

April 9, 2009

9000-1680-32640-02

Don Babiuk Liard Production Project Manager Apache Canada Ltd. 1000, 700 – 9th Avenue S.W. Calgary, AB T2P 3V4

Dear Mr. Babiuk:

RE: SALT WATER AND RECOVERED FLUIDS DISPOSAL APPROVAL APACHE PATRY c-A30-A/94-O-12 (WA# 25140); SIKANNI FORMATION

Commission staff have reviewed the information submitted April 6, 2009, in support of your application dated January 13, 2009, requesting permission to dispose of produced water and completion/workover fluids resulting from fracture treatments, into the Sikanni formation of the subject well.

Existing well control is limited in this area. An injectivity test, approved February 19, 2009, has been completed. Information from the subject well indicates that the Sikanni is water saturated and of favourable rock quality for disposal purposes. However, during acidization of the Sikanni formation, communication between the injection zone and the surface casing vent of the twin well c-30-A/94-O-12 (WA# 17127) was observed. Apache made several attempts to shut-off communication between wells, but was unsuccessful.

Apache will be testing two wells for shale gas production in the immediate area. These wells are located in a winter access area and require a well to dispose of produced water and recovered completion fluids until next winter. Though the Commission agrees that the subject well appears to be a good candidate for salt water disposal in the Sikanni formation, there are concerns regarding the long term suitability of using the subject well for water disposal. The Commission encourages Apache to explore alternate options once access into the area is reestablished.

Attached is Approval 09-02-006 for the application, granted under Part 8, Division 3, section 94 of the *Drilling and Production Regulation*. This approval is effective for one year from the date of approval. The form Notice of Commencement or Suspension of Operations (BC-11) must be submitted upon commencing injection operations.

Should you have any questions, please contact the undersigned at (250) 952-0366.

Sincerely,

Richard Slocomb, P.Eng.

Supervisor, Reservoir Engineering

Resource Conservation

Attachment

APPROVAL 09-02-006

THE PROVINCE OF BRITISH COLUMBIA PETROLEUM AND NATURAL GAS ACT DRILLING AND PRODUCTION REGULATION OIL AND GAS COMMISSION

IN THE MATTER of a scheme of Apache Canada Ltd. (Apache) for Salt Water and Recovered Fluids Disposal in the Other Areas – Sikanni formation in the well Apache Patry c-A30-A/94-O-12 (WA# 25140).

NOW, THEREFORE, pursuant to Part 8, Division 3, Section 94 of the *Drilling and Production Regulation*, the scheme is hereby approved, as such scheme is described in

an application from Apache to the Commission dated January 13, 2009 and related submissions.

- 1. The disposal interval must be in the Sikanni formation.
- A record of volume of salt water and recovered fluid 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.
- 3. The disposal/injection pressure at the sandface must not exceed the formation fracture pressure.
- 4. The Commission must be notified in writing of the date of commencement of disposal.
- 5. This approval may be modified or rescinded if deemed appropriate through a change in circumstances.

Richard Slocomb

Supervisor, Reservoir Engineering

Resource Conservation

Oil and Gas Commission

DATED AT the City of Victoria, in the Province of British Columbia, this 9th day of April 2009.