

PRUDHOE BAY UNIT

**APPLICATION FOR
EXPANSION OF THE PRUDHOE BAY UNIT
AND ORION PARTICIPATING AREA**

**FINDINGS AND DECISION OF THE DIRECTOR,
DIVISION OF OIL AND GAS
UNDER DELEGATION OF AUTHORITY
FROM THE COMMISSIONER,
DEPARTMENT OF NATURAL RESOURCES, STATE OF ALASKA**

February 18, 2009

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PRUDHOE BAY UNIT

Expansion of the Prudhoe Bay Unit and

Deferral of Request to Expand the Orion Participating Area

I. INTRODUCTION, BACKGROUND, AND SUMMARY

On May 21, 2004, BP Exploration (Alaska) Inc. (BPXA), as Operator of the Prudhoe Bay Unit (PBU) and on behalf of itself and the other PBU Working Interest Owners (WIOs), Chevron U.S.A. Inc. (Chevron), ConocoPhillips Alaska, Inc. (CPAI), and ExxonMobil Alaska Production Inc. (EM), submitted an Application for Enlargement of the Prudhoe Bay Unit and Expansion of the Orion Participating Area to the Alaska Department of Natural Resources (DNR) Division of Oil and Gas (Division). On June 10, 2004, the Division requested additional information under 11 AAC 83.306. BPXA did not respond to this request and the Division did not process this application.

On August 5, 2008, BPXA submitted an updated Application to Expand the Orion Participating Area and the Prudhoe Bay Unit – ADL 390067 (Application).

The Orion Participating Area (PA) was formed effective February 1, 2004, and includes portions of 14 leases for a total of approximately 18,842.375 acres. The Orion PA is currently being developed by 38 producers and injectors from L, V and Z pads. Orion production is commingled with IPA and Borealis production and processed at Gathering Center #2 (GC-2).

The proposed expansion of the PBU and Orion PA would add approximately 1,000 acres to the PBU and Orion PA. The expansion area is located within ADL 390067. No wells are currently drilled in the proposed expansion area.

The Division approves the expansion of the PBU on the condition that a well is spud within ADL 390067 by September 1, 2009. If a well is not spud by that date, the unit expansion area will automatically contract out of the PBU.

Because there is currently insufficient data to establish whether the hydrocarbon potential is capable of producing or contributing to production in paying quantities, the proposed PA expansion decision is deferred until all the data from the proposed L-223i well is submitted to the Division.

With approval of the PBU expansion, the total unit area would include all or part of 111 leases and approximately 247,477.10 acres.

The portion of ADL 390067 not committed to the unit is severed and the lease segregated. As provided by 11 AAC 83.373 and Section 9.4 of the PBU Agreement, the segregated portion of ADL 390067 is assigned new ADL 391462, effective March 1, 2009.

II. APPLICATION FOR EXPANSION OF THE PRUDHOE BAY UNIT AND ORION PARTICIPATING AREA

On August 5, 2008, BPXA submitted an updated *Application to Expand the Orion Participating Area and the Prudhoe Bay Unit – ADL 390067*. The Application included a location map of the Orion PA/PBU expansion area, proposed Orion PA participations and tract allocation schedule, an amended Orion PA Plan of Development and Operations, and confidential geological, geophysical and engineering data in support of the Application. The proposed expansion of the PBU and Orion PA would add approximately 1,000 acres to the PBU and PA. The expansion area is located within ADL 390067, which was issued

effective September 1, 2002 for a seven-year primary term and 16.667 percent royalty to the state. The lease is owned 26.36 percent BPXA, 36.08 percent CPAI, 36.40 percent EM , and 1.16 percent Chevron.

