ADVANCED GEOLOGICAL SERVICES

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May 23, 2023

Mr. Chad Hill
Groundwater & Environmental Services, Inc.
6780 Northern Boulevard,
Suite 100
East Syracuse, NY 13057

Subject: Geophysical Investigation Results
Former Silver Cleaners Site
Rochester, New York

Dear Mr. Chad Hill

Advanced Geological Services (AGS) presents this letter report to Groundwater & Environmental Services Inc. (GES) of East Syracuse, New York detailing the methods and results of the geophysical investigation conducted at the former Silver Cleaners site located at 245 Andrews Street, Rochester, New York. The objectives of the geophysical investigation were to:

1) Locate potential underground storage tanks (USTs) outside of the building within the survey area identified by the onsite GES representative.
2) Locate and identify potential utilities located inside and outside the building.
3) Locate the drain lines associated with the two floor drains located inside the building.
4) "Clear" several proposed drilling locations.

The field activities for this investigation were completed by AGS on April 18-19, 2023

Methods

The ground penetrating radar (GPR), radio frequency (RF), and metal detection (MD) methods were utilized for this geophysical investigation. To locate utilities within the survey area, AGS collected RF data in a grid pattern and placed a traceable signal on surficially identifiable utilities. The survey area was scanned with the MD instrument looking for potential utilities that had a metallic signature. Additional GPR profiles were collected throughout the site to locate potential utilities not identified with the other geophysical methods.

All identified utilities were marked on the ground surface with spray paint according to the

American Public Works Association (APWA) color code. To locate utilities identified outside of the building, AGS collected GPS locations using an instrument with a sub-meter accuracy for each identified utility and site feature. AGS generated a scaled sketch map for the utilities identified inside the building.

To locate potential USTs, the electromagnetic (EM) and ground penetrating radar (GPR) methods were utilized for this geophysical investigation. AGS collected the EM data using an EM61 in a grid like pattern with an approximate line spacing of 5 feet. A grid with a spacing of 5 feet by 2.5 feet was measured out for both the parking lot and the back alley by adjacent elementary the school. The EM data was downloaded, contoured and analyzed in the field.

Areas with elevated EM responses were further investigated with the GPR instrument to determine if the EM anomaly was caused by a UST or by other miscellaneous metallic objects like, building foundations and reinforced concrete, buried miscellaneous metallic objects, ect.

AGS scanned the each proposed drilling location with the RF instrument looking for potentially active electric lines. Each proposed drilling location was further scanned with the MD instrument to locate potential metallic anomalies that could be associated with utilities or other buried metallic obstructions. GPR profiles were collected in a grid like pattern centered at the proposed drilling location.

Time Domain EM Metal Detection Method (EM61)

Time domain EM metal detection data were collected using a Geonics EM61 instrument. This instrument generates a pulsed primary EM field into the earth, which induces eddy currents in nearby metallic objects. The eddy current decay produces a secondary magnetic field which is measured by the receiver coil. By taking measurements at a relatively long time after the start of the decay, the current induced in the ground has fully dissipated and only the current in the metal is still producing a secondary field. In scanning mode, the instrument produces an audible response indicating the presence of buried metal beneath the antenna, as well as providing a digital read-out of the response magnitude. The response, which is measured in millivolts (mV), can also be recorded by the integrated data logger. The instrument uses two antenna coils separated by 0.5 meters (1.6 feet) to provide potential depth information, and to both minimize and quantify effects from above ground metallic objects. This instrument is very sensitive to metal objects, but relatively insensitive to variations in soil conductivity and geologic features. The standard EM61 configuration used during this investigation is capable of

detecting metal targets the size of a 55-gallon drum up to depths of 10 feet or more depending upon site conditions.

Ground Penetrating Radar (GPR) Method

The ground penetrating radar (GPR) method was used to locate and identify potential utilities and other buried features. The GPR method is based upon the transmission of repetitive, radio frequency electromagnetic (EM) pulses into the subsurface. When the transmitted energy of down going wave contacts an interface of dissimilar electrical character, part of the energy is returned to the surface in the form of a reflected signal. This reflected signal is detected by a receiving transducer and is displayed on the screen of the GPR unit as well as being recorded on the internal hard-drive. The received GPR response remains constant as long as the electrical contrast between media is present and constant. Lateral or vertical changes in the electrical properties of the subsurface result in equivalent changes in the GPR responses. The system records a continuous image of the subsurface by plotting two way travel time of the reflected EM pulse versus distance traveled along the ground surface. Two way travel time values are then converted to depth using known soil velocity functions.

The GPR field procedures involved (1) instrument calibration, (2) test run completion, (3) production profile collection and recording, and (4) data storage for subsequent processing and analysis in the office. Each radar profile was examined for characteristic GPR signatures that may indicate the presence of buried targets. A Geophysical Survey System SIR System 3000 and a 400 megahertz (MHz) antenna were used with a recording window of 60 nanoseconds (ns) to provide the required depth penetration and subsurface detail.

