



THE STATE
of **ALASKA**
GOVERNOR MICHAEL J. DUNLEAVY

**Department of
Environmental Conservation**

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites Program

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File: 2569.38.014.03

July 1, 2019

Stephen M. Krause
AFCEC/CZOP
10471 20th Street, Suite 348
JBER, AK 99506-2201

Re: **Decision Document: King Salmon AS DA031 Barrel Dump
Cleanup Complete Determination**

Dear Mr. Krause:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has completed a review of the environmental records associated with the King Salmon AS DA031 Barrel Dump located at Mile 5 Lake Camp Road, King Salmon. 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 King Salmon AS DA031 Barrel Dump, 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:

King Salmon AS DA031 Barrel Dump
Mile 5 Lake Camp Road
King Salmon, AK 99613

Name and Mailing Address of Contact Party:

Stephen M. Krause
AFCEC/CZOP
10471 20th Street, Suite 348
JBER, AK 99506-2201

DEC Site Identifiers:

File No.: 2569.38.014.03
Hazard ID.: 4519

Regulatory Authority for Determination:

18 AAC 75

Site Description and Background

DA031 was a former barrel dump located at approximately mile five on Lake Camp Road, east of the King Salmon Divert. A 2006 site visit revealed two separate locations within the DA031 site, designated as DA031-DR1 and DA031-DR2. DA031-DR1 was the location of a small vehicle turnaround area immediately before the gravel pit on the south side of the road. DR1 contained a number of partially buried drums. DA031-DR2 was located on the southwestern edge of the gravel pit and contained an unknown number of crushed, partially buried drums.



During the site characterization and cleanup activities at this site, samples were collected from soil and groundwater and analyzed for volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), gasoline range organics (GRO), diesel range organics (DRO), residual range organics (RRO), and metals. Based on these analyses, the following contaminants were detected above the applicable cleanup levels in soil and are considered Contaminants of Concern at this site:

- Gasoline Range Organics (GRO)
- Diesel Range Organics (DRO)
- Naphthalene
- 1-Methylnaphthalene
- 2-Methylnaphthalene
- Benzene
- Ethylbenzene
- Toluene
- N-Butylbenzene
- N-Propylbenzene
- Methylene Chloride

Cleanup Levels

The more restrictive of either the Method Two human health or migration to groundwater soil cleanup levels found in 18 AAC 75.341(c) apply to this site.

Table 1 – Approved Cleanup Levels

Contaminant	Soil (mg/kg)
GRO	300
DRO	250
Naphthalene	0.038
1-Methylnaphthalene	0.41
2-Methylnaphthalene	1.3
Benzene	0.022
Ethylbenzene	0.13
Toluene	6.7
N-Butylbenzene	23
N-Propylbenzene	9.1
Methylene Chloride	0.33

mg/kg = milligrams per kilogram

Characterization and Cleanup Activities

Characterization and cleanup activities began in 2006. These activities are described below:

DR1:

During a 2006 preliminary assessment site visit, at least 30 rusty and partially full drums were discovered at DR1. Several were seeping black material with a hydrocarbon odor. Two samples were collected under a seeping drum: one at surface depth and the other at a depth of 18-24 inches below the first sample. A

hydrocarbon odor was noted during sampling up to a depth of 20 inches below ground surface (bgs); the odor was absent at 24 inches bgs. The surface sample exceeded ADEC soil cleanup levels for GRO, DRO, three PAHs, and nine VOCs. The sample taken 18-24 inches bgs did not exceed applicable soil cleanup levels.

In 2009, a borehole was installed near the edge of the drum cluster to a depth of 40 feet. There were no cleanup level exceedances in subsurface soil or groundwater collected from the borehole.

An attempt to move the drums was made in 2012 during a brush clearing event, but it was discovered that the drums were extremely rusted, easily punctured, and partially full of a black viscous tarlike substance. At least 31 drums in this state were counted in the immediate vicinity, however more were partially buried beneath a gravel pad. One punctured drum was put into an over pack and shipped offsite for disposal and the remaining drums were left in place.

