



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: 220.38.012

August 30, 2017

Bill Heubner  
National Park Service  
240 West 5<sup>th</sup> Avenue  
Anchorage, AK

Re: Decision Document: NPS Denali Nat'l Park Bldg 107  
Cleanup Complete Determination – Institutional Controls

Dear Mr. Heubner:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (DEC) has completed a review of the environmental records associated with the National Park Service (NPS) Denali National Park Building 107 site located in the Headquarters Area of Denali National Park & Preserve, 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 as long as the institutional controls are maintained and effective and no new information becomes available that indicates residual contamination poses an unacceptable risk.

This Cleanup Complete with Institutional Controls (ICs) determination is based on the administrative record for the NPS Denali National Park Building 107 site, which is located in the offices of the DEC in Fairbanks, Alaska. This decision letter summarizes the site history, cleanup actions, regulatory decisions, and specific conditions required to effectively manage remaining contamination at this site.

**Site Name and Location:**

NPS Denali National Park HQ Building 107  
Denali National Park Headquarters  
Denali Park, AK 99755

**Name and Mailing Address of Contact Party:**

Bill Heubner  
National Park Service  
240 West 5<sup>th</sup> Avenue  
Anchorage, AK 99501

**DEC Site Identifiers:**

File No: 220.38.012  
Hazard ID: 4107

**Regulatory Authority for Determination:**

18 AAC 75

### Site Description and Background

The Denali National Park Headquarters Area is located 3.2 miles into the park, on the south side of Denali Park Road. Building 107 was built in the 1930s as a boiler house. It was used as a plumbing shop, until the 1970s, when it was converted into office space. There is no plumbing or bathroom in Building 107. The drinking water source for the Headquarters Area is on the east side of Rock Creek, upgradient of the site. Depth to groundwater at this site is more than 80 feet.

A bulk fuel farm was located approximately 60 feet west of Building 107, and the parking area for Building 107 was used for filling and dispensing operations. The tank farm consisted of two 8,000-gallon aboveground storage tanks (ASTs) that stored diesel fuel. Drawings show the tanks in place in 1979; the tanks were removed in the mid 1980s and the fueling operations were moved to the Denali C-Camp area. The concrete foundation for the tanks remains at the site.

In addition, a 1,000-gallon diesel underground storage tank (UST), a 1,200-gallon gasoline UST, and a fuel pump house were located approximately 100 feet west of Building 107. The tanks and pump house were removed in the 1980s.

Petroleum contaminated soil was encountered during expansion and drainage work at the Building 107 parking lot in 2001.

### Contaminants of Concern and Cleanup Levels

Cleanup levels for this site are established in 18 AAC 75.340, Method Two, Table B2, under 40-inch zone. Soil samples at this site have been analyzed for gasoline and diesel range organics (GRO and DRO), and benzene, toluene, ethylbenzene, and xylenes (BTEX). Soil sample results have shown GRO, DRO, and benzene above the cleanup levels.

**Table 1 – Soil Cleanup Levels<sup>1</sup>**

Contaminant of Concern	Ingestion Cleanup Level	Inhalation Cleanup Level	Migration to Groundwater Cleanup Level
GRO	1,400	1,400	300
DRO	10.250	12,500	250
Benzene	11 <sup>2</sup>	11 <sup>2</sup>	0.022

<sup>1</sup> – Method Two - Soil Cleanup Levels, Tables B1 and B2

<sup>2</sup> – Table B1, Human Health Cleanup Level, Under 40 inch Zone

mg/kg = milligrams per kilogram

GRO = gasoline range organics

DRO = diesel range organics

### Characterization and Cleanup Activities

Petroleum contaminated soil was encountered during expansion and drainage work at the Building 107 parking lot in 2001. The impacted area was paved over as part of the drainage work. A site assessment was conducted in 2004 including the installation of two soil borings at the former gasoline UST location, one soil boring through the paved parking lot near the former fueling area, and four hand borings around the former AST concrete pad. Samples were analyzed for GRO, DRO, and BTEX. One sample result from the former UST location had a benzene exceedance at 0.031 mg/kg at 30 feet below ground surface. All other analytes tested for were below cleanup levels. Sample results from the boring near the former fueling area contained GRO and DRO above the cleanup level at 10 feet below ground surface, at a concentrations of 785 mg/kg and 11,400 mg/kg, respectively. Results of the sample at 55 feet were below cleanup levels. The boring was

