

April 16, 2018

Coastal GasLink Pipeline Ltd  
450-1st Street, SW  
Calgary, AB T2P 5H1

Attention: Coastal GasLink Pipeline Ltd

**RE: Permit Extension for Application Determination No. 100082299, OGC Legacy No. 9708367**

**Permit Holder:** Coastal GasLink Pipeline Ltd  
**Permit Date of Issuance:** May 28, 2015  
**Extension Effective Date:** May 28, 2018  
**Extended Expiration Date:** May 28, 2019  
**Application Determination No.:** 100082299  
**Pipeline Project No.:** 000023581

## **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, corrections, 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 May 28, 2019 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.



James O'Hanley  
Vice President, Applications

pc: OGC, Compliance & Enforcement

May 1, 2017

Coastal GasLink Pipeline Ltd.  
450 - 1st Street SW  
Calgary, Alberta  
T2P 5H1

Attention: Coastal GasLink Pipeline Ltd.

**RE: Permit Extension for Application Determination Number 100082299, OGC Legacy #9708367**

**Permit Holder:** Coastal GasLink Pipeline Ltd.  
**Permit Date of Issuance:** May 28, 2015  
**Extension Date of Issuance:** May 1, 2017  
**Extended Expiration Date:** May 28, 2018  
**Application Determination No.:** 100082299  
**Pipeline Project No.:** 000023581

## **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.

### **Petroleum and Natural Gas Act**

2. Pursuant to Section 138(1) of the *Petroleum and Natural Gas Act*, the Permit Holder is authorized 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 authorized under this permit.

## **CONDITIONS**

3. The rights granted by this authorization 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.
4. The Permit Holder must not assign or sublicense this permit or permit any person to use or occupy the land, other than its employees, contractors, or representatives, without the Commission's written consent.
5. The Permit Holder must ensure that the area is maintained in a condition so as to minimize hazards, including but not limited to hazards associated with storage of materials and equipment.
6. The Permit Holder must ensure that the area is free of garbage, debris and unused equipment.

## **ADVISORY GUIDANCE**

1. On September 21, 2015, section 14 of the *Land Act* was repealed. Accordingly, the section 14 *Land Act* authorization originally granted to enter, occupy and use any unoccupied Crown land for the purposes of carrying out this oil and gas activity is now authorized under section 138(1) of the *Petroleum and Natural Gas Act*, and the original authorization will be cancelled.
2. 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.
3. The term “unused equipment” has the same definition as in the Drilling and Production Regulation.

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



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James O'Hanley  
Vice President, Permitting & Authorizations

May 27, 2015

Coastal GasLink Pipeline Ltd.  
450 - 1st Street SW  
Calgary AB T2P 5H1

**Attention: Coastal GasLink Pipeline Ltd.**

**RE: Pipeline Permit (Section 3)**

**Date of Issuance: May 27, 2015**

**Commission File No: 9708367**

**Job No.: 014331806-001**

## PERMISSIONS

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:

1. The permissions and authorizations granted under this permit are limited to the areas described in the following construction plans by Midwest Surveys Land Surveying Ltd. Submitted January 31, 2015:

MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-001, Revision 0, Sheet 1 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-002, Revision 0, Sheet 2 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-003, Revision 0, Sheet 3 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-004, Revision 0, Sheet 4 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-005, Revision 0, Sheet 5 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-006, Revision 0, Sheet 6 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-007, Revision 0, Sheet 7 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-008, Revision 0, Sheet 8 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-009, Revision 0, Sheet 9 of 38, dated October 6, 2014.

MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-010, Revision 0, Sheet 10 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-011, Revision 0, Sheet 11 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-012, Revision 0, Sheet 12 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-013, Revision 0, Sheet 13 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-014, Revision 0, Sheet 14 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-015, Revision 0, Sheet 15 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-016, Revision 0, Sheet 16 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-017, Revision 0, Sheet 17 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-018, Revision 0, Sheet 18 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-019, Revision 0, Sheet 19 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-020, Revision 0, Sheet 20 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-021, Revision 0, Sheet 21 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-022, Revision 0, Sheet 22 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-023, Revision 0, Sheet 23 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-024, Revision 0, Sheet 24 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-025, Revision 0, Sheet 25 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-026, Revision 0, Sheet 26 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-027, Revision 0, Sheet 27 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-028, Revision 0, Sheet 28 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-029, Revision 0, Sheet 29 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-030, Revision 0, Sheet 30 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-031, Revision 0, Sheet 31 of 38, dated October 6, 2014.

MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-032, Revision 0, Sheet 32 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-033, Revision 0, Sheet 33 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-034, Revision 0, Sheet 34 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-035, Revision 0, Sheet 35 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-036, Revision 0, Sheet 36 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-037, Revision 0, Sheet 37 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-038, Revision 0, Sheet 38 of 38, dated October 6, 2014.

2. This permit expires two years from the date of issuance as per section 8 of the *Oil and Gas Activities Act* General Regulation if the permit holder has not begun the construction of the pipeline permitted unless the permit has been extended.
3. The permit holder is authorized to construct and operate the pipeline segment to transmit natural gas under a maximum operating pressure of 13375 kPa, and under a maximum concentration of H<sub>2</sub>S of 0.002 mol% unidirectionally, and in accordance Piping & Instrumentation Diagram(s), 4703-03-LA-0S-001, revision RE-IFP, dated September 29<sup>rd</sup>, 2014, and 4703-03-LA-0S-002, revision RE-IFP, dated September 29<sup>rd</sup>, 2014. Notwithstanding the foregoing, 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, H<sub>2</sub>S 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.

## CONDITIONS

### Notification and Reporting

1. At least 30 days prior to commencing any construction activities under this permit, the permit holder must provide the Blueberry River First Nations, Carrier Sekani Tribal Council, Halfway River First Nation, Lheidli T'enneh Band, McLeod Lake Indian Band, Nak'azdli First Nation, Saulteau First Nations and West Moberly First Nations the proposed construction schedule.
2. 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.

3. Unless a submission has been made under condition 4, 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.
4. 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.

### **First Nations**

5. At the completion of construction activities the permit holder must restore any identifiable trails traditionally used by First Nations that were impacted by 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.
6. Prior to commencement of construction activities on any portion of the pipeline right of way or work space, the permit holder must consider relevant information made available by a First Nation in the development of site specific mitigation plans. Relevant information includes culturally modified trees, cache pits, house pits, grave sites, pictograph sites, smoke houses, cabins, artifacts and areas traditionally used for camping, hunting, fishing and berry picking located within the pipeline right of way or work space.

The permit holder must submit, at least 30 days prior to the commencement of construction, the information, along with site-specific mitigation plans for any of the specified items identified that may be impacted by construction activities, to the satisfaction of the Commission.

### **Clearing**

7. Clearing and site preparation must be limited to areas needed for the pipeline right of way and work space.
8. Clearing and site preparation, inclusive of work space, must be confined to the construction corridor and must not exceed 817.24 ha on Crown land and must not, without leave of the Commission, 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;
  - e. a riparian management area (RMA), except to facilitate a stream or wetland crossing, or where it does not involve new clearing;
  - f. a wildlife tree retention area other than those identified in the construction plans referenced in Permissions; and

- g. a wetland classified as W2, except WL-0321A, WL-0325, WL-0353, WL-0367, WL-0382, WL-0415, WL-0445, WL-0487, WL-0795, WL-2018, WL-2112, WL-2113, WL-2126, WL2128, WL-2137, WL-2141, WL-2145 and WL-2159, as identified in the construction plans referenced in Permissions, or to facilitate crossing of that wetland.
9. Except with leave of the Commission, new cut for additional work space is not permitted within a wildlife habitat area; ungulate winter range (UWR), other than those identified in the construction plans referenced in Permissions; riparian reserve zone (RRZ); or old growth management area as defined in the Environmental Protection and Management Regulation (EPMR) or the *Forest and Range Practices Act* and its regulations.
10. Clearing and site preparation, except shooflies identified in the construction plans referenced in Permissions, must be confined to the area approved in the Certified Project Description of the associated Environmental Assessment Certificate.
11. 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, and other conditions relevant to safe construction operations.
12. 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. it is required to avoid one or more of the areas or features identified in condition 8 (a) to (g); or
  - c. the permit holder is granted leave by the Commission.
13. Where practicable, 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. Appropriate erosion and sediment control structures must be installed as necessary to ensure debris and soil are not deposited into watercourses.
14. Any trees harvested within the RMA of a stream or wetland must be felled away from the stream or wetland, and any trees, debris or soil deposited below the high water mark must be removed immediately.

