



THE STATE
of **ALASKA**
GOVERNOR BILL WALKER

Department of Natural Resources

DIVISION OF OIL & GAS

550 W 7th Avenue, Suite 1100

Anchorage, AK 99501-3560

Main: 907.269.8800

Fax: 907.269.8939

September 16, 2016

CERTIFIED MAIL
RETURN SERVICE REQUESTED

Scott Digert
Manager of Reservoir Management
BP Exploration (Alaska) Inc.
PO Box 196612
Anchorage, AK 99519-6612

Re: Prudhoe Bay Unit – Initial Participating Area 2016 Plan of Development (Approved)

Dear Mr. Digert:

On March 31, 2016, the Department of Natural Resources (Department), Division of Oil and Gas (Division) timely received the proposed Prudhoe Bay Unit (PBU) – Initial Participating Areas (IPA) 2016 Plan of Development (POD). The Division notified BP Exploration (Alaska) Inc. (BPXA) by letter on April 11, 2016 that the Division had deemed the POD application incomplete. The Division requested clarification on Section 3.6 of the POD (Major Gas Sales) and additional information from the PBU working interest owners (WIO) on the 2016 PBU IPA POD and long-range proposed development plans to achieve a Major Gas Sale (MGS). In two letters each dated May 2, 2016, BPXA responded to the Division's requests. ConocoPhillips Alaska, Inc. (Conoco) responded to the Division's request via letter dated May 4, 2016. ExxonMobil Production Company (ExxonMobil) responded via letter dated May 20, 2016.

On May 12, 2016, the Division deemed the 2016 PBU IPA POD incomplete for a second time requesting an update on CO2 technical evaluations and status on proposed terms for gas balancing, byproduct handling, and field cost allowance for a MGS. In addressing this request, BPXA and the WIOs hosted a confidential technical workshop with Division staff on May 19, 2016. BPXA and the WIOs shared with the Division technical evaluations during this workshop and limited gas sales information through subsequent meeting and communications with the Division. Subsequent to this meeting, Division Director Feige requested the WIOs provide a discussion of their marketing plan for the PBU relating to long-term development plans and MGS. On June 17, 2016, each WIO responded timely to Director Feige's request.

By letter dated June 30, 2016, the Director informed the BPXA and the WIOs the 2016 POD was incomplete and could not be approved as submitted. In the letter, the Division extended the 2015 POD period to November 1, 2016 and gave BPXA and the WIOs until September 1, 2016 to provide a revised proposed POD to show how and when the WIOs are marketing gas resources and progressing toward MGS. On September 1, 2016, BPXA, as operator submitted a revised POD with an update to the Major Gas Sale section (Section 3.6) as requested by the Division.

BPXA, as operator, and BPXA, ExxonMobil, and Conoco, as WIOs, responded to the Division's request with references to technical strategies, hearing testimony, and public information to supplement the 2016 POD. In their letters, the WIOs offered to make staff available for one or

more informal and confidential technical meetings or discussions with Division staff to convey the PBU IPA plans and activities supportive of MGS. BPXA, as a WIO, also expressed a willingness to share some confidential gas marketing information with the Division under certain conditions. The Division requested all such information be provided in writing. The entirety of the 2016 PBU IPA POD, associated development plans, and supplemental information submitted by the operator and WIOs has been reviewed by the Division.

2015 ANNUAL REPORT

The Prudhoe Bay reservoir management strategy continues to emphasize optimizing base field production within facility constraints through wellwork, reservoir pressure maintenance, flood optimization, and continued well sidetracking and new well development drilling. In 2015, BPXA again conducted a high level of drilling and wellwork in the IPA with 8 grassroots wells and 52 sidetrack wells. BPXA also performed 413 rate adding jobs and ~1,400 non-rate adding jobs. Rig Workovers (RWO) have continued to increase over the past four years with 27 RWOs in 2015. Drilling and wellwork in all categories has been increasing for the last four POD periods in the IPA. In 2015, the IPA produced an average of 196,400 barrels of oil per day (71.7 million barrels total) and approximately 6.9 Billion Standard Cubic Feet of gas per Day (BSCFD) of which 6.24 BSCFD was reinjected as lean gas and Miscible Injectant (MI) into the field for enhanced oil recovery. The remainder of the produced gas is used for fuel gas, minor gas sales, and making natural gas liquids to be delivered to TAPS.

