

OGC File: 9643149

LNG Canada Development Inc.
400- 4th Street SW
Calgary, Alberta
T2P 0J4

Attention: LNG Canada Development Inc.

Re: Approval for Changes in and About a Stream

Date of issuance: February 23, 2016

The Oil and Gas Commission hereby authorizes the holder under section 9 of the *Water Act* to make changes in and about streams, as shown on drawing Title: LNG Canada Export Terminal Section 9 Changes In And About A Stream Workforce Accommodation Centre Application, Revision: F, subject to the following conditions:

1. The permit holder must ensure that, to the extent practicable:
 - a. riparian management areas, determined in accordance with 2 below, are maintained on each side of compensatory streams; and
 - b. infrastructure and operating areas associated with the Workforce Accommodation Centre, except those intended to facilitate the crossing of a stream, are not located within the riparian management areas.
2. For the purposes of 1 above, classification of compensatory streams and minimum riparian management areas must be determined in accordance with the criteria set out in Part 4, Division 1 of the Environmental Protection and Management Regulation.
3. The permit holder must submit, to the satisfaction of the Commission, a Habitat Effectiveness Monitoring Report, via email to postpermitrequests@bcogc.ca at the end of each monitoring year (Years 1, 2, 3, 5, 7 and 10), that includes the following:
 - a. riparian plant inspection summary;
 - b. fish sampling summary;
 - c. water quality summary;
 - d. physical stability and hydraulic connectivity summary; and
 - e. maintenance and management recommendations, if any.

The permit holder must also submit, to the satisfaction of the Commission, via email to postpermitrequests@bcogc.ca, a summary report developed after year 10 verifying the success of the measures taken.

4. The permit holder must ensure that streams not subject to land clearing and infilling are maintained in respect of hydrological, biogeochemical and riparian habitat parameters.

5. The permit holder must design and install adequate berms and barriers such that deleterious substances are prevented from entering streams.
6. A qualified specialist must be on site during all land clearing and infilling of stream operations. This individual must have the authority to stop or modify all construction operations as necessary to minimize impact to adjacent areas of aquatic habitat that are not subject to clearing and infilling.
7. Mechanical stream crossings for access within the site must be constructed, maintained and deactivated according to the following requirements, as applicable:
 - a. Only bridges, culverts, or snow fills may be constructed at stream crossings.
 - b. The permit 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.
 - c. Except with leave of the Commission, the permit holder must ensure that culverts are designed and fabricated in compliance with the applicable:
 - i. Canadian Standards Association CSA G401, Corrugated Steel Pipe Products; or
 - ii. Canadian Standards Association Standard CSA B1800, Section B182.2, Plastic Non-pressure Pipe Compendium.
 - d. Except with leave of the Commission, the permit holder must ensure 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 permit holder anticipates the crossing 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:
 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, culverts must be installed to allow meltwater to pass through. Snow fill and any installed culverts must be removed prior to spring snow melt.
- f. Bridge or culvert abutments, footings and associated scour protection must be located outside the natural stream channel and must not constrict the channel width.
8. The permit holder must notify the Commission and the Haisla Nation a minimum of 48 hours prior to the commencement of each activity conducted under this permit as outlined in the Section 9 Activity Details Table. Notification to the Commission must be sent to OGC.ExternalNotifications@bcogc.ca.

The attached drawing and Section 9 Activity Details Table form an integral part of this authorization.

Advisory Guidance

1. For the purpose of interpreting this authorization, the term "Qualified Specialist" 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 an area of practice for which an opinion or advice is required. A Qualified Specialist must possess 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 regulation, standards, policies, protocols and guidelines.
2. This authorization applies to all streams as that term is defined in the *Water Act*. Unless a condition or its context suggests otherwise, other terms used in this approval have the same meaning as the Environmental Protection and Management Regulation under the *Oil and Gas Activities Act*.



