THE STATE of ALASKA
GOVERNOR SEAN PARNELL

Department of Environmental Conservation

DIVISION OF SPILL PREVENTION & RESPONSE
Contaminated Sites Program

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File No: 1200.38.026
Return Receipt Requested
Article No: 7012 1010 0003 0389 4953

May 2, 2013

Mr. Jan Shifflett
Alyeska Pipeline Service Company
Mail Stop 507
P.O. Box 196660
Anchorage, AK 99519-6660

Re: Decision Document; *Alyeska VMT Crude Tank 15 Containment*; Cleanup Complete Determination

Dear Mr. Shifflett:

The Alaska Department of Environmental Conservation (ADEC), Contaminated Sites Program (CSP) has completed a review of the environmental records and project files associated with *Alyeska VMT Crude Tank 15 Containment*, which is located within the loop formed by West Tank Loop Road at Valdez Marine Terminal (VMT) near Valdez, 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 in the CSP database.

This decision is based on the administrative record for the subject site, which is located in ADEC's offices in Anchorage, Alaska. This letter summarizes the decision process used to determine the site's environmental status and provides a summary of the regulatory issues considered in this Cleanup Complete determination.

Site Name and Location:
Alyeska VMT Crude Tank 15 Containment
West Tank Loop Road
Valdez Marine Terminal
Valdez, Alaska 99686

DEC Site Identifiers:
File No.: 1200.38.026
ADEC Reckey: 1992710128301
Hazard ID: 1724

Name and Mailing Address of Contact Party:
Mr. Jan Shifflett, Response & Remediation SME
Alyeska Pipeline Services Company
Mail Stop 507
P.O. Box 196660
Anchorage, AK 99519-6660

Regulatory Authority for Determination:
18 AAC 75

Background

Alyeska VMT Crude Tank 15 Containment is located within the loop formed by West Tank Loop Road at Valdez Marine Terminal (Figure 1). This is approximately 2.6 miles south of Valdez, Alaska on the south side of Port Valdez. Valdez Marine Terminal is a limited-access, industrial facility operated by Alyeska Pipeline Services Company. The relatively steep bedrock slope, combined with either coarse fill or alluvium/colluviums, is not conducive to supporting saturated soil or use of a drinking water well. Thus, drinking water comes from Allison Creek and is treated by a Non-Transient, Non-Community (formerly Class A) water treatment system before being distributed throughout the marine terminal. Therefore the groundwater pathway is considered incomplete. The water intake is located approximately 1.5 miles due east of the source area, and testing by EPA method 524.2 in August 2012 did not detect BTEX or chlorinated solvent contamination in this drinking water system. There are no recreational facilities near this site.

Tank 15 has a 550,000 barrel (23,100,000 gallon) capacity and receives crude oil from the Trans Alaska Pipeline System. Like all fuel storage tanks at VMT, Tank 15 is within a bermed secondary containment structure. The containment structure surrounding Tanks 15 and 16 has a 1,260,000 barrel (52,920,000 gallon) capacity. A Catalytically Blown Asphalt (CBA) liner forms the base of this containment structure and underlies sand and gravel fill. The liner reduces vertical fluid migration and the risk of contaminant migration to groundwater. Additional fill overlies shallow bedrock below the liner, and groundwater is typically absent. Surface water within these bermed enclosures drains into a subsurface drainage network that empties into VMT's ballast water recovery and treatment system where petroleum, if present, is reclaimed before clean water is discharged into Port Valdez.

Release investigations began when petroleum contaminated soil was discovered north of Tank 15 on October 8, 1988. It is believed that approximately 20 gallons of crude oil spilled from a mixer motor north of the tank, impacting soil over the CBA liner. The cleanup response included site characterization, soil excavation, and landfarming operations.

Contaminants of Concern

Analytical methods in use during this release categorized petroleum constituents into different hydrocarbon fractions than contemporary (2013) methods, but regulatory changes in September 2000 updated the analytical methods and reporting criteria. For example, samples collected in 1992 and 1993 were analyzed for Volatile Petroleum Hydrocarbons (VPH), Extractable Petroleum Hydrocarbons (EPH), Total Residual Petroleum Hydrocarbons (TRPH; C_6-C_{70} minus TPH-G and TPH-D), and benzene, toluene, ethylbenzene, and xylenes (BTEX); whereas contemporary methods analyze and report analogous compounds as Gasoline Range Organics (GRO), Diesel Range Organics (DRO), and Residual Range Organics (RRO), as shown in Table 1.

