

April 22, 2025

Pacific Trail Pipelines Management Inc.
200, 425 – 1 STREET SW
CALGARY, AB T2P 3L8

Attention: Pacific Trail Pipelines Management Inc.

RE: Permit Extension for Application Determination Number 100084207, BCER Legacy# 9706458

Permit Holder: Pacific Trail Pipelines Management Inc.

Permit Date of Issuance: April 25, 2016

Extension Date of Issuance: April 22, 2025

Extended Expiration Date: April 25, 2026

Application Determination Number: 100084207

Pipeline Project No.: 000023847

Permissions

Energy Resource Activities Act

1. The BC Energy Regulator, under section 32(5) of the Energy Resource Activities Act, hereby extends the permit and any associated authorizations to construct, maintain and operate a pipeline.
2. This permit extension is subject to the original permit, authorizations, subsequent amendments and any additional conditions as set out herein .
3. The prescribed period of this permit has been extended for one year and will expire on April 25, 2026, if the permit holder has not begun the activity by this date.

This extension forms an integral part of the permit and should be attached thereto.



Shannon Weatherill
Authorized Signatory
BC Energy Regulator Delegated Decision Maker

Copied to:
First Nations

April 24, 2024

Pacific Trail Pipelines Management Inc.
200, 425 – 1 Street SW
Calgary, AB T2P 3L8

Attention: Pacific Trail Pipelines Management Inc.

RE: Permit Extension for Application Determination Number 100084207, OGC :Legacy Number 9706458

Permit Holder: Pacific Trail Pipelines Management Inc.
Permit Date of Issuance: April 25, 2016
Extension Date of Issuance: April 24, 2024
Extension Effective Date: April 26, 2024
Extended Expiration Date: April 25, 2025
Application Determination Number: 100084207
Pipeline Project No.: 000023847

Permissions

Oil and Gas Activities Act

1. The BC Energy Regulator, under section 32(5) of the Oil & Gas Activities Act, hereby extends the permit and any associated authorizations to construct, maintain and operate a pipeline.
2. This permit extension is subject to the original permit, authorizations, subsequent amendments and any additional conditions as set out herein.
3. The prescribed period of this permit has been extended for one year and will expire on April 25, 2025, if the permit holder has not begun the activity by this date.

ADVISORY GUIDANCE

1. Appropriate *Land Act* tenure will be issued upon acceptance of the post-construction plan. Submission of the original application and submission of the post-construction plan is considered application for all subsequent *Land Act* tenures; no further applications for replacement tenure is required.
2. If the cutting permit(s) approved under this application determination are associated with expired Master Licence(s) to Cut, standalone cutting permit(s) application(s) must be submitted and approved prior to clearing and removal of Crown timber from the Permit Area.

This extension forms an integral part of the permit and should be attached thereto.



Shannon Weatherill
Director, Authorizations
BC Energy Regulator Delegated Decision Maker

April 21, 2023

Pacific Trail Pipelines Management Inc.
200, 425 – 1 Street SW
Calgary, AB T2P 3L8

Attention: Pacific Trail Pipelines Management Inc.

RE: Permit Extension for Application Determination Number 100084207, OGC :Legacy Number 9706458

Permit Holder: Pacific Trail Pipelines Management Inc.
Permit Date of Issuance: April 25, 2016
Extension Date of Issuance: April 21, 2023
Extension Effective Date: April 26, 2023
Extended Expiration Date: April 25, 2024
Application Determination Number: 100084207
Pipeline Project No.: 000023847

Permissions


Oil and Gas Activities Act

1. The BC Energy Regulator (the Regulator), under section 32(5) of the Oil & Gas Activities Act, hereby extends the permit and any associated authorizations to construct, maintain and operate a pipeline.
2. This permit extension is subject to the original permit, authorizations, subsequent amendments and any additional conditions as set out herein.
3. The prescribed period of this permit has been extended for one year and will expire on April 25, 2024, if the permit holder has not begun the activity by this date.

ADVISORY GUIDANCE

1. Appropriate *Land Act* tenure will be issued upon acceptance of the post-construction plan. Submission of the original application and submission of the post-construction plan is considered application for all subsequent *Land Act* tenures; no further applications for replacement tenure is required.
2. If the cutting permit(s) approved under this application determination are associated with expired Master Licence(s) to Cut, standalone cutting permit(s) application(s) must be submitted and approved prior to clearing and removal of Crown timber from the Permit Area.

This extension forms an integral part of the permit and should be attached thereto.



Shannon Weatherill
Director, Authorizations
BC Energy Regulator Delegated Decision Maker

April 20, 2022

Pacific Trail Pipelines (PTP) Management Inc.
c/o Enbridge GTM Canada Inc.
200, 425 – 1 STREET SW
CALGARY, AB T2P 3L8

Attention: Pacific Trail Pipelines (PTP) Management Inc.

RE: Permit Extension for Application Determination Number 100084207, OGC Legacy #9706458

Permit Holder: Pacific Trail Pipelines (PTP) Management Inc.
Permit Date of Issuance: April 25, 2016
Extension Date of Issuance: April 20, 2022
Extension Effective Date: April 26, 2022
Extended Expiration Date: April 25, 2023
Application Determination No.: 100084207
Pipeline Project No.: 000023847

PERMISSIONS

Oil and Gas Activities Act

1. The BC Oil and Gas Commission (the "Commission"), under section 32(5) of the Oil & Gas Activities Act, hereby extends the permit and any associated authorizations to construct, maintain and operate a pipeline.
2. This permit extension is subject to the original permit, authorizations, subsequent amendments and any additional conditions as set out herein .
3. The prescribed period of this permit has been extended for one year and will expire on April 25, 2023 if the permit holder has not begun the activity by this date.

ADVISORY GUIDANCE

1. Appropriate *Land Act* tenure will be issued upon acceptance of the post-construction plan. Submission of the original application and submission of the post-construction plan is considered application for all subsequent *Land Act* tenures; no further applications for replacement tenure is required.
2. If the cutting permit(s) approved under this application determination are associated with expired Master Licence(s) to Cut, standalone cutting permit(s) application(s) must be submitted and approved prior to clearing and removal of Crown timber from the Permit Area.

This extension forms an integral part of the permit and should be attached thereto.



Justin Anderson
Authorized Signatory
Commission Delegated Decision Maker

April 14, 2021

Pacific Trail Pipelines (PTP) Management Inc. c/o Chevron Canada Limited
500, 5th Avenue SW
Calgary, Alberta T2P 0L7

Attention: Pacific Trail Pipelines (PTP) Management Inc. c/o Chevron Canada Limited

RE: Permit Extension for Application Determination Number 100084207, OGC Legacy #9706458

Permit Holder: Pacific Trail Pipelines (PTP) Management Inc. c/o Chevron Canada Limited
Permit Date of Issuance: April 25, 2016
Extension Date of Issuance: April 14, 2021
Extension Effective Date: April 25, 2021
Extended Expiration Date: April 25, 2022
Application Determination No.: 100084207
Pipeline Project No.: 000023847

PERMISSIONS

Oil and Gas Activities Act

1. The BC Oil and Gas Commission (the "Commission"), under section 32(5) of the Oil & Gas Activities Act, hereby extends the permit and any associated authorizations to construct, maintain and operate a pipeline.
2. This permit extension is subject to the original permit, authorizations, subsequent amendments and any additional conditions as set out herein .
3. The prescribed period of this permit has been extended for one year and will expire on April 25, 2022 if the permit holder has not begun the activity by this date.

ADVISORY GUIDANCE

1. Appropriate *Land Act* tenure will be issued upon acceptance of the post-construction plan. Submission of the original application and submission of the post-construction plan is considered application for all subsequent *Land Act* tenures; no further applications for replacement tenure is required.

This extension forms an integral part of the permit and should be attached thereto.



James O'Hanley
Vice President, Applications
Commission Delegated Decision Maker

March 25, 2020

Pacific Trail Pipelines (PTP) Management Inc. c/o Chevron Canada Limited
500, 5th Avenue SW
Calgary Alberta T2P 0L7

Attention: Pacific Trail Pipelines (PTP) Management Inc.

RE: Permit Extension for Application Determination Number 100084207, OGC Legacy 9706458

Permit Holder: Pacific Trail Pipelines (PTP) Management Inc.
Permit Date of Issuance: April 25, 2016
Extension Effective Date: April 25, 2020
Extended Expiration Date: April 25, 2021
Application Determination No.: 100084207
Pipeline Project No.: 000023847

PERMISSIONS

Oil and Gas Activities Act

1. The BC Oil and Gas Commission (the "Commission"), under section 32(5) of the *Oil & Gas Activities Act*, hereby extends the permit and any associated authorizations to construct, maintain and operate a pipeline.
2. This permit extension is subject to the original permit, authorizations, subsequent amendments and any additional conditions as set out herein.
3. The prescribed period of this permit has been extended for one year and will expire on April 25, 2021, if the Permit Holder has not begun the activity by this date.

ADVISORY GUIDANCE

1. Appropriate *Land Act* tenure will be issued upon acceptance of the post-construction plan. Submission of the original application and submission of the post-construction plan is considered application for all subsequent *Land Act* tenures; no further applications for replacement tenure is required.

This extension forms an integral part of the permit and should be attached thereto.



James O'Hanley
Vice President, Applications
Commission Delegated Decision Maker

pc: OGC, Compliance & Enforcement



April 16, 2019

Pacific Trail Pipelines (PTP) Management Inc. c/o Chevron Canada Limited
500, 5th Avenue SW
Calgary Alberta T2P 0L7

Attention: Pacific Trail Pipelines (PTP) Management Inc.

RE: Permit Extension for Application Determination Number 100084207, OGC Legacy 9706458

Permit Holder: Pacific Trail Pipelines (PTP) Management Inc.
Permit Date of Issuance: April 25, 2016
Extension Effective Date: April 25, 2019
Extended Expiration Date: April 25, 2020
Application Determination No.: 100084207
Pipeline Project No.: 000023847

PERMISSIONS

Oil and Gas Activities Act

1. The BC Oil and Gas Commission (the "Commission"), under section 32(5) of the *Oil & Gas Activities Act*, hereby extends the permit and any associated authorizations to construct, maintain and operate a pipeline.
2. This permit extension is subject to the original permit, authorizations, subsequent amendments and any additional conditions as set out herein.
3. The prescribed period of this permit has been extended for one year and will expire on **April 25, 2020** if the Permit Holder has not begun the activity by this date.

