RENOVA environmental services

SITE CLOSURE REPORT

FINAL

DECEMBER 2020

Atlas S-6
641 Dry Bridge Road
Black Brook, New York
FUDS Property # C02NY0211

Prepared for:

U.S. Army Corps of Engineers
New England District
Concord, Massachusetts
Contract # W912WJ-17-C-0012

Prepared by:

Kathryn Martucci
Project Coordinator

Reviewed by:

Kelly Giles
Project Manager

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LIST OF ACRONYMS

AFB	Air Force Base
GPR	Ground Penetrating Radar
GPRS	GPRS, Inc.
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-6 site, located at 641 Dry Bridge Road, Black Brook, 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-6 property, identified as FUDS property number C02NY0211, is located on Dry Bridge Road, near the intersection of Buck Hill Road, in the town of Black Brook, 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-6 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 was suspected to contain or have contained an estimated 10,000-gallon diesel underground storage tank (UST).

The property is currently privately owned and unmaintained, covered by various grasses, wildflowers, and weeds, with asphalt comprising the entrance road and surrounding the missile silo entrance. 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

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 23 October 2020, Ms. Kelly Giles, the Project Manager, and Mr. Anthony Denora, the Onsite Quality Control Manager, held a pre-construction meeting for the Atlas S-6 investigation. Renova reviewed the scope of work for the Atlas S-6 site at this meeting.

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-6 site. Confirmation for the mark-out is included as **Appendix B.**

Renova mobilized to the Site with a geophysicist from GPRS, Inc. (GPRS) on 27 October 2020 to perform a geophysical investigation at the location of the suspected UST, identified on **Figure 2.** The investigation made use of an Underground Scanning Ground Penetrating Radar (GPR) Antenna, Electromagnetic Pipe and Cable Locator, Magnetometer, and a Split-Box. Mr. Harry Hendler from USACE was onsite for the duration of the site work.

The area to be investigated was scanned with the GPR device in a north-south and east-west direction at a spacing of approximately one foot. No targets consistent with the size or shape of a UST were identified during the survey. The survey did identify several metallic targets in the suspected area of the UST. Test pits with the excavator revealed several pieces of scrap metal and other various trash buried in the area.

A copy of the Survey Report from GPRS 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-6 site, located in Black Brook, New York. Based upon the results of the investigation, Renova did not find evidence of a UST. Several anomalies were discovered, and test pits conducted by Renova revealed various scrap metal and other trash buried below the surface. Based upon the findings of the GPR survey and test pits, it is concluded that the UST has been removed at a previous date.

FIGURES

Figure 1 – Site Overview
Figure 2 – Detailed Site Plan

RENOVA
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LEGEND:

SITE LOCATION

SCALE IN FEET
0 200 400

ATLAS S-6: BLACK BROOK, NY
SITE OVERVIEW

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

FIGURE 1

DATE: 12/03/2020

DRAWN BY: KG

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OCEAN TOWNSHIP, NJ 07712
PHONE: (732) 659-1000
www.renovaenviro.com

LEGEND: AREA OF TANK INVESTIGATION

SCALE IN FEET
0 40 80

ATLAS S-6: BLACK BROOK, NY
DETAILED SITE PLAN

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

FIGURE 2

DATE: 12/03/2020

DRAWN BY: KG

APPENDIX A

USACE-Provided Documents

US Army Corps
of Engineers

ATLAS S-6
BLACK BROOK, NEW YORK
FORMERLY USED DEFENSE SITES (FUDS) PROGRAM
ATTACHMENT 7 - LOCATION & PHOTOGRAPHS OF PROJECT SITE