Table 1.

Historical Carbon Fractions		Contemporary (2013) Carbon Fractions	
VPH	C_5-C_{12} Aliphatics	GRO	C_6 – C_{10} Aliphatics
	C_6-C_{10} Aromatics		C_6 – C_{10} Aromatics
EPH	C_9 – C_{36} Aliphatics	DRO	C_{10} – C_{25} Aliphatics
	C_{11} – C_{22} Aromatics		C_{10} – C_{25} Aromatics
TRPH	C_6 – C_{70} minus VPH and EPH	RRO	C_{25} – C_{36} Aliphatics
			C_{25} – C_{36} Aromatics

Notes to Table 1. Contemporary (2013) techniques using AK Methods 101 for GRO, 102 for DRO, and 103 for RRO do not report aliphatic compounds separate from aromatic compounds.

Based on analysis of soil and water samples, the following Contaminants of Concern (COCs) were identified:

- EPH / DRO
- TRPH / RRO
- Benzene

Cleanup Levels

Contemporary soil cleanup levels for this site are established in 18 AAC 75.341, Method Two, Tables B1 and B2 in the *Over 40 Inch Zone* and are presented in Table 2. Contemporary groundwater cleanup levels for this site are established in 18 AAC 75.345(b) Table C and are also presented in Table 2.

Table 2. ADEC Cleanup Levels.

Contaminants of Concern	Medium	Method Two, Direct Contact*	Method Two, Inhalation*	Migration to Groundwater*	Groundwater#
DRO	Soil / (Water)	8,250	12,500	230	(1.5)
RRO	Soil / (Water)	8,300	22,000	9,700	(1.1)
Benzene	Soil / (Water)	120	8.5	0.025	(0.005)

Notes to Table 2. *All soil contaminant concentrations are presented as mg/Kg. #All groundwater contaminant concentrations are presented as mg/L.

Characterization and Cleanup Activities

Soil in the impacted area above the CBA liner was completely removed, and soil beneath the CBA liner was over-excavated to ensure that all contamination was removed. ADEC personnel conducted a site inspection and authorized backfilling of the excavation following contaminant removal. Thus, soil impacted by an estimated 20 gallons of crude oil was excavated to the maximum extent practical, spiked with fertilizer, and stockpiled for landfarming operations before the excavation was backfilled. As of April 2013, any contamination that may have been left in situ after excavation efforts concluded has been subjected to at least 25 years of natural attenuation processes.

Pathway Evaluation

Following investigation and cleanup at this site, exposure to remaining contaminants were 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 3.

Table 3 – Exposure Pathway Evaluation

Exposure Pathway	Result	Explanation
Surface Soil Contact	Pathway Incomplete	Contaminated surface soil was excavated and removed above the CBA liner. Therefore, this pathway is considered to be incomplete.
Sub-Surface Soil Contact	Exposure Controlled	Impacted soil was over-excavated beneath the CBA liner before the liner was repaired. Any contamination that may have been overlooked beneath the liner was capped when the liner was replaced and has been subjected to over 25 years of natural attenuation processes. Therefore, exposure via this pathway is considered to be controlled.
Inhalation – Outdoor Air	Pathway Incomplete	DRO was the primary COC. Contaminated soil was removed and landfarmed 25 years ago. Any contamination that may have remained beneath the liner, which serves as a cap, has been subjected to 25 years of natural attenuation processes as of April 2013.
Inhalation – Indoor Air (vapor intrusion)	Pathway Incomplete	There are no buildings within 65 ft. of the source area, and none are expected to be constructed in the foreseeable future. Therefore, this pathway is considered to be incomplete.
Groundwater Ingestion	Pathway Incomplete	Groundwater is not plentiful enough to support a drinking water well, so drinking water comes from Allison Creek, approximately 1.5 miles east of the source area.
Surface Water Ingestion	Pathway Incomplete	The lined, secondary containment structure prevented contamination from migrating to surface water bodies. Drinking water comes from Allison Creek (approximately 1.5 miles east of the source area) and lacked evidence of COCs when analyzed in August 2012.
Wild Foods Ingestion	Pathway Incomplete	This site is within a fence secured, industrial facility at Alyeska's Valdez Marine Terminal, where wild foods are not harvested.
Exposure to Ecological Receptors	Pathway Incomplete	There is no evidence of ecological damage at this industrial facility. Therefore, this pathway is considered to be incomplete.

