ENVIRONMENTAL COMPLIANCE APPROVAL
NUMBER 1536-B5EKKN
Issue Date: October 23, 2019

Colacem Canada Inc.
56 Longueuil Street
L'Orignal, Ontario
K0B 1K0

Site Location: Colacem L'Orignal Cement Plant
County Road 17
Lot 217, Concession Parcel M100
Champlain Township, United Counties of Prescott and Russell

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

Description Section

A cement manufacturing facility, consisting of the following processes and support units:

- raw materials receiving, storage and handling;
- kiln operations equipped with a selective non-catalytic reduction system
- petcoke receiving and grinding
- clinker storage and transfer
- cement production including cement mills, storage and shipping;

including the *Equipment* and any other ancillary and support processes and activities, operating at a *Facility Production Limit* of up to **1.16 million tonnes of finished cement per year** discharging to the air as described in the *Original ESDM Report.*

For the purpose of this environmental compliance approval, the following definitions apply:

1. "*ACB list"* means the document entitled "Air Contaminants Benchmarks (ACB) List: Standards, guidelines and screening levels for assessing point of impingement concentrations of air contaminants", as amended from time to time

and published by the *Ministry* and available on a Government website;

2. "*Acceptable Point of Impingement Concentration"* means a concentration accepted by the *Ministry* as not likely to cause an adverse effect for a *Compound of Concern* that,
    a. is not identified in the *ACB list,* or
    b. is identified in the *ACB list* as belonging to the category “Benchmark 2” and has a concentration at a *Point of Impingement* that exceeds the concentration set out for the contaminant in that document.
    With respect to the *Original ESDM Report,* the *Acceptable Point of Impingement Concentration* for a *Compound of Concern* mentioned above is the concentration set out in the *Original ESDM Report;*
3. "*Acoustic Assessment Report"* means the report, prepared in accordance with *Publication NPC-233* and Appendix A of the *Basic Comprehensive User Guide,* by Joe Tomaselli / Golder Associates and dated October 20, 2017, and technical memorandum prepared by Joe Tomaselli / Golder Associates and dated October 15, 2018 submitted in support of the application, that documents all sources of noise emissions and *Noise Control Measures* present at the *Facility,* as updated in accordance with Condition 5 of this *Approval;*
4. "*Acoustic Assessment Summary Table"* means a table prepared in accordance with the *Basic Comprehensive User Guide* summarising the results of the *Acoustic Assessment Report,* as updated in accordance with Condition 5 of this *Approval;*
5. "*Alternative Fuel"* means a fuel that meets the definition of Alternative Low-Carbon Fuel in *O. Reg. 79/15*;
6. "*Approval"* means this entire Environmental Compliance Approval and any *Schedules* to it;
7. "*Basic Comprehensive User Guide"* means the *Ministry* document titled "Basic Comprehensive Certificates of Approval (Air) User Guide” dated March 2011, as amended;
8. "*Best Management Practices Plan"* means the document titled "Best Management Practices Plan for the Control of Fugitive Dust", dated May 2016 and prepared by Golder Associates;
9. "*CAEAL"* means the Canadian Association for Environmental Analytical Laboratories;
10. "*Cement Kiln"* means the cement kiln firing *Conventional Fuels* and *Fuel Adjunct Materials,* described in the *Company's* application, this *Approval* and in the supporting documentation referred to herein, to the extent approved by this *Approval;*

11. "*Company"* means **Colacem Canada Inc.** operating as Colacem Canada Inc. that is responsible for the construction or operation of the *Facility* and includes any successors and assigns in accordance with section 19 of the *EPA;*
12. "*Compound of Concern"* means a contaminant described in paragraph 4 subsection 26 (1) of *O. Reg. 419/05,* namely, a contaminant that is discharged from the *Facility* in an amount that is not negligible;
13. "*Continuous Monitoring Plan"* means a document that describes the Continuous Monitoring System that the *Company* will use for continuous monitoring.
14. "*Continuous Monitoring System"* means the continuous monitoring equipment, data acquisition system and associated operating, maintenance, verification and auditing procedures described in the *Continuous Monitoring Plan*;
15. "*Conventional Fuel"*means fuels including petroleum coke, coal and natural gas for regular firing and also includes diesel, propane and natural gas for pre-heating during start-up;
16. "*Description Section"* means the section on page one of this *Approval* describing the *Company's* operations and the *Equipment* located at the *Facility* and specifying the *Facility Production Limit* for the *Facility;*
17. "*Director"* means a person appointed for the purpose of section 20.3 of the *EPA* by the *Minister* pursuant to section 5 of the *EPA;*
18. "*District Manager"* means the District Manager of the appropriate local district office of the *Ministry,* where the *Facility* is geographically located;
19. "*Emission Summary Table"* means a table described in paragraph 14 of subsection 26 (1) of *O. Reg. 419/05;*
20. "*Environmental Assessment Act"* means the Environmental Assessment Act, R.S.O. 1990, c.E.18, as amended;
21. "*EPA"* means the Environmental Protection Act, R.S.O. 1990, c.E.19, as amended;
22. "*Equipment"* means equipment or processes described in the *ESDM Report,* this *Approval* and in the *Schedules* referred to herein and any other equipment or processes;
23. "*Equipment with Specific Operational Limits"* means the *Cement Kiln* and any *Equipment* related to the thermal oxidation of waste or waste derived fuels, fume incinerators or any other *Equipment* that is specifically referenced in any published *Ministry* document that outlines specific operational guidance that must be considered by the *Director* in issuing an *Approval;*
24. "*ESDM Report"* means the most current Emission Summary and Dispersion Modelling Report that describes the *Facility.* The *ESDM Report* is based on the

Original ESDM Report and is updated after the issuance of this *Approval* in accordance with section 26 of *O. Reg. 419/05* and the *Procedure Document;*

