

EDEN NORTH CAROLINA COAL ASH SPILL SURFACE WATER RESULTS

NOTE: The data below represents surface water samples that were collected on February 20, 2014 by EPA START (Team 1) sampling teams. Water sample measurements are in milligrams per liter (mg/L) and/or micrograms per liter (µg/L) for these samples. The data is being compared to EPA ecological risk screening levels (ERSLs) to protect aquatic life in the surface water of the Dan River. Specific qualifiers and footnotes are listed below the summary table. These samples were collected at various locations along the river (refer to map for generalized locations). The detected concentrations in surface water are all below the EPA ERSLs with the exception of copper and lead. EPA typically screens the surface water concentrations using total metals samples, because this is a conservative practice for screening. Because copper and lead were not detected above screening levels in any of the samples of the dissolved fraction of surface water (i.e., samples that were filtered to remove particulates), there is no threat of toxicity from lead to aquatic organisms. When chemical concentrations exceed the screening values it doesn't mean there will be adverse health or ecological effects, but recommends further investigation may be needed.

Analyte	Ecological Screening Standard for Surface Water Samples ¹		Clarksville WTP	
Sample Information				
Sample ID	-		EDEN-CLWTP-RAW-20140220	
Date	-		02/20/2014	
Time	-		1030	
Status	-		Validation Complete	
Type	-		Surface Water	
Dissolved metals SW6010C/6020A/7470A				
Aluminum	87	µg/L	15.1	µg/L
Antimony	5.6	µg/L	5.00U	µg/L
Arsenic	10	µg/L	4.5U	µg/L
Barium	220	µg/L	21.2	µg/L
Beryllium	0.66	µg/L	0.65U	µg/L
Boron	0.36	mg/L	0.0541J+	mg/L
Cadmium	0.1	µg/L	0.700U	µg/L
Calcium	-	-	9,250	µg/L
Chromium	25	µg/L	2.5U	µg/L
Cobalt	3	µg/L	5.00U	µg/L
Copper	3	µg/L	1.63J	µg/L
Iron	1,000	µg/L	116	µg/L
Lead	0.59	µg/L	0.235J	µg/L
Magnesium	-	-	3,570	µg/L
Manganese	200	µg/L	12.7	µg/L
Mercury	0.000012	mg/L	0.0002U	mg/L
Molybdenum	800	µg/L	5.00U	µg/L
Nickel	17	µg/L	5.00U	µg/L
Potassium	53,000	µg/L	1,840	µg/L
Selenium	5	µg/L	4.5U	µg/L
Silica	-	-	5.43	mg/L
Silver	0.06	µg/L	0.05U	µg/L
Sodium	680,000	µg/L	5,530	µg/L
Thallium	0.24	µg/L	0.2U	µg/L
Vanadium	27	µg/L	5.00U	µg/L
Zinc	39	µg/L	10.1	µg/L
Total Dissolved Solids EPA 160.1				
Total Dissolved Solids	-	-	107	mg/L
Total Suspended Solids EPA 160.2				
Total Suspended Solids	-	-	8.5	mg/L

