RENOVA environmental services

SITE CLOSURE REPORT

FINAL

JUNE 2018

Atlas S-9

78 Higby Road (A.K.A. 78 Town Garage Road or 78/85 Higby Road), Dannemora, New York

FUDS Property # C02NY0214

Prepared for:

U.S. Army Corps of Engineers
New England District
Concord, Massachusetts

Contract # W912WJ-17-C-0012

Prepared by:

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Reviewed by:

Kelly Giles
Project Manager

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TABLE OF CONTENTS

FIGURES

APPENDICES

LIST OF ACRONYMS

AFB	Air Force Base
EPI	Environmental Probing Investigations, Inc. of Cream Ridge, NJ
GPR	Ground Penetrating Radar
ICBM	Intercontinental Ballistic Missile
SMS	Strategic Missile Squadron
USACE	United States Army Corps of Engineers
UST	Underground Storage Tank

1.0 INTRODUCTION

Renova Environmental Services, LLC (Renova) has prepared this Site Closure Report to document activities performed at the Atlas S-9 site, located at 78 Higby Road (A.K.A. 78 Town Garage Road or 78/85 Higby Road), Clinton County, New York. All work within this report has been performed under United States Army Corps of Engineers (USACE) Contract # W912WJ-17-C-0012.

2.0 SITE IDENTIFICATION

The Atlas S-9 property, identified as FUDS property number C02NY0214, is located at the end of Higby Road (A.K.A. Town Garage Road) in the town of Dannemora, New York. The site was constructed in the early 1960's and was formerly used as a silo for the Series F Atlas missile, a missile type operationally utilized by the United States in the Intercontinental Ballistic Missile (ICBM) role between September of 1962 and April of 1966. The Atlas S-1 site was one (1) of twelve (12) missile complexes located throughout New York and Vermont assigned to the 556th Strategic Missile Squadron (SMS) at Plattsburgh Air Force Base (AFB) in Plattsburgh, New York. The site was deactivated sometime prior to the 556th SMS inactivation in June of 1965.

An area of the site was identified for a Ground Penetrating Radar (GPR) investigation. The area is suspected to contain or have contained an estimated 10,000-gallon diesel underground storage tank (UST).

The property is currently used as the township headquarters and public works yard for Dannemora. The surface of the site is covered by asphalt as well as various buildings used for township business. The site location is identified on **Figure 1**. A detailed view is included as **Figure 2**. Photographs and diagrams provided by USACE are included as **Appendix A**.

3.0 SCOPE OF WORK

Documentation provided to Renova by USACE indicated that the property is currently owned by the Township of Dannemora. Renova's point of contact for the site was Mr. William Chase, Town Supervisor. The scope of work included the following tasks.

- Perform geophysical investigation using GPR at area of suspected estimated 10,000-gallon diesel tank, approximately 80 feet by 160 feet; and,
- Perform test pit(s) as needed at the suspected UST area to verify if the tank remains in the ground.

4.0 PRE-CONSTRUCTION MEETING

On May 16, 2018, Ms. Kelly Giles, the Project Manager, and Mr. Anthony Denora, the Onsite Quality Control Manager, held a pre-construction meeting for the Atlas S-9 investigation. Due to an unanticipated change in personnel, Renova held a second pre-construction meeting on May 21, 2018 with Robert Anstatt, the Onsite Quality Control Manager. Renova reviewed the scope of work for the Atlas S-9 site at these meetings.

5.0 SITE WORK

Prior to commencement of site activities, Renova notified New York 811 to perform underground utility mark-outs at the Atlas S-9 site. Confirmation for the mark-out is included as **Appendix B.**

Renova mobilized to the Site with a geophysicist from Environmental Probing Investigations, Inc. (EPI) of Cream Ridge, New Jersey on May 22, 2018 to perform a geophysical investigation at the location of the suspected UST, identified on **Figure 2.** The investigation made use of a GSSI SIR-3000 GPR device as well as a Vivax-Metrotech line tracing system, which included a Loc-10Tx transmitter and VLocPro2 receiver.

