THE STATE of ALASKA
GOVERNOR BILL WALKER

**Department of Environmental Conservation**

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites Program

555 Cordova St
Anchorage, AK 99501
Main: 907-269-7691
Fax: 907-269-7687
www.dec.alaska.gov

File No: 2407.26.004

December 16, 2014

Zef Lakhani
Public Works Director
City of Bethel
P.O. Box 388
Bethel, AK 99559

Re: Decision Document: Bethel Public Works Yard
Corrective Action Complete Determination – Institutional Controls

Dear Mr. Lakhani:

The Alaska Department of Environmental Conservation (ADEC) has reviewed the environmental records for the Bethel Public Works Yard site. This decision letter memorializes the site history, cleanup actions, and specific conditions required to effectively manage remaining contamination. No further remedial action will be required as long as compliance with these conditions is maintained.

**Site Name and Location:**
Bethel Public Works Yard
1155 Ridgecrest Drive
Bethel, AK 99559

**Name and Mailing Address of Contact Party:**
Zef Lakhani, Public Works Director
City of Bethel
P.O. Box 388
Bethel, AK 99559

**DEC Site Identifiers:**
File No: 2407.26.004
Hazard ID: 22955

**Regulatory Authority for Determination:**
18 AAC 75 and 18 AAC 78

**Site Description and Background**

The Bethel Public Works Yard site is located roughly 650 feet north-northeast of the Ptarmigan Street and Ridgecrest Drive intersection, in Bethel, Alaska. The public works yard is surrounded by a fence and access is limited. The property grounds are primarily used for staging and fueling vehicles. Frozen ground (permafrost) is present at this site between 8 and 16 feet below ground surface (bgs) and is about 400 feet thick. The nearest drinking water well is located over .25 mile southwest of the site, and is approximately 460 feet deep, with the intake located beneath the permafrost layer. Two

25,000-gallon diesel underground storage tanks (USTs) and two 1,500-gallon gasoline USTs were formerly present at this site. Limited soil sampling in 1993 revealed that a release had occurred in the vicinity of the USTs.

**Contaminants of Concern**
The following petroleum contaminants of concern, those above ADEC cleanup levels, were identified during the course of the site investigations summarized in the Characterization and Cleanup Activities section of this decision letter.

- Gasoline Range Organics (GRO)
- Diesel Range Organics (DRO)
- Benzene
- Toluene
- Ethylbenzene
- Xylenes

**Cleanup Levels**
GRO, DRO, and benzene, toluene, ethylbenzene, and xylenes (BTEX) were present in soil above the Method 2 migration to groundwater (MTG) cleanup levels for the under 40-inch precipitation zone, established in 18 AAC 75.341(c), Table B1, and 18 AAC 75.341 (d), Table B2.

**Table 1 – ADEC Cleanup Levels**

| Contaminant | Soil – MTG (mg/kg) | Soil – Direct Contact (mg/kg) | Soil – Inhalation (mg/kg) | Maximum Remaining Concentration (mg/kg) |
|---|---|---|---|---|
| GRO | 300 | 1,400 | 1,400 | 2,000 |
| DRO | 250 | 10,250 | 12,500 | 7,900 |
| Benzene | 0.025 | 150 | 11 | 8.1 |
| Toluene | 6.5 | 8,100 | 220 | 24 |
| Ethylbenzene | 6.9 | 10,100 | 110 | 27 |
| Xylenes | 63 | 20,300 | 63 | 180 |

mg/kg = milligrams per kilogram
MTG = migration to groundwater

**Characterization and Cleanup Activities**
In June of 1996, 13 test pits (TP1 though TP13) were advanced around the USTs and their associated piping in an effort to delineate the extent of impacted soil. Results of the investigation revealed the contamination was prominent in the surface and subsurface soils surrounding the USTs and beneath the dispensing equipment. Permafrost was encountered at 8 feet bgs during this investigation.

The USTs and their associated piping and dispensing equipment were removed in November 1997. Soils removed during excavation were field screened using a photoionization detector (PID) to evaluate for the presence of volatile organic compounds (VOCs) and were temporarily stockpiled based on field screening results. The excavation continued until frozen ground was encountered,

which was between 10 and 16 feet bgs. Confirmation soil samples were collected from the base and sidewalls of the excavation and were analyzed by an ADEC approved laboratory for GRO, DRO, and BTEX and VOCs. Analytical results revealed that GRO, DRO, and BTEX remain in the western portion of the excavation, beneath the former dispensers, above their respective ADEC cleanup criteria (Please see the enclosed site map).

Following the excavation and sampling activities, approximately 1,300 cubic yards of contaminated soil was permanently stockpiled at the Bethel Fire Training Center, located roughly 700 feet northeast of the site. It was later reported that the stockpile was sampled and transferred to the Bethel Landfill along with several other piles of contaminated soil.

