



THE STATE
of **ALASKA**
GOVERNOR BILL WALKER

Department of Environmental Conservation

Division of Spill Prevention and Response
Contaminated Sites Program

610 University Ave.
Fairbanks, Alaska 99709-3643
Main: 907.451.2370
Fax: 907.451.2155
www.dec.alaska.gov

File: 220.38.015
220.38.016
220.38.017

August 30, 2017

Bill Heubner
National Park Service
240 West 5th Avenue
Anchorage, AK, 99501

**Re: Decision Document: NPS Denali Nat'l Park HQ Bldg 27, NPS Denali Nat'l Park HQ Bldg 28, and NPS Denali Nat'l Park HQ Bldg 34
Cleanup Complete Determination – Institutional Controls**

Dear Mr. Heubner:

The Alaska Department of Environmental Conservation (DEC), Contaminated Sites Program has completed a review of the environmental records associated with the National Park Service (NPS) Denali National Park Headquarters (HQ) Building 27, Building 28, and Building 34 sites. 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 Headquarters Buildings 27, 28, and 34 sites, which are located in the offices of 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 these sites.

Site Name and Location:

NPS Denali National Park HQ Bldgs 27, 28, & 34
Denali National Park Headquarters
Denali Park, AK 99755

Name and Mailing Address of Contact Party:

Bill Heubner
National Park Service
240 West 5th Avenue
Anchorage, AK 99501

DEC Site Identifiers:

File No: 220.38.015, 220.38.016, & 220.38.017
Hazard ID: 25281, 25282, & 25283

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. Buildings 27, 28, and 34 are year-round residences for NPS employees. In 2004, the NPS replaced two aboveground storage tanks (ASTs) and fuel lines that provided heating oil to these buildings. Contaminated soil was encountered during this work.

Groundwater is present at approximately 55-feet in the area of these buildings, and generally flows to the south. The drinking water source for the Headquarters Area is on the east side of Rock Creek, north of the Headquarters Area.

Contaminants of Concern and Cleanup Levels

Cleanup levels for these sites are established in 18 AAC 75.340, Method Two, Tables B1 and B2, Under 40 Inch Zone. Soil samples have been analyzed for diesel range organics (DRO) and benzene, toluene, ethylbenzene, and xylenes (BTEX). Soil sample results have shown DRO, ethylbenzene, and xylenes above the cleanup levels.

Table 1 – Soil Cleanup Levels¹

Contaminant of Concern	Human Health (mg/kg)	Migration to Groundwater (mg/kg)
Ethylbenzene	49	0.13
Xylenes	57	1.5
DRO	10,250 (Ingestion)	250

¹ – Method Two - Soil Cleanup Levels, Tables B1 and B2

mg/kg = milligrams per kilogram

DRO = diesel range organics

Characterization and Cleanup Activities

In 2004, the NPS replaced the AST that serviced Buildings 27 and 28 and the AST at Building 34. Petroleum contaminated soil was identified during these activities, and in 2005, the NPS conducted removal actions at the former AST locations. Approximately 150 cubic yards (cy) of petroleum contaminated soil was removed from the former AST location between Buildings 27 and 28. A large boulder was encountered during excavation activities at a depth of 7 feet, limiting the depth of excavation. Confirmation samples were analyzed for DRO and BTEX. Sample results from the sample collected on top of the boulder documented DRO, ethylbenzene, and xylenes in exceedance of cleanup levels at concentrations of 14,000 mg/kg, at 0.35 mg/kg, and at 3.9 mg/kg, respectively. A sample collected next to the boulder at 10-feet documented DRO at 7,900 mg/kg and xylenes at 2.8 mg/kg. Sidewall samples from 3.5, 4, and 5 feet were all below cleanup levels.

An additional 10 cy of petroleum contaminated soil was removed from where the former piping from the AST entered Building 28. Not all contaminated soil could be removed due to the location of the building. Confirmation samples were analyzed for DRO and BTEX. One sidewall sample collected from near the building foundation at a depth of 3 feet contained DRO at 1,900-mg/kg. All other sample results were below cleanup levels.