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W
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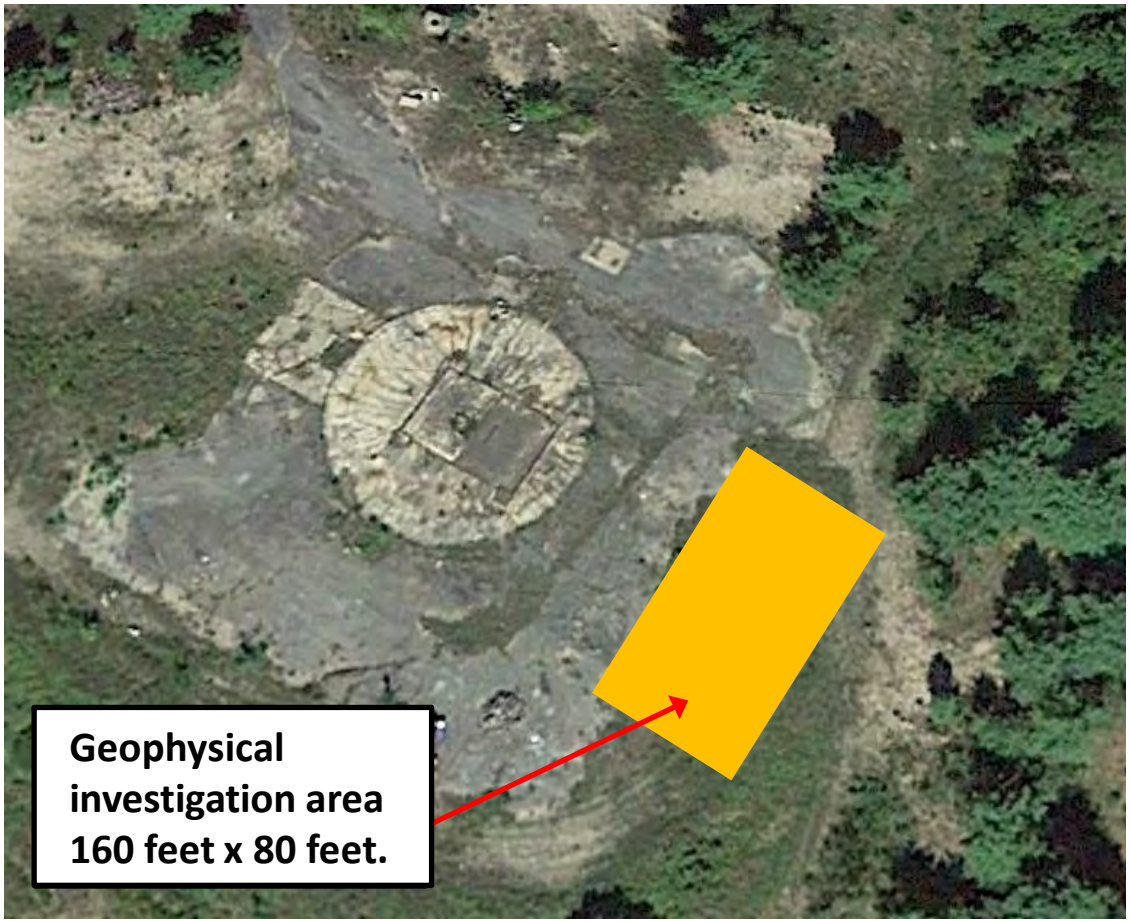
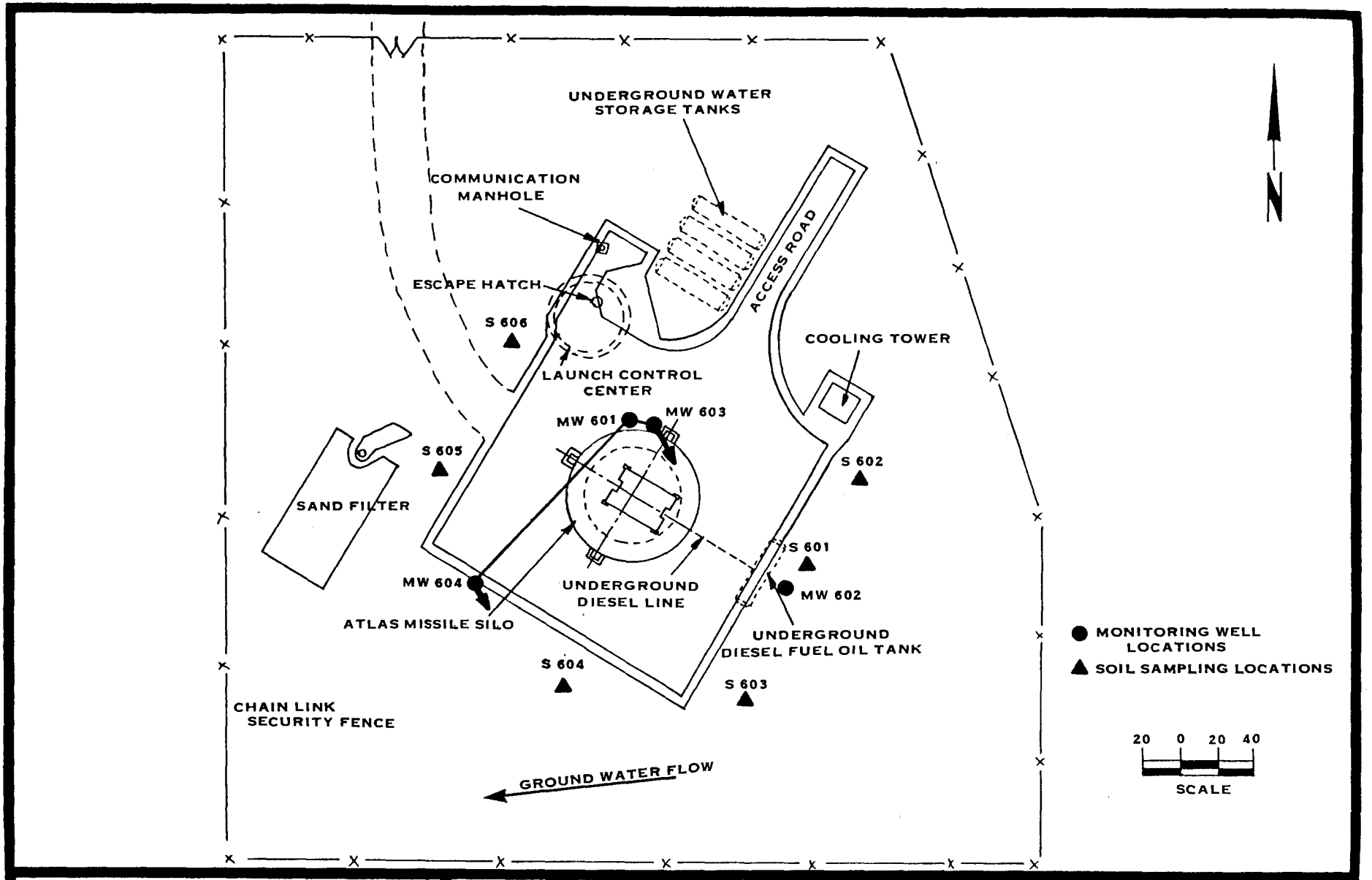
S