Radio Frequency (RF) Utility Locating Method

A Radiodetection RD400/PDL2 multi-frequency RF utility locating system was used for this project to locate potential electric lines and other surficially identifiable utilities and/or features. This instrument consists of a receiver/tracer and a remote transmitter, which operates at frequencies ranging between 8 kHz and 65 kHz. In addition, the receiver can be used in 60 Hz passive mode to identify active buried electrical lines. This utility tracing instrument provides audible and visual feedback to the operator when a utility that is coupled with the transmitted signal is crossed. The transmitter produces a radio-frequency signal in the utility to be traced by either induction coupling or direct hook-up. The receiver output provides measured field strength of the received signal and varies an audible pitch depending upon how

far the utility is from the receiver. By carefully adjusting the gain of the receiver it is possible to determine the location of the utility and to separate it from adjacent utilities.

Hand Held Metal Detection (MD) Method

The survey area and each proposed drilling location was scanned using a hand held metal detection (MD) instrument. This method uses the principle of electromagnetic induction to detect shallow buried metal objects such as USTs, metal utility conduits, rebar in concrete, manhole covers, and various metallic debris. This is done by carrying a hand-held radio transmitter-receiver unit above the ground and continuously scanning the surface. A primary coil broadcasts a radio signal from a transmitter. This primary radio signal induces secondary electrical currents in metal objects. These secondary currents in turn produce a magnetic field which is detected by the receiver.

The MD instrument used for this investigation was a Fisher TW-6 pipe and cable locater. This instrument is expressly designed to detect metallic pipes, cables, USTs, manhole covers, and other buried metallic objects. The instrument produces an audible response and significant meter deflections when near a metal object. The peak instrument response usually occurs when the unit is directly over the object.

Results

AGS has included two figures showing the identified utilities and site features. Figure 1 shows the identified utilities and contoured EM response for outside the building. Figure 2 has a sketch map with the identified utilities located inside the building. All identified features were marked on the ground surface with spray paint. The aerial photograph for figure 1 was taken in 2020 and was downloaded from https://data.gis.ny.gov/. All locations on Figure 1 are in the New York West NAD83 state plane coordinate system with all units in feet.

AGS did not identify any USTs within the survey area on either the GPR or EM61 data sets. The elevated EM responses identified on the EM contour maps on figure 1 correlate well with surficial metallic objects or with buried miscellaneous objects as identified on the GPR profiles. AGS was unable to identify the object that generated EMA1 (Figure 1). Since EMA1 is approximately 10 feet long and less than 5 feet wide it is likely that this feature is not a

standard size UST.

AGS was unable to locate the drain lines associated with the two floor drains inside the building (Figure 2). AGS attempted to insert a wire into the drain lines however each drain line appeared to be filled with sediment as AGS was unable to penetrate into the drain with the stiff wire. AGS collected GPR profiles around these features but the drain lines were not identified on the GPR profiles.

AGS "cleared" numerous proposed drilling locations. Each “cleared” proposed drilling location exhibited a reflection-free GPR signature and no RF or MD response. The final locations for each proposed drilling location was discussed and reviewed with the onsite representative.

Closing

AGS identified several utilities and "cleared" several proposed drilling locations. No UST were identified within the survey area. Upon completion of the geophysical investigation AGS reviewed the results with the onsite GES representative.

All geophysical data and field notes collected as a part of this investigation will be stored at the AGS office. The data collection and interpretation methods used in this investigation are consistent with standard practices applied to similar geophysical investigations. The correlation of geophysical responses with probable subsurface features is based on the past results of similar surveys although it is possible that some variation could exist at this site. Due to the nature of geophysical data, no guarantees can be made or implied regarding the presence or absence of additional objects or targets beyond those identified.

