Underground Miscellaneous

Prepared For: Adam Smith

Prepared By:
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June 29, 2023

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Adam Smith
Attn: Adam Smith
Site: 475 Brooktondale Rd Brooktondale, NY

We appreciate the opportunity to provide this report for our work completed on June 29, 2023.

PURPOSE

The purpose of this project was to search for any signs of an old creek bed from an old mill that was referenced on old deed descriptions. Also to search for any signs of an old barn foundation, which was also referenced. The client walked through the area desired to be scanned.

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
- **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 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

PROCESS

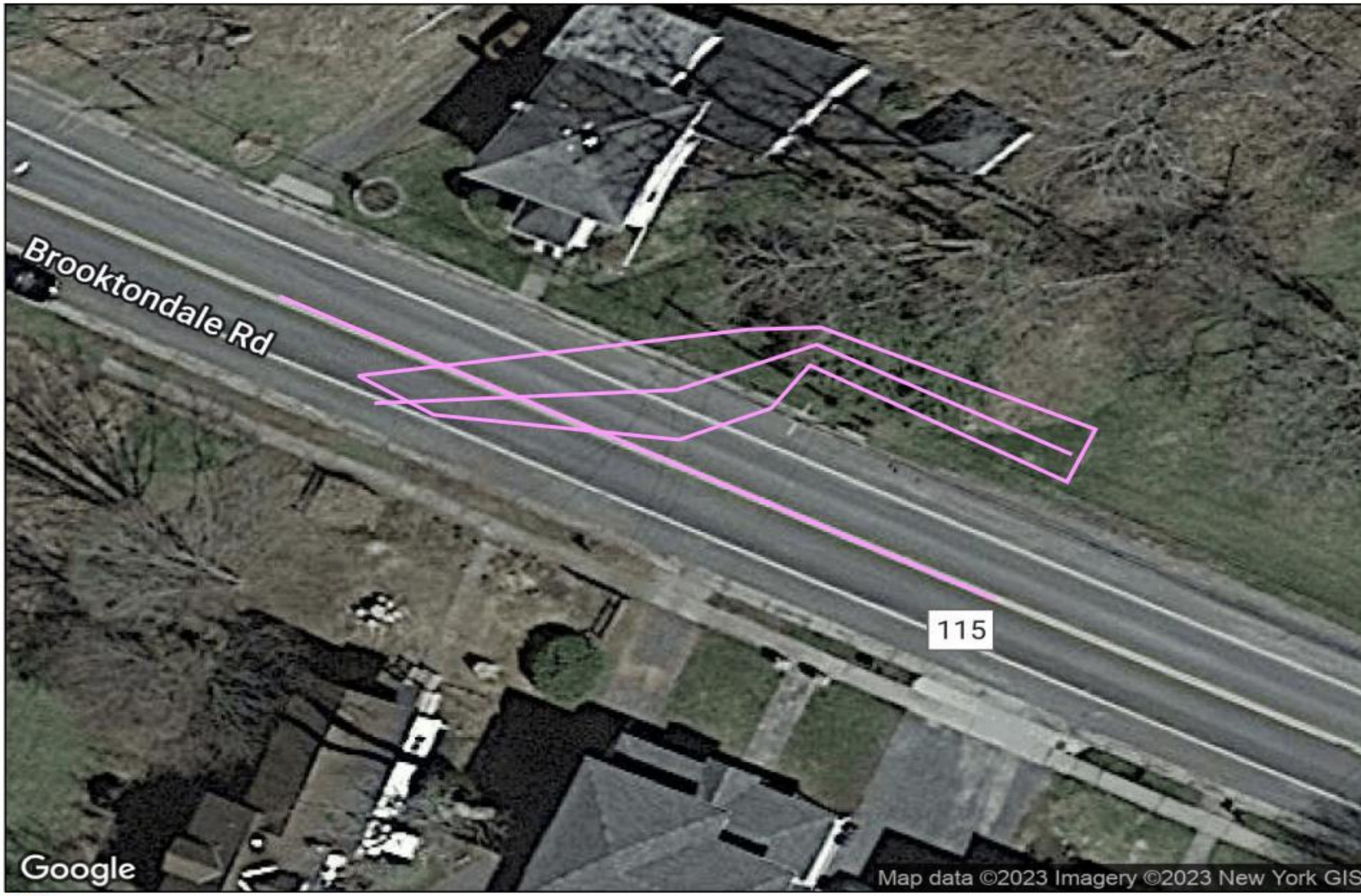
The process typically begins by using GPR scans in order to evaluate the data and calibrate the equipment. Based on these findings, a scanning strategy is formed, typically consisting of scanning the entire area in a grid with 2 ft scan spacing in order to locate any potential anomalies that may be possible remnants of a creek bed and/or foundation walls . The GPR data is viewed in real time and anomalies in the data are located and marked on the surface along with their depths using spray paint, pin flags, etc. Relevant scan examples were saved and will be provided in this report.