At the Building 34 site, approximately 60 cy of petroleum contaminated soil was removed. Confirmation samples were analyzed for DRO and BETX. Results from one sample at 6.5 feet depth had DRO at 2,000 mg/kg. All other results were below cleanup levels. Further excavation was limited by an asphalt driveway. All contaminated soil was transported off-site for thermal remediation at OIT.

In 2003, monitoring well MW-7 was installed in between Buildings 27, 28, and 34 as part of a larger groundwater flow investigation at the Headquarters Area. Groundwater samples from MW-7 have been analyzed for DRO and BTEX. All results have been below cleanup levels.

In 2012, a vapor intrusion assessment was performed at Buildings 27, 28, and 34, including interviewing the residents of Building 27, and reviewing building plans. It was determined that all three of these buildings had operating radon mitigation systems and no further assessment was necessary.

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 non-carcinogenic 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 for each site is presented in the tables below.

Table 2 – Building 27 Exposure Pathway Evaluation

Pathway	Result	Explanation
Surface Soil Contact	Pathway Incomplete	Contaminated surface soil has been removed from this site.
Sub-Surface Soil Contact	Exposure Controlled	Petroleum contaminated soil remains in the sub-surface above cleanup levels. 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	A De Minimis volume of petroleum contaminated soil remains in the sub-surface above the outdoor air inhalation cleanup level.
Inhalation – Indoor Air (vapor intrusion)	Exposure Controlled	The building has an operating radon mitigation system.
Groundwater Ingestion	Pathway Incomplete	Petroleum contaminated soil remains at this site above cleanup levels, however contamination is not expected to migrate to the depth of groundwater. Groundwater sample results are below cleanup levels.
Surface Water Ingestion	Pathway Incomplete	The nearest surface water body is Rock Creek, approximately 250 feet east of the site. Remaining contamination is in the sub-surface soil and not expected to migrate.

Wild and Farmed Foods Ingestion	Pathway Incomplete	This site is within the Headquarters Area of Denali National Park & Preserve. 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.

Table 3 – Building 28 Exposure Pathway Evaluation

Pathway	Result	Explanation
Surface Soil Contact	Pathway Incomplete	Contaminated surface soil has been removed from this site.
Sub-Surface Soil Contact	De Minimis Exposure	Petroleum contaminated soil remains in the sub-surface above migration to groundwater cleanup levels but below health based cleanup levels.
Inhalation – Outdoor Air	De Minimis Exposure	Contaminant concentrations remaining in the sub-surface are below health based cleanup levels.
Inhalation – Indoor Air (vapor intrusion)	Exposure Controlled	The building has an operating radon mitigation system.
Groundwater Ingestion	Pathway Incomplete	Petroleum contaminated soil remains at this site above migration to groundwater cleanup levels, however contamination is not expected to migrate to the depth of groundwater. Groundwater sample results are below cleanup levels.
Surface Water Ingestion	Pathway Incomplete	The nearest surface water body is Rock Creek, approximately 250 feet east of the site. Remaining contamination is in the sub-surface soil and not expected to migrate.
Wild and Farmed Foods Ingestion	Pathway Incomplete	This site is within the Headquarters Area of Denali National Park & Preserve. 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.

Table 4 – Building 34 Exposure Pathway Evaluation

Pathway	Result	Explanation
Surface Soil Contact	Pathway Incomplete	Contaminated surface soil has been removed from this site.
Sub-Surface Soil Contact	De Minimis Exposure	Petroleum contaminated soil remains in the sub-surface above migration to groundwater cleanup levels but below health based cleanup levels.
Inhalation – Outdoor Air	De Minimis Exposure	Contaminant concentrations remaining in the sub-surface are below health based cleanup levels.
Inhalation – Indoor Air (vapor intrusion)	Exposure Controlled	The building has an operating radon mitigation system.

Groundwater Ingestion	Pathway Incomplete	Petroleum contaminated soil remains at this site above migration to groundwater cleanup levels, however contamination is not expected to migrate to the depth of groundwater. Groundwater sample results are below cleanup levels.
Surface Water Ingestion	Pathway Incomplete	The nearest surface water body is Rock Creek, approximately 250 feet east of the site. Remaining contamination is in the sub-surface soil and not expected to migrate.
Wild and Farmed Foods Ingestion	Pathway Incomplete	This site is within the Headquarters Area of Denali National Park & Preserve. 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 contamination remains in subsurface soil above levels suitable for unrestricted future use; however 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 that 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 cleanup 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.

