

TAMPA AQUIFER STORAGE AND RECOVERY SYSTEM – ROME AVENUE

FIELD TRIP LEADERS:

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The City of Tampa Rome Avenue Park potable water ASR system consists of eight ASR wells and is permitted for up to 10 million gallons per day (mgd) of injection and recovery. A new site is currently under development with one constructed ASR well near the David L. Tippin Water Treatment Facility (DLT WTF). If successful, the new site may be expanded to up to 30 mgd of ASR capacity. This field trip will focus on the Rome Avenue ASR system that has eight ASR wells dispersed throughout several properties including a park, a youth athletic facility, an elementary school, and city property. Several wells were completed in below-grade vaults for aesthetic and security reasons. The Rome Avenue ASR system has been in operational testing with beneficial use since 1995, and more than 8 billion gallons of water has been supplied to the City's potable water system.

This ASR system was the first to encounter the arsenic mobilization problem, and the City has taken some unique steps to responsibly manage the site while seeking solutions to the issue. One step taken early in the program was an ordinance



adopted by the City that required domestic well users located within the anticipated 5-foot drawdown contour (approximately within 1 mile of the site) to connect to the City's potable water distribution system at no charge. This action was taken in response to potential negative effects from recovery phase drawdown, but offered the additional benefit of ensuring that arsenic was not intercepted by any domestic wells. The second step was to construct a 4-mile pipeline from the ASR site to the DLT WTF, where all arsenic in the recovered water is removed prior to distribution to the public. The third step was installation of an extensive water quality monitoring system consisting of 13 monitoring wells. This monitoring network has documented the very spatially limited

nature (approximately 200 feet or less, and shrinking) of arsenic mobilization. The City of Tampa originally used chloramines for disinfection but switched to an ozone-based system in 2003 with a minimal chloramines residual, and observed immediate arsenic concentration increases in recovered ASR water. This increase has been attenuating consistently since then with each cycle of operation. The City is also intermittently utilizing a carbon dioxide (CO₂) gas feed system on one well to manage clogging of the well by carbonate precipitation that occurs upon mixing of injection water with native water.

The field trip will be hosted by the City of Tampa, CH2M HILL, and ASRuS LLC.