advanced to 80 feet in an attempt to install a monitoring well, however no groundwater was encountered. Surface soil samples collected from around the former AST concrete pad contained DRO above cleanup levels, at a maximum concentration of 23,900 mg/kg (HB-4). One sample was collected beneath the asphalt parking area that detected DRO at 11,400 mg/kg.

In 2006, approximately 900 cubic yards of petroleum contaminated soil was removed from the site. The excavation encompassed the area of the former diesel ASTs, which is west of the former fuel loading area and east of the former USTs. Prior to backfilling, RegenOx, an oxidizing agent, was added to the excavation to promote biodegradation. Confirmation samples from the limits of the excavation were analyzed for GRO, DRO, and BTEX. DRO was detected above the migration to groundwater cleanup level but below the inhalation and ingestion cleanup levels, with a maximum concentration of 3,380 mg/kg. BTEX and GRO results were all below cleanup levels.

Indoor air inhalation was identified as a complete exposure pathway due to the remaining levels of petroleum contamination near Building 107. In 2012, a building survey was completed and four soil vapor points were installed near the building. Soil gas samples were collected in the summer of 2012 and spring of 2014 and analyzed for volatile organic compounds (VOCs). Seven compounds were detected in the 2012 sampling event; results were below residential target levels. No compounds were detected in the 2014 sampling event.

### 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 cumulative risk criteria for human health.

### 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 below.

**Table 2 – Exposure Pathway Evaluation**

<b>Pathway</b>	<b>Result</b>	<b>Explanation</b>
Surface Soil Contact	Exposure Controlled	Contaminated surface soil at this site is covered by an asphalt parking area. The NPS has identified the location of remaining contaminated soil on their GIS database and have implemented an internal planning process for all projects that requires the user to look at the GIS database to determine if contamination is present in the project area.
Sub-Surface Soil Contact	Exposure Controlled	The NPS has identified the location of remaining contaminated soil on their GIS database and have implemented an internal planning process for all projects that requires the user to look at the GIS

		database to determine if contamination is present in the project area.
Inhalation – Outdoor Air	De Minimis Exposure	Concentrations of remaining petroleum contaminated soil are below the inhalation cleanup levels.
Inhalation – Indoor Air (vapor intrusion)	De Minimis Exposure	Results from soil gas sampling at Building 107 are below the target screening levels.
Groundwater Ingestion	Pathway Incomplete	Contaminated soil remains above the migration to groundwater cleanup levels at this site, however soil sample results from 55 feet were below the cleanup levels and contamination is not expected to migrate to the depth of groundwater.
Surface Water Ingestion	Pathway Incomplete	Remaining contamination is not expected to migrate to surface water bodies.
Wild and Farmed Foods Ingestion	Pathway Incomplete	This site is located within the Headquarters Area of Denali National Park & Preserve and hunting and farming activities do not occur in this area.
Exposure to Ecological Receptors	Pathway Incomplete	There are no complete ecological exposure pathways at this site.

**Notes:** “De Minimis Exposure” means that in DEC’s judgment receptors are unlikely to be 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

Petroleum contaminated soil remains in place at this site at concentrations above levels suitable for unrestricted future use. DEC has approved the use of institutional controls to limit potential future exposure and risk to human health or the environment. Institutional controls necessary to support this closure determination include:

1. Identification of the location of remaining soil and groundwater contamination on the NPS GIS database and use of the internal NPS planning process for all projects that directs the user to the GIS database to determine if contamination is present within the project area.
2. A requirement that proper field screening and characterization be conducted during any soil excavation, digging, or trenching in the areas where residual soil contamination exists and that any contaminated soil encountered be managed in accordance with regulations applicable at that time.
3. A restriction on installing groundwater wells or using groundwater from the site without prior DEC approval.