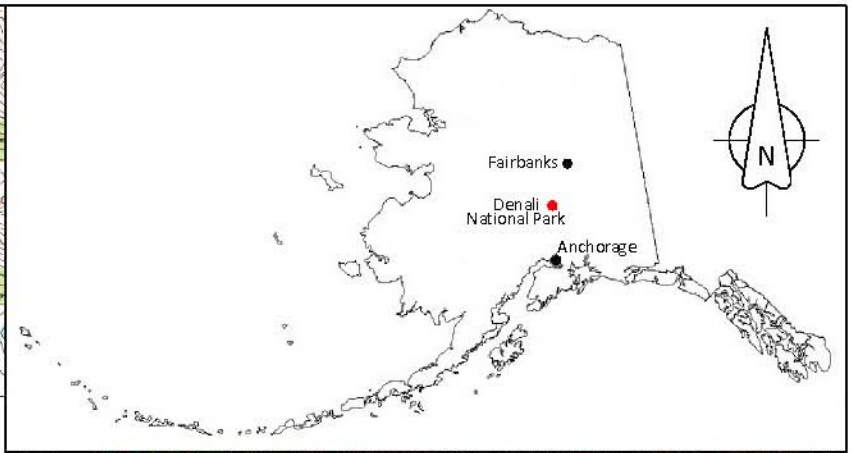
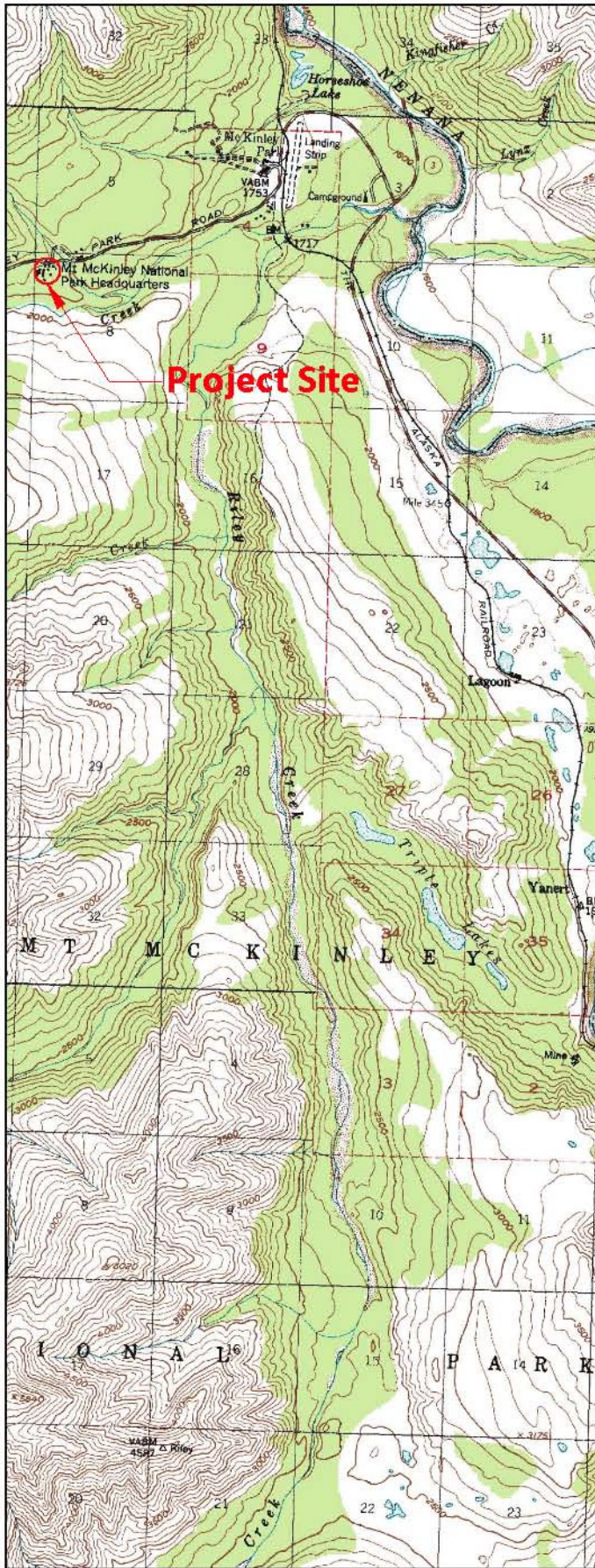
If you have questions about this closure decision, please feel free to contact me at (907) 451-2370 or gretchen.caudill@alaska.gov.

