



THE STATE
of **ALASKA**
GOVERNOR SEAN PARNELL

Department of
Environmental Conservation

DIVISION OF SPILL PREVENTION & RESPONSE
Contaminated Sites Program

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Anchorage, Alaska 99501
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File No: 300.38.177

Article No.: 7012 1010 0003 0389 2973

March 1, 2013

Mr. Sam Myers
ADOT&PF Northern Region Office
2301 Peger Road
Fairbanks, AK 99709

Re: Decision Document; ADOT&PF Deadhorse Blk 700 Lots 7A & 8; Cleanup Complete -
Institutional Controls Determination

Dear Mr. Myers;

The Alaska Department of Environmental Conservation (ADEC), Contaminated Sites Program (CSP) has completed a review of the environmental records and project files associated with the Alaska Department of Transportation and Public Facilities (ADOT&PF) Deadhorse Blk 700 Lots 7A & 8, which are located immediately north of the airport in Deadhorse, Alaska. Based on the information provided to date, ADEC has determined that the remaining contaminant concentrations and disposition do not pose unacceptable risks to human health or the environment, and this site will be closed with Institutional Controls (ICs) in the CSP database. No further remedial action will be required as long as this site remains in compliance with the ICs described herein.

This decision is based on a review of the project files for the subject site, which are available for public review in ADEC's offices at 555 Cordova Street, Anchorage, Alaska. This letter summarizes the key factors that have affected this site's environmental status, and provides a summary of regulatory issues affecting this Cleanup Complete with Institutional Controls (CC-IC) Determination.

Site Name and Location:
ADOT&PF Deadhorse Blk 700 Lots 7A & 8
Deadhorse, Alaska 99734

Name and Mailing Address of Contact Party:
Mr. Sam Myers
2301 Peger Road
Fairbanks, AK 99709

DEC Site Identifiers:
ADEC Reckey #: 1993360125001
File No.: 300.38.177
Hazard ID: 1963

Regulatory Authority for Determination:
18 AAC 75

Background

This property (*ADOT&PF Deadhorse Blk 700 Lots 7A & 8*) is the former location of ADOT&PF's Deadhorse Maintenance Facility and consists of a Maintenance Building, a Warm Storage Building, and outside equipment storage (Figure 1) which is located immediately north of the airport in Deadhorse, Alaska. The property is a non-residential facility formerly used by workers to conduct vehicle maintenance, airport services, and heavy equipment storage for the ADOT. The majority of ADOT&PF maintenance activities now occur within the new Shop Building located approximately 600 ft. west-southwest of the original Maintenance Building. The original buildings are now used for warm storage and light maintenance. Because the site is situated north of latitude 68 degrees North and underlain by continuous permafrost, it is subject to the Arctic Zone cleanup levels.

Maximum contaminant concentrations were detected beneath the Maintenance Building and arose from leaks and spills during routine servicing of State vehicles and equipment. The Maintenance Building was constructed over a four to ten foot thick gravel pad, which overlies continuous permafrost. Both buildings have gravel floors without poured concrete foundations, but eight concrete floor tiles and a steel plate are situated atop the gravel floor in the central portion of the Maintenance Building. There are no recreational facilities near this site.

Drinking water comes from the Sagavanirktok River and is treated by a community (formerly Class A) public water treatment facility before being distributed to the community of Deadhorse. The water intake is located approximately 1.9 miles northeast of the source area, and 2012 testing by EPA method 524.2 did not reveal contamination (BTEX or chlorinated solvents) in this public water system. Seasonal surface water reportedly collects on Lot 8 (western extent of site) during summer months, but considering the availability of the Sagavanirktok River public water resource, it is not considered to be a likely source of drinking water.

Contaminants of Concern

During site investigations, soil and surface water samples were analyzed for one or more of the following: gasoline range organics (GRO), diesel range organics (DRO), residual range organics (RRO), total petroleum hydrocarbons (TPH), polychlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons (PAHs), and volatile organic compounds (VOCs), including chlorinated solvents and benzene, toluene, ethylbenzene, and xylenes (BTEX). Based on these analyses, the following contaminants of concern (COCs) were identified above ADEC cleanup levels in soil samples:

- GRO
- DRO

Cleanup Levels

The Cleanup Levels (CLs) 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. However, ADEC considers a number of factors when evaluating site specific cleanup levels in the Arctic Zone, including:

- Risk to human health from ingestion, inhalation, and dermal absorption;
- Ecological impacts (effects on non-human species);
- Suprapermafrost and surface water quality;

- Presence of free phase product;
- Other factors that might degrade 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 Activities

Site characterization began in 1993 when 33 soil borings were advanced and sampled from the surface to approximately 7 ft. below ground surface (bgs). Soil borings were advanced through the gravel floors of the Maintenance and Warm Storage Buildings, as well as in numerous locations throughout the gravel pad. Petroleum contamination was noted in several areas inside both buildings and near outside storage areas. Maximum DRO concentrations reached 17,000 mg/Kg in a sample from a stained area 2.5 ft. beneath the Maintenance Building and GRO was detected up to 2,800 mg/Kg near an aboveground fuel storage tank. Surface water and sediment samples were also collected from a water body located approximately 130 ft. east of the Maintenance Building. DRO was detected in one of the sediment samples at 1,400 mg/Kg, and TPH was detected in a surface water sample at 2 mg/L.

