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November 12, 2015

Project 130691

Drysdale Properties Ltd.  
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**ATTENTION:** Shelley Drysdale

**REFERENCE:** Performance Verification Plan, Township of Langley owned  
Management Area associated with 20512 Mufford Crescent Langley, BC

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On behalf of Drysdale Properties Ltd. (Drysdale), SNC-Lavalin Inc. (SNC-Lavalin) has prepared this Performance Verification Plan (PVP) in support of an application for a Certificate of Compliance (CofC) for the Township of Langley owned Management Area associated with 20512 Mufford Crescent in Langley, BC (herein referred to as the MA). The PVP presents the principal risk controls that apply at the MA to ensure the CofC remains valid (i.e., the key risk controls of Schedule B of the CofC). The PVP was prepared in accordance with BC Ministry of Environment (BC MoE) Procedure 12: Procedures for preparing and issuing contaminated sites legal instruments (BC MoE, 2013) and Administrative Guidance 14: Performance Verification Plans, Contingency Plans and Operations and Maintenance Plans (BC MoE, 2014).

### **PRINCIPAL RISK CONTROLS**

A Human Health and Ecological Risk Assessment (HHERA) was conducted for the MA, with the results are presented in the SNC-Lavalin report *Human Health and Ecological Risk Assessment, Township of Langley Management Area Associated with 20512 Mufford Crescent Langley, BC*, prepared by SNC-Lavalin (SNC-Lavalin, 2015a). The HHERA was prepared based on the findings and conclusions presented in the SNC-Lavalin report, *Stage 2 Preliminary Site Investigation, Detailed Site Investigation and Confirmation of Remediation Report, 20512 Mufford Crescent, Langley, BC* (SNC-Lavalin, 2015b).

The principal risk controls on which the SNC-Lavalin (2015a) risk assessment was based, as presented in Schedule B of the CofC, are as follows:

- a) The MA will continue to be used as roadway/sidewalk.
- b) Fruit/nut-bearing vegetation will not be introduced at the MA.



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

Based on the principal risk controls for the MA (i.e., the use of an institutional control to mitigate/eliminate risks at the MA and lack of imminent risks in the event that controls were either not implanted or were rendered ineffective), the Remediation Type applicable at the MA is considered to be Type 2.

Under a Remediation Type 2 scenario, MoE (2013 and 2014) indicates that a PVP is required, while an operations and maintenance plan may be required.

## **PERFORMANCE VERIFICATION PLAN**

A PVP is required to ensure that the principal risk controls upon which the HHERA is based are being met at the MA.

This includes the maintenance of up-to-date records of performance verification actions and results for the MA being maintained by the responsible person (or their agents). If requested by the Director, the responsible person (or their agents) will provide these records to the MoE. As well, if requested by the Director, responsible person(s) will provide a signed statement on whether conditions set out in Schedule B of the CofC are being met.

Performance verification actions for the MA include the following:

- a) Communication with the MA owner/operator that the MA will continue to be used as roadway/sidewalk. The MA is currently used as a portion of sidewalk/roadway (i.e., a transportation corridor) and it is considered unlikely that the MA will be used for other purposes in the foreseeable future. It is acknowledged that land use at the MA is industrial under the CSR and that the evaluation of a pedestrian at the MA is a conservative measure. Nonetheless, it was assumed that pedestrians were present at the MA and in contact with contaminated soil for 8 hours per day, 1 day per week, 52 weeks per year for a period of 35 years. It is noted that 1 day a week, versus the 5 days a week recommended by Health Canada for commercial receptors, was used; nonetheless, the use of 1 day a week is considered conservative and an overestimate of the potential exposure frequency for a pedestrian receptor. Using this exposure frequency, risks for pedestrian receptors were less than the CSR risk-based standards. The MA is currently paved and exposure to soil is not anticipated; however, in the event that pavement was not maintained, it is considered unlikely that use as a roadway/sidewalk would result in contact with contaminated soil present at 0.1 m below ground surface (bgs) and deeper. This is the basis of this risk control. Note due to the contamination on the MA being localized the risk control is only applicable to the following:
  - o Defined Portion 1 of Langley Management Area: Commencing at a point bearing 319 degrees 16 minutes 25 seconds a distance of 40.4 m from the northeast corner of Lot A, DL 311, Group 2, NWDP, NWP87874 (Except Portion in Plan 45495). Thence, at a bearing of 270 degrees 0 minutes 0 seconds a distance of 2.9 m. Thence, at a bearing of 0 degrees 0 minutes 0 seconds a distance of 2.8 m. Thence, at a bearing of 90 degrees 0 minutes 0 seconds a distance of 2.9 m. Thence, at a bearing of



180 degrees 0 minutes 0 seconds a distance of 2.8 m to the point of commencement, and comprising an area of 8.0 m<sup>2</sup>.