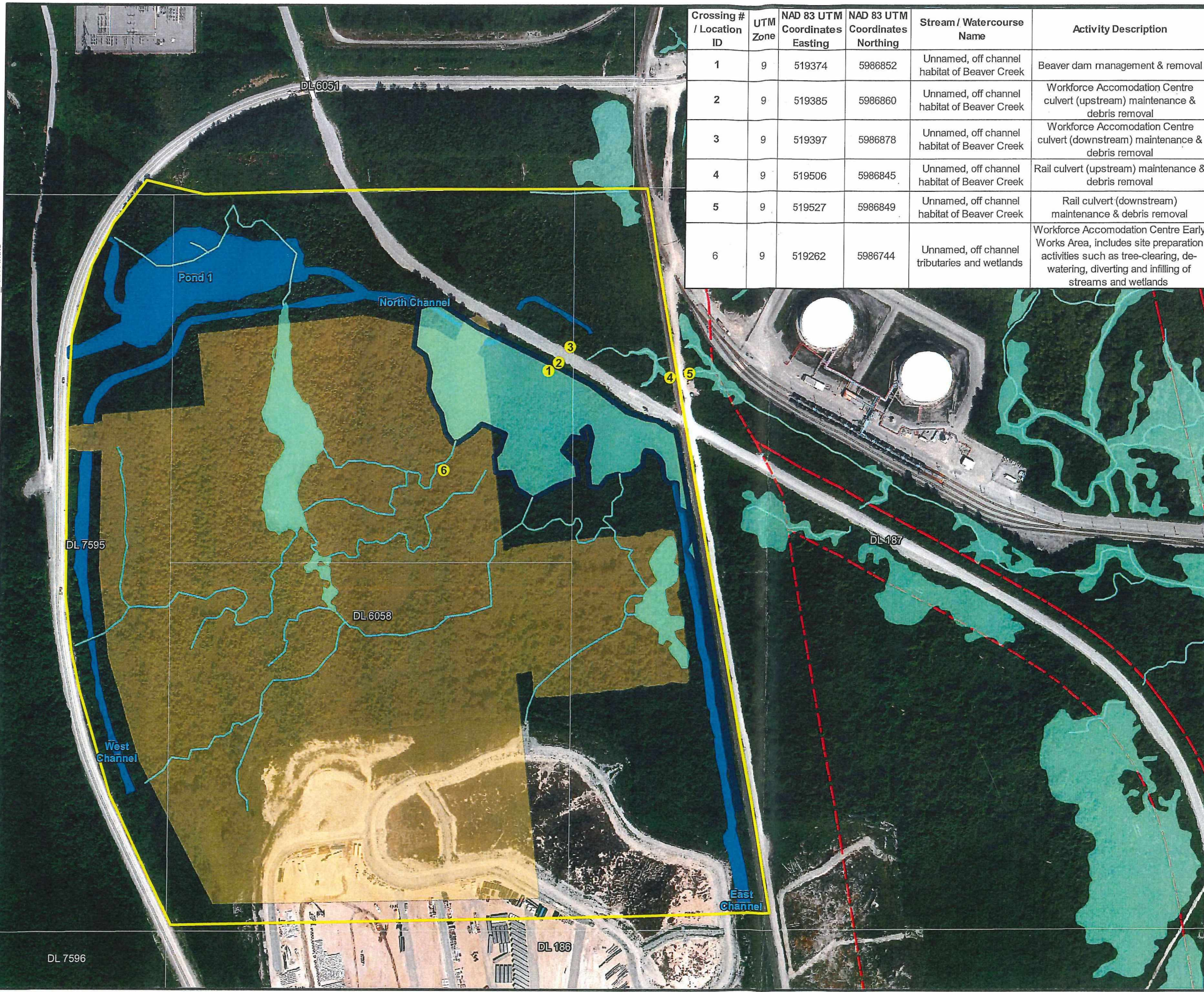
Mayka Kennedy, P.Eng.
Executive Vice President, Chief Engineer
Commission Delegated Decision Maker

pc. CFSW LNG Constructors
OGC File: 9643149
OGC First Nations (Haisla Nation)