ADVISORY GUIDANCE

1. Appropriate *Land Act* tenure will be issued upon acceptance of the post-construction plan. Submission of the original application and submission of the post-construction plan is considered application for all subsequent *Land Act* tenures; no further applications for replacement tenure is required.

This extension forms an integral part of the permit and should be attached thereto.

A handwritten signature in black ink, appearing to read 'James O'Hanley', is written over a horizontal line.

James O'Hanley
Vice President, Applications
Commission Delegated Decision Maker

pc: OGC, Compliance & Enforcement

April 16, 2018

Pacific Trail Pipelines (PTP) Management Inc. c/o Chevron Canada Limited
500, 5th Avenue SW
Calgary Alberta T2P 0L7

Attention: Pacific Trail Pipelines (PTP) Management Inc.

RE: Permit Extension for Application Determination Number 100084207, OGC Legacy 9706458

Permit Holder: Pacific Trail Pipelines (PTP) Management Inc.
Permit Date of Issuance: April 25, 2016
Extension Effective Date: April 25, 2018
Extended Expiration Date: April 25, 2019
Application Determination No.: 100084207
Pipeline Project No.: 000023847

PERMISSIONS

Oil and Gas Activities Act

1. The BC Oil and Gas Commission (the "Commission"), under section 32(5) of the *Oil & Gas Activities Act*, hereby extends the permit and any associated authorizations to construct, maintain and operate a pipeline.
2. This permit extension is subject to the original permit, authorizations, subsequent amendments and any additional conditions as set out herein.
3. The prescribed period of this permit has been extended for one year and will expire on April 25, 2019 if the Permit Holder has not begun the activity by this date.

ADVISORY GUIDANCE

1. Appropriate *Land Act* tenure will be issued upon acceptance of the post-construction plan. Submission of the original application and submission of the post-construction plan is considered application for all subsequent *Land Act* tenures; no further applications for replacement tenure is required.

This extension forms an integral part of the permit and should be attached thereto.



James O'Hanley
Vice President, Applications

pc: OGC, Compliance & Enforcement



April 25, 2016

PACIFIC TRAIL PIPELINES MANAGEMENT INC.
500, 5th Avenue SW
Calgary AB T2P 0L7

Attention: Pacific Trail Pipelines (PTP) Management Inc.

RE: PTP Section 1 Pipeline Permit

Date of Issuance: 25 April 2016
Commission File No: 9706458
Job No.: 008912391-001

PERMISSIONS

1. The BC Oil and Gas Commission (the "Commission"), under section 25(1) of the *Oil and Gas Activities Act*, hereby permits the holder to construct and operate a pipeline for the purpose of conveying natural gas subject to the following conditions, any applicable exemptions and authorizations:
 - a. The permissions and authorizations granted under this permit are limited to the areas described in the following construction plans by Can-Am Geomatics as submitted to the Commission in the permit application dated January 25, 2016:

Can-Am File: N20120168, CAD File: N20120168PL-Sec1_Rev3, sheet 1 of 4, revision 3, dated December 3, 2015;
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Can-Am File: N20120168, CAD File: N20120168PL-Sec1_Rev3, sheets 2 to 4 of 4, revision 3, dated December 4, 2015;
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2. Pursuant to section 138(1) of the *Petroleum and Natural Gas Act*, the permit holder is permitted to enter, occupy and use any unoccupied Crown land located within the operating area to carry out the oil and gas activity and related activities permitted under this permit.

The permission to occupy and use Crown land does not entitle the permit holder to exclusive possession of the area.

3. The permit holder is authorized to construct and operate the pipeline segments 001, 002, 003, 004, 005, 006, 007, 008, 009, 010 and 011 to transmit sweet natural gas under a maximum operating pressure of 13790 kPa, unidirectionally in a 1066.8 mm (42 inch) diameter pipe, and in accordance with Piping & Instrumentation Diagram(s), PL-PID-03-DWG-001 Revision C, dated April 07, 2014, and PL-P1B-100-DWG-002 Revision G, dated June 6, 2014.
4. Changes may be made to pigging design, and to above ground valves and piping, provided that:
 - a. the changes do not affect direct connections to pipelines and facilities;

- b. there are no changes to approved pressure protection, H2S protection or isolation;
 - c. there is no substantive impact to any aspect of the project that was included in a consultation under the Consultation and Notification Regulation; and
 - d. the design and operation of the pipeline continues to meet all regulatory requirements and the requirements of CSA Z662, as amended from time to time.
5. The permit holder is only permitted to construct the pipeline within the right of way identified on the construction plans referenced in permissions.

AUTHORIZATIONS

Cutting Permit under Master Licence to Cut under section 47.4 of the *Forest Act* Authorization

- 6. Subject to Master Licence to Cut M02283, Prince George Forest District, the permit holder is hereby authorized, under Cutting Permit No. 10, to harvest timber on the Crown land portion shown on survey plan associated with this approval.
- 7. These Cutting Permits are deemed spent upon the submission of the "Post-Construction Plan" or upon either the cancellation or the expiry of the "permitted oil and gas activity."

CONDITIONS

Notification and Reporting

- 8. At least 30 days prior to commencing any construction activities under this permit, the permit holder must provide the Carrier Sekani Tribal Council, Lheidli T'enneh Band, McLeod Lake Indian Band, Nak'azdli Band and West Moberly First Nations the proposed construction schedule.
- 9. At least one week prior to the beginning of each month, the permit holder must submit a schedule to the Commission indicating the location and timing of horizontal directional drilling, microtunnelling or in-stream work planned to commence the following month.
- 10. Unless a submission has been made under condition 11, the permit holder must annually, on or before March 31 of each year, submit to the Commission's KERMIT system, a Post Construction Plan map showing the location and nature of any construction activities completed under this permit during the previous calendar year.
- 11. Within 60 days of completion of construction activities under this permit, the permit holder must submit to the Commission a Post Construction Plan as an ePASS shape file accurately identifying the location of the total area actually disturbed under this permit, and written statement indicating whether the permit holder has complied with the permit conditions and applicable legislation relating to the design and construction of the activities authorized under this permit. The written statement must be signed by the permit holder and specify the date on which it was made.
- 12. Prior to undertaking construction activities within 100 m upslope and 200 m downslope of a water supply well or waterworks the permit holder must:
 - a. provide information on the location and ownership of the water supply well or waterworks to the Commission; and
 - b. notify the owners of the water supply well or waterworks of the nature and planned timing of the construction activities.

First Nations Trails

- 13. At the completion of construction activities the permit holder must restore any identifiable trails traditionally used by First Nations that were impacted by pipeline construction, to the level of access that existed prior to

construction, if the location of the trail is made known to the permit holder by a First Nation or the Commission prior to the permit holder's notice of construction start.

Clearing

14. Clearing and site preparation must:
 - a. be limited to areas needed for the pipeline right of way and work space;
 - b. inclusive of work space, be confined to the construction corridor; and
 - c. not exceed 82.72 ha on Crown land.
15. Except with leave of the Commission, clearing and site preparation, inclusive of work space and decking sites, must not occur within:
 - a. 100 meters of where water is diverted by a waterworks, water supply well or water storage reservoir;
 - b. an area containing a mineral lick, bald eagle, osprey, goshawk or great blue heron nest unless the mineral lick or nest is not damaged by activities authorized under this permit;
 - c. a permanent sample site on Crown Land used as a snow course;
 - d. an area that would require harvest or disturbance of whitebark pine trees; or
 - e. a wetland classified as W2, except to facilitate the crossing of that wetland.
16. Clearing and site preparation, inclusive of workspace, must not occur within a RMA except:
 - a. the pipeline right of way and temporary workspace, as shown on the construction plans;
 - b. to facilitate a stream or wetland crossing;
 - c. where it does not involve new clearing and existing clearings do not have a reestablished vegetative cover; or
 - d. with leave of the Commission.
17. Clearing and site preparation, inclusive of work space, must not occur within a wildlife tree retention area except:
 - a. as shown on the construction plans; or
 - b. with leave of the Commission.
18. Except as shown on the construction plans or with leave of the Commission, incremental clearing for extra work space or decking sites is not permitted within:
 - a. a wildlife habitat area;
 - b. an ungulate winter range; or
 - c. old growth management areas.
19. Except with leave of the Commission, incremental clearing for extra work space or decking sites is not permitted within the RRZ of streams with a riparian classification of S1-S3.
20. Clearing and site preparation must be confined to the area approved in the Certified Project Description of the associated Environmental Assessment Certificate.
21. Clearing and site preparation must be limited to the area necessary to safely construct the pipeline taking into account the influence of terrain, safe equipment operations, clearing debris, worker safety and egress, protection of adjacent infrastructure or environmental values and other conditions relevant to safe construction operations.

22. Clearing and site preparation, other than those identified in the construction plans referenced in Permissions, must be located on any previously disturbed areas located within the construction corridor unless:
 - a. a previously disturbed area is less than 2 hectares;
 - b. such clearing and site preparation is required to avoid one or more of the areas or features identified in Conditions 15, 16, 17 or 18; or
 - c. the permit holder is granted leave by the Commission to carry out such clearing and site preparation.
23. The permit holder must maintain vegetation and minimize stumping or ground disturbance within 10 metres of the high water mark of a fish bearing watercourse and delay grading of the banks of watercourses until immediately before construction of either pipeline crossings or crossings for vehicle access, except where necessary to address terrain related constraints, safe equipment operations, clearing debris, worker safety and egress, protection of adjacent infrastructure or environmental values, and other conditions relevant to safe construction operations. Appropriate erosion and sediment control structures must be installed as necessary to ensure debris and soil are not deposited into watercourses.
24. The permit holder must fall any tree that is harvested within its tree length of a stream or a wetland away from the stream or wetland, and must immediately remove any debris or soil deposited below the high water mark.
25. All harvested Crown timber within MLTC M02283, Prince George Forest District, must be marked with Timber Mark Number MTA 708;
26. Cutting Permit No. 10 under MLTC M02283 does not grant the permit holder the exclusive right to harvest Crown timber from the site. Authority to harvest some or all of the timber may be granted to other persons. The permit holder's right to harvest timber applies to any timber found on the site at the time they undertake harvesting activities.
27. Stumpage for Cutting Permit No. 10 will be calculated in accordance with the Interior Appraisal Manual as amended from time to time. In the current version of the Manual, stumpage will be determined in accordance with Table 6-3 (volume based).
28. The interior timber merchantability specifications and monetary waste billing requirements in the Provincial Logging Residue and Waste Measurement Procedures Manual, as amended from time to time, apply to any waste assessments required under Master License to Cut M02283.
29. The holder of Cutting Permit No. 10 must pay to the Province, stumpage and any waste billing determined in accordance with the terms of this permit.
30. The permit holder must not harvest more than 61.88 ha of new cut within the operating area.
31. The permit holder is permitted to fell any trees located on Crown land within 1.5 tree lengths of the area shown on the survey plan that are considered to be a safety hazard under the *Workers Compensation Act*, as amended from time to time, and must be felled in order to eliminate the hazard. Trees or portions of these trees that can be accessed from the site without causing damage to standing timber may be harvested.

