

OGC File: 9642638

LNG Canada Development Inc.
400- 4th Avenue SW
Calgary, AB T2P 0J4

Attention: Surface Land Administrator

Re: Approval for Changes in and About a Stream

Date of issuance: July 29, 2015

The Oil and Gas Commission hereby authorizes the holder under section 9 of the *Water Act* to make changes in and about streams at Crossing location 1: UTM Zone 9 N. 5985774, E. 520452; Crossing location 2: UTM Zone 9 N. 5985888, E. 520546; and Crossing location 3: UTM Zone 9 N. 5985882, E. 520468, as shown on drawing Project No. 13-1447-0183, Revision A, Figure 1, dated June 22, 2015 and drawing Project No. 13-1447-0183, Revision A, Figure 2, dated June 24, 2015, subject to the following conditions:

1. Any substance, sediment, debris or material that could adversely impact the stream
 - a. must not be allowed or permitted to enter or leach or seep into the stream from an activity, construction, worksite, machinery or from components used in the construction of any works, or
 - b. must not be placed, used or stored within the stream channel;
2. Temporary material, fill, bridge, culvert, pump, pipe, conduit, ditch or other structure used in the construction of any works must be constructed and maintained only during the period of construction, and must be removed upon completion of the works;
3. Activities associated with the stream crossing are carried out in accordance with the regional and /or species -specific timing windows or the periods of time in the year when change can proceed without causing serious harm to fish, wildlife or habitat;
4. Instream works associated with this project must 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.
5. During the temporary ford of a stream the authorization holder must ensure that:
 - a. the construction occurs at a time of the year during which the construction can occur without causing harm to fish, wildlife or habitat,
 - b. the 1 in 10 year maximum daily flow over the ford is accommodated without the loss of the ford and without scouring the stream,
 - c. a stream culvert, if used, is designed and installed to pass the average low flow during the period of use,
 - d. the stream channel is protected against erosion during the period of construction and use of the ford, and
 - e. the temporary ford is removed at the end of the period of use at a time, before the next freshet, when the removal can proceed without causing serious harm to fish, wildlife or habitat.

6. During the installation, maintenance or removal of a stream culvert for crossing a stream, the authorization holder must ensure that:
 - a. equipment used for site preparation, construction, maintenance or removal of the culvert is operated from the top of the bank,
 - b. in fish bearing waters, the culvert allows fish in the stream to pass up or down stream under all flow conditions,
 - c. the culvert inlet and outlet incorporate measures to protect the structure and the stream channel against erosion and scour,
 - d. if debris cannot safely pass, provision is made to prevent the entrance of debris into the culvert,
 - e. the installation, maintenance or removal does not destabilize the stream channel,
 - f. the culvert and its approach roads do not produce a backwater effect or increase the head of the stream,
 - g. the culvert capacity is equivalent to the hydraulic capacity of the stream channel or is capable of passing the 1 in 10 year maximum daily flow without the water level at the culvert inlet exceeding the top of the culvert,
 - h. the culvert has a minimum equivalent diameter of 600 mm,
 - i. a culvert having an equivalent diameter of 2 metres or greater, or having a design capacity to pass a flow of more than 6 cubic metres a second, is designed by a professional engineer and is constructed in conformance with that design,
 - j. the stream channel, located outside the cleared width, is not altered,
 - k. embankment fill materials do not and will not encroach on culvert inlets and outlets,
 - l. the culvert has a depth of fill cover which is at least 300 mm or as required by the culvert manufacturer's specifications,
 - m. the maximum fill heights above the top of the culvert do not exceed 2 m, and
 - n. the culvert is fabricated in compliance with the Canadian Standards Association standard CSA G401, Corrugated Steel Pipe Products, or section B182.2 of the Canadian Standards Association standard CSA B1800, whichever is applicable;

7. During the construction, maintenance or removal of a clear span bridge, the authorization holder must ensure that:
 - a. the bridge and its approach roads do not produce a back water effect or increase the head in the stream,
 - b. the equipment used for construction, including site preparation, maintenance or removal of the bridge, is situated in a dry stream channel or is operated from the top of the bank,
 - c. the hydraulic capacity of the bridge is equivalent to the hydraulic capacity of the stream channel, or is capable of passing the 1 in 10 year maximum daily flow, whichever is greater, and the height under the bridge will provide free passage of flood debris and ice flows, and
 - d. the bridge is designed and fabricated in compliance with the Canadian Bridge Design Code, CAN/CSA-86, of the Canadian Standards Association;

8. During the restoration of a change in and about a stream, the authorization holder must ensure that:
 - a. any structures constructed to cross the stream are removed,
 - b. the channel is restored to its natural state, to the extent practicable,
 - c. the site of the crossing and associated approaches (including cut and fill slopes and ditch lines) are restored by:
 - i. stabilizing any waste materials removed from the site to above the high water mark to prevent them from entering the stream,

- ii. re-vegetating disturbed areas associated with the crossing using seed or vegetative propagules of an ecologically suitable species,
- iii. redistributing coarse wood debris in a manner that aids soil stabilization, and
- iv. ensuring that surface drainage associated with approaches will not transport sediments into the stream.

