



May 31, 2017

Mr. Joel Ello
Southern Railway of Vancouver Island Ltd.
2102 River Drive
New Westminster, BC V3M 6S3

Dear Mr. Ello:

**Re: Performance Verification Plan for Certificate of Compliance
855 Centennial Road, Vancouver, BC
Site ID: 15125
Project No. 13218**

1. BACKGROUND

Keystone Environmental Ltd. (Keystone Environmental) has prepared this Performance Verification Plan (PVP) in support of an application for a risk-based Certificate of Compliance (CofC) for the property listed as 855 Centennial Road, Vancouver, BC (the "Site").

The PVP presents the principal risk management measures (i.e., the Schedule B key risk management controls) that apply and must remain in place at the Site to ensure that the CofC remains valid. The PVP was prepared in accordance with BC Ministry of Environment (MOE) Administrative Guidance 14: Performance Verification Plans, Contingency Plans, and Operations and Maintenance Plans (MOE, 2015). The PVP was based on the findings of the following reports:

- Keystone Environmental (2013) report titled *Report of Findings – Human Health and Ecological Risk Assessment and Remedial Action Plan, 855 Centennial Road, Vancouver, BC*, dated July 2013.
- Keystone Environmental (2017a). Letter *Re: Blue Water Project, Burrard Inlet Pier, Amendment to Approval-in Principal (Site 15126), 855 Centennial Road, Vancouver, BC, Project No. 13218*, dated January 2017 (Letter to the BC Ministry of Environment [MOE]).
- Keystone Environmental (2017b) report titled *Report of Findings – Stage 1 Preliminary Site Investigation Update and Confirmation of Remediation, 855 Centennial Road, Vancouver, BC*, dated May 2017.

- Keystone Environmental (2017c) report titled *Report of Findings – Addendum to Human Health and Ecological Risk Assessment, 855 Centennial Road, Vancouver, BC*, dated May 2017.

2. PERFORMANCE VERIFICATION PLAN

2.1 Determination of Remediation Type

Based on the risk management measures for the Site, the Remediation Type applicable is considered to be Type 2. Remediation Type 2 sites may require the use of engineering and institutional controls to mitigate/eliminate risks at the Site, but in the event that controls were either not implemented or were implemented but were rendered ineffective, there is a lack of imminent risks.

2.2 Required Risk Controls

The principal risk controls which must be maintained at the Site include the following items:

- Contaminated soils greater than applicable industrial land use standards must remain covered by pavement or buildings, as outlined in the metes and bounds (see **attached Figure**);
- Security measures (fencing and signage) must be maintained to restrict public access;
- The existing engineered cap must have a minimum thickness of 0.3 m and must remain atop of sediments in Zone 2, as outlined in the metes and bounds (see **attached Figure**).

2.3 Required Actions to Implement the Required Risk Controls

The following actions are required to implement the risk controls:

- Mandatory notification provided to the Site owner/operator that soil contamination with concentrations exceeding applicable standards relevant to human and ecological soil contact is to remain beneath pavement or buildings;
- Mandatory notification provided to the Site owner/operator that public access restrictions must be maintained at the Site;
- Mandatory notification provided to the Site owner/operator that the existing engineered cap must have a minimum thickness of 0.3 m and must be maintained atop of sediments in Zone 2.

Records of these actions should be maintained by the owner of the Site and submitted to the MOE, if requested. Other reporting requirements for all performance verification records include the following:

- The Director must be notified promptly by the person(s) responsible for the Site if performance verification actions indicate that any of the required risk controls are not being met. The following information must be submitted to the Director with the notification, or as soon as practicable thereafter:
 - The time period over which risk controls were not in place or implemented
 - The nature of the excursion(s)
 - The temporary or permanent corrective measures implemented or to be implemented
 - An implementation schedule
 - Supporting documentation
- If requested by the Director, a report signed by an Approved Professional must be submitted for review to the Director and must include the following (as applicable):
 - An evaluation of the performance of the institutional controls
 - Supporting documentation

2.4 Summary Rationale

Soil contamination exceeding the CSR Schedule 4 or 5 industrial land use (IL) soil standards relevant to human and ecological soil contact is present in soils at the Site. The risk assessment assumed that human and terrestrial ecological exposures with such soils would not occur due to the presence of existing pavement or building foundations atop of the contaminated soils. Inspection of pavement and building ground covers atop of identified soil contamination following future building construction is needed to prevent future human and terrestrial ecological exposures to soil contaminants.