Standard site closure conditions that apply to all sites include:

1. Any proposal to transport soil or groundwater off-site 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.

DEC has determined the cleanup is complete as long as the institutional controls are properly implemented and no new information becomes available that indicates residual contamination may pose an unacceptable risk.

The DEC Contaminated Sites Database will be updated to reflect the change in site status to “Cleanup Complete with Institutional Controls” and will include a description of the contamination remaining at the site.

The institutional controls will be removed in the future if documentation is provided that shows concentrations of all residual hazardous substances remaining at the site are below the levels that allow for unrestricted exposure to, and use of, the contaminated media and that the site does not pose a potential unacceptable risk to human health, safety or welfare, or to the environment. Standard conditions 1-3 above will remain in effect after ICs are removed.

This determination is in accordance with 18 AAC 75.380 and does not preclude DEC from requiring additional assessment and/or cleanup action if the institutional controls are determined to be ineffective or if new information indicates that contaminants at 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, 555 Cordova Street, Anchorage, Alaska 99501-2617, 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, 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) 451-2370 or [gretchen.caudill@alaska.gov](mailto:gretchen.caudill@alaska.gov).

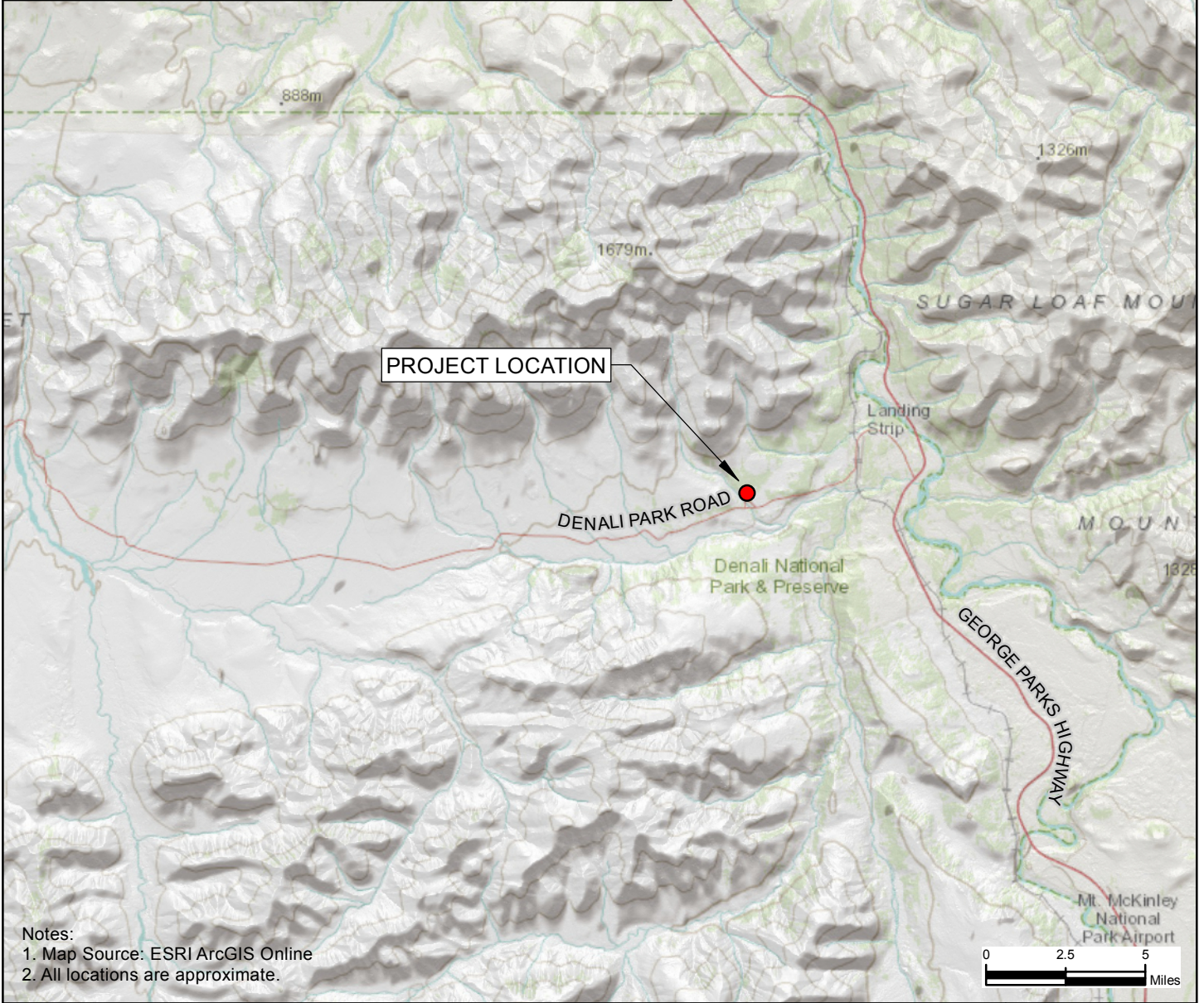
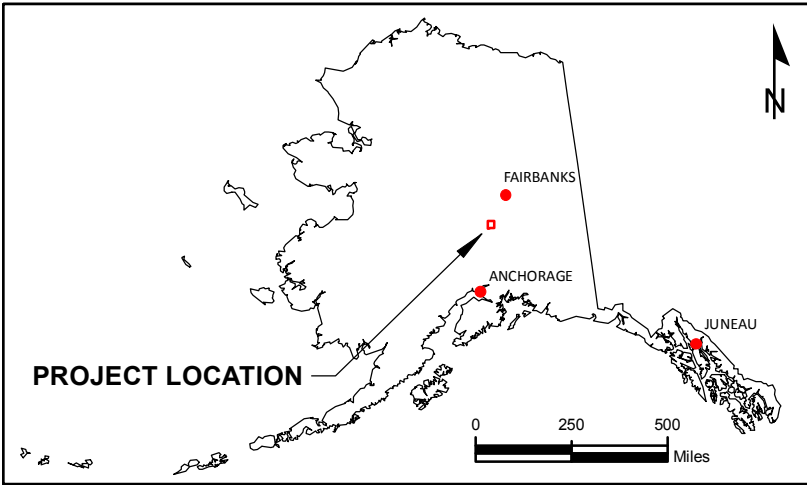
Sincerely,

