



THE STATE
of **ALASKA**
GOVERNOR SEAN PARNELL

**Department of Environmental
Conservation**

Division of Spill Prevention and Response
Contaminated Sites Program

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File: 100.26.087

February 20, 2013

Patrick Roth
611 CES/CEAR
10471 20th Street, Suite 343
JBER, AK 99506-2201

Re: Cleanup Complete / Corrective Action Complete Determination for Murphy Dome Long Range Radar Site Underground Storage Tank at White Alice Site (SS008)

Dear Mr. Roth:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (DEC) has completed a review of the environmental records associated with a former underground storage tank, referred to on the DEC Contaminated Sites database as Murphy Dome AFS Bldg 1001 UST SS08, and referred to by the Air Force as Underground Storage Tank at White Alice (SS008). I will refer to this site as "SS008" in this letter. SS008 is located at the Murphy Dome Long Range Radar Site, at the top of Murphy Dome, near Fairbanks, Alaska. Based on the information provided to date, the ADEC has determined that the contaminant concentrations remaining on site do not pose an unacceptable risk to human health or the environment. This letter is your notification that DEC has closed this site on the DEC Contaminated Sites database with a "Corrective Action Complete" determination, effective February 20, 2013. "Corrective Action Complete" is the terminology used for underground storage tank cleanups and is equivalent to a "Cleanup Complete" determination for a contaminated site.

This decision is based on the DEC administrative record for SS008, which is located in the offices of the Alaska Department of Environmental Conservation (ADEC) in Fairbanks, 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 Corrective Action Complete determination.

Site Name and Location:

Murphy Dome AFS Bldg 1001 UST SS08
Murphy Dome Long Range Radar Site (LRRS)
Murphy Dome Road
Fairbanks, Alaska

DEC Hazard ID and File Number:

Hazard ID: 24245
File: 100.26.087

Regulatory authority for site investigation and cleanup:

18 AAC 75 Article Three and 18 AAC 78

Background

The site referred to by USAF as "SS008" consists of a 2,000-gallon underground storage tank that was used to store diesel fuel for emergency power generation at the Murphy Dome White Alice facility from the 1950s until the 1970s. The tank, located approximately 50 feet southwest of the main structure, was removed in September 1993. All soil removed during excavation (approximately 45 cubic yards) was returned to the excavation. The excavation was backfilled with additional clean fill and the site was graded. The main White Alice facility was demolished in 2001.

Tank Closure and Site Characterization Activities1993 underground storage tank removal

In 1993, USAF personnel removed the 2,000 gallon diesel underground storage tank and collected eight soil samples from the floors and walls of the excavation. The tank closure activities consisted of removal of approximately 280 gallons of fuel remaining in the tank, removal of the 2,000 gallon tank, and removal of associated piping. The fuel was pumped into 55-gallon overpacks and shipped to DRMO at Elmendorf Air Force Base. The tank appeared to be in good condition, and no areas of excessive corrosion were noted. The tank was cleaned, cut into quarters, and disposed at the municipal waste material storage site, South Cushman Street, Fairbanks, AK.

Eight soil samples were collected from the excavation and analyzed for gasoline range organics (GRO) and diesel range organics (DRO). DRO was detected at a maximum concentration of 3,437 mg/kg, with the highest concentrations at the southern end of the tank. GRO was detected at a maximum concentration of 167 mg/kg. It was assumed that the contaminated soil at the southern end of the tank was a result of overfilling on multiple occasions.

Approximately 45 cubic yards of soil were removed during the tank excavation. The soil was placed on a liner and later returned to the excavation following sampling in the excavation. Additional clean soil was used as backfill over the surface of the excavation.

1994 remedial investigation field season

Six soil borings were installed and sampled down gradient of the southern end of SS008, where the highest concentrations of petroleum-contaminated soil had been identified during the 1993 tank removal. The maximum concentration of DRO detected in the 1994 soil borings was 55 mg/kg, indicating no significant down gradient migration of petroleum contamination from the tank.

Contaminants of Concern

Based on the analysis of soil samples during the tank removal, DRO and GRO were identified as contaminants of concern.

Exposure Pathways

The site is located at the top of Murphy Dome. No groundwater or permafrost was encountered during excavation of the tank or during investigation of other Murphy Dome IRP sites located at the top of the dome. In the past, when the site housed troops, site water was obtained from a well approximately one mile from the site at a lower elevation. Thus, the migration to groundwater pathway does not appear to be present at this site. Complete exposure pathways at this site are soil ingestion and soil inhalation from contact with surface and subsurface soil.

Cleanup Levels

The site is located in the under-40-inch climatic zone. Therefore, the Method Two cleanup levels for the under-40-inch zone from 18 AAC 75.341 Table 2B are the applicable cleanup levels for this site.

Comparison of the maximum concentrations detected at the site with the cleanup levels shows that the concentrations of DRO and GRO are below the Method Two cleanup levels. Since site contaminant levels are below the cleanup levels, there is no significant risk posed to human health by exposure to the soil.

Chemical	Maximum concentration (mg/kg)	Cleanup Level* (mg/kg)
DRO	3,437	19,250
GRO	167	1,400

*Cleanup levels are based on the more conservative of soil ingestion and soil inhalation cleanup levels.

Site Risks

Human health exposure pathways at this site are soil ingestion and soil inhalation. Since maximum concentrations of DRO and GRO are below the cleanup levels for these exposure pathways, site contaminants do not pose a significant risk to human health, safety, or welfare.

Wildlife exposure could occur for burrowing animals that come in direct contact with contaminated sub-surface soil. The total area affected is small and not sufficient to support a community of organisms. Site contaminants are not migrating to a surface water body; thus aquatic exposure routes are not present. DRO and GRO do not bioaccumulate, thus there are no potential impacts to animals higher on the food chain. Murphy Dome is not designated as a park, preserve, refuge, or other critical habitat. Based on these factors, in accordance with the Ecoscoping Guidance (DEC Contaminated Sites Program, January 2012), further ecological evaluation is not needed, and the site does not pose a significant risk to ecological receptors.

DEC Decision

DEC has determined that there is not a significant risk to human health or to the environment and that site contaminants are below the applicable cleanup levels. Therefore, no further assessment or cleanup action is required and this site will be designated as closed with a "Corrective Action Complete" determination on the DEC Contaminated Sites database.

Although a Corrective Action Complete determination has been made, DEC approval is required for off-site soil disposal in accordance with 18 AAC 78.600(h). DEC recommends that you place a notice in USAF Real Property Records restricting excavation or disturbance of soil at SS008 to prevent placement of petroleum-contaminated soil in environmentally sensitive areas without prior approval from ADEC. This determination is in accordance with 18 AAC 78.276(f) 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.

References

The following references were the primary sources of information used in making the closure determination.

Murphy Dome Underground Storage Tank Removal (Report), 11 CEOS/DEV, February, 1994.
Remedial Investigation, Murphy Dome LRRS, Alaska, Woodward-Clyde Consultants, March, 1996.

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 Tamar Stephens at (907) 451-2131, or by e-mail at tamar.stephens@alaska.gov.

Sincerely,

A handwritten signature in black ink that reads "Tamar J. Steph". The signature is written in a cursive, flowing style.

Tamar Stephens
Environmental Program Specialist