

APPROVALS

RE: Determination of Application Area Number 100105205

Approval Holder: Trans Mountain Pipeline ULC
Date of Issuance: July 20, 2020
Effective Date: July 20, 2020
Application Submitted Date: May 14, 2018
Application Determination Number: 100105205

CHANGES IN AND ABOUT A STREAM

APPROVAL

The Commission, pursuant to section 11 of the *Water Sustainability Act*, approves the changes in and about a stream, as detailed in the application, for construction and maintenance activities within the activity areas identified below, unless otherwise restricted or refused by this approval and to the conditions below.

Changes in and about a Stream No.: 0004547	As included in the application referenced herein, unless referenced in the Refused Activities table, below.	Tenure No.: N/A Document No.: N/A
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Conditions

1. Unless a condition or its context suggests otherwise, terms used in the following conditions have the same meaning as the Environmental Protection and Management Regulation and the Oil and Gas Road Regulation under the *Oil and Gas Activities Act*.
2. Subject to the provisions of this approval, crossing of the wetland must be constructed in accordance with the Vehicle Crossing Methods, as appropriate, that are specified in the document named: *WetlandXingTable_Access_New_Deact_S6b_Jan2018.xlsx*, uploaded 2018-03-21 that has been submitted to the satisfaction of the Commission.
3. Except with leave of the Commission, in-stream works must be carried out in accordance with the methods and any mitigations specified in the application.
4. A notice of maintenance or deactivation activities must be submitted to OGC.ExternalNotifications@bcogc.ca, or such other address as indicated in a notice from the Commission, at least 21 working days prior to the commencement of any changes in or about a stream associated with maintenance activities.
5. At least 21 working days prior to the commencement of any changes in or about a stream associated with maintenance or deactivation activities, the Approval 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.

6. 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 associated with condition 11 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.
7. 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
 - a) make the information documented under b) and c) available to the Commission upon request.
8. Activities under this Approval must not result in any deleterious materials being deposited into a stream, wetland or lake.
9. The Approval Holder must ensure all of the following for each crossing of a stream, wetland and lake:
 - b) 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;
 - c) 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;
 - d) the side of the stream, lake or wetland is protected at the crossing; and
 - e) any disturbance to the stream channel and stream bank, wetland or lake bottom, as applicable, is mitigated.
10. 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 National Energy Board 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.
11. 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, culverts, ice bridges or snow fills 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:

Column 1 Anticipated period crossing structure will remain on site	Column 2 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:
 - (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) Subject to condition 11 a), 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.

12. Following initial road construction, stream, lake and wetlands crossings are approved for necessary road maintenance 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;
 - d) works within a Temperature Sensitive Stream established by order under s. 27 of the Environmental Protection and Management Regulation; or
 - e) works within a Fisheries Sensitive Watershed established by order under s. 28 of the Environmental Protection and Management Regulation.
13. (1) 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.
- (2) The Approval Holder must implement the plan when undertaking the maintenance works.
14. Construction and maintenance activities in and about wetlands including wetland crossings must be constructed, maintained and removed in accordance with the following:
- a) minimize erosion or release of sediment within the wetland;
 - b) ensure the natural flow of water is reasonably maintained;
 - c) any padding materials must be placed on the wetland surface only and must not be used for infilling;
 - d) except with leave of the Commission, construction or maintenance works within a W1 wetland containing open water must either be isolated or utilize sediment curtains to minimize turbidity; and
 - e) any padding materials must be removed as soon as practicable following construction, considering weather and ground conditions.
15. The Approval 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.
16. The Approval Holder must ensure that each bridge or major culvert is regularly inspected by a qualified person. Records of inspections must be retained by the Approval Holder for at least one year after the bridge or major culvert is removed from the site or the Approval Holder's responsibility for the road ceases.
17. The Approval Holder must perform the maintenance and undertake modifications necessary to ensure that watercourse crossing structures and any other in-stream works associated with the road are functional and appropriate for the uses of the road until they are deactivated.
18. The Approval Holder must ensure that bridges and culverts on fish streams are constructed, maintained, and deactivated in a manner that does not prevent or impede the movement of fish.
19. The Approval 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 Approval Holder. These drawings must be provided to the Commission upon request.

Advisory Guidance

1. Construction Plans are for the Approval Holder's internal reference only and were not reviewed as decision tools for this approval, nor do they form an integral part of this approval.

2. The Approval Holder should be aware that there may be First Nation's traditional, cultural, or spiritual activities occurring concurrently with maintenance activities, as well as cultural resources that overlap the activity area. All reasonable efforts should be made to minimize interference with those activities and resources while carrying out the maintenance.

All pages included in this approval and any attached plan(s) form an integral part of this approval.



James O'Hanley
Vice President, Applications