The Division requested additional information on August 14 and 25, 2008. BPXA provided it on August 18, 21, and September 15, 2008. The Division determined that the Application was complete and published a notice in the *Arctic Sounder* on September 25, 2008 and in the *Anchorage Daily News* on September 21, 2008, as required under 11 AAC 83.311. Copies of the public notice were provided to interested parties under 11 AAC 83.311. These parties included, among others, the North Slope Borough, Arctic Slope Regional Corporation, the Alaska Department of Environmental Conservation, the Alaska Department of Fish and Game, and the Alaska Oil and Gas Conservation Commission (AOGCC). The public notices invited interested parties and members of the public to submit comments by October 27, 2008. The Division received no comments.

On November 12, 2008, BPXA advised the Division that it was considering drilling an injection well on ADL 390067 prior to drilling the proposed multi-lateral L-203 production well adjacent to ADL 390067. The Division and BPXA also discussed inconsistencies in the tract participation schedule. On November 14, 2008, BPXA e-mailed corrected proposed tract participations. On December 15, 2008, BPXA provided the Division with coordinates for L-223i, the proposed injection well on ADL 390067.

III. DISCUSSION OF DECISION CRITERIA

The Commissioner of the Department of Natural Resources (Commissioner) reviews applications related to units, including unit and PA expansions, under AS 38.05.180(p) and 11 AAC 83.303 – 11 AAC 83.395. By memorandum dated September 2, 2004, the Commissioner approved a revision of Department Order 003 and delegated this authority to the Director of the Division of Oil and Gas (Director). The Director will approve expansion of a unit to include all or part of an oil or gas reservoir, or all or part of a potential hydrocarbon accumulation if he finds that it will conserve the natural resources of all or part of an oil and gas pool and is necessary or advisable to protect the public interest.

The Director will approve an expansion of a PA only if the land is reasonably known to be underlain by hydrocarbons and known or reasonably estimated through use of geological, geophysical, or engineering data to be capable of producing or contributing to production in paying quantities. 11 AAC 83.351(a).

“paying quantities” means quantities sufficient to yield a return in excess of operating costs, even if drilling and equipment costs may never be repaid and the undertaking considered as a whole may ultimately result in a loss; quantities are insufficient to yield a return in excess of operating costs unless those quantities, not considering the costs of transportation and marketing, will produce sufficient revenue to induce a prudent operator to produce those quantities.

11 AAC 83.395(4). An application to expand both a unit and PA must be evaluated under these standards, as well as those of 11 AAC 83.303.

The Division’s review of the Application is based on the criteria set out in 11 AAC 83.303 (a) and (b). A discussion of the subsection (b) criteria, as it applies to this Application, is set out directly below, followed by a discussion of the subsection (a) criteria.

A. Decision Criteria Considered Under 11 AAC 83.303(b)

1. The Environmental Costs and Benefits of Unitized Exploration and Development

A decision to approve either the proposed unit or PA expansion has no direct environmental impact. This Decision is an administrative action and does not convey any authority to conduct any operations on the surface within the PBU. Potential effects on the environment are analyzed when permits to conduct

exploration or development in the unit area are reviewed. This Decision simply approves additional acreage for the unit. Proposed development of the expansion acreage will be conducted from existing PBU infrastructure. Proposed drilling activity in the expansion area will be conducted from an existing well pad. No significant additional impacts to habitat or biological resources are anticipated because of the PBU expansion.

2. Prior Exploration and Development Activities and the Geological and Engineering Characteristics of the Proposed Expansion Area

BPXA submitted confidential data in support of the Application. The data includes top structure maps for individual Schrader Bluff Sands, hydrocarbon pore volume (HCPV) maps for individual Schrader Bluff Sands, seismic dip and strike cross section lines, polygon 1A strike and dip cross-sections, MDT sample data, pressure data, API gravity data, well log picks, fluid contact information, and rock properties for the various Schrader Bluff Sands. The Division will hold these data confidential under AS 38.05.035(a)(8)(C) and 11 AAC 96.220.