## **Wildlife**

15. Except with leave of the Commission, the permit holder must not undertake clearing activities between May 1 and July 31 unless pre-clearing surveys are completed and clearing activities do not occur within 100 metres of any stick nest, and within 30 metres of any songbird nest.
16. Except with leave of the Commission, the permit holder must not undertake any construction 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.
17. Except with leave of the Commission, the permit holder must not undertake any construction or significant maintenance activities within UWR U-7-003 between January 15 and July 15.



18. Except with leave of the Commission, the permit holder must not undertake any construction or significant maintenance activities between KM 172 and KM 189.5, within the Hart Caribou Herd Area between May 15 and July 15.
19. Except with leave of the Commission, the permit holder must not undertake any construction activities within the Salmon River and associated RRZ between July 15 and June 15.
20. Except with leave of the Commission, the permit holder must not undertake construction or significant maintenance activities within 200 meters of an active grizzly bear or black bear den between December 1 and April 30.
21. Except with leave of the Commission, the permit holder must not undertake construction activities within 500 meters of an active wolverine den between February 1 and August 1.
22. Except with leave of the Commission, the permit holder must not, with respect to fisher:
  - a. undertake construction activities within 200 metres of any known den; and
  - b. undertake construction or significant maintenance activities within 400 metres of an active den between March 15 and July 31.
23. 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;
  - b. directly approach, hover over or circle near, or land within 500 meters of known wolverine den sites between February 1 and June 30; or
  - c. occur over the Hart Caribou Herd Area between May 15 and July 15.
24. The permit holder must implement appropriate measures to reduce the obstruction of wildlife movement across the pipeline right of way during construction and operations.
25. The permit holder must collect and store garbage in a manner that does not attract bears.
26. The permit holder must construct line of sight barriers across the width of the pipeline right of way in consultation with the Commission between KM 172 and KM 189.5, within the Hart Caribou Herd area.

### **Terrain Stability, Acid Rock Drainage and Mineral Leaching**

27. Prior to operating the pipeline, the permit holder must prepare and file with the Commission a report satisfactory to 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.

28. The permit holder must submit prior to construction an acid rock assessment and mitigation information to the Commission, all to the satisfaction of the Commission, with respect to

potentially acid generating (PAG) rock along the proposed pipeline route. The information must include the following elements:

- a. the criteria used to classify acid rock drainage/metal leaching 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 above information must be prepared by a qualified professional and any protocols, mitigation or monitoring associated with e through j must be implemented by permit holder.

### **Stream, Wetland and Lake Crossings**

29. 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 specified in the Construction Section 3 Supplemental Stream Crossings Submission that has been submitted to the satisfaction of the Commission.
30. 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 Construction Section 3 Supplemental Stream Crossings Submission that has been submitted to the satisfaction of the Commission. Any contingency method specified Construction Section 3 Supplemental Stream Crossings Submission may only be utilized with leave of the Commission.
31. Open cut crossings of watercourses must be planned and conducted in accordance with the relevant detail in the Construction Section 3 Supplemental Stream Crossings Submission 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. excavated materials must be contained using appropriate techniques, so that sediment-laden water and spoil do not re-enter the watercourse;
  - d. 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;
  - e. where feasible, aquatic vegetation and organic debris removed from the construction area must be salvaged and returned following trench backfilling; and
  - f. 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.
32. Open cut crossings of wetlands must be planned and conducted in accordance with the relevant detail in the Construction Section 3 Supplemental Stream Crossings Submission 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 stream for replacement during restoration;
  - b. excavated materials must be contained using appropriate techniques, so that that sediment-laden water and spoil do not re-enter the wetland; and
  - c. 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.
33. Flow isolation crossings must be planned and conducted in accordance with the relevant detail in the Construction Section 3 Supplemental Stream Crossings Submission that has been submitted to the satisfaction of the Commission, and in accordance with b to f of condition 31 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. instream activities, including the location and operation of any equipment must be isolated from water flowing in the stream;
  - c. spawning gravels must not be disturbed when redds that contain eggs are present;
  - d. activities must be suspended if high stream flows present an increased risk to effectively completing the intended crossing installation technique;
  - e. welding, coating, weighting and, where applicable testing, of the pipe must be completed prior to commencement of trenching within fish-bearing water bodies;
  - f. 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;
  - g. pump intakes must not disturb beds of streams or wetlands and must be screened with a maximum mesh size of 2.54 mm and approach velocity of 0.038 m/s;