The area to be investigated was scanned with the GPR device in a north-south and east-west direction at a spacing of approximately 4'. No targets consistent with the size or shape of a UST were identified during the survey. Numerous buried utilities were discovered sitting at depths of between 2-3' below ground surface, and their locations were mapped using the line tracing technology. Due to the tight spacing of the utilities, the possibility that they were actively used at the township buildings, and the understanding that these could be identified as utilities and not "anomalies," test pitting was not conducted in order to avoid any potential damage to the underground structures.

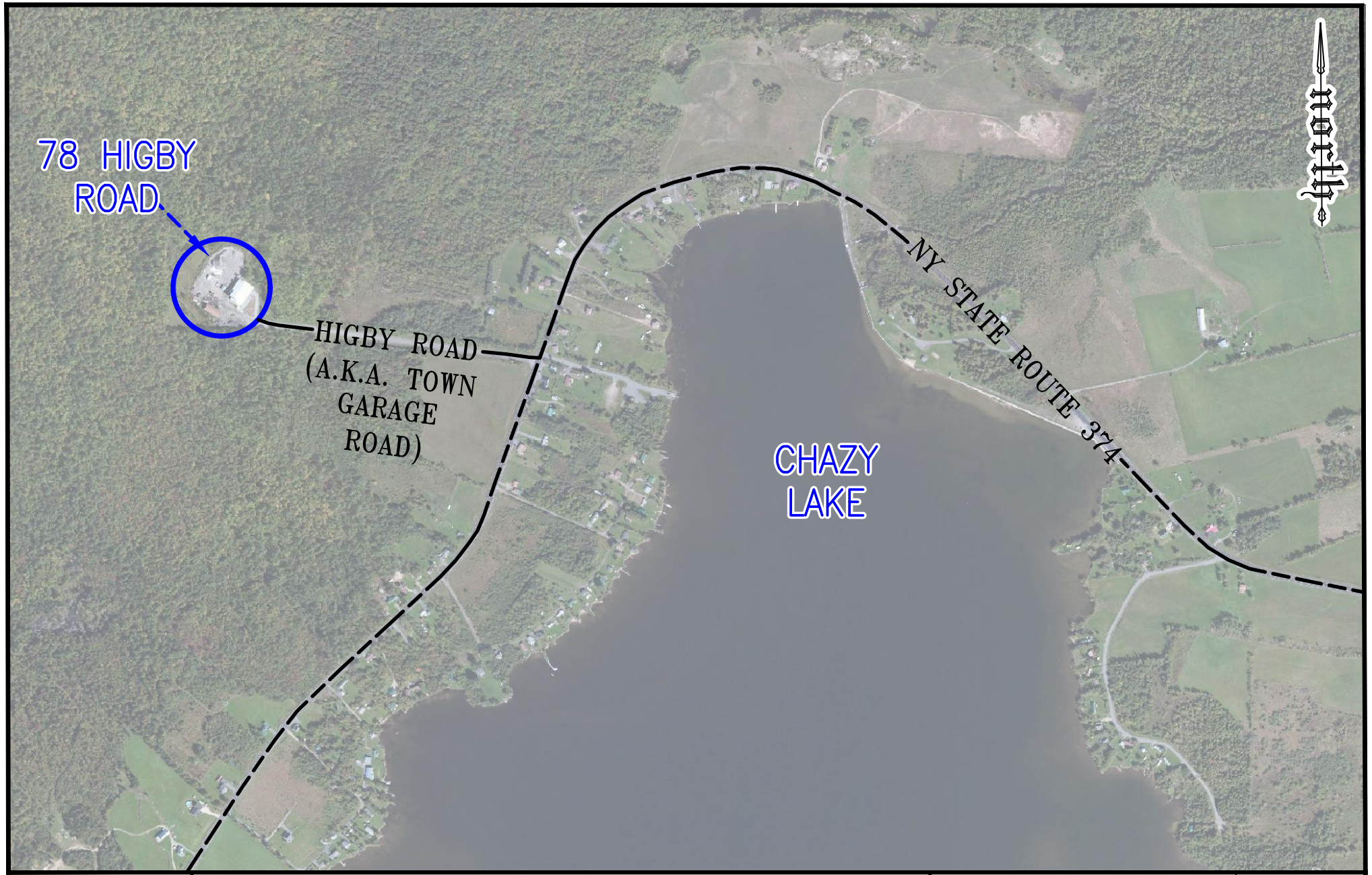
A copy of EPI's GPR Survey Report is included as **Appendix C.** Site photographs are included as **Appendix D.**

6.0 CONCLUSION

As part of USACE Contract # W912WJ-17-C-0012, Renova performed a geophysical investigation at the Atlas S-9 site, located in Dannemora, New York. Based upon the results of the investigation, Renova did not find evidence of a UST. Due to the density of the underground utility findings and the absence of any magnetic anomalies during the GPR survey, it is concluded that the suspected UST has been removed at a previous date.