Sincerely,

Gretchen Caudill
Project Manager

Enclosures: Figure 1 – State and Site Vicinity Map (Ahtna, 2012)
Figure 2 – Site Plan (Ahtna, 2012)
Figure 3 – Water Bodies (Ahtna, 2012)
Figure 4–9 – Institutional Control NPS GIS database (NPS, 2017)

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



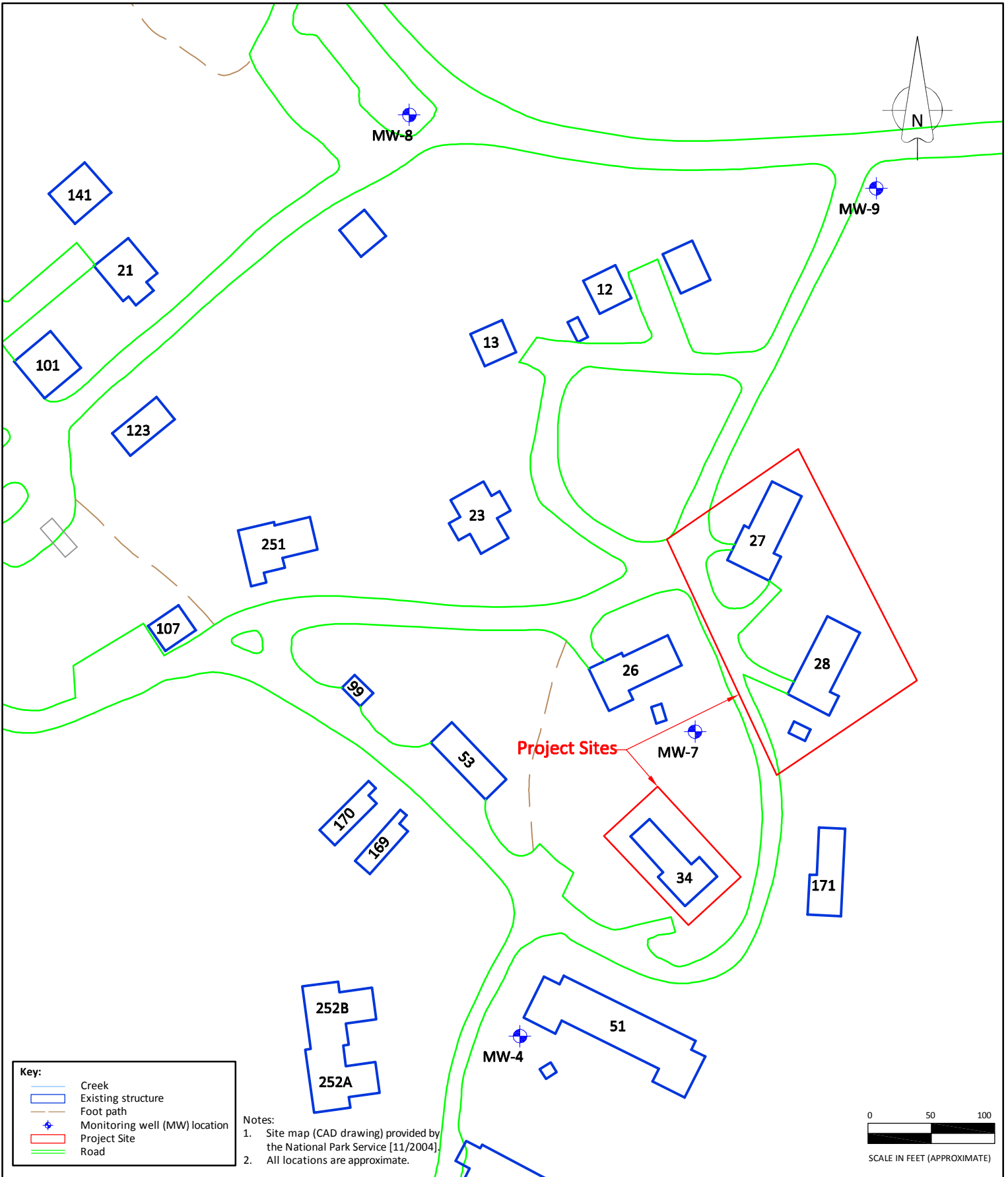
Headquarters Buildings 27, 28 and 34 - Vapor Intrusion Work Plan
Denali National Park and Preserve, Alaska



