

# STATE OF ALASKA

FRANK H. MURKOWSKI, GOVERNOR

## **ALASKA OIL AND GAS CONSERVATION COMMISSION**

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### ADMINISTRATIVE APPROVAL NO. AIO 2B.03

Mr. Randy Thomas  
Greater Kuparuk Area Development Team Leader  
ConocoPhillips Alaska, Inc.  
700 G Street  
Anchorage, AK 99501

Re: Amendment to Area Injection Order 2B to Allow Disposal Injection into the Upper Ugnu C Sand Within Sections 26, 27, 34 and 35 of T11N, R10E, UM

Dear Mr. Thomas:

The Alaska Oil and Gas Conservation Commission ("Commission") has received correspondence from ConocoPhillips Alaska Inc. ("CPAI"), dated September 8, October 19, and October 20, 2004 requesting amendment of Area Injection Order No. 2B ("AIO 2B") to allow disposal injection into the non-hydrocarbon bearing intervals of the Ugnu C sand within Sections 26, 27, 34 and 35 of T11N, R10E, Umiat Meridian ("UM"), in addition to disposal injection into existing authorized Ugnu sands A and B. CPAI plans to drill a Class II well in this area for the purpose of disposing of mud and cuttings and other non-hazardous fluids from drilling and production operations. This amendment will allow CPAI greater flexibility in selecting the most appropriate Ugnu disposal injection zone based on rock properties, while avoiding Ugnu hydrocarbon accumulations.

Within the Kuparuk River Unit, the Ugnu Formation is informally divided into three sand units. They are, from deepest to shallowest, the Ugnu A, B, and C sands. The Ugnu A and B sands are defined as those strata that correlate to the measured depths from 3390 feet to 3640 feet in the ARCO West Sak River State No. 1 well. The Ugnu A and B are presently approved as disposal intervals in the subject sections. The Ugnu C is defined as those strata that correlate to the measured depths from 3145 feet to 3390 feet in ARCO West Sak River State No. 1.

Within Sections 26, 27, 34 and 35 of T11N, R10E, UM, non-hydrocarbon bearing zones exist within the Ugnu A, B, and C sands. These sections lie within the Kuparuk River Oil Pool boundary, and all aquifers within this boundary are exempted for Class II injection activities by the U.S. Environmental Protection Agency in 40 CFR 147.102(b)(3). Confinement above the Ugnu C sand is provided by a 40 to 110-foot thick interval of interbedded mudstone and siltstone that contains an aggregate mudstone thickness ranging from 30 feet to 50 feet. Confinement below the Ugnu A sand is provided by a 95 to 180-foot thick interval of interbedded mudstone and siltstone that contains an aggregate mudstone thickness ranging from 30 feet to 50 feet. Injection into the Ugnu sands will be conducted

below formation parting pressure, which is estimated at 2600 psi based on log data acquired from the KRU 1J-10 well.

Appropriate disposal injection intervals will be determined for the planned Class II well using log data gathered when the well is drilled. Operating parameter surveillance and mechanical integrity tests required by AIO 2B will demonstrate performance, disclose possible abnormalities and indicate integrity problems.

In accordance with Rule 9 of AIO 2B, the Commission may administratively amend any rule stated within AIO 2B as long as the operator demonstrates to the Commission's satisfaction that sound engineering practices are maintained and the amendment will not result in an increased risk of fluid movement into an underground source of drinking water. The Commission has reviewed the subject application and finds the requested amendment is based on sound engineering practices and will not result in an increased risk of fluid movement into an underground source of drinking water. Amendment of AIO 2B to allow disposal injection into non-hydrocarbon bearing intervals of the Ugnu C sand within Sections 26, 27, 34 and 35 of T11N, R10E, UM is approved. Rule 2 of AIO 2B shall be amended to read:

**Rule 2. Authorized Injection Strata for Disposal**

Class II oil field fluids may be injected in conformance with 20 AAC 25 for the purpose of fluid disposal into strata defined as follows:

- a. Within the affected area, those strata which correlate with the strata found in ARCO West Sak River State Well No. 1 between the measured depths of 3390 feet and 3640 feet [Ugnu A and B]; and with the strata found in ARCO/BP Ugnu Well No. 1 between the measured depths of 8370 feet and 8800 feet [Ivishak]. (Source: AIO 2, June 6, 1986).
- b. Within tract ADL 25648 (Sections 3, 4, 9, and 10, T11N, R10E, UM) those strata that correlate with the strata found in ARCO West Sak River State Well No. 1 between the measured depths of 3145 feet and 3390 feet [Ugnu C]. (Source: AIO 2.3, July 7, 1988)
- c. Within portions of tracts ADL 355023, ADL 355024, and ADL 373301 (Sections 3, 4, 5, 8, 9 and 10, T13N, R9E) into the non-hydrocarbon bearing portions of the zone, which correlate with the strata found in ARCO Oliktok Point Well No. 2 between the measured depths of 2937 feet and 3544 feet [Ugnu C]. (Source: AIO 2.5, December 27, 1991)
- d. Within portions of tracts ADL 25660 and ADL 25661 (Sections 26, 27, 34 and 35, T11N, R10E) into the non-hydrocarbon bearing portions of the zone which correlates with the strata found in ARCO West Sak River State Well No. 1 between the measured depths of 3145 feet and 3390 feet [Ugnu C]. (This action, AIO 2B.03.)

Administrative Approval No. AIO 2B.03  
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DONE in Anchorage, Alaska this 29 th of March 2005.



A large, stylized handwritten signature in black ink, appearing to read "John K. Norman".

John K. Norman, Chairman  
Alaska Oil and Gas Conservation Commission

A smaller, more fluid handwritten signature in black ink, appearing to read "Daniel T. Seamont, Jr.".

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