

# STATE OF ALASKA

**SARAH PALIN, GOVERNOR**

**DEPT. OF ENVIRONMENTAL CONSERVATION  
DIVISION OF SPILL PREVENTION AND RESPONSE  
CONTAMINATED SITES PROGRAM**

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File: # 300.38.018

April 30, 2008

Chuck Stilwell  
BP Exploration (Alaska) Inc  
P.O. Box 196612  
900 East Benson Blvd  
Anchorage, AK 99519-6612

Re: Eastern Operating Area Fire Training Ground  
Record of Decision

Dear Mr. Stilwell:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) reviewed the environmental records associated with BPX Eastern Operating Area (EOA) Fire Training Ground. This site had been contaminated by the release of a hazardous substance; however, based on the information provided to date, ADEC has determined that no further remedial action is required, and that the EOA Fire Training Ground can be closed subject to the conditions outlined in this document. The hazardous substance contamination has been adequately addressed and does not pose an unacceptable risk to human health or the environment. This site is included on the Existing (Contaminated) Sites Charter for the Development of the Alaska North Slope (Paragraph II.A.3; Exhibit D.2).

This decision is based on the administrative record for this site which is located in the offices of the ADEC in Anchorage, Alaska. This letter summarizes the decision process used to determine the environmental status of this site and provides a summary of the regulatory issues considered in the ADEC determination.

## **Introduction**

### Site Name and Location

BPX EOA Fire Training Area (former ARCO)  
Prudhoe Bay, AK

### Name and Mailing Address of Contact Party:

Chuck Stilwell  
BP Exploration (Alaska) Inc  
P.O. Box 196612  
900 East Benson Blvd  
Anchorage, AK 99519-6612

Database Record Key and CS file number:

ADEC Reckey # 1991730136401

CS file # 300.38.018

Regulatory authority under which the site is being cleaned up:

18 AAC 75 and 18 AAC 70

**Background**

The EOA Fire Training Ground has been used for fire training since the 1980's. Diesel used to set fires has resulted in several releases that have impacted the pad and the surrounding tundra.

**Site Characterization**

Diesel contamination up to 8,200 mg/kg DRO was identified in the gravel pad in 1991. A vertical barrier liner was installed downgradient of the fire training area in 1992 and a bottom liner was installed in 1993 to keep contaminants from migrating off the pad.

Surface water and pore water monitoring have been conducted at the site since 2000. Elevated concentrations of DRO and benzene have been detected in pore water off the pad to the southwest, however surface water sampling indicates surface water has not been impacted.

The fire training ground is currently still in use and is anticipated to remain in use into the foreseeable future.

**Contaminants of Concern**

Diesel Range Organics

Benzene

**Cleanup Levels**

The cleanup levels for petroleum hydrocarbon-contaminated soil on manmade gravel pads and roads in the Arctic Zone are established in 18 AAC 75.341 Method One, Table A2 and 18 AAC 75.341 Method Two Tables B1 and B2.

A number of factors are considered by ADEC when evaluating site specific cleanup levels in the Arctic Zone including:

- human health (ingestion/inhalation);
- ecological impacts (contamination impacting ecological species other than humans);
- water (ground and surface) quality;
- presence of free phase product; and
- any other factors that might cause a deleterious impact to the environment.

In the Arctic Zone, the migration to surface water pathway is evaluated as the primary migration pathway since the migration to groundwater pathway is not considered applicable due to the presence of continuous permafrost.

The 18 AAC 75.341 Method Two Table B2 regulations also limit soil hydrocarbon concentrations to a "maximum allowable concentration". This concentration was established based on a specific soil type in which hydrocarbon product may become mobile as a separate phase and migrate in the soil. If a petroleum hydrocarbon exceeds a soil saturation limit, there

may be an increased risk of migration off the gravel pad to surface water or tundra that has to be evaluated when making environmental decisions. Therefore, the soil type must be evaluated when establishing cleanup levels in the Arctic Zone to ensure the petroleum hydrocarbon does not exceed the residual saturation levels and pose a risk by migrating.

ADEC has evaluated the current site specific information regarding North Slope soil types and considers a coarse gravel soil type to be representative of those gravel pads rather than a fine sandy silt soil that was considered when establishing the Table B2 Arctic Zone levels. The diesel range saturation point in a coarse gravel material is 2200 mg/kg; the gasoline range saturation point is 950 mg/kg with residual range being 4800 mg/kg.