FIGURES

Figure 1 – Site Overview
Figure 2 – Detailed Site Plan: Site 1



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LEGEND:

SITE LOCATION

SCALE IN FEET
0 400 800

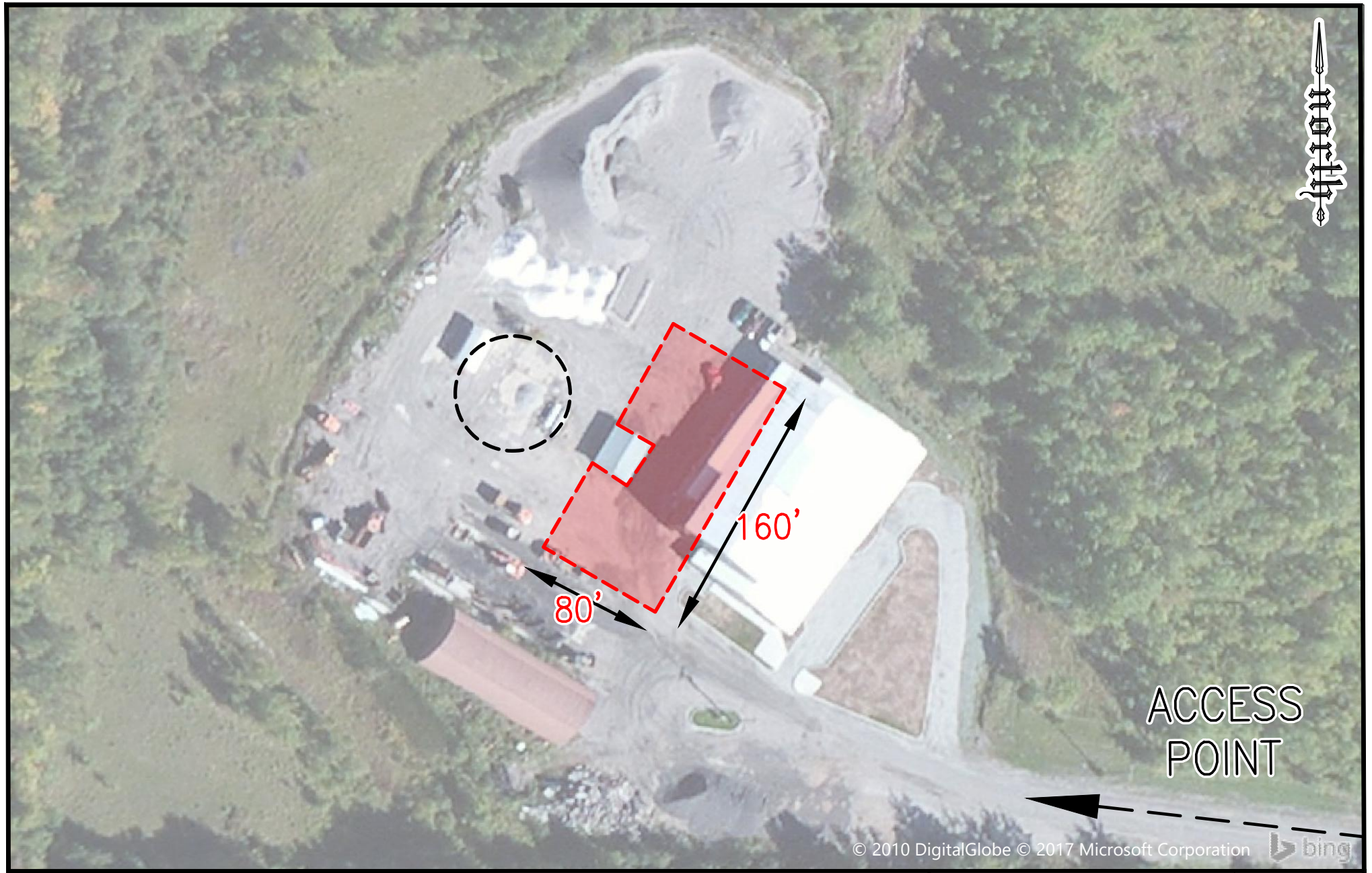
ATLAS S-9: DANNEMORA, NY
SITE OVERVIEW

U.S. ARMY CORPS OF ENGINEERS
CONTRACT # W912WJ-17-C-0012

FIGURE 1

DATE: 06/07/2018

DRAWN BY: KEG



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LEGEND:

MISSILE SILO DOORS

AREA OF INVESTIGATION

SCALE IN FEET

0 40 80

ATLAS S-9: DANNEMORA, NY
SITE PLAN

U.S. ARMY CORPS OF ENGINEERS
CONTRACT # W912WJ-17-C-0012

FIGURE 2

DATE: 06/07/2018

DRAWN BY: KEG

APPENDIX A

USACE-Provided Documents

US Army Corps
of Engineers

ATLAS S-9
DANNEMORA, NEW YORK
FORMERLY USED DEFENSE SITES (FUDS) PROGRAM
ATTACHMENT 6 - LOCATION & PHOTOGRAPHS OF PROJECT SITE

Proposed UST investigation at the former Atlas S-9.

Atlas S-9, Dannemora, NY

View of Investigation Area

Another view of Investigation Area

APPENDIX B

Mark-Out Confirmation

RENOVA
nvironmental services

Rebecca Hanson <rebecca@renovaenviro.com>

Stakeout Request 05118-120-048, Next Steps

1 message

DO_NOT_REPLY <APR_MailBot@digsafelynewyork.com> Fri, May 11, 2018 at 10:59 AM
To: rebecca@renovaenviro.com

REBECCA HANSON,

This is an automated message. DO NOT REPLY, it will not go anywhere.

The Dig Safely New York issued Company ID for RENOVA ENVIRONMENTAL SERVICES is 127795. You can use this as a shortcut to identify yourself the next time you call. No worries if you forget it, however, as your phone number can work as well.

Your stakeout request 05118-120-048, TEST PIT at 78-85 TOWN GARAGE RD in the Township of Dannemora, resulted the following utilites being notified.

Charter Communications (Fiber, Telephone, Catv).
Verizon / East (Fiber, Telephone).

Now that you have taken the important first step of calling before you dig, here is what happens next:

