Cumberland Fossil Plant

CUMBERLAND CITY, TENNESSEE

EPA CCR Rule Groundwater Monitoring for 2019

This fact sheet summarizes groundwater monitoring conducted by TVA for the Cumberland Fossil Plant, as required by the U.S. Environmental Protection Agency (EPA) Coal Combustion Residuals (CCR) Rule for the 2019 calendar year. The EPA published the CCR Rule on April 17, 2015. It requires companies operating coal-fired power plants to study whether constituents in CCR have been released to groundwater from active, inactive and new CCR impoundments, as well as active and new CCR landfills.

The CCR Rule establishes multiple phases of protective groundwater monitoring including baseline sampling, Detection Monitoring and Assessment Monitoring. Corrective action may be necessary at the completion of this process. For more information on the CCR Rule Groundwater Monitoring requirements, refer to the Executive Summary that can be found by clicking on the following hyperlink www.tva.com/ccr.

Cumberland Plant CCR Rule Groundwater Monitoring Network

In addition to ongoing groundwater monitoring required under State regulations, TVA established monitoring well networks for the Bottom Ash Pond, Dry Ash Stack, and Gypsum Storage Area and for the Stilling Pond (including Retention Pond), consisting of "background," or upgradient, wells in locations that were not expected to be affected by the management of CCR and wells around the edge of the areas where CCR is managed. These wells are sometimes referred to as "downgradient wells" and placed in locations to monitor for releases to groundwater. These CCR Rule groundwater monitoring well networks are monitored in accordance with the CCR Rule during the baseline, Detection Monitoring, and Assessment Monitoring phases. The locations of the wells are shown on the figure on the next page.