25. "*Facility"* means the entire operation located on the property where the *Equipment* is located;
26. "*Facility Production Limit"* means the production limit placed by the *Director* on the main product(s) or raw materials used by the *Facility;*
27. "*Fuel Adjunct Material"* means solid fuel, wholly used at the *Facility,* as supplementary fuels to coal and petroleum coke for firing the *Cement Kiln,* such as but not limited to carbon dust, metallurgical coke and carbon black, but which does not include *Alternative Fuel*;
28. "*Industrial By-Product Material"* means industrial by-product materials such as: iron slag from smelting industry, fly ash from coal fired generating plants and foundry sand used in casting processes, wholly used at the *Facility* as substitute raw material sources of calcium oxide, silica, iron oxide and alumina required for the ongoing cement manufacturing process which does not involve combustion of the materials;
29. "*Log"* means a document that contains a record of each change that is required to be made to the *ESDM Report* and *Acoustic Assessment Report,* including the date on which the change occurred. For example, a record would have to be made of a more accurate emission rate for a source of contaminant, more accurate meteorological data, a more accurate value of a parameter that is related to a source of contaminant, a change to a *Point of Impingement* and all changes to information associated with a *Modification* to the *Facility* that satisfies Condition 2;
30. "*Maximum Emissions Scenario*" means maximum emissions scenarios as outlined in the ESDM Report;
31. "*Manager"* means the Manager, Technology Standards Section, Technical Assessment and Standards Development Branch, or any other person who represents and carries out the duties of the Manager, Technology Standards Section, Technical Assessment and Standards Development Branch, as those duties relate to the conditions of this *Approval*.
32. "*Minister"* means the Minister of the Environment, Conservation and Parks or such other member of the Executive Council as may be assigned the administration of the *EPA* under the Executive Council Act;
33. "*Ministry"* means the ministry of the *Minister;*
34. "*Modification"* means any construction, alteration, extension or replacement of any plant, structure, equipment, apparatus, mechanism or thing, or alteration of a process or rate of production at the *Facility* that may discharge or alter the rate or manner of discharge of a *Compound of Concern* to the air or discharge or alter

noise or vibration emissions from the *Facility;*

35. "*Noise Control Measures"* means measures to reduce the noise emissions from the *Facility* and/or *Equipment* including, but not limited to, silencers, acoustic louvres, enclosures, absorptive treatment, plenums and barriers;
36. "*O. Reg. 347"* means Ontario Regulation 347, General - Waste Management, as amended.
37. "*O. Reg. 419/05"* means Ontario Regulation 419/05, Air Pollution – Local Air Quality, as amended;
38. "*Original ESDM Report"* means the Emission Summary and Dispersion Modelling Report which was prepared in accordance with section 26 of *O. Reg. 419/05* and the *Procedure Document* by Jamie McEvoy / Golder Associates and dated May 3, 2016 submitted in support of the application, and includes any changes to the report made up to the date of issuance of this *Approval;*
39. "*Point of Impingement"* has the same meaning as in section 2 of *O. Reg. 419/05;*
40. "*Point of Reception"* means Point of Reception as defined by *Publication NPC-300.*
41. "*Procedure Document"* means *Ministry* guidance document titled "Procedure for Preparing an Emission Summary and Dispersion Modelling Report" dated February 2017, as amended;
42. "*Processes with Significant Environmental Aspects"* means the *Equipment* which, during regular operation, would discharge one or more contaminants into the air in an amount which is not considered as negligible in accordance with section 26 (1) 4 of *O. Reg. 419/05* and the *Procedure Document;*
43. "*Publication NPC-207"* means the *Ministry* draft technical publication "Impulse Vibration in Residential Buildings", November 1983, supplementing the Model Municipal Noise Control By-Law, Final Report, published by the *Ministry,* August 1978, as amended;
44. "*Publication NPC-233"* means the *Ministry* Publication NPC-233, "Information to be Submitted for Approval of Stationary Sources of Sound", October, 1995, as amended;
45. "*Publication NPC-300"* means the *Ministry* Publication NPC-300, “Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning, Publication NPC-300”, August 2013, as amended;
46. "*Schedules"* means the following schedules attached to this *Approval* and forming part of this *Approval* namely:
    - Schedule A - Supporting Documentation

- Schedule B - Process Dust Control Equipment Operational requirements
- Schedule C - Material Analysis of Inorganic Contaminants for Industrial By-Product Material and Fuel Adjunct Material
- Schedule D - Materials Analysis of Organic Contaminants for Industrial By-Product Material and Fuel Adjunct Material
- Schedule E - Materials Analysis of Polyaromatic Contaminants for Industrial By-Product Material and Fuel Adjunct Material
- Schedule F - Source Testing Procedures;
- Schedule G - Test Contaminants - Source Testing;

47. "*Source Testing"* means sampling and testing to measure emissions resulting from operating the *Targeted Sources* under conditions which yield the worst case emissions within the approved operating range of the *Targeted Sources* which satisfies paragraph 1 of subsection 11(1) of O. Reg. 419/0;
48. "*Source Testing Code"* means the Ontario Source Testing Code, dated June 2010, prepared by the *Ministry,* as amended;
49. "*Toxicologist"* means a qualified professional currently active in the field of risk assessment and toxicology that has a combination of formal university education, training and experience necessary to assess contaminants; and
50. "*Written Summary Form"* means the electronic questionnaire form, available on the *Ministry* website, and supporting documentation, that documents the activities undertaken at the *Facility* in the previous calendar year.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. **GENERAL**
    1. Except as otherwise provided by this *Approval,* the *Facility* shall be designed, developed, built, operated and maintained in accordance with the terms and conditions of this *Approval* and in accordance with the following *Schedules* attached hereto:
        - Schedule A - Supporting Documentation
        - Schedule B - Process Dust Control Equipment Operational Requirements

- Schedule C - Material Analysis of Inorganic Contaminants for Industrial By-Product Material and Fuel Adjunct Material
- Schedule D - Materials Analysis of Organic Contaminants for Industrial By-Product Material and Fuel Adjunct Material
- Schedule E - Materials Analysis of Polyaromatic Contaminants for Industrial By-Product Material and Fuel Adjunct Material
- Schedule F - Source Testing Procedures;.
- Schedule G - Test Contaminants - Source testing;

