STATE OF ALASKA
ALASKA OIL AND GAS CONSERVATION COMMISSION
333 West Seventh Avenue, Suite 100
Anchorage Alaska 99501-3539

Re: BP Exploration (Alaska), Inc., as Operator of the Prudhoe Bay Unit; Prudhoe Bay Field; Well A-22 Enforcement Action	)	AOGCC Order No. 029 November 15, 2004

DECISION AND ORDER

On December 11, 2003, the Alaska Oil and Gas Conservation Commission ("Commission" or "AOGCC") issued a Notice of Proposed Enforcement Action under 20 AAC 25.535(b), stating that it considered that BP Exploration (Alaska) Inc. ("BPXA") had violated 20 AAC 25.526 in connection with its practices in managing wells with sustained annular pressures, by failing to carry out operations and maintain the property in a safe and skillful manner in accordance with good oil field engineering practices. The Commission proposed civil penalties under AS 31.05.150(a) in the total amount of $2,530,000, plus a penalty for wasted gas under AS 31.05.150(e) in the amount of $1,112.

BPXA requested informal review under 20 AAC 535(d). As part of the informal review, BPXA provided written submissions to the Commission and made an oral presentation to the Commission on April 15, 2004. Having now completed its review, the Commission issues this proposed Decision and Order.

A. Background

Early on the morning of August 16, 2002, previously shut-in Prudhoe Bay Well A-22 ("Well A-22"), operated by BPXA, failed catastrophically while being brought back into

production. A rapid release of gas from below the pad surface led to an explosion and fire that seriously injured the pad operator employed by BPXA. The blast blew open doors of the well house, and the resulting fire continued for approximately six hours before it was brought under control.

A subsequent investigation by the Commission examined information gathered through field inspections, meetings, BPXA's responses to AOGCC requests, public hearings, Commission review of well records, Commission review of BPXA operating policies and training programs, and interviews with operating personnel. This investigation disclosed the following:[1]

1. Well A-22 exhibited historical pressure in the casing annuli prior to August 2002. Approximately 1,300 pounds of pressure per square inch (psi") was imposed in the inner casing annulus for artificial lift. Annulus pressure records indicated the historical outer casing annulus pressure to have been approximately 600 psi.

2. Pressure increased in the outer casing annulus from approximately 600 psi to approximately 1,900 psi sometime between July 24 and August 1, 2002. There was no available pressure information between these two dates and no information describing the cause of increased pressure in BPXA's records, nor were any diagnostics performed to determine the source of the sudden outer casing annulus pressure increase or to evaluate the well for continued operation.

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[1] A copy of the Commission's investigative report dated November 17, 2003 is attached hereto as Appendix "A".

3. Well A-22's surface casing failed because the internal gas pressure exceeded the outer casing's burst capacity, and well A-22's surface casing burst approximately 17 feet below the well pad surface.

4. The excessive internal gas pressure was a direct result of heating during well startup, acting on relatively high initial outer casing annulus gas pressure. No evidence was found to suggest that any attempts were made to relieve annulus pressures from the well at the time the well was restarted, and outer annulus pressures at the time of restart were reported by separate sources as ranging from approximately 1,700 psi to approximately 1,950 psi.

5. At the time, a BPXA internal waiver process was used to allow wells to continue in operation with annulus pressure communication. A temporary waiver had been orally issued by BPXA on August 15, 2002, clearing Well A-22 to return to production. The justification for the waiver was high fluid level in the outer casing annulus and a high imposed inner annulus pressure, which BPXA incorrectly interpreted to represent well integrity. Diagnostic testing to support a permanent waiver for Well A-22 was scheduled but never occurred.

6. When Well A-22 was restarted, the pressurized gas that ruptured the surface casing vented up the space between the conductor and surface casing, blowing well house wood flooring and gravel upward. Sparks from flying debris or damaged electrical equipment ignited the escaping gas and started the fire.

7. A single operator per 12-hour work shift was responsible for three production pads, containing more than 100 wells and associated facilities.

8. No high-pressure hose was available at the site of Well A-22 or elsewhere on A-Pad with which to relieve casing annulus pressures. Therefore, prior to the explosion, the pad operator found it necessary to leave the well, and the production pad, unattended while he went

to obtain a hose, from another pad, approximately 2 miles away, to relieve the pressure in the well's outer annulus.

9. The pad operator returned to the well, attempted to enter the well house, was caught in the blast and received severe injuries.