The risk assessment assumed that security measures would continue to restrict public access to the Site. Maintenance of security measures such as existing fencing and signage restricting use (e.g., no trespassing, no authorized entry) would be needed to prevent exposures to Site related contaminants by trespassers.

Sediment contamination exceeding the CSR Schedule 9 marine sediment criteria for typical sites (SedQC_{TS}) or risk-based standards relevant to aquatic ecological contact is present in sediment in Zone 2. The engineered sediment cap requires a minimum thickness of 0.3 m in Zone 2 to prevent benthic organisms from penetrating into the contaminated sediments present beneath the cover. Capping thickness was confirmed with diver measurements in Zone 2 where rip rap was present over much of the area. Furthermore, the engineered cap over Zone 2 is located within an area with low potential for prop-wash and is constructed with a rock mixture of

sizes and existing rip rap that forms a stable sloped and permanent cap cover. In addition, the port authority has indicated that the planned expansion of the Centerm will involve filling the area between 855 Centennial (Burrard Dock) and the Ballantyne Pier, which will further cap Zone 2 until it will no longer be considered aquatic habitat. Therefore, long-term inspection of the cap in Zone 2 is not warranted.

2.5 Conclusion

It is our opinion that the actions identified in this report are sufficient to ensure performance verification of the risk controls required for the Site.

3. GENERAL LIMITATIONS AND CONFIDENTIALITY

The findings presented in this report are based upon the field work conducted by Keystone Environmental for Southern Railway of Vancouver Island Ltd. Keystone Environmental has prepared this document in good faith and has relied upon information provided by others. Keystone Environmental has assumed that the information provided by third parties is both complete and accurate.

This report was completed in a manner consistent with that level of care and skill normally exercised by other environmental professionals, practicing under similar circumstances in the same locale at the time of the performance of the work.

This report has been prepared solely for the internal use of Southern Railway of Vancouver Island Ltd. and the review by the BC Ministry of Environment, pursuant to the agreement between Keystone Environmental Ltd. and Southern Railway of Vancouver Island Ltd. By using this report, Southern Railway of Vancouver Island Ltd. and the BC Ministry of Environment agree(s) to review this report in its entirety. Keystone Environmental accepts no responsibility, and denies any liability whatsoever, to parties other than Southern Railway of Vancouver Island Ltd. and the BC Ministry of Environment, who may obtain access to this report for any injury, loss or damage suffered by such parties arising out of, reliance upon, or decisions or actions based on this report, except to the extent those parties have obtained a prior written consent of Keystone Environmental to use and rely upon this report and the information contained herein. Any use, reliance or decisions made based on this report by other parties without prior written approval by Keystone Environmental are the responsibility of such parties and Keystone Environmental accepts no responsibility for damages, if any, suffered by other parties as a result of decisions made or actions based on this report. The findings presented herein should be considered within the context of the scope of work and project terms of reference. The findings are time sensitive and are considered valid at the time this report was produced. The conclusions and recommendations contained in this report are based upon applicable guidelines, regulations, and legislation existing at the time this report was produced; consequently, any changes in the regulatory regime may alter the conclusions and/or recommendations.

4. CLOSURE

If you have any questions, please do not hesitate to contact the signatories of this report.

Sincerely,

Keystone Environmental Ltd.

