



Sahtu Land and Water Board

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March 10, 2023

S13L1-007

Benjamin Fraser,
Environment and Regulatory Advisor
Imperial Oil Resources N.W.T. Limited,
750 Mackenzie Drive, Bag 5000,
Norman Wells, NT, X0E 0V0

Sent by email

Dear Benjamin Fraser,

**Re: Request for Modification per Part G, Condition 1 of S13L1-007 – Board Approval
2023 Bosworth Creek Erosion Mitigation Project**

The SLWB received your 20-day notification of modification request on February 22, 2023, requesting approval to carry out bank armouring work, during March 14 to 28, 2023, to mitigate a 21 m section of the Bosworth Creek bank where there is active erosion and slope degradation threatening nearby utilidor infrastructure on the mainland of Norman Wells Operations.

As required by Water Licence S13L1-007 (the Licence) Part G, condition 1:

The Licensee may, without written consent from the Board, carry out Modifications to the water supply and Waste disposal facilities, bunkers, docks, bridges, flowlines, creek banks, and river banks provided that the Modification are consistent with the terms of this Licence and the following requirements are met: a) 60-day notification; b) complies with the Licence, the MVRMA, Federal, Territorial, Municipal Legislation; c) review will not require more than 60 days; d) the Board has not rejected the proposed Modification.

This notification meets all but the Board's 60-day notification requirement for approval without written consent.

The scope of work includes:

- a) Tree and vegetation removal and site grading to facilitate access to the area requiring work below the high water mark of Bosworth Creek.
- b) Use of equipment for clearing, grading, and excavation.
- c) Preparation of two staging areas - #1 D-28x well site and #2 across the creek from the failed bank.
- d) Two ice bridge/snowfill crossings of Bosworth Creek.
- e) Placement of non-woven geotextile filter fabric and 65 m³ Class 1M riprap, 75 m³ Class 2 riprap armour rock along 240 m² section of the bank to mitigate from future erosion.

Timeline

- **November 2022** – TRS Advisian retained by IORL to complete a geotechnical assessment of Bosworth Creek.
- **January 17, 2023** – TRS Advisian submitted report to Imperial with the following findings:
 - i) The area comprises a sand and silt alluvial terrace with gentle south slopes toward the Mackenzie River.
 - ii) There is a 21 m long by 7 to 8 m high section of unstable creek bank showing evidence of recent sloughing and soil and vegetation loss and active slope degradation during spring freshet and when Bosworth Creek water levels are high.

- i) A utilidor (provides right of way for electrical cables and conveyance pipes carrying multiphase fluids, fuel and natural gas) that parallels Bosworth Creek, is currently offset 2.5 to 6 m from the crest of the actively eroding creek bank.
- ii) Future instability is likely to occur if no action is taken.
- **January 18 – February 2023** - Imperial worked with inhouse civil engineers and contractor, Graham Construction to develop an erosion mitigation plan using rip rap armour to prevent future erosion of the unstable bank and to protect the nearby flowline infrastructure.
- **February 2023** – Imperial contacted DFO who will be completing a project review prior to commencement.
- **February 22, 2023** – Imperial submitted Modification request to the SLWB and Inspector, acknowledging the shortened notification timeline with this scope of work.
- **February 23, 2023** – CIRNAC Inspector agrees with the approach and considers it necessary work to avoid erosion and future issues with the infrastructure near Bosworth Creek. The Inspector included conditions for during and after Project execution.
- **March 3, 2023** – SLWB sends email to the Imperial Oil Distribution List requesting input as to whether a formal review should be undertaken.
- **March 10, 2023** – SLWB to approve the Modification with conditions if no further input requested.

This Modification Request was accepted by the Board on March 10, 2023 as per Part G, condition 1 of Licence S13L1-007 and based on recommendation of the CIRNAC Inspector and the need to protect infrastructure.

Based on the evidence provided through this regulatory review process, the Board approves the Modification with the following conditions:

- a) The Licensee will implement all of the mitigation measures as described in the February 22, 2023 Modification request letter received from Imperial.
- b) The Licensee will provide 72-hour Inspector Notification of Project commencement.
- c) Any deviation from the proposed plan will be communicated to the Inspector before the work continues.
- d) All removed brush should be spread around the area and not piled as this can cause wildlife obstructions. No brush should be left on the ice but placed in an area where it will not enter the creek during freshet.
- e) The Licensee will provide as-built plans and drawings as per Part G, Condition 3 of S13L1-007 that shall include, but not be limited to:
 - i) Details of the riprap brought in including volumes, quarry information and seller information,
 - ii) Detailed drawings of any roads / trails , staging areas constructed to access the area,
 - iii) Before and after photos of all areas of the project including the creek, slumping area, access trails, brush disposal, refueling station, etc. that detail the project and explain the work that was completed,
 - iv) Details on the removal and ultimate disposal of sediment from the creek surface and any material removed from the creek bank.
- f) The reporting of Modifications or major maintenance work completed, quantities of water used, and quantity of materials brought in, is required to be reported in the Annual Report for S13L1-007 Part B, Condition 13 and Schedule 1. The Report should detail work completed, dates, issues encountered, monitoring plans, future concerns, etc..

The continued cooperation of Imperial in meeting their regulatory requirements is anticipated. If you have any questions or concerns, please contact Bonnie Bergsma at (867) 496-2778 or email bonnie.bergsma@slwb.com.

Sincerely,

Tanya MacIntosh, Chair
Sahtu Land and Water Board

Copy (by email): John Gregory, Conventional Operations Superintendent
Tim Morton, CIRNAC inspector
Imperial Oil Distribution List