

STATE OF ALASKA

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

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File No.: 300.38.236

April 3, 2007

Chuck Stillwell
BP Exploration Alaska Inc.
P.O. Box 196612
Anchorage, Alaska
99519

RE: BPX CIC Former Chemical Tank Storage Area (CTSA)
Eastern Operating Area, Prudhoe Bay Alaska
Record of Decision

Dear Mr. Stillwell:

The Department of Environmental Conservation, Contaminated Sites Program, (ADEC) reviewed the environmental records associated with the BPX CIC Former Chemical Tank Storage Area (CTSA). The information presented to date indicates that the subject area was contaminated by the release of a hazardous substance; however, analytical sampling indicates the contamination does not pose an unacceptable risk to human health or the environment.

Based on this information, ADEC has determined that the CTSA shall be conditionally closed. 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 determination.

Introduction

Site name and location:

BPX CIC Former Chemical Tank Storage Area (CTSA)
Eastern Operating Area
Prudhoe Bay, Alaska

Name and mailing address of contact person:

Chuck Stillwell
BP Exploration Alaska Inc.
P.O. Box 196612
Anchorage, Alaska
99519

Database Record Key and CS file number:

ADEC Reckey # 2005360109301
CS file # 300.38.236

Regulatory authority under which the site is being cleaned up:

18 AAC 75 and 18 AAC 70

Background

The former CTSA site was used to store a variety of chemicals including methanol, glycols, lube oil, corrosion inhibitors, and emulsion breakers. Chemicals were stored in tanks of approximately 1,000 gallons, and up to 20 above ground storage tanks were in-use at any given time. There were no documented spills reported at this site, however BPX decided to conduct a site investigation based on CTSA's past history as a chemical storage area.

CTSA is entirely encompassed by an upgradient, contaminated site, the Crude Oil Topping Unit (COTU), which has been historically monitored on an annual basis.

Cleanup Actions

A site investigation was conducted at the former CTSA in 2002. Ten soil borings were drilled in the area of former tank storage as identified through aerial photos, with six of the borings completed as monitoring wells. Ten soil samples were collected from borings near the porewater interface, approximately 2.5 feet below ground surface (bgs). Two surface water samples were also collected at the downgradient toe of the pad. Samples were analyzed for DRO, GRO, VOCs, SVOCs, methanol, and glycols.

Pore water samples collected from the newly installed monitoring wells contained DRO up to 9.29 mg/l and GRO up to 8.4 mg/l. Benzene was also detected in pore water up to 1.84 mg/l. Contamination in pore water can be attributed to the upgradient COTU site as it is contiguous with contaminated pore water from that site. Glycols were not detected in pore water or in surface water at CTSA.

DRO was detected in five of the ten soil samples at concentrations ranging from 8.1 mg/kg to 4,190 mg/kg. GRO was detected in 2 of the 10 samples at 1,060 mg/kg and 1,610 mg/kg. VOCs, SVOCs, glycols, and methanol were not detected above ADEC cleanup criteria. There is no known source for soil contamination at CTSA, and it is likely a result of contamination that has migrated from the upgradient COTU site.

Chemicals of Concern

Diesel Range Organics (DRO)
Gasoline Range Organic (GRO)
Benzene
Glycols

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 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 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.

Exposure Pathways Identified

The pathways evaluated at this site included: inhalation; ingestion and migration to surface water.

Both the inhalation and ingestion pathways may be complete but the concentrations do not exceed the risk based concentration established for human health in the Arctic Zone.

There is no evidence of contamination in the surface water adjacent to this pad. In addition, it is not a drinking water source so there are no receptors. Therefore, the human exposure pathway is not complete for surface water.

The ecological exposure to surface water pathway may be complete, so it was evaluated in accordance with Alaska Water Quality standards (18 AAC 70). The sample data indicated no exceedances of those standards.

ADEC Decision

Based on the information provided to date, ADEC has determined that further remedial action is not required and a conditional closure of the BPX CIC Former Chemical Tank Storage Area (CTSA) is appropriate.

This decision will be noted as "Conditional Closure" on the ADEC database and is subject to the following conditions:

1. A Notice of Residual Contamination will be recorded on the ADEC database to document that there are areas on the pad where hazardous substance contamination may remain above the most stringent ADEC cleanup levels
2. Any proposal to transport soil or porewater off site requires ADEC approval in accordance with 18 AAC 75.325(i).

This determination is based on information presented to date but does not preclude the Department 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 18 AAC 75.341 Method One, Table A2 or Method Two migration to groundwater, Under 40 Inch Zone 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 William O'Connell at (907) 269-3057.

Sincerely,



Jim Frechione
Environmental Manager

Cc: Jim Chatham, BPX