Notes to Table 3: "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 available information, ADEC has determined that there is no longer an unacceptable risk to human health or the environment at this facility, and no further assessment or cleanup is required. Therefore, the site identified as *Alyeska VMT Crude Tank 15 Containment* will be designated as "Cleanup Complete" in the Department's database.

Although a Cleanup Complete determination is being granted, ADEC approval is required prior to off-site transport of soil or groundwater that has been subjected to the release of hazardous

substances 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, regardless of property ownership. 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, so confirmation samples should be analyzed prior to soil transport and deposition.

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. 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.

Sincerely,

Richard R. Bernhardt, PhD
Environmental Program Specialist

cc: Scott Rose, SLR

Attachment A - Site Figure

Attachment A - Site Figure

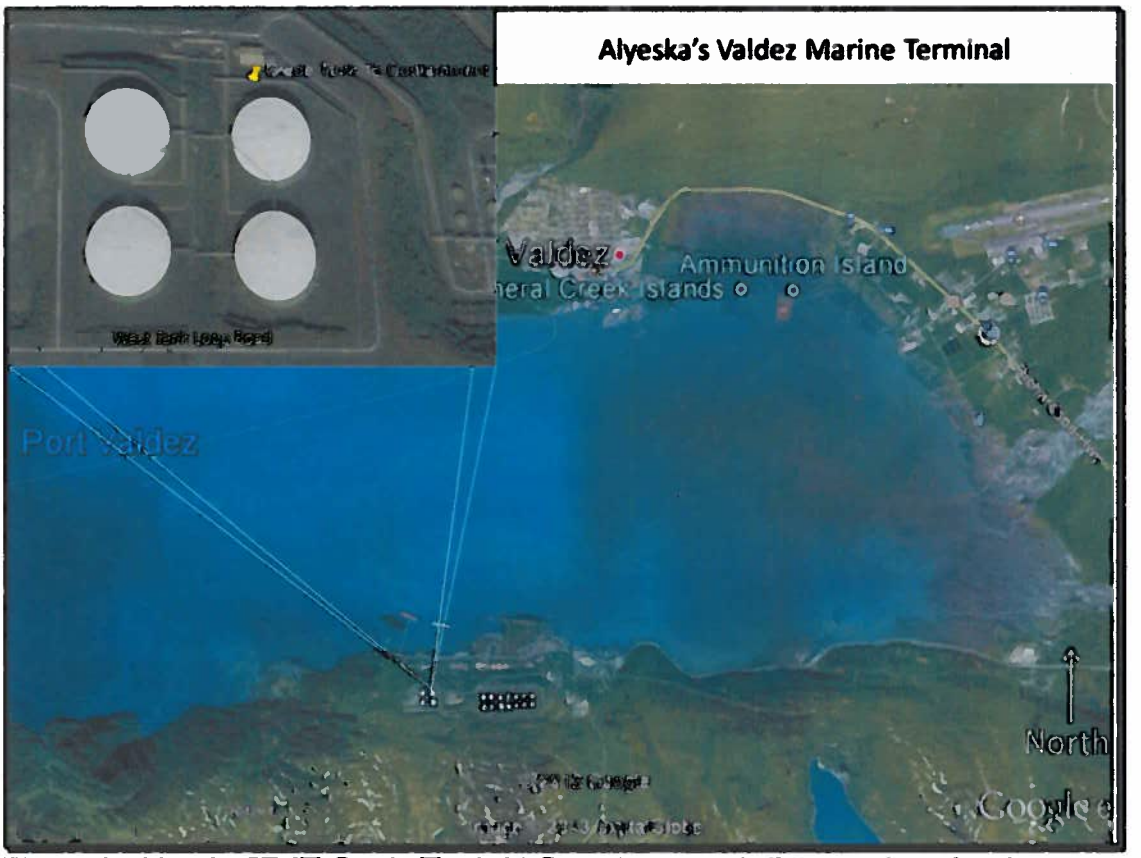

Figure 1. Alyeska VMT Crude Tank 15 Containment. Soil contaminated with approximately 20 gallons of crude oil was discovered north of Tank 15 at Alyeska's Valdez Marine Terminal on October 8, 1988. It was excavated, spiked with fertilizer, landfarmed, and subjected to approximately 25 years of natural attenuation processes as of April 2013.