Wildlife

32. The permit holder must not undertake any clearing activities during the migratory bird nesting period between May 1 and July 31 unless the area has been previously logged, brushed, or mowed.
33. Except with leave of the Commission, the permit holder must not undertake clearing or significant maintenance activities within a wetland when an active waterfowl nest is present within 200 metres of the pipeline right of way and work spaces in that wetland.
34. If a great blue heron rookery is discovered within 300 metres of the construction corridor, a mitigation plan must be prepared by a qualified professional and submitted to the satisfaction of the Commission, to effectively mitigate construction associated disturbance to the heron prior to commencing construction activities within 300 metres of the rookery. Any protocols, mitigation or monitoring associated with that plan must be implemented by the permit holder.

35. Except with leave of the Commission, the permit holder must not undertake clearing or significant maintenance activities within 200 meters of any active grizzly bear or black bear den that was identified by the survey conducted in accordance with condition 70, between November 1 and April 30.
36. Except with leave of the Commission, the permit holder must not undertake clearing or significant maintenance activities within 500 meters of any active wolverine den that was identified by the survey conducted in accordance with condition 70, between February 1 and August 1.
37. Except with leave of the Commission, the permit holder must not:
 - a. undertake clearing or significant maintenance activities within 200 metres of any fisher den that was identified by the survey conducted in accordance with condition 70; and
 - b. undertake construction or significant maintenance activities within 400 metres of any active fisher den that was identified by the survey conducted in accordance with condition 70, between March 15 and July 31.
38. When using aircraft to undertake activities associated with the permit, the permit holder must provide written instructions to the pilot specifying that flights must not, except in the event of an emergency situation:
 - a. directly approach, hover over, circle, or land near mountain goats, moose, elk, or caribou; or
 - b. directly approach, hover over or circle near, or land within 500 meters of known wolverine den sites between February 1 and June 30;
39. The permit holder must ensure that wildlife movement is not obstructed across the pipeline right of way area.
40. The permit holder must collect and store garbage in a manner that does not attract bears or other wildlife.

Terrain Stability, Acid Rock Drainage and Mineral Leaching

41. Prior to operating the pipeline, the permit holder must submit a report, to the satisfaction of the Commission, for the monitoring and maintenance of ground and slope stability on areas where the stability
 - a. may be affected by clearing or construction of the pipeline; or
 - b. may affect the safe operation of the pipeline.

The report must be prepared by a qualified professional and must include an assessment of and monitoring plan for any areas where karst or ground subsidence may be located.
42. Prior to construction the permit holder must submit an acid rock assessment and mitigation plan, to the satisfaction of the Commission, with respect to potentially acid generating (PAG) rock along the proposed pipeline route. The assessment and mitigation plan must include the:
 - a. the criteria used to classify acid rock drainage/metal leaching (ARD/ML) potential;
 - b. the process used to delineate PAG rock including desktop and field/laboratory assessments;
 - c. results of engineering evaluation of expected PAG rock locations and associated construction-related quantities;
 - d. additional planned characterization to complement initial assessment results;
 - e. protocols to be followed during construction to verify results of PAG characterization and engineering assessments;
 - f. a flowchart outlining material handling steps for confirmed PAG rock;
 - g. associated mitigation and monitoring programs for exposed in situ and disposed PAG rock;
 - h. mitigation selection criteria;
 - i. typical drawings and typical specifications for mitigation such as soil covers and rock slope face barriers (e.g., shotcrete and synthetic spray cover); and

- j. gradational specifications for cover layer barriers composed of glacial till and/or other materials.

The assessment and mitigation plan must be prepared by a qualified professional. The permit holder must implement any protocols, steps, mitigation measures, monitoring or recommended specifications in the assessment and mitigation plan that relate to items (e) through (j) above.

Stream, Wetland and Lake Crossings

- 43. Subject to sections 11 and 12 of the EPMR, crossings of non-fish bearing streams and wetlands must be constructed in accordance with the methods and any mitigations that are specified in the 9706458 Watercourse Crossing Table that has been submitted to the satisfaction of the Commission.
- 44. Subject to sections 11 and 12 of the EPMR, crossings of fish bearing streams and wetlands must be constructed in accordance with the timing, methods and any mitigations that are specified in the 9706458 Watercourse Crossing Table that that has been submitted to the satisfaction of the Commission. Any contingency method specified in the 9706458 Watercourse Crossing Table may only be utilized with leave of the Commission.
- 45. Open cut crossings of watercourses must be planned and conducted in accordance with the relevant detail in the 9706458 Watercourse Crossing Table that has been submitted to the satisfaction of the Commission, and the following requirements:
 - a. an open cut of a stream classified as S1, S2, S3, S4, S5 or S6 may only occur with leave of the Commission, unless the stream is frozen to its bed or is completely dry with no evidence of subsurface flow;
 - b. where the streambed consists of rocks, pebbles or coarse gravel overlaying finer material, this material must be removed and stockpiled separately above the high water mark of the stream for replacement during restoration;
 - c. Unless otherwise authorized by Fisheries and Oceans Canada, spawning gravels must not be disturbed when redds that contain eggs or alevins are present. The authorization must be provided to the Commission;
 - d. excavated materials must be contained using appropriate techniques, so that sediment-laden water and spoil do not re-enter the watercourse;
 - e. any sediment-laden trench water must be pumped onto stable surfaces in a manner that does not cause erosion of soils or release of suspended sediments to watercourses;
 - f. where feasible, aquatic vegetation and organic debris removed from the construction area must be salvaged and returned following trench backfilling; and
 - g. channels, banks and beds of streams or wetlands, including any disturbed stable natural material must be restored, to the extent practicable, to the structure and conditions that existed before the crossing construction was initiated. Fish streams must be restored based on pre-construction surveys, including restoration of areas containing rearing potential with adequate stream depth and in-stream structures and restoration of spawning areas with gravel placement.
- 46. Open cut crossings of wetlands must be planned and conducted in accordance with the relevant detail in the 9706458 Watercourse Crossing Table that has been submitted to the satisfaction of the Commission, and the following requirements:
 - a. where the wetland substrate consists of rocks, pebbles or coarse gravel overlaying finer material, this material must be removed and stockpiled separately above the high water mark of the wetland for replacement during restoration;

- b. materials referred to in a) must be excavated and stockpiled in a manner that minimizes sediment dispersal within the wetland and must be replaced in a manner that minimizes disturbance to the wetland following pipeline installation;
 - c. channels, banks and beds of wetlands, including any disturbed stable natural material, must be restored, to the extent practicable, to the structure and conditions that existed before the crossing construction was initiated; and
 - d. excavated materials must be contained using appropriate techniques, so that that sediment-laden water and spoil do not re-enter the wetland; and
 - e. any sediment-laden trench water must be pumped onto stable surfaces in a manner that does not cause erosion of soils or release of suspended sediments to watercourses.
47. Flow isolation crossings must be planned and conducted in accordance with the relevant detail in the 9706458 Watercourse Crossing Table that that has been submitted to the satisfaction of the Commission, and in accordance with b to f of condition 45 and the following additional requirements:
- a. crossings of fish-bearing streams may commence only after confirming that sufficient equipment and supplies are available to complete the crossing in an efficient and timely manner;
 - b. crossing construction within the stream channel, including the location and operation of any equipment, must be isolated from water flowing in the stream;
 - c. activities must be assessed by a qualified professional for suspension if high stream flows present an increased risk to effectively completing the intended crossing installation technique; the option deemed by the qualified professional as the lower risk should be implemented;
 - d. welding, coating, weighting and, where applicable testing, of the pipe must be completed prior to commencement of trenching within fish-bearing water bodies;
 - e. water from flumes, pump-arounds, diversions, or other methods must be released to downstream areas using dissipation structures to avoid causing erosion or sediment release;
 - f. except with leave of the Commission, pump intakes must not disturb beds of streams or wetlands except as necessary to ensure safe installation and operation of equipment and must be screened with maximum mesh sizes and approach velocities in accordance with the Fisheries and Oceans Canada "Freshwater Intake End-of-Pipe Fish Screen Guideline";
 - g. water flows downstream of in-stream construction sites must be maintained consistent with upstream flows; and
 - h. ditch plugs must be maintained at or near the banks of the crossing and left in place until the crossing has been initiated.
48. Prior to commencing construction on any pipeline stream crossing, the permit holder must:
- a. identify any new streams not described in the 9706458 Watercourse Crossing Table ;
 - b. conduct the field work needed to complete stream classifications and identify the fish species presence for that stream, including any required confirmation of fish species presence in streams that were surveyed prior to issuance of this permit, and
 - c. submit the results of the field work required under (b) to the satisfaction of the Commission. The results must clearly identify where: 1) salmonids, and 2) Dolly Varden and Bull Trout spawning sites were found and what management and mitigation measures will be employed for each in order to minimize impacts to these species and spawning sites.
49. Construction or maintenance activities within a fish bearing stream or wetland must occur:
- a. during the applicable reduced risk work windows as specified in the Region 7 Omineca – Reduced Risk Timing Windows for Fish and Wildlife;

