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## Electronic Utility Markers: A Locating Solution for Problematic Utilities

Utilities and utility structures that have a high probability of being lost or buried, or that will be intentionally buried and must be recoverable in the future, can benefit from new utility locating technology. Electronic Utility Markers provide a solution to marking underground utilities that are traditionally non-locatable because of closely paralleling utilities or damaged tracing materials. Gas companies and combustible utility providers are beginning to utilize Electronic Utility Marker systems as a common practice where locations of their underground facilities are crucial for regular service or expansion.



Designed to be more accurate, faster, and better integrated, Electronic Utility Marker systems incorporate digital signal processing to quickly and efficiently locate utilities. During the beginning development phases, the electronic markers can be

programmed by Mid-Atlantic Utility Locating with specific information such as a pre-programmed unique identification number, facility data, depth, owner information, application type, placement date, and many other details, and then can be installed underground by Mid-Atlantic Utility Locating personnel or utility installation contractors.

Outliving the life of the utility, a radio microprocessor inside the marker, similar to those used in animal micro-chipping and commuter toll tags, reflects the programmed information to a hand-held locator device on the surface to precisely pinpoint the marked utility or structure. Compatible with GPS/GIS mapping instruments, the marker system allows Mid-Atlantic Utility Locating personnel to perform real time mapping, saving information directly into CAD and GIS systems.

Electronic Utility Marker systems not only create an automated paperless system for records updating, but they also improve excavation safety and locating accuracy. For more information on how Electronic Utility Marker systems and Mid-Atlantic Utility Locating can assist you on your next project, please contact Aaron Blow at (703) 378-0100.

### Utility Marker Case Study

A major corporate campus determined that it had no formal utility maps for its entire 40-acre campus in Northern Virginia. Mid-Atlantic Utility Locating was selected to provide subsurface utility engineering services in order to facilitate campus-wide horizontal and vertical utility mapping.



**Problem:** Mid-Atlantic Utility Locating was initially only able to locate approximately 40% of the plastic gas lines within the campus using standard utility locating equipment. The gas company's underground utility drawings only showed the main line into the campus, and gave no indication where the service lines ran. Also, the majority of tracing wires had been damaged during construction of the gas lines, or during incidental construction over the course of time on the campus.

**Solution:** Mid-Atlantic Utility Locating utilized vacuum excavation test holes to assist in locating the remaining non-locatable gas lines. At each location where lines were found, an Electronic Utility Marker was installed, especially at tee's, bends, and other critical points. For each marker installed, Mid-Atlantic Utility Locating programmed the marker with site-specific information.

Through Electronic Utility Marking technology, the corporation now has a method to locate gas services within the campus, including those with damaged tracing wires or that have interference from paralleling utilities.

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