

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 6911-CGCN4Q

Issue Date: September 1, 2022

Geosyntec Consultants International Inc.
Operating As SiREM
130 Stone Road West
Guelph, Ontario
N1G 3Z2

Site Location: Mobile

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:

- a mobile in-situ bioremediation process to treat ground water contaminated with chlorinated volatile organic compounds and/or hydrocarbon chemicals by the injection of non-hazardous Biostimulation Compound(s) and Bioaugmentation Cultures into the contaminated soil/ground water;

All in accordance with the Application for Approval (Air & Noise) and all the supporting documentation, dated May 16, 2022 and signed by Corey Scales of Geosyntec Consultants International Inc.

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

1. "Approval" means this Environmental Compliance Approval, including the application and supporting documentation listed above;
2. "Bioaugmentation" means the use of currently exogenous, specialized microbes or genetically engineered microbes to optimize bioremediation;
3. "Bioaugmentation Culture" means the use of KB-1, KB-1 Plus and DGG Plus Consortia used to optimize bioremediation;
4. "Biostimulation Compound" means any chemical amendment, nutrient amendment or pH adjustment chemical used in the Process to enhance bioremediation. In this Approval, it means:
 - a. chemical amendments (biofouling): liquid biofouling agent, chlorine dioxide;
 - b. nutrient amendments: Adventus remediation products (such as EHC-L, EHC-

M), benzoate, citrate, emulsified vegetable oil products (such as Emulsified Oil Substrate products, Newman Zone (RNAS) products), methanol, ethanol, lactate, Regenesis products (such as HRC-X, HRC and 3-D Microemulsion); and

c. pH adjustment chemicals: sodium bicarbonate;

d. anaerobic condition enhancement: KB-1 Primer.

5. "Company" means Geosyntec Consultants International Inc., Operating as SiREM, 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;
6. "District Manager" means the District Manager of the appropriate local district office of the Ministry, where the Facility is geographically located;
7. "EPA" means the *Environmental Protection Act*, R.S.O. 1990, c.E.19;
8. "Equipment" means the equipment described in the Company's application, this Approval and in the supporting documentation submitted with the application, to the extent approved by this Approval;
9. "Facility" means the entire operation located on the property where the Equipment is located;
10. "Manual" means a document or a set of documents that provide written instructions to staff of the Company;
11. "Ministry" means the ministry of the government of Ontario responsible for the EPA and includes all officials, employees or other persons acting on its behalf;
12. "Process" means the bioremediation process described in the Company's application, this Approval and in the supporting documentation submitted with the application, to the extent approved by this Approval;
13. "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;
14. "Remedial Work Plan" means the overall plan, developed for each site, that contains as a minimum the remedial objectives, an overview of the extent of contamination at the site and closure conditions to remove the Process from the site;
15. "Site" means the property on which the Process is operated;
16. "Soil, Groundwater and Sediment Standards" means the Ministry publication "Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act dated March 9, 2004", as amended;
17. "Supporting Documents" means the Ministry publications that accompany the Soil,

Groundwater and Sediment Standards including “Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario” dated May 1996, as amended; and

18. “Target Compounds” means the chlorinated volatile organic compounds that the Process is designed to treat as part of the Remedial Work Plan.

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. Performance Requirements.

- a. The Company shall, at all times, design and operate the Process/Equipment with the intent to reduce the ground water concentrations of the Target Compounds to comply with the appropriate criteria provided in the Soil, Groundwater and Sediment Standards, appropriate worker health and safety criteria or site specific criteria developed in accordance with the Supporting Documents.
- b. Bioaugmentation, except the use of the approved Bioaugmentation Cultures, is not permitted by this Approval.
- c. The Company shall, before commencement of operation of the Process at the site, prepare a Remedial Work Plan for the Site.
- d. The Company shall, at all times, ensure that the noise emissions from the Process/Equipment at the Site comply with the limits set out in Ministry Publication NPC-300.

2. Operating Procedures and Maintenance Manual.

The Company shall, prior to the injection of any Biostimulation Compound(s) and Bioaugmentation Culture, prepare and implement a Manual outlining the operating procedures and a maintenance program for the Process/Equipment, including as a minimum:

- a. emergency procedures, including spill clean-up procedures;
- b. frequency of inspections and scheduled preventative maintenance;
- c. procedures to prevent upset conditions and contingency measures to address any off-site migration;
- d. procedures to minimize all fugitive emissions;
- e. procedures to prevent and/or minimize odorous emissions;

- f. procedures to prevent and/or minimize the build up of vinyl chloride;
- g. procedures to record the amount of Biostimulation Compound(s) and Bioaugmentation Culture each time material is injected by the Process;
- h. procedures to record and respond to environmental complaints.