The Orion PA is located in the northwestern corner of the PBU. Thirty-eight wells have been drilled in the Orion PA - 11 oil wells, 25 injection wells, and two wells suspended as of July 2008. In addition, other development wells that target the deeper Ivishak and Kuparuk formations provide geologic data on the Orion oil pool. BPXA has drilled producing wells with two-to-six multi-lateral completions to access more individual sands and improve recovery efficiency. Multi-lateral wells are performing significantly better than earlier vertical or slanted wells in the Schrader Bluff formation. Initial rates of production in multi-lateral wells are generally higher and sustained over a longer period of time.

The Orion PA is producing from Upper Cretaceous Schrader Bluff sandstones. The Schrader Bluff Formation, and the equivalent West Sak Formation in the adjacent Kuparuk River Unit, were deposited in a marine shoreface to upper shelf depositional environment. The Upper Cretaceous shelf was broad and gently dipping to the northeast. The trend of the Upper Cretaceous Schrader Bluff/West Sak shelf edge was approximately northwest-to-southeast in the area of the western PBU. Several sandstones make up the Schrader Bluff oil pool in the Orion PA. From shallowest-to-deepest they are the Na, Nb and Nc sands and the OA and OB (Oba, OBb,OBc,OBd,ObE and OBf) sandstones. Depositionally, the entire package thins to the northeast. Due to the depositional environment, sandstone net-to-gross, thickness and quality is variable. The N sands are unconsolidated and range from 50 to less than 15 feet in gross thickness. The sandstones are separated by thick, silty mudstones. The OA sandstone is 45 to 80 feet gross thickness with a net sand thickness of 10 to 35 feet. The OA sandstone in the Orion PA is one of the higher quality sandstones in the Schrader Bluff formation. The OA sandstones range from 45 to 80 feet gross thickness with net sandstone thickness up to 35 feet. The OB sandstones range from silty, low net-to-gross sandstones to very high quality sandstones. Sandstone continuity across the Orion PA is good, although some sandstones pinch out or are interpreted to be truncated based on the current well spacing. In ascending order, the OBf and overlying ObE sandstones are moderately thick, silty and clayey sandstones that range in thickness from 35 to 55 feet gross thickness. They have the lowest net-to-gross of all the OB sandstones. The OBd sandstone ranges in thickness from 55 to 70 feet gross thickness. This sandstone thins northward and is a primary reservoir target. The OBc and OBb sandstones are thickest in the southern Orion PA near V- and Z-Pads. Both sandstones thin northward and are of good reservoir quality. The Oba sandstone is also a primary Schrader Bluff target and ranges in thickness from 25 to 55 feet thick. Two regional erosion surfaces are identified in the Oba sandstone. Above each surface is a blocky to fining upward, high permeability (1000 millidarcies) sandstone that ranges in thickness from 5 to 15 feet thick.

The structural top of the Schrader Bluff formation dips gently to the east/northeast. The formation is cut by several sets of faults that intersect and control the distribution of reservoir fluid in the Orion PA. The predominant set of faults runs northwest/southeast. Northwest/southeast faults bound the Orion pool on the southwest. Structural dip to the northeast controls the accumulation on the northeastern side. An important set of faults that compartmentalize the Schrader Bluff formation runs north/south. These faults have up to 100 feet of throw. Interbedded shales form shale smear along the fault planes which may contribute to the sealing nature of the faults. In addition, fault offset in excess of gross sandstone thickness causes fluid contacts to differ from fault block to fault block in the Schrader Bluff sandstones. Development drilling has helped define the water-up-to and oil-down-to in many of the fault blocks. Several oil-water contacts have been defined by drilling; however, some areas are still being delineated. Since 2004, stage one drilling has been completed and the operator is well into stage 2 drilling that consists of additional drilling from L, V and W pads located in western PBU.