UST investigation at the former Atlas S-6.



View of Investigation Area



ATLAS SITE S-6
BLACK BROOK, NEW YORK

LAW ENVIRONMENTAL SERVICES
MARIETTA, GEORGIA

SITE LAYOUT AND SAMPLING LOCATIONS

SAMPLED 11/20/86

FIGURE 1-1

APPENDIX B

Mark-Out Confirmation

RENOVA environmental services

Katie Martucci <kmartucci@renovaenviro.com>

Responses for Dig Safely New York, Inc. (DSNY) locate request 10190-000-791

Dig Safely New York Exactix <tickets@exactix.digsafelynewyork.com> Tue, Oct 20, 2020 at 9:16 AM
Reply-To: Dig Safely New York Exactix <tickets@exactix.digsafelynewyork.com>
To: kmartucci@renovaenviro.com

This is a message from Dig Safely New York's Automated Positive Response System (APR). Below is the response status from the facility operators associated with

Ticket # 10190-000-791

NY : CLINTON County, BLACK BROOK
641 DRY BRIDGE RD

CHARTER COMMUNICATIONS ROUSES PT
- CLEAR, NO FACILITIES WITHIN 15 FT OF THE EXCAVATOR DEFINED WORK AREA
  Comment - No Comment

FRONTIER USIC NY
- CLEAR, NO FACILITIES WITHIN 15 FT OF THE EXCAVATOR DEFINED WORK AREA
  Comment - No Comment

NATIONAL GRID / CENTRAL / ELECTRIC
- CLEAR, NO FACILITIES WITHIN 15 FT OF THE EXCAVATOR DEFINED WORK AREA
  Comment - No Comment

For the most up-to-date response status please visit exactix.digsafelynewyork.com or call 888-DIGGERS(344-4377).

For location requests which provide the legal 2 full working days' notice, facility operators have until the stated commencement date and time to provide a response status.

APPENDIX C

GPRS, Inc. GPR Survey Report

Summary of Scanning for Underground Storage Tanks (UST's)

Prepared For: Renova Environmental Services

Prepared By:
Michael Russett
michael.russett@gprsinc.com
Project Manager-Northeast
315-506-5506

October 27, 2020

October 27, 2020

Renova Environmental Services
Attn: Anthony Denora
Site: 641 Dry Bridge Road, Au Sable Forks, Black Brook, NY

We appreciate the opportunity to provide this report for our work completed on October 27, 2020.

PURPOSE

The purpose of this project was to search for any suspected underground storage tanks (USTs) or suspected UST-related piping/anomalies remaining on the property. The scope of work consisted of 2 location(s) measuring approximately 2,500 sq. ft. The interiors of buildings were excluded from the scope of this project. The client directed the project manager to desired locations prior to our scanning and our markings were then placed onto the surface using pink marking paint and white flags.

EQUIPMENT

- **Underground Scanning GPR Antenna**. The antenna with frequencies ranging from 250 MHz-450 MHz is mounted in a stroller frame which rolls over the surface. The surface needs to be reasonably smooth and unobstructed in order to obtain readable scans. Obstructions such as curbs, landscaping, and vegetation will limit the feasibility of GPR. The data is displayed on a screen and marked in the field in real time. The total depth achieved can be as much as 8' or more with this antenna but can vary widely depending on the types of materials being scanned through. Some soil types such as clay may limit maximum depths to 3' or less. As depth increases, targets must be larger in order to be detected and non-metallic targets can be especially difficult to locate. Depths provided should always be treated as estimates as their accuracy can be affected by multiple factors. For more information, please visit: Link
- **Electromagnetic Pipe Locator**. The EM locator can passively detect the electromagnetic fields from live AC power or from radio signals travelling along some conductive utilities. It can also be used in conjunction with a transmitter to connect directly to accessible, metallic pipes or tracer wires. A current is sent through the pipe or tracer wire at a specific frequency and the resulting EM field can then be detected by the receiver. A utility's ability to be located depends on a variety of factors including access to the utility, conductivity, grounding, interference from other fields, and many others. Depths provided should always be treated as estimates as their accuracy can be affected by multiple factors. For more information, please visit: Link
- **GPS**. This handheld GPS unit offers accuracy down to 4 inches; however, the accuracy will depend on the satellite environment and obstructions and should not be considered to be survey-grade. Features can be collected as points, lines, or areas and then exported into Google Earth or overlaid on a CAD drawing. For more information, please visit: Link
- **Split Box**. This pipe and cable locator uses a transmitter-receiver pair to locate buried metallic objects. The transmitter and receiver are attached to opposite ends of a handle and are used for inductive tracing to locate buried metallic targets and determine if they are linear (pipes and cables) or non-linear and isolated (buried manhole covers, buried valves, metallic debris, USTs, etc.). The transmitter generates both an induction field and a radiated field upon metallic objects below the surface. The induced current couples energy into the metallic object which generates an opposing field detected by the receiver. For more information, please visit: Link
- **Magnetometer**. The magnetometer detects the magnetic field of a ferromagnetic object. It responds to the difference in the magnetic field between two sensors. It is interpreted in the field by listening to changes in frequency as emitted by a speaker on the device. Larger metallic objects can be located at depths of up to 10' or more but total depths will depend on the size, type, shape, and orientation of objects along with the amount of interference from other objects. For more information, please visit: Link