Concentrations of GRO, DRO, and BTEX remain at the base of the excavation above ADEC cleanup levels. However, the excavation was commenced vertically until frozen ground (permafrost) was encountered and further excavation vertically is not feasible. Groundwater was not encountered in the deepest portion of the excavation. The nearest drinking water well is located over .25 mile southwest of the site, and is approximately 460 feet deep. In addition, three above ground storage tanks (ASTs) were constructed to replace the former USTs, and are located over the former dispenser excavation. It would be difficult and may pose a safety risk to continue excavation at this site. At this time, the remaining contamination does not pose a risk to human health or the environment.

**Cumulative Risk Evaluation**

Pursuant to 18 AAC 78.600(d), 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 non-carcinogenic 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 do not pose a cumulative human health risk.

**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 | Pathway Incomplete | Contamination is not present in surface soil (0 to 2 feet below ground surface). |
| Sub-Surface Soil Contact | De-Minimis Exposure | GRO contamination remains in the sub-surface soils above direct contact cleanup levels; however, further excavation is impractical and the extent of contamination is limited. |

| | | |
|---|---|---|
| Inhalation – Outdoor Air | De-Minimis Exposure | GRO and xylene contamination remains in the sub-surface soils above inhalation cleanup levels; however, further excavation is impractical and the extent of contamination is limited. |
| Inhalation – Indoor Air (vapor intrusion - VI) | De-Minimis Exposure | Volatile contamination remains in the sub-surface soils; however, no buildings are present within 30 feet of the remaining contamination. Additionally, the contamination remains at a depth of 10 feet or greater. Since VI is unlikely for petroleum COCs at this depth, risk via this pathway is considered insignificant. |
| Groundwater Ingestion | Pathway Incomplete | Groundwater contamination is not present. |
| Surface Water Ingestion | Pathway Incomplete | Surface water is not contaminated and is not used as a drinking water source in the vicinity of the site. |
| Wild and Farmed Foods Ingestion | Pathway Incomplete | Site is not located in an area used for foraging activities. |
| Exposure to Ecological Receptors | Pathway Incomplete | Terrestrial and aquatic routes are not present. |

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. "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**

Petroleum contamination remains on-site in soil and groundwater above ADEC cleanup levels; however, ADEC has determined there is no unacceptable risk to human health or the environment as long as the contamination is properly managed in accordance with the following conditions.

1. Any future change in land use may impact the exposure assumptions cited in this document. If land use and/or ownership changes, these management conditions may not be protective and ADEC may require additional remediation and revised conditions. Therefore the City of Bethel shall report to ADEC every 5 years to document land use, or report as soon as the City of Bethel becomes aware of any change in land ownership and/or use, if earlier. The report can be sent to the local ADEC office or electronically to DEC.ICUnit@alaska.gov.

2. Installation of groundwater wells requires ADEC approval.

3. Sub-surface soil contamination remains beneath the current AST fueling station. If the soil becomes accessible and/or is encountered in the future, the soil must be evaluated and contamination addressed in accordance with an ADEC approved work plan.

4. Any proposal to transport soil or groundwater off-site requires ADEC approval in accordance with 18 AAC 78.600(h). 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.

5. Movement or use of contaminated material in a manner that results in a violation of 18 AAC 70 water quality standards is prohibited.

The ADEC Contaminated Sites Database will be updated to reflect the change in site status as detailed above, and will include a description of the contamination remaining at the site. Institutional controls will be removed in the future if documentation can be provided that shows cleanup levels have been met. Management conditions 4 and 5 remain in effect after ICs are removed.

This determination is in accordance with 18 AAC 78.276(f) 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 99811-1800, 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, 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.

**Please sign and return *Attachment A* to ADEC within 30 days of receipt of this letter.** If you have questions about this closure decision, please feel free to contact me at (907) 269-7691.

Sincerely,

Joshua Barsis
Environmental Program Specialist

Enclosures: Site Map

cc: RFA via email at dec.spar.cr@alaska.gov
Kamie Willis, DOL (via email)

***Attachment A: Cleanup Complete-ICs Agreement and Signature Page****

The City of Bethel agrees to the terms and conditions of this Corrective Action Complete Determination, as stated in this decision letter for the Bethel Public Works Yard site, dated **December 16, 2014.** Failure to comply with the terms and conditions of the determination may result in ADEC reopening this site and requiring further remedial action in accordance with18 AAC 18 AAC 78.276(f).