Section 9 Activity Details Table

Crossing # / Location ID	UTM Zone	NAD 83 UTM Coordinates Easting	NAD 83 UTM Coordinates Northing	Stream / Watercourse Name	EPMR Stream Classification	Bank Full Stream Width (m)	Stream Gradient (%)	Type of Crossing or Other Works	Activity Description	Proposed Start Date	Proposed End Date
1	9	519374	5986852	Unnamed offchannel habitat of Beaver Creek				Other Works	Beaver Dam management & removal	Mar-16	Dec-16
2	9	519385	5986860	Unnamed off channel habitat of Beaver Creek				Other Works	Workforce Accommodation Centre culvert (upstream) maintenance & debris removal	Mar-16	Dec-16
3	9	519397	5986878	Unnamed off channel habitat of Beaver Creek				Other Works	Workforce Accommodation Centre culvert (downstream) maintenance & debris removal	Mar-16	Dec-16
4	9	519506	5986845	Unnamed off channel habitat of Beaver Creek				Other Works	Rail culvert (upstream) maintenance & debris removal	Mar-16	Dec-16
5	9	519527	5986849	Unnamed off channel habitat of Beaver Creek				Other Works	Rail culvert (downstream) maintenance & debris removal	Mar-16	Dec-16
6	9	519262	5986744	Unnamed, off channel tributaries and wetlands	S2	Varies	Varies	Other Works	Workforce Accommodation Centre Early Works Area, includes site preparation activities such as tree-clearing, de-watering, diverting and infilling of streams and wetlands. These site preparation activities are further explained below.	Apr-16	Dec-16
				Fish Salvage for WAC				Other Works	Fish salvaging has commenced and will continue until completion.	Feb-16	Apr-16
				Major Drainage Systems				Other Works	Installation of diversion channels around the west, north and east boundaries of the WAC footprint, new crossings of the new diversion channels, and tie into existing upstream culverts	Apr-16	Oct-16
				WAC Tree Clearing				Other Works	Clearing of the WAC area of trees.	Apr-16	Apr-16
				Grubbing				Other Works	Site preparation	May-16	Nov-16
				Temporary Road Access				Other Works	Construction of temporary roads for accessing the WAC and locations of activities.	Mar-16	Jul-16
				Water Management				Other Works	Dewatering, temporary drainage and crossings, culvert maintenance and debris removal and installation of sediment and erosions controls.	Mar-16	Dec-16
				Infilling, grading and leveling				Other Works	Infilling of WAC area and leveling and grading.	Jun-16	Nov-16

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Legend

Crossing # / Location ID for Other Works

Scope of Section 9 Water Act Application

Streams

Existing Wetland/Pond

Existing Wetland/Pond (Will Remain)

Proposed Ponds and Channels

Workforce Accommodation Center

Surveyed Parcels

Facility Boundary as Identified in OGC Facility Permit Application

Notes:
1. Existing Streams and Wetland/Pond data provided by Stantec (January 27, 2016).
2. Surveyed parcels sourced from TANTALIS.
3. B.C.G.S. 1031.007 103H.097

ePASS: 10053796



F	ISSUED FOR REVIEW	LK				16/02/16
E	ISSUED FOR REVIEW	AK				05/02/16
D	ISSUED FOR REVIEW	JF				29/01/16
C	ISSUED FOR REVIEW	LK				22/12/15
B	UPDATES	AK				06/11/15
A	INITIAL DRAFT	AK				06/10/15
REV. NO.	DESCRIPTION	BY	CHKD	APVD	APVD	DATE

REVISIONS

WorleyParsons

resources & energy

LNGCANADA

Opportunity for British Columbia. Energy for the world

LNG CANADA PROJECT

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TITLE: LNG CANADA EXPORT TERMINAL

SECTION 9 CHANGES IN AND ABOUT A STREAM

WORKFORCE ACCOMMODATION CENTER

APPLICATION

UNIT: LOCATION: KITIMAT PLANT:

FIG No.: 1 SIZE: B REV: F

FILE NAME: 04-014-001_REV