PROCESS

The EM pipe locator was used to connect to accessible, traceable pipes that may be tank-related such as vent pipes or product lines. A current is induced onto the pipe which creates an electromagnetic field that can be traced using the receiver. We can then attempt to trace these pipes to their origin or end point and paint or flag their locations.

Initial GPR scans were collected in order to evaluate the data and calibrate the equipment. Based on these findings, a scanning strategy is formed, consisting of scanning the entire area in a grid with 1' scan spacing in order to locate any potential UST's that may remain at the site. The GPR data is viewed in real time and anomalies in the data were located and marked on the surface along with their depths using pink marking paint and white flags. Relevant scan examples were saved and will be provided in this report.

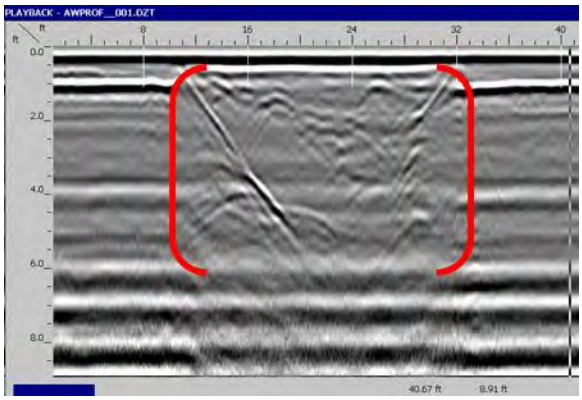
The magnetometer was used to sweep the site every 3'-5' to search for readings that may represent buried, ferrous objects. Upon detection, the readings will be marked on the surface and then investigated from multiple directions and with other methods such as GPR.

LIMITATIONS

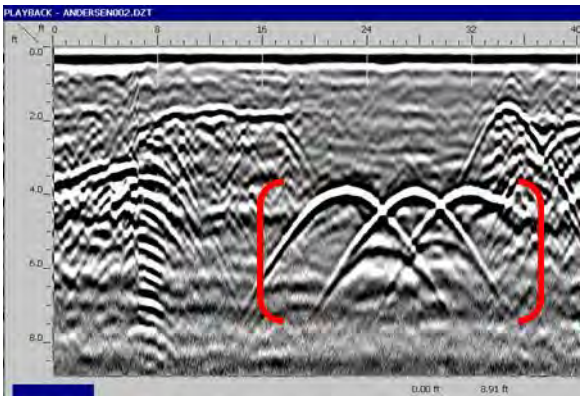
Please keep in mind that there are limitations to any subsurface investigation. The equipment may not achieve maximum effectiveness due to soil conditions, above ground obstructions, reinforced concrete, and a variety of other factors. No subsurface investigation or equipment can provide a complete image of what lies below. Our results should always be used in conjunction with as many methods as possible including consulting existing plans and drawings, exploratory excavation or potholing, visual inspection of above-ground features, and utilization of services such as One Call/811. Depths are dependent on many factors so depth accuracy can vary throughout a site and should be treated as estimates only. Relevant scan examples were saved and will be provided in this report.