- b. in accordance with alternative timing and associated mitigation recommended by a qualified professional and accepted by the Commission; or
 - c. in accordance with an authorization or letter of advice from Fisheries and Oceans Canada that is provided to the Commission.
- 50. Vegetable based hydraulic oil must be used in hydraulic machinery conducting work within a stream or wetland.
- 51. Equipment to be used in or adjacent to a stream, lake or wetland must be clean or otherwise free of external grease, oil or other fluids, excessive muds, soil and vegetation, prior to entering the waterbody, to the extent practicable.
- 52. Within a RMA, generators and other stationary equipment that require refueling must be situated in secondary containment capable of containing the fuel capacity of the generators.
- 53. Fuel storage, equipment servicing or fueling must not occur within a RMA.
- 54. Except with leave of the Commission, prior to construction activities in a stream classified as S1, S2, S3 or S4; or the RRZ of a stream classified as S1, S2, S3, or a S4 stream, the permit holder must develop a Water Quality Monitoring Program to the satisfaction of the Commission. The Water Quality Monitoring Program must:
 - a. be developed, implemented and supervised by a qualified professional;
 - b. be consistent with the Ministry of Environment's approved water quality guidelines;
 - c. include environmental water quality monitoring, including field monitoring of turbidity, pH and total suspended solids for potential exceedance of BC Water Quality Guidelines for the protection of aquatic life or, where they exist, the Water Quality Objectives for a specific watercourse, as they may be amended from time to time;
 - d. require pre and post construction monitoring upstream (baseline) and downstream of the location of potential disturbance from construction activities;
 - e. require sampling that is representative of water quality variation across the stream; and
 - f. require documentation of pre and post construction monitoring completed under the Water Quality Monitoring Program.
- 55. Except with leave of the Commission, prior to construction activities in a wetland, the permit holder must develop a wetland Water Quality Monitoring Program to the satisfaction of the Commission. The wetland Water Quality Monitoring Program must:
 - a. be developed, implemented and supervised by a qualified professional;
 - b. be consistent with the Ministry of Environment's approved water quality guidelines;
 - c. include environmental water quality monitoring for potential exceedance of the BC Water Quality Guidelines for the protection of aquatic life or, where they exist, the Water Quality Objectives for a specific wetland, as they may be amended from time to time;
 - d. where appropriate, require pre and post construction monitoring proximal to the location of potential disturbance from construction activities;
 - e. require sampling that is representative of water quality variation across the pipeline right of way through wetlands with a riparian classification of W1; and
 - f. require documentation of pre and post construction monitoring completed under the Water Quality Monitoring Program.
- 56. The permit holder must implement any Water Quality Monitoring Program developed pursuant to conditions 54 and 55 and do each of the following:
 - a. provide records of documentation of all pre and post construction monitoring to the Commission;

- b. immediately report to the Commission any exceedance of the BC Water Quality Guidelines for aquatic life or, where they exist, the Water Quality Objectives for a specific watercourse or wetland that persist for a period of 24 hours or greater, relative to the baseline; and
 - c. immediately take steps to address the factors producing any exceedance of the BC Water Quality Guidelines for aquatic life, relative to the baseline, should any exceedance persist for a period of 24 hours or greater, and where such steps do not result in addressing the turbidity exceedance, promptly suspend construction operations at the site of activities causing the exceedance until effective solutions, to the satisfaction of the Commission, have been developed and implemented.
57. As part of the post construction monitoring program, the permit holder must, for all watercourse and wetland crossings:
- a. inspect and provide a report to the Commission that includes assessment of:
 - i. RMA stability;
 - ii. erosion risk to the watercourse;
 - iii. vegetation re-establishment within the RMA, including species composition, percent establishment, and presence of invasive plant species; and
 - iv. identify where contingency measures may be required to address the items in i, ii or iii; and
 - v. where contingency measures are required, the permit holder must develop and implement an appropriate plan to the satisfaction of the Commission.
58. The permit holder must construct, maintain, and deactivate all mechanical stream crossings constructed for access within the operating area according to the following requirements, as applicable:
- a. Only bridges, culverts, ice bridges, or snow fills may be constructed at stream crossings.
 - b. Permanent bridges must be designed and fabricated in compliance with:
 - i. the Canadian Standards Association Canadian Bridge Design Code, CAN/CSA-S6; and
 - ii. soil property standards, as they apply to bridge piers and abutments; set out in the Canadian Foundation of Engineering Manual.
 - c. Except with leave of the Commission,
 - i. any culverts used must be designed and fabricated in compliance with the Canadian Standards Association CSA G401, Corrugated Steel Pipe Products; or the Canadian Standards Association Standard CSA B1800, Section B182.2, Plastic Non-pressure Pipe Compendium, as applicable; and
 - ii. Any pipe installed in lieu of a culvert must be of at least equivalent standard and strength as any culvert specified above.
 - d. Except with leave of the Commission, bridges and culverts must meet the criteria set out in (i), (ii), or (iii) below:
 - i. the bridge or culvert is designed to pass the highest peak flow of the stream that can reasonably be expected within the return periods set out in column 2 the table below for the period the permit holder anticipates the crossing structure will remain on site, as set out in column 1 in the table below.

Column 1	Column 2
Anticipated period crossing structure will remain on site	Peak flow period
Bridge or culvert, 3 years or less	10 years

Bridge other than a bridge within a community watershed, more than 3 years but less than 15	50 years
Bridge within a community watershed, more than 3 years	100 years
Bridge, 15 years or more	100 years
Culvert, more than 3 years	100 years

- ii. the bridge, or any component of the bridge:
 - (1) is designed to pass expected flows during the period the bridge is anticipated to remain on the site;
 - (2) is constructed, installed and used only in a period of low flow; and
 - (3) is removed before any period of high flow begins.
- iii. the culvert:
 - (1) is a temporary installation, and the permit holder does not expect to subsequently install a replacement culvert at that location;
 - (2) is not installed in a stream, when the stream contains fish;
 - (3) is sufficient to pass flows that occur during the period the culvert remains on the site;
 - (4) is installed during a period of low flow; and
 - (5) is removed before any period of high flow begins.
- e. Snow fills must consist of clean snow and may only be located on streams that are dry or frozen to the bottom during the period of construction, maintenance and use. Where periodic thaws are anticipated, measures must be in place to allow meltwater to pass through the snow fill, to ensure movement of fish is not impeded, and to prevent pooling on the upstream side of the snow fill. Snow fill and any installed culverts must be removed prior to spring snow melt.
- f. Ice bridges on fish bearing streams may only be constructed where sufficient water depth and stream flows prevent the bridge structure from coming in contact with the stream bottom.
- g. Water applied to construct an ice bridge on a water body must be sourced in accordance with the *Water Sustainability Act* unless:
 - i. the water body is a stream with a stream channel width of at least 5 metres and is not designated as a sensitive stream under the *Fish Protection Act*, or has a riparian class of W1, W3, or L1;
 - ii. the water is sourced from the same water body proximal to the location on which the ice bridge is constructed;
 - iii. the water body is not within the boundaries of a public park;
 - iv. pump intakes do not disturb beds of streams or wetlands except as necessary to ensure safe installation and operation of equipment and are screened with a maximum mesh size and approach velocity in accordance with the Fisheries and Oceans Canada Freshwater Intake End-of-Pipe Fish Screen Guideline; and
 - (1) where the water body is a stream, the flow of water in the stream at the time and location of pumping exceeds 60 litres per second and the instantaneous pumping rate does not exceed 1% of the water flowing in the water body at the time and location the pumping occurs; or

- (2) where the water body is a lake or pond, the cumulative volume of water withdrawn does not exceed 10 cm of lake or pond depth, calculated as the product of lake or pond surface area x 10 cm;
- v. records of water withdrawal and corresponding streamflow measurements are maintained and provided to the Commission upon request; and
- vi. bridge or culvert abutments, footings and associated scour protection must be located outside the natural stream channel and must not constrict the channel width.

Engineering

- 59. The permit holder must not undertake any pipeline crossing work at the Salmon River East crossing KP 12.7, unless it has collected bathymetric survey data on the water body in the vicinity of the crossing location.
- 60. The permit holder must construct all pipeline stream crossings in accordance with the drawings submitted with its application dated May 27, 2014.
- 61. At least 90 days prior to pipe-stringing activities in areas where geohazards are present, the permit holder must submit, to the satisfaction of the Commission, a geohazard assessment that includes:
 - a. a description of the geohazard(s) identified that have reasonable probability of impacting the pipeline, with the location of each geohazard illustrated on either a map or in a table; and
 - b. specific design measures, such as materials to be used, installation procedures, protective structures, depth of cover, and monitoring that will be implemented to mitigate the geohazard(s) identified in (a).
- 62. Before beginning construction activities on any crossing of a road by the pipeline, the permit holder must submit, to the satisfaction of the Commission, information, in tabular or other format, describing:
 - i. the crossing location;
 - ii. a summary, including any outcomes, of engagement with the road tenure holder, primary road user or road owner;
 - iii. whether the crossing will be constructed using trenchless methods;
 - iv. the approximate dates and maximum time that traffic at the crossing is expected to be restricted or obstructed;
 - v. the pipeline specifications at the crossings, including pipeline diameter, wall thickness, depth of cover and grade; and
 - vi. maximum vehicular weights expected at the crossing location.
- 63. The permit holder must construct any road crossing consistent with information accepted by the Commission under condition 62.
- 64. At least 45 days prior to commencement of welding, the permit holder must submit to the satisfaction of the Commission, a fracture arrest and mitigation program. The permit holder must implement the program.
- 65. Where the hoop stress during the pressure test exceeds 100% SMYS, the permit holder must submit to the Commission the P-V test and the pressure test results before beginning operation of a pipeline.
- 66. Except with leave of the Commission, within 12 months of commencement of gas transmission to the metering station at the terminus facility, the permit holder must submit to the Commission the results and interpretation of a high resolution in-line inspection tool run to establish an accurate position of the pipeline (GEOPIG) and to detect pipe deformation and defects.

Archeology

- 67. An Archaeological Impact Assessment (AIA) must be completed for all pipeline right of way and work space areas prior to commencement of construction activities.

68. The permit holder must, as soon as practicable, submit an AIA report to the Commission and provide a copy of the AIA report to the First Nations listed in condition 8.
69. If artifacts, features, materials or things protected under section 13(2) of the *Heritage Conservation Act* are identified the permit holder must, unless the permit holder holds a permit under section 12 of the *Heritage Conservation Act* issued by the Commission in respect of that artifact, feature, material or thing:
 - a. immediately cease all work in the vicinity of the artifacts, features, materials or things;
 - b. immediately notify the Commission; and
 - c. refrain from resuming work in the vicinity of the artifacts, features, materials or things except in accordance with an appropriate mitigation plan that has been prepared in accordance with the *Heritage Conservation Act* and approved by the Commission.

