



Hemmera Envirochem Inc.  
18<sup>th</sup> Floor, 4730 Kingsway  
Burnaby, BC V5H 0C6  
T: 604.669.0424  
F: 604.669.0430  
hemmera.com

February 29, 2016  
File: 448-023.22

Chevron Canada Limited  
1200 – 1050 West Pender Street  
Vancouver, BC V6E 3T4

**Attn: Kristi Thornhill, Site Remediation Specialist**

Dear Ms. Thornhill,

**Re: Performance Verification Plan for Certificate of Compliance at a Portion of BC Rail Right of Way, Quesnel, BC**

Hemmera Envirochem Inc. (Hemmera) has prepared this Performance Verification Plan (PVP) in support of an application for a Certificate of Compliance (CofC) for the property designated as Off-Site Management Area (OMA-2), which is a portion of the BC Rail Right of Way, Quesnel, BC. The PVP presents the principle risk management measures that apply at OMA-2 so that risk-based standards are and continue to be met, and the actions that must be taken so that these risk controls are implemented and maintained. This PVP was prepared in accordance with BC Ministry of Environment (MOE) *Procedure 12: Procedures for Preparing and Issuing Contaminated Site Legal Instruments*, effective February 1, 2016 (BC MOE 2016a) and BC MOE Administrative Guidance on Contaminated Sites #14: *Performance Verification Plans, Contingency Plans, and Operations and Maintenance Plans, Version 1.0*, dated December 2015 (BC MOE 2016b).

A detailed human health and ecological risk assessment (DHHERA) was conducted for OMA-2 in February 2016 (Hemmera 2016b). The DHHERA relied on the Stage 1 and 2 Preliminary Site Investigation and Detailed Site Investigation Report (Hemmera 2016a).

This Work was performed in accordance with Master Contractor Services Agreement between Hemmera Envirochem Inc. ("Hemmera") and Chevron Canada Limited ("Client"), dated May 1, 2011 ("Contract"). This Report has been prepared by Hemmera, based on fieldwork conducted by Hemmera, for sole benefit and use by Chevron Canada Limited and for review by the BC Ministry of the Environment and BC Contaminated Sites Approved Professionals (CSAP) Society. In performing this Work, Hemmera has relied in good faith on information provided by others, and has assumed that the information provided by those individuals is both complete and accurate. This Work was performed to current industry standard

practice for similar environmental work, within the relevant jurisdiction and same locale. The findings presented herein should be considered within the context of the scope of work and project terms of reference; further, the findings are time sensitive and are considered valid only at the time the Report was produced. The conclusions and recommendations contained in this Report are based upon the applicable guidelines, regulations, and legislation existing at the time the Report was produced; any changes in the regulatory regime may alter the conclusions and/or recommendations.

## 1.0 RISK CONTROL TYPE

Based on the risk management measures required for OMA-2:

- the need for institutional controls to mitigate and/or eliminate risks (see **Section 2.0** below for further information); and,
- that if these risk controls were to fail, there would be no imminent risks to humans or the receiving environment,

this site is considered a **Type 2** (per BC MOE (2015; 2016) and therefore this PVP is required to ensure the controls are identified, explained, and responsibilities outlined.

## 2.0 REQUIRED RISK CONTROLS

The principle risk controls as developed from assumptions and conclusions from the DHHERA (Hemmera 2016b) are as follows:

Institutional:

1. Fruit or nut trees and edible vegetation should not be introduced on OMA-2 in order to limit potential exposures to human receptors.
2. Deep rooting vegetation should not be introduced on OMA-2 in order to limit potential exposures to subsurface soil and groundwater contamination.

## 3.0 REQUIRED ACTIONS TO IMPLEMENT THE REQUIRED RISK CONTROLS

As mentioned above, a PVP is required to maintain the principle risk management measures upon which the DHHERA is based.

Performance verification actions required for OMA-2 include the following:

- Communication/notification with the current owner (and each owner is to thereafter notify each subsequent purchaser) of these required PVP elements.

No associated inspection, monitoring/maintenance or other performance verification actions, other than notification of the Director in the case that the subject of this advisory is breached, is required. The listing of these risk management measures in Schedule B of the CofC meets these requirements.

#### 4.0 SUMMARY OF RATIONALE FOR SELECTING REQUIRED PVP ELEMENTS

***Fruit or nut trees and edible vegetation should not be introduced on OMA-2 in order to limit potential exposures to human receptors.***

Contamination in soil remains in surface soil on OMA-2. Risks from planting and subsequent harvesting of fruit or nut trees and edible vegetation have not been quantified and it is unknown whether it could result in adverse health effects in the event contamination was to be taken up into vegetation.

***Deep rooting vegetation should not be introduced on OMA-2 in order to limit potential exposures to subsurface soil and groundwater contamination.***

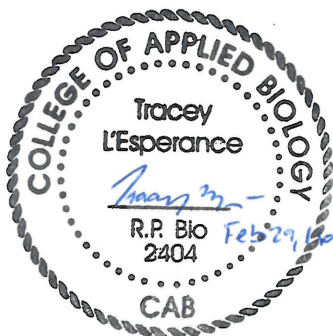
Contamination in soil and groundwater remains on OMA-2. Risks from exposures to deep soil contamination and groundwater have not been quantified and it is unknown whether it could result in adverse ecological risk in the event contamination was to be taken up into vegetation.

#### 5.0 CLOSURE

We have appreciated the opportunity of working with you on this project and trust that this report is satisfactory to your requirements. Please feel free to contact the undersigned regarding any questions or further information that you may require.

Report prepared by:  
Hemmera Envirochem Inc.

Report peer reviewed by:  
Hemmera Envirochem Inc.



Tracey L'Espérance, B.Sc., R.P.Bio.  
Environmental Scientist  
604.669.0424 (438)  
tlesperance@hemmera.com



Diane Zorn, P.Eng., CSAP  
Project Director  
604.669.0424 (271)  
dzorn@hemmera.com

## **6.0 REFERENCES**

BC MOE 2015. BC MOE Administrative Guidance 14 on Contaminated Sites: Performance Verification Plans, Contingency Plans, and Operations and Maintenance Plans, Version 1.0 dated December 2015.

BC MOE 2016. BC Ministry of Environment (BC MOE) Procedure 12: Procedures for Preparing and Issuing Contaminated Site Legal Instruments dated December 15, 2015. Effective February 1, 2016.

Hemmera (2016a). Stage 1 and 2 Preliminary Site Investigation and Detailed Site Investigation, 310 Legion Drive, Quesnel, BC (VCN0600), dated February 2016.

Hemmera (2016b). Detailed Human Health and Ecological Risk Assessment Chevron Former Bulk Plant #600 (VCN0600), 310 Legion Drive and Affected Properties, Quesnel, BC, dated February 2016.