- h. water flows downstream of in-stream construction sites must be maintained consistent with upstream flows; and
  - i. hard ditch plugs must be installed at or near the banks of the crossing and left in place until the crossing has been initiated.
- 34. 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.
- 35. 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.
- 36. Within the riparian management area, generators and other stationary equipment that require refueling must be situated in secondary containment capable of containing the fuel capacity of the generators.
- 37. Except with leave of the Commission, prior to construction activities in a stream classified as S1, S2, S3 or S4; or the Riparian Reserve Zone 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 e.
- 38. 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; and
  - e. require documentation of pre and post construction monitoring completed under d.
39. The permit holder must implement the Water Quality Monitoring Programs developed as per conditions 37 and 38 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, satisfactory to the Commission, have been developed and implemented.
40. 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.
  - b. Where contingency measures are required, the permit holder must develop and implement an appropriate plan to the satisfaction of the Commission.

## **Engineering**

41. 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:
- a. the crossing location;
  - b. summary, including any outcomes, of engagement with the road tenure holder, primary road user or road owner;
  - c. whether the crossing will be constructed using trenchless methods;
  - d. the approximate dates and maximum time that traffic at the crossing is expected to be restricted or obstructed;

- e. pipeline specifications at the crossings, including pipeline diameter, wall thickness, depth of cover and grade; and
  - f. maximum vehicular weights expected at the crossing location.
42. The permit holder must construct any road crossing consistent with information accepted by the Commission under condition 41.
43. At least 45 days prior to commencement of welding, the permit holder must submit to the Commission's satisfaction, a fracture arrest and mitigation program.
44. 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.
45. 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. a geohazard assessment that includes:
    - i. 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
    - ii. 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 (i); and
  - b. a field changes manual for geohazards that includes:
    - i. criteria for measures, including those identified in a(ii) above, that will be implemented to mitigate any additional geohazards identified during construction; and
    - ii. qualification requirements for field staff who will implement the field changes manual.
46. Except with leave of the Commission, within 12 months of commencement of gas transmission to the Kitimat Metering Station, 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.

## Archaeology

47. An Archaeological Impact Assessment (AIA) must be completed for the all pipeline right of way and work space areas prior to commencement of construction activities.
48. The permit holder must, as soon as practicable, submit an AIA report to the Commission.
49. 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

50. 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. Western Toad breeding areas located within 100 metres of the pipeline right of way or workspaces, and any associated migration corridors;
  - c. 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
  - d. 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 d that may be impacted by construction activities, to the satisfaction of the Commission prior to notice of construction start.

51. 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.
52. 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 Commission's satisfaction.
53. 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 Commission's satisfaction.
54. 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.
55. 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 other alternative effective measures as appropriate.
56. 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.

57. 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.
58. Upon completion of construction activities authorized under this permit, 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. between KM 172 and KM 189.5, within the Hart caribou herd area, implement human, primary prey and predator access control through higher density planting of tree species and restoration of disturbed areas with fast-growing species not preferred for browse; and
  - c. take reasonably practicable measures to limit or prevent vehicular access to and along, and to reduce sightlines along the pipeline right of way.
59. The permit holder must determine timber hauling restrictions pertaining to the management of beetle infested timber recommended by the BC Ministry of Forests, Land, and Natural Resource Operations and adhere to all such restrictions unless otherwise specified by the Commission.

