

April 13, 2016

Ref. No.: 10-2793T13

Imperial Oil Limited  
505 Quarry Park Boulevard SE  
Calgary, Alberta  
T2C 5N1

Attention: Environmental Services

Re: Performance Verification Plan for  
3101 Lakeshore Road  
Kelowna, British Columbia  
Location No.: JF.00267

These documents and the information contained in them are confidential - property of Imperial Oil and any disclosure of same is governed by the provisions of each of the applicable provincial or territorial Freedom of Information legislation, the Privacy Act (Canada) 1980-81-82-83, c.111, Sch. II "1", and the Access to Information Act (Canada) 1980-81-82-83, c.111, Sch. I "1", as such legislation may be amended or replaced from time to time.

Further to your request, Parsons Inc. (Parsons) is pleased to provide this Performance Verification Plan (PVP) in support of an application for a risk-based Certificate of Compliance (CofC) for the property located at 3101 Lakeshore Road in Kelowna, British Columbia (the subject property). The PVP presents the principal risk management measures that apply within the subject property to ensure the CofC remains valid (i.e. the key risk management controls of Schedule B of the CofC which must remain in place within the subject property). The PVP was prepared in accordance with British Columbia Ministry of Environment (BCMOE) Procedure 12: Procedures for preparing and issuing contaminated sites legal instruments (Procedure 12).

A plan indicating the areal extent of the the subject property relevant to this PVP, is indicated in Schedule A of the CofC.



## **PRINCIPAL RISK MANAGEMENT CONTROLS**

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A human health and ecological risk assessment (HHERA) was conducted for the subject property, and the results presented in the Parsons reports, "Supplemental Preliminary Site Investigation/Detailed Site Investigation/Confirmation of Remediation, 3101 Lakeshore Road, Kelowna, British Columbia (dated April 13, 2017)" and "Risk Assessment, 3101 Lakeshore Road, Kelowna, British Columbia (dated April 13, 2017)". The principal risk management measures on which the risk assessment were based, as presented in Schedule B of the CofC, are as follows:

- (a) Soil contamination at the subject property should remain at a depth of at least 1 m below future grade and not be redistributed as surface soil, nor is a change permitted in future grade elevation from the current elevation that would cause current soil contamination to be within 1 m of grade.
- (b) No drinking water wells will be installed within the subject property
- (c) Plants/vegetation with roots expected to extend to below 1.0 metres below ground surface (mbgs) shall only be planted in the area of the subject property where there is no remaining soil and/or groundwater contamination. This area is defined in Schedule A of the Certificate of Compliance for the subject property.

## **DETERMINATION OF PROCEDURE 12 REMEDIATION TYPE**

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Based on the risk management measures on the subject property, (i.e. the use of institutional controls to mitigate/eliminate risks on the subject property and lack of imminent risks in the event that controls were not implemented) the Remediation Type applicable within the subject property is considered to be Type 2.

Under a Remediation Type 2 scenario, Procedure 12 indicates that a PVP is required, while an operations and maintenance plan may be required.

## **PERFORMANCE VERIFICATION PLAN**

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A PVP is required to ensure that the principal risk management measures upon which the risk assessment is based are met on the subject property.

If requested by the Director, the responsible person(s) must provide a signed statement on whether the principle risk management controls outlined in (a) through (c) above are being met.

Performance verification actions for the subject property include the following:

- (a) Soil contamination at the subject property should remain at a depth of at least 1 m below future grade and not be redistributed as surface soil, nor is a change permitted in future grade elevation from the current elevation that would cause current soil contamination to be within 1 m of grade.

The assumptions in the vapour assessment and the risk assessment regarding future development were based on, and are consistent with, the expected future land use for the subject property which is a construction of a commercial development at grade. Redistribution of the soil to cause current soil contamination to be within 1 m of grade would violate the conditions of the risk assessment.

Since any change in grade of the subject property would be expected to occur in the process of developing the subject property, the risk of violating this condition in the absence of knowledge of the property owner/owners is extremely low. As such, the following advisory for the subject property is considered appropriate to meet this risk management measure: soil contamination at the subject property should remain at a depth of at least 1 m below future grade and not be redistributed as surface soil, nor is a change permitted in future grade elevation from the current elevation that would cause current soil contamination to be within 1 m of grade. The listing of this risk management measure in Schedule B of the CofC meets this requirement.

- (b) Communication with the property owner that drinking water wells must not be installed on the subject property.

Imminent risks to drinking water receptors are not anticipated based on the following:

- the absence of drinking water wells at the subject property and developments in the vicinity of the subject property; and
- potable water within the City of Kelowna is sourced from Okanagan Lake. To our knowledge, there are no plans to install water wells on the subject property.

