



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: 2245.38.047

October 13, 2022

Michael Campfield
Palmer Arts Council
P.O. Box 4286
Palmer, AK 99645

Re: Decision Document: Matanuska Maid Block Parcel E – Palmer Former Power House
Cleanup Complete Determination

Dear Mr. Campfield:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (DEC) has completed a review of the environmental records associated with the Matanuska Maid Block Parcel E – Palmer Former Power House (Former Power House) located at 237 East Dahlia Avenue, Palmer. 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 information becomes available that indicates residual contaminants may pose an unacceptable risk.

This Cleanup Complete determination is based on the administrative record for the Former Power House, which is located in the DEC office in Anchorage, Alaska. This decision letter summarizes the site history, cleanup actions and levels, and site closure conditions that apply.

Site Name and Location:

Matanuska Maid Block Parcel E –
Palmer Former Power House
237 East Dahlia Avenue
Palmer, AK 99645

Name and Mailing Address of Contact Party:

c/o Michael Campfield
Palmer Arts Council
P.O. Box 4268
Palmer, AK 99645

DEC Site Identifiers:

File No.: 2245.38.047
Hazard ID.: 27130

Regulatory Authority for Determination:

18 Alaska Administrative Code (AAC) 75

Site Description and Background

The Former Power House site is located on approximately 0.36 acres at 237 East Dahlia Avenue in Palmer, AK. The power house was built in the mid-1950s to replace a 1930s structure that had burned down in a fire. Coal-fired boilers were used onsite from the 1930s through the early 1960s and fuel oil-fired boilers from the early 1960s to mid-1970s to create steam for power generation.

In 2019, initial site assessment activities identified several areas of potential contamination and limited sampling was conducted. Subsequently, property owner Palmer Arts Council applied for and was awarded DEC Brownfield Assessment and Cleanup (DBAC) services to provide additional site characterization activities—specifically, to delineate the extent of soil contamination and further investigate the source and extent of groundwater contamination.

Contaminants of Concern and Cleanup Levels

During site characterization activities at this site, samples were collected from soil and groundwater in order to determine the extent of the previously identified contamination. Soil and groundwater at the site have been analyzed for diesel range organics (DRO), gasoline range organics (GRO), residual range organics (RRO), polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), and metals.

Soil cleanup levels applicable to the site are the most stringent levels found in 18 AAC 75.341, Tables B1 and B2. Groundwater cleanup levels are found in 18 AAC 75.345 Table C. The contaminants shown in Table 1 were found above their respective cleanup levels in soil or groundwater and are considered contaminants of concern at the site.

Table 1 – Approved Cleanup Levels

Contaminant	Soil Migration to Groundwater (mg/kg)	Soil Human Health (mg/kg)	Groundwater (µg/L)
DRO	250	10,250	N/A
Naphthalene	0.038	29	N/A
1-methylnaphthalene	0.41	68	N/A
2-methylnaphthalene	1.3	310	N/A
Benzene	0.022	11	N/A
Ethylbenzene	0.13	49	N/A
Xylenes	1.5	57	N/A
1,2,4-Trimethylbenzene	0.61	43	N/A
Chloroform	0.0071	4	N/A
Mercury	0.36	3.1	0.52
Lead	N/A	N/A	15
Arsenic	N/A	N/A	0.52

mg/kg = milligrams per kilogram

ug/L = micrograms per liter

Characterization and Cleanup Activities

Several mobilizations have been conducted at the Former Power House site to characterize soil and groundwater contamination at the property, including field work performed in June 2019, June/July 2020, October/November 2021, and May 2022.

Soil

In June 2019, initial site characterization was performed at the site by the Matanuska Susitna Borough (MSB) through a Brownfield Assessment grant from the U.S. Environmental Protection Agency (EPA). A Limited Phase II Environmental Site Assessment (ESA) was conducted, including the advancement of six soil borings to characterize soil and groundwater at the site. Analytical soil samples taken near the former boilers and in the vicinity of a debris pile contained concentrations of DRO, 1-methylnaphthalene, naphthalene, and mercury greater than DEC's default 18 AAC 75.341, Tables B1 and B2 migration to groundwater soil cleanup levels.

In June and July 2021, DEC conducted additional site characterization activities, including the collection of surface and subsurface soil samples. The scope of these activities was based upon previous assessment conducted by the MSB. DEC limited the analytical tests to only those analytes which were found to be elevated above DEC's default cleanup levels in 2019. Specifically, surface samples were analyzed for DRO, 1-methylnaphthalene, and naphthalene. Concentrations of naphthalene (maximum of 1.72 mg/kg) and 1-methylnaphthalene (maximum of 0.691 mg/kg) were detected above the DEC Method Two migration to groundwater cleanup levels in several surface soil samples, but less than the human health cleanup levels. In addition, three soil borings were advanced to a depth of between 37 and 39 bgs to investigate the vertical extent of mercury-impacted soil. Total mercury was detected in all three borings, but at concentrations (maximum of 0.2 mg/kg) less than the Method Two migration to groundwater cleanup level of 0.36 mg/kg.

