



SUBSURFACE GPR MAPPING IN THE URBAN ENVIRONMENT

BACKGROUND

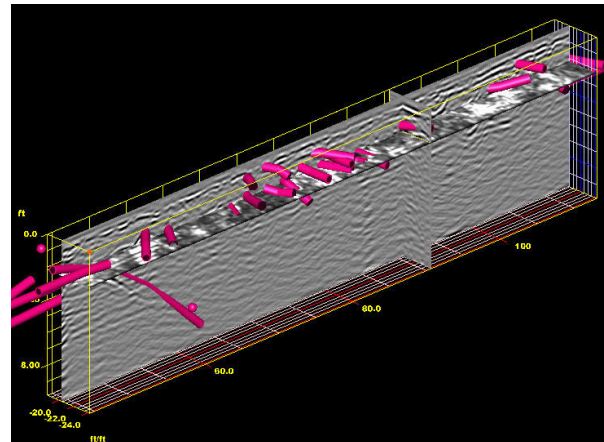
Black and Veatch requested a SUE 'Level B' survey for selected areas in a roughly rectangular portion of downtown Jacksonville, Florida. Installation of a high voltage underground electric loop was planned along the edge of the city right of way. The main objective of this survey was to confirm the location of underground utilities known to exist at the site prior to any excavation or installation. 3D subsurface imaging with GPR was carried out as part of the study.

SCOPE & RESULTS

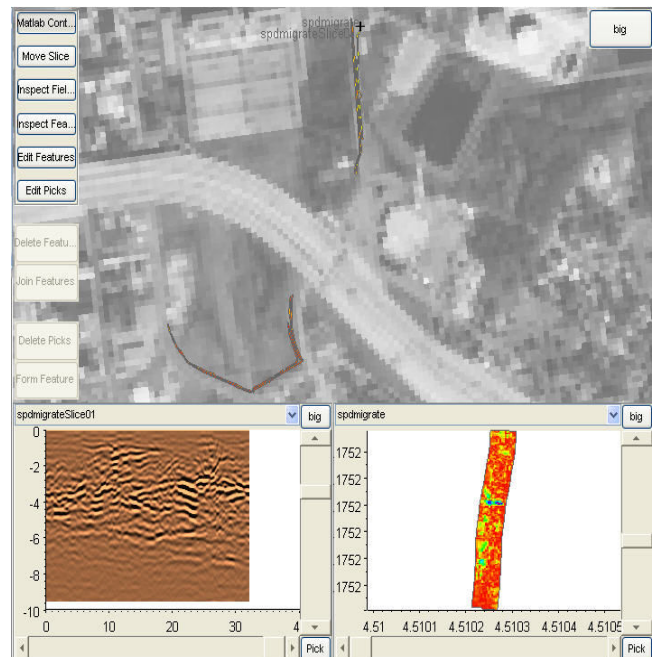
Approximately 170 GPR swaths were collected at the site. Due to the size and geometric complexity of the site, the survey was broken into several areas to ease processing and interpretation. Signal penetration depth varied between 6.5 and 8.5 feet throughout the area. 700+ distinct targets were tabulated including apparent subsurface utilities that correspond with those on available maps, linear targets not shown on maps, areas of buried rebar, railroad lines, reinforcing mesh, and areas of trenching and/or backfill.

METHODOLOGY

The UIT 14 channel TerraVision II® system was employed at the project site. GPR data were positioned using both standard survey techniques and a Navcom GPS system. GPS and GPR data were collected together and recorded with the UIT system, later the data was interpreted using proprietary 3D software SPADE®, and XYZ utility locations transferred to a CAD map.



Above: 3D rendering of a cross-section of GPR data showing a large number of utilities found with TerraVision II®



Above: Screen shot from SPADE® showing GPR data superimposed on a large scale aerial image of the site.