NOTE: Even though the migration to groundwater pathway is not complete in the Arctic Zone, the soil cleanup levels established for the migration to groundwater pathway in the Over 40 inch Zone are considered to be the most stringent cleanup levels, and protective of human health and the environment. If these cleanup levels are achieved at an Arctic Zone site, it will allow for unrestricted closure. In addition, the 18 AAC 75.341 Method One Table A2 cleanup levels may also be considered when making a final closure determination. Either Method One or Method Two migration to groundwater cleanup levels are considered protective to allow full site closure. The guidance document, "Policy for Establishing Cleanup Levels for Sites in the Arctic Zone in Accordance With 18 AAC 75, Article 3," provides additional information for management of residual contamination in the Arctic Zone.

### **Pathway Evaluation**

The human health (HH) exposure pathways that were evaluated for this decision document included: inhalation of outdoor air; ingestion of soil; dermal contact with soil; and ingestion of groundwater. The inhalation and ingestion pathways may be complete but contaminant concentrations do not exceed 18 AAC 75.341 Table B2, Method Two risk based cleanup levels for either ingestion or inhalation. Therefore, the HH exposure risk is considered acceptable. The dermal contact may be complete, but the pad is not frequently used and potentially impacted surface soil is not anticipated to pose a significant risk to receptors via the dermal contact pathway..

In the Arctic Zone, the migration to surface water pathway is evaluated as a possible risk to human health (drinking water source) and/or for compliance with Alaska Water Quality standards (18 AAC 70). Any surface water adjacent to this pad is not a drinking water source; therefore, the human exposure pathway is not considered complete.

In addition, the migration to surface water is evaluated as a possible exposure pathway for ecological receptors because of the tundra wetland ecosystem that exists throughout the Arctic region. The migration to surface water pathway may be complete but sampling indicates surface water has not been impacted

The exposure pathway analysis above was supported by the most recent ADEC Exposure Tracking Model (ETM) ranking. The ETM results showed all pathways to be one of the following: De Minimis Exposure, Exposure Controlled, or Pathway Incomplete.

**ADEC Decision**

There is contamination remaining above established cleanup levels at BPX EOA Fire Training Area (former ARCO), but ADEC has determined there is no unacceptable risk to human health or the environment, and this site will be conditionally closed.

This decision is subject to the following conditions:

1. A Notice of Environmental Contamination will be recorded on the ADEC database to document that there is residual contamination remaining on site above the most stringent ADEC cleanup levels;
2. Pore water monitoring will be conducted on a biennial basis in accordance with an ADEC approved work plan. Wells to be monitored include WP-1, WP-5, WP-6, WP-9 and WP-14. Samples should be analyzed for DRO and BTEX. Future monitoring events will be required based on a review of sampling data and current fire training practices at the site.
3. When the pad is decommissioned, contaminated gravel must be removed and disposed of in accordance with ADEC guidance.
4. Any proposal to transport soil off site requires ADEC approval in accordance with 18 AAC 75.370 (b)

This determination is in accordance with 18 AAC 75.380 (d) and does not preclude ADEC from requiring additional assessment and/or cleanup action if future information indicates that this site may pose an unacceptable risk to human health or the environment.

Site closure (without conditions) can be achieved when soil sampling confirms that all soil meets the most stringent ADEC cleanup levels.

**Appeal**

Any person who disagrees with this decision may request an adjudicatory hearing in accordance with 18 AAC 15.195 -18 AAC 15.340 or an informal review by the Division Director in accordance with 18 AAC 15.185. Informal review requests must be delivered to the Division Director, 410 Willoughby Avenue, Suite 303, Juneau, Alaska 99801, within 15 days after receiving the department's decision reviewable under this section. Adjudicatory hearing requests must be delivered to the Commissioner of the Department of Environmental Conservation, 410 Willoughby Avenue, Suite 303, Juneau, Alaska 99801, within 30 days after the date of issuance of this letter, or within 30 days after the department issues a final decision under 18 AAC 15.185. If a hearing is not requested within 30 days, the right to appeal is waived.

If you have questions about this closure decision, please contact ADEC Project Manager William O'Connell at (907) 269-3057.

Sincerely,



Linda Nuechterlein  
Environmental Manager

cc: Gary Schultz, ADNR Fairbanks