THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Department of Environmental Conservation

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites Program

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File: 2569.38.016.09

May 21, 2020

Stephen Krause
AFCEC/CZOP
10471 20th St, Ste 348
JBER, AK 99506-2201

Re: Decision Document: King Salmon AS GWZ 2 DA034 Gravel Fill Pad
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 GWZ 2 DA034 Gravel Fill Pad located in 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 GWZ 2 DA034 Gravel Fill Pad, 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:
DA034 Gravel Fill Pad
Groundwater Zone 2
King Salmon Divert
King Salmon, AK 99613

Name and Mailing Address of Contact Party:
Stephen Krause
AFCEC/CZOP
10471 20th St, Ste 348
JBER, AK 99506-2201

DEC Site Identifiers:
File No.: 2569.38.016.09
Hazard ID.: 4521

Regulatory Authority for Determination:
18 AAC 75

Site Description and Background

Site DA034 is located in the northeast portion of Groundwater Zone 2 at the King Salmon Divert. This site was initially described as a trench and fill site, but no trench was identified upon initial investigation in 2006. DA034 contains a considerable amount of fill, as well as concrete rubble and small pieces of

asphalt. Two partially buried horizontal tanks that were previously used for storage or as bunkers were found in the southern, fenced in section where DA034 is located; no contamination was found near the tanks. Groundwater in this area flows north toward Eskimo Creek. In 2000, sediment and surface water samples were collected from Eskimo creek, downgradient of this site; sample results were well below applicable cleanup levels.

Figure 1: Aerial view of groundwater zones at King Salmon AS, with DA034's location identified.

Figure 2: Aerial detail of DA034 where excavations occurred in 2014.

Contaminants of Concern

During the site characterization and cleanup activities at this site, samples were collected from soil and groundwater and analyzed for Gasoline Range Organics (GRO), Diesel Range Organics (DRO), Residual Range Organics (GRO), Volatile Organic Compounds (VOCs), Polynuclear Aromatic Hydrocarbons (PAHs), Polychlorinated Biphenyls (PCBs), pesticides, and metals. A collocated surface water and sediment sample was collected from Eskimo Creek, downgradient of this site, and sampled for GRO, Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX), and Trichloroethylene. Based on these analyses, the following contaminants were detected above the applicable cleanup levels and are considered Contaminants of Concern at this site:

- Diesel Range Organics (DRO)
- Residual Range Organics (RRO)

Cleanup Levels

Soil cleanup levels for this site are the more restrictive of either the Method Two human health or migration to groundwater soil cleanup levels found in 18 AAC 75.341(d) for the under 40 inches precipitation zone. The groundwater cleanup levels applicable to this site are found in 18 AAC 75.345 Table C.

Table 1 – Approved Cleanup Levels

Contaminant	Soil (mg/kg)	Groundwater (mg/L)
DRO	250	1.5
RRO	10,000	1.1

mg/kg = milligrams per kilogram
mg/L = milligrams per liter

Characterization and Cleanup Activities

Characterization and cleanup activities conducted under the regulatory authority of the Contaminated Sites Program began in 2006. These activities are described below.

Site DA034 was located during a 2006 Site Inspection by Paug-Vik Services, LLC; it was noted that the site consisted of a considerable amount of fill, a large quantity of rubble, and small pieces of asphalt. Two samples were taken at DA034 in September 2006. One sample was collected from a drainage ditch on the western edge of the site at a depth of 6 inches below ground surface (bgs); no detections of DRO were found in the sample, however the laboratory detection limit was above the cleanup level. A second sample was collected from a fill area located in the center of the site at a depth of 20 inches bgs; DRO exceeded the cleanup level at 572 mg/kg in this sample. RRO results in both samples were high, but below the cleanup level (5,310 mg/kg and 9,830 mg/kg, respectively).

In 2009, the site was investigated again by Paug-Vik Services. One borehole was advanced in the vicinity of the 2006 confirmed sample exceedance. Two samples were collected from the borehole; one from the groundwater interface and one from the location of the highest field screening result. DRO and RRO were both detected above cleanup levels at 4 feet bgs (930 mg/kg and 14,000 mg/kg, respectively), but were nondetect in the collocated sample from 17 feet bgs. Groundwater was encountered in this borehole at a depth of 19 feet below ground surface; groundwater was sampled and DRO was detected below the cleanup level at a concentration of 83 µg/L. RRO was not detected in groundwater.

Excavation at this site took place during a 2014 removal action by Paug-Vik Services. Excavating began at the location of the 2006 and 2009 soil exceedances. The top 1.5 feet of soil was scraped off and taken to the landfarm. Further digging from 1.5 feet to 5 feet bgs revealed large chunks of asphalt and concrete; this material was set aside as a stockpile. There were no field indications (field screening,

odor, staining) of POL contamination within or below the asphalt. Sand without staining or odor was found at 5 feet bgs and below. In order to see how widespread the asphalt layer was, two more test pits were dug; one 7 feet east and another 40 feet northeast. Both additional excavations revealed the same asphalt and sand layers. Four confirmation samples were collected from the floor of Excavation 1 (6-7 feet bgs), one confirmation sample was collected from the floor of Excavation 2 (6 feet bgs), and one confirmation sample was collected from the floor of Excavation 3 (5 feet bgs). Sidewall samples were not collected because the sidewalls contained large quantities of asphalt. Samples were analyzed for DRO, RRO, and PAHs; samples from all three excavations were below cleanup levels. The asphalt/concrete was left buried on site and the three excavations were backfilled to the original grade.

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 surface soil, but is below the most conservative 18 AAC 75.341(d) cleanup levels.
Sub-Surface Soil Contact	De-Minimis Exposure	Contamination remains in the sub-surface, but is below the most conservative 18 AAC 75.341(d) 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 Exposure	Contaminants detected in groundwater are below 18 AAC 75.345 cleanup levels.
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	Remaining soil contamination includes PAHs that have the potential to bioaccumulate in plants or

		animals, however these contaminants were detected in subsurface soil (at least 5 ft bgs) at de-minimis concentrations.
Exposure to Ecological Receptors	De-Minimis Exposure	Terrestrial and aquatic exposure routes may be present in the vicinity of this site, however remaining contaminant concentrations are de-minimis and are not expected to affect terrestrial or aquatic receptors.

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 and groundwater contamination at the 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

Sammi Castle
Project Manager

cc: Spill Prevention and Response, Cost Recovery Unit