Gretchen Caudill  
Project Manger

**Note: This letter is being transmitted to you in electronic format only. If you require a paper copy, let us know and we will be happy to provide one to you. In the interest of reducing file space, the Division of SPAR/Contaminated Sites Program is transitioning to electronic transmission of project correspondence.**

Enclosures: Figure 1 – State and Vicinity (Ahtna, 2014)  
Figure 2 – Site Plan (Ahtna, 2014)  
Figure 3 – Soil Vapor Points and Historic Sampling Locations (Ahtna, 2014)  
Figure 4–5 – Institutional Control NPS GIS database (NPS, 2017)

cc: Eric Breitenberger, DEC, via email  
Spill Prevention and Response, DEC, Cost Recovery Unit, via email



**Notes:**

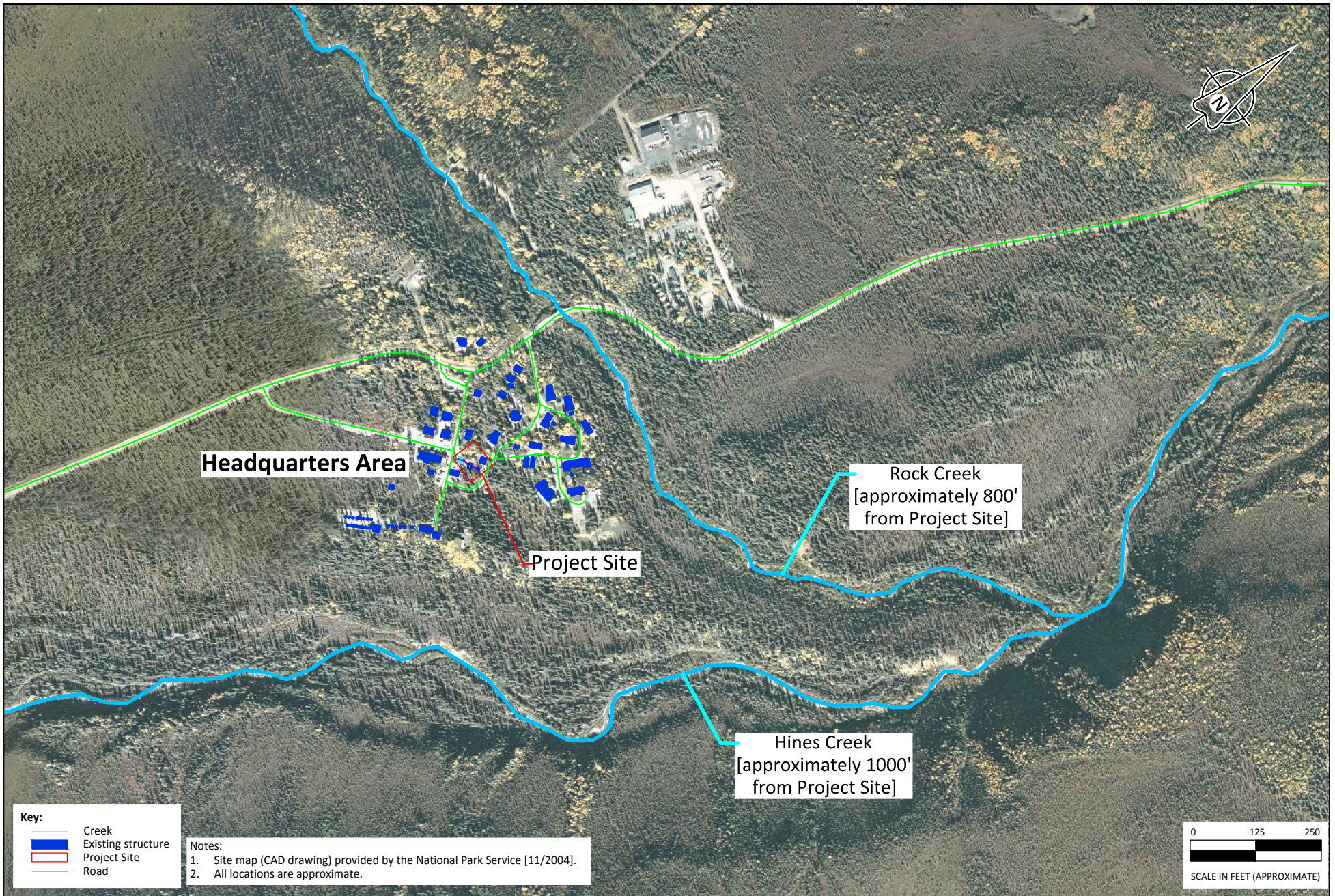
1. Map Source: ESRI ArcGIS Online
2. All locations are approximate.

Soil Gas Sampling  
Headquarters Building 107, Denali National Park and Preserve, Alaska



Project Number: 20194.4653	Figure Number: <b>1</b>
Date: 4/22/2014	
Drafted By: dhickey	

