DOE Fellows from FIU Deploy Remote Monitoring Stations in Tims Branch, Savannah River Site for Environmental Data Collection

Researchers from the Applied Research Center (ARC) at Florida International University (FIU) are continuing their efforts to collect timeseries data from the Tims Branch watershed at Savannah River Site (SRS) in support of ongoing surface water and contaminant transport modeling research being performed at FIU. Two DOE Fellows, Ron Hariprashad and Juan Morales, who are both FIU graduate students participating in the DOE-FIU Science and Technology Workforce Development Program, successfully deployed two HOBO RX3000 3G remote monitoring stations which record streamwater data that can be translated into flow rates. One unit was installed along the A-014 outfall tributary near its confluence with the main Tims Branch stream, and a second unit was installed downstream of Steed Pond along Tims Branch near its confluence with Upper Three Runs.
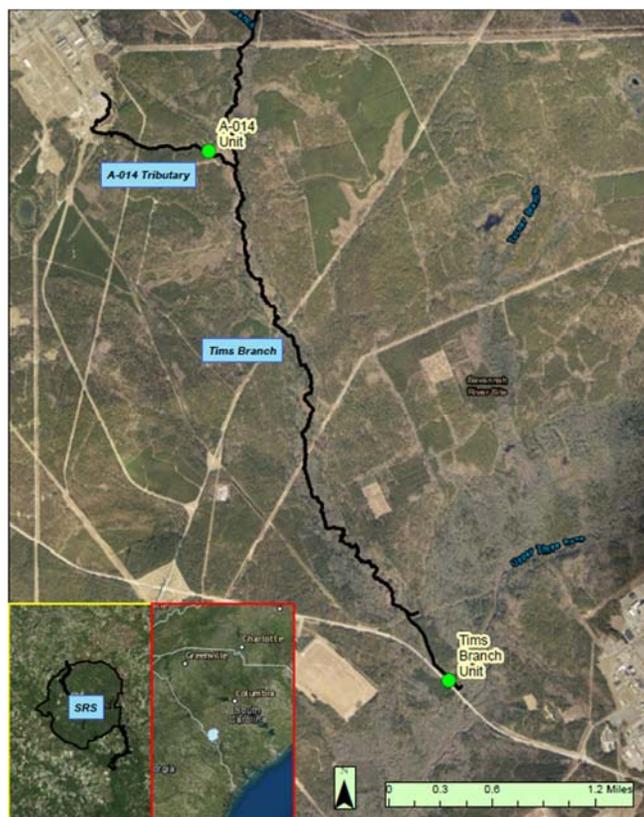
Deployment locations of the two remote monitoring stations along the Tims Branch watershed.

Ron, who participated in a student internship at the Savannah River Ecology Laboratory (SREL) in the summer of 2017 and plans to develop a hydrological model of surface water-groundwater interaction in the Tims Branch watershed as part of his master's thesis, stated upon his return to FIU, *"I believe this was a very successful trip. Everything was on point, from planning to execution."* The success of this effort was in large part due to the support and collaboration of Dr. John Seaman and his research team at SREL, Dr. Brian Looney from the Savannah River National Laboratory (SRNL) and all of the SRS site personnel who assisted with security clearance, permits and RADCON escort.

Juan, who is pursuing a Ph.D. in environmental health sciences, also collected water samples for water quality analysis which will support ongoing monitoring of the Tims Branch system following the implementation of a tin-based remediation technology to address historical low-level mercury contamination in the stream. The water quality data will be used for development and calibration of the contaminant transport component of the model being developed by FIU. Although historical data was available for preliminary development of the flow model, several data gaps were encountered. In order to improve the accuracy of the model, FIU has deployed the HOBO units which will provide near real-time data in an attempt to capture the effect of extreme hydrological events on the stream flow and pollutant transport. Utilization of Tims Branch as a test bed to develop a numerical modeling tool to evaluate hydrological impacts on the fate and transport of major contaminants of concern (e.g., Hg, U, Ni, radionuclides) will be beneficial to SRS, particularly if the tool developed can be applied to other streams at SRS as well as other DOE EM sites.

For additional information, contact Dr. Leonel Lagos (Principal Investigator) at (305) 348-1810 or lagosl@fiu.edu.

DOE Fellow Juan Morales installing a remote monitoring stations at SRS.

Remote monitoring stations being installed at SRS.