Environment

70. Prior to commencing clearing or site preparation on any portion of the pipeline right of way or work space, the permit holder must conduct a survey identifying any:
 - a. Bear, fisher or wolverine dens located within 200 metres of the pipeline right of way and work space, and within the construction corridor;
 - b. vascular plants, mosses or lichens listed under the *Species at Risk Act* as endangered, threatened or special concern and located within the construction corridor; and
 - c. individual plants, plant communities or residences species identified as species at risk in a subsisting order issued under the *Forest and Range Practices Act* or the *Oil and Gas Activities Act* and located within or adjacent to the construction corridor.

The permit holder must submit the survey results, along with site-specific mitigation plans for any of items identified in a to c that may be impacted by construction activities, to the satisfaction of the Commission prior to notice of construction start.

71. Subject to obtaining any required land owner permission, the permit holder must, before and after conducting construction activities, have the water in each water well systems located within 100 meters of the approved right of way area sampled under the direction of a qualified specialist and analyzed by an accredited laboratory facility using standard and accepted field sampling and analyzing procedures, and provide a report that includes the complete test results and analysis of the test to the Commission and to any land owner of the land on which the water well system is located. For each test, the analysis must include:
 - a. well yields and water level responses, as applicable;
 - b. basic water chemistry, including anions, cations, pH, alkalinity, SO₄;
 - c. turbidity, total dissolved solids, total suspended solids, and true colour of water well user's water;
 - d. dissolved methane and higher chain hydrocarbons, if such substances are detected; and
 - e. isotope analysis of dissolved methane, if methane is detected.
72. In addition to water testing and reporting required by condition 71, and subject to obtaining any required land owner permission, the permit holder must, before and after any blasting operations, have the water in each water well system located within 200 meters of the blasting area sampled under the direction of a qualified specialist and analyzed by an accredited laboratory facility for nitrate levels, and provide a report that includes the complete test results and analysis of the test to the Commission and to any land owner of the land on which the water well system is located.
73. Construction activities must not result in rutting, compaction or erosion of soils that cannot be reasonably rehabilitated to similar levels of soil productivity that existed on the site prior to the construction activities taking place.

74. The permit holder must, as soon as practicable, restore recreation sites, recreation trails or recreation facilities established or authorized under the *Forest and Range Practices Act* that are affected by construction activities to their pre-construction condition to the satisfaction of the Commission.
75. The permit holder must, as soon as practicable, restore range developments defined under the *Forest and Range Practices Act* that are affected by construction activities to their pre-construction condition to the satisfaction of the Commission.
76. At the completion of construction activities the permit holder must restore any identifiable trails used by trappers that were impacted by pipeline construction, to the level of access that existed prior to construction, if the location of the trail is made known to the permit holder by the registered trapper for the area specific to the trail or the Commission prior to the permit holder's notice of construction start.
77. In all locations where run-off from the area of the pipeline right of way or work space may flow into a watercourse, the permit holder must contour and stabilize banks and approach slopes and install berms, silt fences, cross ditches, or implement other alternative effective measures as appropriate to minimize erosion and avoid sediment deposit into the watercourse.
78. For all locations where soil cut slopes are greater than 10 metres in height, or where fine-grained soils are anticipated, the permit holder must design and implement soil cut slope support provisions in accordance with the direction of a qualified specialist.
79. The permit holder must undertake dust control measures to ensure that dust resulting from construction activities does not affect safe travel on a road or significantly impair the use and enjoyment of lawfully occupied permanent dwellings, significant public use areas or other similar areas.
80. The permit holder must undertake reasonable measures to mitigate noise from construction activity that has the potential to affect public safety or significantly impair the use and enjoyment of lawfully occupied permanent dwellings, significant public use areas during periods of use or other similar areas. Unless otherwise directed by the Commission, construction noise or anticipated construction noise in such areas occurring between 7pm and 7am must be consistent with the parameters contained in the Commission's British Columbia Noise Control Best Practice Guideline, as amended from time to time.
81. Upon completion of the construction of the pipeline, the permit holder must:
 - a. re-vegetate, using seed or vegetative propagules of an ecologically suitable species or implement other measures, to the satisfaction of the Commission, that promote the restoration of the wildlife habitat that existed on the area before the commencement of any works authorized under this permit, and stabilize the soil if it is highly susceptible to erosion; and,
 - b. take reasonably practicable measures to limit or prevent vehicular access to and along the pipeline right of way.
82. The permit holder must adhere to all timber hauling restrictions pertaining to the management of beetle infested timber recommended by the BC Ministry of Forests, Lands, and Natural Resource Operations, unless otherwise specified by the Commission.

General

83. The rights granted by this permit in relation to unoccupied Crown land are subject to all subsisting grants to or rights of any person made or acquired under the *Coal Act, Forest Act, Land Act, Mineral Tenure Act, Petroleum and Natural Gas Act, Range Act, Water Sustainability Act or Wildlife Act*, or any extension or renewal of the same.
84. The permit holder must not assign, sublicense or transfer this permit or permit any person to use or occupy any Crown land within the operating area, other than its employees, contractors, or representatives, without the Commission's written consent.
85. The permit holder must ensure that any Crown land within the operating area is maintained in a condition so as to minimize hazards, including but not limited to hazards associated with storage of materials and equipment.

86. The permit holder must ensure that any Crown land within the operating area is maintained free of garbage, debris and unused equipment.

ADVISORY GUIDANCE

1. Appropriate *Land Act* tenure will be issued upon acceptance of the post construction plan. Submission of the original application and submission of the post construction plan is considered application for all subsequent *Land Act* tenures; no further applications for replacement tenure is required.
2. Trenchless crossing must be planned and conducted in accordance with the Directional Drilling Procedures and Drilling Mud Release Contingency Plan and the relevant detail in the Typical Drawings of the Environmental Management Plan and any plans accepted by the Commission under condition 43 and 44 above.
3. The permit holder must avoid all archaeology sites unless issued a site alteration permit by the Commission, pursuant to section 12 of the *Heritage Conservation Act*.

DEFINITIONS

Unless the condition or its context indicates otherwise, the terms in this permit have the same meaning as defined in the *Oil and Gas Activities Act* or the regulations under that Act.

Unless the condition or its context indicates otherwise, the terms in this permit have the same meaning as defined in the *Oil and Gas Activities Act* or the regulations under that Act.

“**additional work space**” work space, other than temporary work space, needed to facilitate pipeline construction. These include extra workspaces and decking sites.

“**construction activities**” or “construction” means clearing, site preparation, trench excavation, pipe installation and any other activities required to construct a pipeline.

“**construction corridor**” means, the area of land extending on either side of the centerline of the pipeline as indicated in the application for this permit, and is labelled as either “construction corridor” or “review corridor” on the construction plans.

“**environmental management plan**” means, the environmental management plan as revised, that supports the application for this permit, the relevant components of which are acceptable to the Commission.

“**qualified professional**” means a member in good standing of a profession regulated in British Columbia and who is recognized by that profession as being qualified to work in area of practice for which an opinion or advice is required.

“**qualified specialist**” means a person who possesses an appropriate combination of formal education, knowledge, skills, and experience to conduct a technically sound and rational assessment for the area of practice, and be familiar with applicable regulations, standards, policies, protocols and guidelines.

“**residence**” means a dwelling-place, such as a den, nest or other similar area or place, that is occupied or habitually occupied by one or more individuals during all or part of their life cycles, including breeding, rearing, staging, wintering, feeding or hibernating.

“**RRZ**” means Riparian Reserve Zone;

“**RMA**” means Riparian Management Area;

“**road**” means, an existing road:

- a. that is a highway as defined in the *Transportation Act* and is currently being maintained by an agency of the provincial government or a local government, either directly or by agreement,
- b. that is a Forest Service Road,
- c. for which there is a subsisting permit under the *Forest Act*, *Land Act* or *Oil and Gas Activities Act*,
- d. that is an industrial road as defined under the *Industrial Roads Act*, or

e. that is privately owned.

“temporary work space” means the work space that runs adjacent to the pipeline right of way (generally 7 – 13 meters wide along the length of either side of the pipeline right of way), which may be used to accommodate vehicle traffic as well as stringing, welding and placing pipe.

“work space” includes both temporary work space and additional work space.



Ken Paulson, P. Eng.
Chief Operating Officer
Authorized Signatory
Commission Delegated Decision Maker

pc: Scott Land & Lease Co. Ltd.

