assessment by a qualified professional is completed in accordance with MECP requirements and demonstrates the modification

a. Barn #1b, Barn #2, Barn #3 and Woodlands F and G (as shown on drawing 1 of 4) shall only be removed outside of the bat

b. Habitat for eastern meadowlark and bobolink (as shown on the Key Natural Heritage Features Schematic on drawing 1 of 4)

C. To comply with the Migratory Birds Convention Act. Barn #1a. Barn #2. Barn #3 and Shed #3 (as shown on the plan view on

d. To comply with the Migratory Birds Convention Act, removal of vegetation shall not be permitted during the active season for

drawing 1 of 4) shall not be removed during the active season for barn swallow (May 1st - August 31st), unless disturbance is

preceded by a nesting survey conducted by a qualified biologist. If any active nests are found during the nesting survey, the

breeding birds (April 15th - August 15th), unless construction disturbance is preceded by a nesting survey conducted by a

protect against disturbance. Vegetation within the protection buffer shall not be removed until the young have fledged the nest.

Implement a minimum setback for extraction of 30 metres from the Coulterville Wetland Complex (as shown on this drawing).

e. Implement a minimum setback for extraction of 15 metres from significant woodlands (as shown on this drawing). There shall be

g. Implement a minimum setback for extraction of 30 metres from Tributary #1 and the pond (as shown on this drawing). There

h. Implement a minimum setback for extraction of 30 metres from unevaluated wetland units 3, 4 and 5 (as shown on this drawing).

Sediment and erosion control measures shall be installed along the dripline of the significant woodlands in areas where runoff

has the potential to enter the woodland, and adjacent to the Coulterville Wetland Complex prior to commencement of activities

duration of the proposed operations. Following rehabilitation of the areas adjacent to the significant woodlands, the control

within 30 metres of the significant woodlands (e.g., Site preparation) and shall be actively monitored and maintained for the

k. Excess water collected in the sump(s) shall be pumped to a settling pond located on the east side of the North Area, from which

water will flow by gravity for off-site discharge to the Osprey Valley Golf Course irrigation pond system, with the excess water

Water collected from quarry operations and discharged off-Site shall be monitored for total suspended solids and temperature to

• Location 2: Main Quarry - Northwest Area - Coulterville Wetland Complex (SW17/MP17, SW18/MP18, SW19/MP19,

• Location 4: South Quarry - Monitoring Wells for the South Area Mitigation System (MW-IT-03A/B, MW-IT-04A/B,

b. Prior to below water operations commencing in the Main Area and prior to operations commencing in the South Area, the

a. The licensee shall hold an annual Community Liaison Committee meeting once a year. The Community Liaison Committee shall

2. MECP - Ministry of the Environment, Conservation and Parks 3. MGCS - Ministry of Government and Consumer Services

4. DFO - Department of Fisheries and Oceans Canada

5. MNRF - Ministry of Natural Resources and Forestry 6. MCM - Ministry of Citizenship and Multiculturalism

TSSA - Technical Standards and Safety Authority

8. MTCS - Ministry of Tourism, Culture and Sport

9. ECA - Environmental Compliance Approval

10. BMPP - Best Management Practices Plan

11. WWIS - Water Well Information System

12. HIA - Heritage Impact Assessment

13. CVC - Credit Valley Conservation

14. MASL - Metres above sea level

15. PTTW - Permit to Take Water

16. NTS - Not to Scale

consist of up to 5 members of the public that live within 500 m of the licence area and representatives of the licensee. The

Community Liaison Committee is intended to provide a forum for dialogue and exchange of information between the surrounding

community and the licensee relative to ongoing operations, rehabilitation, monitoring, reporting and any complaints received and

actions taken by the licensee. The licensee shall also invite the MNRF, Town of Caledon, the Region of Peel and the CVC to

licensee shall enter into an agreement with the Region of Peel for a crossing underneath Main Street and Charleston Sideroad,

ensure it meets the discharge objectives for those parameters, as specified in the Environmental Compliance Approval.

Location 1: Main Quarry - Northwest Area - Tributary #1 (SW14/MP14, SW22/MP22, SW23/MP23, MW20-15A/B/C)

• Location 3: Main Quarry - Monitoring Wells for the Main Area Mitigation System (MW-IT-01A/B, MW-IT-02A/B)

a. Prior to shipping, the licensee shall enter into an agreement with the Region of Peel for the construction of the:

qualified biologist. If any active nests are found during the nesting survey, a buffer will shall be installed around the nest to

complies with MECP noise limits at surrounding sensitive receptors. Prior to any modification, notification shall be given to

shall be completed by a qualified professional once extraction and processing activities commence in the Main Area.

Area 5 through Area 6 and shown on the Noise Mitigation Schematic on this drawing or drawing 2 of 4. In addition, the loaders

or shipping containers, as long as the height and the density requirements of 20 kg/m² without gaps are maintained.

specifics areas as indicated on the Noise Mitigation Schematic on this drawing or drawing 2 of 4

operating in Area 6 shall be similar to the plant loader with sound power levels of 107 dBA.

I. Gravel extraction shall be completed using a single loader with a sound power level of 107 dBA.

7:00am to 7:00pm) Monday to Saturday, except statutory holidays.

loaders and no other operations shall be permitted.

of the use of the temporary processing plant.

Area 1 - operation of a single unmitigated drill;

Area 3 - operation of two mitigated drills; and,

Area 4 - operation of one mitigated and one unmitigated dril

professional to confirm maximum emission levels are not exceeded.

shall only be removed outside of the nesting period of May 1st - July 31st.

structure shall not be removed until the young have fledged the nest.

no disturbance, including berms, within 10 metres of these significant woodlands.

There shall be no disturbance, including berms, within 10 metres of the wetland.