At a hearing before the AOGCC to establish Orion Pool Rules (Conservation Order 505, January 2004), BPXA testified that original oil in place (OOIP) was estimated to be 1,070 to 1,785 million stock tank barrels (MMSTB) with 845 to 1,410 MMSTB in the O-Sands and 225 to 375 MMSTB in the N-Sands. The wide range of OOIP suggests there is uncertainty regarding the extent and accessibility of the accumulation. Production from the Orion PA to date is 14.1 million barrels oil or about one percent of the OOIP.

BPXA's testimony before the AOGCC for an area injection order (Area Injection Order No. 26, January 2004) provided simulation results that indicated primary recovery within the development area was expected to be 5 to 10 percent of the OOIP, and that a waterflood could increase recovery to 20 to 25 percent of the OOIP. Estimates for recovery from miscible gas injection have not been provided. Waterflood operations began January 2004 and miscible gas injection began in October 2006. To date 12.3 million barrels of water and 3.6 billion cubic feet of miscible gas have been injected into the reservoir.

I-Pad, to the northwest of L-Pad, is still under evaluation. The N-sand reservoir at I-pad contains 20 to 25 percent of the OOIP. I-Pad Define Engineering is complete for the revised surface location. However, BPXA is evaluating the sand characteristics from two wells with N-sand laterals that were drilled in 2008 and how the potential sand rate increase will impact GC-2.

There are no wells drilled in ADL 390067 and limited drilling in the Orion PA adjacent to ADL 390067. The confidential data provided with the Application is sufficient to support a finding that the expansion area encompasses the minimum area that may contain a potential hydrocarbon accumulation. However, the available data is insufficient to support a finding that the potential hydrocarbon accumulation is capable of producing or contributing to production in paying quantities. Committing to spud a well in ADL 390067 by September 1, 2009, supports expansion of the PBU. Well data from a well drilled in ADL 390067 will identify the down dip extent of hydrocarbons in the area and determine the potential extent of the PA.

3. The Applicant's Plan of Development for the PBU Expansion Area

On December 15, 2008, the Division approved the PBU Satellites, 2009 Plan of Development (2009 POD), for the period January 1, 2009 through December 31, 2009. The 2009 POD for the Orion PA anticipated the drilling of the L-203 hexa-lateral producer well within 200 feet of the expansion acreage. However, on December 15, 2008, BPXA advised the Division that it will drill an injector, L-223i, on ADL 390067 prior to drilling the L-203 producer. BPXA plans to spud the well no later than September 1, 2009.

4. The Economic Costs and Benefits to the State and Other Relevant Factors

The State will benefit from the PBU expansion and the drilling of a well on ADL 390067 because there is currently no well drilled in that area. Expanding the unit boundary on the condition that a well is drilled on the lease will afford the WIOs an opportunity to drill a unit well through existing facilities, minimize the surface impacts, and promote efficient evaluation and development of the state's resources. The state's interests are also protected because the operator is required to spud a well in the expanded PBU area by September 1, 2009, as a condition of adding the acreage to the PBU.

Because there are no wells drilled on ADL 390067 and limited drilling next to this lease, there is currently insufficient data to support an expansion of the Orion PA. Drilling a well in ADL 390067 will provide necessary data to determine whether the potential hydrocarbon accumulation is capable of producing or contributing to production in paying quantities to support a PA expansion. The decision to expand the Orion PA is deferred until BPXA has submitted all the well data in Attachment 2 for L-223i.

B. Decision Criteria Considered Under 11 AAC 83.303(a)

1. Promote Conservation of All Natural Resources

The unitization of oil and gas leases is a well accepted means of hydrocarbon conservation. Unitization allows the unit operator to explore the area as if it were one lease. Expansion of the PBU will promote the conservation of both surface and subsurface resources through unitized rather than lease-by-lease development. The PBU expansion promotes efficient evaluation and development of the state's resources, yet minimizes impacts to the area's cultural, biological, and environmental resources because additional production can be accommodated without additional infrastructure. The PBU expansion will provide a comprehensive plan for development through existing unit infrastructure.