Original signed by

Kevin Hall, B.Sc., R.P.Bio.
Risk Assessor

Original signed by

Adam Radlowski, M.Sc., R.P.Bio.
Senior Environmental Risk Assessor

I:\13200-13299\13218\HHERA Update\PVPs\13218 170531 HHERA PVP OnSite.docx

ATTACHMENTS:

- References
- Metes and Bounds Figure
- Metes and Bounds Description

REFERENCES

REFERENCES

- BC MOE (2015) British Columbia Ministry of Environment. Environmental Protection Division. *Administrative Guidance 14 on Contaminated Sites: Performance Verification Plans, Contingency Plans, and Operations and Maintenance Plans*. (Version 3.0). December 2015.
- Keystone Environmental (2013). *Report of Findings – Human Health and Ecological Risk Assessment and Remedial Action Plan, 855 Centennial Road, Vancouver, BC*. Burnaby, BC: Keystone Environmental Ltd. July 2013.
- Keystone Environmental (2017a). *Report of Findings – Stage 1 Preliminary Site Investigation Update and Confirmation of Remediation, 855 Centennial Road, Vancouver, BC*. Burnaby, BC: Keystone Environmental Ltd. January 2017.
- Keystone Environmental (2017b). *Report of Findings – Addendum to Human Health and Ecological Risk Assessment, 855 Centennial Road, Vancouver, BC*. Burnaby, BC: Keystone Environmental Ltd. May 2017.

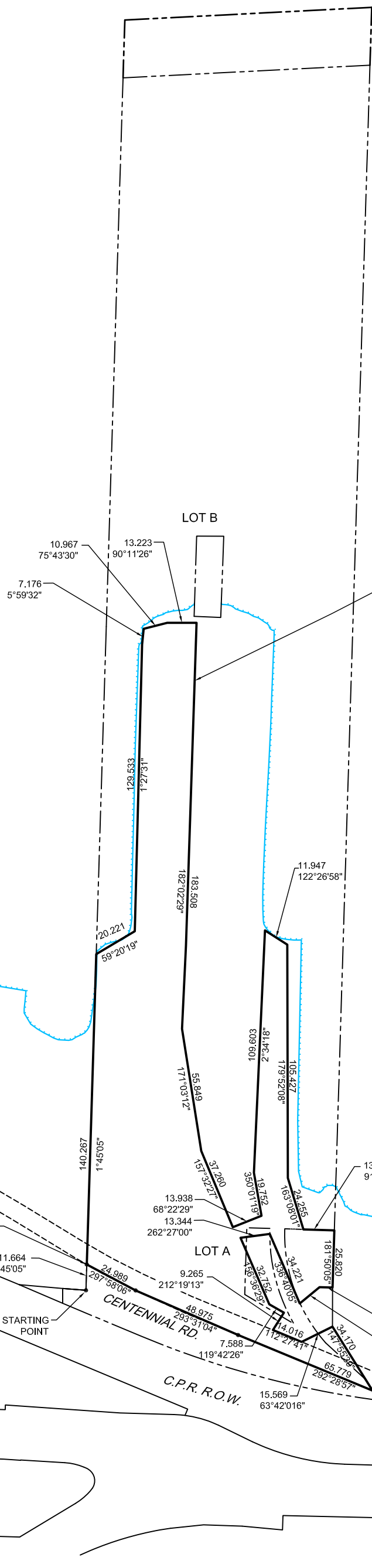
METES AND BOUNDS FIGURES



METES & BOUNDS OF CONTAMINATED SOIL AREA:

- STARTING AT THE SOUTHWEST CORNER OF LOT A,
- DISTRICT LOT 181, GROUP 1, NEW WESTMINSTER
- DISTRICT PLAN BCP40923:
- THENCE 1° 45' 05" FOR 11.664 METRES;
- TO THE POINT OF COMMENCEMENT.
- THENCE 1° 45' 05" FOR 140.267 METRES;
- THENCE 59° 20' 19" FOR 20.221 METRES;
- THENCE 1° 27' 31" FOR 129.533 METRES;
- THENCE 5° 59' 32" FOR 7.176 METRES;
- THENCE 75° 43' 30" FOR 10.967 METRES;
- THENCE 90° 11' 26" FOR 13.223 METRES;
- THENCE 182° 02' 29" FOR 183.508 METRES;
- THENCE 171° 03' 12" FOR 55.849 METRES;
- THENCE 157° 32' 27" FOR 32.260 METRES;
- THENCE 68° 22' 29" FOR 13.938 METRES;
- THENCE 350°01'19" FOR 19.752 METRES
- THENCE 2° 34' 18" FOR 109.603 METRES
- THENCE 122° 26' 58" FOR 11.947 METRES;
- THENCE 179° 52' 08" FOR 105.427 METRES;
- THENCE 163° 08' 01" FOR 24.255 METRES;
- THENCE 91° 45' 04" FOR 13.995 METRES;
- THENCE 181° 50' 05" FOR 25.820 METRES;
- THENCE 271° 50' 05" FOR 5.853 METRES;
- THENCE 230° 26' 15" FOR 11.503 METRES;
- THENCE 336° 40' 05" FOR 34.221 METRES;
- THENCE 262° 27' 00" FOR 13.344 METRES;
- THENCE 156° 36' 29" FOR 32.752 METRES;
- THENCE 171° 03' 12" FOR 55.849 METRES;
- THENCE 156° 36' 29" FOR 32.752 METRES;
- THENCE 119° 42' 26" FOR 7.588 METRES;
- THENCE 212° 19' 13" FOR 9.265 METRES;
- THENCE 112° 27' 41" FOR 14.016 METRES;
- THENCE 63° 42' 16" FOR 15.569 METRES;
- THENCE 147° 55' 39" FOR 34.170 METRES;
- THENCE 292° 28' 57" FOR 65.779 METRES;
- THENCE 293° 31' 04" FOR 48.975 METRES;
- THENCE 297° 58' 06" FOR 24.989 METRES;
- THENCE 297° 58' 06" FOR 24.989 METRES;

RETURNING TO THE POINT OF COMMENCEMENT.



POINT OF COMMENCEMENT

STARTING POINT

LOT B

LOT A

CENTENNIAL RD.

C.P.R. R.O.W.