State and Site Vicinity Maps

Project Number: 20194.8135	Figure Number: 1
Date: 07-30-2012	
Drawn By: L.B.	

NOT TO SCALE

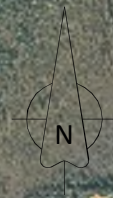


Headquarters Buildings 27, 28 and 34 - Vapor Intrusion Work Plan
Denali National Park and Preserve, Alaska

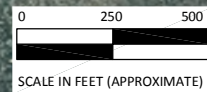


Site Plan

Project Number: 20194.8135	Figure Number:
Date: 08-01-2012	2
Drawn By: L.B.	



- Notes:
1. All locations are approximate.
2. Aerial: Bureau of the Census (May 2006).



Headquarters Buildings 27, 28 and 34 - Vapor Intrusion Work Plan Denali National Park and Preserve, Alaska



Water Bodies

Project Number: 20194.8135	Figure Number: 3
Date: 07-30-2012	
Drawn By: L.B.	

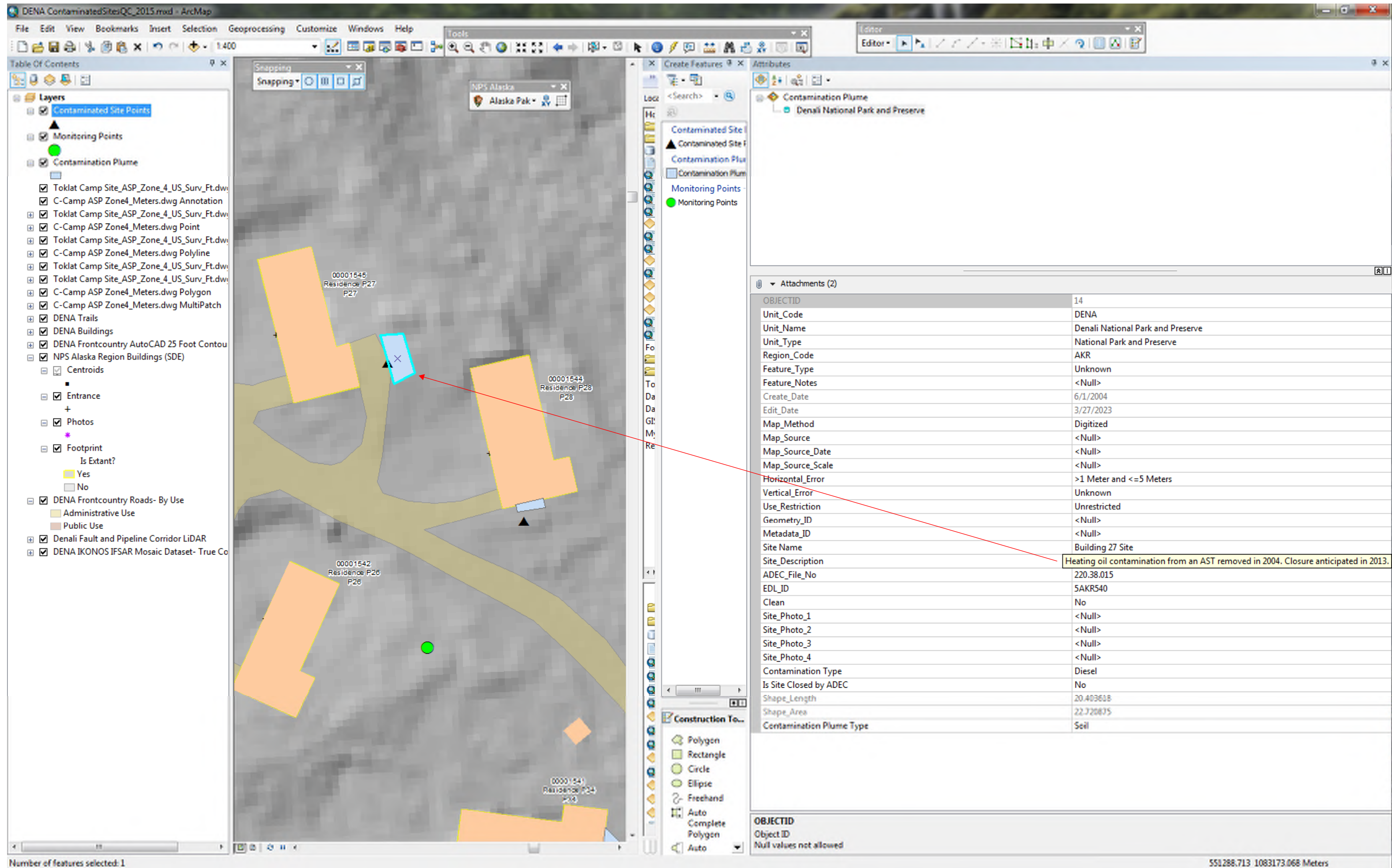
NPS Figure 4. Denali Building 27 Site Summary Screenshot from GIS