## **AUTHORIZATIONS ASSOCIATED WITH THE PERMIT**

### **Temporary Permit under Section 14 of the *Land Act***

60. Subject to 61 through 67 below, the Commission, under section 14 of the *Land Act* and pursuant to Authorization Number 941015, hereby authorizes the permit holder to occupy and use Crown land limited to the areas described in the following construction plans by Midwest Surveys Land Surveying Ltd. submitted January 31, 2015:

MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-001, Revision 0, Sheet 1 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-002, Revision 0, Sheet 2 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-003, Revision 0, Sheet 3 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-004, Revision 0, Sheet 4 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-005, Revision 0, Sheet 5 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-006, Revision 0, Sheet 6 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-007, Revision 0, Sheet 7 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-008, Revision 0,



Sheet 8 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-009, Revision 0, Sheet 9 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-010, Revision 0, Sheet 10 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-011, Revision 0, Sheet 11 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-012, Revision 0, Sheet 12 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-013, Revision 0, Sheet 13 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-014, Revision 0, Sheet 14 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-015, Revision 0, Sheet 15 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-016, Revision 0, Sheet 16 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-017, Revision 0, Sheet 17 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-018, Revision 0, Sheet 18 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-019, Revision 0, Sheet 19 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-020, Revision 0, Sheet 20 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-021, Revision 0, Sheet 21 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-022, Revision 0, Sheet 22 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-023, Revision 0, Sheet 23 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-024, Revision 0, Sheet 24 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-025, Revision 0, Sheet 25 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-026, Revision 0, Sheet 26 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-027, Revision 0, Sheet 27 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-028, Revision 0, Sheet 28 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-029, Revision 0, Sheet 29 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-030, Revision 0,

Sheet 30 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-031, Revision 0, Sheet 31 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-032, Revision 0, Sheet 32 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-033, Revision 0, Sheet 33 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-034, Revision 0, Sheet 34 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-035, Revision 0, Sheet 35 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-036, Revision 0, Sheet 36 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-037, Revision 0, Sheet 37 of 38, dated October 6, 2014.
MIDWEST SURVEYS Document: CGE4703-MSI-G-MP-192-038, Revision 0, Sheet 38 of 38, dated October 6, 2014.

61. The permit holder will:

- a. indemnify the Province of British Columbia (the "Province") and the Commission against all losses, damages, costs, and liabilities arising out of any breach or non-performance of any condition or agreement set out in this permit, and any personal injury, death or property damage occurring on the site or happening by virtue of the permit holder's occupation of the site, and this obligation to indemnify will include all of the foregoing from the first day that such losses, damages, costs and liabilities arose; and
- b. immediately effect, and keep in force while occupying the site, insurance of an amount not less than \$1,000,000 protecting the Province, the Commission and the permit holder (without any rights of cross-claim or subrogation) against claims for personal injury, death, property damage, or third party or public liability claims arising from any accident or occurrence on the site.

62. The authorization to occupy and use Crown land does not entitle the permit holder to exclusive possession of the area. The permit holder will not interfere with the activities of another person entering on and using the area under a prior or subsequent authorization issued under the *Land Act*.

63. The rights granted by this section 14 permit are subject to all subsisting grants to or rights of any person made or acquired under the *Coal Act*, *Forest Act*, *Mineral Tenure Act*, *Petroleum and Natural Gas Act*, *Range Act*, *Water Act* or *Wildlife Act*, or any extension or renewal of the same, any prior dispositions made under the *Land Act*, and the exceptions and reservations of rights and interests under section 50 of the *Land Act*.

64. The permit holder will acknowledge and agree that any interference with rights granted under this section 14 permit by virtue of the exercise or operation of the rights or interests set out in 62 or 63 above shall not constitute a breach of the Province's or the Commission's obligations under this permit and the permit holder will release and discharge the Province and/or the Commission from any claim for loss or damage arising directly or indirectly out of

any such interference. The permit holder will also agree to pay all costs and expenses that arise out of the permit holder's interference with the rights or interests set out in sections 62 or 63 and that the permit holder will not commence or maintain proceedings under section 65 of the *Land Act* with respect to interference with the permit holder's rights arising out of exercise or operation of the rights set out in sections 62 or 63.

65. The permit holder must pay, when due, the Fees to the address set out in the attached covering letter.
66. The permit holder must not assign, sublicense or transfer this Permit or permit any person to use or occupy the land, other than its employees, contractors, or representatives, without the Commission's written consent.
67. This authorization of a permit to occupy and use Crown land expires two years from the date of issuance.