2. **LIMITED OPERATIONAL FLEXIBILITY**
    1. Pursuant to section 20.6 (1) of the *EPA* and subject to Conditions 2.2 and 2.3 of this *Approval,* future construction, alterations, extensions or replacements are approved in this *Approval* if the future construction, alterations, extensions or replacements are *Modifications* to the *Facility* that:
        a. are within the scope of the operations of the *Facility* as described in the *Description Section* of this *Approval;*
        b. do not result in an increase of the *Facility Production Limit* above the level specified in the *Description Section* of this *Approval;* and
        c. result in compliance with the performance limits as specified in Condition 4.
    2. Condition 2.1 does not apply to,
        a. the addition of any new *Equipment with Specific Operational Limits* or to the *Modification* of any existing *Equipment with Specific Operational Limits* at the *Facility;* or
        b. *Modifications* to the *Facility* that would be subject to the *Environmental Assessment Act.*
    3. Condition 2.1 of this *Approval* shall expire ten (10) years from the date of this *Approval,* unless this *Approval* is revoked prior to the expiry date. The *Company* may apply for renewal of Condition 2.1 of this *Approval* by including an *ESDM Report* and an *Acoustic Assessment Report* that describes the *Facility* as of the date of the renewal application.

3. **REQUIREMENT TO REQUEST AN *ACCEPTABLE POINT OF IMPINGEMENT CONCENTRATION***
    1. Prior to making a *Modification* to the *Facility* that satisfies Condition 2.1.a. and 2.1.b., the *Company* shall prepare a proposed update to the *ESDM Report* to reflect the proposed *Modification.*

2. The *Company* shall request approval of an *Acceptable Point of Impingement Concentration* for a *Compound of Concern* if the *Compound of Concern* is not identified in the *ACB list* as belonging to the category “Benchmark 1” and a proposed update to an *ESDM Report* indicates that one of the following changes with respect to the concentration of the *Compound of Concern* may occur:
    a. The *Compound of Concern* was not a *Compound of Concern* in the previous version of the *ESDM Report* and
        i. the concentration of the *Compound of Concern* exceeds the concentration set out for the contaminant in the *ACB list;* or
        ii. the *Compound of Concern* is not identified in the *ACB list;* or
    b. The concentration of the *Compound of Concern* in the updated *ESDM Report* exceeds the higher of,
        i. the most recent *Acceptable Point of Impingement Concentration,* and
        ii. the concentration set out for the contaminant in the *ACB list,* if the contaminant is identified in that document.

3. The request required by Condition 3.2 shall propose a concentration for the *Compound of Concern* and shall contain an assessment, performed by a *Toxicologist,* of the likelihood of the proposed concentration causing an adverse effect at *Points of Impingement.*
4. If the request required by Condition 3.2 is a result of a proposed *Modification* described in Condition 3.1, the *Company* shall submit the request, in writing, to the *Director* at least 30 days prior to commencing to make the *Modification.* The *Director* shall provide written confirmation of receipt of this request to the *Company.*
5. If a request is required to be made under Condition 3.2 in respect of a proposed *Modification* described in Condition 3.1, the *Company* shall not make the *Modification* mentioned in Condition 3.1 unless the request is approved in writing by the *Director.*
6. If the *Director* notifies the *Company* in writing that the *Director* does not approve the request, the *Company* shall,
    a. revise and resubmit the request; or
    b. notify the *Director* that it will not be making the *Modification.*
7. The re-submission mentioned in Condition 3.6 shall be deemed a new submission under Condition 3.2.

8. If the *Director* approves the request, the *Company* shall update the *ESDM Report* to reflect the *Modification.*
9. Condition 3 does not apply if Condition 2.1 has expired.

4. **PERFORMANCE LIMITS**
    1. Subject to Condition 4.2, the *Company* shall not discharge or cause or permit the discharge of a *Compound of Concern* into the air if,
        a. the *Compound of Concern* is identified in the *ACB list* as belonging to the category "Benchmark 1" and the discharge results in the concentration at a *Point of Impingement* exceeding the Benchmark 1 concentration; or
        b. the *Compound of Concern* is not identified in the *ACB list* as belonging to the category “Benchmark 1” and the discharge results in the concentration at a *Point of Impingement* exceeding the higher of,
            i. if an *Acceptable Point of Impingement Concentration* exists, the most recent *Acceptable Point of Impingement Concentration,* and
            ii. the concentration set out for the contaminant in the *ACB list,* if the contaminant is identified in that document.
    2. Condition 4.1 does not apply if the benchmark set out in the *ACB list* has a 10-minute averaging period and no ambient monitor indicates an exceedance at a *Point of Impingement* where human activities regularly occur at a time when those activities regularly occur.
    3. The *Company* shall ensure that the noise emissions from the *Facility* comply with the limits set out in *Ministry Publication NPC-300.*
    4. The *Company* shall ensure that the vibration emissions from the *Facility* comply with the limits set out in *Ministry Publication NPC-207.*
    5. The *Company* shall operate any *Equipment with Specific Operational Limits* approved by this *Approval* in accordance with the *Original ESDM Report.*

5. **DOCUMENTATION REQUIREMENTS**
    1. The *Company* shall maintain an up-to-date *Log.*
    2. No later than June 30 in each year after commencement of operation of the *Facility*, the *Company* shall update the *Acoustic Assessment Report* and shall update the *ESDM Report* in accordance with section 26 of *O. Reg. 419/05* so that the information in the reports is accurate as of December 31 in the previous year.
    3. The *Company* shall make the *Emission Summary Table* (see section 27 of *O. Reg. 419/05)* and *Acoustic Assessment Summary Table* available for

examination by any person, without charge, by posting it on the Internet or by making it available during regular business hours at the *Facility.*

4. The *Company* shall, within three (3) months after the expiry of Condition 2.1 of this *Approval,* update the *ESDM Report* and the *Acoustic Assessment Report* such that the information in the reports is accurate as of the date that Condition 2.1 of this *Approval* expired.
5. Conditions 5.1 and 5.2 do not apply if Condition 2.1 has expired.