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 the dielectric of the materials being scanned so depth accuracy can vary throughout a site. 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 2-3 ft in most areas. GPR imagery was very poor on the asphalt. The following pages will provide further explanation of the findings. The equipment and methods used did not detect reactions from potential barn foundations, but did detect reactions of the suspected creek bed. The following pages will provide further explanation of the findings.



DISCLAIMERS

LEGEND

MISCELLANEOUS

FOR INFORMATION ONLY

GPRS FINDINGS MAP

PREPARED FOR:
ADAM SMITH

LOCATION:
475 BROOKTONDALE RD
BROOKTONDALE, NY

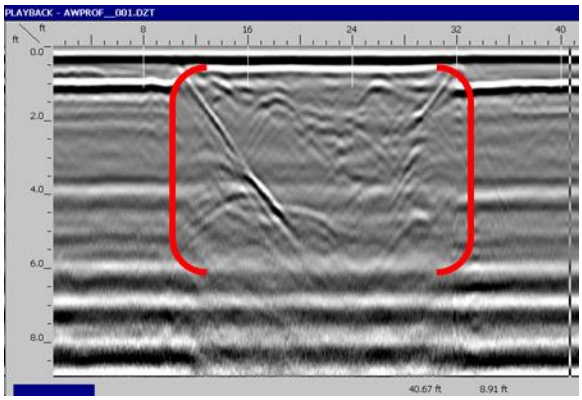
PROJECT MANAGER:
MIKE BISHOP
MIKE.BISHOP@GPRSINC.COM

DATE	2023 JUN 29		
DRAWING NO.	1	REV.	0

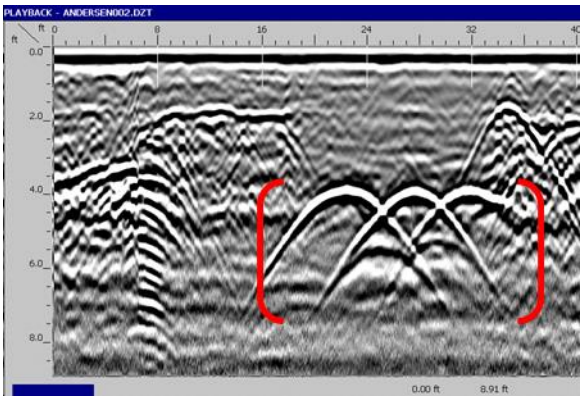
Prepared for: Shumaker Consulting Prepared By: Mike Bishop Date of Scanning: 11/9/22	**Terms and Conditions** GPRS does not provide land survey or civil engineering data collection or documentation. This is provided as a reference map of the field markings and is not survey-grade.	475 Brooktondale Rd Brooktondale, NY	Prepared by: GPRS