LEGEND

- PROPERTY LINE
- METES & BOUNDS OF CONTAMINATED SOIL AREA

NOTES:
 1. THIS DRAWING IS FOR GENERAL INFORMATION ONLY.
 LOT BOUNDARIES AND FEATURES ARE APPROXIMATE

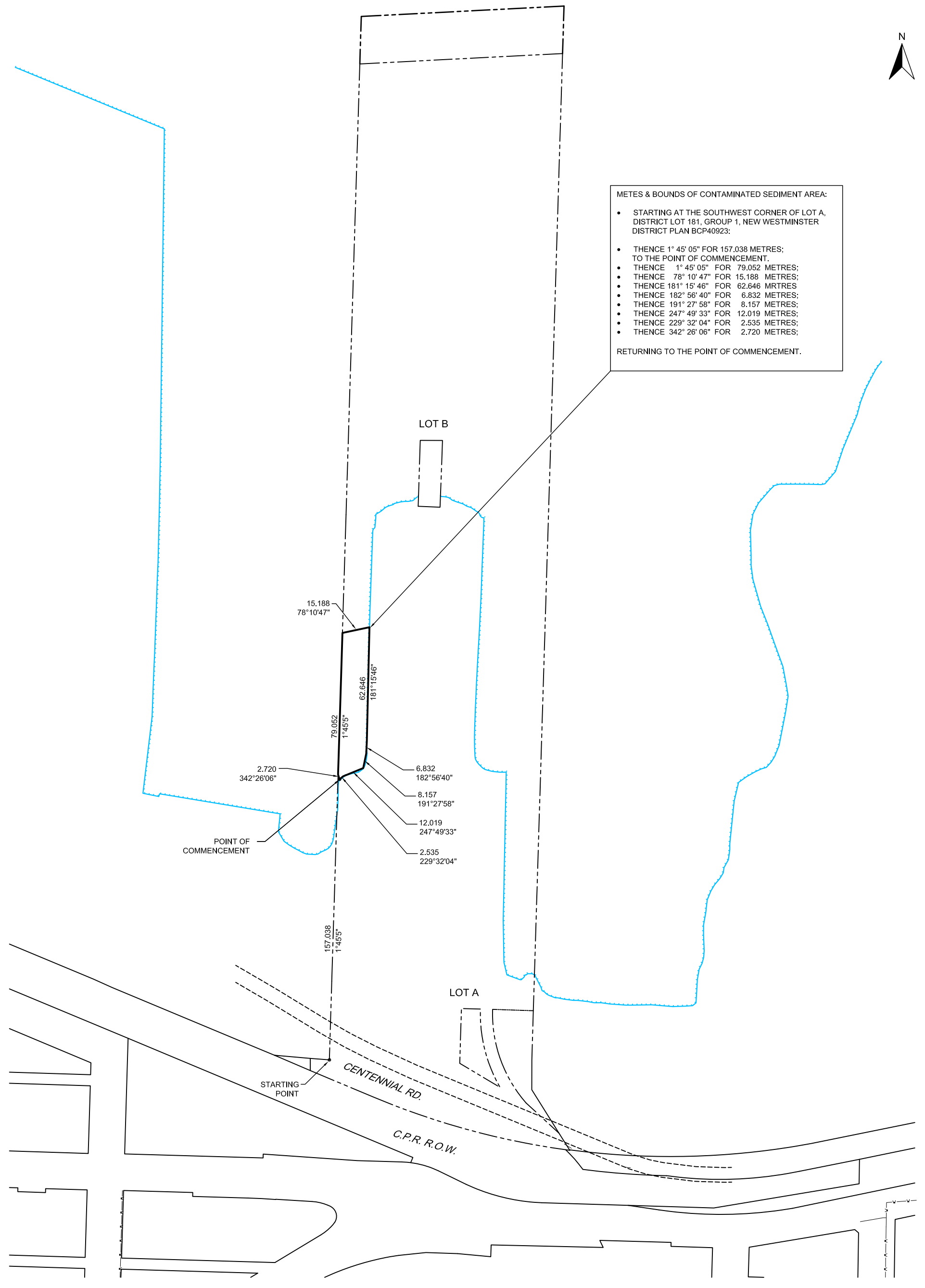
<table border="1"> <thead> <tr> <th>No.</th> <th>DATE</th> <th>DESCRIPTION</th> <th>BY</th> <th>APPROVED</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	No.	DATE	DESCRIPTION	BY	APPROVED																<p>Keystone Environmental 855 Centennial Road Vancouver, B C</p>	<p>Keystone Environmental Ltd. Ste. 320 4400 Dominion Street Burnaby, British Columbia</p>	DESIGN	APPROVED	CLIENT South Railway of Vancouver Island	DATE 5/16/17
	No.	DATE	DESCRIPTION	BY	APPROVED																					
DRAWN H.L.	CHECKED	<p>Metes and Bounds of Soil Contamination Area</p>	SHEET No. 1 of 4																							
SCALE 0m 50m SCALE: 1:2000(approx.)			PROJECT No. 13218-15																							
			REVISION No. 00																							
		DRAWING No. 01																								



METES & BOUNDS OF CONTAMINATED SEDIMENT AREA:

- STARTING AT THE SOUTHWEST CORNER OF LOT A, DISTRICT LOT 181, GROUP 1, NEW WESTMINSTER DISTRICT PLAN BCP40923:
- THENCE 1° 45' 05" FOR 157.038 METRES; TO THE POINT OF COMMENCEMENT.
- THENCE 1° 45' 05" FOR 79.052 METRES;
- THENCE 78° 10' 47" FOR 15.188 METRES;
- THENCE 181° 15' 46" FOR 62.646 MRTRES;
- THENCE 182° 56' 40" FOR 6.832 METRES;
- THENCE 191° 27' 58" FOR 8.157 METRES;
- THENCE 247° 49' 33" FOR 12.019 METRES;
- THENCE 229° 32' 04" FOR 2.535 METRES;
- THENCE 342° 26' 06" FOR 2.720 METRES;

RETURNING TO THE POINT OF COMMENCEMENT.



15.188
78°10'47"

62.646
181°15'46"

79.052
1°45'05"

2.720
342°26'06"

POINT OF COMMENCEMENT

6.832
182°56'40"

8.157
191°27'58"

12.019
247°49'33"

2.535
229°32'04"

LOT B

LOT A

CENTENNIAL RD.

C.P.R. R.O.W.

STARTING POINT

157.038
1°45'05"

LEGEND

- PROPERTY LINE
- METES & BOUNDS CONTAMINATED SEDIMENT AREA

NOTES:
1. THIS DRAWING IS FOR GENERAL INFORMATION ONLY.
LOT BOUNDARIES AND FEATURES ARE APPROXIMATE.

