



THE STATE
of **ALASKA**
GOVERNOR BILL WALKER

Department of Environmental
Conservation

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated sites Program

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File No: 2407.26.015

September 13, 2016

John Wagner
Northstar Gas, LLC
4025 West 50th Ave., Suite 1
Anchorage, Alaska 99502

Re: Decision Document: Northstar Gas Company – Bethel - 1993
Cleanup Complete Determination

Dear Mr. Wagner:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has completed a review of the environmental records associated with the **Northstar Gas Company – Bethel - 1993** site, located at 1170 Bridge Street, Bethel, Alaska. 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 Northstar Gas Company – Bethel – 1993 site, which is located in the ADEC office in Soldotna, Alaska. This decision letter summarizes the site history, cleanup actions and levels, and standard site closure conditions that apply.

Site Name and Location:

Northstar Gas Company – Bethel - 1993
1170 Bridge Street
Bethel, Alaska 99559

Name and Mailing Address of Contact Party:

John Wagner
Northstar Gas, LLC
4025 West 50th Ave., Suite 1
Anchorage, Alaska 99502

DEC Site Identifiers:

File No: 2407.26.015
Hazard ID: 24813

Regulatory Authority for Determination:

18 AAC 75 and 18 AAC 78

Landowner:

Northstar Gas, LLC
4025 West 50th Ave., Suite 1
Anchorage, Alaska 99502

Property Legal Descriptions:

Lot 10A, Block 14, U.S. Survey No. 3230 A&B, Townsite of Bethel, Alaska. A Subdivision of Lots 10 and 11, Block 14 U.S. Survey 3230 A&B Located in Bethel Recording District, Fourth Judicial District, Bethel, Alaska

Site Description and Background

This North Star Gas property was developed as a gas station. In September 1993, ADEC received a Phase II Environmental Site Assessment report, identifying gasoline contaminated soils. The cause of the gasoline contamination was attributed to overfilling of the underground storage tanks (USTs).

In July 1998, two 2,300-gallon gasoline USTs were permanently closed by excavation and removal from the ground. An estimated 98 cubic yards of gasoline contaminated soils were excavated and stockpiled on site.

Subsurface soils are generally silt and silty sand (ML and SM), and the site is underlain by permafrost, with the active layer extending to approximately 6 to 7 feet bgs. No groundwater was encountered, although saturated soil has been observed in the thawed active layer above the permafrost (supra-permafrost groundwater).

According to the City of Bethel Public Works Department, permafrost in this area of Bethel is encountered from near the ground surface to approximately 100 feet bgs. Groundwater used for drinking water is available beneath the permafrost at depths exceeding 400 feet bgs. The closest drinking water well is located approximately 1/2 mile from this site. Two City of Bethel drinking water wells are located 2-3 miles away from this site. Most developments in the City of Bethel receive drinking water from the City of Bethel's Hauled Utilities Department, which hauls drinking water to onsite potable water storage tanks.

Contaminants of Concern

During the site investigation and cleanup activities performed at this site, soil samples were collected and analyzed for benzene, ethylbenzene, toluene, xylenes (BTEX) and gasoline range organics (GRO). Based on these analyses, the following contaminant was detected above the applicable soil cleanup level and is considered a Contaminant of Concern at this site:

- Xylenes

Approved Soil Cleanup Levels

The more restrictive of either the inhalation or ingestion soil cleanup levels apply to this site. Xylenes were detected in soil above the inhalation cleanup level. Migration to groundwater soil cleanup levels are not applicable at this site because the site is underlain by continuous permafrost from the near ground surface to 100 feet below ground surface (bgs). The migration to groundwater pathway to the 400-foot deep groundwater is considered incomplete, due to a 100 foot depth of overlying permafrost. The approved soil cleanup level for total xylenes for this site are established in 18 AAC 75.341, Method Two, Table B1, Under 40 Inch Zone, “Outdoor Inhalation”, as follows:

- Total xylenes 63 mg/kg (Csat)

Groundwater Cleanup Level

Contamination didn't affect the 400-foot deep groundwater at this site; therefore no groundwater cleanup levels have been established.

Site Characterization Activities

Site characterization activities conducted under the regulatory authority of ADEC's Contaminated Sites Program began in 1998. These activities are described below.

In September, 1998, Phukan Consulting Engineers and Associates, Incorporated (Phukan), provided site assessment services during the permanent closure of two 2,300 gallon gasoline USTs. An estimated 98 cubic yards of gasoline contaminated soil was excavated and placed within a soil treatment cell constructed on the property. These contaminated soils were excavated near the west property line in an approximate 30 by 30 feet area, from 2 to 7 feet bgs (Phukan 1998).

Contaminated soil remained beneath the USTs, along the western property boundary, and where structures prevented further excavation. Seven soil samples were collected for laboratory analysis for BTEX and GRO. GRO, and all BTEX analytes were detected in concentrations exceeding the Level B ADEC soil cleanup levels in effect at that time, at one sample location (NSG-7), along the west edge of the property. The highest total xylenes concentration was detected at 280 mg/kg. The excavated soils that were placed within a soil treatment cell were later sampled, shown to meet the prevailing ADEC soil cleanup levels, and then landspread onsite.

