

July 16, 2013

Sahtu Land and Water Board
P.O. Box 1
Fort Good Hope, NT
X0E 0H0

Via email: angela.love@slwb.com

Attention: Angela Love

Dear Angela,

Re: Husky Oil Land Use Permit S13A-002 and Water License S13L1-005 Applications – Letter of Comment from Environment Canada

We have reviewed the comments and recommendations provided by Environment Canada (EC) in the correspondence to the Board dated July 5, 2013. Husky's responses are provided below and follow the format contained in the EC review letter.

General

- Acknowledged

Groundwater

- A final report for the groundwater monitoring well installation will be provided shortly. The summer sampling program has not yet commenced but a summary report on this component will be supplied when complete and no later than year-end.

Waste Treatment/Management

- Criteria for testing is described in the Waste Management Plan submitted with the application.
- Husky is aware of the requirements for interprovincial waste transfer

Fuel Storage

- Acknowledged

Drilling and Completion

- Fluids will be stored in either single or double-walled tanks. In either case a synthetic berm will be used as a secondary or tertiary containment.
- A DFIT is basically a "mini-frac" where the formation is pressured up to initiate localized fracturing. The formation pressures are then monitored to determine the characteristics of the reservoir rock and how the it responds to the pressure. This information assists in the development of the hydraulic fracture stimulation program.
- Husky is committed to execute this program based on good industry practices in a safe and environmentally friendly manner. Operations will be ensured to meet the well design requirements, applicable regulatory requirements (i.e. Alberta AER Directives) and confirm to Industry Best Practice.
- The chemical additives that will be used in the drilling and completion will be provided by vendors which have an internal process to evaluate the hazard and toxicity of each of the additives. If a less hazardous or less toxic substitute is available that would meet design requirements then that chemical would be recommended. Husky will collaborate with the vendors to ensure that this

selection process meets Husky's internal standards and complies with corporate environmental responsibility policies..

Air

- Fugitive emissions are managed as part of regular drilling and completion practices through mandatory pressure testing and leak-off tests. Possible emissions would include natural gas and light-end hydrocarbons.
- A green house gas emission study was conducted for the project and is included in the application.
- Each well will be tested for approximately 20 days. It is uncertain how much gas will be produced since this program will assess untested sections of the Canol Formation which is a tight shale. The dispersion modelling used $10 \times 10^3 \text{ m}^3/\text{day}$ as an anticipated high-end flow rate estimate. We expect the average to be $5 \times 10^3 \text{ m}^3/\text{day}$ but will not be a constant flow. It is anticipated that the gas will initially be produced as surges and become a steady flow as the flow test progresses.

Wildlife

- Crews will be briefed on wildlife interactions and will be instructed to avoid contact and disturbance of nests and eggs.
- Set back distances for flights will be maintained for all observed flocks during migration.
- Husky will update its table to include Woodland Caribou
- Husky will avoid any non-essential clearing of trees that may be suitable for nesting for the Olive sided flycatcher
- Husky will provide updated shape files upon request
- A report on the winter track survey will be provided when complete and will be shared with interested parties.

Cumulative Effects

- Cumulative effects will be discussed in annual reporting.

Regards,

Husky Oil Operations Limited



R.M. (Bob) Raina, P.Geol.
Operations Environmental Advisor
Canol Shale Project

cc. Ken Hansen – Project Manager, Canol Shale Project
Jenica von Kuster – Environmental Advisor
Darren Heck - MWH