



Natural Resources and Northern Development
Petroleum Branch
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Phone (204) 748-4260

December 8, 2022

Attn: Petroleum Inspectors

**RE: (04-19)102.04-18-10-27 W1M Daly
New Battery Application – Flare Stack at Single Well Battery**

As per subsection 75(1) of the *Drilling and Production Regulation* Tundra Oil & Gas Limited is submitting an application to construct a new battery to be located at (04-19) 102.04-18-10-27W1M. A vapour collection system complete with separator and flare is to be installed at this single well battery to control H₂S odors, ensure ambient air quality off lease and ensure worker safety. This well is a few miles from the nearest tie in point and is likely to remain producing to a tank for several years. Please review the following application.

- A) The application fee of \$1,000 has been requested and will be submitted via EFT. I will forward the confirmation email to Landon Fraser, Scott Westbrook, and Eric Bjornsson when it is received.
- B) Performance deposit for Tundra is currently topped up and up to-date.
- C) A survey plan of the well site has been included in the application package.
 - C.1) The description of landowner consultation is attached in **Appendix A**. This appendix also includes the names and addresses for all the landowners within 1.5 km of the proposed battery. No occupants were identified within the distance parameters. There were a couple of objections from the landowners, however Tundra reached out to these landowners again and received their permission via telephone.
- D) (04-19) 102.04-18-10-27, well license 11374, will be the only well that will produce to this battery.
- E) This well is currently producing 18.0 m³/day oil, 12.0 m³/day water, and 0.936 e3m³/day gas. The well has a calculated GOR of 52. It is assumed that 100% of the gas will separate out in the separator and go to flare. A scrubber will be utilized to prevent odors when loading a truck to haul the fluid.
 - E.1) The most recent gas analysis for this well has been attached. This was used as an analog for the gas dispersion modeling.

F) Equipment specification.

- There will be a separator, two 400bbl test tanks, a flare stack, and a knockout drum on site. Currently two test tanks are required. The well is electrified.
- *The CRN and Serial numbers of the separator and flare stack will be forwarded to the Branch when they are installed, the equipment will be from Tundra's surplus equipment.*
- Separator Building Specs:
 - 8' x 10' building on a skid
 - Vessel is 6' high x 24" OD. MAWP 500 PSI. 2 Phase separator
 - 2" Taylor PSV "G" orifice set at 500 PSI
 - MB CRN # TBD, SN# TBD
 - 3-way divert actuated on high level and high pressure
 - Scanner 2000 gas meter run with bypass
 - Nitrogen bottle
 - Building heater
- The flare stack is:
 - Fre-Flo 3" dia. by 40' freestanding flare stack, Serial #TBD, mounted c/w the following: 13' x 8' nom. wide flange skid collapsible stack lowered/raised by wide flange support system
 - hand winch to raise/lower stack c/w cable
 - 3" 150# Enardo detonation type flame arrestor, (Serial #TBD).
 - Mactronic 120V ignitor system for stack c/w slip stream ignition chamber
 - ignitor head with retractable ignitor head assembly manual or automatic operation

G) This well will produce through the separator with a meter, and it is the only well producing to the tank, so it is therefore "tested" daily.

G.1) Flare and vapour system. This battery will collect all gas knocked out in the separator and direct it to flare.

G.2) The results of the dispersion modelling for SO₂ at this site are included within **Appendix B**.

All gas is being directed to the flare stack. As per the Dispersion Modeling Guidelines for Oil Batteries in the Province of Manitoba within Informational Notice 02-215 it is assumed that the combustion conversion of H₂S to SO₂ is 100% and the radiation heat loss is assumed to be 25%. Therefore, if 100% of the gas is collected and passes through the flare this location will be in compliance with ambient air quality for H₂S.

Air dispersion modeling for SO₂ was completed at current production rates and show result of 6.592 µg/m³. These results are in compliance with regulations.

H) Plot Plan: a proposed plot plan has been included in the application package. Tundra will complete an as-built survey of the site and forward it to the branch. For well site planning, we will ensure the tanks are 25 meters away from the wellhead and the flare is 25 meters away from the tanks and the wellhead.

I) A process flow diagram has been included in the application package.

K) The oil & water from this location will be hauled to the 13-10-009-28 battery where it will be processed. The water will be disposed of between the 103.13-10-009-28W1M and 100.09-09-09-28W1M disposal wells.

If you have any additional questions, comments, or concerns please contact me in the Virden office at 204-748-4748.

Sincerely,

SBenko

Shelby Benko
Facilities E.I.T