In February, 2009, Golder Associates, Inc. (Golder), performed a Phase II Environmental Assessment on a separate property located immediately west of the North Star Gas property. Four soil borings were drilled and sampled at four locations on the adjacent property. Two of the soil

borings were drilled approximately 10 feet west of the western limit of the cleanup excavation performed at the Northstar Gas site in 1998. Soil samples were analyzed for GRO, BTEX, diesel range organics (DRO), and residual range organics (RRO). Only benzene exceeded the ADEC “Migration to Groundwater” soil cleanup levels, at 1.11 mg/kg at 5 feet bgs in one soil boring, and 0.221 mg/kg at 3 feet bgs in the other soil boring. The Golder 2009 samples served to demonstrate that the extent and magnitude of gasoline contaminated soil to the west of the 1998 cleanup excavation was limited in quantity and concentration.

In July, 2010, the environmental consulting firm Tutka, LLC (Tutka), performed additional site characterization work in the effort to pursue an ADEC site closure determination, on behalf of Northstar Gas, LLC. Water saturated soils were encountered overlying the shallow permafrost at a depth of less than 3 feet bgs. Four soil samples were collected for laboratory analysis. GRO, benzene, toluene and total xylenes still exceeded the ADEC Method Two, Table B1 and B2 “Migration to Groundwater” soil cleanup levels along the west edge of the property, at the same location as Tutka’s NSG-7 soil sampling location. Total xylenes also exceeded the Table B2 inhalation (C_{sat}-based) soil cleanup level, however contaminant concentrations were substantially reduced in 2010 compared to the 1998 Phukan soil sampling event.

In October 2013, Golder Associates, Inc., completed an Environmental Site Summary report for North Star Gas. Golder’s report included the following scope of work:

- Conduct a background review of historical assessment information, including a review of all available reports and letters in the ADEC files;
- Evaluate the potential applicable soil cleanup levels for the site based on their understanding of site conditions;
- Conduct a preliminary review and evaluation of the soil vapor intrusion risk; and
- Prepare a Conceptual Site Model (CSM) including a graphic of the exposure pathways and text describing each element of the CSM.

The last soil sampling performed at this site was completed by Tutka in 2010. Residual soil concentrations were below applicable ADEC inhalation soil cleanup level for total xylenes, except at soil sample 10NSG001, located on the western edge of the site, where xylenes were reported at 162.1 mg/kg. ADEC’s Table B1 Outdoor Inhalation soil cleanup level for total xylenes is based on the soil saturation concentration (C_{sat}) for xylenes, which is set at 63 mg/kg. The C_{sat}-based soil cleanup level is used to ensure that free product is removed at contaminated sites to the maximum extent practical. The actual outdoor inhalation pathway-based soil cleanup level for xylenes for a child under residential exposure is 560 mg/kg. The highest total xylenes concentration detected in any soil sample by Tutka in 2010 was 162.1 mg/kg.

Contaminant concentrations in 2010 were substantially reduced from the concentrations reported by Phukan in 1998. Based on the completion of the soil cleanup excavation work in 1998 (which proceeded down to saturated soils in the thawed active layer of permafrost), the 4 additional soil

samples collected in the immediate vicinity of sample location 10NSG001 – all meeting the approved soil cleanup level, and the underlying permafrost which retards downward leachate migration, the soil contamination has been largely removed, and the residual mass of contamination exceeding the ADEC Csat soil cleanup level for total xylenes is considered de-minimis. Furthermore, the maximum xylene concentration remaining at this site meets the inhalation soil cleanup level, calculated using ADEC’s cleanup level calculator.

Cumulative Risk Evaluation

Pursuant to 18 AAC 78.600(d), when detectable contamination remains on-site, 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 the completion of site characterization work, exposure to residual Contaminants of Concern 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 or Pathway Incomplete. A summary of this pathway evaluation is included in Table 1.

Table 1 – Exposure Pathway Evaluation

Pathway	Result	Explanation
Surface Soil Contact	De-Minimis Exposure	Contaminated soil has been excavated from the upper two feet of the ground, to less than the approved soil cleanup levels.
Sub-Surface Soil Contact	De-Minimis Exposure	Contamination remains in sub-surface soils, but at concentrations below the approved soil cleanup levels.
Inhalation – Outdoor Air	De-Minimis Exposure	Contamination remains in sub-surface soils, but below the outdoor air soil cleanup levels.
Inhalation – Indoor Air (vapor intrusion)	De-Minimis Exposure	The closest building to the residual soil contamination is built upon a piling foundation, and the floor is elevated above the ground surface in order to prevent thawing of the permafrost. The indoor air vapor migration pathway is broken by

		the air gap between the ground surface and the building.
Groundwater Ingestion	Pathway Incomplete	Supra-permafrost groundwater is not a potential drinking water source. Sub-permafrost groundwater is found at depths greater than 400 feet, beneath 100 feet of permafrost, and is not impacted by site contamination.
Surface Water Ingestion	Pathway Incomplete	Surface water at this site is not used as a drinking water source.
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 remains in sub-surface soils and in supra-permafrost groundwater, however this residual contamination is not impacting adjacent surface waters.

Notes to Table 1: “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.

ADEC Decision

Soil contamination at the site has been cleaned up to concentrations below the approved cleanup level 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 supra-permafrost groundwater off-site requires ADEC approval in accordance with 18 AAC 78.600(h). A “site” 18 AAC 78.995(134) 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.

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 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, 410 Willoughby Avenue, Suite 303, Juneau, Alaska 99801, 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 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.

If there are questions about this Decision Document, please contact me at (907) 262-3422, or via e-mail at paul.horwath@alaska.gov

Sincerely,



Paul Horwath
Engineer I, DEC

Cc: Golder Associates, Inc.