There shall be no disturbance, including berms, within 10 metres of these features.

shall be no disturbance, including berms, within 10 metres of these features.

i. All conditions of Endangered Species Act approvals/permits shall be followed.

stored or discharged through the existing pond system to the Credit River.

m. Implement the water monitoring requirements for Locations 1, 2, 3 and 4:

SW20/MP20, MW22-02A/B, MW22-03A/B)

a.b. Charleston Sideroad improvements

attend the Community Liaison Committee meetings.

Site Plan Acronyms

1. ARA - Aggregate Resources Act

Area 2 - operation of a single mitigated drill;

active period of March 15th - November 30th

measures shall be removed.

10. <u>Traffic</u>

located in Phase 6 lands.

working face.

. Natural Environment

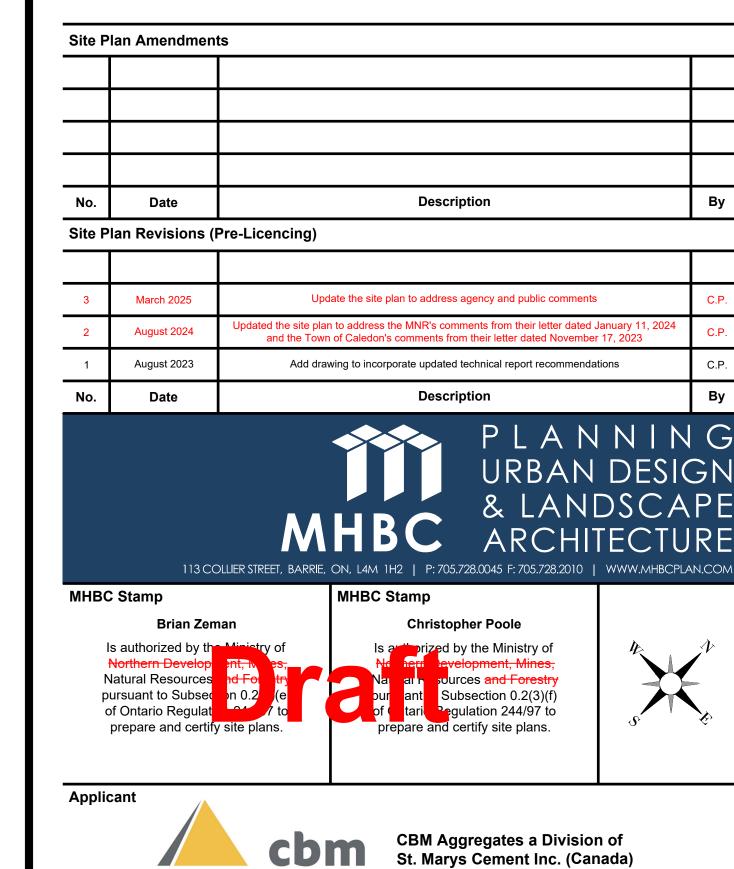
Legal Description Part of Lots 15-1718, Concession 4 WSCR and Part of Lot 16, Concession 3 WSCR b. Activities to prepare the Site, such as the stripping of topsoil, construction of the berms, or activities related to the rehabilitation of the Site after the extraction is completed are considered to be construction activities and are only permitted to occur during the (former geographic Township of Caledon) Township of Caledon c. Activities for site operations, such as extraction, processing and drilling are permitted to occur during the daytime period (i.e. Regional Municipality of Peel d. Activities related to shipping are permitted from 6:00am to 7:00pm Monday to Saturday, except statutory holidays. Shipping is permitted from 7:00pm to 6:00am only where required to support public authority contracts that necessitate the delivery of aggregates during these hours. Shipping activities from 7:00pm to 6:00am shall be limited to highway trucks and shipping Additional Land Owned Licence Boundary e. A 5-m high visual/acoustical barrier berm shall be installed around constructed in the locations identified on the plan view of this by Licensee drawing for the Main Area, North Area and South Area prior to extraction commencing in the identified areas. A 265 m portion of this the berm along the west part of the Main Area shall be constructed to a 7 m high acoustic/visual barrier berm (see plan view for location). The berm along the west part of the Main Area property boundary shall be constructed prior to the commencement Limit of Extraction 120m Offset From

Licence Boundary —₄01— Contours with Elevation Metres above sea level (MASL) Public Road Enbridge Gas Inc Driveway Fence 1.2 m post & wire fence unless otherwise noted ¹ Railwa∨ Silt Fence Main Discharge Entrance / Exit Operational Access Entrance / Exit Office/lab and Maintenance Access Berm (with 2:1 side slopes) unnel Crossino 5.0 m in height except for section along the western extent of the Main Area identified as 7.0 m on the plan view General Direction of \bowtie Excavation & Boundary Watercourse Building/Structure (Direction of flow indicated by arrows) Topsoil & Overburden Watercourse Intermittent Stockpile Area (Maximum Height 8.0 m) (Direction of flow indicated by arrows) Water Feature Wooded Area Archaeological Protection Area (Including 10 70 metre buffer) Wetland

MNRF Evaluated - Other Infiltration Trench MNRF - Unevaluated Visual Planting Area Top - Existing (MASL) / Middle - Water Table (MASL) Bottom - Maximum Depth of Extraction (MASL) ↑ Cross Sections

Site Plan Changes

The redline revisions shown on this drawing represent all of the changes that have been made since the August 2023 Aggregate Resource Act site plan



VOTORANTIM cimentos Caledon Pit & Quarry

55 Industrial Street

Toronto, Ontario

18722 Main Street, Caledon, Ontario MNRF Licence Reference No. Applicant's Signature 626600 Plan Scale: 1:5000 (Arch E) August 2023 March 2025

Technical Recommendations Drawing No.

File Path

3 of 4

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