

STATE OF ALASKA
ALASKA OIL AND GAS CONSERVATION COMMISSION
333 West 7th Avenue, Suite 100
Anchorage, Alaska 99501

Re: THE APPLICATION OF Cook Inlet Natural Gas Storage Alaska, LLC for an Aquifer Exemption Order for the Cannery Loop Unit in Township 05 North, Range 11 West, Seward Meridian, Kenai Peninsula Borough, in conformance with 20 AAC 25.440.) Docket Number: AEO-10-02
) Aquifer Exemption Order No. 13
) Cannery Loop Field
) Cannery Loop Unit
) Sterling C Gas Storage Pool
) Kenai Peninsula Borough, Alaska
)
) November 17, 2010

IT APPEARING THAT:

1. By application dated August 17, 2010, Cook Inlet Natural Gas Storage Alaska, LLC (CINGSA) applied to the Alaska Oil and Gas Conservation Commission (Commission) for an order exempting aquifers deeper than 1300' true vertical depth (TVD), below the Cannery Loop Unit (CLU), Kenai Peninsula Borough, Alaska.
2. On August 20, 2010 pursuant to 20 AAC 25.540, the Commission published in the Alaska Journal of Commerce notice of opportunity for public hearing on October 19, 2010. Notice was also published in the Peninsula Clarion on August 20, 2010. The Commission has jurisdiction in this matter under 20 AAC 25.440.
3. According to 40 CFR 144.1 (g) (2) (iv), CINGSA's proposed underground storage of dry natural gas, originating in the Greater Cook Inlet region and transported via the KNPL pipeline, is specifically excluded from federal Underground Injection Control ("UIC") regulations.
4. The Commission has authority to issue an aquifer exemption in accordance with the standards set forth in 20 AAC 25.440.
5. On September 13, 2010 Inlet Fish Producers, Inc. (IFP), requested a hearing and protested CINGSA's application for this CLU aquifer exemption.
6. The Commission held a public hearing on October 19th and 20th, 2010 at 333 West 7th Avenue, Suite 100, Anchorage, Alaska 99501. Testimony was presented by CINGSA and IFP.
7. During the public hearing on October 19th and 20th, 2010, CINGSA and IFP also submitted written exhibits for the hearing record.
8. The hearing record was held open until October 27, 2010, so that IFP and CINGSA could provide written comments concerning the written exhibits submitted at the hearing.

FINDINGS:

1. Operator

Marathon Oil Company (Marathon) operates the CLU, which is located within the Kenai Field on the east side of the Cook Inlet, Kenai Peninsula Borough, Alaska. Subject to final negotiations, the execution of definitive agreements and satisfaction of certain conditions, CINGSA anticipates acquiring the Sterling C Pool reservoir from Marathon.

2. Extent of Aquifer Exemption Area

The affected area of this aquifer exemption application is T5N, R11W, SM, specifically described as:

Section 4: SW 1/4.

Section 5: S 1/2.

Section 6: SE 1/4.

Section 7: E 1/2.

Section 8: All.

Section 9: W 1/2.

Section 16: W 1/2.

Section 17: All.

Section 18: E 1/2.

3. Geology and Groundwater Hydrology

The geologic stratigraphic column on the Kenai Peninsula includes clastic rocks from the Quaternary through the Tertiary which lie in an unconforming pattern on top of Mesozoic basement rocks. Shallow Quaternary sand and gravel accumulations that serve as fresh water aquifers are approximately 750' thick in the area. Local water well depths are reported to be up to 229' deep. Below the Quaternary fresh water zones lies the Kenai Group which is comprised of the Sterling, Beluga, Tyonek, Hemlock and West Foreland formations. These formations are the recognized traditional commercial Cook Inlet oil and gas producing formations.

The Kenai Group is comprised of both reservoir and non-reservoir lacustrine and fluvial-derived continental rock. The Cannery Loop area is not heavily faulted and faulting is not expected to play a role in defining or controlling aquifer properties. Individual sand bodies within the Sterling and Beluga formations are very discontinuous.

In the Cannery Loop area, drinking water is readily available from relatively shallow aquifers. Recorded local water wells are present throughout the area. Area water wells as recorded with the State of Alaska range in depth from 11' to 229'. No recorded water wells in the area penetrate the Sterling or deeper formations.

4. Formation Water Salinity

Formation water salinity was determined from produced water samples obtained from wells in the Cannery Loop area, as well as by log analysis. Produced water samples in the area are considered representative of Sterling formation produced water. Measured total dissolved solids (TDS) of Sterling produced water average 1350 milligrams per liter

(mg/l), ranging from 1280 mg/l to 1418 mg/l. Relative to Sterling water, salinity generally increases in the Beluga and deeper strata.

