



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**REGION 10**  
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OFFICE OF  
WATER AND WATERSHEDS

**FINDING OF NO SIGNIFICANT IMPACT (FONSI)**

To all interested government agencies,  
public groups, and individuals:

In accordance with the Environmental Protection Agency (EPA) procedures for complying with the National Environmental Policy Act (NEPA), 40 CFR Part 6, EPA has completed an environmental review of the following proposed action:

**Coverage of Sanitary and Domestic Waste Water Discharges from the Liberty Development Project Under the National Pollutant Discharge Elimination System (NPDES) Permit Renewal for the Endicott Operations (AK-003866-1)**

to:

**BP Exploration (Alaska), Inc. (BPXA)**

**EPA ROLE AND RESPONSIBILITY**

EPA effluent limitation guidelines and new source performance standards for the oil and gas extraction point source category went into effect on December 16, 1996 (61 FR 66123; 40 CFR Part 435). With promulgation of the new source performance standards (NSPS) for oil and gas extraction, those oil and gas projects requiring NPDES permits, which are defined as "new sources," are subject to the provisions of NEPA. "New Sources" are defined as any facility where construction commenced after the effective date of applicable NSPS (40 CFR 122.2). The Endicott Operations NPDES permit renewal will authorize the discharge of sanitary and domestic wastewater (S/D wastewater) generated from the BPXA Liberty Development Project, which is considered a new source and must meet applicable NSPS. Additionally, as a new source discharge, the discharge of S/D wastewater generated from the Liberty Development Project is subject to NEPA review as required under the Council on Environmental Quality (CEQ) regulations at 40 CFR Parts 1500-1508 and EPA's regulations for implementing the procedural provisions of NEPA (40 CFR Part 6).

**BACKGROUND AND CHRONOLOGY**

In February 1998 BPXA submitted a Development and Production Plan (DPP) to EPA and Minerals Management Service (MMS) for review and approval of a Liberty Development

Project (Liberty Project) based on an offshore manmade gravel island with full production facilities and a buried sub-sea pipeline to shore, both located in Foggy Island Bay in the Beaufort Sea, Alaska. In 2002 MMS, together with EPA as a cooperating agency, issued a final environmental impact statement (FEIS) for the offshore project. However, in 2002 BPXA pulled its application for the offshore project, as described, to further review the design and economics.

In November 2004 BPXA submitted an NPDES permit renewal application for the Endicott Operations to EPA. On April 11, 2005, the Endicott Operations NPDES permit expired and was administratively extended by EPA until a new permit could be issued.

In August 2006 BPXA decided to pursue the development of the Liberty reservoir by employing the use of ultra-extended-reach drilling (uERD) wells from an existing man-made satellite drilling island (SDI), the Endicott SDI. The Endicott SDI will be expanded to accommodate the Liberty wells, drilling rig, and various production facilities and piping.

In February 2007 EPA notified BPXA that the Liberty Project, as described, triggers NSPS for S/D wastewater and that a NEPA review would be required. Additionally, the notification requested that BPXA submit additional details regarding the use of the Endicott facilities for disposal of Liberty S/D wastewater.

In April 2007 BPXA submitted the *Liberty Development Project Development and Production Plan*, based upon the use of uERD wells from the expanded Endicott SDI facility, to EPA and MMS to initiate the permitting and NEPA processes.

In July 2007 BPXA provided additional information to EPA regarding the handling and disposal of Liberty S/D wastewater. The notification outlined three disposal options for Liberty S/D wastewater:

- 1) utilization of the permanent living quarters at the Endicott production facility and disposing of Liberty S/D wastewater at the existing Endicott wastewater treatment plant (WWTP);
- 2) utilization of a temporary construction/drilling camp at or near the project location and trucking Liberty S/D wastewater to the Endicott WWTP and/or;
- 3) utilization of a temporary construction/drilling camp at or near the project location and trucking the Liberty S/D wastewater to existing Prudhoe Bay Unit infrastructure for disposal.

