



Sahtu Land and Water Board

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June 30, 2015

File: S12X-006

Husky Oil Operations Limited
Attn: Ken Hansen
Project Manager – NWT
P.O. Box 6525, Station D
Calgary, Alberta T2P 3G7

RE: Suspension of the Surface and Groundwater Monitoring Programs

Dear Mr. Hansen,

The Sahtu Land and Water Board has reviewed the Surface and Groundwater Monitoring Program (SWGMP) and annual report from Husky and has considered the request to suspend the Program. The Husky Land Use Permit S12X-006 conditions state the proponent shall revise the Plan as needed and submit to the SLWB for approval.

Recommendation 1: The Board agrees to suspend the ground water program component but would like Husky to conduct targeted water quality sampling during field operations conducted by the proponents.

Rationale: The surface water quality and hydrological monitoring programs are more flexible in the efforts required to collect and analyze samples. Some of the objectives for the surface and hydrologic sampling programs were:

- To identify potential long-term variations in local water quality and flow during the open water seasons to try and capture the natural variability that can occur between spring freshet and fall turnover;
- To assess the range of parameter concentrations and variability of surface water quality within the open water season and between years.

Long-term and seasonal variations in local water quality cannot be determined with statistical accuracy if the water sampling programs are suspended. Data presented so far identify that several parameters on the exploration sites are naturally elevated with unknown reasons for these exceedances. It would be beneficial to collect additional data in order to gain a better understanding of these data and data anomalies.

Recommendation 2: In reviewing the annual report submitted by Husky, the SLWB has identified some issues and concerns and would like the following items to be addressed in a revised report.

1) The Board would like to see the data for each type of waterbody separated and presented independently for each type.

Rationale: Husky have identified collecting data from various types of waterbodies (lakes, streams, ponds, rivers). However, in their reporting, they don't differentiate among them. The processes that drives these waterbodies are very different therefore the data should not be combined for these different systems. Ranges (and in the future, when enough data are collected, trends) may be different among the different waterbody types.

2) i) The Board requests a table that lists every site, by waterbody type, and when it was sampled. ii) The Board recommends more temporal consistency on resampling sites at similar times of the years.

Rationale: i) It would be much easier to interpret information in a table rather than in the several different figures. e.g.

Site	Aug 2012	Feb 2013	July 2013	Sept 2013	Sept 2014
01	X		X		
02	X	X			X
03				X	X

ii) More effort should be placed into sampling sites during one time in the year (temporal consistency) than spreading out the effort. Hydrological systems change quite a bit from July to September and it's not statistically/biologically sound to combine these data.

3) The Board requests the reports be amended to identify disturbed and undisturbed (control) sites and to provide a larger scale map of sample sites.

Rationale: The Husky report does not identify whether a site is impacted by an upstream disturbance or whether it's a control (undisturbed) site. The maps are on a relatively small scale which make them difficult to read.

4) The Board recommends an increased number of samples taken in order to increase the statistical accuracy of the dataset.

Rationale: In order to understand a system, it is important, especially when collecting baseline data, to collect an adequate amount of samples in order to establish the natural variability at the site.

5) The Board requires more explanation of the data trends that are being provided in figures and tables in the report.

Rationale: There is a general lack of explanation of why we are seeing what we are seeing. Some figures presented indicate trends but do not provide explanations as to their occurrence.

- 6) **The Board requires a plan for data analysis as part of the methodology for the monitoring program design.**

Rationale: The sample collection and design of the monitoring program requires a plan for how the data will be analyzed and statistically compared.

- 7) **The Board requires that dissolved metals and phenols sampling be continued at this time.**

Rationale: Dissolved metals and phenols are baseline data important to establishing the natural variability of parameters in the system. The Board is not satisfied that baseline conditions have been established.

- 8) **The Board recommends a plain language summary of the reports made available for the general public.**

Rationale: It is unclear why some variables are being measured/how they help in understanding the health of surface water, e.g. isotope analysis, water typing, piper diagrams. These variables are difficult for the general public/non chemists to understand and interpret. A plain language summary would assist reviewers and the general public with interpretation and understanding of the data presented.

The SLWB appreciates the efforts that have been made to collect baseline water quality data for surface and groundwater resources on the exploration licence program site. These data and future data collected to support ongoing baseline monitoring will help to contribute to a better understanding of local and regional conditions so that monitoring during program activities can identify any potential impacts from exploration drilling for oil and gas and ensure that prompt and effective response measures can be implemented to protect the environment.

The Board asks for your continued cooperation with data collection, analysis and reporting on this important matter.

Yours Sincerely,



Larry Wallace
Chair - SLWB

Cc: Stephanie Hughes – Water Resources Officer, GNWT - ENR
Steve Deschene – Regional Superintendent, GNWT – Lands
Darren Heck – Environmental Project Manager, NESTL
Jenica von Kuster – Environmental and Regulatory Coordinator – NWT, Husky