


CERTIFICATE OF APPROVAL
AIR

NUMBER 0901-8LQQ2K

Issue Date: October 26, 2011

Tri-Phase Environmental Inc.
 446 Hazelhurst Rd
 Mississauga, Ontario
 L5J 2Z7

Site Location: Mobile Facility

You have applied in accordance with Section 9 of the Environmental Protection Act for approval of:

- one (1) in-situ remediation process to treat soil/groundwater contaminated with petroleum hydrocarbons and/or chlorinated solvents by the injection/application of non-hazardous Biostimulation Compound(s) into the contaminated subsurface soil/groundwater and trenches when necessary;

all in accordance with the Application for Approval (Air & Noise) submitted by Tri-Phase Environmental Inc. dated April 27, 2011 and signed by Camille Atrache, Chief Operating Officer, and all supporting information including the additional information provided by Camille Atrache (Tri-Phase Environmental Inc.) dated September 20, 2011 and September 21, 2011.

For the purpose of this Certificate of Approval and the terms and conditions specified below, the following definitions apply:

(1) "Act" means the *Environmental Protection Act*.

(2) "Biostimulation Compound" means any chemical amendment, nutrient amendment or pH adjustment chemical used in the Process to enhance remediation. In this Certificate, it means Oxygen Release Compound (ORC, by Regenesis), Oxygen Release Compound Advanced (ORC-A, by Regenesis), Hydrogen Release Compound (HRC, by Regenesis), Metals Remediation Compound (MRC, by Regenesis), Ivey-Sol Surfactant Technology (a non-ionic surface active agent, by Ivey International Inc.), Hydrogen Peroxide (by Canada Colors and Chemicals Limited), RegenOx (a sodium percarbonate complex, by Regenesis), ReMox-S and ReMox-L (a dilute solution of potassium/sodium permanganate, by Canada Colors and Chemicals Limited) as described in the Company's application, this Certificate and in the supporting documentation submitted with the application, to the extent approved by this Certificate.

(3) "Certificate" means this Certificate of Approval (Air), including Schedule "A", issued in accordance with Section 9 of the Act.

(4) "Company" means Tri-Phase Environmental Inc.

(5) "District Manager" means the District Manager of the District Office of the Ministry, responsible for the geographic area in which the Process is to be operated.

(6) "Ministry" means Ontario Ministry of the Environment.

(7) "Process" means the remediation process as described in the Company's application, this Certificate and in the supporting documentation submitted with the application, to the extent approved by this Certificate.

(8) "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.

(9) "Site" means the property on which the Process is operated.

(10) "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.

(11) "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.

(12) "Target Compounds" means the metals, the petroleum hydrocarbons and the chlorinated solvents that the Process is designed to treat as part of the Remedial Work Plan.

(13) "Trained Personnel" means an employee knowledgeable in the following through instruction and/or practice:

- a. relevant waste management legislation, regulations and guidelines;
- b. major environmental concerns pertaining to the waste to be handled;
- c. occupational health and safety concerns pertaining to the wastes to be handled;
- d. management procedures including the use and operation of equipment for the processes and wastes to be handled;
- e. emergency response procedures;
- f. specific written procedures for the control of nuisance conditions;
- g. waste sampling and testing procedures;
- h. waste and/or vehicle inspection procedures; and
- i. the requirements of this Certificate.

(14) "Waste" means the waste excavated at the Site as required to build, when necessary, trenches or subsurface barriers, usually at the property line.

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

TERMS AND CONDITIONS

Performance Requirements

1. The Company shall, at all times, design and operate the Process so that no Biostimulation Compound(s), Target Compounds or their decomposition compounds are permitted to migrate off the Site, in groundwater or soil vapour at concentrations greater than the appropriate criteria provided in the Guideline, appropriate worker health and safety criteria or site specific criteria developed in accordance with the Supporting Documents.

2. The Company shall, before commencement of operation of the Process at the Site, prepare a Remedial Work Plan for the Site.

Operating Procedures and Maintenance Manual

3. The Company shall, before commencement of operation of the Process at the Site, prepare and implement an operating procedures and maintenance manual for the Process. The manual shall specify, as a minimum:

(a) frequency of inspections and scheduled preventative maintenance;

(b) procedures to prevent upset conditions and contingency measures to address any off-site migration due to the use of the Biostimulation Compound(s) ;

(c) procedures to minimize all fugitive emissions;

(d) procedures to prevent and/or minimize odorous emissions;

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

Monitoring Plan

4. The Company shall, before commencement of operation of the Process at the Site, design and implement a Monitoring Plan, in accordance with the Supporting Documents, for the soil, soil vapour and groundwater at the site to document that contamination is not migrating off the site due to the application of the Biostimulation Compound(s), that the Performance Requirements outlined above are not exceeded and that the Remedial Work Plan objectives are 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) 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.