To evaluate current site conditions, a follow-up investigation was conducted in 2009. Four soil borings were advanced beneath the Maintenance Building where the heaviest contamination was detected in 1993. Soil borings were advanced to approximately 15 feet bgs, and samples were continuously field screened, using a photoionization detector (PID). Maximum DRO and GRO concentrations of 3,760 mg/Kg and 581 mg/kg, respectively, were located 8-11 feet bgs. The surface water body had been filled prior to 2009 to enlarge the gravel pad's functional surface area, so comparison surface water and sediment samples were not collected.

Pathway Evaluation

Following investigation and cleanup at this site, exposure to remaining contamination was evaluated using ADEC's Exposure Tracking Model (ETM). Exposure pathways are conduits by which contamination may reach human and/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 depicted in Table 1.

Table 1 – Exposure Pathway Evaluation

Exposure Pathway	Result	Explanation
Direct Contact with Surface Soil	De Minimis Exposure	Contaminated surface soil remains within the Maintenance Building, which is intermittently occupied, but known concentrations are below maximum allowable levels for direct contact. Therefore exposure via this pathway is considered to be insignificant.
Subsurface Soil Contact	De Minimis Exposure	Contaminated soil remains beneath the Maintenance Building, but known concentrations are below maximum allowable levels for direct contact. Therefore exposure via this pathway is considered to be insignificant.
Inhalation – Outdoor Air	De Minimis Exposure	Contaminant concentrations are below outdoor air inhalation CLs, and soil is frozen for much of the year. Therefore exposure via this pathway is considered to be insignificant.
Inhalation – Indoor Air (vapor intrusion)	De Minimis Exposure	The Maintenance Building is only intermittently occupied, and soil is frozen for much of the year. Therefore exposure via this pathway is considered to be insignificant.
Groundwater Ingestion	Pathway Incomplete	Groundwater is not used as a drinking water source in the Arctic Zone. Therefore, the pathway is incomplete.
Surface Water Ingestion	Pathway Incomplete	Drinking water comes from a surface water intake approximately 1.9 miles NE of this site. Therefore, this pathway is incomplete.
Wild Foods Ingestion	Pathway Incomplete	Wild foods are not gathered from this area.
Exposure to Ecological Receptors	Pathway Incomplete	There is no evidence of ecological damage or off-pad migration. Therefore, this pathway is considered to be incomplete.

Notes to Table 1: “De-Minimis Exposure” means that in ADEC’s judgment receptors are unlikely to be affected by the minimal volume of contamination that remains. “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

Contamination may remain onsite above established default cleanup levels; however ADEC has determined there won’t be an unacceptable risk to human health or the environment while institutional controls remain in effect. Therefore this site will be issued a Cleanup Complete-ICs determination subject to the following:

1. Any future change in land use may impact the exposure assumptions cited in this document. If land use and/or ownership changes, current ICs may not be protective and ADEC may require additional remediation and/or ICs. Therefore ADOT&PF Airport Leasing or their designee shall report to ADEC once every five years, or as soon as they become aware of any change in land ownership or use, if earlier. **The report can be sent to the ADEC project manager or electronically to DEC.ICUnit@alaska.gov.**
2. When the Maintenance Building is decommissioned, contaminated soil must be characterized and managed in accordance with an ADEC approved plan.
3. Movement or use of contaminated material in a manner that results in a violation of 18 AAC 70 water quality standards is prohibited.

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.

Please sign and return *Attachment A* to ADEC within 30 days of receipt of this letter. If you have questions about this closure decision, please contact the ADEC project manager, Richard Bernhardt at (907) 269-7546 or Rick.Bernhardt@Alaska.gov.

Sincerely,



Richard R. Bernhardt, PhD
Environmental Program Specialist

Attachment A- Cleanup Complete with ICs signature page
Attachment B- Site Figure

cc: Margaret Moody, ADOT&PF

Attachment A: Cleanup Complete-ICs Agreement and Signature Page*

Mr. Sam Myers / Alaska Department of Transportation and Public Facilities agrees to the terms of this Cleanup Complete with Institutional Controls determination as stated in this Closure Decision Document for *ADOT&PF Deadhorse Lot 700 Blks 7A & 8*, dated March 1, 2013. Failure to comply with the terms of this agreement may result in ADEC reopening this site and requiring further remedial action in accordance with 18 AAC 75.380(d).

Signature of Authorized Representative

Mr. Sam Myers / Alaska Department of Transportation and Public Facilities

Printed Name of Authorized Representative

Mr. Sam Myers / Alaska Department of Transportation and Public Facilities

Note to Responsible Person (RP):

After making a copy for your records, please return a signed copy of this form to the ADEC project manager at the address on this correspondence within 30 days of receipt of this letter.

