

STATE OF ALASKA
ALASKA OIL AND GAS CONSERVATION COMMISSION
3001 Porcupine Drive
Anchorage, Alaska 99501-3192

Re: **THE REQUEST OF PHILLIPS**) Aquifer Exemption Order No. 4
PETROLEUM COMPANY for an Aquifer)
Exemption Order for the North Cook Inlet) North Cook Inlet Unit
Field.) North Cook Inlet Field

September 29, 1998

IT APPEARING THAT:

1. Phillips Petroleum Company ("Phillips") submitted an application, dated March 10, 1998, requesting that the Alaska Oil and Gas Conservation Commission issue an aquifer exemption for purposes of Class II disposal in the North Cook Inlet Unit A-12 well. Additional information requested by the Commission was received on July 10, 1998 and July 31, 1998.
2. The Commission published notice of an opportunity for a public hearing in the Anchorage Daily News on March 12, 1998.
3. The Commission did not receive any protest or request for a public hearing.
4. The Commission has jurisdiction in this matter under AS 31.05.030(h), 20 AAC 25.440, and 40 CFR 147, Subpart C - Alaska.
5. The Commission submitted a copy of Phillips' Aquifer Exemption application and a proposed order to the U.S. Environmental Protection Agency, Region 10, ("EPA Region 10") on August 7, 1998, in accordance with Section 14 of the November 22, 1991 Memorandum of Agreement between EPA Region 10 and the Commission.
6. EPA Region 10 did not object to the Aquifer Exemption Order for the North Cook Inlet Field.

FINDINGS:

1. In correspondence dated December 10, 1997, Phillips Petroleum requested an order authorizing Class II disposal into the Sterling Formation in the North Cook Inlet Unit (NCIU) A-12 well.
2. The NCIU is located offshore in Cook Inlet, approximately 30 miles southwest of Anchorage, Alaska and 5 miles due east of Tyonek, Alaska.
3. Wireline log analytical techniques, which are compliant with EPA recommended methods as described in "Survey of Methods to Determine Total Dissolved Solids Concentrations", (KEDA Project No. 30-956), were used to characterize formation water salinities in the NCIU.
4. A water sample taken from the Sterling Formation several hundred feet below the proposed disposal interval in the NCIU A-10 well, at a depth of 3,700' TVD contained 6230 mg/l TDS and 2940 mg/l chlorides. The physical sample compares to a wireline log calculated TDS concentration of 5933 mg/l.

5. Wireline log analysis from NCIU wells A-10 and A-12, calibrated to a fluid sample from the NCIU A-10 well, show the proposed Class II disposal injection zone contains freshwater with a total dissolved solids (TDS) concentration of between 3,000 and 10,000 mg/l.
6. Wireline log analysis in the NCIU A-12 well demonstrates formation water TDS increases with depth in the NCIU.
7. The bottom of formation waters with a TDS concentration of less than 3,000 mg/l in the NCIU A-12 well has been estimated from wireline log analysis to be 2900' MD.
8. The Pliocene-aged Sterling Formation in the NCIU is composed of coarse-grained clastic intervals and interspersed relatively thin carbonaceous mudstones. Lithologic units are correlative throughout the unit.
9. The proposed Class II disposal interval in the A-12 well is between 3260' and 3380' MD, within highly porous and permeable fluvial sandstones and conglomerates of the Sterling Formation.
10. The proposed disposal interval is overlain and confined by approximately 95 feet of fined grained sediments below 2900' MD, which should prevent vertical migration of Class II wastes into formation waters with TDS content less than 3000 mg/l.
11. Structural deformation has folded the Sterling Formation, causing at least 250' of relief in the proposed disposal interval.
12. Structural closure and the associated hydrostatic gradient will prevent lateral migration of Class II wastes beyond the NCIU.
13. The closest drinking water well to the NCIU is located onshore, approximately 8 miles to the northwest, in the Beluga River Unit.
14. The Tyonek platform in the NCIU is equipped with a seawater distillation unit. Distilled Cook Inlet water is used for human consumption. Occasionally, Phillips supplements the distilled water with freshwater brought to the platform by boat. Phillips has no plans to use the underlying aquifers as a source of drinking water.
15. Development of the freshwater aquifers below the NCIU by entities other than Phillips is economically impractical because of the offshore location, water depths and currents, drilling costs and readily available alternative freshwater sources onshore.
16. The Commission's authority to act in this matter is embodied in 40 CFR 147 Subpart C, the Alaska Oil and Gas Conservation Act (AS 31.05), and the Alaska Administrative Code (20 AAC 25.005 through 20 AAC 25.570).
17. Portions of aquifers beneath the Cook Inlet underlying the Granite Point, McArthur River, Middle Ground Shoal and Trading Bay fields, regardless of total dissolved solids content, were exempted for Class II injection activities by EPA under 40 CFR 147.102.

CONCLUSIONS:

1. Those portions of freshwater aquifers occurring beneath the North Cook Inlet Field do not currently serve as a source of drinking water.
2. Those portions of freshwater aquifers occurring beneath the North Cook Inlet Field are situated at a depth and location that makes recovery of water for drinking water purposes economically impractical.

3. Those portions of aquifers occurring beneath the North Cook Inlet Field cannot reasonably be expected to serve as an underground source of drinking water.
4. Those portions of aquifers occurring beneath the North Cook Inlet Field at a depth below 2900' MD in the NCIU A-12 well qualify as exempt freshwater aquifers under 20 AAC 25.440.

NOW, THEREFORE, IT IS ORDERED THAT the portions of aquifers in North Cook Inlet Field common to and which correlate with the interval below 2900' MD in the NCIU A-12 well in the following tracts of land are exempt under 20 AAC 25.440.

Seward Meridian

T11N R9W Sections 5,6, 7, North 1/2 and Southwest 1/4 of Section 8, North 1/2 of Section 18.

T11N R10W Sections 1, East 1/2 of section 2, East 1/2 of section 11, Section 12, North 1/2 of section 13.

T12N R9W Southeast 1/4 of Section 19, East 1/2 and Southwest 1/4 of Section 20, West 1/2 of Section 21, West 1/2 of Section 28, Sections 29, 30, 31, 32 and Northwest 1/4 of Section 33.

T12N R10W Southeast 1/4 of Section 25, Southeast 1/4 of Section 35, and Section 36.

DONE at Anchorage, Alaska, and dated September 29, 1998.

David W. Johnston, Chairman
Alaska Oil and Gas Conservation Commission

Camillé Oechsli, Commissioner
Alaska Oil and Gas Conservation Commission

AS 31.05.080 provides that within 20 days after receipt of written notice of the entry of an order, a person affected by it may file with the Commission an application for rehearing. A request for rehearing must be received by 4:30 PM on the 23rd day following the date of the order, or next working day if a holiday or weekend, to be timely filed. The Commission shall grant or refuse the application in whole or in part within 10 days. The Commission can refuse an application by not acting on it within the 10-day period. An affected person has 30 days from the date the Commission refuses the application or mails (or otherwise distributes) an order upon rehearing, both being the final order of the Commission, to appeal the decision to Superior Court. Where a request for rehearing is denied by nonaction of the Commission, the 30-day period for appeal to Superior Court runs from the date on which the request is deemed denied (i.e., 10th day after the application for rehearing was filed).