As such, an advisory for the subject property that no drinking water wells will be installed within the subject property is considered sufficient to meet this risk management

measure. The listing of this risk management measure in Schedule B of the CofC meets this requirement.

- (c) Communication with the property owner that plants/vegetation with roots expected to extend to below 1.0 mbgs shall only be planted in the area of the subject property where there is no remaining soil and/or groundwater contamination. This area is defined in Schedule A of the Certificate of Compliance for the subject property.

An assumption of the risk assessment is that there will not be deep rooting vegetation planted in the future at the subject property (with root structures extending deeper than 1.0 mbgs) in the area of remaining soil and/or groundwater contamination. There are three existing trees at the subject property; one located in the northeast quadrant of the subject property, and two located near the south property line near the southeast corner. However, these existing trees are not located in areas of remaining soil or groundwater contamination. The area of the subject property where deep rooting vegetation is permitted to be planted in the future is defined in Schedule A of the Certificate of Compliance for the subject property. As the future land use at the subject property is expected to be commercial, the future vegetation is expected to be limited to localized areas of landscaping, and deep-rooting trees are not typically planted in these limited areas. The metes and bounds description of the area where deep rooting vegetation should only be planted is as follows:

ALL AND SINGULAR that certain parcel or tract of land, situate, lying, and being:

That part of Lot 2, District Lot 14, Osoyoos Division, Yale District Plan 2863 Except Plans 36584 and 40362; which may be more particularly described as follows:

COMMENCING at the southeast corner of said Lot 2;

THENCE 2°00'30", a distance of 63.610 metres along the easterly boundary of Lot 2;

THENCE 272°09'00", a distance of 23.550 metres along the northerly boundary of Lot 2;

THENCE 182°00'30", a distance of 63.690 metres;

THENCE 91°57'20", a distance of 23.550 metres, more or less, along the southerly boundary of Lot 2, to the point of commencement, and containing 1499.0 square metres, more or less.

Based on the current absence of deep-rooting plants, the anticipated future commercial developments, and the considerable time (years) required to establish deep rooting

vegetation, imminent risks to ecological receptors are not anticipated in the event that this risk management measure was not met.

As such, an advisory for the subject property that: "Plants/vegetation with roots expected to extend to below 1.0 mbgs shall only be planted in the area of the subject property where there is no remaining soil and/or groundwater contamination. This area is defined in Schedule A of the Certificate of Compliance for the subject property" is considered appropriate to meet this risk management measure. The listing of this risk management measure in Schedule B of the CofC meets this requirement.

In summary, it is my opinion that the advisories listed in Schedule B of the CofC are sufficient for the risk management measures required for the subject property.

We trust that the foregoing information is satisfactory for your present requirements. Should you have any questions, please do not hesitate to contact the undersigned.

Respectfully submitted,

PARSONS INC.

A handwritten signature in black ink, appearing to read 'BA King'.

B.A. King, P.Chem., R.P. Bio.

BAK/cer

## **LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD PARTY RELIANCE**

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This report has been prepared and the work referred to in this report has been undertaken by Parsons for Imperial Oil Limited. It is intended for the sole and exclusive use of Imperial Oil Limited, its affiliated companies and partners and their respective agents, employees and advisors (collectively, "Imperial Oil"). Any use, reliance on or decision made by any person other than Imperial Oil based on this report is the sole responsibility of such other person. Imperial Oil and Parsons make no representation or warranty to any other person with regard to this report and the work referred to in this report and they accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the work referred to in this report.

The investigations undertaken by Parsons with respect to this report and any conclusions or recommendations made in this report reflect Parsons' judgment based on the site conditions observed at the time of the site inspection on the date(s) set out in this report and on information examined at the time of preparation of this report. This report has been prepared for specific application to this site and it is based, in part, upon visual observation of the site, subsurface investigation at discrete locations and depths, and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future site conditions, portions of the site which were unavailable for direct investigation, subsurface locations which were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation described in this report may exist within the site, substances addressed by this investigation may exist in areas of the site not investigated and concentrations of substances addressed which are different than those reported may exist in areas other than the locations from which samples were taken.

If site conditions or applicable standards change or if any additional information becomes available at a future date, modifications to the findings, conclusions and recommendations in this report may be necessary. Other than by Imperial Oil, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted without the express written permission of Parsons. Nothing in this report is intended to constitute or provide a legal opinion.

### **BRITISH COLUMBIA MINISTRY OF ENVIRONMENT'S RELIANCE**

Notwithstanding the above, the British Columbia Ministry of Environment is permitted to rely on this report and the information contained herein to the extent necessary to confirm that Imperial Oil has met their statutory obligations with respect to the Performance Verification Plan.