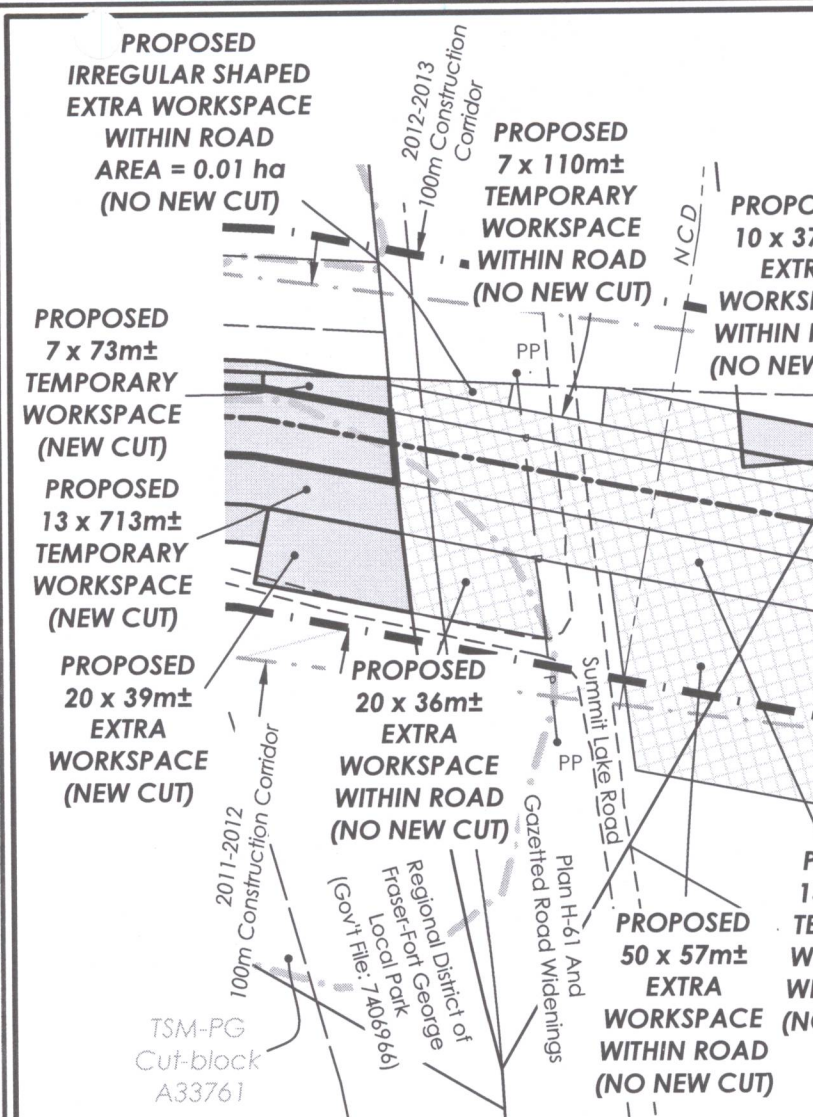
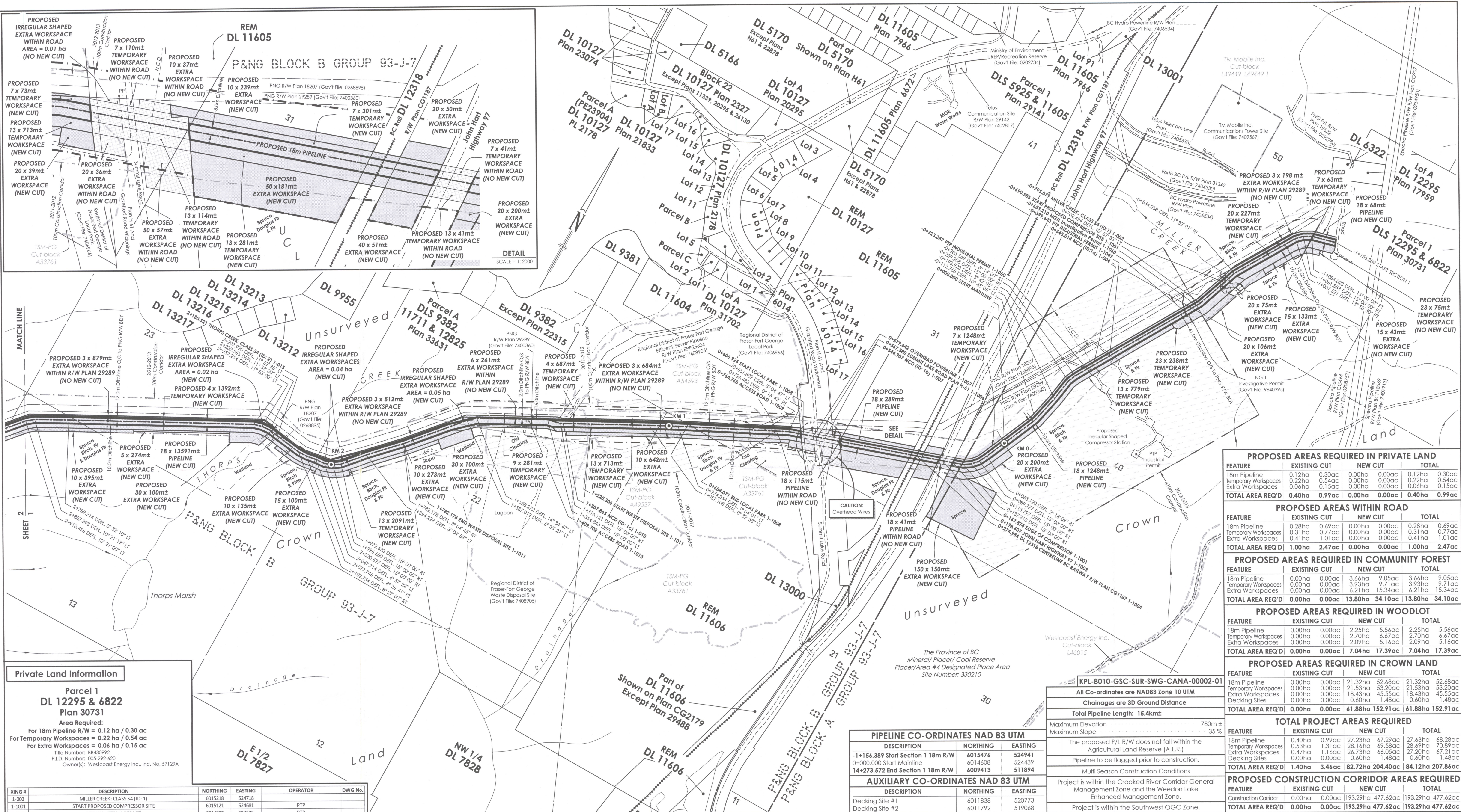
OGC: 9706458

FLNRO: Prince George Forest District

OGC, First Nations (Carrier Sekani Tribal Council, Lheidli T'enneh Band, McLeod Lake Indian Band, Nak'azdli Band and West Moberly First Nations)

Environmental Assessment Office

WorkSafe BC



PROPOSED AREAS REQUIRED IN PRIVATE LAND					
FEATURE	EXISTING CUT	NEW CUT	NEW CUT	TOTAL	TOTAL
18m Pipeline	0.12ha	0.30ac	0.00ha	0.00ac	0.12ha 0.30ac
Temporary Workspaces	0.22ha	0.54ac	0.00ha	0.00ac	0.22ha 0.54ac
Extra Workspaces	0.06ha	0.15ac	0.00ha	0.00ac	0.06ha 0.15ac
TOTAL AREA REQ'D	0.40ha	0.99ac	0.00ha	0.00ac	0.40ha 0.99ac

PROPOSED AREAS WITHIN ROAD					
FEATURE	EXISTING CUT	NEW CUT	NEW CUT	TOTAL	TOTAL
18m Pipeline	0.28ha	0.69ac	0.00ha	0.00ac	0.28ha 0.69ac
Temporary Workspaces	0.31ha	0.77ac	0.00ha	0.00ac	0.31ha 0.77ac
Extra Workspaces	0.41ha	1.01ac	0.00ha	0.00ac	0.41ha 1.01ac
TOTAL AREA REQ'D	1.00ha	2.47ac	0.00ha	0.00ac	1.00ha 2.47ac

PROPOSED AREAS REQUIRED IN COMMUNITY FOREST					
FEATURE	EXISTING CUT	NEW CUT	NEW CUT	TOTAL	TOTAL
18m Pipeline	0.00ha	0.00ac	3.66ha	9.05ac	3.66ha 9.05ac
Temporary Workspaces	0.00ha	0.00ac	3.93ha	9.71ac	3.93ha 9.71ac
Extra Workspaces	0.00ha	0.00ac	6.21ha	15.34ac	6.21ha 15.34ac
TOTAL AREA REQ'D	0.00ha	0.00ac	13.80ha	34.10ac	13.80ha 34.10ac

PROPOSED AREAS REQUIRED IN WOODLOT					
FEATURE	EXISTING CUT	NEW CUT	NEW CUT	TOTAL	TOTAL
18m Pipeline	0.00ha	0.00ac	2.25ha	5.56ac	2.25ha 5.56ac
Temporary Workspaces	0.00ha	0.00ac	2.70ha	6.67ac	2.70ha 6.67ac
Extra Workspaces	0.00ha	0.00ac	2.09ha	5.16ac	2.09ha 5.16ac
TOTAL AREA REQ'D	0.00ha	0.00ac	7.04ha	17.39ac	7.04ha 17.39ac

PROPOSED AREAS REQUIRED IN CROWN LAND					
FEATURE	EXISTING CUT	NEW CUT	NEW CUT	TOTAL	TOTAL
18m Pipeline	0.00ha	0.00ac	21.32ha	52.68ac	21.32ha 52.68ac
Temporary Workspaces	0.00ha	0.00ac	21.53ha	53.20ac	21.53ha 53.20ac
Extra Workspaces	0.00ha	0.00ac	18.43ha	45.55ac	18.43ha 45.55ac
Decking Sites	0.00ha	0.00ac	0.60ha	1.48ac	0.60ha 1.48ac
TOTAL AREA REQ'D	0.00ha	0.00ac	61.88ha	152.91ac	61.88ha 152.91ac

TOTAL PROJECT AREAS REQUIRED					
FEATURE	EXISTING CUT	NEW CUT	NEW CUT	TOTAL	TOTAL
18m Pipeline	0.40ha	0.99ac	27.23ha	67.29ac	27.63ha 68.28ac
Temporary Workspaces	0.53ha	1.31ac	28.16ha	69.58ac	28.69ha 70.89ac
Extra Workspaces	0.47ha	1.16ac	26.73ha	66.05ac	27.20ha 67.21ac
Decking Sites	0.00ha	0.00ac	0.60ha	1.48ac	0.60ha 1.48ac
TOTAL AREA REQ'D	1.40ha	3.46ac	82.72ha	204.40ac	84.12ha 207.86ac

PROPOSED CONSTRUCTION CORRIDOR AREAS REQUIRED					
FEATURE	EXISTING CUT	NEW CUT	NEW CUT	TOTAL	TOTAL
Construction Corridor	0.00ha	0.00ac	193.29ha	477.62ac	193.29ha 477.62ac
TOTAL AREA REQ'D	0.00ha	0.00ac	193.29ha	477.62ac	193.29ha 477.62ac

Private Land Information

Parcel 1 DL 12295 & 6822 Plan 30731
 Area Required:
 For 18m Pipeline R/W = 0.12 ha / 0.30 ac
 For Temporary Workspaces = 0.22 ha / 0.54 ac
 For Extra Workspaces = 0.06 ha / 0.15 ac
 Title Number: 88430992
 P.I.D. Number: 005-292-620
 Owner(s): Westcoast Energy Inc., Inc. No. 57129A