2. Promote Prevention of Economic and Physical Waste

Expanding the PBU to permit the drilling of a unit well on ADL 390067, and allowing this area to access existing unit facilities and infrastructure prevents economic and physical waste. Unitized operations greatly improve development of reservoirs beneath leases that may have variable productivity.

An equitable allocation of hydrocarbon shares among the WIOs discourages unnecessary surface development. Similarly, an equitable cost-sharing agreement promotes efficient development of the resource through common facilities and rational operating strategies. Unitization prevents economic and physical waste by eliminating redundant expenditures for a given level of production, and by avoiding loss of ultimate recovery by adopting unified reservoir management plans.

The ownership of ADL 390067 is aligned to unit decimals:

BPXA	26.360567 percent
CPAI	36.076746 percent
EMA	36.402687 percent
Chevron	1.160000 percent

ADL 39067 has a 16.66667 percent royalty rate.

3. Provide for the Protection of All Parties, Including the State

Approval of the proposed PBU expansion on the condition that a well is spud by September 1, 2009 protects the interests of the WIOs and the state as royalty owner. The long-term goal is to maximize the physical and economic recovery of hydrocarbons from each of the productive reservoirs. Maximum hydrocarbon recovery will enhance the state's long-term royalty and tax revenue stream. Exploration and development under a unit plan promotes efficient evaluation and development of the state's resources, yet minimizes impacts to the area's cultural biological and environmental resources.

IV. FINDINGS AND DECISION

Considering the facts discussed in this document and the administrative record, I hereby make findings and impose conditions as follows.

1. The expansion of the PBU is necessary and advisable to protect the public interest. AS 38.05.180(p) and 11 AAC 83.303.
2. The available geological and engineering data and development plans, justify an expansion of the PBU to include all or part of a potential hydrocarbon accumulation. Under the regulations governing formation and operation of oil and gas units (11 AAC 83.301 – 11 AAC 83.395) and the terms and conditions under which these lands were leased from the State of Alaska, the following lands are added to and included in the PBU Area on the condition that a well is spud in ADL 390067 no later than September 1, 2009.

PBU Expansion Area

Tract 13, ADL 390067
T. 12N R. 11E UM
Section 14: S1/2S1/2
Section 23: All
Section 24: SW1/4, SW1/4NW1/4
Containing approximately 1,000 acres, more or less.

3. If a well is not spud in ADL 390067 by September 1, 2009, the expansion area will automatically contract out of the PBU.
4. ADL 390067 is segregated as to lands committed to the PBU and as to lands not committed to the PBU. In accordance with 11 AAC 83.373 and paragraph 9.4 of the PBU Agreement, the uncommitted lands are severed from oil and gas lease ADL 390067 and assigned ADL 391462, effective March 1, 2009.
5. Field costs may not be deducted from the state's share of royalty oil production allocated to ADL 390067. Field costs include, but are not limited to, expenses for separating, cleaning, dehydration, gathering, saltwater disposal, and preparing oil, gas, or associated substances for transportation off the unit area.
6. The available geological and engineering data do not, at this time, justify expansion of the Orion PA. There are no wells drilled in the PBU Expansion Area and limited drilling near ADL 390067. While there is potential Orion reservoir in the PBU Expansion Area, the data is insufficient to establish that the hydrocarbon potential is capable of producing or contributing to production in paying quantities.

7. The Division pre-approves Lease/Tract operations on ADL 390067 for BPXA to drill the L-223i well on the condition that BPXA submit the geologic and engineering data listed in Attachment Two of this Decision.
8. The decision to expand the Orion PA is deferred until BPXA submits all the data in Attachment Two of this Decision.
9. Any part of the PBU Expansion Area that is not included in a PA on March 1, 2011 will automatically contract out of the PBU.

