

April 3, 2014

Gene Wasylchuk
Vice President - Reservoir, Geotechnical and New Ventures
Tervita Corporation
500, 140 – 10th Avenue SE
Calgary, AB T2G 0R1

Dear Mr. Wasylchuk:

**RE: PRODUCED WATER/NONHAZARDOUS WASTE DISPOSAL SPECIAL PROJECT
AMENDMENT #2 (TEMPORARY APPROVAL)
TERVITA HZ W STODDART 10-30-87-20 W6M; WA# 10864
HALFWAY FORMATION**

Oil and Gas Commission (Commission) staff have reviewed the request, dated November 20, 2013, seeking approval to re-activate disposal at Tervita HZ W Stoddart 10-30-87-20 W6M into the Halfway formation of the subject well. As well, the request dated January 20, 2014 to commingle fluids from the 16-7-88-20W6M well with other produced fluids before disposal into the subject well has been considered.

Previously utilized for disposal of non-hazardous wastes, commencing March 2004, the subject well was ordered shut-in by the Oil and Gas Commission in November 2012 due to high reservoir pressure. The pressure has since partially dissipated from this measured high value. Tervita requires permission to temporarily re-commence disposal at the subject well to accept produced water from the well at 16-7-88-20 (WA 15311). The reservoir at the 16-7 well remains considerably over-pressured and is under Order for continued withdrawal and disposal of previously injected produced water and nonhazardous waste. Concerns with ongoing truck traffic from 16-7, and the projected limited impact on reservoir pressure at the 10-30 location, support the approval for temporary disposal in the subject well. Commingling produced and flow-back fluids at the plant location is acceptable provided disposed volumes into 10-30 do not exceed volumes produced at 16-7.

Attached Order 04-02-001 Amendment #2 designates an area in the Stoddart West field – Halfway formation a Special Project under section 75 of the Oil and Gas Activities Act, for use of a storage reservoir for the disposal of a limited additional volume of produced water/nonhazardous waste withdrawn from the well Tervita Silverberry 16-7-88-20. The results of recent well inspection and testing have confirmed mechanical integrity of the wellbore.

This amendment establishes a maximum wellhead pressure value, ultimate average reservoir pressure and reservoir pressure testing requirements, in addition to other conditions.

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

Sincerely,



Mayka Kennedy, P.Eng.
Chief Engineer
Oil and Gas Commission

Attachment

IN THE MATTER of the operation and use of a storage reservoir by Tervita Corporation in the Stoddart West field.

ORDER 04-02-001 Amendment #2

- 1 Under Section 75(1)(d) of the *Oil and Gas Activities Act*, the Oil and Gas Commission designates the temporary operation and use of a storage reservoir for the disposal of produced water and non-hazardous waste from the well Tervita Silverberry 16-7-88-20 (WA 15311), into the Stoddart West area – Halfway formation as a special project in the following area:

DLS Twp 87 Rge 20 W6M; Section 30 – Lsd's 9, 10, 15 and 16.

- 2 Under section 75(2) of the *Oil and Gas Activities Act*, the special project designation in this Order is subject to the following conditions:
- a) A volume of produced water and non-hazardous waste equivalent only to that flowed from the well Tervita Silverberry 16-7-88-20 (WA #15311) may be injected into the Halfway formation through the well Tervita HZ W Stoddart 10-30-87-20 W6M (WA #10864).
 - b) The non-hazardous waste disposal must be in accordance with the approval conditions of Waste Discharge Permit #17347, issued by the Ministry of Environment.
 - c) Injection must be through tubing with downhole packer.
 - d) Wellhead injection pressure must be continually monitored and recorded and reported weekly to the Commission.
 - e) Disposal/injection pressure at the wellhead must not exceed 14,800 kPa, based on the maximum allowed pressure in the adjacent Tervita HZ W Stoddart Cadomin disposal well (WA #28116) connected via a common manifold.
 - f) Cease injection and notify the Commission immediately if hydraulic isolation is lost in the wellbore or formation.
 - g) A record of volume disposed of through this well must be included on a Monthly Injection/Disposal Statement, in the prescribed form (BC-S18), which must be submitted to the Oil and Gas Commission not later than the 25th day of the month following the reported month.
 - h) Total volume disposed under this Amendment must not exceed volume withdrawn from Tervita Silverberry 16-7-88-20W6M (WA 15311).
 - i) Stabilized reservoir pressure must be measured and reported each 6 months from the date of initial disposal.
 - j) The average reservoir pressure must not exceed 18,900 kPa, 140% of initial pressure.
 - k) Not conduct a hydraulic fracture stimulation on any formation in the subject well without prior Commission approval.



Mayka Kennedy, P.Eng.
Chief Engineer
Oil and Gas Commission

DATED AT the City of Victoria, in the Province of British Columbia, this 4th day of April, 2014.

Advisory Guidance for Order 04-02-001 Amendment #2

- I. A production packer must be set above the injection interval and the space between the tubing and casing (including the space between the 3 packers) filled with corrosion inhibiting fluids, as per section 16(2) of the Drilling and Production Regulation.
- II. Annual packer isolation tests are required, as per section 16(3) of the Drilling and Production Regulation.
- III. Injected fluids must be metered, as per section 74 of the Drilling and Production Regulation.
- IV. A monthly disposal statement must be submitted to the Commission not later than the 25th day of the month following the reported month, as per section 75 of the Drilling and Production Regulation.