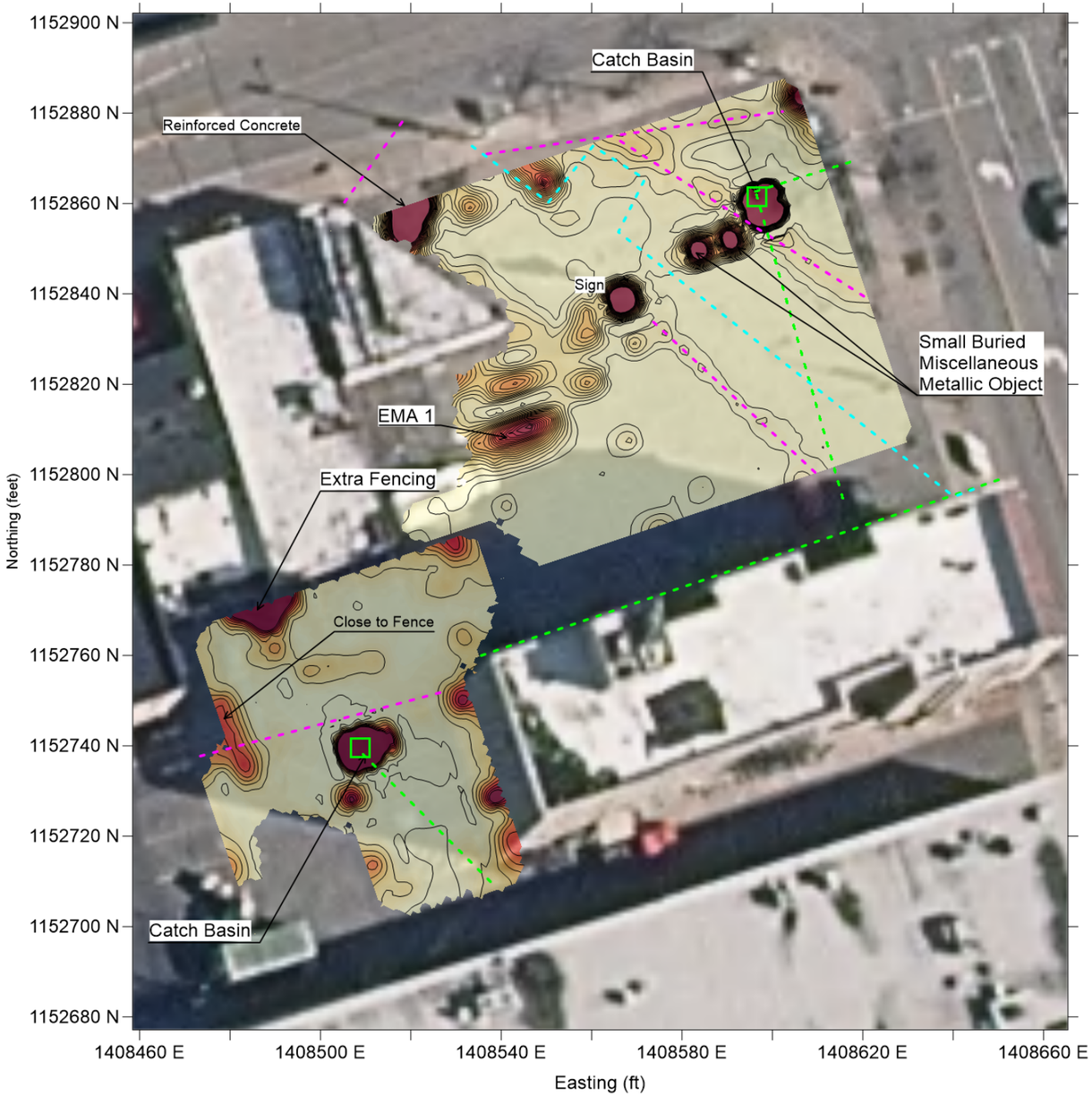
If you have any questions regarding the results of this field investigation, please contact me at 610-722-5500. It was a pleasure working with you on this project and we look forward to being able to provide you with sub-surface imaging services in the future.

Sincerely,
Prepared by

Christopher Call P.G.
Senior Geophysicist

Encl.: Figure 1: Identified Utilities, Contoured EM Response & Site Features – Outside the Building

Figure 2: Identified Utilities, & Site Features – Inside the Building



Legend

- Electric Line
- Storm Sewer Line
- Steam Line
- Utility of an Unknown Type
- Catch Basin

N
North

Scale
0 20 40 (feet) 60 80 100

EM Response
0 100 200 300 400 500 600 700 800
(mV)

Notes:

(1) AGS used a RF instrument, a M-Scope, EM61 and a SIR 3000 GPR instrument with a 400MHz antenna for this investigation.
(2) AGS identified many utilities within the survey area. Identified utilities were marked on the ground surface with spray paint.
(3) AGS did not identify any USTs within the survey area and no USTs were identified on the GPR profiles collected over the numerous asphalt patches in the parking lot.
(4) AGS collected GPR profiles across EMA 1 however AGS did not identify any USTs associated with this anomaly.
(5) The aerial photograph was taken in 2020 and was downloaded from https://data.gis.ny.gov/.
(6) The field positions were not surveyed by a licensed surveyor and should be considered approximate.
(7) The items shown on this figure may not be all inclusive. AGS does not warrant the fact that additional buried features might be present at this site.