Additional Conditions:

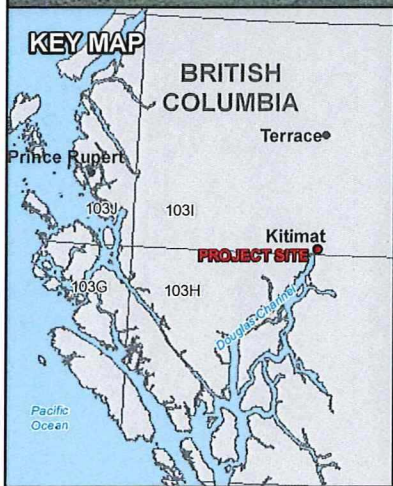
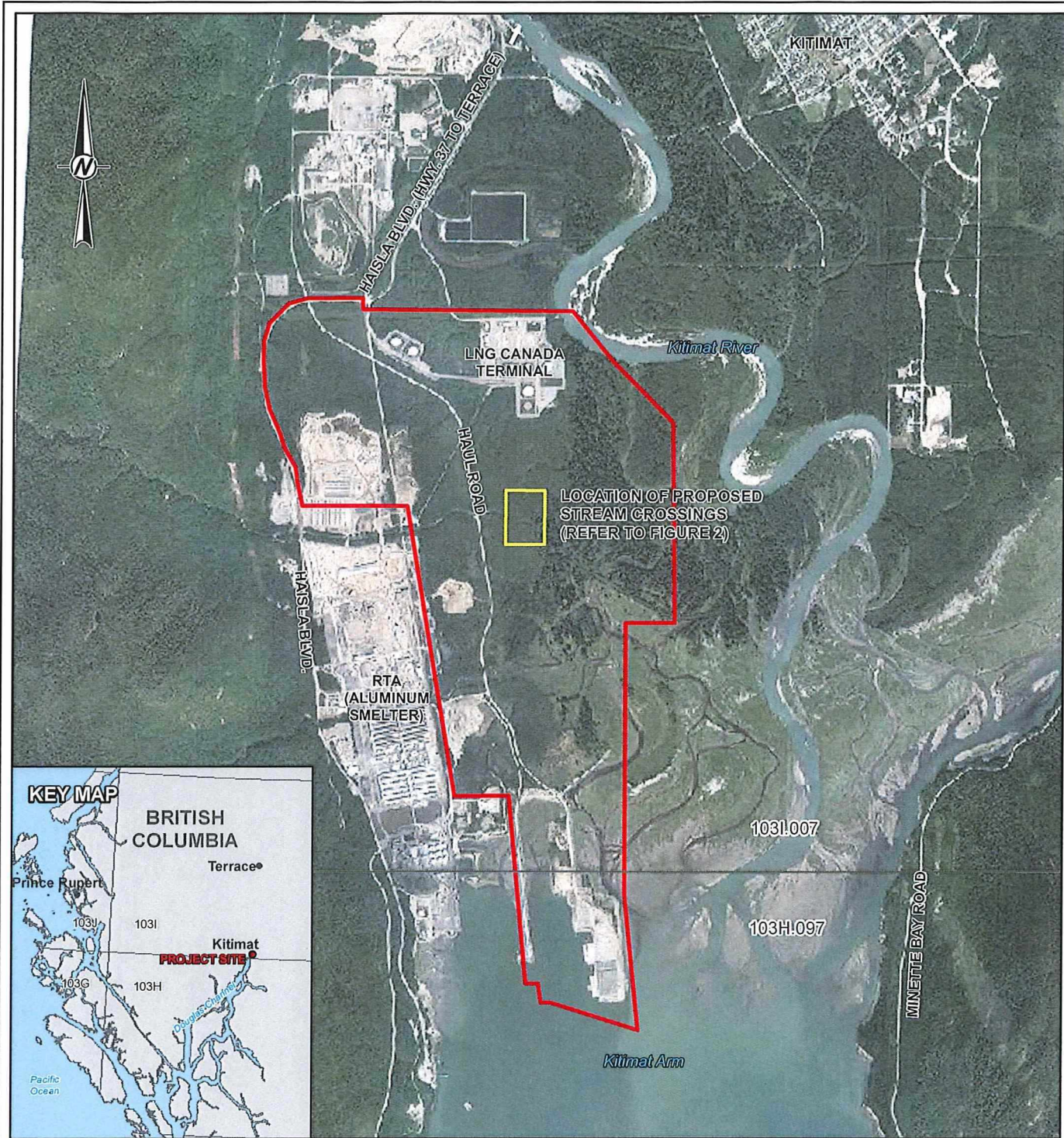
1. Instream activities associated with this permit must occur during the reduced risk work window from June 1st to February 1st.
2. The permit holder must notify Haisla Nation office prior to the commencement of activities.