Under Article 9.1 of the PBU Agreement and the *Notice of Intent to Enlarge the Prudhoe Bay Unit to Encompass Expansion to the Orion Participating Area*, the effective date for the expansion decision is the first day of the calendar month following the date of the final approval by the Division. The expansion of the PBU is approved effective March 1, 2009. Within 30 days of this Decision, BPXA must submit revised Exhibits A and B to the PBU Agreement.

A person affected by this decision may appeal it, in accordance with 11 AAC 02. Any appeal must be received within 20 calendar days after the date of "issuance" of this decision, as defined in 11 AAC 02.040 (c) and (d), and may be mailed or delivered to Thomas Irwin, Commissioner, DNR, 550 W. 7th Avenue, Suite 1400, Anchorage, Alaska 99501; faxed to 1 -907-269-8918, or sent by electronic mail to dnr.appeals@alaska.gov. This decision takes effect immediately. An eligible person must first appeal this decision in accordance with 11 AAC 02 before appealing this decision to Superior Court. A copy of 11 AAC 02 may be obtained from any regional information office of the Department of Natural Resources.



Kevin R. Banks, Director
Division of Oil and Gas

2-18-09

Date

Attachment: Attachment One: Map of Approved PBU Expansion Area
Attachment Two: Geologic and Engineering Data Submittal Requirements

ATTACHMENT TWO:

Alaska Department of Natural Resources, Division of Oil and Gas Geologic and Engineering Data Submittal Requirement for Wells

(a) The lessee shall submit to the Alaska Department of Natural Resources all geological, geophysical and engineering data obtained from the lease within 30 days after completion, abandonment, or suspension of the well and within 30 days after completion or plugging of a well branch, if occurring at a different time. The lessee shall submit to the Alaska Department of Natural Resources data acquired subsequent to well completion within 30 days following acquisition of that data. The state may waive receipt of operational data from some development, service or injection wells. The state will inform the operator of the waiver prior to well completion.

The lessee shall submit the data to the Division of Oil and Gas, Department of Natural Resources.

The data shall include the following:

1. a copy of the well completion report (AOGCC form 10-407) with all attachments, including summaries of perforations open to production, production tests, core data, formation tops or geologic markers, and formation tests.
2. daily drilling reports or a summary report of daily drilling.
3. latitudinal and longitudinal coordinates (based on NAD-27 spheroid) for the completed surface and bottom hole locations, include locations for all plug-backs and pilot holes.
4. Paper and digital copies of all directional surveys, include surveys for all plug-backs and pilot holes.
5. a summary list of all logs run and the depth interval covered by each, also list logs for all plug-backs and pilot holes.
6. a list of formations and other geologic markers encountered and the measured depths (MD) and true vertical depths (TVD) of each.
7. a summary of cored intervals (both conventional and sidewall), including depth, formation name, lithology, presence of oil, gas and water, porosity, fractures and apparent dips, indicate “**none**” in space provided on completion report or in an attachment if no cores were taken.
8. paper and digital copies of all core reports including lab analyses of lithology, porosity, permeability (vertical and horizontal, air and liquid), density, capillary pressure, and fluid saturation, if available.
9. paper and digital copies of all conventional and sidewall core photos (plain light and ultraviolet), if available.
10. identify depth and formation name for oil and gas shows, indicate “**none**” on the completion report or in an attachment if no shows were observed.
11. identify zones of abnormal pressure, indicate “**none**” on the completion report or in an attachment if none were observed.
12. a synopsis or summary of testing and all fluid recovery efforts, including production tests (IP), drill stem tests (DST), wireline formation tests (i.e. repeat formation tests (RFT) and modular dynamics tests (MDT)), and other production and formation testing data; the summary should include test date, time, depth, formation name, method of operation, recovered fluid type(s) and amount(s), and fluid rate, gas-oil ratio (GOR), oil gravity, pressure, and choke size, when available. If no tests were undertaken, indicate “**none**” where appropriate on the completion report or in an attachment, if tests were undertaken but failed to recover fluids indicate “**no recovery**”.
13. paper and digital copies of all pressure build-up, and fluid PVT analyses, if available.
14. copies of all open flow potential test reports and report attachments AOGCC Forms 10-421 .