		<p>Keystone Environmental</p> <p>Keystone Environmental Ltd. Ste. 320 4400 Dominion Street Burnaby, British Columbia</p> <p>855 Centennial Road Vancouver, B C</p>	DESIGN	APPROVED	CLIENT	DATE 5/16/17
			DRAWN H.L.	CHECKED	South Railway of Vancouver Island	SHEET No. 3 of 4
		SCALE		<p>Metes and Bounds of Sediment Contamination Area</p>	PROJECT No. 13218-15	
		<p>SCALE: 1:2000(approx.)</p>			REVISION No. 00	
No.	DATE	DESCRIPTION	BY	APPROVED	DRAWING No. 03	

METES AND BOUNDS DESCRIPTIONS

METES & BOUNDS OF CONTAMINATED SOIL AREA:

STARTING AT THE SOUTHWEST CORNER OF LOT A, DISTRICT LOT 181, GROUP 1,
NEW WESTMINSTER DISTRICT PLAN BCP40923:

THENCE 1° 45' 05" FOR 11.664 METRES; TO THE POINT OF COMMENCEMENT.

THENCE 1° 45' 05" FOR 140.267 METRES;
THENCE 59° 20' 19" FOR 20.221 METRES;
THENCE 1° 27' 31" FOR 129.533 METRES;
THENCE 5° 59' 32" FOR 7.176 METRES;
THENCE 75° 43' 30" FOR 10.967 METRES;
THENCE 90° 11' 26" FOR 13.223 METRES;
THENCE 182° 02' 29" FOR 183.508 METRES;
THENCE 171° 03' 12" FOR 55.849 METRES;
THENCE 157° 32' 27" FOR 32.260 METRES;
THENCE 68° 22' 29" FOR 13.938 METRES;
THENCE 350° 01' 19" FOR 19.752 METRES
THENCE 2° 34' 18" FOR 109.603 METRES
THENCE 122° 26' 58" FOR 11.947 METRES;
THENCE 179° 52' 08" FOR 105.427 METRES;
THENCE 163° 08' 01" FOR 24.255 METRES;
THENCE 91° 45' 04" FOR 13.995 METRES;
THENCE 181° 50' 05" FOR 25.820 METRES;
THENCE 271° 50' 05" FOR 5.853 METRES;
THENCE 230° 26' 15" FOR 11.503 METRES
THENCE 336° 40' 05" FOR 34.221 METRES;
THENCE 262° 27' 00" FOR 13.344 METRES;
THENCE 156° 36' 29" FOR 32.752 METRES;
THENCE 171° 03' 12" FOR 55.849 METRES;
THENCE 156° 36' 29" FOR 32.752 METRES;
THENCE 119° 42' 26" FOR 7.588 METRES;
THENCE 212° 19' 13" FOR 9.265 METRES;
THENCE 112° 27' 41" FOR 14.016 METRES;
THENCE 63° 42' 16" FOR 15.569 METRES;
THENCE 147° 55' 39" FOR 34.170 METRES;
THENCE 292° 28' 57" FOR 65.779 METRES;
THENCE 293° 31' 04" FOR 48.975 METRES;
THENCE 297° 58' 06" FOR 24.989 METRES;

RETURNING TO THE POINT OF COMMENCEMENT.

METES & BOUNDS OF CONTAMINATED SEDIMENT AREA:

STARTING AT THE SOUTHWEST CORNER OF LOT A, DISTRICT LOT 181, GROUP 1, NEW WESTMINSTER DISTRICT PLAN BCP40923:

THENCE 1° 45' 05" FOR 157.038 METRES; TO THE POINT OF COMMENCEMENT.

THENCE 1° 45' 05" FOR 79.052 METRES;

THENCE 78° 10' 47" FOR 15.188 METRES;

THENCE 181° 15' 46" FOR 62.646 METRES;

THENCE 182° 56' 40" FOR 6.832 METRES;

THENCE 191° 27' 58" FOR 8.157 METRES;

THENCE 247° 49' 33" FOR 12.019 METRES;

THENCE 229° 32' 04" FOR 2.535 METRES;

THENCE 342° 26' 06" FOR 2.720 METRES;

RETURNING TO THE POINT OF COMMENCEMENT.