December 9, 2024 5000-4150-59240-16

Carlo Flores Gil, P. Eng.
Chief Inspector, Engineer – Facility Engineer
NorthRiver Midstream Inc.
1200, 888 – 3rd Street S.W.
Calgary, Alberta T2P 5C5

Dear Mr. Gil:

RE: ACID GAS DISPOSAL APPROVAL 96-16-002 AMENDMENT #4
NORTHRIVER JEDNEY a-79-J/94-G-1; WELL PERMIT #9637
JEDNEY FIELD – BALDONNEL/UPPER CHARLIE LAKE "A" POOL

The subject well was drilled in 1996 for the purpose of deep disposal of waste by-product acid gas (H_2S & CO_2) and was approved as Special Project Order Approval 96-16-002 under section 116 of the Petroleum and Natural Gas Act (now section 75(2) of the Energy Resource Activities Act) on November 7, 1996.

Subsequent amendments occurred in 2012, 2017, 2018. This amendment removes the requirement for a cement bond, as the hydraulic isolation log is effective to confirm zonal isolation of the injected fluid. This amendment also removes 2 observation wells as they are no longer available for representative sampling of the disposal fluid. Additionally, the order area description has been modified to include the full gas spacing area, appropriate for acid gas disposal.

Attached please find Order 96-16-002 Amendment #4 designating an area in the Jedney field Baldonnel/Upper Charlie Lake "A" pool, for the operation and use of a storage reservoir for the disposal of acid gas.

Should you have any questions, please contact Michelle Gaucher at (250) 419-4482 or Ron Stefik at (250) 419-4430.

Sincerely,

Ron Stefik, P.L. Eng.
Supervisor, Reservoir Engineering
BC Energy Regulator

Attachment

ORDER 96-16-002 AMENDMENT #4

1 Under Section 75(1)(d) of the *Energy Resource Activities Act*, the Regulator designates the Baldonnel/Upper Charlie Lake "A" pool as a special project for the operation and use of a storage reservoir for the disposal of acid gas within the following area:

NTS 94-G-01 Block J Unit 78, 79, 88, 89.

2 Under section 75(2) of the *Energy Resource Gas Activities Act*, the special project designation in this Order is subject to the following conditions. The Permit Holder shall:

Well Details

a) Inject acid gas only into the well Northriver Jedney a-79-J/94-G-1; WA 9637 – Baldonnel/Upper Charlie Lake "A" pool (1487.0 – 1537.0 mKB).

Operating Limits

b) Limit the maximum H2S concentration of the injection fluid stream to 80%

c) Not exceed an injection pressure, measured at the wellhead on the subject well, of 9,800 kPag or the pressure required to fracture the formation, whichever is lesser.

d) Inject only through tubing with a packer set as near as is practical above the injection interval.

e) Continually measure and record the wellhead casing and tubing pressures electronically, including when the disposal well is inactive or suspended.

f) Alarm the annulus pressure monitoring system to indicate when casing pressure varies outside the normal operating range by greater than 1000 kPa.

g) Cease injection upon reaching a maximum formation pressure of 11,041 kPaa measured at MPP of 1512.0 mKB (MD).

Monitoring

h) Sample gas from active Baldonnel/Upper Charlie Lake A well d-44-C/94-G-8, WA1375 each 6 months and submit the gas composition analysis.

i) Sample the disposal fluid and submit composition analysis at least twice annually, indicating the disposal well as the sample source.

j) Submit the annual packer isolation test report to the Regulator within 30 days of the completion of the test.

k) Conduct and submit an annual Surface Casing Vent Flow test to the Regulator within 30 days of the completion of the test

l) Install seismic ground motion monitoring within 1.5 km of the wellsite with capability to measure events as indicated in this document http://www.bcogc.ca/node/13256/download.

m) At the time of each scheduled facility maintenance outage and at an interval of no greater than 4 years, conduct a reservoir pressure test on the formation in the subject well, with a shut-in period of sufficient length to provide data for calculation of the reservoir pressure and submit a report of the test within 60 days of the end of the test.

Wellbore Integrity

n) Ensure a Wellhead Emergency Shut-Off Device (ESD) and Subsurface Safety Valve (SSSV) are installed to operate “fail-safe”.

o) Ensure a Wellhead ESD is linked to H_2S detection at the wellhead.

p) Ensure the SSSV has remote activation capability.

q) Implement appropriate corrosion and freeze protection measures in the casing-tubing annulus.

r) Conduct function testing of the SSSV at least annually, or as recommended by API 14B or the manufacturers - whichever requires more rigorous function testing.

s) Conduct SSSV retrieval and inspection as per API 14B or the manufacturers recommended practice – whichever is more rigorous.

t) Annually confirm the Subsurface Safety Valve is capable of activation remote from the wellhead.

u) Immediately suspend injection if any injection equipment, monitoring equipment or safety devices considered necessary for safe operation should fail.

v) Cease injection and notify the Regulator immediately if hydraulic isolation is lost in the wellbore or formation.

w) Perform a casing inspection log on the subject well and submit results to the Regulator within 30 days of the completion of logging, at the next scheduled facility maintenance outage. Subsequently at an interval of not more than 10 years. Through tubing logging is acceptable.

x) Perform a hydraulic isolation log on the subject well and submit results to the Regulator within 30 days of the completion of logging, at the next scheduled facility maintenance outage. Subsequently at an interval of not more than 5 years.

y) Maintain a barricade around the wellhead that is capable of withstanding vehicle collision.

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

aa) Submit a Progress Report to the Regulator for each six month period the project is in operation. The Progress Report must be filed within 60 days after the end of each period and must contain the information specified in the Acid Gas Progress Report Requirements document found on the OGC website here: http://www.bcogc.ca/industry-zone/documentation/Subsurface-Disposal.

bb) Prior to abandonment of the disposal zone, conduct a reservoir pressure test on the zone in the subject well, with a shut-in period of sufficient length to provide data for calculation of the reservoir pressure and submit a report of the test within 60 days of the end of the test.

Ron Stefik, P.L. Eng.
Supervisor, Reservoir Engineering
BC Energy Regulator

DATED AT the City of Victoria, in the Province of British Columbia, this 9th day of December 2024.

Advisory Guidance for Order 96-16-002 Amendment #4

I. A production packer must be set above the injection interval and the space between the tubing and casing filled with corrosion inhibiting fluids, as per section 16(2) of the Drilling and Production Regulation.

II. Annual packer isolation tests are required to be conducted and the associated report must be submitted to the Regulator within 30 days of test completion, as per section 16(3) of the Drilling and Production Regulation.

III. Injected fluids must be metered and the injection pressure measured at the wellhead, as per section 74 of the Drilling and Production Regulation.

IV. A monthly disposal statement must be submitted to the Regulator via Petrinex not later than the 20th day of the month following the reported month, as per section 75 of the Drilling and Production Regulation.

V. All fluid analyses must be submitted with 30 days of tests as per section 34(5)(a) of the Drilling and Production Regulation.

VI. Seismic events must be reported and disposal operations suspended as per section 21.1 of the Drilling and Production Regulation.