The screenshot displays the ArcMap interface with the following components:

- Table of Contents:** Lists various layers including 'Contaminated Site Points', 'Monitoring Points', 'Contamination Plume', and 'DENA Buildings'.
- Map:** Shows a satellite view of the site with orange buildings, a green dot, and a blue triangle. A red arrow points to the blue triangle with the text: "Black triangle denotes site summary (blue dot indicates this feature is selected in ArcGIS)".
- Attributes Panel:** Shows the selected feature's details. A red arrow points to the 'Attachments (1)' section with the text: "Hyperlink to 2006 soil excavation and remediation report".
- Attribute Table:**

OBJECTID	22
Unit_Code	DENA
Unit_Name	Denali National Park and Preserve
Unit_Type	National Park and Preserve
Region_Code	AKR
Feature_Type	<Null>
Feature_Notes	<Null>
Create_Date	<Null>
Edit_Date	1/19/2016 4:47:34 PM
Map_Method	<Null>
Map_Source	<Null>
Map_Source_Date	<Null>
Map_Source_Scale	<Null>
Horizontal_Error	<Null>
Vertical_Error	<Null>
Use_Restriction	Unrestricted
Geometry_ID	<Null>
Metadata_ID	<Null>
Site_Name	Headquarters Building 27 Site
Site_Description	Heating oil soil contamination from former AST and lines
ADEC_File_No	220.38.015
EDL_ID	5AKRS40
Clean	No
Site_Photo_1	<Null>
Site_Photo_2	<Null>
Site_Photo_3	<Null>
Site_Photo_4	<Null>
CentPt_Type	<Null>
Is Site Closed by ADEC	<Null>
Sitept_Status	<Null>
- Bottom Status Bar:** Shows "Number of features selected: 1" and coordinates "551291.782 1083174.444 Meters".

NPS Figure 5. Denali Building 27 Site Soil Contamination Plume Screenshot from GIS



NPS Figure 6. Denali Building 28 Site Summary Screenshot from GIS

Number of features selected: 1

551291.041 1083156.452 Meters

Table of Contents:

- Contaminated Site Points
- Monitoring Points
- Contamination Plume
- Toklat Camp Site_ASP_Zone_4_US_Surv_Ft.dwg
- C-Camp ASP Zone4_Meters.dwg Annotation
- Toklat Camp Site_ASP_Zone_4_US_Surv_Ft.dwg
- C-Camp ASP Zone4_Meters.dwg Point
- Toklat Camp Site_ASP_Zone_4_US_Surv_Ft.dwg
- C-Camp ASP Zone4_Meters.dwg Polyline
- Toklat Camp Site_ASP_Zone_4_US_Surv_Ft.dwg
- Toklat Camp Site_ASP_Zone_4_US_Surv_Ft.dwg
- C-Camp ASP Zone4_Meters.dwg Polygon
- C-Camp ASP Zone4_Meters.dwg MultiPatch
- DENA Trails
- DENA Buildings
- DENA Frontcountry AutoCAD 25 Foot Contour
- NPS Alaska Region Buildings (SDE)
- Centroids
- Entrance
- Photos
- Footprint
 - Is Extant?
 - Yes
 - No
- DENA Frontcountry Roads- By Use
 - Administrative Use
 - Public Use
- Denali Fault and Pipeline Corridor LiDAR
- DENA IKONOS IFSAR Mosaic Dataset- True Color