6. **REPORTING REQUIREMENTS**
    1. Subject to Condition 6.2, the *Company* shall provide the *Director* no later than August 31 of each year, a *Written Summary Form* to be submitted through the *Ministry's* website that shall include the following:
        a. a declaration of whether the *Facility* was in compliance with section 9 of the *EPA, O. Reg. 419/05* and the conditions of this *Approval;*
        b. a summary of each *Modification* satisfying Condition 2.1.a. and 2.1.b. that took place in the previous calendar year that resulted in a change in the previously calculated concentration at a *Point of Impingement* for any *Compound of Concern* or resulted in a change in the sound levels reported in the *Acoustic Assessment Summary Table* at any *Point of Reception.*
    2. Condition 6.1 does not apply if Condition 2.1 has expired.

7. **OPERATION AND MAINTENANCE**
    1. The *Company* shall prepare and implement, before commencement of operation of the *Facility,* operating procedures and maintenance programs for all *Processes with Significant Environmental Aspects,* which shall specify as a minimum:
        a. frequency of inspections and scheduled preventative maintenance for *Equipment* including but not limited to the emission control equipment specified in **Schedule B** of this *Approval;*
        b. procedures to prevent upset conditions;
        c. procedures to minimize all fugitive emissions;
        d. procedures to prevent and/or minimize odorous emissions;
        e. procedures to prevent and/or minimize noise emissions;
        f. acceptable range of the static pressure drop and other operational parameters for the process dust control equipment specified in **Schedule B** of this *Approval;*
        g. program to monitor and record the pressure differential across each

baghouse dust collector in **Schedule B** of this *Approval,* including procedures to investigate and correct the cause of any anomalous measurements of the operational parameter;

h. list of management and supervisory personnel responsible for the operation and maintenance of the emission control equipment specified in **Schedule B** of this *Approval;* and

i. procedures for record keeping activities relating to the operation and maintenance programs.

2. The *Company* shall maintain and update to keep current, a list of all process dust control equipment, including the following details:
Source identification; Production building/area served; Process/location served; Stack gas flow rate; Hours of operations; Filter area (as applicable); Stack diameter and Stack height above grade;

3. The *Company* shall ensure that all *Processes with Significant Environmental Aspects* are operated and maintained in accordance with this *Approval,* the operating procedures and maintenance programs.

4. The *Company* shall record the following data during *Cement Kiln* operation:
   a. hourly combined raw feed;
   b. *Fuel Adjunct Material and Industrial By-Product Material* for the relevant period;
   c. hourly *Conventional Fuels* firing rates in the *Cement Kiln;*
   d. hourly clinker production; and
   e. details of start-up, shut down and upset condition incidents including the time and nature of incidents of the Raw Mill, *Cement Kiln* and the emission control equipment specified in **Schedule B** of this *Approval.*

8. **START-UP, SHUTDOWN AND UPSET PROCEDURES**
   1. The *Company* shall prepare and update as necessary, not later than three (3) months after commencement of operation of the *Facility,* operating procedures which address kiln start-up, shut down and any upset conditions to prevent and/or limit emissions to the natural environment.

9. **MATERIAL ANALYSIS AND CRITERIA FOR ACCEPTANCE**
   1. The *Company* shall ensure that the following material analysis program to measure and record the concentration of contaminants for *Industrial By-Product Material* and *Fuel Adjunct Material* is implemented:
      a. For each material received as *Fuel Adjunct Materials,* the *Company* shall obtain a metals/metal hydrides scan, including at a minimum the

contaminants listed in **Schedule C** on an annual basis. The *Company* shall ensure that the standard sampling methods outlined in the document "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario, Ontario Ministry of the Environment and Energy, Standards Development Branch, December, 1996" are used, and that the samples are submitted to a *CAEAL* certified laboratory for analysis.

b. For each material received as *Industrial By-Product Materials,* the *Company* shall obtain a metals/metal hydrides scan, including at a minimum the compounds listed in **Schedule C** on a quarterly basis, as well as organic and polyaromatic hydrocarbon compounds as set out in **Schedules D and E** on an annual basis. The *Company* shall ensure that the standard sampling methods outlined in the document "Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario, Ontario Ministry of the Environment and Energy, Standards Development Branch, December, 1996" are used, and that the samples are submitted to a *CAEAL* certified laboratory for analysis.

c. At any time, should the *Company* either independently or through other sources reasonably expect other inorganic or organic compounds not outlined under (a) or (b) to be present in any material at greater than the trace concentrations, the *Company* shall obtain the appropriate analysis forthwith.

d. Upon receipt of the analysis, the *Company* shall ensure that the *Point of Impingement* concentrations of any inorganic and or organic compounds identified in Condition 9.1.a, 9.1.b or 9.1.c above do not exceed the respective limit based on the *Maximum Emissions Scenario.* For contaminants not covered under the *Maximum Emission Scenario,* the *Company* shall develop a maximum emissions scenario for these organic and inorganic compounds and ensure that they do not exceed their respective *Point of Impingement* limits.

e. The *Company* shall limit the accumulation of *Industrial By-Product Materials* and other raw materials in exterior storage piles to amounts which may reasonably be expected to be necessary for use in the cement manufacturing processes.

f. The *Company* shall ensure that any *Industrial By-Product Material* stored at the *Facility* which the *Company* determines cannot be utilized in ongoing cement manufacturing processes, is managed in accordance with applicable waste management regulations, and, where an *Industrial*

By-Product Material becomes unusable, the *Company* shall advise the *District Manager* in writing, of the type and quantity of such material, the reasons why it cannot be used and the specific manner in which the material is to be managed as a waste.

g. The *Company* shall continue to prepare an annual summary report documenting the use of *Industrial By-Product Materials* and *Fuel Adjunct Materials* received at the *Facility* for the preceding calendar year. This summary report shall be submitted to the *District Manager* within sixty (60) days following the close of each calendar year and shall include a summary of the information set out in Condition No. 9.1 of this *Approval.*

2. The *Company* shall ensure that the material analysis program to measure and record the concentration of contaminants for *Industrial By-Product Material* and *Fuel Adjunct Material* is implemented.