### **Changes in and about a Stream Authorization under section 9 of the *Water Act***

The Commission hereby authorizes the permit holder, under section 9 of the *Water Act*, to make changes in and about streams located in the areas described in the Construction Section 3 Supplemental Stream Crossings Submission.

### **Cutting Permit Authorization**

68. Pursuant to section 47.4 of the *Forest Act*, the Commission hereby issues Cutting Permit No. 13, under Master License to Cut number M02341, Prince George Forest District, to cut and remove timber from the areas of Crown land within the area within the Site subject to the following conditions:
  - a. These cutting permits are deemed spent upon submission of the post-construction plan referenced in condition 4, or upon either the cancellation or the expiry of the permitted oil and gas activity;
  - b. These cutting permits are subject to the terms and conditions in the Master Licences to Cut;
  - c. All harvested Crown timber within Master License to Cut number M02341, Prince George Forest District, must be marked with Timber Mark Number MTB 286;
  - d. The felling, bucking and utilization specifications in the Master Licenses to Cut apply to these cutting permits;
  - e. Stumpage under these cutting permits is required to be paid to the Crown and will be determined with the Ministry of Forests Interior Appraisal Manual;
  - f. These cutting permits do not grant the permit holder to the exclusive right to harvest timber from the license area and the Commission reserves the right to grants rights to other persons to harvest timber from the license area;
  - g. In accordance with the Master Licences to Cut referenced above, "Within 60 days of completing operations on a cutting permit, the Licensee shall submit to the Commission a map showing all disturbances that have occurred pursuant to that cutting permit, at a scale of 1:20,000 or 1:50,000.";
  - h. Prior to harvesting, any clearing authorized by these cutting permits must be clearly defined on the ground by ribboning or blazing; and

- i. This authorization is for a maximum total new cut area of 638.88 ha within the construction corridor.

## ADVISORY GUIDANCE

1. The permit holder must provide notices required by the Pipeline Regulation prior to beginning construction, maintenance or repair of the pipeline.
2. As required by section 3 of the Pipeline Regulation, the permit holder must design, construct, operate and maintain the pipeline in accordance with CSA Z662, as amended from time to time.
3. As required by section 4(2) of the Pipeline Regulation, the permit holder must submit to the Commission the pipe and component specifications and the as-built drawings for the pipeline within 3 months after completion of construction of a pipeline.
4. As required by section 24(1) of the *Oil and Gas Activities Act* General Regulation, the permit holder must complete the surveying and posting of the pipeline right of way within 16 months after completing construction of the pipeline.
5. As required by section 7 of the Pipeline Regulation, the permit holder must include the pipeline authorized by this permit in its Integrity Management Plan and Damage Prevention Program.
6. 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 29 and 30 above.
7. 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*.
8. All archaeological reports submitted to the Commission must also be provided to the archaeology branch of the Ministry of Forests, Lands and Natural Resource Operations.
9. All archaeological reports submitted to the Commission must also be provided to the First Nations listed in condition 1 of this permit.
10. Prior to commencing construction on any pipeline stream crossing, the permit holder must:
  - a. identify any new streams not described in the Construction Section 3 Supplemental Stream Crossings Submission;
  - b. for new streams or where there was outstanding fieldwork required for a stream described in the Construction Section 3 Supplemental Stream Crossings Submission, 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 any field work required under (b) to the satisfaction of the Commission. The results must clearly describe the management and mitigation measures that will be employed in order to minimize impacts to the species present and their habitat.

## 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.

**“additional work space”** work space, other than temporary work space, needed to facilitate pipeline construction. These include shooflies, log decks, log storage sites, laydown areas and stockpile 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.

**“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 13 – 15 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 and Authorized Signatory  
Commission Delegated Decision Maker

CC: Roy Northern Land Services Ltd.  
MFLNRO, Prince George Forest District, Vanderhoof Forest District  
First Nations (Blueberry River First Nations, Carrier Sekani Tribal Council, Halfway River First  
Nation, Lheidli T'enneh Band, McLeod Lake Indian Band, Nak'azdli First Nation, Sauteau First  
Nations and West Moberly First Nations)  
WorkSafe BC  
OGC File: 9708367  
BC Environmental Assessment Office