Attribute Table:

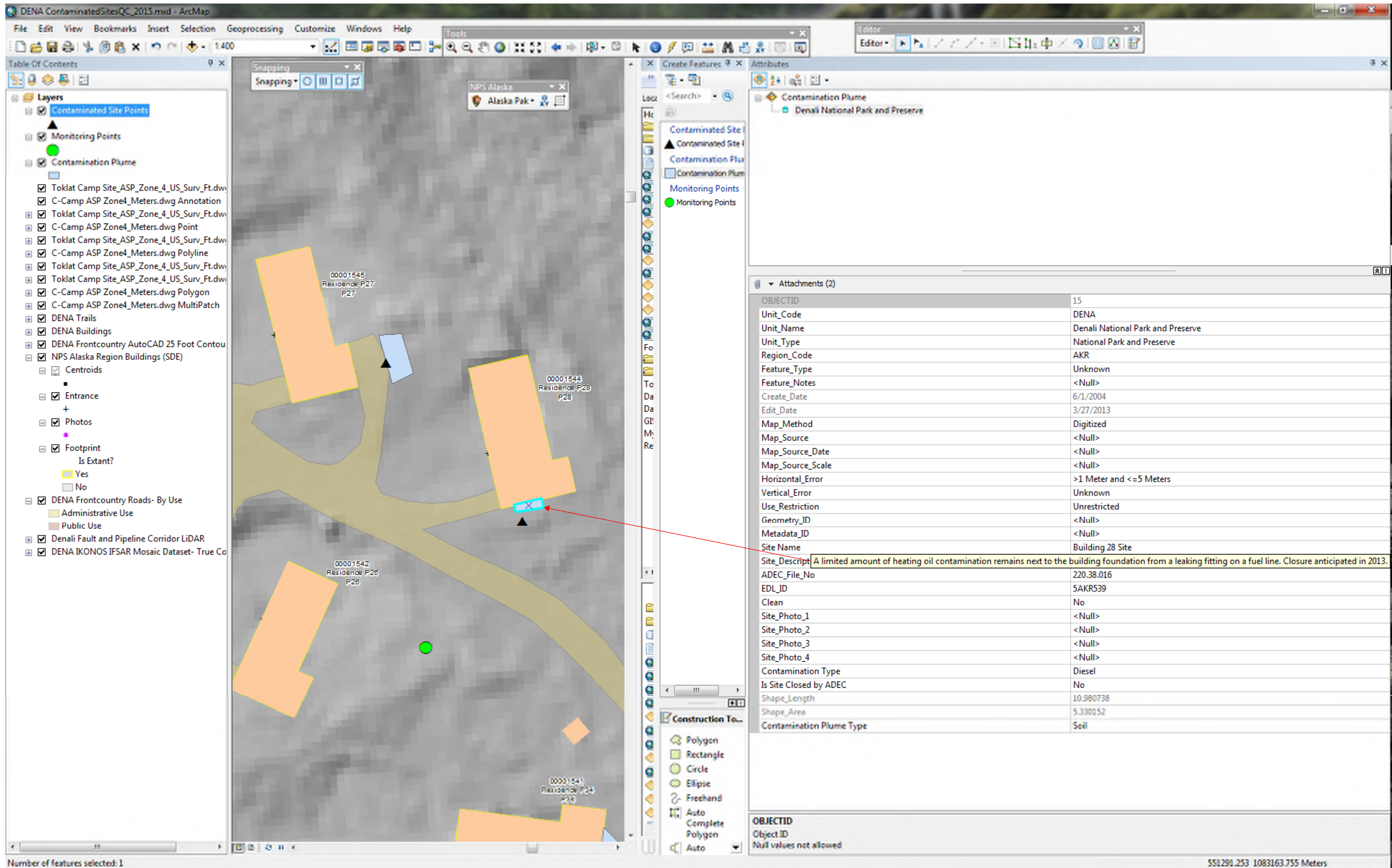
OBJECTID	23
Unit_Code	DENA
Unit_Name	Denali National Park and Preserve
Unit_Type	National Park and Preserve
Region_Code	AKR
Feature_Type	<Null>
Feature_Notes	<Null>
Create_Date	<Null>
Edit_Date	1/26/2016 6:20:02 PM
Map_Method	<Null>
Map_Source	<Null>
Map_Source_Date	<Null>
Map_Source_Scale	<Null>
Horizontal_Error	<Null>
Vertical_Error	<Null>
Use_Restriction	Unrestricted
Geometry_ID	<Null>
Metadata_ID	<Null>
Site_Name	Headquarters Building 28 Site
Site_Description	Heating oil soil contamination associated with former AST and lines
ADEC_File_No	220.38.016
EDL_ID	5AKR539
Clean	No
Site_Photo_1	<Null>
Site_Photo_2	<Null>
Site_Photo_3	<Null>
Site_Photo_4	<Null>
ContPt_Type	<Null>
Is Site Closed by ADEC	Yes
Sitept_Status	<Null>