Notification Requirements

5. The Company shall notify the District Manager in writing, if the Process is not operated in accordance with the Performance Requirements or the Operating Procedures and Maintenance Manual or the Monitoring Plan outlined above.

6. The Company shall notify the District Manager in writing, at least ten (10) working days prior to the commencement of operation of the Process at a new Site by submitting a completed Form 1, set out in Schedule "A" of this Certificate, with attachments, to the District Manager.

Waste Transport and Disposal Requirements

7. All Waste removed from the Site shall be immediately loaded into Ministry approved transportation vehicles and transported to a Ministry approved waste disposal site. Only haulers approved by the Ministry shall be used to transport the Waste from the Site.

8. All Waste removed from the Site shall be transferred to a waste disposal site approved by the Ministry to receive that type and quantity of waste or to an equivalent facility if located outside of the Province of Ontario.

9. All vehicles transporting the Waste through and from the Site shall be adequately covered to prevent dust, odour and litter emissions at the Site and on municipal roadways.

10. All vehicles transporting the Waste from the Site shall not drag any waste, dirt or mud into municipal roadways.

11. Trained Personnel or a designate shall inspect all departing vehicles for compliance with the requirements set out in this Certificate.

Record Keeping Requirements

12. 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 Certificate, related to or resulting from the operation of the Process and shall include, but not be limited to:

- (a) the Remedial Work Plan;
- (b) records on the type, frequency and quantity of Biostimulation Compound(s) used in the Process;
- (c) records on the quantities of Waste excavated and transported off Site;
- (d) records on the inspection, maintenance and repair of the equipment related to the Process;
- (e) all monitoring results including the verification sampling to demonstrate that the Remedial Work Plan objectives are met;
- (f) records on the environmental complaints; including:
 - (1) a description, time and date of each incident to which the complaint relates;
 - (2) wind direction at the time of the incident to which the complaint relates;
 - (3) 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.

These records shall be made available, upon request, to Ministry personnel, or Ministry authorized representative(s), upon presentation of credentials.

SCHEDULE "A"
Form 1
SOIL/GROUNDWATER BIOREMEDIATION PROCESS
NOTICE OF INTENDED LOCATION

- 1. Owner/Operator:

- 2. Contact person and telephone number:

- 3. Certificate of 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:

Date of commencement:

Estimated duration:

7. Please attach the following:

- (a) A copy of the Certificate of 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) 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. Conditions 1 and 2 are included to outline the minimum performance requirements considered necessary to prevent an adverse effect resulting from the operation of the Process.
2. Condition 3 is included to emphasize that the Process must be operated according to a procedure that will result in compliance with the Act, the regulations and this Certificate.
3. Condition 4 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 Certificate can be verified.
4. Conditions 5 and 6 are included to require the Company to notify the Ministry so that the environmental impact and subsequent compliance with the Act, the regulations and this Certificate can be verified.
5. Conditions 7, 8, 9, 10 and 11 are included to ensure that the approved activities are undertaken in a manner that minimizes the potential for negative environmental impacts.
6. Condition 12 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 Certificate can be verified.

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, as amended, you may by written Notice served upon me, the Environmental Review Tribunal and in accordance with Section 47 of the Environmental Bill of Rights, S.O. 1993, Chapter 28, 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:

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

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the works are located;

CONTENT COPY OF ORIGINAL

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, 15th Floor
Toronto, Ontario
M5G 1E5

AND

The Environmental Commissioner
1075 Bay Street, 6th Floor
Suite 605
Toronto, Ontario
M5S 2B1

AND

The Director
Section 9, *Environmental Protection Act*
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

This instrument is subject to Section 38 of the Environmental Bill of Rights, 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.ene.gov.on.ca, you can determine when the leave to appeal period ends.

The above noted works are approved under Section 9 of the Environmental Protection Act.

DATED AT TORONTO this 26th day of October, 2011

Ian Parrott, P.Eng.
Director
Section 9, *Environmental Protection Act*

RA/
c: District Manager, MOE Halton-Peel
Camille Atrache, Tri-Phase Environmental Inc.