3. The *District Manager* may relax the frequency and/or scope of the material analysis specified in condition 9.1.a, 9.1.b and 9.1.c of this *Approval,* if the results specified in Condition 9.1.d indicate that the emissions and *Point of Impingement* concentrations of *Compounds of Concern* are insignificant.

10. **FUGITIVE EMISSIONS CONTROL**

1. The *Company* shall implement the *Best Management Practices Plan* for the control of fugitive dust emissions resulting from the operation of the *Facility.* The *Best Management Practices Plan* shall be updated as necessary or at the direction of the *District Manager.*

11. **CONTINUOUS EMISSIONS MONITORING**

1. The *Company* shall submit, to the *Manager*, not later than sixty (60) days after commencement of operation of the *Facility*, a *Continuous Monitoring Plan* for the *Continuous Monitoring System* that will continuously monitor the following parameters in the exhaust gas stream from the *Cement Kiln* stack:
   a. Nitrogen Oxides
   b. Sulphur Dioxide
   c. Volumetric flow rate;
   d. Temperature;and
   e. Opacity

2. The *Continuous Monitoring System* for nitrogen oxides and sulphur dioxide shall comply with the requirements of O.Reg 194/5 - Industry Emissions - Nitrogen Oxides and Sulphur Dioxide, as amended from time to time.

3. The *Continuous Monitoring Plan* shall include descriptions of, but not be limited to:
    a. Source and air pollutants / parameters requiring continuous monitoring and associated targets / in-stack limits,
    b. Sample probe and gas calibration port location(s) and associated flue gas conditions,
    c. Sample extraction, transport and conditioning system,
    d. Analyzer performance specifications,
    e. Relative accuracy and reference method for test audit,
    f. Performance indicators and monitoring frequency,
    g. Communication protocol(s) and corrective action(s) regarding malfunctions,
    h. Preventative maintenance and spare parts,
    i. Service contractor and staff responsibilities including training,
    j. Other operating and maintenance procedures to ensure availability,
    k. Data acquisition system, and
    l. Data verification procedures.
4. The *Company* shall finalize the *Continuous Monitoring Plan* in consultation with the *Manager*.
5. The *Company* shall procure, install, operate and maintain the *Continuous Monitoring System* not later than six (6) months after the *Manager* has approved the *Continuous Monitoring Plan.* A current copy of the *Continuous Monitoring Plan* shall be kept at an accessible location for easy access by persons responsible for supervising, operating and maintaining the *Continuous Monitoring System* and associated data as well as by a *Ministry* representative, upon request.

12. **SOURCE TESTING**
    1. The *Company* shall perform *Source Testing*, not later than twelve (12) months after commencement of operation of the *Facility*, in accordance with the procedures in **Schedule F**, to determine the rates of emission of the test contaminants specified in **Schedule G** from the *Cement Kiln* stack..

13. **COMPLAINTS RECORDING AND REPORTING**
    1. If at any time, the *Company* receives an environmental complaint from the public regarding the operation of the *Equipment* approved by this *Approval,* the *Company* shall take the following steps:

a. Record and number each complaint, either electronically or in a log book. The record shall include the following information: the time and date of the complaint and incident to which the complaint relates, the nature of the complaint, wind direction at the time and date of the incident to which the complaint relates and, if known, the address of the complainant.

b. Notify the *District Manager* of the complaint within two (2) business days after the complaint is received, or in a manner acceptable to the *District Manager.*

c. Initiate appropriate steps to determine all possible causes of the complaint, and take the necessary actions to appropriately deal with the cause of the subject matter of the complaint.

d. Complete and retain on-site a report written within one (1) week of the complaint date. The report shall list the actions taken to appropriately deal with the cause of the complaint and set out steps to be taken to avoid the recurrence of similar incidents.

14. **RECORD KEEPING REQUIREMENTS**

1. Any information requested by any employee in or agent of the *Ministry* concerning the *Facility* and its operation under this *Approval,* including, but not limited to, any records required to be kept by this *Approval,* shall be provided to the employee in or agent of the *Ministry,* upon request**,** in a timely manner.

2. Unless otherwise specified in this *Approval,* the *Company* shall retain, for a minimum of five (5) years from the date of their creation all reports, records and information described in this *Approval,* including,

   a. a copy of the *Original ESDM Report* and each updated version*;*

   b. a copy of each version of the *Acoustic Assessment Report;*

   c. supporting information used in the emission rate calculations performed in the *ESDM Reports* and *Acoustic Assessment Reports;*

   d. the records in the *Log;*

   e. copies of each *Written Summary Form* provided to the *Ministry* under Condition 6.1 of this *Approval;*

   f. records of maintenance, repair and inspection of *Equipment* related to all *Processes with Significant Environmental Aspects,* including but not limited to the emission control equipment specified in **Schedule B** of this *Approval;*

g. records related to the *Cement Kiln* operation;

h. records related to environmental complaints made by the public as required under condition titled "Complaints Recording and Reporting" of this *Approval;*

i. records related to the preventative and control measures implemented as specified under condition titled “Fugitive Emissions Control” of this *Approval;*

j. records related to *Source Testing* events specified under condition titled "*Source Testing*" of this *Approval;*

k. records related to sampling and analysis specified under condition titled "Material Analysis and Criteria of Acceptance" of this *Approval*.