5. Suitability of CLU Sediments as Drinking Water Aquifers

Pursuant to 20 AAC 25.440 (a)(1), the Commission may exempt aquifers upon a showing that an aquifer “is hydrocarbon producing” or “is situated at a depth or location that makes recovery of water for drinking purposes economically or technologically impractical”. The subject aquifer exemption requested by CINGSA is supported by the following:

- a. the Cannery Loop area encompasses plentiful surface and groundwater available to a depth of approximately 229’ below sea level;
- b. the proposed gas storage reservoirs produce, or have produced, commercial quantities of hydrocarbon gas and liquids since 2000;
- c. Cannery Loop area aquifers below 1300’ are sufficiently deep that recovery of drinking water is economically impractical; and
- d. CINGSA’s application for aquifer exemption lists all water wells in the subject area, according to data from the Alaska Department of Natural Resources Water Rights Geographic Information System and Land Administration System Case Abstracts website.

CONCLUSIONS:

1. Those portions of freshwater aquifers occurring deeper than 4850’ below sea level within the CLU and affected area do not currently serve as sources of drinking water. All known and foreseeable ground water consumption from the Cannery Loop vicinity is consistent with usable surface and ground water resources occurring above a depth of about 229’ below sea level.
2. Those portions of freshwater aquifers occurring deeper than 4850’ below sea level within the CLU and affected area are situated at locations and depths that make recovery of these waters for drinking water purposes economically impractical.
3. Those portions of aquifers occurring deeper than 4850’ below sea level within the affected area cannot reasonably be expected to serve as underground sources of drinking water.
4. Those portions of aquifers occurring in the CLU and affected area storage injection strata, and deeper than 4850’ below sea level, qualify as exempt freshwater aquifers under 20 AAC 25.440(a)(1)(A) and 20 AAC 25.440(a)(1)(B).

NOW, THEREFORE, IT IS ORDERED THAT the aquifers or portions of aquifers occurring deeper than 4850’ below sea level in the following areas within T05N, R11W, SM, are exempt as provided by 20 AAC 25.440 for the purposes of gas storage injection operations:

Section 4: SW 1/4.

Section 5: S 1/2.

Section 6: SE 1/4.
Section 7: E 1/2.
Section 8: All.
Section 9: W 1/2.
Section 16: W 1/2.
Section 17: All.
Section 18: E 1/2.

Note that this Order does not authorize the injection of any fluids or gas within the exemption area. Storage Injection Order No. 9 governs storage injection operations within the exemption area.

DONE at Anchorage, Alaska, and dated November 17, 2010.



Daniel T. Seamount, Jr., Commissioner, Chair
Alaska Oil and Gas Conservation Commission

Cathy P. Foerster, Commissioner
Alaska Oil and Gas Conservation Commission

RECONSIDERATION AND APPEAL NOTICE

As provided in AS 31.05.080(a), within **20** days after written notice of the entry of this order or decision, or such further time as the Commission grants for good cause shown, a person affected by it may file with the Commission an application for reconsideration of the matter determined by it. If the notice was mailed, then the period of time shall be **23** days. An application for reconsideration must set out the respect in which the order or decision is believed to be erroneous.

The Commission shall grant or refuse the application for reconsideration in whole or in part within 10 days after it is filed. Failure to act on it within 10-days is a denial of reconsideration. If the Commission denies reconsideration, upon denial, this order or decision and the denial of reconsideration are **FINAL** and may be appealed to superior court. The appeal **MUST** be filed within **33** days after the date on which the Commission mails, **OR 30** days if the Commission otherwise distributes, the order or decision denying reconsideration, **UNLESS** the denial is by inaction, in which case the appeal **MUST** be filed within **40** days after the date on which the application for reconsideration was filed.

If the Commission grants an application for reconsideration, this order or decision does not become final. Rather, the order or decision on reconsideration will be the **FINAL** order or decision of the Commission, and it may be appealed to superior court. That appeal **MUST** be filed within **33** days after the date on which the Commission mails, **OR 30** days if the Commission otherwise distributes, the order or decision on reconsideration. As provided in AS 31.05.080(b), "[t]he questions reviewed on appeal are limited to the questions presented to the Commission by the application for reconsideration."

In computing a period of time above, the date of the event or default after which the designated period begins to run is not included in the period; the last day of the period is included, unless it falls on a weekend or state holiday, in which event the period runs until 5:00 p.m. on the next day that does not fall on a weekend or state holiday.