XING #	DESCRIPTION	NORTHING	EASTING	OPERATOR	DWG No.
1-1002	MILLER CREEK CLASS S4 (ID: 1)	6015218	524718		
1-1001	START PROPOSED COMPRESSOR SITE	6015121	524681	PTP	
1-1049	PTP INDUSTRIAL PERMIT	6014872	524535	PTP	
1-1004	NCD (ID: 1a)	6014825	524508		
1-1050	PTP INDUSTRIAL PERMIT	6014807	524497	PTP	
1-1001	END PROPOSED COMPRESSOR SITE	6014384	524294	PTP	
1-1060	INVESTIGATIVE PERMIT	6015089	524663	NGTL	
1-1003	JOHN HART HIGHWAY 97	6014374	524265	MOTH	
1-1004	DL 12318 CENTRELINE BC RAILWAY R/W PLAN CG1187	6014349	524193	BC RAIL	
1-1007	NCD (ID: 1b)	6014262	523959		
1-1006	SUMMIT LAKE ROAD PLAN H-61	6014254	523918	MOTH	
1-1007	OVERHEAD POWERLINE	6014250	523907	BC HYDRO	
1-1008	START LOCAL PARK	6014242	523881	R. D. of Fraser Fort George	
1-1008	END LOCAL PARK	6014211	523807	R. D. of Fraser Fort George	
1-1009	ACCESS ROAD	6014177	523740	PTP	
1-1011	START WASTE DISPOSAL SITE	6013964	523335	R. D. of Fraser Fort George	
1-010	NCD (ID: 1c)	6013926	523264		
1-1013	ACCESS ROAD	6013887	523171	MOF	
1-1011	END WASTE DISPOSAL SITE	6013649	522894	R. D. of Fraser Fort George	
1-015	THORPS CREEK CLASS S4 (ID: 2)	6013488	522567		

NOTES:
 All underground facilities shown were located with electronic locators and may be subject to error. Actual locations should be verified independently by the contractor in field prior to any crossings. Plus chainages shown are horizontal distances measured along the surveyed boundary of the right-of-way.

LEGEND:

Drainage shown thus: [Symbol]

Powerpole & guy wire shown thus: [Symbol]

Seismic Line shown thus: [Symbol]

2012-2013 Construction Corridor shown thus: [Symbol]

Buried Pipe shown thus: [Symbol]

2011-2012 Construction Corridor No Longer Required shown thus: [Symbol]

Fence line shown thus: [Symbol]

Crossing Numbers shown thus: 1-1000

Powerpole & guy wire shown thus: [Symbol]

Cut block/Woodlot boundary [Symbol]

Top of bank/break in slope [Symbol]

Above ground pipe shown thus: [Symbol]

A.L.R. boundary shown thus: [Symbol]

2013 KM Markers shown thus: [Symbol]

NVC - Non Visible Channel

Vegetation Change shown thus: [Symbol]

Logging Trail shown thus: [Symbol]

Forest Service Road shown thus: [Symbol]

Buried Cable shown thus: [Symbol]

Overhead Powerlines shown thus: [Symbol]

Community Forest boundary: [Symbol]

BC - Begin Curve; EC - End Curve

Hooked Parcel shown thus: [Symbol]

No.	REVISIONS	BY	DATE	CKD
0	Original Plan Issued	JMS/WC	13/10/15	BP/CD
1	Multiple Updates	WC/OT	13/11/22	BP
2	Removed Temp Workspace Over Facility Site	JMS	13/11/28	BP
3	Updated Background & Water Crossings	JMS	15/12/03	BP

PIPELINE CO-ORDINATES NAD 83 UTM			
DESCRIPTION	NORTHING	EASTING	
-1+156.389 Start Section 1 18m R/W	6015476	524941	
+0+000.000 Start Mainline	6014608	524439	
+1+273.572 End Section 1 18m R/W	6009413	511894	

AUXILIARY CO-ORDINATES NAD 83 UTM			
DESCRIPTION	NORTHING	EASTING	
Decking Site #1	6011838	520773	
Decking Site #2	6011792	519068	

KPL-8010-GSC-SUR-SWG-CANA-00002-01

All Co-ordinates are NAD83 Zone 10 UTM
 Chainages are 3D Ground Distance
 Total Pipeline Length: 15.4km±

Maximum Elevation: 780m ±
 Maximum Slope: 35 %

The proposed P/L R/W does not fall within the Agricultural Land Reserve (A.L.R.)
 Pipeline to be flagged prior to construction.

Multi Season Construction Conditions

Project is within the Crooked River Corridor General Management Zone and the Weedon Lake Enhanced Management Zone.
 Project is within the Southwest OGC Zone.

PACIFIC TRAIL PIPELINES MANAGEMENT INC.

PLAN SHOWING PROPOSED 18m PIPELINE FROM PARCEL 1 DL 12295 & 6822 PLAN 30731 (a-50-A, 93-J-7) TO N 1/2 DL 2549 (d-76-K, 93-J-2)

BCGS 931.026, 93J.027

can-am geometrics

Scale: 1:5,000

50 100 200 300 METRES

SHEET 1 OF 4

APPROVED BY: [Signature]

PROJECT ENGINEER: [Signature]

FIELD: CAN-AM FILE: N20120168

CLIENT FILE: [Blank]

A/E No.: [Blank]

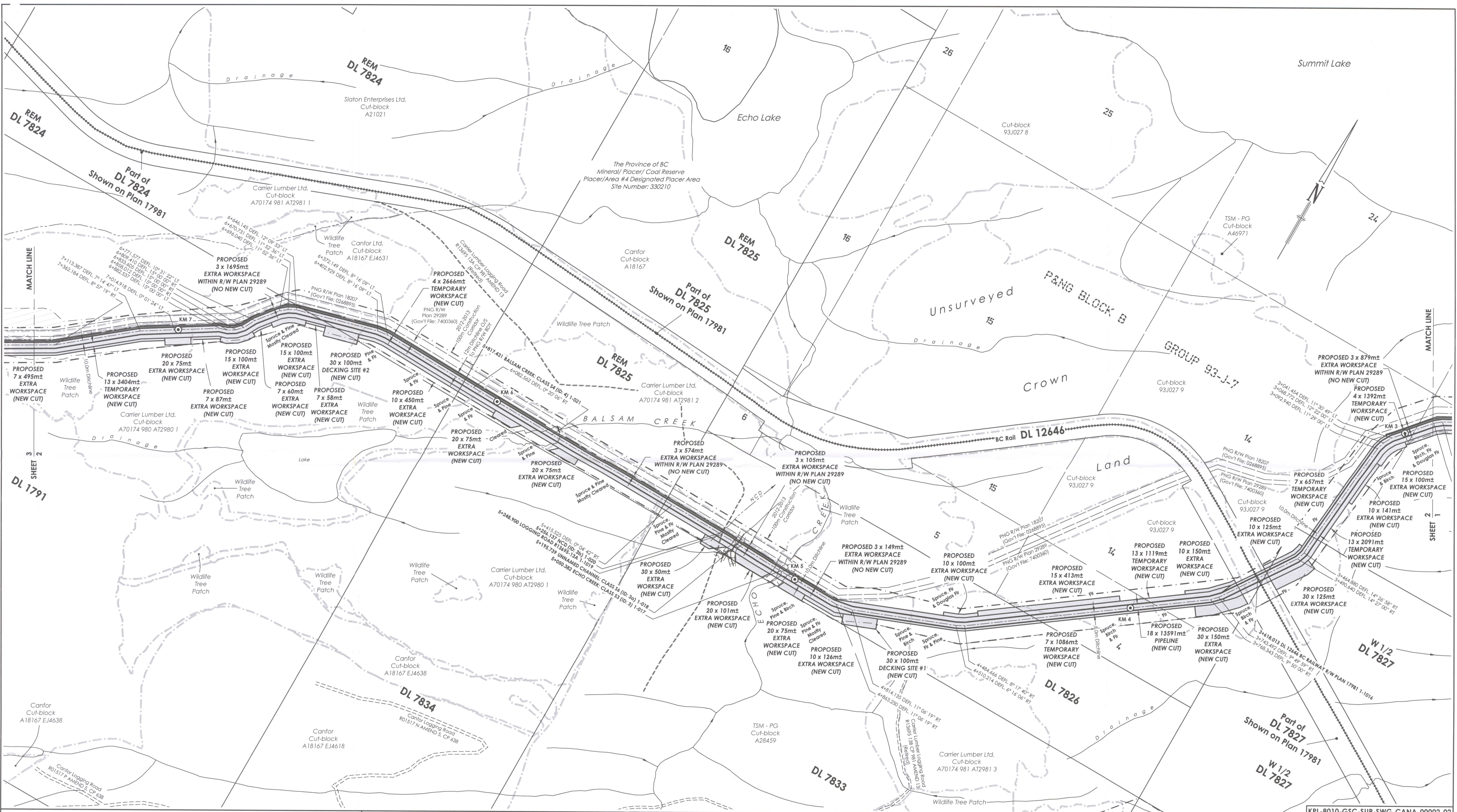
CAD FILE: N20120168PLSec1_Rev3

LAND FILE: [Blank]

DATE: 13/10/15

EPASS: 10044857

REVISION: 3



XING #	DESCRIPTION	NORTHING	EASTING	OPERATOR	DWG No.
1-1016	DL 12646 BC RAILWAY R/W PLAN 17981	6012526	521704	BC RAIL	
1-017	ECHO CREEK: CLASS S3 (ID: 3)	6011848	520503		
1-018	UNNAMED CHANNEL: CLASS S6 (ID: 3a)	6011849	520358		
1-1019	LOGGING ROAD R13695-13A	6011849	520305	CARRIER LUMBER	
1-020	NCD (ID: 3b)	6011849	520298		
1-021	BALSAM CREEK: CLASS S4 (ID: 4)	6011854	519737		

NOTES:
 All underground facilities shown were located with electronic locators and may be subject to error. Actual locations should be verified independently by the contractor in field prior to any crossings. Plus chainages shown are horizontal distances measured along the surveyed boundary of the right-of-way.

LEGEND:

Drainage shown thus:

Seismic Line shown thus:

2012-2013 Construction Corridor shown thus:

Buried Pipe shown thus:

2011-2012 Construction Corridor No Longer Required shown thus:

Fence line shown thus:

Crossing Numbers shown thus: 1-1000

Powerpole & guy wire shown thus: PP

Cut block/Woodlot boundary:

Top of bank/break in slope:

Above ground pipe shown thus:

A.L.R. boundary shown thus: A.L.R.