15. paper and digital copies of well test procedures, field chronologies, and field data; including details – such as interval(s) open to test; volumes of oil, water and gas, BS&S=W, API gravity, gas density; wellhead and downhole pressure; and formation and wellhead temperature, – necessary to fully evaluate the test data.
16. paper and digital copies of geochemical and formation fluid analyses and reports, if available.
17. down hole and surface fluid sampling procedures, field chronologies, raw data, and laboratory test results for all water and hydrocarbon-bearing zones sampled; including details necessary to fully evaluate quality of sample data
18. a copy of the permit to drill (AOGCC form 10-401) and the survey as-built of the well location.
19. paper copy (no sepia copies, please) of all final 2-inch open hole and cased hole logs, including measured depth (MD) and true-vertical depth (TVD) versions, specialty logs (such as Schlumberger's cyberlook, formation microscanners and dipmeter logs), measured-while-drilling (MWD) and logged-while-drilling (LWD) logs (in color, when available). Provide 5-inch scale logs when 2-inch scale logs are unavailable.
20. paper copy of final composite mud or lithology log and report, with lithology display, oil and gas show indicators, and cuttings descriptions (in color, when available).
21. a digital version of well logs in LAS format on IBM format floppy disks, Zip100 disk, CD or DVD, and a digital version of final directional surveys in ASCII format (other formats may be acceptable upon agreement with the Division of Oil and Gas).
22. Paper and digital (if available) copies of all well data and reports including, but not limited to, paleontology, palynology, petrography (including point-count analyses), X-ray diffraction analyses, SEM micrographs, thermal maturity, vitrinite reflectance, rock eval pyrolysis, geochronology, fission track analyses, fluid inclusion analyses, Mercury injection capillary pressure analyses, chemical analyses (EPMA, XRF, ICP, etc.), isotope analyses, water chemistry, burial and temperature history analyses, strain analyses and acoustic analyses.
23. all final reports of velocity, checkshot or VSP surveys (an ASCII format digital version of the above data shall also be submitted), indicate "none" in your response to this request if no velocity, checkshot or VSP surveys were undertaken. Submission of velocity, checkshot, and VSP surveys are always required by DNR under the operator surface-use permit obligations.
24. paper and digital copies of all coalbed core, gas and water quality reports including lab analyses of core lithology, coal rank, vitrinite reflectance, maceral composition, TOC, ash, sulfur and BTU content, moisture content, cleating, adsorption/desorption data, residual gas measurements, porosity and permeability analyses, core photos, if available.

All material should be either hand-carried by bonded courier or mailed by registered mail to:

Kristin Dirks, Geologist
Dept. of Natural Resources-Div. of Oil and Gas
State of Alaska
550 W. 7th Avenue, Suite 800
Anchorage, AK 99501-3510

Telephone: (907)269-8769
Fax: (907)269-8942
Email: kristin_dirks@dnr.state.ak.us

The state may also require the lessee to submit additional data in accordance with the applicable statutes and regulations in effect at the time of the drilling and completion of the well.

Any data submitted to the state by the lessee in connection with this lease will be available at all times for use by the state and its agents. The state will keep information confidential as provided in AS 38.05.035(a)(9) and its applicable regulations. In accordance with AS 38.05.035(a)(9)(c), in order for geological, geophysical and engineering data submitted under the lease agreement named above to be held confidential, the lessee must request confidentiality at the time the data is submitted by indicating "CONFIDENTIAL" on all confidential data items.

This action does not eliminate the need to file all data normally filed with the Alaska Oil and Gas Conservation Commission (AOGCC) under their permit requirements.