

April 13, 2016

Ref. No.: 10-2793T13

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

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Attention: Environmental Services

Re: Performance Verification Plan for  
a Portion of City of Kelowna Lands Beneath Lakeshore Road and KLO  
Road adjacent to 3101 Lakeshore Road  
Kelowna, British Columbia  
Location No.: JF.00267

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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 City of Kelowna property located to the west of 3101 Lakeshore Road in Kelowna, British Columbia (the City of Kelowna Property). The PVP presents the principal risk management measures that apply within the Management Area on the City of Kelowna 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 Management Area on the City of Kelowna 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 Management Area on the City of Kelowna 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 City of Kelowna 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) The City Management Area will remain as roadways/sidewalks for the foreseeable future with surface cover of asphalt and/or concrete.
- (b) Plants with roots expected to extend to below 1.0 metres below ground surface (mbgs) shall not be planted within the boulevards/sidewalks of the City Management Area.
- (c) No drinking water wells will be installed within the City Management Area.

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

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Based on the risk management measures within the Management Area on the City of Kelowna Property, (i.e. the use of institutional controls to mitigate/eliminate risks within the Management Area on the City of Kelowna Property and lack of imminent risks in the event that controls were not implemented) the Remediation Type applicable within the Management Area on the City of Kelowna 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 within the Management Area on the City of Kelowna 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 City of Kelowna Property include the following:

- (a) Communication with the City of Kelowna that the Management Area on the City of Kelowna Property will remain as roadways/sidewalks for the foreseeable future with surface cover of asphalt and/or concrete.

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 Management Area on the City of Kelowna Property. As the Management Area on the City of Kelowna Property is currently comprised of road right-of-ways, the construction of a future building in the Management Area on the City of Kelowna Property and the use of the area for anything other than a roadway/sidewalk is considered an unlikely scenario.

As such, the following advisory for the Management Area on the City of Kelowna Property is considered appropriate to meet this risk management measure: The Management Area on the City of Kelowna Property will remain as roadways/sidewalks for the foreseeable future with surface cover of asphalt and/or concrete. The listing of this risk management measure in Schedule B of the CofC meets this requirement.

- (b) Communication with the City of Kelowna that plants with roots expected to extend to below 1 mbgs must not be planted within the Management Area on the City of Kelowna Property.

Based on the current absence of deep-rooting plants (the City of Kelowna property is largely covered by sidewalk and roadway), the anticipated future use as roadway/sidewalk, 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 Management Area on the City of Kelowna Property that: “plants with roots expected to extend to below 1 mbgs shall not be planted within the Management Area on the City of Kelowna 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.

- (c) Communication with the City of Kelowna that drinking water wells must not be constructed within the Management Area on the City of Kelowna Property.

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

- the absence of drinking water wells at the City of Kelowna Property and developments in the vicinity of the City of Kelowna Property;
- the City of Kelowna Property is utilized as a sidewalk and a roadway; and

- potable water within the City of Kelowna is sourced from Okanagan Lake. To our knowledge, there are no plans to install water wells in the area of the City of Kelowna Property.

As such, an advisory for the Management Area on the City of Kelowna Property that drinking water wells must not be constructed within the Management Area on the City of Kelowna 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.

In summary, it is our opinion that the advisories listed in Schedule B of the CofC are sufficient for the risk management measures required for the City of Kelowna 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.

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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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.

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### **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.