QUICK FACTS

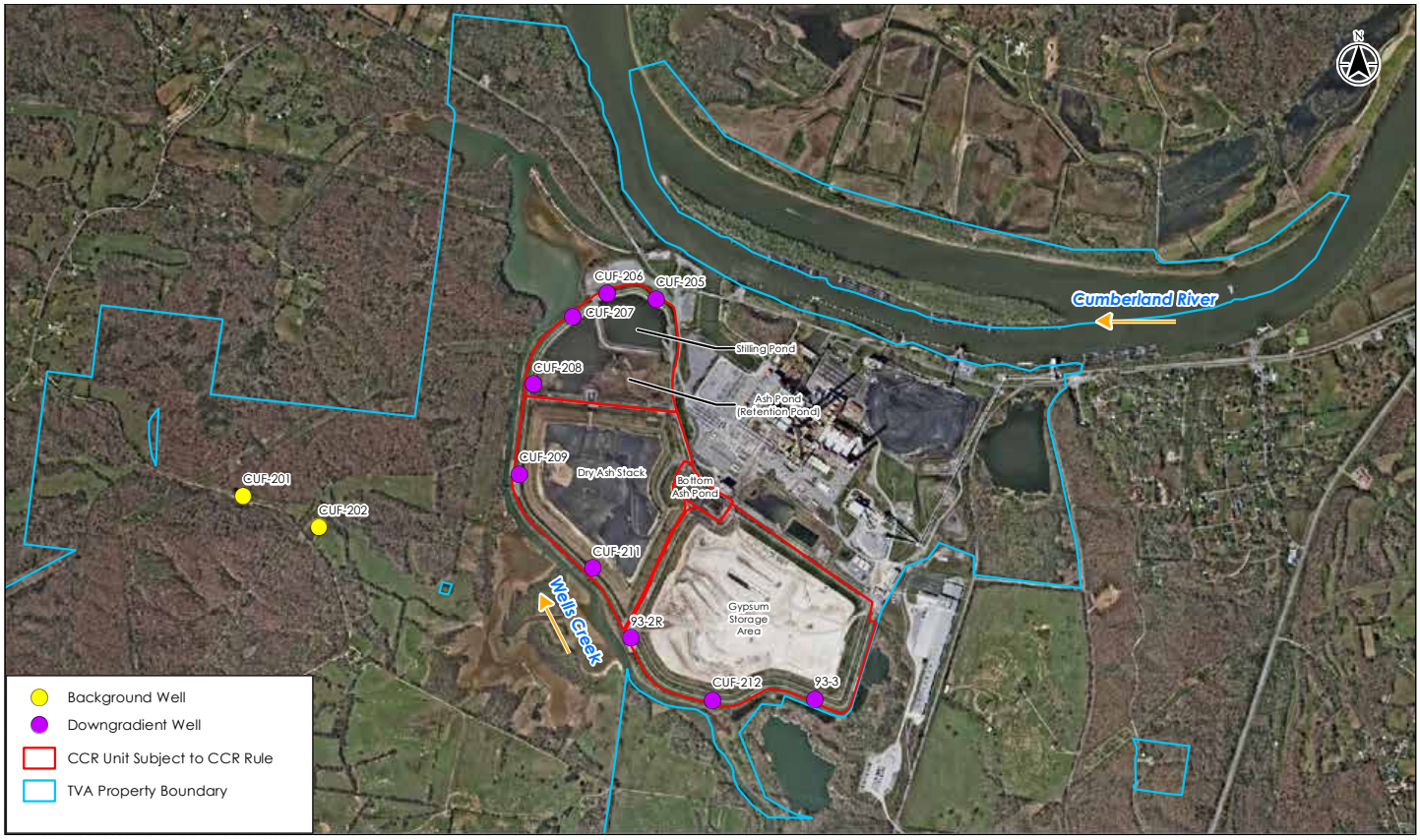
Commissioning Date: 1973

Output: 2,470 Megawatts (16 billion kilowatt-hours)

Number of homes powered: 1.1 Million

Wet to Dry / Dewatered Conversion Program: Activities underway

TVA Wide CCR Conversion Program Total Spend: Approximately $1.3 Billion



2019 Cumberland Fossil Plant CCR Rule Assessment Monitoring Results

The Assessment Monitoring results are contained in the **2019 Annual Groundwater Monitoring and Corrective Action Reports***. The reports can be found on the CCR Rule website at www.tva.com/ccr.

For the 2019 assessment monitoring, the statistically significant levels (SSLs) above the groundwater protection standard (GWPS) for lithium in well 93-3, for arsenic at well CUF-206 and for cobalt in well CUF-212 are the same as identified for the 2018 assessment monitoring sampling, and a new SSL for cobalt in well CUF-211 has been identified.

* The results in this report reflect quality of groundwater beneath the CCR units and are not necessarily an indication of impacts beyond TVA property. Local utilities are required to test public drinking water supplies to ensure that they are safe for consumption. Monitoring data consistently shows that surface water quality is not being adversely impacted by TVA's operations of its coal plants, including ash management practices.

The following table shows the reported statistical exceedances of GWPS, as reflected by the red dots. Out of the 11 wells sampled, four wells contain SSLs for a single constituent (arsenic, cobalt or lithium). Refer to Appendix A – Statistical Analysis Report of the 2019 Annual Groundwater Monitoring and Corrective Actions Reports for more information.

2019		GROUNDWATER QUALITY MONITORING WELL LOCATIONS										
		Background Wells		Dry Ash Stack and Gypsum Storage Area					Stilling and Retention Pond			
Constituent	GWPS mg/L	CUF-201	CUF-202	CUF-209	CUF-211	93-2R	CUF-212	93-3	CUF-205	CUF-206	CUF-207	CUF-208
Antimony	0.006	●	●	●	●	●	●	●	●	●	●	●
Arsenic	0.01	●	●	●	●	●	●	●	●	●	●	●
Barium	2	●	●	●	●	●	●	●	●	●	●	●
Beryllium	0.004	●	●	●	●	●	●	●	●	●	●	●
Cadmium	0.005	●	●	●	●	●	●	●	●	●	●	●
Chromium	0.1	●	●	●	●	●	●	●	●	●	●	●
Cobalt	0.006	●	●	●	●	●	●	●	●	●	●	●
Fluoride	4	●	●	●	●	●	●	●	●	●	●	●
Lead	0.015	●	●	●	●	●	●	●	●	●	●	●
Lithium	0.04	●	●	●	●	●	●	●	●	●	●	●
Mercury	0.002	●	●	●	●	●	●	●	●	●	●	●
Molybdenum	0.1	●	●	●	●	●	●	●	●	●	●	●
Rad226+228	5 pCi/L	●	●	●	●	●	●	●	●	●	●	●
Selenium	0.05	●	●	●	●	●	●	●	●	●	●	●
Thallium	0.002	●	●	●	●	●	●	●	●	●	●	●

Color Coding Key

- ● Monitoring data results are below groundwater protection standards (GWPS)
- ● Monitoring data results are below GWPS, but results are 65% or more of the GWPS
- ● Monitoring data results exceed GWPS (TVA has initiated and completed assessment of corrective measures report)

Next Steps for Cumberland Fossil Plant CCR Rule Groundwater Monitoring

TVA will continue to monitor and evaluate the groundwater at the Cumberland Fossil Plant site. TVA has completed an Assessment of Corrective Measures Report to analyze the potential effectiveness of potential corrective measures. This report was posted on the CCR Rule website on August 14, 2019. As a final groundwater remedy has not been selected for the CCR Units, semiannual reports on the progress of remedy selection were prepared and posted on the CCR Rule website on February 14, 2020.