

Company	EPI Geophysics	
Report created on:	Jul 29, 2021	
EPI Geophysicist	Paul McLeod	
Geophysicist Email	paul@epi-geophysics.com	
Geophysics conducted on:	January 30, 2021	
Weather	30s, clear	
Project Name	EPIGEO-Sample1, (6304)	
Project Address	Your town, NJ	
Client's Purchase Order (if applicable)	9999	
General scope of work	Scan property, map utilities	

#### **PROJECT MAP**



Page 2 of 13



#### **SUBSURFACE SURVEY REPORT**

PROJECT SCOPE: EPI Geophysics was contracted to locate and map all utilities within the project area.

#### **EQUIPMENT USED**

GPR: GSSI SIR-3000 RADAR SYSTEM - 400 MHz antenna

RADIO FREQUENCY (RF) LINE TRACING: VIVAX/METROTECH – vLOCPro2

✓ TRIMBLE Geo7X GPS



# **Geophysical Survey Results**

The GPR survey made use of a GSSI SIR-4000 together with a 350 HS 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 6'.

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 some frequency is then detected with the receiver to trace the location of the buried pipe or cable.

The gas, water, electric, and telecommunications cable all make their way to the rear of the building. The gas line bypasses the front parking area, but all other utilities pass through the front parking area. The water lines sit at depths of 5-7'. The sanitary sewer line sits at a depths ranging from 8-15'. The storm sewers sit at depths ranging from 4-15'. The electric lines sit a depths of 1 to 3'. The telecommunications cable sits at a depth of around

## Limitations

EPI Geophysics 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. Subsurface 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 reinforced concrete may be 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 Geophysics does not guarantee that all existing utility systems



can or will be used as a tool and should not be considered a guarantee regarding the presence or absence of USTs or piping.

#### PHOTOS



Photo 1: Airborne image of the west end of the project area with mapped utilities.

Page 5 of 13



#### SUBSURFACE SURVEY REPORT



Photo 2: North facing photo showing cable, electric, and gas accessing the rear of the building.



EPI Geophysics | reducetherisk@epi-geophysics.com | 267-362-9442 | <u>www.epi-geophysics.com</u> Page 5 of 13



Photo 3: Airborne photo of the central part of the project area with mapped utilities.



Photo 4: North facing photo of the water, cable, and electric lines in the main parking area.

Page 7 of 13



## **SUBSURFACE SURVEY REPORT**



Photo 5: Northwest facing photo of the water, cable, and electric lines in the main parking area.



EPI Geophysics | reducetherisk@epi-geophysics.com | 267-362-9442 | <u>www.epi-geophysics.com</u> Page 7 of 13



Photo 6: Northeast facing photo of the water, cable, and electric lines in the main parking area.



Photo 7: Airborne photo of the east end of the project area.





Photo 8: Airborne photo of the south end of the project area.



EPI Geophysics | reducetherisk@epi-geophysics.com | 267-362-9442 | <u>www.epi-geophysics.com</u> Page 9 of 13



Photo 9: Southeast facing photo of the water, electric, and sanitary sewer in the southern parking area.



Photo 10: North facing photo of water and sanitary sewer entering the project area.





Photo 11: Transverse GPR transect across three adjacent USTs with their tops sitting 3' below ground surface.







Photo 12: Longitudinal GPR transect across one of the USTs confirms the depth of 3' and shows that the tank is 16' long, corresponding to a volume of 3,000-4,000 gallons.

# **Borehole Coordinates- NJ State Plane feet**

	West Longitude	North Latitude	Easting	Northing
Borehole 1	-74.32535709	40.43632196	540736.875	583900.555
Borehole 2	-74.32566082	40.43621966	540652.407	583863.121
Borehole 3	-74.32588984	40.43610435	540588.742	583820.991
Borehole 4	-74.32615644	40.43601502	540514.6	583788.304
Borehole 5	-74.32650088	40.43590229	540418.807	583747.051
Borehole 6	-74.32686552	40.43575352	540317.416	583692.657