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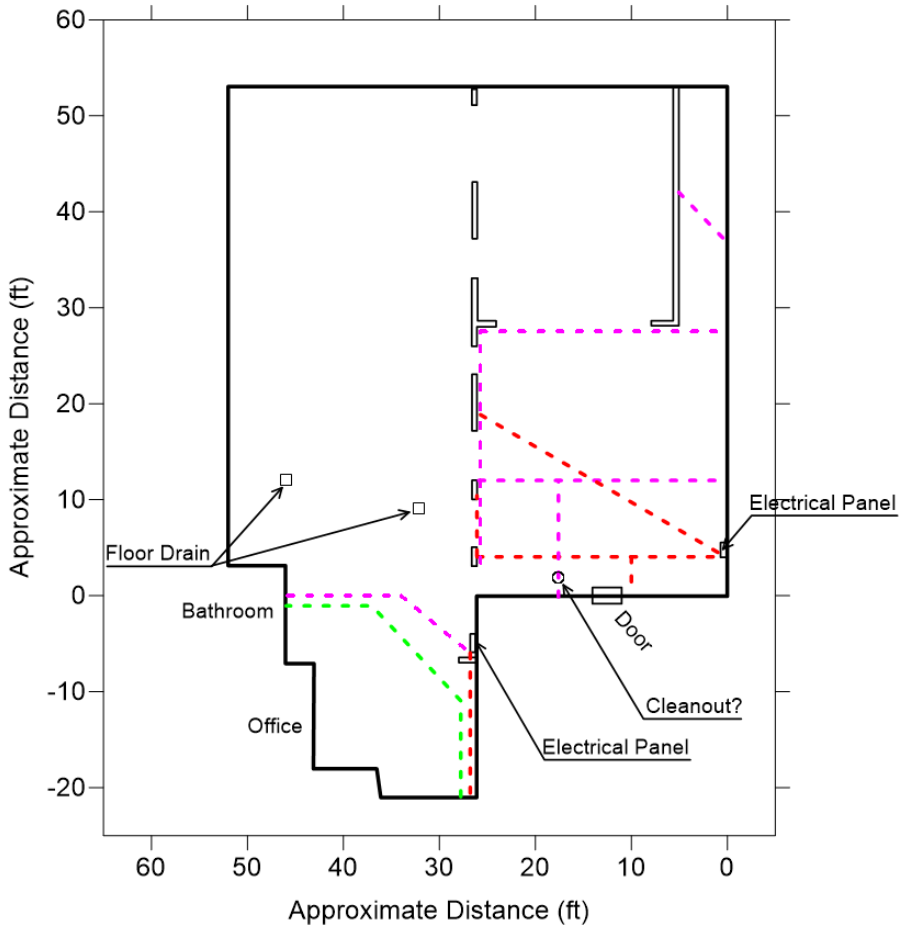
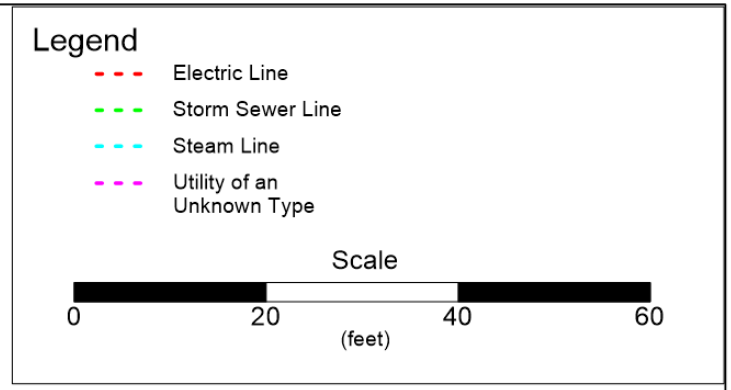
FIGURE 1
Identified Utilities
Site Features &
Contoured EM Response

LOCATION: 245 Andrews St, Rochester, NY
CLIENT: GES
ADVANCED GEOLOGICAL SERVICES, INC.
DATE: May 23, 2023
DRAWN BY: C. Call

FIGURE 1





Notes:

(1) AGS used a RF instrument, a M-Scope, EM61 and a SIR 3000 GPR instrument with a 400MHz antenna for this investigation.
(2) AGS identified many utilities within the survey area. Identified utilities were marked on the ground surface with spray paint.
(3) AGS identified several utilities of an unknown type inside the building. AGS marked the main utilities entering the building from the outside (water, gas, sanitary sewer & electric) services. Not all of these main utility services continue underground inside the building.
(4) AGS was unable to enter the office and bathroom areas due to the presence of numerous obstructions.
(6) The field positions were not surveyed by a licensed surveyor and should be considered approximate.
(7) The items shown on this figure may not be all inclusive. AGS does not warrant the fact that additional buried features might be present at this site.

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FIGURE 1
Identified Utilities
Site Features
Inside Building

LOCATION: 245 Andrews St, Rochester, NY

CLIENT: GES

ADVANCED GEOLOGICAL SERVICES, INC.

DATE: May 23, 2023

DRAWN BY: C. Call

FIGURE 2