Fact Sheet

Environmental Investigation at Allen Fossil Plant

TVA Submits Allen Remedial Investigation Report to State

Background
In the Spring of 2017, the Tennessee Valley Authority (TVA) reported to state regulators elevated levels of arsenic, fluoride and lead in some shallow aquifer monitoring wells around the coal ash pond at the Allen Fossil Plant in Memphis. TVA, under the oversight of the Tennessee Department of Environment and Conservation (TDEC), began a remedial investigation into the nature and extent of the contamination.

TVA also has five permitted production wells in the deep Memphis Aquifer at the Allen Gas Plant, approximately one-half mile from the fossil plant. TVA contracted with the U. S. Geological Survey (USGS) and the University of Memphis to conduct hydraulic and geologic testing to determine if there is a connection between the Alluvial and Memphis aquifers. TDEC requested these test results be submitted as part of the Remedial Investigation Report.

The Remedial Investigation Report was submitted to TDEC on March 6, 2018, and included the initial draft report from USGS.

Key Points
- TVA is committed to the health and safety of the community, our employees and the environment.
- Drinking water at the plant, and throughout Memphis, is not impacted by the issues at Allen. This is reinforced by TDEC and local health officials, and confirmed by testing of the water supply by Memphis Light, Gas and Water (MLGW).
- TVA is committed to not using the Memphis Aquifer wells at its gas plant and is moving ahead to buy water from MLGW and provide for a reliable water supply through the building of water holding tanks and redundant water feed systems.

Remedial Investigation Findings
- The remedial investigation included the installation of 22 new sampling wells around the East Pond at varying depths into the Alluvial aquifer, four rounds of groundwater sampling and more than 60 samples collected from various depths.
- The sampling confirmed the presence of arsenic, fluoride and lead in the upper 40 feet of the Alluvial aquifer and these constituents are not moving downward.
- Groundwater flow in the area is horizontal, rather than vertical, keeping the contaminants contained in the shallow aquifer.
- The base of the Alluvial aquifer is a clay layer approximately 30 to 70 feet thick that separates the Alluvial and Memphis aquifers.
- The elevated levels of arsenic, fluoride and lead are contained within site boundaries.
- The areas of affected groundwater are not impacting the Memphis aquifer or the public drinking water supply.
- TVA will work with TDEC to determine if any additional investigation is necessary, then begin evaluating clean-up alternatives for the contamination.

March 7, 2018
Environmental Investigation at Allen Fossil Plant

Results of USGS and University of Memphis Connectivity Testing
- The remedial investigation report also includes initial findings from the United States Geological Survey and the University of Memphis.
- TVA contracted with these experts to study potential connectivity between the upper Alluvial Aquifer and the Memphis Aquifer.
- Three rounds of sampling were conducted using the production wells at the Allen gas plant by running the pumps to draw water from the Memphis Aquifer.
- The initial round of sampling, prior to production well pump testing, indicated the presence of modern/young groundwater in the Memphis aquifer.
- Pumping the production wells did produce a discernable drawdown in the upper Alluvial Aquifer, indicating a hydraulic connection with the Memphis Aquifer. This information was also included in the Remedial Investigation Report provided to TDEC for their consideration.

Allen Gas Plant to Purchase MLGW Water for Operations
In August 2017, TVA committed to not using the gas plant production wells. In preparation for the start-up and operations of the gas plant in late spring of 2018, TVA began working with MLGW on a contingency plan to purchase the necessary water to operate the plant. In addition, TVA began constructing two, 2.5 million-gallon water tanks, which will provide necessary water for peak power demand periods, such as in the summer and winter. TVA is also working with MLGW to install a second, redundant water feed to increase reliability of the water supply for the plant.

The illustrations below show the extent of the constituents found beneath the East Ash Pond at the Allen Fossil Plant. Testing shows mostly horizontal plumes below the two wells that do not extend beyond the shallow Alluvial aquifer.

March 7, 2018