_____ _____

Signature of Authorized Representative, Title Date

_____

Printed Name of Authorized Representative, Title

**Note to Responsible Person (RP):**
**After making a copy for your records, please return a signed copy of this form to the ADEC project manager at the address on this correspondence within 30 days of receipt of this letter.**

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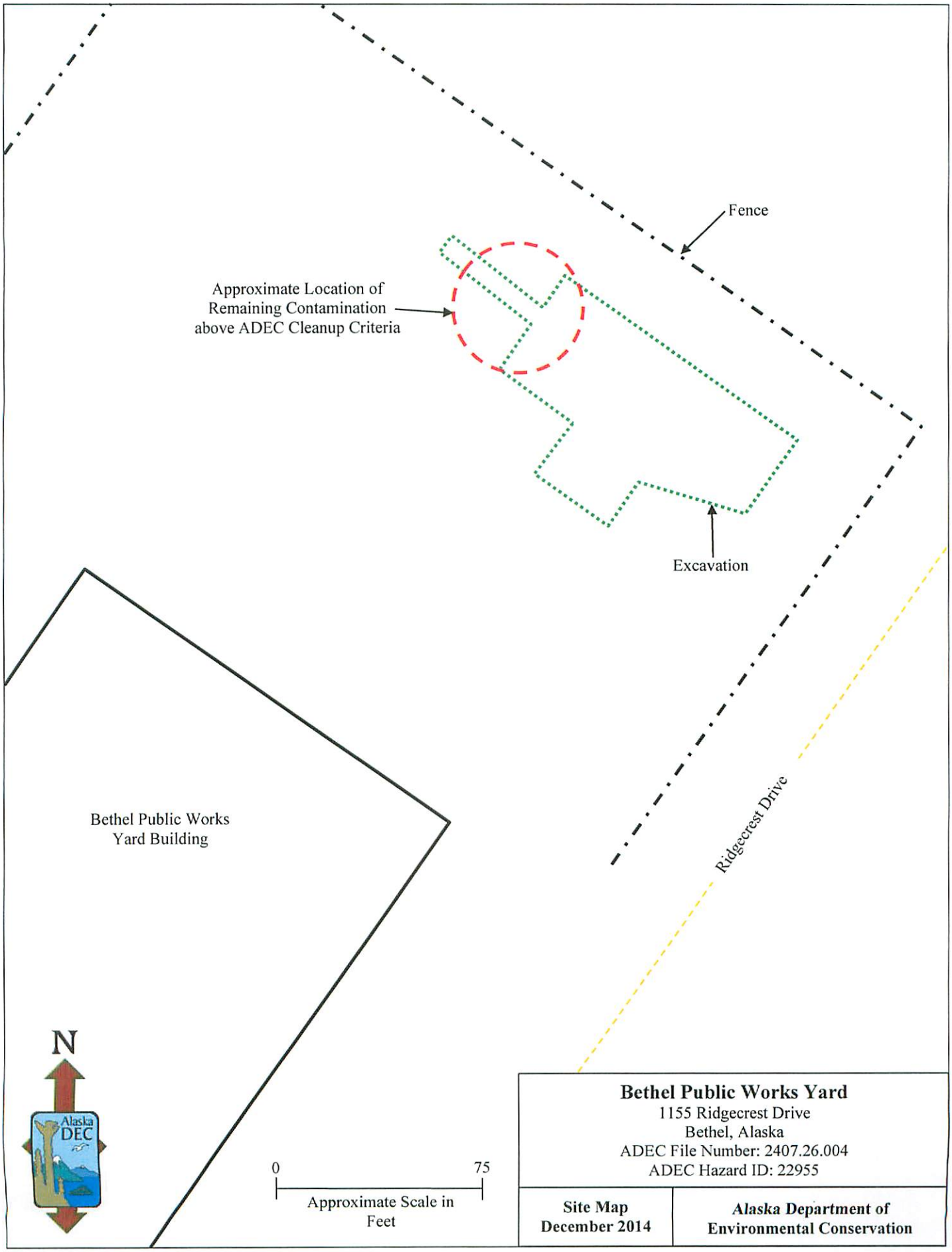
ADEC File No. 2407.26.004
Hazard ID: 22955
ADEC Project Manager: Joshua Barsis

**For Internal Use Only**

***Attention ADEC Administration Staff:** Please follow the procedure below after Attachment A is signed/returned to ADEC.

1. Log-in and Date Stamp *Attachment A*
2. Scan *and* Save to the appropriate electronic folder on the network Drive
3. File the hard copy in the appropriate project/site file Correspondence Folder (blue in Anchorage).
4. Provide the Correspondence folder (with the filed *Attachment A* hard copy) to the ADEC Project Manager




**Bethel Public Works Yard**
1155 Ridgecrest Drive
Bethel, Alaska
ADEC File Number: 2407.26.004
ADEC Hazard ID: 22955

| Site Map<br>December 2014 | Alaska Department of<br>Environmental Conservation |
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