



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

Prepared For: Impact7G

Prepared By:

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Impact7G

Attn: Jon Reis

Site: Hopkinton, IA

We appreciate the opportunity to provide this report for our work completed on February 24, 2022.

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 750 ft². The interiors of buildings were excluded from the scope of this project. The client marked the desired locations prior to our scanning and our markings were then placed onto the surface using pink paint.

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](#)

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.

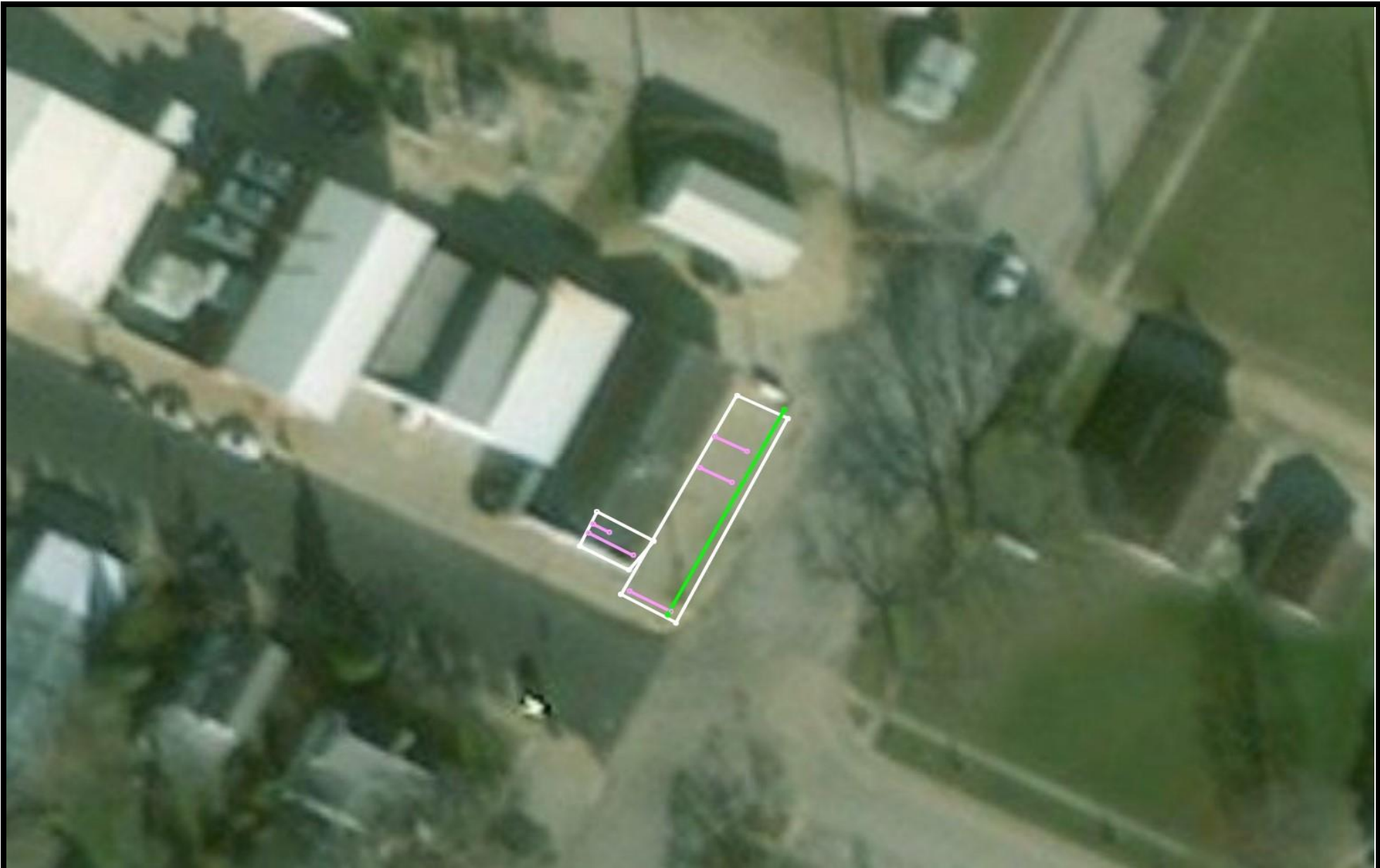
Initial GPR scans were collected in order to evaluate the data and calibrate the equipment. Based on these findings, a scanning strategy is formed, consisting of scanning the entire area in a grid with 3 ft scan spacing in order to locate any potential UST's that may remain at the site. The GPR data is viewed in real time and anomalies in the data were located and marked on the surface along with their depths using pink paint. 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 many factors so depth accuracy can vary throughout a site and should be treated as estimates only. At this site we were limited by the existing building in that our utility cart cannot scan within three feet (3') of any wall or obstruction. 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 3-4 ft. 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 but did find areas of potential UST associated piping in place. The following pages will provide further explanation of the findings.