You've scheduled your excavation to begin on 05/22/2018 07:00:00 AM. The utilities have until that time to mark their facilities around your indicated job site. To assist in that process, it is suggested that you outline the perimeter of the digsite using white paint or white flags, to narrow down the location as closely as is possible.

After a utility has marked, or if they have no facilities in that immediate area, each utility should respond to Dig Safely New York's APR system with their results, indicating that their stakeout process is complete, or that they had no facilities in the area. Dig Safely New York's APR system will consolidate their responses and attempt to send the result to you a few business hours before 05/22/2018 07:00:00 AM, or it will send it immediately if all have checked-in sooner. Some facility owners may also contact you directly if a high risk or high value facility is nearby.

You should receive "Positive Response" from *each* utility listed above before you commence excavating. You can view the current response status at any time by visiting http://www.digsafelynewyork.com/apr or you can dial 1-888-Diggers (888-344-4377) to check via phone call. It will want to know your phone and ticket number (732-659-1000, 05118-120-048).

Note that the Dig Safely New York call center agents cannot tell you if a utility has responded or not. Call Center Agents are not allowed to see this information.

If a utility has not provided Positive Response by your stated starting time, contact them via their Stakeout Contact that is provided, below. As a last resort, you can contact the one-call center and inform us of the problem. Remember to reference ticket 05118-120-048. Also remember that Dig Safely New York is a call center; it is not one of the utilities that were involved, and it is not a locating service.

Charter Communications: Usic Voice Calls 800-262-8600.
Verizon / East: Verizon (ppm Center) Stakeout Contact 855-226-9564.