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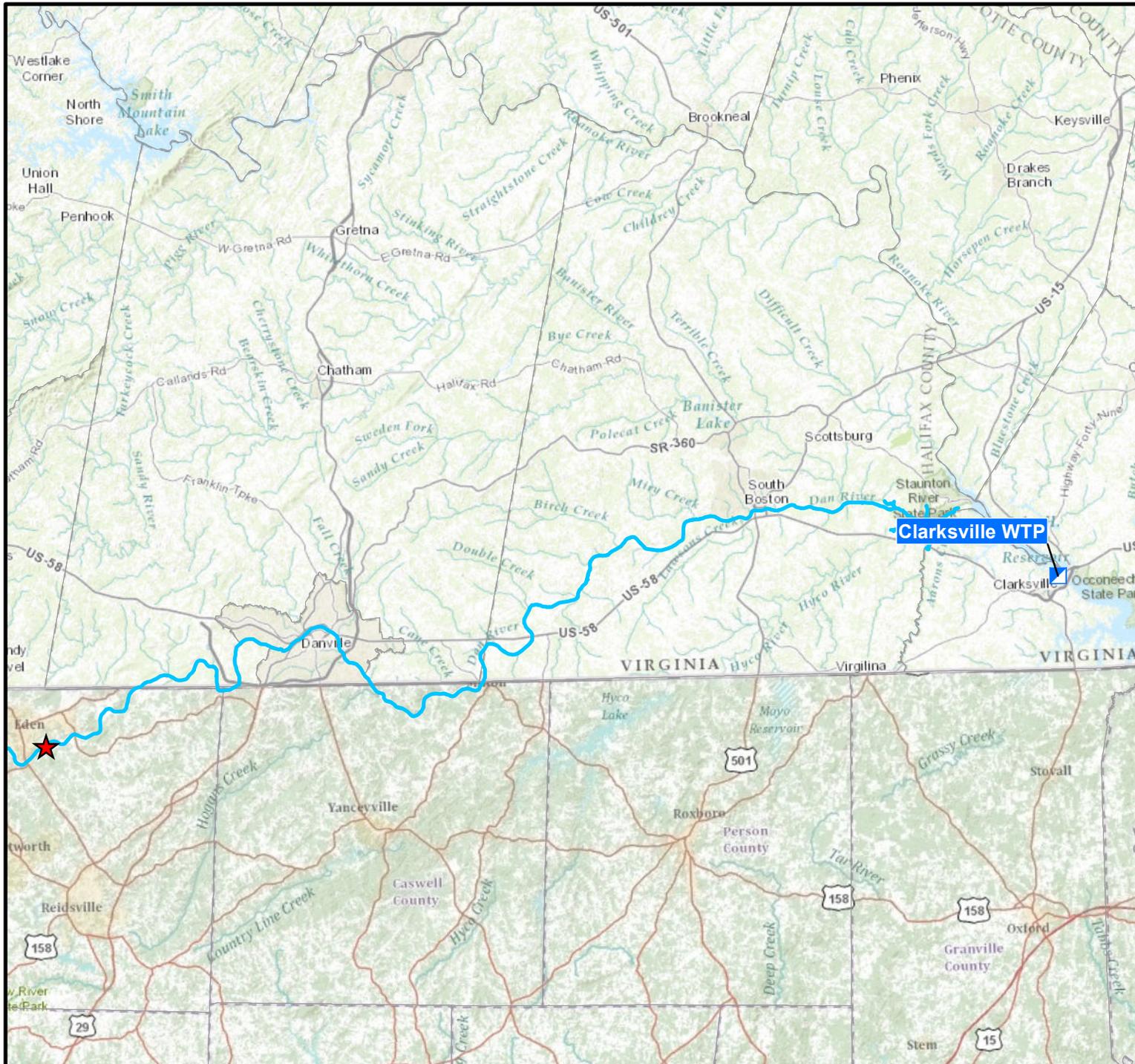
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Sample Information				
Sample ID	-		EDEN-CLWTP-RAW-20140220	
Date	-		02/20/2014	
Time	-		1030	
Status	-		Validation Complete	
Type	-		Surface Water	
Total Metals SW6010C/6020A/7470A				
Aluminum	2,000	µg/L	623	µg/L
Antimony	5.6	µg/L	5.00U	µg/L
Arsenic	10	µg/L	4.5U	µg/L
Barium	220	µg/L	26.5	µg/L
Beryllium	0.66	µg/L	0.65U	µg/L
Boron	0.36	mg/L	0.065J+	mg/L
Cadmium	2	µg/L	0.7U	µg/L
Calcium	-	-	9,530	µg/L
Chromium	29	µg/L	1.21J	µg/L
Cobalt	24	µg/L	5.00U	µg/L
Copper	3	µg/L	3.07	µg/L
Iron	2,300	µg/L	1,190	µg/L
Lead	0.6	µg/L	0.991J+	µg/L
Magnesium	-	-	3,410	µg/L
Manganese	200	µg/L	51.5	µg/L
Mercury	0.000012	mg/L	0.0002U	mg/L
Molybdenum	-	-	5.00U	µg/L
Nickel	17	µg/L	5.00U	µg/L
Potassium	53,000	µg/L	1,730	µg/L
Selenium	5	µg/L	4.5U	µg/L
Silica	-	-	6.3	mg/L
Silver	0.06	µg/L	0.055U	µg/L
Sodium	680,000	µg/L	5,500	µg/L
Thallium	0.24	µg/L	0.2U	µg/L
Vanadium	27	µg/L	2.61J	µg/L
Zinc	39	µg/L	13.9J+	µg/L
Anions EPA 300.1				
Bromide	-	-	-	µg/L
Anions SW9056A				
Bromide	-	-	1U	mg/L
Chloride	230	mg/L	12	mg/L
Sulfate	-	-	31	mg/L

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Wet Chemistry				
EPA 310.2/SM2340B/SW9040 C/SW9060A				
Alkalinity, Total (As CaCO ₃)	-	-	25.9	mg/L
Hardness, Calcium/Magnesium (As CaCO ₃)	-	-	37.8	mg/L
Organic Carbon, Dissolved	-	-	0.822J	mg/L
pH	6.5 - 9.0	std	7.36J	std

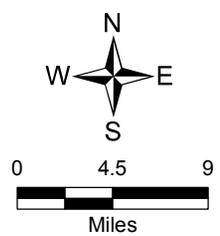
Notes

- ¹ Value obtained from the GL Tier 2 Values; National Recommended Water Quality Criteria; Suter and Tsao (1996); Reference condition for EcoRegion XI (25 percentile); NCDENR State Standards for surface water
- EPA U.S. Environmental Protection Agency
- J Value is estimated
- J+ Value is estimated with a possible high bias
- µg/L micrograms per liter
- mg/L milligrams per liter
- U Analyte was not detected at the listed reporting limit.



Legend

- ★ Approximate Spill Location
- ▣ Surface Water Sample Location
- Dan River



Map Source: ArcGIS Online World Map Topo, 2014

**Surface Water
Sample Locations
February 20, 2014**