3. Monitoring Plan.

The Company shall, prior to injection of any Biostimulation Compound(s) or Bioaugmentation Culture, design and implement a Monitoring Plan, in accordance with the Supporting Documents, for the groundwater at the site to document that the Performance Requirements outlined above are not exceeded and that the Remedial Work Plan objectives have been met. The Monitoring Plan shall specify, as a minimum:

- a. Monitoring Plan objectives;
- b. list of analytical parameters;
- c. monitoring locations and frequency;
- d. sampling methodology and QA/QC procedures;
- e. a site-specific evaluation of the potential impact of the applied Biostimulation Compound(s) and Bioaugmentation Culture to assess whether groundwater monitoring of the applied Biostimulation Compound(s) is needed;
- f. a soil vapour monitoring program to assess the levels of vinyl chloride at the site in comparison to the appropriate worker health and safety criteria for the site;
- g. Remedial Work Plan objectives for discontinuation of the Process.

4. Notification Requirements.

- a. The Company shall notify the District Manager in writing, if the Process is not operated in accordance with the Operating Procedures and Maintenance Manual or Performance Requirements or the Monitoring Plan outlined above.
- b. The Company shall notify the District Manager at least ten (10) working days prior to the operation of the Process at a new site by submitting a completed Form 1, set out in Schedule "A" of this Approval, with attachments, to the District Manager.
- c. The Company shall notify the District Manager, in writing, of each environmental complaint within two (2) business days of the complaint. The notification shall include:
 - i. a description of the nature of the complaint;
 - ii. the time and date of the incident to which the complaint relates; and

- iii. a description of the measures taken to address the cause of the incident to which the complaint relates and to prevent a similar occurrence in the future.

5. Record Keeping Requirements.

The Company shall, for each site, retain for a minimum of two (2) years from the date of their creation, all reports, records and information described in this Approval, related to or resulting from the operation of the Process/Equipment.

These records shall be made available to staff of the Ministry upon request in a timely manner. The Company shall retain as a minimum:

- a. the Remedial Work Plan;
- b. records on the type, frequency and quantity of Biostimulation Compound(s) and Bioaugmentation Culture used in the Process;
- c. records on the inspection, maintenance and repair of the equipment related to the Process;
- d. all monitoring results including the verification sampling to demonstrate that the Remedial Work Plan objectives are met;
- e. records on the environmental complaints; including:
 - i. a description, time and date of each incident to which the complaint relates;
 - ii. wind direction at the time of the incident to which the complaint relates;
 - iii. a description of the measures taken to address the cause of the incident to which the complaint relates and to prevent a similar occurrence in the future.

SCHEDULE "A"

Form 1

**GROUNDWATER BIOREMEDIATION PROCESS
NOTICE OF INTENDED LOCATION**

1. Owner/Operator:
2. Contact person and telephone number:
3. Approval (Air) Number and Date of Issuance:
4. Proposed location of the Bioremediation Process (street address and municipality or lot and concession number):
5. Land use in the immediate vicinity:
6. Operating Schedule:
 - a. Date of commencement:

b. Estimated duration:

7. Please attach the following:

- a. A copy of the Approval (Air).
- b. A site plan of the intended location.
- c. A copy of the material safety data sheet (MSDS) of the Biostimulation Compound(s) and Bioaugmentation Culture provided by material supplier.
- d. A copy of the Remedial Work Plan for the Site.

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

1. Condition No. 1 is included to provide the minimum performance requirements considered necessary to prevent an adverse effect resulting from the operation of the Process.
2. Condition No. 2 is included to emphasize that the Process must be operated according to a procedure that will result in compliance with the EPA, the Regulations and this Approval.
3. Condition No. 3 is included to require the Company to gather accurate information so that the environmental impact and subsequent compliance with the Act, the regulations and this Approval can be verified.
4. Condition No. 4 is included to require the Company to retain records and provide information to the Ministry so that the environmental impact and subsequent compliance with the Act, the regulations and this Approval can be verified.
5. Condition No. 5 is included to require the Company to notify staff of the Ministry so that the environmental impact and subsequent compliance with the Act, the regulations and this Approval can be verified.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 6439-7PCSCH issued on February 27, 2009.

In accordance with Section 139 of the *Environmental Protection Act*, you may by written notice served upon me, the Ontario Land Tribunal and in accordance with Section 47 of the *Environmental Bill of Rights*, 1993, the Minister of the Environment, Conservation and Parks, within 15 days after receipt of this notice, require a hearing by the Tribunal. The Minister of the Environment, Conservation and Parks will place notice of your appeal on the Environmental Registry. Section 142 of the *Environmental Protection Act* provides that the notice requiring the hearing ("the Notice") 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.

Pursuant to subsection 139(3) of the *Environmental Protection Act*, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

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:

Registrar*
Ontario Land Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5
OLT.Registrar@ontario.ca

and

The Minister of the Environment,
Conservation and Parks
777 Bay Street, 5th Floor
Toronto, Ontario
M7A 2J3

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 Ontario Land Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349 or 1 (866) 448-2248, or www.olt.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 <https://ero.ontario.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 1st day of September,
2022

A handwritten signature in black ink that reads "Nancy Orpana". The signature is written in a cursive style with a large initial 'N'.

Nancy E Orpana, P.Eng.

Director

appointed for the purposes of Part
II.1 of the *Environmental Protection
Act*

QN/

c: District Manager, MECP Guelph
Corey Scales, SiREM