Cleanup efforts at DR1 began in September 2014. Twenty-five drums containing asphalt/tar, eight drums containing waste oil, and twelve drums containing asphalt/soil were removed from DR1. Drums were loaded into two shipping containers, which were then hauled to the Bristol Bay Borough dock in Naknek and shipped offsite for final disposition. 84 cubic yards of soil were removed from the asphalt drum area and taken to a landfarm for treatment. The top 2-3 feet of soil that was in contact with the drums was removed. While excavating, more asphalt material was encountered. This material was placed in two 55 gallon drums and two 85 gallon drums. These drums were taken into the biocell yard for storage until a method of disposal could be determined. The final excavation measured 854 square feet with 117 feet of sidewalls and a depth of three feet. Twenty-one locations in the final excavation were screened with a PID. Five confirmation samples were collected from the floor of the excavation and six were collected from the sidewalls. Confirmation sample results were all below cleanup levels. The excavation was backfilled with clean fill obtained from a local borrow source.

In 2018, the King Salmon landfarm was decommissioned and landfarm soils from DA031 were removed and shipped offsite for final disposition at Waste Management's Subtitle D Landfarm in Arlington, Oregon. The four drums from DA031 containing an asphalt/tar mixture were disposed of in the Naknek Landfill.

DR2:

During the 2006 preliminary assessment site visit, numerous rusted, crushed, empty drums were found in the side of the gravel pit at DR2. There were no visible markings on the drums, and no soil staining was observed. Four soil samples were collected from two locations with high concentrations of drums; DRO and RRO were detected below ADEC cleanup levels in all samples.

In 2009, two boreholes were installed to a depth of 20 feet at the base of the hill below where the drums are located. There were no exceedances in any of the soil samples collected from the boreholes. An elevated concentration of iron was detected in groundwater from one borehole; there were no other cleanup level exceedances for groundwater at DR2.

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 human health cumulative risk criteria for residential land use.

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, Exposure Controlled, 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, but is below the most conservative 18 AAC 75 cleanup levels.
Sub-Surface Soil Contact	De-Minimis Exposure	Contamination remains in the sub-surface, but is below the most conservative 18 AAC 75 cleanup levels.
Inhalation – Outdoor Air	De-Minimis Exposure	Contamination remains in the sub-surface, but is below inhalation cleanup levels.
Inhalation – Indoor Air (vapor intrusion)	Pathway Incomplete	No buildings are present within 30 feet of the site.
Groundwater Ingestion	De-Minimis	All contaminants detected in groundwater are below 18 AAC 75 cleanup levels. The single elevated iron concentration is assumed to be naturally occurring.
Surface Water Ingestion	Pathway Incomplete	Surface water is not used as a drinking water source in the vicinity of the site.
Wild and Farmed Foods Ingestion	Pathway Incomplete	Contaminants of concern do not have the potential to bioaccumulate in plants or animals.
Exposure to Ecological Receptors	Pathway Incomplete	Terrestrial and aquatic exposure routes are not present in the vicinity of this site.

Notes to Table 2: “De-Minimis Exposure” means that in ADEC’s judgment receptors are unlikely to be adversely 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. “Exposure Controlled” means there is an institutional control in place limiting land or groundwater use and there may be a physical barrier in place that prevents contact with residual contamination.

ADEC Decision

Soil contamination at this site has been cleaned up to concentrations below the approved cleanup levels suitable for residential land use. 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 from a site that is subject to the site cleanup rules or for which a written determination from the department has been made under 18 AAC 75.380(d)(1) that allows contamination to remain at the site above method two soil cleanup levels or groundwater cleanup levels listed in Table C requires DEC 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 20 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 907-269-0298, or email at sammi.castle@alaska.gov.

Sincerely,



Sammi Castle
Project Manager

cc: Spill Prevention and Response, Cost Recovery Unit