



THE STATE
of **ALASKA**
GOVERNOR BILL WALKER

**Department of
Environmental Conservation**

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites Program

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File: 510.38.001

January 18, 2018

Eric Billingsley
Vice President, Operations
NANA Development Corporation
909 West 9th Avenue
Anchorage, AK 99501

Re: **Decision Document: Deering Old Bulk Fuel Tank Farm
Cleanup Complete Determination**

Dear Mr. Billingsley:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has completed a review of the environmental records associated with the Deering Old Bulk Fuel Tank Farm site, located on on Lot 32 of the City of Deering Subdivision. 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 no further remedial action will be required unless new information becomes available that indicates residual contaminants may pose an unacceptable risk.

This Cleanup Complete determination is based on the administrative record for the Deering Old Bulk Fuel Tank Farm site, which is located in the ADEC office in Anchorage, Alaska. This decision letter summarizes the site history, cleanup actions and levels, and standard site closure conditions that apply.

Site Name and Location:

Deering Old Bulk Fuel Tank Farm
Plat #92-3, Lot 32
City of Deering
Longitude: -162.722618
Latitude: 66.074005

Name and Mailing Address of Contact Party:

Eric Billingsley
Vice President, Operations
NANA Development Corporation
909 West 9th Avenue
Anchorage, AK 99501

DEC Site Identifiers:

File No.: 510.38.001
Hazard ID.: 1141

Regulatory Authority for Determination:

18 AAC 75

Site Description and Background

The Deering Old Bulk Fuel Tank Farm site is located on Lot 32 of the City of Deering Subdivision. Lot 32 is located roughly 500 feet south of the Front Street and Inmachuk Road intersection, and on the south side

of Smith Creek and on the west side of the road. At least four bulk fuel tanks were used at the site from 1986 until 1988, when they were decommissioned and removed.

Contamination was originally identified in 1990 during a joint ADEC and NANA site visit. The goal of this particular site visit was to determine if contamination was present from the former NANA bulk fuel tank farm. Using a shovel to dig shallow test pits, ADEC noted visual and olfactory evidence of contamination that appeared to be leaching into the Smith River on the south side of the Deering spit. It was estimated that up to 6,000 cubic yards of soil could be impacted by fuel releases. Following the site visit, ADEC requested that NANA perform a site assessment and/or cleanup action to remove the contamination soil.

Contaminants of Concern

During the site investigation and cleanup activities at this site, samples were collected from soil and surface water and were analyzed for gasoline range organics (GRO), diesel range organics (DRO), benzene, toluene, ethylbenzene, and xylenes (BTEX), and polycyclic aromatic hydrocarbons (PAHs). Based on these analyses, the following contaminants were identified above the applicable cleanup levels and are considered Contaminants of Concern at this site:

- Gasoline Range Organics (GRO)
- Diesel Range Organics (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 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.

For the purposes of this Cleanup Complete Determination the following cleanup levels from 18 AAC 75 were used:

Table 1 – ADEC Soil Cleanup Levels

Contaminants of Concern	Method Two, Table B2*
GRO	1,400
DRO	12,500

Notes to Table. *All soil contaminant concentrations are presented as mg/kg. Due to continuous permafrost in the Arctic Zone, the “Migration to Groundwater” pathway is considered incomplete or non-applicable (N/A). The department will determine the cleanup levels for undisturbed tundra and native vegetation on a site-specific basis, depending on whether a cleanup action would cause more severe or long-lasting damage than would the discharge or release alone.

Characterization and Cleanup Activities

The 1990 cleanup at this site is not well documented. A letter from NANA, dated December 21, 1990, stated “During the week of September 20th this contaminated soil was removed and hauled and spread at the dump site. Upon completion of this effort, three soil samples were taken and sent to Chemical and Geological Laboratories of Alaska for analysis. The results of which are attached.” Analytical results revealed minimal contamination above ADEC cleanup levels and the site was closed. However, several issues exist with this information. A report was not prepared (or not located) regarding the cleanup action and there are substantial data gaps pertaining to the location and limits of the excavation, sample locations, depths, and methodology used.

Later in January 1993, a geotechnical soil investigation was performed at this site to assess the suitability for a 500,000-gallon water tank. Five soil borings were advanced as part of the assessment, two of which (Borings 1 and 2) were located on the pad. Petroleum odors were identified in Borings 1 and 2, and potentially in Boring 3. As a result, soil samples were collected from Borings 1 and 2 from gravel pad material. Extractable petroleum hydrocarbons (EPH) were present in the surface and shallow subsurface soils up to 2,550 mg/kg. Permafrost was encountered in all the borings at about 5 feet below ground surface (bgs). The 500,000-gallon water tank was not installed.