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 Date of Scanning: 02-24-22

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.

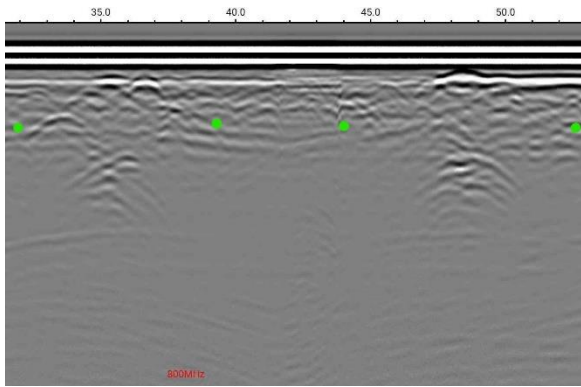
LEGEND

	ELECTRIC		SANITARY
	WATER		STORM
	COMM		UNKNOWN
	GAS		

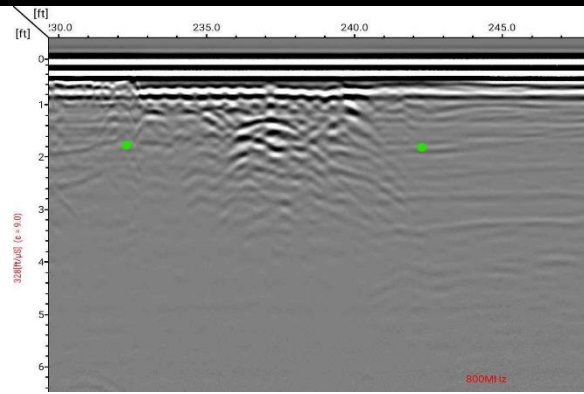
Hopkinton, IA

Prepared by:

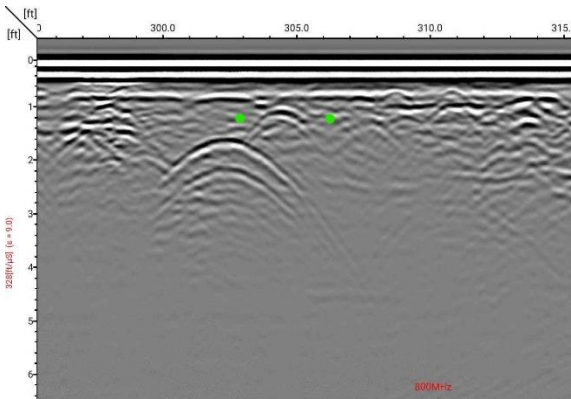




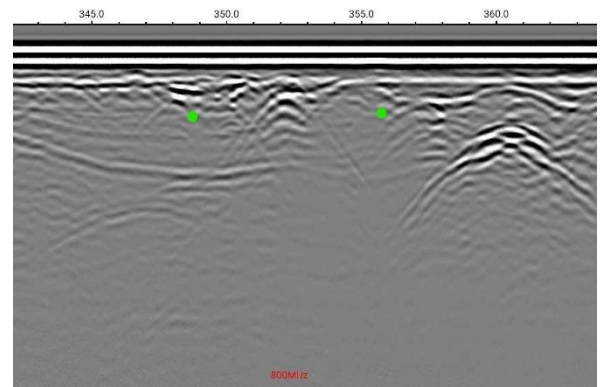
Area 1: showing 2 scans picking up anomalies where old tank used to be.



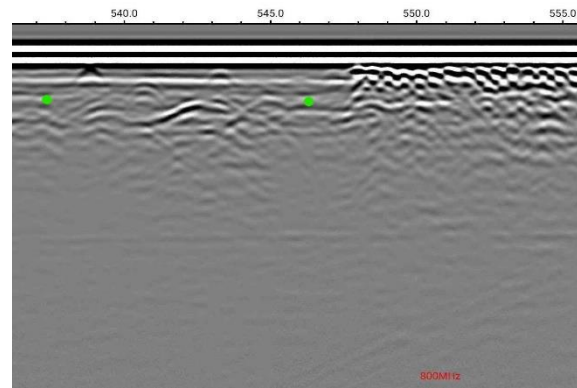
Area 2: showing an example of anomalies traced out as a line and marked on the ground/maps.



Area 2: showing anomaly traced out as a line and marked on the ground/maps. The larger hyperbola is storm sewer drain.



Area 2: showing anomaly traced out as a line and marked on the ground/maps. The larger hyperbola is storm sewer drain.



Area 2: showing anomaly traced out as a line and marked on the ground/maps.

GPR Data

Hopkinton, IA





Area 1: showing center line of disturbed ground (CL) and potential piping in place (P).



Outside of area 1: showing unknown line.



Area 2: showing storm sewer line.



Area 2: showing potential piping in place.



Area 2: showing storm sewer line and drain.

Site Photos

Hopkinton, IA



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.

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,

John Goossen
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