The attached plan(s) form an integral part of this authorization

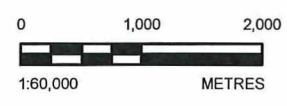


Justin Anderson
Review Approval resource Officer

cc: Roy Northern Land Service
cc: 9642638
cc: Haisla Nation



- LEGEND**
- LNG CANADA PROJECT AREA
 - LOCATION OF PROPOSED STREAM CROSSINGS
 - BCGS 20K GRID



- REFERENCE(S)**
1. ORTHOPHOTOGRAPH BY MCELHANNEY (JULY 2012); USED WITH PERMISSION
 2. INSET MAP LAYER CREDIT: WORLD IMAGERY, ESRI
 3. BCGS GRID OBTAINED FROM THE GOVERNMENT OF BC.
 4. DATUM: NAD83. PROJECTION: UTM ZONE 9.

CLIENT
LNG CANADA

PROJECT
LNG CANADA LIQUEFIED NATURAL GAS FACILITY
KITIMAT, BC, CANADA

CONSULTANT	YYYY-MM-DD	2015-06-22
DESIGNED	DC	
PREPARED	DS	
REVIEWED	KLN	
APPROVED	DN	

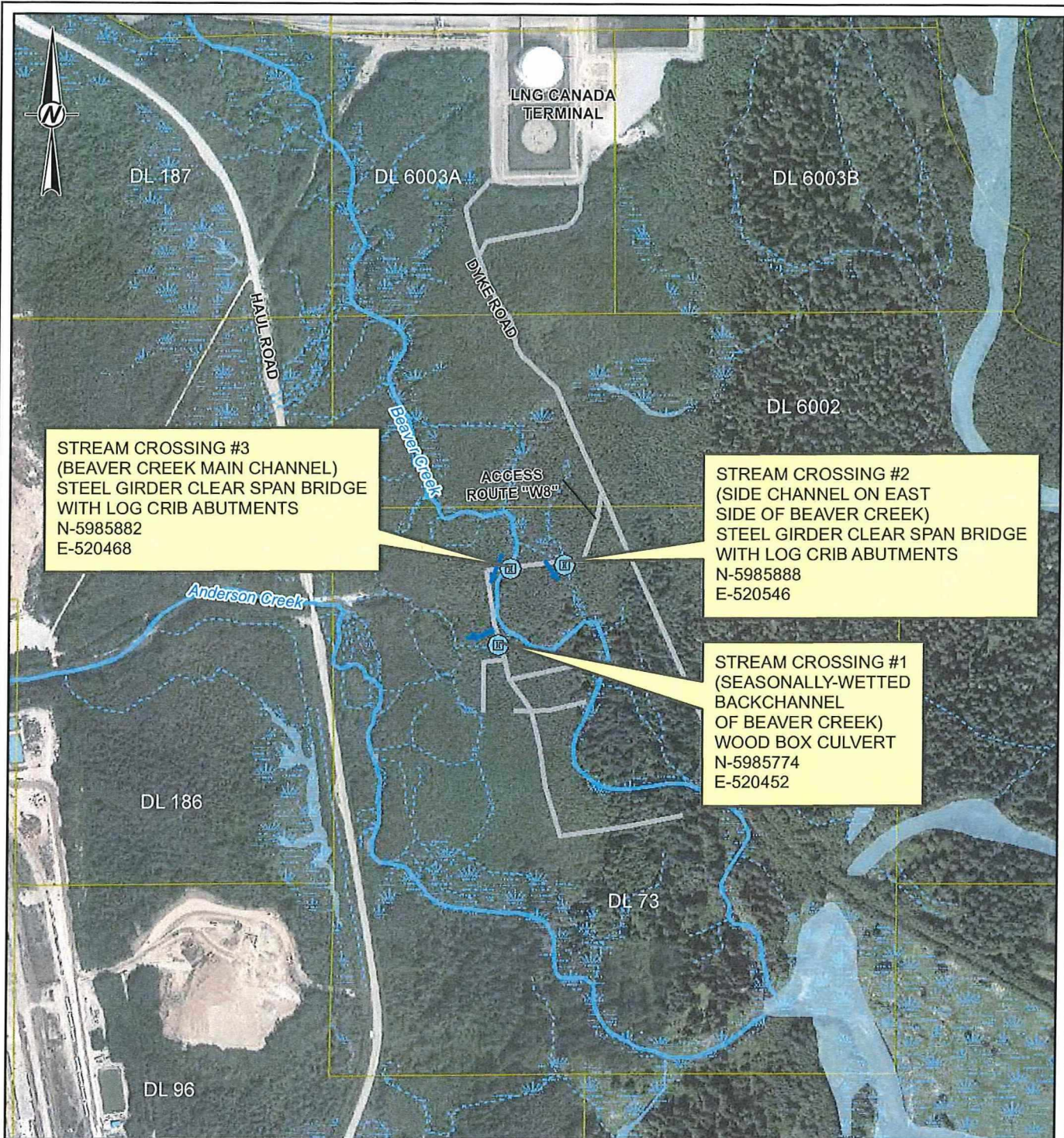
TITLE
**2015 GEOTECHNICAL AND GEO-ENVIRONMENTAL INVESTIGATION
PROPOSED STREAM CROSSING LOCATION INSIDE BCGS 103I.007**