Heating oil in the soil may remain next to the foundation on the south side of the residence. Proper PPE is required when excavating in this area. Refer to contaminated site reports to determine location and extent of contamination.

Black triangle denotes overall site summary information. Blue dot obscuring the triangle indicates that this triangle is selected.

Hyperlink to soil excavation and remediation report and VI study

NPS Figure 7. Denali Building 28 Soil Contamination Plume Screenshot from GIS



NPS Figure 8. Denali Building 34 Site Summary Screenshot from GIS

The screenshot displays the ArcMap interface with the following components:

- Table of Contents:** Lists various layers including Contaminated Site Points, Monitoring Points, Contamination Plume, Toklat Camp Site, C-Camp ASP, DENA Trails, DENA Buildings, DENA Frontcountry Roads, Denali Fault and Pipeline Corridor LiDAR, and DENA IKONOS IFSAR Mosaic Dataset.
- Map:** Shows a site labeled "00001541 Residence P34" with an orange polygon representing a building footprint. A black triangle symbol is placed on the map, pointing to the site's summary information.
- Attributes Panel:** Displays the following data for the selected site:

Attachments (1)	
OBJECTID	24
Unit_Code	DENA
Unit_Name	Denali National Park and Preserve
Unit_Type	National Park and Preserve
Region_Code	AKR
Feature_Type	<Null>
Feature_Notes	<Null>
Create_Date	<Null>
Edit_Date	1/19/2016 4:44:17 PM
Map_Method	<Null>
Map_Source	<Null>
Map_Source_Date	<Null>
Map_Source_Scale	<Null>
Horizontal_Error	<Null>
Vertical_Error	<Null>
Use_Restriction	Unrestricted
Geometry_ID	<Null>
Metadata_ID	<Null>
Site_Name	Headquarters Building 34 Site
Site_Description	Heating oil contaminated soil from former AST and lines removed from site
ADEC_File_No	220.38.017
EDL_ID	UNK
Clean	No
Site_Photo_1	<Null>
Site_Photo_2	<Null>
Site_Photo_3	<Null>
Site_Photo_4	<Null>
ContPt_Type	<Null>
Is Site Closed by ADEC	<Null>
Sitept_Status	<Null>
- Annotations:**
 - A red arrow points to the black triangle on the map with the text: "Black triangle denotes summary information about the site".
 - Another red arrow points to the "Attachments" section of the attribute table with the text: "Hyperlink to 2006 site assessment and soil remediation report".
- Map Text:** A text box at the bottom of the map area reads: "Heating oil in the soil may be encountered to the east of the building adjacent to the driveway. Proper PPE should be used. Refer to contaminated site reports to determine location and extent of contamination."

NPS Figure 9. Denali Building 34 Soil Contamination Plume Screenshot from GIS

