

February 25, 2021

Trans Mountain Pipeline ULC  
2700, 300 - 5th Avenue SW  
Calgary, AB T2P 5J2

Attention: Trans Mountain Pipeline ULC

**RE: Determination of Application Number 100112014**

**Permit Holder:** Trans Mountain Pipeline ULC  
**Date of Issuance:** February 25, 2021  
**Effective Date:** February 25, 2021  
**Application Submission Date:** January 4, 2021  
**Application Determination Number:** 100112014  
**Approved Disturbance Footprint:** 0.0 ha

**ACTIVITIES APPROVED**

Changes In and About a Stream: 0006502
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**GENERAL APPROVALS AND CONDITIONS**

**APPROVALS**

**Water Sustainability Act**

1. The Commission, pursuant to section 11 of the *Water Sustainability Act*, approves the Changes In and About a Stream, as detailed in the Activities Approved table above, within the activity area for construction and maintenance activities, unless otherwise restricted by this authorization:
  - a. Instream works must be carried out in accordance with the methods and any mitigations, as specified in the application.
2. The approvals granted under this permit are limited to the area identified in the spatial data submitted to the Commission in the permit application as identified and dated above; herein after referred to as the 'activity area'.

**CONDITIONS**

**Notification**

3. A notice of construction start must be submitted, as per the relevant Commission process at the time of submission, at least 48 hours prior to commencement of activities under this permit.
4. Within 60 days of the completion of construction activities under this permit, the permit holder must submit to the Commission a post construction plan as a shapefile and PDF plan accurately identifying the location of the total area actually disturbed under this permit.
5. A notice of maintenance activities must be submitted, as per the relevant Commission process at the time of submission, at least 21 working days prior to the commencement of any changes in or

about a stream associated with maintenance activities.

6. At least ten 21 working days prior to the commencement of any changes in or about a stream associated with maintenance activities, the permit holder must provide a notice of works to any First Nation(s) who may have Aboriginal Interests identified, as per the BC First Nations Consultative Areas Database, within the area in which the works are to occur.

### **Clearing/Forest Act**

7. The permit holder is permitted to fell any trees located on Crown land within 1.5 tree lengths of the activity area that are considered to be a safety hazard under applicable regulations and must be felled in order to eliminate the hazard. Trees or portions of these trees that can be accessed from the activity area without causing damage to standing timber may be harvested.

### **Water Course Crossings and Works**

8. Stream, lake and wetland crossings must be constructed in accordance with the methods and any mitigations, as specified in the application.
9. Except with leave of the Commission or where the stream is dry or frozen at the time, water quality must be monitored by a qualified professional during construction or maintenance activities that involve:
  - a) construction or maintenance within a fish-bearing stream other than the installation or removal of flow isolation works or activities under condition 12 a);
  - b) operation of construction machinery within the riparian reserve zone of a S1, S2 or S3 stream or within 20 meters of an S4 stream.
10. Water monitoring under the above condition must:
  - a) monitor locations upstream and downstream of the location of any physical disturbance associated with the project either in-stream or in the riparian areas identified above;
  - b) identify and document any exceedance of the British Columbia Approved Water Quality Guideline: Aquatic Life, Wildlife & Agriculture (March 2016 or as amended or replaced from time to time) (the "Water Quality Guidelines") likely caused by the construction or maintenance activities;
  - c) undertake and document measures to eliminate the cause of any exceedance identified under b) or, if the cause could not be eliminated, to minimize the duration and significance of any detrimental effects; and
  - d) make the information documented under b) and c) available to the Commission upon request.
11. Activities under this Approval must not result in any deleterious materials being deposited into a stream, wetland or lake.
12. The Approval Holder must ensure all of the following for each crossing of a stream, wetland and lake:
  - a) the crossing is constructed and maintained at times and in a manner that is unlikely to harm fish or destroy, damage or harmfully alter fish habitat;
  - b) the crossing does not prevent the movement of fish, nor impede the movement of fish to the extent that it is harmful to the survival of the fish;
  - c) the side of the stream, lake or wetland is protected at the crossing; and
  - d) any disturbance to the stream channel and stream bank, wetland or lake bottom, as applicable, is mitigated.
13. In-stream activities within a fish bearing stream, lake or wetland must occur:
  - a) during the applicable reduced risk work windows as specified in the regional timing windows for respective regions through which the pipeline passes and within which the works will occur;