10. No engineering analysis or other technical framework was found in BPXA's annular pressure management policies or operator training actions prior to the Well A-22 failure that addressed the importance of controlling thermally induced well pressures prior to initiating well startup.

11. Pressure was not bled from the well prior to start-up. If the pressure in the outer casing annulus of Well A-22 had been appropriately bled, the final outer casing annulus pressure would not have approached the burst rating of the surface casing (5,380 psi) and this event would not have occurred.

12. Corrective actions to prevent future incidents similar to what occurred at Well A-22 have been initiated by BPXA and the Commission, and are now in place.

In its written submission and oral presentation, BPXA raised various issues relative to the existence of a violation and objected to the size of the Commission's proposed penalty, assuming the existence of a violation. These points are addressed below.

B. The Violation of 20 AAC 25.526.

Some time prior to August 16, 2002, pressure in the outer casing annulus of Well A-22 increased from its historic level of approximately 600 psi to approximately 1,900 psi, a pressure that equalized with and tracked the imposed gas lift pressure in the well's inner annulus. This indicates that the pressure being introduced into the inner casing annulus leaked into and became trapped in the outer casing annulus. There was no attempt to relieve this trapped pressure, and as

the well was being restarted, heat resulting from restart of the well caused the fluids trapped in the outer casing annulus to expand and exceed the burst capacity of the surface casing.

The central issue is whether this incident was an unforeseeable anomaly or whether it resulted from a negligent failure to observe good oil field engineering practices. BPXA contends that its then-existing policies and procedures were adequate and based upon sound engineering analysis. BPXA further contends that its policies in effect in August of 2002 set rigid minimum requirements for allowing a well with sustained casing pressure to remain in production, and that primary responsibility for monitoring well pressures rested with the individual pad operator.

It is the Commission's opinion, however, that the policies cited by BPXA in defense of its practices in managing wells with sustained annulus pressures were used more as guidelines than as rigid standards, and were not consistently implemented or enforced by BPXA field supervisors. Moreover, BPXA's policies for bleeding down and monitoring annular pressures failed to address key issues. Nowhere in the record is there a credible explanation for why Well A-22 was allowed to be restarted with such high pressure in the outer casing annulus, or why this pressure was not relieved before restarting the well.

BPXA states that a determination was made that well A-22 could be returned to production safely "if outer annulus pressure was kept below 2,000 "psi." Yet Well A-22 was restarted at approximately 1,950 psi without proper equipment (a high pressure hose) readily available to permit the predictable heat induced pressure increase to be relieved. Indeed, Well A-22, already at the threshold of BPXA's maximum pressure limit in the outer casing annulus, was allowed to continue to operate unattended for at least 5 hours. Nothing in the record indicates that the lone pad operator, who had simultaneous responsibility for more than 100 wells, was aware of the potentially disastrous consequences of restarting a well with pressure

trapped in the outer casing annulus and the resulting effect that thermally induced high pressure could have on a well left unattended after restart. Nor does anything in the record suggest any latent defect in material – in fact, the well's casing actually withstood substantially greater pressure than it was rated for. There is no evidence of any unforeseeable external event, such as a lightning strike, that might be viewed as having caused this event. Rather, the casing failure and the resulting explosion and fire are, in the opinion of the Commission, the completely predictable and foreseeable outcome of managing this well in the way it was managed, given the pressure conditions of the well preceding restart. It is therefore difficult to accept BPXA's argument that such management was consistent with good oil field engineering practices.

BPXA has also argued that in August of 2002, its policies for managing wells with high outer annulus pressures were in strict compliance with the Commission's statutes, regulations and orders then in effect, because none of the Commission's requirements expressly addressed annular pressure issues. However, in August of 2002, the practice of the Commission was to rely upon each operator to manage annular pressures in accordance with good oil field engineering practices. Following this incident the Commission concluded it could no longer rely upon individual operators to self-employ good oil field engineering practices in annular pressure management, and the Commission enacted specific Conservation Orders establishing explicit annular pressure management requirements for Prudhoe Bay and other fields in Alaska. The fact that these specific orders were not in place at the time of this incident in no way relieves BPXA from its responsibility to carry out operations in a safe and skillful manner in accordance with good oil field engineering practices, as required by 20 AAC 25.526.

C. The Penalty Amount.

The Commission's proposed civil penalty totaling $2,530,000 was calculated by multiplying the maximum daily penalty allowed under AS 31.05.150 ($5,000) by the number of days from the most recent revision of BPXA's annular pressure management policies (March 21, 2001) to the date of the Well A-22 explosion and fire (August 16, 2002). BPXA has argued the proposed penalty amount is excessive, for several reasons.

