



Sahtu Land and Water Board

Staff Report

Division: Land Program	Report No. 3
Date Prepared: May 7, 2013	File No. S12X-006
Meeting Date: May 16, 2013	
Subject: Surface and Groundwater Monitoring Plan submitted by Husky Oil Operations Ltd.	

1. Purpose/Report Summary

To re-consider the Surface and Groundwater Monitoring Plan (the Plan) as submitted by Husky Oil Operations Ltd. (Husky) to satisfy condition Part 26 (1) D.22, of the Type A Land Use Permit S12X-006.

2. Background

2.1 Project Overview

The Plan has been submitted to satisfy Part 26 (1) D.22, of Land Use Permit S12X-006 which states:

“The Permittee shall submit a Groundwater and Surface Water Monitoring Plan by January 11, 2013 for approval from the Sahtu Land and Water Board. Once approved, the Permittee shall;

- (a) revise the Plan as needed and submit to the Sahtu Land and Water Board for approval, and;
- (b) abide by the approved Plan for the duration of this Permit.”

The initial Plan was submitted January 11, 2013. A revised Plan was submitted March 8, 2013, and a further revision of the Plan was submitted April 22, 2013 to address the concerns/recommendations raised by the reviewers.

Groundwater Program

- Drilling of up to 15 holes at five locations (three holes per location) to evaluate bedrock aquifers to a maximum depth of 150 metres each;
 - Two locations have been drilled; one encountered groundwater and one did not (was abandoned).
- Drilling of 20 holes to evaluate surficial groundwater to a maximum depth of 30 metres each or three metres into the bedrock;
 - Two of the 20 wells encountered water while others encountered permafrost or bedrock, so some were either abandoned or completed as thermistor sites to monitor temperature.
- Following construction, wells will be purged and sampled;
 - Purged water will be stored onsite until sufficient volumes have accumulated and will then be sent out for analytical testing and if all parameters have not been exceeded the water will be pumped off in a controlled manner; and

- Samples were collected prior to and after completion and stimulation of the two well sites.
- Aquifer testing will be used to evaluate hydraulic characteristics and assess the development potential of the source.

Surface Water Program

- Data loggers will be re-deployed in Bogg Creek, Slater River and Little Bear River to monitor water levels and the barometric pressure;
- Three to five flow/discharge measurements will be conducted throughout the open water season to establish reliable stage-discharge relationships for the three basins;
- 39 Surface water samples were initially sampled in July 2012;
 - Husky is currently assessing the possibility of adding the approved water sources into this program and to expand the program to include the sampling of sediments for sites located within a lake, downstream of operations; and
- Surface water samples will be collected during 2013 on two occasions (early summer and early fall) from the 39 locations.
- Sediment sampling is proposed to take place in 2013 and 2015.
 - Will be collected from two representative lakes during early summer.
 - An alternative water quality sampling approach will be taken at these two lakes. Will included samples collected 1 m below the lake surface and 1 m above the bottom of the deepest part of the lake.

Recommendations for any changes to the programs based on the findings obtained, any obvious data gaps, or any collaborative review of data from other research or studies in the area will be communicated to the Board in the annual report.

2.2 Process Requirements

Land Use Permit Issued: December 5, 2012
Received the Plan: January 11, 2013
Sent Out the Plan for Review: January 12, 2013
Review Period End Date: February 1, 2013
Number of Review Agencies: 20
Revised Plan: March 8, 2013
Sent Out the Plan for Review: March 28, 2013
Review Period End Date: April 10, 2013
Number of Review Agencies: 19
Sent Out the Plan for Review: April 23, 2013
Review Period End Date: May 2, 2013
Number of Review Agencies: 4

3. Other Agency Comments

The second revision to the Plan was circulated to 4 organizations requesting a reply by May 2, 2013. To date 1 organization has responded. The following organization offered comments on the application:

- **Aboriginal Affairs and Northern Development Canada**

Please see the attachments for complete comments.

All review comments were emailed to the proponent for their information and follow-up action as required.

3.1 Discussion

A brief summary of comments are provided below. This section does not summarize all comments. Please review the attachments for complete comments.

Aboriginal Affairs and Northern Development Canada

In an email letter dated May 2, 2013, AANDC had the following comments and recommendations:

- Monitoring throughout the exploration block assists in the process of further expansion of the project, but monitoring near active work areas and wellsites is better suited to detect potential impacts from these activities. Specific surface and groundwater monitoring stations should be added in proximity to the location of activities.
- Further details on the future groundwater monitoring program including the addition of groundwater wells to be drilled.
- Further details on the interpretation and reporting of their monitoring program results.

Husky Response to AANDC

In an email letter dated May 6, 2013, Husky responded to the AANDC comments and recommendations.

- The monitoring plan will be revised to include additional sampling locations as appropriate.
- The monitoring program will expand in future years when and if additional development takes place. Should additional suitable locations become available in the future, additional wells will be drilled.
- Results will be compared to the CCME Guidelines for Freshwater Aquatic Life. Changes may be detected by the appearance of previously undetected analyses and/or statistical comparison between sampling events.

4. Conclusion

Board staff concludes that the Surface and Groundwater Monitoring Plan, submitted April 22, 2013, can be approved at this time. Board staff would like the Board to recognize that the Plan is a living document that will evolve over time in conjunction with the growing scale of exploration and available data. Future expectations of the Proponent are outlined in the Issuance Letter.

5. Recommendation

It is recommended that the SLWB approve the Surface and Groundwater Monitoring Plan as submitted and for Board staff to keep working with the company to ensure consistency with all similar plans in the area.

6. Reference Material Attached

- 6.1 Review Comments from AANDC
- 6.2 Response from Husky to AANDC

Respectfully submitted,



Angela Love
Regulatory Specialist

Executive Director Comments:

Paul Dixon
Executive Director