- b) in accordance with alternative timing and associated mitigation recommended by a qualified professional and accepted by the Canadian Energy Regulator and provided to the Commission; or
  - c) in accordance with an authorization or letter of advice from Fisheries and Oceans Canada that is provided to the Commission.
14. Mechanical stream crossings must be constructed, maintained and deactivated according to the following requirements, as applicable:
- a) To facilitate construction of a crossing, a machine is permitted to ford the stream a maximum of one time in each direction at the crossing location;
  - b) Only bridges or culverts may be constructed at stream crossings;
  - c) Notwithstanding, (b), matting or steel plates may be used to cross streams classified as NCD, S4 or S6;
  - d) The Approval Holder must ensure that permanent bridges are 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.
  - e) Except with leave of the Commission, the Approval Holder must ensure that:
    - (i) any culverts used are designed and fabricated in compliance with the applicable:
      - (a) Canadian Standards Association CSA G401, Corrugated Steel Pipe Products; or
      - (b) Canadian Standards Association Standard CSA B1800, Section B182.2, Plastic Non-pressure Pipe Compendium, or
    - (ii) Any pipe installed in lieu of a culvert is of at least equivalent standard and strength as any culvert as specified above.
  - f) Except with leave of the Commission, the Approval Holder must ensure that bridges and culverts 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 Approval Holder anticipates the structure will remain on site, as set out in Column 1 in the table below:

<b>Column 1</b> <b>Anticipated period crossing structure will remain on site</b>	<b>Column 2</b> <b>Peak flow period</b>
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:
  - (a) is designed to pass expected flows during the period the bridge is anticipated to remain on the site;
  - (b) is constructed, installed and used only in a period of low flow; and
  - (c) is removed before any period of high flow begins.

- (iii) The culvert:
    - (a) is a temporary installation, and the Approval Holder does not expect to subsequently install a replacement culvert at that location;
    - (b) is not installed in a stream, when the stream contains fish;
    - (c) is sufficient to pass flows that occur during the period the culvert remains on the site;
    - (d) is installed during a period of low flow; and
    - (e) is removed before any period of high flow begins.
  - g) Bridge or culvert abutments, footings and scour protection must be located outside the natural stream channel and must not constrict the channel width;
  - h) Equipment used for activities under this approval must not be situated in a stream channel unless it is dry or frozen to the bottom at the time of the activity, or if under flowing conditions, is carried out in accordance with DFO's Measures to Avoid Harm to Fish and Fish Habitat, and the advice of a qualified professional.
15. Following initial pipeline/road construction, stream, lake and wetlands crossings are approved for necessary road maintenance or deactivation activities except for:
- a) works within the boundary of a provincial park;
  - b) stream bank or stream bed revetment works in a stream classified as S1, S2, S3, S4 or S5;
  - c) permanent alteration of a stream bank;
16. Before any in-stream maintenance works in or adjacent to a stream or wetland crossing occurs where any of the following are established in relation to the stream or wetland after construction of the road is complete:
- a) Species identified as special concern, threatened, or endangered under the federal Species at Risk Act; or
  - b) Species identified by Order as a species at risk under the Forest and Range Practices Act or the Oil and Gas Activities Act.
- the Approval Holder must submit a plan developed by a qualified professional, to the satisfaction of the Commission, that specifies measures to avoid or mitigate potential impacts to those species.
- The Approval Holder must implement the plan when undertaking the maintenance works.
17. Open cut crossings and works within streams, lakes or wetlands must be planned and conducted in accordance with the following requirements:
- a) An open cut of a stream classified as S1, S2, S3 or S4 must not occur, unless the stream is frozen to its bed or is completely dry with no evidence of subsurface flow, unless otherwise approved by the Canadian Energy Board and/or Fisheries and Oceans Canada;
  - b) Where the streambed or substrate consists of rocks, pebbles or coarse gravel overlaying finer material, this material must be removed and stockpiled separately outside the wetted perimeter of the stream for replacement during restoration;
  - c) Materials referred to in (b) above must be excavated and stockpiled in a manner that minimizes sediment dispersal within the stream, lake or wetland and must be replaced in a manner that minimizes disturbance to the stream, lake or wetland following pipeline installation;
  - d) 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;