In October and November 2021, DEC conducted additional soil sampling to evaluate the extent of contamination. Specifically, an area 7-feet-by-7-feet where the highest concentrations of naphthalene had been detected was excavated vertically up to 2 feet below ground surface (bgs). Approximately 15 cubic yards of soil was direct hauled for disposal at the MSB Central Landfill. During excavation, a creosote odor and a distinct layer of dark soil was encountered from approximately 0.5 to 1.5 feet bgs on each side of the excavation. The specific source of the dark soil layer is not known, but may have resulted from previous site activities associated with power generation (e.g., storage/transport of coal).

Analytical soil samples were collected from the side walls and base of the excavation. To evaluate the lateral extent of the dark soil layer, six test pits were advanced to a maximum depth of 3 feet bgs to the west, south, and east of the excavated area. The dark soil layer was present in each of the test pits. Naphthalene was detected in several samples collected from the excavated area (maximum 0.994 mg/kg) at concentrations greater than the most stringent cleanup level. In addition, 1-methylnaphthalene (1.39 mg/kg) and 2-methylnaphthalene (1.63 mg/kg) were also detected in one sample at concentrations greater than the most stringent cleanup levels. The remaining analytes were either not detected or detected at concentrations less than migration to groundwater soil cleanup levels.

In May 2022, DEC advanced additional test pits in order to determine the lateral and vertical extent of the dark soil layer, which was observed to extend off of the property boundary to the north, east, and west of the property. The vertical extent of the dark soil layer was delineated and was not found deeper than 2 feet bgs. DRO (360 mg/kg), benzene (1.07 mg/kg), ethylbenzene (1.49 mg/kg), total xylenes (11.2 mg/kg), 1,2,4-trimethylbenzene (2.9 mg/kg), chloroform (0.0212 mg/kg), naphthalene (2.21

mg/kg), 1-methylnaphthalene (2.26 mg/kg), and 2-methylnaphthalene (2.49 mg/kg) were detected in the soil samples collected from the dark layer at concentrations greater than the ADEC Method Two migration to groundwater cleanup levels. All analytical results of material collected from the dark soil layer showed that COCs were detected at concentrations less than the DEC Method Two human health cleanup levels. Soil data from the various sampling efforts was used to guide groundwater investigation at the site as discussed below.

Groundwater

The 2019 Limited Phase II ESA found arsenic, mercury and lead concentrations in groundwater samples collected from temporary wells exceeded DEC's 18 AAC 75.345, Table C groundwater cleanup levels. Other contaminants detected in soil above the migration to groundwater cleanup levels were not found in groundwater above the groundwater cleanup levels. The Limited Phase II report noted that the groundwater samples were highly turbid, with a significant amount of sediment in the samples, which can result in a high bias.

In June 2021, three groundwater monitoring wells were installed and sampled for mercury after the samples were filtered to remove sediment. Mercury was not detected above the groundwater cleanup level indicating the 2019 samples were biased high due to turbidity. The monitoring wells were decommissioned in October 2021.

Assessment activities have demonstrated that the vertical extent of the shallow soil contamination (above 3 feet bgs) does not extend to the groundwater table located at approximately 36 feet bgs, and the COCs in soil have not been detected in groundwater. Although soil remaining onsite contains COCs, groundwater data indicates that these contaminants have not migrated to groundwater and are not considered a risk to groundwater.

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, DEC 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 DEC'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	Pathway Incomplete	Contamination is not present in surface soil (0 to 2 feet below ground surface).

Sub-Surface Soil Contact	De-Minimis Exposure	Contamination remains in the sub-surface, but is below human health and ingestion cleanup levels in 18 AAC 75.341, Tables B1 and B2.
Inhalation – Outdoor Air	De-Minimis Exposure	Contamination remains in the sub-surface, but is below human health and inhalation cleanup levels in 18 AAC 75.341, Tables B1 and B2.
Inhalation – Indoor Air (vapor intrusion)	Pathway Incomplete	Contaminants were not detected above vapor intrusion screening levels.
Groundwater Ingestion	Pathway Incomplete	Contamination was not present above groundwater cleanup levels.
Surface Water Ingestion	Pathway Incomplete	Surface water bodies are not present at 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	Contamination is not expected to affect ecological receptors.

Notes to Table 2: “De-Minimis Exposure” means that in DEC’s judgment receptors are unlikely to be adversely affected by the minimal volume or concentration of remaining contamination. “Pathway Incomplete” means that in DEC’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.

DEC Decision

Soil and groundwater at the site have been assessed and found to have concentrations of contaminants below the approved cleanup levels suitable for residential land use. In accordance with 18 AAC 75.380(c)(2), DEC determines final groundwater compliance using the filtered, dissolved samples. This site will receive a “Cleanup Complete” designation on the Contaminated Sites Database.

DEC approval is required for movement and disposal of soil and/or groundwater subject to the Site Cleanup Rules, in accordance with 18 AAC 75.325(i). Please contact DEC for information about applicable regulations and requirements. A “site”, as defined by 18 AAC 75.990, means an area that is contaminated, including areas contaminated by the migration of hazardous substances from a source area, regardless of property ownership.

Movement or use of contaminated material in an ecologically sensitive area or in a manner that results in a violation of 18 AAC 70 water quality standards is prohibited. Furthermore, 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. If, in the future, groundwater from this site is to be used for other purposes, 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 DEC from requiring additional assessment and/or cleanup action if 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) 465-5206, or email at marc.thomas@alaska.gov.

Sincerely,

Marc Thomas

Marc Thomas
Project Manager