First, BPXA argues that the Commission's maximum penalty should be reserved only for the most egregious violations, and that this case does not fall into that category.

In past enforcement matters the Commission has identified five factors as among those that should be considered in determining the appropriate amount of a civil penalty. These are: (1) the good or bad faith of the operator in violating the law; (2) the injury to the public resulting from the violation; (3) the benefits derived by the operator from its violation; (4) the operator's ability to pay the penalty; and (5) the need to deter similar behavior by the operator and others in the future.

After careful consideration of all relevant facts and the arguments presented by BPXA in its written submission, and at the April 15, 2004 informal review conference, the Commission is persuaded that although the potential – and in this case the actual – consequences of this type of violation are extremely serious, BPXA's acts and omissions here were not the result of bad faith. In addition, the Commission believes it is appropriate to take into account the extensive self-investigation conducted by BPXA to help determine the precise cause of this incident and also to consider BPXA's voluntary actions since the Well A-22 incident to develop new and better methods to monitor and manage well conditions. This incident was a costly and traumatic event

for BPXA and its involved employees, and BPXA has responded to the experience by putting into place more stringent and specific operating requirements designed to avoid a recurrence of such an event. The Commission concludes therefore that imposition of the maximum daily penalty is not warranted in this case and has reduced the proposed penalty amount by one half.

The Commission also notes that in the aftermath of the Well A-22 incident, BPXA voluntarily took a number of positive steps. Among these, one that may hold benefits for the entire oil industry in Alaska, is a Pilot Program begun in the winter of 2003-2004 to determine the feasibility of remote monitoring of outer annulus pressures, in real time. Although it is too soon to make any conclusions, this study could lead to utilization of new and safer technology in Alaska's oil fields. The record shows that BPXA has budgeted $549,000 for this program. Therefore, the Commission will allow BPXA to credit its actual expenditures on the Pilot Program, up to the amount of $549,000, against the civil penalties that are otherwise imposed by this Decision and Order.

BPXA has argued that the penalty period is not reasonably related to this incident. However, the company policies that allowed this event to occur, arguably had been in place for far longer than the penalty period. The Commission chose however to look back only to the last clear opportunity BPXA had to enact and implement better annular pressure management policies, in March 2001, and the penalty was calculated using this date.

Finally, BPXA argues that the proposed penalty is inconsistent with constitutional principles of due process and equal protection. In support of this argument BPXA cites testimony of other operators who at the time of this incident were following policies similar to those of BPXA, and it is implied that BPXA may have been unfairly singled out. The Commission disagrees. The Commission has approached this enforcement action even-

handedly. To the Commission's knowledge, no other operator's well has been allowed to develop avoidable annular pressures sufficient to rupture a casing. It is the incident, not the Commission's desire to penalize BPXA, which brought about this enforcement action.

NOW THEREFORE IT IS ORDERED THAT:

1. BPXA shall pay to the Commission a civil penalty of $1,265,000 within 30 days from the date this Decision and Order becomes final;

2. The penalty amount specified in the preceding paragraph may be reduced by the amount that has been expended on the Pilot Program described in BPXA's letter to the Commission dated May 28, 2004 (a copy of which is attached as Appendix "B), subject to a maximum reduction of $549,000, if within 30 days from the date this Decision and Order becomes final, BPXA provides to the Commission documentation of its actual expenditures on the Pilot Program;

3. Within 30 days from the date this Decision and Order becomes final, BPXA shall pay to the Commission $1,112 for the unauthorized venting (waste) of 1,053 thousand cubic feet of gas that occurred as a direct result of the Well A-22 incident; and

4. This Decision and Order shall, pursuant to 20 AAC 25.535(d), become final on the 30th day of November, 2004, unless on or before the 29th day of November, 2004, BPXA files with the Commission a written request for a hearing.[2] If BPXA timely files a written request for a

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[2] The normal time period has been extended because of the Thanksgiving holiday.

hearing, this Decision and Order shall be of no effect, and the Commission will proceed to schedule this enforcement action for a formal hearing in accordance with 20 AAC 25.540.

Done at Anchorage, Alaska this 15th day of November, 2004.

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

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

I certify that on 11.15.04 a copy of the above was hand delivered to each of the following at their addresses of record: Johnson / McKim

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