In October 2007 MMS issued an Environmental Assessment for the Liberty Project, entitled *Liberty Development and Production Plan Ultra Extended Reach Drilling from Endicott—Satellite Drilling Island (SDI) Environmental Assessment*.

In November 2007 MMS issued a Finding of No Significant Impact (FONSI) for the Liberty Project.

In January 2008 EPA requested additional information from BPXA regarding the Liberty S/D wastewater disposal options BPXA outlined in July of 2007.

In March 2008 BPXA provided additional information to EPA regarding the disposal options for Liberty S/D wastewater. BPXA outlined two potential options for disposal of Liberty S/D wastewater:

1) hauling the Liberty S/D wastewater from temporary drilling camps to one of three North Slope facilities: the Endicott Operations WWTP [AK-003866-1]; Prudhoe Bay Operations Center (PBOC) WWTP [AKG-57-0006]; and/or the North Slope Borough Service Area 10 (SA-10) Publicly Owned Treatment Works (POTW) [AKG-57-0016]; and/or

2) dispose of Liberty S/D wastewater at the Endicott Main Production Island (MPI) or on-site at Liberty (i.e., Endicott SDI) through injection into a Class I/II Underground Injection Control (UIC) well(s).

BPXA formally requested that EPA authorize the discharge of Liberty S/D wastewater in the renewal of the Endicott Operations NPDES permit [AK-003866-1], which has been administratively continued since April 11, 2005.

#### **PURPOSE AND NEED OF ACTION**

The purpose of EPA's proposed action is to authorize the discharge of S/D wastewater generated from the Liberty Project under the renewal of the Endicott Operations NPDES permit [AK-003866-1]. With the exception of Outfall 003 (fire control water), the proposed permit renewal retains all the outfall discharges currently permitted under the existing administratively extended permit.

The need for the action is to allow the permittee, BPXA, to continue to operate the Endicott Operations, to allow it the option to treat and discharge S/D wastewater from the Liberty Development Project through the Endicott wastewater treatment plant, and to establish and discharge controls and monitoring requirements to protect receiving waters.

#### **AGENCY PREFERRED ALTERNATIVE**

EPA's preferred alternative, Alternative A-1—Proposed Action, involves the renewal of the Endicott Operations NPDES permit [AK-003866-1]. Three of the outfalls covered under the existing permit—Outfalls 001 (combined wastewater from seawater treatment plant, potable water unit, and *LoSal*<sup>TM</sup> seawater processing unit), 001A (S/D wastewater, which is combined with Outfall 001 prior to discharge), and 002 (continuous flush system)—would be reauthorized. Additionally, S/D wastewater generated from the Liberty Project will also be an authorized discharge under the proposed permit renewal—through Outfall 001A—in the Endicott Operations NPDES permit renewal. Each of the outfalls is discussed in further detail, below.

The wastewater treatment plant (WWTP) at Endicott handles an average flow of 11,500 gallons per day (gpd) of domestic and sanitary wastewater from the living quarters at the Endicott facility. At present, the treated wastewater is discharged through the main outfall (i.e., Outfall 001) along with effluents from a seawater treatment plant (STP), potable water system (POW) unit, and the *LoSal*<sup>TM</sup> seawater processing unit. BPXA plans to inject the treated wastewater from the WWTP into a Class II Enhanced Oil Recovery (EOR) well in the near future, but will keep Outfall 001 for the WWTP discharges as an alternative to injection.

On August 4, 2009, pursuant to Section 401 of the CWA, the Alaska Department of Environmental Conservation (ADEC) issued a final Certificate of Reasonable Assurance (401 Certification) for the Endicott Operations NPDES permit renewal. The 401 Certification authorizes a mixing zone for the following parameters: fecal coliform, pH, turbidity, temperature, sediment, toxic and other deleterious organic and inorganic substances (including total residual chlorine), residues, whole effluent toxicity (WET), and dissolved inorganic substances (salinity). The mixing zone is defined as the area of a 100-meter radius circle, centered on the point of discharge, from the seafloor to the surface and provides for a dilution of 40:1. Compliance with all Alaska Water Quality Standards must be achieved at the edge of the mixing zone.

