



June 17, 2019

8100-2800-32640-02

Mat Loewen
President
Albright Flush Systems Ltd.
P.O. Box 6148
Fort St. John, BC V1J 4H6

Dear Mr Loewen,

**RE: PRODUCED WATER DISPOSAL SPECIAL PROJECT APPROVAL; AMENDMENT #2
HYDRAULIC FRACTURE STIMULATION
ABT W STODDART A10-09-087-21; WA# 14095
STODDART WEST FIELD – CADOMIN FORMATION**

Approval for disposal of produced water, Order 14-02-013 as a Special Project under section 75 of the *Oil and Gas Activities Act* (OGAA), was issued for the subject well, Cadomin formation, on November 10, 2014, with subsequent amendments on November 18, 2014 and September 21, 2017.

A Notice of Operation for the subject well dated April 30, 2019 indicated the intent to “re-perforate existing Cadomin intervals and additional new intervals and re-fracture stimulate the well to increase injectivity”.

Condition 2 l) of Order 14-02-013 Amendment #2 states,

l) Not conduct a hydraulic fracture stimulation on any formation in the subject well without prior Commission approval.

Fracture stimulation of wells approved for disposal operation is addressed on pages 19 and 20 of the document “Water Service Wells Summary Information” located at <https://bcogc.ca/node/5997/download>

Section 22 of the Drilling and Production Regulation requires a well permit holder establish and maintain hydraulic isolation between all porous zones in a well.

Email correspondence between the Commission and Albright, commencing May 1, 2019, regarding the proposed hydraulic fracture stimulation, contained the following key points;

- The requirement for modeled results of a proposed hydraulic fracture stimulation.
- Albright Flush Systems Ltd. does not own the Petroleum and Natural Gas Lease rights to the overlying Gething formation. A PNG lease is required to utilize a formation for disposal storage. A proposal for commingled disposal utilizing the Cadomin and Gething cannot be approved.
- Compromising the integrity of a portion of the existing cap rock is to be avoided, to ensure the long-term containment of the disposal fluid.

Numerous simulation models, for various hydraulic fracture stimulation programs, have been forwarded to and reviewed by the Commission. The Commission is of the opinion that the model values and results contain a degree of uncertainty which limits confidence that a sizable fracture stimulation will remain contained within the Cadomin formation.

Based on the result of a previous hydraulic fracture stimulation on the well A10-9, and concern for maintaining hydraulic isolation, the Commission approves a maximum fracture stimulation size of 25T with the following conditions:

- following fracture stimulation a hydraulic isolation temperature log must be conducted.
- written approval from this office, following review of the log results, is required prior to recommencement of disposal operation of the well ABT W Stoddart A10-09-087-21; WA# 14095.
- any resulting change to the perforation interval from that stated in Condition 2 a) of 1259.0 – 1273.0 mKB will require an amendment to Order 14-02-013. A shallower perforation top depth may result in a reduction in the maximum wellhead injection pressure stated in condition 2 b).

Note that an outcome of loss of formation isolation will likely result in cancelation of the disposal approval, under OGAA section 75(2)(b)(iv), and where a risk to the environment, safety or resource recovery may result, the Commission may issue an order necessitating remedial actions, which can include formation fluid flowback to reduce pressure.

Should you have any questions, please contact the undersigned at (250) 419-4430.

Sincerely,



Ron Stefik, Eng.L.
Supervisor, Reservoir Engineering
Oil and Gas Commission