2013 KM Markers shown thus:

NVC - Non Visible Channel

Vegetation Change shown thus:

Logging Trail shown thus:

Forest Service Road shown thus:

Buried Cable shown thus:

Overhead Powerlines shown thus:

Community Forest boundary:

BC - Begin Curve; EC - End Curve

Hooked Parcel shown thus:

No.	REVISIONS	BY	DATE (YY/MM/DD)	CKD
0	Original Plan Issued	JMS/WC	13/10/15	BP/CD
1	Multiple Updates	WC/OT	13/11/22	BP
1	Removed Temp Workspace Over Facility Site	JMS	13/11/28	BP
3	Updated Background & Water Crossings	JMS	15/12/03	BP

APPROVED BY: _____

PROJECT ENGINEER: _____

PACIFIC TRAIL PIPELINES MANAGEMENT INC.

PLAN SHOWING PROPOSED 18m PIPELINE FROM PARCEL 1 DL 12295 & 6822 PLAN 30731 (a-50-A, 93-J-7) TO N 1/2 DL 2549 (d-76-K, 93-J-2)

SCALE = 1 : 5,000

BCGS 93J.026, 93J.027

FIELD: CAN-AM FILE: N20120168

CLIENT FILE: _____

AFE No.: _____

CAD FILE: N20120168PLSec1_Rev3

LAND FILE: _____

DATE: 13/10/15

EPASS: 10044857

REVISION:

9706458

KPL-8010-GSC-SUR-SWG-CANA-00002-02



XING #	DESCRIPTION	NORTHING	EASTING	OPERATOR	DWG NO.
1-1022	LOGGING ROAD	6011065	517892	CARRIER LUMBER	
1-1024	LOGGING ROAD	6010800	517463	QUATRO	
1-1025	NCD (ID: RA 4z)	6010654	517074		
1-032	UNNAMED CHANNEL CLASS 54 (ID: RA 5a)	6010427	515847		
1-1027	SALMON FOREST SERVICE ROAD	6010366	515730	DISTRICT MANAGER PRINCE GEORGE	
1-034	UNNAMED CHANNEL CLASS 53 (ID: RA 5b)	6010058	515172		
1-1058	SALMON RIVER SIDE CHANNEL CLASS 53 (ID: RA 5c)	6010027	515038		
1-035	NCD (ID: 6N)	6009969	514785		

NOTES:
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LEGEND:

Drainage shown thus:

Seismic Line shown thus:

2012-2013 Construction Corridor shown thus:

Buried Pipe shown thus:

2011-2012 Construction Corridor No Longer Required shown thus:

Fence line shown thus:

Crossing Numbers shown thus: **1-1000**

Powerpole & guy wire shown thus:

Cut block/Woodlot boundary:

Top of bank/break in slope:

Above ground pipe shown thus:

A.L.R. boundary shown thus:

2013 KM Markers shown thus:

Vegetation Change shown thus:

Logging Trail shown thus:

Forest Service Road shown thus:

Buried Cable shown thus:

Overhead Powerlines shown thus:

Community Forest boundary:

BC - Begin Curve; EC - End Curve

Hooked Parcel shown thus:

No.	REVISIONS	BY	DATE (YY/MM/DD)	CKD
0	Original Plan Issued	JMS/WC	13/10/15	BP/CD
1	Multiple Updates	WC/OT	13/11/22	BP
2	Removed Temp Workspace Over Facility Site	JMS	13/11/28	BP
3	Updated Background & Water Crossings	JMS	15/12/03	BP

APPROVED BY: _____

PROJECT ENGINEER: _____

can-am geomatics
 Phone: 250.774.7881
 Fax: 250.774.7882

PACIFIC TRAIL PIPELINES MANAGEMENT INC.

PLAN SHOWING PROPOSED 18m PIPELINE FROM PARCEL 1 DL 12295 & 6822 PLAN 30731 (α-50-A, 93-J-7) TO N 1/2 DL 2549 (d-76-K, 93-J-2)

BCGS 93J.026.93J.027
 SCALE = 1 : 5,000

SHEET 3 OF 4

PACIFIC TRAIL PIPELINES

FIELD: CAN-AM FILE: N20120168

CLIENT FILE: _____

AFE No.: _____

CAD FILE: N20120168PL-9ec1_Rev3

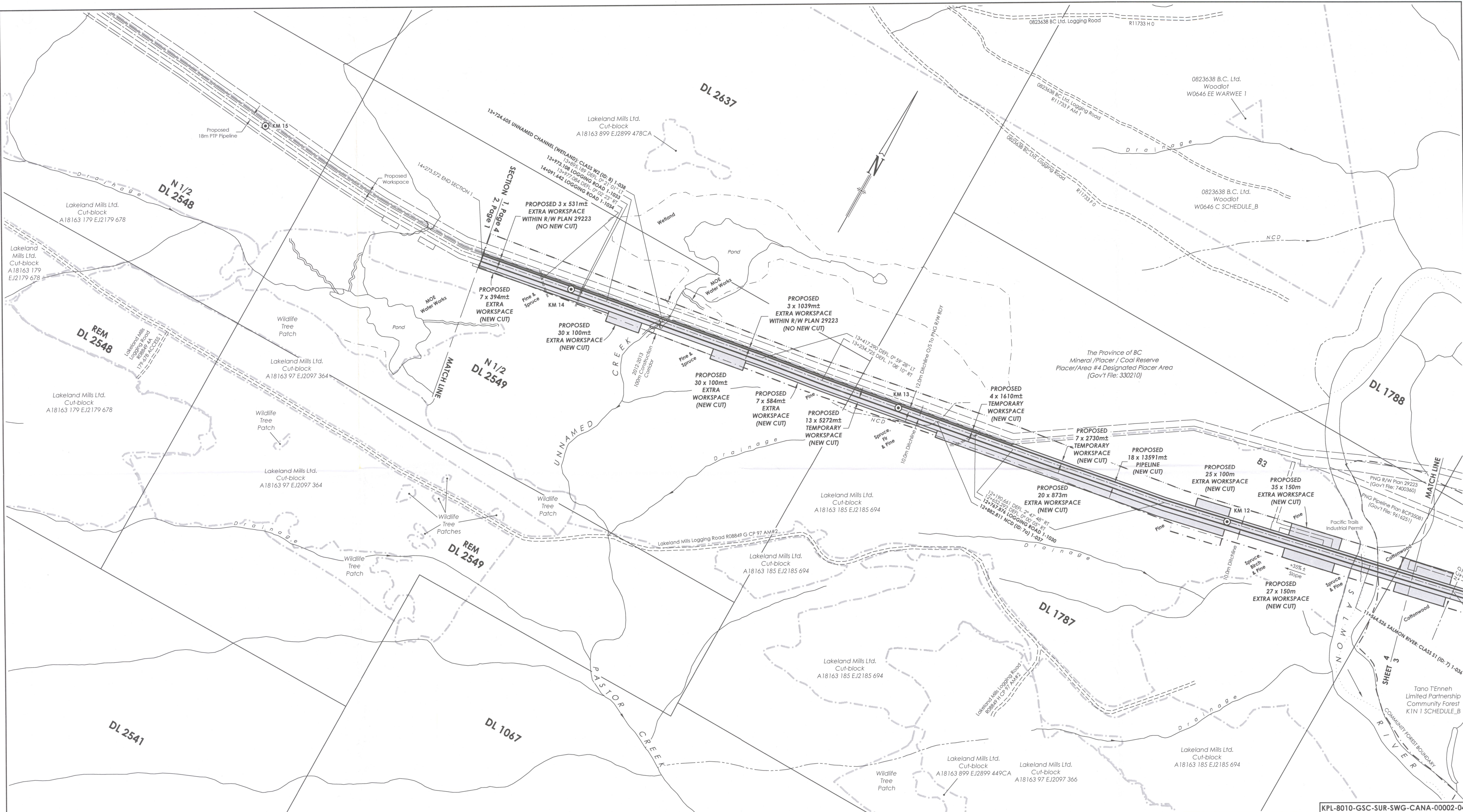
LAND FILE: _____

DATE: 13/10/15

EPASS: 10044857

REVISION:

KPL-8010-GSC-SUR-SWG-CANA-00002-03



XING #	DESCRIPTION	NORTHING	EASTING	OPERATOR	DWG No.
1-036	SALMON RIVER: CLASS S1 (ID:7)	6009913	514542		
1-1030	LOGGING ROAD	6009674	513374	MOF	
1-037	NCD (ID: 7a)	6009654	513260		
1-038	UNNAMED CHANNEL (WETLAND): CLASS W2 (ID: 8)	6009511	512434		
1-1033	LOGGING ROAD	6009467	512189	MOF	

NOTES:
 All underground facilities shown were located with electronic locators and may be subject to error. Actual locations should be verified independently by the contractor in field prior to any crossings. Plus chainages shown are horizontal distances measured along the surveyed boundary of the right-of-way.

LEGEND:

Drainage shown thus:

Setback Line shown thus:

2012-2013 Construction Corridor shown thus:

Buried Pipe shown thus:

2011-2012 Construction Corridor No Longer Required shown thus:

Fence line shown thus:

Crossing Numbers shown thus: **1-1000**

Powerpole & guy wire shown thus:

Cut block/Woodlot boundary

Top of bank/break in slope

Above ground pipe shown thus:

A.L.R. boundary shown thus:

2013 KM Markers shown thus:

NVC - Non Visible Channel

Vegetation Change shown thus:

Logging Trail shown thus:

Forest Service Road shown thus:

Buried Cable shown thus:

Overhead Powerlines shown thus:

Community Forest boundary:

BC - Begin Curve; EC - End Curve

Hooked Parcel shown thus:

No.	REVISIONS	BY	DATE (YY/MM/DD)	CKD
0	Original Plan Issued	JMS/WC	13/10/15	BP/CD
1	Multiple Updates	WC/OT	13/11/22	BP
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3	Updated Background & Water Crossings	JMS	15/12/03	BP

APPROVED BY: _____

PROJECT ENGINEER: _____

PACIFIC TRAIL PIPELINES MANAGEMENT INC.

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Scale = 1 : 5,000

50 0 100 200 300 METRES

SHEET 4 OF 4

PACIFIC TRAIL PIPELINES

FIELD: CAN-AM FILE: N20120168

CLIENT FILE: _____

AFE No.: 93J.026, 93J.027

CAD FILE: N20120168P1-Sec1_Rev3

LAND FILE: _____

DATE: 13/10/15

EPASS: 10044857

3 REVISION

KPL-8010-GSC-SUR-SWG-CANA-00002-04