FINDINGS

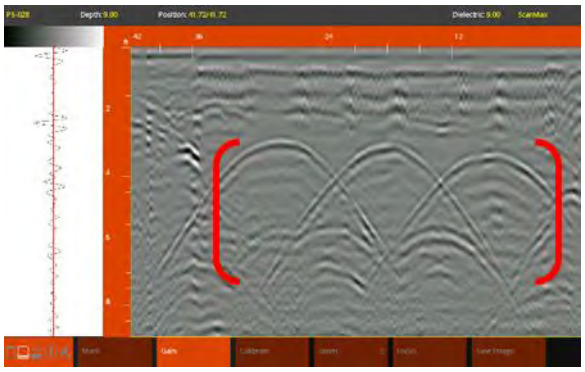
The subsurface conditions at the time of the scanning allowed for maximum GPR depth penetration of 3' in most areas. Multiple utilities were observed during the scanning; however, utility locating was not part of the scope of this project. The equipment and methods used did not detect reactions from potential UST's. The following pages will provide further explanation of the findings.



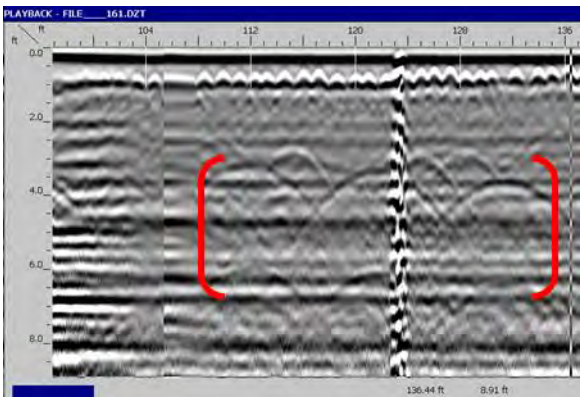
Sample GPR data screenshot showing a possible former tank pit or excavation. The change in the data from the excavation is apparent but GPR cannot determine whether this is due to a tank removal or whether tanks may still exist beyond the maximum depth penetration of the GPR signal.



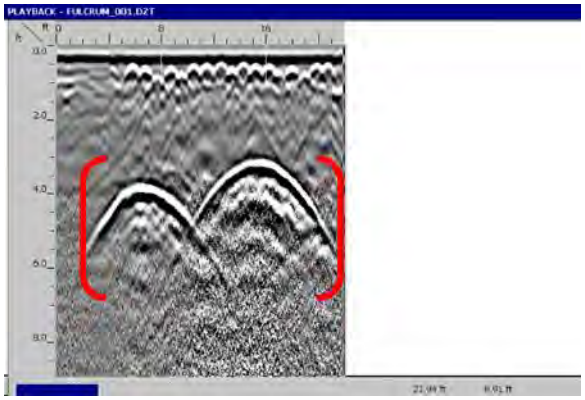
Sample GPR data screenshot showing three reactions from probable USTs. The diameters cannot be determined from these hyperbolas but they can be seen to be larger than a reaction from a typical utility.



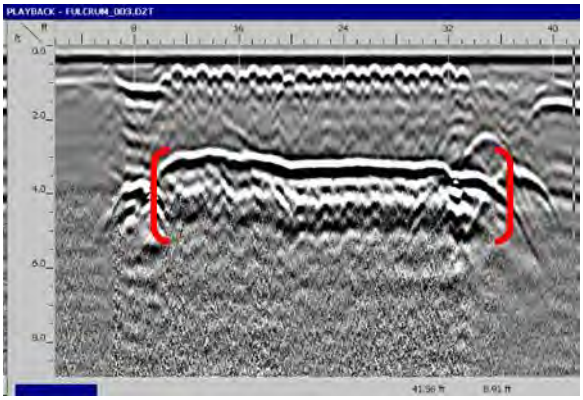
Sample GPR data screenshot showing three reactions from known USTs at an active fueling station. The concrete above the USTs is reinforced with wire mesh.