SCHEDULE A

Supporting Documentation

1. Environmental Compliance Approval Application, dated June 1, 2016, signed by Marc Bataille and submitted by the *Company;*
2. Emission Summary and Dispersion Modelling Report, prepared by Golder Associates Ltd. and dated May 3, 2016;
3. Letter prepared by Golder Associates Ltd., signed by Camille Taylor and dated August 31, 2017;
4. Modelling files prepared by Golder Associates Ltd., provided by Rachel Gould and dated September 5, 2017;
5. Letter, prepared by Golder Associates Ltd., signed by Camille Taylor and dated November 14, 2017;
6. Report, prepared by Golder Associates Ltd., provided by Rachel Gould and dated March 15, 2018;
7. Letter, prepared by Golder Associates Ltd., signed by Camille Taylor and Sean Capstick and dated September 24, 2018;
8. *Acoustic Assessment Report,* prepared by Joe Tomaselli / Golder Associates and dated October 20, 2017;
9. Technical Memorandum to the *Acoustic Assessment Report,* prepared by Joe Tomaselli / Golder Associates and dated October 15, 2018;

SCHEDULE B

Emission Control Equipment Operational Requirements

The value of each of the following parameters must be referenced to the value recorded during previous source testing, if available. In the absence of source testing, each parameter must be referenced to the value or normal range representing normal operation, recorded as soon as possible for the Equipment.

1. **Primary Equipment**
   Primary dust control equipment includes the Kiln Dust Collector; Petcoke Grinder Dust Collector, Clinker Cooler Dust Collector, and Cement Mill Dust Collectors.
   1. **Dust Collector**
      Operating parameters mean the following parameters of a fabric filter dust collector:
      a. the condition of the dust collector filter bags, the ducts leading to and from the dust collector and connecting the components of the dust collector;
      b. the static pressure drop across the dust collector filter bag compartments recorded continuously by the *Facility's* automated control system;
      c. the presence or absence of clean side deposits;
      d. the frequency of cleaning;
      e. the current of the induced draft fan(s); and
      f. the hours of operation

2. **Secondary Equipment**
   Secondary dust control equipment includes all other dust collectors which are not primary dust control equipment.
   1. **Dust Collector**
      Operating parameters mean the following operating parameters of a fabric filter dust collector:
      a. the condition of the dust collector filter bags, the ducts leading to and from the dust collector and connecting the components of the dust collector;
      b. the static pressure drop across the dust collector filter bag compartments recorded at least quarterly;
      c. the presence or absence of clean side deposits;
      d. the frequency of cleaning; and
      e. the hours of operation

SCHEDULE C

Material Analysis of Inorganic Contaminants for Industrial By-Product Material and Fuel Adjunct Material

antimony

arsenic
barium
beryllium
cadmium
chromium
cobalt
iron
lead
manganese
mercury
nickel
selenium
silver
tin
vanadium

SCHEDULE D

Materials Analysis of Organic Contaminants for Industrial By-Product Material and Fuel Adjunct Material

Chloromethane
Vinyl chloride
Bromomethane
Chloroethane
Trichlorofluoromethane
Acetone
1,1-Dichloroethene
Dichloromethane (Methylene Chloride)
trans-1,2-Dichloroethene
Methyl-t-Butyl Ether
1,1-Dichloroethane
Methyl Ethyl Ketone (MEK)
cis-1,2-Dichloroethene
Chloroform
1,2-Dichloroethane
1,1,1-Trichloroethane
Carbon Tetrachloride
Benzene

1,2-Dichloropropane
Trichloroethene (Trichloroethylene)
Bromodichloromethane
cis-1,3-Dichloropropene
Methyl Isobutyl Ketone (MIBK)
trans-1,3-Dichloropropene
1,1,2-Trichloroethane
Toluene
2-Hexanone
Dibromochloromethane
1,2-Dibromoethane (Ethylene dibromide)
Tetrachloroethene (Perchloroethylene)
1,1,1,2-Tetrachloroethane
Chlorobenzene
Ethylbenzene
m-Xylene & p-Xylene
Bromoform
Styrene
1,1,2,2-Tetrachloroethane
o-Xylene
1,4- Dichlorobenzene
1,2-Dichlorobenzene

SCHEDULE E

Materials Analysis of Polyaromatic Contaminants for Industrial By-Product Material and Fuel Adjunct Material

Naphthalene
2-Methylnaphthalene
1-Methylnaphthalene
Acenaphthylene
Acenaphthene
Fluorene
Phenanthrene
Anthracene
Fluoranthene
Pyrene
Benzo(a)anthracene
Chrysene
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzo(a)pyrene
Indeno(1,2,3-cd)pyrene
Dibenzo(a,h)anthracene
Benzo(ghi)perylene

SCHEDULE F

Source Testing Procedures

1. The *Company* shall submit to the *Manager,* not later than six (6) months after commencement of operation of the *Facility,* a *Pre-Test Plan* for the *Source Testing* required under this *Approval.* The *Company* shall finalize the *Pre-Test Plan* in consultation with the *Manager.*
2. The *Company* shall not commence the *Source Testing* required under this *Approval* until the *Manager* has approved the *Pre-Test Plan.*
3. The *Company* shall complete the *Source Testing* after acceptance of the *Pre-Test Plan* by the *Manager,* and within a period as directed or agreed to in writing by the *Manager* or the *District Manager.*
4. The *Company* shall notify the *District Manager,* the *Manager* and the *Director* in writing of the location, date and time of any impending *Source Testing* required by this *Approval,* at least fifteen (15) days prior to the *Source Testing.*
5. The *Company* shall submit a report (hardcopy and electronic format) on the *Source Testing* to the *Manager,* the *District Manager* and the *Director* not later than four (4) months after completing the *Source Testing.* The report shall be in the format described in the *Source Testing Code,* and shall also include, but not be limited to:
    1. an executive summary;
    2. records of weather conditions such as ambient temperature, wind speed and direction, any environmental complaints received at the time of *Source Testing;*
    3. records of operating conditions at the time of *Source Testing,* including but not limited to the following:
        a. clinker production rate in tonnes/hour;
        b. combined raw feed in tonnes/hour;
        c. fuel firing rates in the *Cement Kiln* and/or Raw Mill;
        d. description of the operational status of the Raw Mill and other relevant *Cement Kiln* processes, and
        e. any other records that may affect the *Source Testing* results.
    4. a summary of all records of the *Continuous Monitoring System* at the time of *Source Testing;*
    5. a copy of the most recent annual Relative Accuracy test report verifying the operation of the *Continous Monitoring System,* as required under O. Reg

194/5 - Industry Emissions - Nitrogen Oxides and Sulphur Dioxide;