- Defined Portion 2 of Langley Management Area: Commencing at a point bearing 318 degrees 23 minutes 14 seconds a distance of 28.2 m from the northeast corner of *Lot A, DL 311, Group 2, NWDP, NWP87874 (Except Portion in Plan 45495)*. Thence, at a bearing of 270 degrees 0 minutes 0 seconds a distance of 2.9 m. Thence, at a bearing of 0 degrees 0 minutes 0 seconds a distance of 8.0 m. Thence, at a bearing of 90 degrees 0 minutes 0 seconds a distance of 2.9 m. Thence, at a bearing of 180 degrees 0 minutes 0 seconds a distance of 8.0 m to the point of commencement, and comprising an area of 23.3 m<sup>2</sup>.
- Defined Portion 3 of Langley Management Area: Commencing at a point bearing 30 degrees 11 minutes 17 seconds a distance of 4.0 m from the northeast corner of *Lot A, DL 311, Group 2, NWDP, NWP87874 (Except Portion in Plan 45495)*. Thence, at a bearing of 299 degrees 45 minutes 40 seconds a distance of 16.8 m. Thence, at a bearing of 25 degrees 12 minutes 15 seconds a distance of 5.5 m. Thence, at a bearing of 94 degrees 20 minutes 8 seconds a distance of 4.7 m. Thence, at a bearing of 40 degrees 19 minutes 6 seconds a distance of 10.8 m. Thence, at a bearing of 130 degrees 19 minutes 6 seconds a distance of 4.0 m. Thence, at a bearing of 220 degrees 19 minutes 6 seconds a distance of 10.4 m. Thence, at a bearing of 143 degrees 25 minutes 31 seconds a distance of 10.4 m. Thence, at a bearing of 220 degrees 19 minutes 6 seconds a distance of 3.0 m to the point of commencement, and comprising an area of 146.1 m<sup>2</sup>.

Based on the above, an advisory that the MA will continue to be used as roadway/sidewalk is considered appropriate to meet this risk control. The listing of this risk control in Schedule B of the CofC meets this requirement.

- b) Communication with the MA owner/operator that fruit/nut-bearing vegetation will not be introduced at the MA. The MA is currently being used as a roadway/sidewalk. Due to the presence of metals soil contamination, it is recommended that fruit and/or nut bearing vegetation not be introduced at the MA that could result in consumption by humans or ecological receptors. Given the use of the MA as a roadway/sidewalk, such a scenario is considered unlikely as vegetation is likely to be ornamental in nature. Given the localized nature of the contamination, the risk control is only applicable to the following:
  - Defined Portion 1 of Langley Management Area: Commencing at a point bearing 319 degrees 16 minutes 25 seconds a distance of 40.4 m from the northeast corner of *Lot A, DL 311, Group 2, NWDP, NWP87874 (Except Portion in Plan 45495)*. Thence, at a bearing of 270 degrees 0 minutes 0 seconds a distance of 2.9 m. Thence, at a bearing of 0 degrees 0 minutes 0 seconds a distance of 2.8 m. Thence, at a bearing of 90 degrees 0 minutes 0 seconds a distance of 2.9 m. Thence, at a bearing of 180 degrees 0 minutes 0 seconds a distance of 2.8 m to the point of commencement, and comprising an area of 8.0 m<sup>2</sup>.



- Defined Portion 2 of Langley Management Area: Commencing at a point bearing 318 degrees 23 minutes 14 seconds a distance of 28.2 m from the northeast corner of *Lot A, DL 311, Group 2, NWDP, NWP87874 (Except Portion in Plan 45495)*. Thence, at a bearing of 270 degrees 0 minutes 0 seconds a distance of 2.9 m. Thence, at a bearing of 0 degrees 0 minutes 0 seconds a distance of 8.0 m. Thence, at a bearing of 90 degrees 0 minutes 0 seconds a distance of 2.9 m. Thence, at a bearing of 180 degrees 0 minutes 0 seconds a distance of 8.0 m to the point of commencement, and comprising an area of 23.3 m<sup>2</sup>.
- Defined Portion 3 of Langley Management Area: Commencing at a point bearing 30 degrees 11 minutes 17 seconds a distance of 4.0 m from the northeast corner of *Lot A, DL 311, Group 2, NWDP, NWP87874 (Except Portion in Plan 45495)*. Thence, at a bearing of 299 degrees 45 minutes 40 seconds a distance of 16.8 m. Thence, at a bearing of 25 degrees 12 minutes 15 seconds a distance of 5.5 m. Thence, at a bearing of 94 degrees 20 minutes 8 seconds a distance of 4.7 m. Thence, at a bearing of 40 degrees 19 minutes 6 seconds a distance of 10.8 m. Thence, at a bearing of 130 degrees 19 minutes 6 seconds a distance of 4.0 m. Thence, at a bearing of 220 degrees 19 minutes 6 seconds a distance of 10.4 m. Thence, at a bearing of 143 degrees 25 minutes 31 seconds a distance of 10.4 m. Thence, at a bearing of 220 degrees 19 minutes 6 seconds a distance of 3.0 m to the point of commencement, and comprising an area of 146.1 m<sup>2</sup>.