Sample GPR data screenshot showing three reactions from known USTs at an active fueling station. These USTs are non-metallic and therefore have a weaker reflection that is more difficult and sometimes impossible to identify in the GPR data.

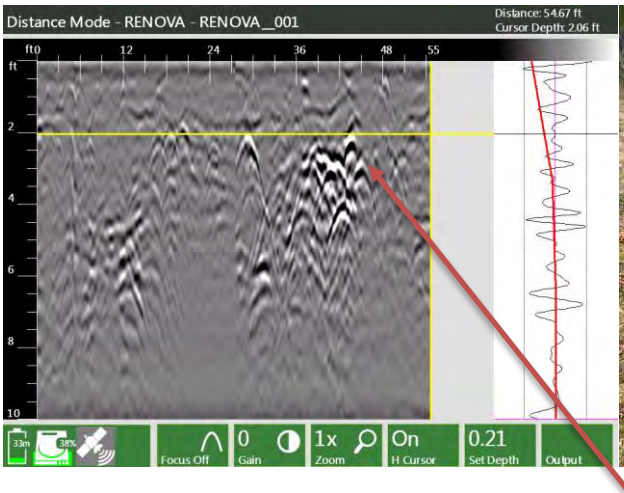


Sample GPR data screenshot showing two potential USTs. These reactions are larger than a typical utility but large utilities can look identical to a UST.



Sample GPR data screenshot showing a scan collected parallel along the top one of the suspected USTs shown in the data to the left. A parallel scan is used to determine a clear beginning and end to the reaction to the reaction which is an indicator of a UST and to determine an approximate length.

Sample Data Screenshots. (Not taken from this project)	Location: previously collected from various sites	GPRS



GPR scans not indicative of UST. Rather, conductive to numerous metal reactions below surface.

Test pit concluding in scrap metal found in location of suspected UST.

GPR Data Screenshots and Photos	641 Dry Bridge Road, Au Sable Forks, Black Brook, NY	GPRS

CLOSING

GPRS, Inc. has been in business since 2001, specializing in underground storage tank location, concrete scanning, utility locating, and shallow void detection for projects throughout the United States. I encourage you to visit our website (www.gprsinc.com) and contact any of the numerous references listed.

Client directed Project Manager to scan in location of suspected underground storage tank. Numerous scans within the area did not indicate typical UST data readings. Upon scanning, Project Manager found areas indicative of metal reactions below the surface. While digging a test pit, it was found that scrap metal was located within scanned area in which UST was suspected. Government official on-site informed that previous owner of property claimed that UST was removed. However, no documentation of this claim was acquired.

GPRS appreciates the opportunity to offer our services, and we look forward to continuing to work with you on future projects. Please feel free to contact us for additional information or with any questions you may have regarding this report.

Signed,

Michael Russett
Project Manager—Northeast

Direct: 315-506-5506

michael.russett@gprsinc.com

www.gprsinc.com

Reviewed,

Eric Fish
Area Manager—Northeast

Direct: 401-474-4505

eric.fish@gprsinc.com

www.gprsinc.com

Job Summary

Job Date : 10/27/2020

Customer	Renova Environmental Services	**Phone Number**	(732) 684-4990

Billing Address	City	State	Zip
3417 Sunset Ave.	Ocean Twp.	NJ	07712

Job Details

Jobsite Location	641 DRY BRIDGE RD
City	AU SABLE FORKS
State	NY

WA Number	226767
Job Num	CENAE FUDS ATLAS S-6
PO Num	

Lead Technician	RUSSETT, MICHAEL	**Phone**	518-918-5753	**Email**	michael.russett@gprsinc.com

Thank you for using GPRS on your project. We appreciate the opportunity to work with you. If you have questions regarding the results of this scanning, please contact the lead GPRS technician on this project.