The location of any privately owned utility (such as a service drop) is typically the responsibility of the property owner, since the property owner is the person who (a) owns it, and (b) had it installed. If the property owner is unsure of the location of the service drops, private locating services are available in most areas. Dig Safely New York has compiled a list of several of these services, but be advised that the list is incomplete and no endorsements are implied.
http://www.digsafelynewyork.com/excavators/private-locators

Once all utility operators have responded to your pending excavation request, you may begin excavation on your stated commencement date 05/22/2018 07:00:00 AM. Remember that you are required to hand dig within two feet of any markings prior to using mechanized equipment (Tolerance Zone) in order to verify the location and depth of the facility. Or, you can also use vacuum excavation to accomplish this goal.
http://www.digsafelynewyork.com/excavators/tolerance-zone

Thank you for utilizing this one call service to ensure a safe excavation.

APPENDIX C

Environmental Probing Investigations, Inc.: GPR Survey Report

ENVIRONMENTAL PROBING INVESTIGATIONS, INC.

833 MONMOUTH ROAD
CREAM RIDGE, NJ 08514
609.758.9000

SUBSURFACE SURVEY REPORT

DATE	May 22, 2018	**CLIENT**	Renova Environmental
WEATHER	Cloudy, 60s	**PROJECT NAME**	Nike Missile Site Atlas S-9
EPI Geophysicist	Paul McLeod	**PROJECT ADDRESS**	78/85 Higby Road Dannemora, NY

EQUIPMENT USED

GPR: GSSI SIR-3000 RADAR SYSTEM- 400 MHz antenna	**X**
RADIO FREQUENCY (RF) LINE TRACING: VIVAX/METROTECH – vLOCPro2	**X**
TRIMBLE Geo7X GPS	**X**

PROJECT SCOPE

Environmental Probing Investigations, Inc. (EPI) was contracted by Renova Environmental to scan the historic Nike Missile site (Atlas S-9) for extant USTs.

Visual Site Inspection

The former Nike Missile site located at 78/85 Higby Road in Dannemora, NY currently serves as the township offices for Dannemora, NY. The concrete infrastructure of the missile silo and command center is still in place beneath the ground. The survey area is approximately 80' x 160' and covers a rectangular area immediately southeast of the silo where a large UST was known to have been located in the past. Today a maintenance building sits in this area, but otherwise the flat project area is covered with sand or asphalt.

Geophysical Survey Results

The GPR survey made use of a GSSI SIR-3000 together with a 400 MHz antenna mounted on a cart. The method involves the transmission of microwave-like signals directly down into the ground and the reception of those same signals as they reflect back up to the receiver. The method works best in dry, sandy, resistive soils with an approximate depth of penetration of around 8'. In damp, clayey, conductive soils the depth of penetration may be as little as 2-3'. The soils at this particular project site allowed a signal penetration down to a depth of around 5-6'. Survey lines were run in at least two perpendicular directions at a line spacing of around 4'.

Line Tracing was undertaken with a Vivax-Metrotech system, specifically the Loc-10Tx (10 Watt) transmitter and a VLocPro2 receiver. The system works on at least two modes including a passive mode where the receiver detects any lines carrying current as well as an induction/conduction mode. In the induction/conduction mode, a specific radio frequency is transmitted into a cable or pipe (either through direct connection or through inductive coupling) and that same frequency is then detected with the receiver to trace the location of the buried pipe or cable.

No USTs were discovered anywhere on the site. Despite the fact that we were looking for a 20,000 gallon UST, I used a 4' line spacing to be able to find USTs that may be as small as 1000 gallons. A 20,000 gallon UST would have been plainly visible to GPR, therefore the results suggesting that the historic UST was removed are extremely reliable. In addition, a variety of unidentified buried utilities were also located and mapped, mostly using line tracing. These utilities sit at depths of 2-3'; these are likely to be electric lines and water lines, and they almost certainly post-date the era of the Nike Missiles. The density of the post-Nike utilities suggests that there was a lot of excavation in recent years, so it would make sense that the UST would have been removed.

Upon completion of the geophysics fieldwork, all of the results were surveyed using a Trimble Geo7X. The uncorrected location data from this instrument has an accuracy of approximately 2', but correction with Pathfinder software increases the accuracy to approximately 1'.