Drilling activity was extensive in all six IPA depletion areas. Three wells were drilled in the FS-2 area, referred to as the “East of Sag” drilling campaign, and successfully tested the pattern rotation concept. Two wells drilled in 2014 and one in 2015 will test the conversion from inverted 9 spot to 5 spot patterns. In the northern portion of FS-2 area, three more wells were drilled in 2015 to target Zone 1A where the initial results show promising oil saturation levels. There were 12 wells drilled and completed in the Western Waterflood area (five Sag River wells and seven Ivishak wells) in 2015 with four rig workovers to repair mechanical integrity. The Updip Zone 4 Injection (UZI) Project progressed in 2015 after continuing to demonstrate improved oil recovery in areas where the gas cap has expanded and gravity drainage process is less effective. Installation of the N-Pad UZI project was completed in 2015 and three more producers will be converted to injectors. In the Sag River Development area, 11 wells were drilled and completed mostly in the NW Fault Block. Of the 11 wells, eight are producers that are all on production and three are MI/waterflood injectors. Sag River horizontal injector-producer pairings have not proven viable due to high well costs and lower-than-expected rates. Finally, two new coil sidetrack wells were drilled in the East West End/ NW Eileen area as voidage replacement ratios are maintained around the target level of 1.

The facility work to debottleneck western PBU fluid and gas handling was completed in 2015 with the commissioning of a jumper line at U-Pad. Two turnarounds (TARs) were also completed at the Gathering Center 1 and Flow Station (FS) 1 in 2015. Other projects completed during the 2015 POD period were the N-Pad UZI and Drill Site 16 and 17 pipeline replacements. Continued facility and integrity management activities such as additional upgrades to the Seawater Treatment Plant (STP) and pipeline in-line inspection or smart pigging work occurred

in 2015. Nearly 104 miles of pipelines were inspected. Facility and pipeline work is important for maintaining field operations and preparation for future Major Gas Sales.

2016 PLAN OF DEVELOPMENT

For the 2016 POD period, BPXA anticipates reduced drilling and wellwork activity as three drill rigs will be removed from service in the PBU due partly to market price conditions. In 2016, BPXA estimates four planned RWOs, eight rotary penetrations, and 24 coil penetrations. The higher success rate of non-rig workover repairs enables more wells to be returned to service without use of a rig, reducing the need for RWO. BPXA has focused on drilling and RWOs in the Gravity Drainage depletion area; however, the drilling is increasingly challenged by gas cap expansion and water encroachment. Increases in oil production at FS2 have resulted through shutting in water injector wells and re-perforating wells higher in the oil column at Drill Sites 03, 04, 09, and 11. This program has been successful in adding oil production and BPXA plans to continue an uphole add-perforation campaign in the remaining wellbore candidates. Another significant plan for 2016 is expansion of MI injection into two more MI sidetrack wells and injection into one UZI pattern on N-Pad. UZI's long-term viability is dependent upon future allocation of MI and injection water, which makes water handling and gas handling capacity important.

Facility upgrades continue to be major investments necessary to maintain field operations. There are no TARs scheduled for 2016. A substantial project began in 2014 with the replacement of the Stock Tank Vapor & Intermediate Pressure turbine-driven gas compressors at FS-1, FS-2, and FS-3. The compressor replacement was completed for FS-1 in 2014, the FS-3 compressor will be installed in 2016 with the FS-2 compressor installation in 2017. Evaluations are planned for the STP to continue seawater injection efficiency for the Gas Cap Water Injection project pressure support and other water injection projects. BPXA also plans piping modifications at Skid 50 (FS-3), pipeline modification for the STP 36-inch flowline from Point McIntyre, and more than 110 miles of pipeline in-line inspections.

ANALYSIS

When considering a POD, the Division must consider the criteria in 11 AAC 83.303(a) and (b). Accordingly, the Division considered the public interest, conservation of natural resources, prevention of economic and physical waste, protection of all interested parties including the state, environmental costs and benefits, geological and engineering characteristics of the reservoirs or potential hydrocarbon accumulations, prior exploration activities, plans for exploration or development, economic costs and benefits to the state, and any other relevant factors, including mitigation measures. 11 AAC 83.303(a)-(b).