Based on the above, an advisory fruit/nut-bearing vegetation will not be introduced at the MA is considered appropriate to meet this risk control. The listing of this risk control in Schedule B of the CofC meets this requirement.

In summary, it is our opinion that advisories in the form of the listing of the above risk controls on Schedule B of the CofC are sufficient for addressing the principal risk controls at the MA.

## REFERENCES

- MoE. 2013. Procedure 12. Procedures for preparing and issuing contaminated sites legal instruments. BC Ministry of Environment, Victoria, BC, February, 2013.
- MoE. 2014. Administrative Guidance 14: Performance Verification Plans, Contingency Plans and Operations and Maintenance Plans. BC Ministry of Environment, Victoria, BC, February, 2014.
- SNC-Lavalin. 2015a. *Human Health and Ecological Risk Assessment, Township of Langley Management Area Associated with 20512 Mufford Crescent Langley, BC*. Prepared by SNC-Lavalin. 2015.
- SNC-Lavalin. 2015b. *Stage 2 Preliminary Site Investigation, Detailed Site Investigation and Confirmation of Remediation Report, 20512 Mufford Crescent, Langley, BC*. Prepared by SNC-Lavalin. 2015.



## **NOTICE TO READER**

This report has been prepared and the work referred to in this report have been undertaken by SNC-Lavalin Inc. (SNC-Lavalin) for the exclusive use of Drysdale Properties Limited (Drysdale), who has been party to the development of the scope of work and understands its limitations. The methodology, findings, conclusions and recommendations in this report are based solely upon the scope of work and subject to the time and budgetary considerations described in the proposal and/or contract pursuant to which this report was issued. Any use, reliance on, or decision made by a third party based on this report is the sole responsibility of such third party. SNC-Lavalin accepts no liability or responsibility for any damages that may be suffered or incurred by any third party as a result of the use of, reliance on, or any decision made based on this report. Should this report be submitted to the BC Ministry of Environment (MoE) by Drysdale, the MoE is authorized to rely on the results in the report, subject to the limitations set out herein, for the sole purpose of determining whether Drysdale has fulfilled its obligations with respect to meeting the regulatory requirements of the MoE.

The findings, conclusions and recommendations in this report (i) have been developed in a manner consistent with the level of skill normally exercised by professionals currently practicing under similar conditions in the area, and (ii) reflect SNC-Lavalin's best judgment based on information available at the time of preparation of this report. No other warranties, either expressed or implied, are made as to the professional services provided under the terms of our original contract and included in this report. The findings and conclusions contained in this report are valid only as of the date of this report and may be based, in part, upon information provided by others. If any of the information is inaccurate, new information is discovered, site conditions change or applicable standards are amended, modifications to this report may be necessary. The results of this assessment should in no way be construed as a warranty that the subject site is free from any and all contamination.

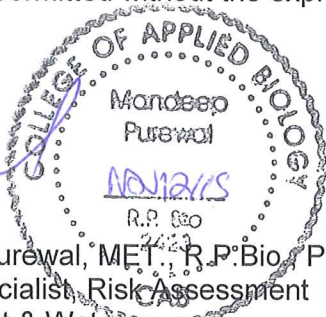

Any soil and rock descriptions in this report and associated logs have been made with the intent of providing general information on the subsurface conditions of the site. This information should not be used as geotechnical data for any purpose unless specifically addressed in the text of this report. Groundwater conditions described in this report refer only to those observed at the location and time of observation noted in the report.

This report must be read as a whole, as sections taken out of context may be misleading. If discrepancies occur between the preliminary (draft) and final version of this report, it is the final version that takes precedence. Nothing in this report is intended to constitute or provide a legal opinion.



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