**State and Vicinity**



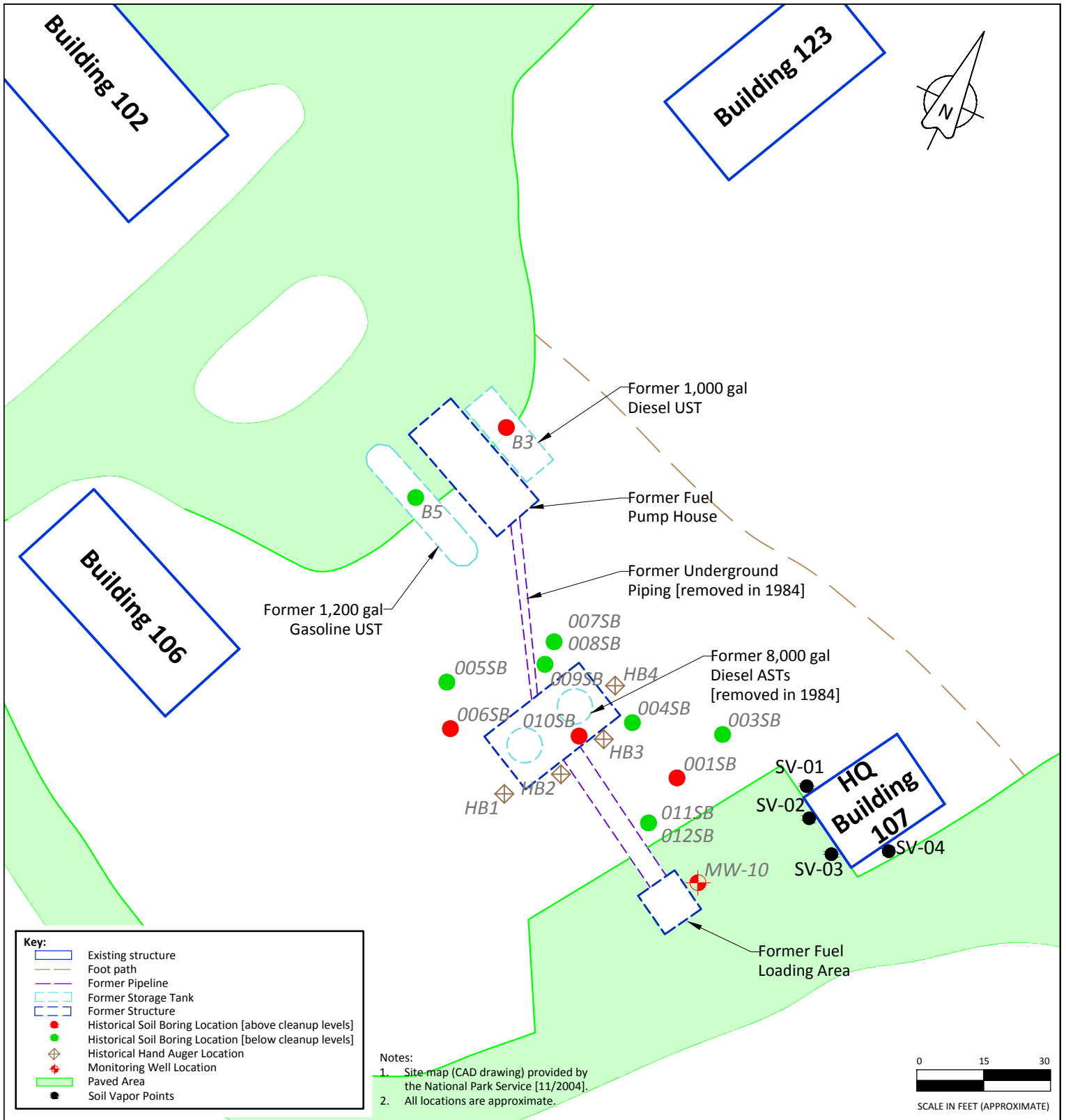
Soil Gas Sampling  
Headquarters Building 107, Denali National Park and Preserve, Alaska



**Site Plan**

Project Number: 20194.4653	Figure Number:
Date: 04.14.2014	<b>2</b>
Drawn By: G.R.	





Soil Gas Sampling  
Headquarters Building 107, Denali National Park and Preserve, Alaska



Soil Vapor Points and Historic Sampling Locations

Project Number: 20194.4653	Figure Number:
Date: 04.14.2014	3
Drawn By: G.R.	