PROJECT NO.	CONTROL	REV.	FIGURE
13-1447-0183	3120	A	1



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PATH: \\pdserv001\pds\Barron\Barron\GIS\Client\LNG_Canada\Kitimat\9 - PROJECTS\13-1447-0183\02 - PRODUCTION\13170 - Environmental\1 and Geotechnical\Drilling\AKD\Report\50\Fig1 - Key Plan - June23.mxd
 IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A
 25mm



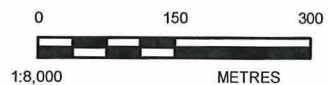
STREAM CROSSING #3
 (BEAVER CREEK MAIN CHANNEL)
 STEEL GIRDER CLEAR SPAN BRIDGE
 WITH LOG CRIB ABUTMENTS
 N-5985882
 E-520468

STREAM CROSSING #2
 (SIDE CHANNEL ON EAST
 SIDE OF BEAVER CREEK)
 STEEL GIRDER CLEAR SPAN BRIDGE
 WITH LOG CRIB ABUTMENTS
 N-5985888
 E-520546

STREAM CROSSING #1
 (SEASONALLY-WETTED
 BACKCHANNEL
 OF BEAVER CREEK)
 WOOD BOX CULVERT
 N-5985774
 E-520452

LEGEND

PROPERTY BOUNDARY	STREAM
EXISTING ACCESS ROUTE	FLOOD CHANNEL
ACCESS ROUTE, RE-SURFACING REQ'D.	WETLAND
PROPOSED STREAM CROSSING	WATER BODY
	FLOW DIRECTION



PROJECT PLAN NOTES
 1. FIELD SURVEY CONDUCTED APRIL 13-18 AND MAY 13-15 2015
 2. BCGS MAPSHEET 103I.007

REFERENCES
 1. ORTHOPHOTOGRAPH BY MCELHANNEY (JULY 2012); USED WITH PERMISSION
 2. INSET MAP LAYER CREDIT: WORLD IMAGERY, ESRI
 3. PROPERTY BOUNDARIES AND BCGS GRID OBTAINED FROM PROVINCE OF BC (DL = 'DISTRICT LOT')
 4. HYDROLOGY FEATURES DEVELOPED BY GOLDBER, BASED ON FIELD WORK
 5. DATUM: NAD83. PROJECTION: UTM ZONE 9.

CLIENT
LNG CANADA

CONSULTANT	YYYY-MM-DD	2015-06-24
	DESIGNED	DC
	PREPARED	DS
	REVIEWED	KLN
	APPROVED	DN

PROJECT
**LNG CANADA LIQUEFIED NATURAL GAS FACILITY
 KITIMAT, BC, CANADA**

TITLE
PROPOSED STREAM CROSSINGS, PROJECT PLAN MAP

PROJECT NO. 13-1447-0183	CONTROL 3120	REV. A	FIGURE 2
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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM A3/34