The 2016 POD period predicts a reduction in drilling and RWO work for the coming year. However, the 2015 POD period reported another year of high levels of drilling and workovers at the IPA. The activities conducted at the IPA over the last four years have seen record levels of drilling, RWOs, and rate adding jobs along with heavy investment in facility upgrades, pipeline replacements and inspection, and TARs. The IPA experienced an average daily production

decline of only about 7,000 barrels of oil per day in 2015. The Prudhoe Bay field has exceeded its original recovery factor estimate by 2.7 billion barrels of oil due to investments beyond drilling wells. BPXA is progressing and developing new reservoir projects such as UZI, new MI targets, Sag River, and “pattern rotation” or pattern inversion in the east of Sag area. BPXA continues major facilities investments targeting debottlenecking constrained facilities and enhanced water and gas injection.

As the field has matured, the investments to maintain and replace aging infrastructure are key components to process and handle gas and fluids as efficiently as possible. The continuing investments in 2015 and proposed plans for 2016 are preventing physical and economic waste and continuing to provide economic benefits to the State. Increasing pipeline integrity management and facility maintenance activities promotes the protection of all natural resources and the public interest.

PBU gas has been reinjected into the field for increased oil recovery with natural gas liquids sold and delivered through TAPS consistent with the AOGCC’s Conservation Order 360. To date, utilizing gas reinjection has led to incremental recovery of nearly three billion barrels of oil from the entire unit.

As described in Commissioner Mark Myers’ January 14, 2016 letter, the Department has begun efforts to obtain additional information concerning resource development and production as part of the POD process. In contrast to the detailed technical information regarding development of the oil resource and facility sharing, the proposed 2016 POD, including additional submittals and the September 1, 2016 revised POD, provides only a limited level of detail regarding plans to prepare for or accomplish MGS from the PBU IPA. Given the production, development, and marketing requirements under the PBU leases, the Prudhoe Bay Unit Agreement (“PBUA”), and the law, and as outlined in the Division’s correspondence regarding the 2016 PBU IPA POD, Alaska is entitled to a firm commitment to move the PBU toward MGS. *See* particularly, the June 30, 2016 letter. Accordingly, the Department is entitled to specific, detailed information concerning what the unit operator and the WIOs are doing to plan and prepare for MGS from the PBU IPA, including the timeline and measurable milestones that can be evaluated.

The WIOs’ communications suggest that their participation in the Alaska LNG Project satisfies these duties. The revised POD does not discuss specific actions the WIOs will take during this POD period to progress MGS in that or any other context, but the WIOs have committed to specific, measurable, verifiable actions to progress MGS through the Alaska LNG Project both in public hearings before the Alaska State Legislature and in public correspondence with the administration. The Division is relying upon these public statements and requests that the WIOs provide details regarding the progress of those efforts as part of the 2017 POD. In addition, it is the Division’s continuing expectation that the unit operator and the WIOs will make verifiable progress, even in the current POD period, on resolving the misalignment between WIOs that currently impedes progress towards a MGS and entering into critical agreements. Details regarding such progress or the reasons for a lack of progress must also be included and updated in the 2017 POD.

The Division will accept the 2016 PBU IPA POD, as revised on September 1, 2016, with the understanding that the information requested during this 2016 process will continue to be required in upcoming POD submittals. In those future submittals, the unit operator and the WIOs will be required to provide specific, measurable, verifiable actions they will take during the proposed POD period to move towards MGS.

DECISION

The revised 2016 PBU IPA POD is approved for the period November 1, 2016 through June 30, 2017. The Division finds that the revised 2016 PBU IPA POD complies with the provisions of 11 AAC 83.303. Nevertheless, it is the Division's expectation that the unit operator's and WIOs' activities towards MGS, including resolving any misalignment between WIOs that currently impedes progress towards a MGS and agreeing on development strategy, will be identified in detail and updated in the 2017 POD.

This approval is only for a general plan of development. Specific field operations will require an approved Plan of Operations. Under 11 AAC 83.343, the 2017 POD is due on April 1, 2017, ninety (90) days before the 2016 POD expires.

With the approval of the revised 2016 PBU IPA POD, the administrative record for the 2015-2016 POD agency review and adjudication is complete. We look forward to continuing a cooperative effort to maintain oil production from the PBU and progressing towards a MGS in future PODs.

An eligible 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 Andrew T. Mack, Commissioner, Department of Natural Resources, 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.

Sincerely,



Corri A. Feige
Director

cc: Department of Law
Andrew T. Mack, Commissioner, Department of Natural Resources
David Van Tuyl, Regional Manager, BP Exploration Inc.
Jon Schultz, Manager – Great Prudhoe Area, ConocoPhillips Alaska, Inc.
Gilbert S. Wong, OBO Asset Manager, ExxonMobil Production Company