The proposed discharge Outfalls authorized under the Endicott Operations NPDES permit renewal include:

#### Outfall 001, Combined Wastewater Discharge

Outfall 001 is a permitted discharge under the existing administratively extended permit and the applicant has requested that it be retained in the permit renewal. As noted above, Outfall 001 consists of streams from the STP and POW unit that are commingled prior to discharge. Both of these streams may be intermittent. The STP may not be operating if enough produced water exists in a reservoir and the addition of waterflood is not necessary for EOR. The POW unit may not be in operation if potable water is being hauled by truck from another potable water plant on the North Slope. In addition, a *LoSal*<sup>TM</sup> Seawater Processing Unit is expected to be part of the STP.

#### Outfall 001A, Sanitary and Domestic Wastewater

Outfall 001A is a permitted discharge under the existing administratively extended permit and the applicant has requested that it be retained in the permit renewal. This Outfall consists of treated S/D wastewater generated from the Endicott WWTP. The Endicott WWTP handles an average flow of 11,500 gpd and a maximum of 30,000 gpd of domestic and sanitary wastewater from the living quarters at the Endicott facility. At present, the treated wastewater is discharged through the main outfall along with effluents from the STP and the POW unit (Discharge 001). The Liberty Project is expected to contribute an additional 5,000 gpd (average flow) of S/D wastewater at the Endicott WWTP, and will be discharged through Outfall 001A.

## Outfall 002, Continuous Flush System

Outfall 002 is a permitted discharge under the existing administratively extended permit and the applicant has requested that it be retained in the permit renewal. This Outfall consists of untreated seawater that is drawn through the continuous flush system to minimize ice formation and debris accumulation in the intake basin. There is no use of continuous flush seawater for cooling equipment (i.e., no process cooling water).

## **OTHER ALTERNATIVES CONSIDERED**

### Alternative A-2—PBOC

Under Alternative A-2—PBOC, BPXA could dispose of Liberty S/D wastewater at the PBOC WWTP, under NPDES Permit No. AKG-57-0006. The PBOC lies in the heart of the BPXA-operated Prudhoe Bay field. The PBOC WWTP processes wastewater from the living quarters at Prudhoe Bay as well as approximately 100 outlying remote sites. The PBOC is designed to process in excess of 234,000 gpd with a maximum flow limit of 250,000 gpd. Current rates at the PBOC include approximately 35,000 gpd from remote sites and 150,000-160,000 gpd peak flow at the WWTP. Originally, the PBOC WWTP operated under individual NPDES permit AK-0021229. However, on July 21, 2004, EPA issued the NPDES general permit AKG-57-0000, *Small Publicly Owned Treatment Works and other Small Treatment Works Providing Secondary Treatment of Domestic Sewage in Alaska*. Pursuant to the terms of the permit and specified in Appendix A, the PBOC was automatically granted coverage under AKG-57-0000 as AKG-57-0006.

Under Alternative A-2 EPA would have no administrative action. The NPDES general permit, which covers the PBOC WWTP, specifically allows for the introduction of new pollutants into the treatment works from an indirect discharger. Additionally, pursuant to Section III.I of AKG-57-000, *Notice of New Introduction of Pollutants*, the PBOC would not be required to provide notice to EPA because EPA has determined that the introduction of Liberty S/D wastewater into the treatment works does not meet the definition of a “substantial change in volume or character of pollutants.”

### Alternative A-3—SA-10

Under Alternative A-3—SA-10, BPXA could dispose of Liberty S/D wastewater at the North Slope Borough’s SA-10 Publicly-Owned Treatment Works (POTW) in Deadhorse, Alaska. The SA-10 POTW has a flow limit of 180,000 gpd and is believed to be operating at roughly 90,000 gpd. Similar to the PBOC, the SA-10 POTW formerly operated under an individual NPDES permit but was automatically granted coverage under AKG-57-0000 as AKG-57-0016.

