July 11, 2017

TVA Allen Fossil Plant – Site Information
East NPDES Coal Combustion Residual Surface Impoundment
Discovery of Arsenic in Ground Water Monitoring Wells

The Tennessee Valley Authority (TVA) notified Tennessee Department of Environment and Conservation (TDEC) staff via email on May 19, 2017 that ground water samples collected and analyzed from several ground water monitoring wells at the Tennessee Valley Authority (TVA) Allen Fossil Plant (ALF) had elevated levels of Arsenic, Lead and Fluoride. TVA installed these monitoring wells as required by the U.S. Environmental Protection Agency Coal Combustion Residual regulations. The ground water samples were collected from the Uppermost Aquifer at the TVA Allen Fossil Plant. The samples were taken from monitoring wells that are approximately 50 ft. below the ground. This letter provides you with the levels of these constituents found from November 2016 to May 2017 in the attached tables.

From review of the ground water sample results, there are three monitoring wells with Arsenic levels consistently above the recommended drinking water criteria of 10 parts per billion (ppb). There are six monitoring wells with Arsenic levels above the drinking water criteria. Monitoring Wells 202 and 203 have Arsenic levels above the state Drinking Water criteria. Lead at levels exceeding the state drinking water criteria has only been found in Monitoring Well 203

Upon receipt of this sampling information from TVA , TDEC notified TVA of the need to investigate this ground water contamination problem. TDEC sent a letter to TVA on June 20, 2017 requiring that TVA determine the extent of ground water contamination at or near the TVA ALF facility. The ground water investigation will require TVA to install additional ground water monitoring wells and collect ground water samples that will be analyzed for constituents commonly found in coal ash.

TDEC requested that TVA submit any information it has available about ground water quality and contamination at the TVA ALF facility on or before July 15, 2017. TDEC is also requiring TVA to conduct a ground water investigation at the TVA ALF to determine the extent of ground water contamination at the site and to determine the source of the ground water contamination. TVA is required to an Environmental Investigation Plan TDEC review and approval. TVA will be required to sample the Uppermost Aquifer at the TVA ALF site.

The ground water monitoring wells currently in place at the TVA ALF facility are installed in the Uppermost Aquifer. TDEC believes these wells were installed to a depth of approximately 50 ft. below ground surface. As a part of the site investigation, ground water monitoring wells will be installed in all directions until the ground water contaminant plume has been defined. Ground water monitoring wells will also be installed at greater depths to determine if Arsenic or other CCR constituents are moving deeper into the Uppermost Aquifer. By installing ground water monitoring wells horizontally and vertically, a three-dimensional "picture" of the extent of ground water contamination will be developed. This will aid TDEC in determining the most appropriate corrective action TVA will need to take for this site. While the extent of ground water contamination must be determined, it is also very important to determine the source of the Arsenic and Lead contamination in ground water at the TVA ALF site. Identification and removal of the source of ground water contamination is essential to successful corrective action.

TVA has submitted the analytical results of ground water samples collected from the cooling water wells TVA installed into the Memphis Sands Aquifer. TVA collected ground water samples from each of the three wells Analysis and did not find any CCR constituents above drinking water criteria.

TDEC is working with Memphis Light Gas and Water (MLGW). The Davis water supply well field is approximately 2 miles from the TVA ALF facility. MLGW has agreed to sample the ground water from the water wells entering the water treatment plant for metals such as Arsenic and Lead. MLGW will also sample the treated water distributed to MLGW customers.

TDEC is gathering information about domestic water wells and privately owned water wells installed into the Uppermost Aquifer and the Memphis Sands Aquifer within a two-mile radius of the TVA ALF facility. TDEC will use the information to determine if there are any private/domestic water wells being used as a water supply.

Please contact TDEC if you have any questions concerning this environmental investigation and TDEC will ensure TVA takes the necessary steps to ensure the protection of public health and the environment.

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Table 1. Arsenic Levels in the TVA ALF Ground Water Monitoring Wells near the TVA ALF East Ash Surface Impoundment

	MW 202	MW 203	MW 204	MW 210	MW 212	MW 213
November 2016	177	3900	46	< 10	11.6	31.6
January 2017	176	3230	42.8	< 10	12.2	16.4
February 2017	199	3220	36.8	10.6	15.4	15.1
March 2017	245	3620	49.9	< 10	14.5	11.4
April 2017	197	2890	49.1	< 10	< 10	< 10
May 2017	235	3560	56.9	< 10	< 10	< 10

Results are in parts per billion
The Drinking Water Limit for Arsenic is 10 ppb

Table 2. Lead Levels in the TVA ALF Ground Water Monitoring Wells near the TVA ALF East Ash Surface Impoundment

	MW 202	MW 203	MW 204	MW 210	MW 212	MW 213
November 2016	< 15	36	< 15	< 15	< 15	< 15
January 2017	< 15	42	< 15	< 15	< 15	< 15
February 2017	< 15	36.3	< 15	< 15	< 15	< 15
March 2017	< 15	60.4	< 15	< 15	< 15	< 15
April 2017	< 15	61.3	< 15	< 15	< 15	< 15
May 2017	< 15	63.9	< 15	< 15	< 15	< 15

Results are in parts per billion
The Drinking Water Limit for Lead is 15 ppb