Limitations

EPI completes non-intrusive geophysical surveys using equipment and techniques consistent with the standards of the subsurface utility mapping industry. However, there can be no guarantee that every target will be detected at a particular site. Sub-surface conditions may prevent some or all geophysical methods from detecting a particular target. Targets that are non-metallic or deep, as well as areas that are paved or covered with re-enforced concrete may difficult to locate.

Every reasonable effort was made to locate all systems of interest whether indicated on records available to us or not, but EPI does not guarantee that all existing utility systems can or will be detected. The results of this investigation should only be used as a tool and should not be considered a guarantee regarding the presence or absence of USTs or piping.

PHOTO 1

South facing view of the project area. The small building near the center of the photo sits near the center of the survey. The lines in the sand were made by the GPR.

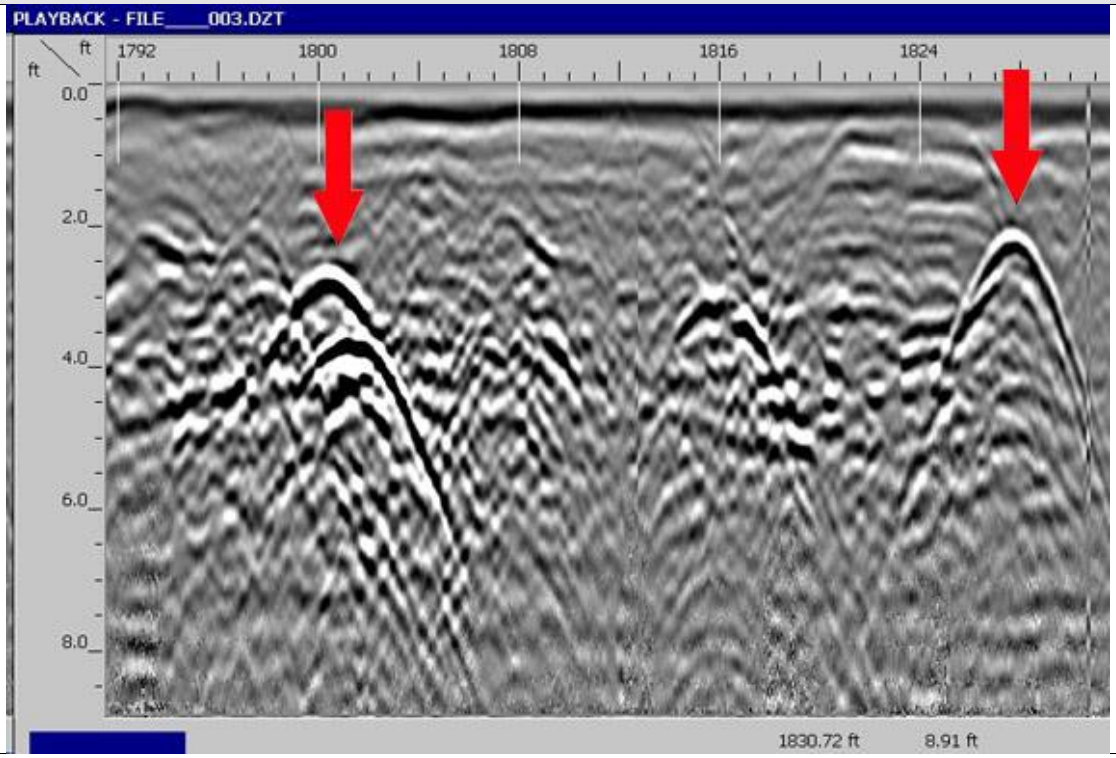
PHOTO 2

North facing photo of the project area shows the maintenance building. Asphalt pavement separates that small building from the large township builing on the right. The white mark on the asphalt at right indicates the south corner of the survey.

PHOTO 3

Airborne photo of the southwest half fo the project area shows the locations of numerous unidentified buried utilities. These sit at depths of between 2 and 3 feet.

PHOTO 4



A snapshot of the GPR data shows that the signal penetrated at least 6' deep. Two examples of the utilities discovered on the site (sitting at depths of 2-3') are marked by the red arrows.

APPENDIX D

Site Photographs

Photo 1 – Site location with mapped utilities

Photo 2 – Site location with mapped utilities

Photo 3 – Mapped underground utilities

Photo 4 – Underground utilities leading to township fueling station

Photo 5 – Underground utilities

Photo 6 – Underground utilities leading to township building