ADEC File No.	300.38.177
Hazard ID:	1963
Source ID:	72941
ADEC Project Manager:	Richard R. Bernhardt, PhD

For Internal Use Only

***Attention ADEC Administrative Staff:** Please follow the procedure below after Attachment A is signed/returned to ADEC.

1. Log-in and Date Stamp *Attachment A*
2. Scan and Save to the appropriate electronic folder on the network Drive
3. File the hard copy in the appropriate project/site file Correspondence Folder (blue in Anchorage).
4. Provide the Correspondence folder (with the filed *Attachment A* hard copy) to the ADEC Project Manager so that the PM can update the CS database.

Attachment B- Site Figure

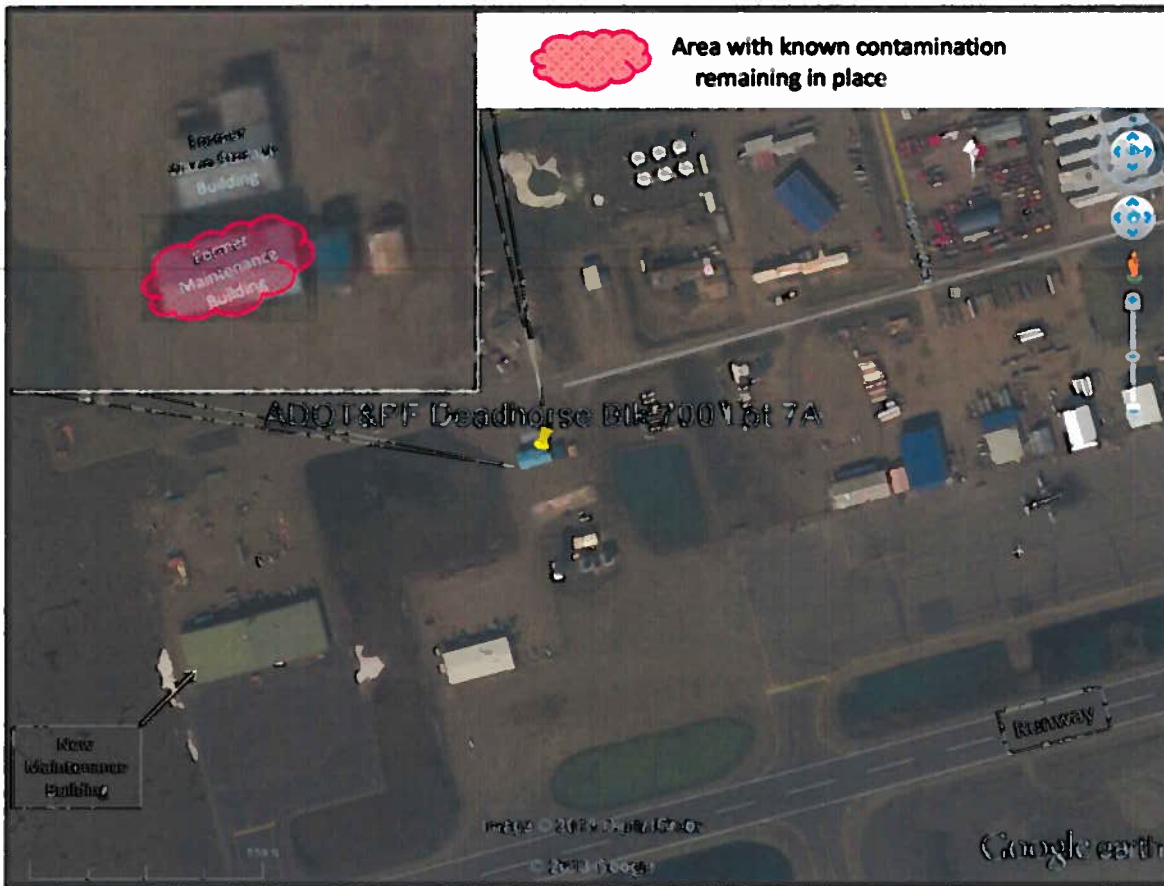


Figure 1. ADOT&PF Deadhorse Maintenance Facility. As of June 2009, contamination in excess of ADEC's cleanup levels may remain beneath the Maintenance Building. Highest known concentrations were detected approximately 1/3 of the way from the building's eastern end. This included GRO concentrations at 581 mg/Kg and DRO at 3,760 mg/Kg.

Attachment A: Cleanup Complete-ICs Agreement and Signature Page*

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Signature of Authorized Representative

Mr. Sam Myers / Alaska Department of Transportation and Public Facilities

Printed Name of Authorized Representative

Mr. Sam Myers / Alaska Department of Transportation and Public Facilities

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ADEC File No. 300.38.177
Hazard ID: 1963
Source ID: 72941
ADEC Project Manager: Richard R. Bernhardt, PhD

For Internal Use Only

*Attention ADEC Admin
is signed/returned to AD

CC: Linda
Reading
file,
Bill Reading

below after Attachment A

1. Log-in and Date Stamp
2. Scan and Save to the appropriate Drive
3. File the hard copy in the appropriate Reference Folder (blue in file Case)
4. Provide the Corresponding hard copy) to the ADEC Project Manager so