Additional characterization was performed at this site in August 2016. Activities consisted of collecting soil and water samples from eight test pits, three newly installed monitoring wells, and three surface water bodies surrounding the site. All samples were analyzed for one or more of the following: GRO, DRO, BTEX, and PAHs. Most of the soil samples did not exhibit contaminants above the most stringent cleanup levels; however concentrations of DRO in the samples collected from Test Pits 8 and 5 exceeded the Method One Table A2 cleanup levels for manmade pads and roads (4,670 mg/kg and 2,200 mg/kg, respectively), but were below Method Two cleanup levels. One water sample collected from MW01 exhibited concentrations of DRO at 20.3 mg/l and benzene at 0.00589 mg/l, and was the only well to have contaminant concentrations present above Table C groundwater cleanup levels. All samples collected from surface water were below groundwater cleanup levels and Alaska Water Quality Standards (AWQS) criteria for total aromatic hydrocarbons (TAH) and total aqueous hydrocarbons (TAqH). Results from the investigation suggested that contamination was bound by test pits and monitoring wells to the north and west, and partially bound to the south by the surface water body. However, ADEC determined that additional delineation was necessary to the east, towards the Deering Airport Road.

Additional delineation efforts were completed in September 2017, and consisted of collecting soil samples from five new test pits, collecting water samples from two new temporary monitoring wells and four existing wells, collecting surface water samples from the tundra pond at the southern edge of the site, and completing 6 shovel sheen tests. Results of the investigation concluded that the extent of soil contamination has been sufficiently delineated, and that the extent of groundwater contamination can be inferred as not impacting the surrounding surface water and not migrating off site or beyond the Deering Airport Road to the east.

Cumulative Risk Evaluation

Pursuant to 18 AAC 75.325(g), when detectable contamination remains on-site following a cleanup, a cumulative risk determination must be made that the risk from hazardous substances does not exceed a cumulative carcinogenic risk standard of 1 in 100,000 across all exposure pathways and does not exceed a cumulative noncarcinogenic risk standard at a hazard index of one across all exposure pathways.

Based on a review of the environmental record, ADEC has determined that residual contaminant concentrations meet the cumulative risk criteria for human health.

Exposure 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 or Pathway Incomplete. A summary of this pathway evaluation is included in Table 2.

Table 2 – Exposure Pathway Evaluation

Pathway	Result	Explanation
Surface Soil Contact	De-Minimis Exposure	Contamination remains in the surface soils, but below the Method Two Arctic Zone ingestion cleanup levels.
Sub-Surface Soil Contact	De-Minimis Exposure	Contamination remains in the sub-surface, but below the Method Two Arctic Zone ingestion cleanup levels.
Inhalation – Outdoor Air	De-Minimis Exposure	Contamination remains in the sub-surface, but below the Method Two Arctic Zone inhalation cleanup levels.
Inhalation – Indoor Air (vapor intrusion)	Pathway Incomplete	There are no structures present at the site.
Groundwater Ingestion	Pathway Incomplete	Groundwater is not utilized as a drinking water source, as this is underlain by continuous permafrost.
Surface Water Ingestion	De-Minimis Exposure	Sample results from the adjacent surface water bodies at this site were all below AWQS for TAH and TAqH.
Wild and Farmed Foods Ingestion	Pathway Incomplete	Wild foods are not collected in this area.

Exposure to Ecological Receptors	De-Minimis Exposure	Aquatic and terrestrial routes are not present.
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Notes to Table 2: “De-Minimis Exposure” means that in ADEC’s judgment receptors are unlikely to be affected by the minimal volume or concentration of remaining contamination. “Pathway Incomplete” means that in ADEC’s judgment contamination has no potential to contact receptors.

ADEC Decision

Soil and groundwater contamination at the site have been cleaned up to concentrations below the standard Method Two Arctic Zone soil cleanup levels. This site will receive a “Cleanup Complete” designation on the Contaminated Sites Database, subject to the following standard conditions.

Standard Conditions

1. Any proposal to transport soil or groundwater off-site requires ADEC approval in accordance with 18 AAC 75.325(i). A “site” as defined by 18 AAC 75.990 (115) means an area that is contaminated, including areas contaminated by the migration of hazardous substances from a source area, regardless of property ownership.
2. Movement or use of contaminated material in a manner that results in a violation of 18 AAC 70 water quality standards is prohibited.
3. Groundwater throughout Alaska is protected for use as a water supply for drinking, culinary and food processing, agriculture including irrigation and stock watering, aquaculture, and industrial use. Contaminated site cleanup complete determinations are based on groundwater being considered a potential drinking water source. In the event that groundwater from this site is to be used for other purposes in the future, such as aquaculture, additional testing and treatment may be required to ensure the water is suitable for its intended use.

This determination is in accordance with 18 AAC 75.380 and does not preclude ADEC from requiring additional assessment and/or cleanup action if future information indicates that contaminants at this site may pose an unacceptable risk to human health, safety, or welfare or to 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, 555 Cordova Street, Anchorage, Alaska 99501-2617, 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, P.O. Box 111800, Juneau, Alaska 99811-1800, 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 feel free to contact me at (907) 269-7691 or email at joshua.barsis@alaska.gov.

Mr. Eric Billingsley
NANA Development Corporation

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January 18, 2018

Sincerely,



Joshua Barsis
Project Manager

Note: This letter is being transmitted to you in electronic format only. If you require a paper copy, let us know and we will be happy to provide one to you. In the interest of reducing file space, the Division of SPAR/Contaminated Sites Program is transitioning to electronic transmission of project correspondence.

cc: Spill Prevention and Response, Cost Recovery Unit