6. results of *Source Testing,* including the emission rate, emission concentration, and relevant emission factor of the test contaminants from the sources specified in the *Source Testing* condition of this *Approval,* and

6. The *Company* shall ensure that the *Source Testing* report is made available and easily accessible for review by the public at the *Facility*, immediately after the document is submitted to the *Ministry*.
7. The *Director* may not accept the results of the *Source Testing* if:
    1. the *Source Testing Code* or the requirements of the *Manager* were not followed;
    2. the *Company* did not notify the *Manager* and the *District Manager* of the *Source Testing;* or
    3. the *Company* failed to provide a complete report on the *Source Testing.*
8. If the *Director* does not accept the results of the *Source Testing,* the *Director* may require re-testing. If re-testing is required, the *Pre-Test Plan* strategies need to be revised and submitted to the *Manager* for approval. The actions taken to minimize the possibility of the *Source Testing* results not being accepted by the *Director* must be noted in the revision.
9. The *Company* shall update their *ESDM Report* in accordance with Section 26 of *O. Reg. 419/05* with the results from the *Source Testing* report for the applicable contaminants and make these records available for review by staff of the *Ministry* upon request. The updated Emission Summary Table from the updated *ESDM Report* shall be submitted with the report on the *Source Testing.*

SCHEDULE G

Test Contaminants - Source Testing

- Total Suspended Particulate Matter (including PM 2.5 and PM 10)
- Ammonia
- Hydrogen Chloride

List of Metals

- Aluminum
- Antimony
- Arsenic

- Barium
- Beryllium
- Boron
- Cadmium
- Chromium
- Cobalt
- Copper
- Iron
- Lead
- Magnesium
- Manganese
- Molybdenum
- Mercury
- Nickel
- Phosphorus
- Potassium
- Selenium
- Silver
- Strontium
- Thallium
- Tin
- Titanium
- Vanadium
- Zinc

List of Volatile Organic Matter

- Acetone
- Acrolein
- Benzene
- Bromodichloromethane
- Bromoform

- Bromomethane
- Butadiene, 1,3 -
- Butanone, 2 -
- Carbon Tetrachloride
- Chloroform
- Cumene
- Dibromochloromethane
- Dichlorodifluoromethane
- Dichloroethane, 1,2 -
- Dichloroethene, Trans - 1,2
- Dichloroethene, 1,1 -
- Dichloropropane, 1,2 -
- Ethylbenzene
- Ethylene Dibromide
- Mesitylene
- Methylene Chloride
- Styrene
- Tetrachloroethene
- Toluene
- Trichloroethane, 1,1,1 -
- Trichloroethene
- Trichloroethylene, 1,1,2 -
- Trichlorotrifluoroethane
- Trichlorofluoromethane
- Xylenes, M-, P- and O
- Vinyl Chloride

List of Polycyclic Organic Matter

- Acenaphthylene
- Acenaphthene
- Anthracene

- Benzo(a)anthracene
- Benzo(b)fluoranthene
- Benzo(k)fluoranthene
- Benzo(a)fluorene
- Benzo(b)fluorene
- Benzo(ghi)perylene
- Benzo(a)pyrene
- Benzo(e)pyrene
- Biphenyl
- 2-Chloronaphthalene
- Chrysene
- Coronene
- Dibenzo(a,c)anthracene
- Dibenzo(a,h)anthracene
- Dibenzo(a,e)pyrene
- 9,10-Dimethylanthracene
- 7,12-Dimethylbenzo(a)anthracene
- Fluoranthene
- Fluorene
- Indeno(1,2,3-cd)pyrene
- 2-Methylanthracene
- 3-Methylcholanthrene
- 1-Methylnaphthalene
- 2-Methylnaphthalene
- 1-Methylphenanthrene
- 9-Methylphenanthrene
- Naphthalene
- Perylene
- Phenanthrene
- Picene
- Pyrene

- Tetralin
- M-terphenyl
- O-terphenyl
- P-terphenyl
- Triphenylene

List of Dioxins, Furans and Dioxin-like PCBs (Polychlorinated Biphenyls)

- 2,3,7,8-Tetrachlorodibenzo-p-dioxin [2,3,7,8-TCDD]
- 1,2,3,7,8-Pentachlorodibenzo-p-dioxin [1,2,3,7,8-PeCDD]
- 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin [1,2,3,4,7,8-HxCDD]
- 1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin [1,2,3,6,7,8-HxCDD]
- 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin [1,2,3,7,8,9-HxCDD]
- 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin [1,2,3,4,6,7,8-HpCDD]
- 1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin [1,2,3,4,6,7,8,9-OCDD]
- 2,3,7,8-Tetrachlorodibenzofuran [2,3,7,8-TCDF]
- 2,3,4,7,8-Pentachlorodibenzofuran [2,3,4,7,8-PeCDF]
- 1,2,3,7,8-Pentachlorodibenzofuran [1,2,3,7,8-PeCDF]
- 1,2,3,4,7,8-Hexachlorodibenzofuran [1,2,3,4,7,8-HxCDF]
- 1,2,3,6,7,8-Hexachlorodibenzofuran [1,2,3,6,7,8-HxCDF]
- 1,2,3,7,8,9-Hexachlorodibenzofuran [1,2,3,7,8,9-HxCDF]
- 2,3,4,6,7,8-Hexachlorodibenzofuran [2,3,4,6,7,8-HxCDF]
- 1,2,3,4,6,7,8-Heptachlorodibenzofuran [1,2,3,4,6,7,8-HpCDF]
- 1,2,3,4,7,8,9-Heptachlorodibenzofuran [1,2,3,4,7,8,9-HpCDF]
- 1,2,3,4,6,7,8,9-Octachlorodibenzofuran [1,2,3,4,6,7,8,9-OCDF]
- 3,3',4,4'-Tetrachlorobiphenyl [3,3',4,4'-tetraCB (PCB 77)]
- 3,4,4',5- Tetrachlorobiphenyl [3,4,4',5-tetraCB (PCB 81)]
- 3,3',4,4',5- Pentachlorobiphenyl (PCB 126) [3,3',4,4',5-pentaCB (PCB 126)]
- 3,3',4,4',5,5'- Hexachlorobiphenyl [3,3',4,4',5,5'-hexaCB (PCB 169)]
- 2,3,3',4,4'- Pentachlorobiphenyl [2,3,3',4,4'-pentaCB (PCB 105)]
- 2,3,4,4',5- Pentachlorobiphenyl [2,3,4,4',5-pentaCB (PCB 114)]
- 2,3',4,4',5- Pentachlorobiphenyl [2,3',4,4',5-pentaCB (PCB 118)]

