THE STATE of ALASKA
GOVERNOR SEAN PARNELL

Department of Environmental Conservation
DIVISION OF SPILL PREVENTION & RESPONSE
Contaminated Sites Program
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File: 300.38.300

October 11, 2012

Mr. Lee Majors/Mr. Ken Linderman
Alaska Clean Seas
4700 Business Park Blvd, Suite G42
Anchorage, AK 99503

Re: Decision Document; Alaska Clean Seas Deadhorse Base Facility
Cleanup Complete Determination

Dear Mr. Majors/Mr. Linderman:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has completed a review of the environmental records associated with the Alaska Clean Seas Deadhorse Base Facility contaminated site located on Spine Road in Deadhorse, Alaska. Based on the information provided to date, it has been determined that the contaminant concentrations remaining on site do not pose an unacceptable risk to human health or the environment and this site will be closed.

This decision is based on the administrative record for Halliburton Otis Engineering Fac., 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 Cleanup Complete determination.

Introduction

Site Name and Location
Alaska Clean Seas Deadhorse Base Facility
Spine Road
Deadhorse, AK

Name and Mailing Address of Contact Party:
Mr. Lee Majors/Mr. Ken Linderman
Alaska Clean Seas
4700 Business Park Blvd, Suite G42
Anchorage, AK 99503

ADEC Site Identifiers:
Hazard ID #25879
CS file # 300.38.300

Regulatory authority under which the site is being cleaned up:
18 AAC 75

Background
Hydrocarbon contamination was discovered during a geotechnical investigation conducted at the site in January 2012. Seven boreholes were advanced and sampled, and DRO was detected up to 1,220 mg/kg at 2.5 feet below ground surface (bgs). The source of the hydrocarbon contamination is assumed to be leaks and spills from a fueling area formerly located at the site. Hydrocarbon contamination was noted in only one borehole, B-1 located between the Cold Storage Building and the portable offices near the northern corner of the pad.

Contaminants of Concern
During the various investigations at this site, soil samples were analyzed for diesel range organics (DRO), residual range organics (RRO), gasoline range organics (GRO), benzene, toluene, ethylbenzene, and xylenes (BTEX), and polynuclear aromatic hydrocarbons (PAHs). . Based on the results of these investigations, the following contaminant of concern was identified:

- DRO

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);
- groundwater and surface water 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 because the migration to groundwater pathway is not considered applicable due to the presence of continuous permafrost. Impacted surface water can adversely affect both human and ecological receptors, depending on the location of the contaminant source, its proximity to surface waters, and water usage in the impacted area. Therefore 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).

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. Potential future use of the property must also be taken into account when determining closure status. Differentiating between a "Cleanup Complete" and a "Cleanup Complete with Institutional Controls" determination will be based on site specific conditions and exposure pathways as determined by ADEC.

Site Characterization and Cleanup
To delineate the extent of hydrocarbon contamination, and to evaluate the potential migration of contaminants to the tundra, five test pits were excavated in July 2012. In addition, a tundra inspection was conducted along the edge of the pad. Hydrocarbon contamination was found in test pit TP-1, which was

excavated at the same location as geotechnical borehole B-1. Soil samples from this test pit contained DRO up to 771 mg/kg at one foot below ground surface. Contaminants were not detected above the Method One, Table A2 – Arctic Zone cleanup levels in any other test pits.

Along the edge of the pad near the area of concern, sediment and surface water were inspected for visual or olfactory evidence of contamination, such as sheen or odor, and none was observed.

Pathway Evaluation

Following investigation and cleanup at the site, exposure to the remaining contaminants was evaluated using ADEC's Exposure Tracking Model (ETM). Exposure pathways are the conduits by which contamination may reach human or ecological receptors. ETM results show all pathways to be one of the following: De Minimis Exposure, Exposure Controlled, or Pathway Incomplete. A summary of this pathway evaluation is included in Table 1.

Table 1 – Exposure Pathway Evaluation

Pathway	Result	Explanation
Direct Contact with Surface Soil	Pathway Incomplete	Contaminated soil has been removed from the surface
Direct Contact with Sub-Surface Soil	De Minimis Exposure	Although the remaining contaminated soil exceeds the Method One Arctic Zone cleanup level, it is considered de minimis in volume.
Inhalation-Outdoor Air	De Minimis Exposure	The remaining contamination is well below Method Two inhalation cleanup levels and de minimis in volume.
Inhalation-Indoor Air	Pathway Incomplete	The remaining DRO contamination is well below inhalation cleanup levels; is considered non-volatile and de minimis in volume.
Groundwater Ingestion	Pathway Incomplete	Groundwater is not utilized as a drinking water source in the Arctic Zone.
Surface Water Ingestion	Pathway Incomplete	Surface water is not utilized as a drinking water source in this area
Wild Foods Ingestion	Pathway Incomplete	Wild foods are not collected in this area.
Exposure to Ecological Receptors	Pathway Incomplete	There are no complete exposure pathways to ecological receptors at the site.

Notes to Table 1: "De minimis exposure" means that in ADEC's judgment receptors are unlikely to be affected by the minimal volume of remaining contamination. "Pathway incomplete" means that in ADEC's judgment contamination has no potential to contact receptors. "Exposure controlled" means there is an administrative mechanism in place limiting land or groundwater use, or a physical barrier in place that deters contact with residual contamination.

ADEC Decision

Based on the information available, ADEC has determined no further assessment or cleanup action is required. There is no longer a risk to human health or the environment, and this site will be designated as closed on the Department's database.

Although a Cleanup Complete determination has been granted, ADEC approval is required for off-site soil disposal in accordance with 18 AAC 75.325(i). It should be noted that movement or use of potentially contaminated soil in a manner that results in a violation of 18 AAC 70 water quality standards is unlawful.

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.

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.

Approved By,

Linda Nuechterlein
Environmental Manager

Recommended By,

William O'Connell
Environmental Program Specialist

Cc: Melissa Head, ADNR Fairbanks