Figure 4. NPS Denali Building 107 Site Summary Screenshot from GIS

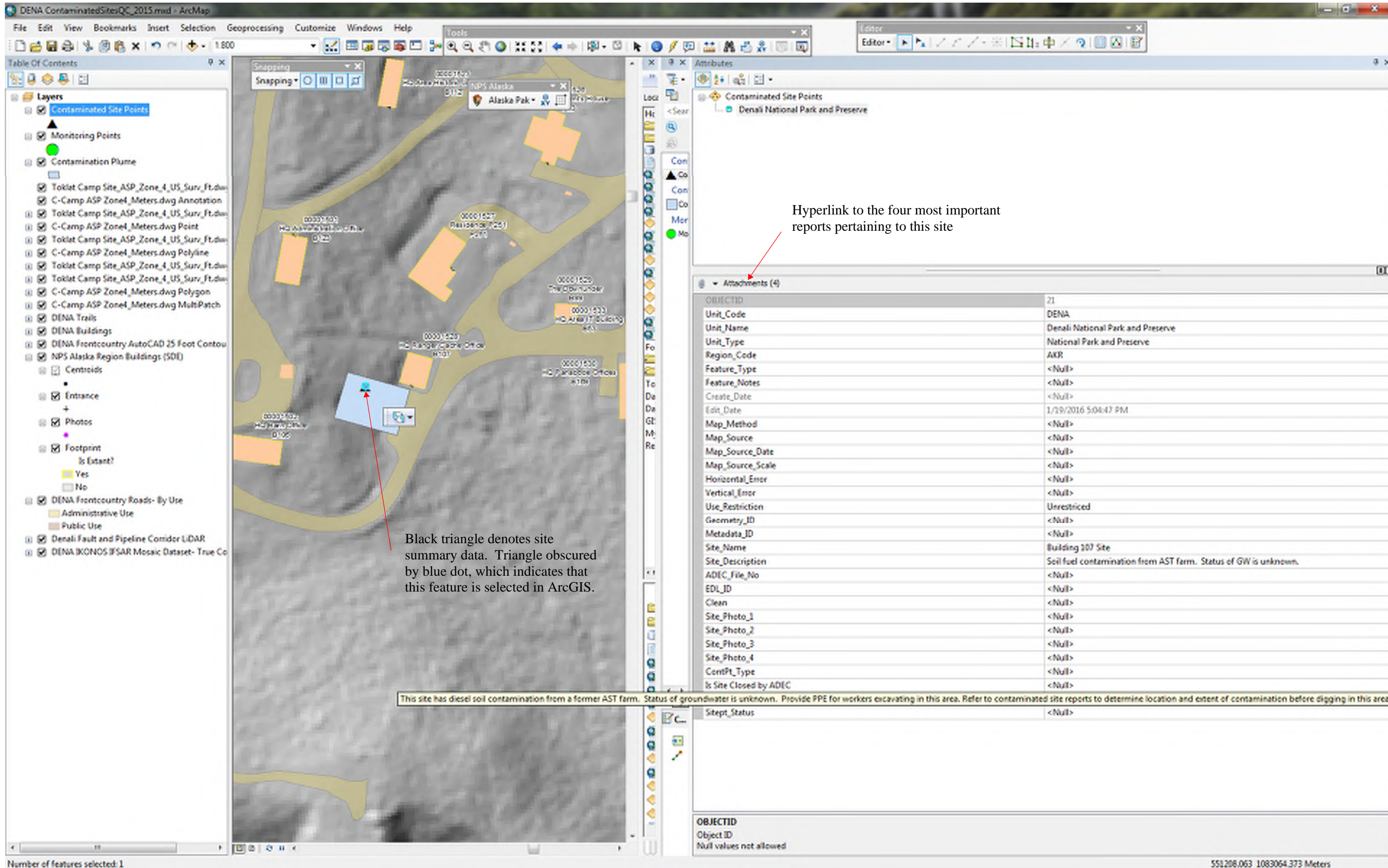


Figure 5. NPS Denali Building 107 Site Soil Contamination Plume Screenshot from GIS