Under Alternative A-3 EPA would have no administrative action. The NPDES general permit, which covers the SA-10 POTW, specifically allows for the introduction of new pollutants into the treatment works from an indirect discharger. Additionally, pursuant to Section III.I of AKG-57-000, *Notice of New Introduction of Pollutants*, SA-10 would not be required to provide notice to EPA as EPA has determined that the introduction of Liberty S/D wastewater into the treatment

works does not meet the definition of a “substantial change in volume or character of pollutants.”

#### Alternative B-1—Underground Injection Control (UIC) Injection at Endicott SDI

Under Alternative B-1—UIC Injection, BPXA could dispose of Liberty S/D wastewater on-site (i.e., at the Endicott SDI) by injecting the wastewater into a Class I UIC disposal well or a Class II UIC EOR well. Currently, there are no permitted UIC wells at the Endicott SDI, and BPXA would need to obtain the necessary permits from EPA and the State of Alaska prior to well construction.

#### Alternative B-2—UIC Injection at Endicott Main Production Island

Under Alternative B-2—UIC Injection, BPXA could dispose of Liberty S/D wastewater at the Endicott MPI by injecting the wastewater into the facility’s Alaska Oil and Gas Conservation Commission (AOGCC)-permitted Class II UIC well.

#### No Action Alternative

Under the No Action Alternative, the existing Endicott NPDES permit would be reissued; however, EPA would not authorize the discharge of Liberty S/D wastewater in the permit renewal.

### **MITIGATION MEASURES**

The proposed permit renewal contains water quality- and technology-based effluent limitations and monitoring requirements necessary to meet Alaska Water Quality Standards and federal guidelines, maintain the water quality of receiving waters, and prevent the degradation of the marine environment. The permittee must comply with all applicable effluent limitations, special conditions, and monitoring and reporting requirements contained in the proposed permit renewal.

The Clean Water Act and federal regulations authorize EPA to require best management practices, or BMPs, in NPDES permits (40 CFR Part 122.44(k)). BMPs are measures for controlling the generation of pollutants and their release to waterways. For many facilities, these measures are typically included in the facility Operation & Maintenance (O&M) plans. BMPs are important tools for waste minimization and pollution prevention. EPA encourages facilities to incorporate BMPs into their O&M plans and to revise them as new practices are developed. The permittee has promoted their control of pollutant discharges through the use of BMP plans in the past and will continue these practices into the future. The proposed permit requires the permittee to continue the BMP plan at Endicott.

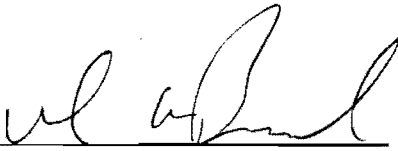
### **SUMMARY**

Based on the EA and consideration of the proposed NPDES permit conditions, and in accordance with the guidelines for determining the significance of proposed federal actions (40 CFR Part 1508.27) and EPA criteria for initiating an Environmental Impact Statement (EIS) (40 CFR Part

6.207), EPA has concluded that the proposed NPDES permit renewal will not result in a significant effect on the environment.

In accordance with NEPA regulations at 40 CFR Part 1508.13, the findings of the EA are hereby incorporated by reference. The proposed permit renewal will not significantly affect land use patterns or population, wetlands or flood plains, threatened or endangered species, farmlands, ecologically critical areas, historic resources, air quality, water quality, noise levels, fish and wildlife resources, nor will it conflict with approved local, regional, or state land use plans or policies. The proposal also conforms to all applicable federal statutes and executive orders. As a result of these findings, EPA has determined that an EIS will not be prepared.

Copies of the EA can be obtained by calling Jamey L. Stoddard (206-553-6110) or Hanh Shaw (206-553-0171) or toll-free at (800) 424-4EPA.



Michael A. Bussell, Director  
Office of Water and Watersheds

8-20-2009

Date