- e) Channels, banks and beds of streams, wetlands, and lakes including any disturbed stable natural material, must be restored and maintained, to the extent practicable, to the structure and conditions that existed before the crossing construction was initiated;
  - f) Excavated materials must be contained using appropriate techniques, so that that sediment-laden water and spoil do not re-enter the stream, lake or wetland;
  - g) 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; and
  - h) Where feasible, aquatic vegetation and organic debris removed from the construction area must be salvaged and returned following trench backfilling, and channels, banks and beds of streams, 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.
18. Flow isolation crossings and works must be planned and conducted in accordance with (b) to (h) of the above condition regarding open cut crossings and the following additional requirements:
- a) Flow isolation works must be installed prior to any other in-stream construction work at the crossing;
  - b) After installation of the flow isolation works, construction of the crossing or works, including the location and operation of any equipment, must be isolated from water flowing in the stream;
  - c) Welding, coating, weighting and, where applicable testing, of the pipe must be completed prior to commencement of trenching within fish-bearing water bodies;
  - d) Water from flumes, pump-arounds, diversions, or other methods must be released to downstream areas in a manner that avoids erosion or sediment release;
  - e) Pump intakes must not disturb beds of fish bearing streams, lakes 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;
  - f) Water flows downstream of in-stream construction sites must be maintained at volume and discharge consistent with upstream flows; and
  - g) Ditch plugs must be maintained at or near the banks of the crossing and left in place until the crossing has been initiated.
19. 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 streams.
20. The permit holder must place and maintain a sign, at a distance from each bridge sufficient to enable users to stop safely before reaching the bridge that states the maximum load capacity of the bridge.
21. The permit holder must ensure that each bridge or major culvert is regularly inspected by a qualified person. Records of inspections must be retained by the permit holder for at least one year after the bridge or major culvert is removed from the site or the permit holder's responsibility for the road ceases.
22. The permit holder must perform the maintenance and undertake modifications necessary to ensure that watercourse crossing structures and any other instream works associated with the road are functional and appropriate for the uses of the road.
23. The permit holder must ensure that bridges and culverts on fish streams are constructed and maintained in a manner that does not prevent or impede the movement of fish.
24. The permit holder must prepare and maintain as-built drawings of any bridges or culverts exceeding 2000 mm in diameter or height that are constructed or modified by the permit holder. These drawings must be provided to the Commission upon request.

## **ADVISORY GUIDANCE**

1. Instructions for submitting notice of construction start, as required by regulation, can be found in the Oil and Gas Activity Operations Manual on the Commission's website.
2. The permit holder should be aware that there may be First Nation's traditional, cultural, or spiritual activities occurring concurrently with maintenance activities, as well as areas of current use or cultural resources that overlap the activity area. All reasonable efforts should be made to minimize interference with those activities while carrying out the activities authorized herein.
3. Unless a condition or its context suggests otherwise, terms used in this approval have the same meaning as the Environmental Protection and Management Regulation under the Oil and Gas Activities Act.

All pages included in this permit and any attached documents form an integral part of this permit.



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Justin Anderson  
Authorized Signatory  
Commission Delegated Decision Maker

Copied to:

First Nations – Cowichan Tribes (Hul'qumi'num People), Penelakut Tribe (Hul'qumi'num People), Stz'uminus First Nation (Hul'qumi'num People), Kwikwetlem First Nation, Musqueam Indian Band, Tsleil-Waututh Nation, Halalt First Nation (Hul'qumi'num People), Katzie First Nation, Kwantlen First Nation, Lake Cowichan First Nation (Hul'qumi'num People), Lyackson First Nation (Hul'qumi'num People), People Of The River Referrals Office (PRRO), Seabird Island First Nation, Semiahmoo First Nation, Shxw'owhamel First Nation