- 2',3,4,4',5- Pentachlorobiphenyl [2',3,4,4',5-pentaCB (PCB 123)]
- 2,3,3',4,4',5- Hexachlorobiphenyl [2,3,3',4,4',5-hexaCB (PCB 156)]
- 2,3,3',4,4',5'- Hexachlorobiphenyl [2,3,3',4,4',5'-hexaCB (PCB 157)]
- 2,3',4,4',5,5'- Hexachlorobiphenyl [2,3',4,4',5,5'-hexaCB (PCB 167)]
- 2,3,3',4,4',5,5'- Heptachlorobiphenyl [2,3,3',4,4',5,5'-heptaCB (PCB 189)]

The reasons for the imposition of these terms and conditions are as follows:

1. **GENERAL**
   Condition No. 1 is included to require the *Approval* holder to build, operate and maintain the *Facility* in accordance with the Supporting Documentation in Schedule A considered by the *Director* in issuing this *Approval.*
2. **LIMITED OPERATIONAL FLEXIBILITY, REQUIREMENT TO REQUEST AN *ACCEPTABLE POINT OF IMPINGEMENT CONCENTRATION* AND PERFORMANCE LIMITS**
   Conditions No. 2, 3 and 4 are included to limit and define the *Modifications* permitted by this *Approval,* and to set out the circumstances in which the *Company* shall request approval of an *Acceptable Point of Impingement Concentration* prior to making *Modifications.* The holder of the *Approval* is approved for operational flexibility for the *Facility* that is consistent with the description of the operations included with the application up to the *Facility Production Limit.* In return for the operational flexibility, the *Approval* places performance based limits that cannot be exceeded under the terms of this *Approval. Approval* holders will still have to obtain other relevant approvals required to operate the *Facility,* including requirements under other environmental legislation such as the *Environmental Assessment Act.*
3. **DOCUMENTATION REQUIREMENTS**
   Condition No. 5 is included to require the *Company* to maintain ongoing documentation that demonstrates compliance with the performance limits as specified in Condition 4 of this *Approval* and allows the *Ministry* to monitor on-going compliance with these performance limits. The *Company* is required to have an up to date *ESDM Report* and *Acoustic Assessment Report* that describe the *Facility* at all times and make the *Emission Summary Table* and *Acoustic Assessment Summary Table* from these reports available to the public on an ongoing basis in order to maintain public communication with regard to the emissions from the *Facility.*
4. **REPORTING REQUIREMENTS**
   Condition No. 6 is included to require the *Company* to provide a yearly *Written Summary Form* to the *Ministry,* to assist the *Ministry* with the review of the site's

compliance with the *EPA,* the regulations and this *Approval.*

5. **OPERATION AND MAINTENANCE**
   Conditions No. 7, 8 and 9 are included to require the *Company* to properly operate and maintain the *Processes with Significant Environmental Aspects* to minimize the impact to the environment from these processes.
6. **FUGITIVE EMISSIONS CONTROL**
   Condition No. 10 is included to emphasize that the *Equipment* must be maintained and operated according to a procedure that will result in compliance with the *EPA,* the Regulations and this *Approval.*
7. **CONTINUOUS EMISSIONS MONITORING AND SOURCE TESTING**
   Conditions No. 11 and 12 are included to require the *Company* to gather and retain accurate information so that compliance with the *EPA, Regulation 419/05* and this *Approval* may be verified.
8. **COMPLAINTS RECORDING AND REPORTING PROCEDURE**
   Condition No. 13 is included to require the *Company* to respond to any environmental complaints regarding the operation of the *Equipment,* according to a procedure that includes methods for preventing recurrence of similar incidents and a requirement to prepare and retain a written report.
9. **RECORD KEEPING REQUIREMENTS**
   Condition No. 14 is included to require the *Company* to retain all documentation related to this *Approval* and provide access to employees in or agents of the *Ministry,* upon request, so that the *Ministry* can determine if a more detailed review of compliance with the performance limits as specified in Condition 4 of this *Approval* is necessary.

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me, the Environmental Review Tribunal and in accordance with Section 47 of the Environmental Bill of Rights, 1993, S.O. 1993, c. 28 (Environmental Bill of Rights), the Environmental Commissioner, within 15 days after receipt of this Notice, require a hearing by the Tribunal. The Environmental Commissioner will place notice of your appeal on the Environmental Registry. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

a. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
b. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

1. The name of the appellant;

2. The address of the appellant;
3. The environmental compliance approval number;
4. The date of the environmental compliance approval;
5. The name of the Director, and;
6. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary* Environmental Review Tribunal 655 Bay Street, Suite 1500 Toronto, Ontario M5G 1E5	AND	The Environmental Commissioner 1075 Bay Street, Suite 605 Toronto, Ontario M5S 2B1	AND	The Director appointed for the purposes of Part II.1 of the Environmental Protection Act Ministry of the Environment, Conservation and Parks 135 St. Clair Avenue West, 1st Floor Toronto, Ontario M4V 1P5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 326-5370 or** www.ert.gov.on.ca

This instrument is subject to Section 38 of the Environmental Bill of Rights, 1993, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at www.ebr.gov.on.ca*, you can determine when the leave to appeal period ends.*

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 23rd day of October, 2019

Christina Labarge, P.Eng.
Director
appointed for the purposes of Part II.1 of the *Environmental Protection Act*

ML/
c: Area Manager, MECP Cornwall
c: District Manager, MECP Ottawa
Jamie McEvoy, Golder Associates Ltd.