LEGEND

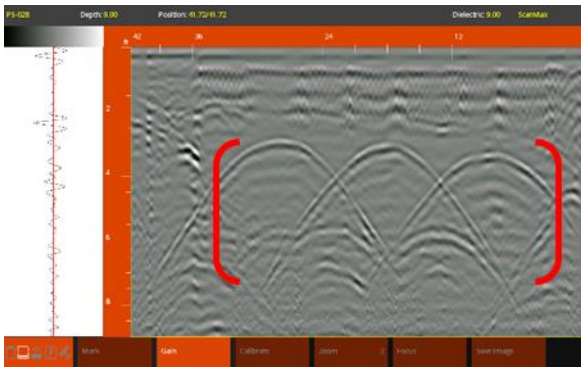
(red)	ELECTRIC	(dark green)	SANITARY
(blue)	WATER	(light green)	STORM
(orange)	COMM	(magenta)	UNKNOWN
(yellow)	GAS		



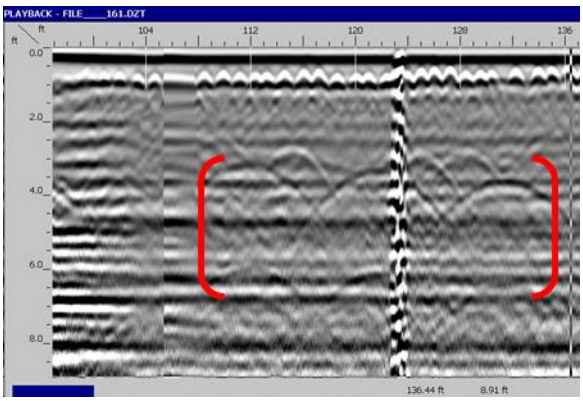
Sample GPR data screenshot showing a possible former tank pit or excavation. The change in the data from the excavation is apparent but GPR cannot determine whether this is due to a tank removal or whether tanks may still exist beyond the maximum depth penetration of the GPR signal.



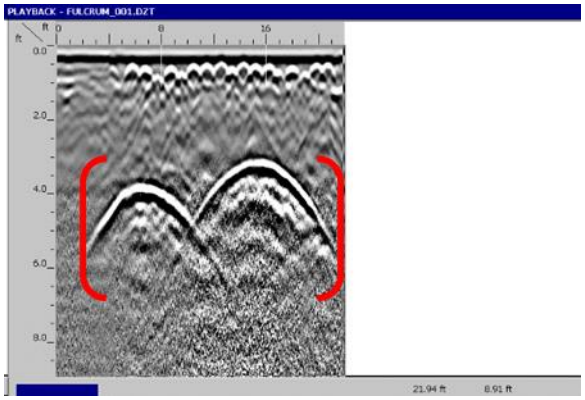
Sample GPR data screenshot showing three reactions from probable USTs. The diameters cannot be determined from these hyperbolas but they can be seen to be larger than a reaction from a typical utility.



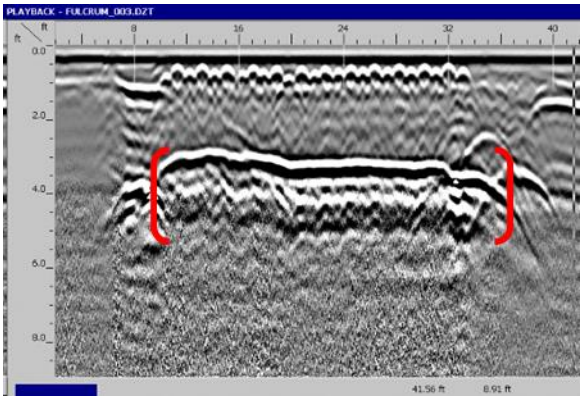
Sample GPR data screenshot showing three reactions from known USTs at an active fueling station. The concrete above the USTs is reinforced with wire mesh.



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

Typical GPR imagery throughout site in grass-This reaction my be detecting a reaction to an old creek bed. Images below were marked off this data.

Imagery going into street, last favorable image of potential reaction to old creek bed.

Suspected area of creek bed laid out going across street where old location is known.

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.

Potential anomalies were able to be produced with GPR that may indicate the old creek bed that was desired to be found. Measurements from old deed descriptions were taken and lined up very closely with what was found with GPR. When scanning for the old barn foundation on the SW corner of the property, no reactions were detected with the GPR that would indicate such. The highest priority was the creek bed and it is believed it was found.

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,

Mike Bishop
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Reviewed,

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