EQUIPMENT USED

The following equipment was used on this project:

- Underground Scanning GPR antenna. Typically capable of detecting objects up to 8' deep or more in ideal conditions but maximum effective depth can vary widely and depends on site and soil conditions. Depth penetration is most commonly limited by moisture and clay/conductive soils. Depths provided should always be treated as estimates as their accuracy can be affected by multiple factors.
- Electromagnetic Pipe and Cable Locator. Detects electromagnetic fields. Used to actively trace conductive pipes and tracer wires, or passively detect power and radio signals traveling along conductive pipes and utilities. Depths provided should always be treated as estimates as their accuracy can be affected by multiple factors.
- Magnetometer. Detects ferromagnetic objects at depths up to 8' by detecting their magnetic fields. Effective at detecting well heads, buried manholes, and other iron objects.
- Split-Box

Work Performed

Ground Penetrating Radar Systems performed the following work on this project:

Underground Tanks

The scope of work included scanning the designated area to attempt to locate evidence of underground storage tanks and/or UST removal excavations. The locations of any UST's, associated piping, or excavations detected were marked with paint, flags, or other appropriate means, and results were reviewed with onsite personnel unless otherwise noted. The ability to locate these objects depends on the maximum depth penetration and soil conditions and non-metallic tanks can be especially difficult to locate.

- The total area scanned was approximately 2,500 square feet.

Job Summary

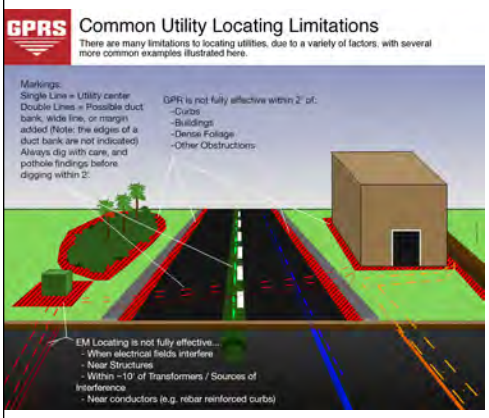
Job Date : 10/27/2020

- Investigation of UST location in which removal of UST will occur. Client directed technician to scan in location of suspected underground storage tank. As well as 1 other suspected location, outside of original scope of work. Suspected area scanned was approximately 2,500 sq. ft.
- The effective depth of GPR will vary throughout a site depending on surface and soil conditions. In this area, the maximum effective GPR depth was approximately 0-3 feet.
- GPR effectiveness may have been inhibited by contents of soil. RD effectiveness may have been hindered by proximity of electromagnetic fields/ high energy equipment.

All observed anomalies/possible locations of UST marked with pink marking paint and white flags.

Numerous scans within the area did not indicate typical UST data readings. Upon scanning, areas indicative of metal reactions below the surface were found. Test pit was dug by client and revealed scrap metal buried in location of suspected UST.

Pictures

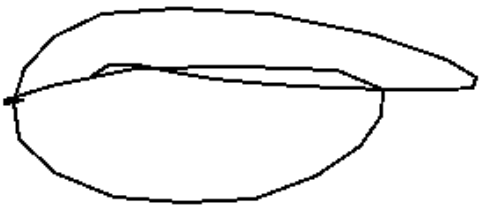


Utility Limitations

TERMS & CONDITIONS

http://www.gprsinc.com/termsandconditions.html

SIGNATURE



Contact Name

Anthony Denora (732) 684-4990 Kelly@renovaenviro.com

APPENDIX D

Site Photographs

Photo 1 – Area of tank investigation

Photo 2 – Area of tank investigation

Photo 3 – Flags marking areas to investigate further with test pits

Photo 4 – Scrap metal uncovered from test pit

Photo 5 – Scrap metal uncovered from test pit

Photo 6 – Scrap metal / trash uncovered from test pit

Photo 7 – Test pits backfilled upon conclusion of investigation