

EDEN NORTH CAROLINA COAL ASH SPILL SURFACE WATER RESULTS

NOTE: The data below represents surface water samples that were collected on April 12, 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 aluminum, copper, iron, and lead. EPA typically screens the surface water concentrations using total metals samples, because this is a conservative practice for screening. Copper, iron, 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), therefore there is no threat of toxicity from these compounds 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-CWTP-RAW-1-20140412	
Date	-		04/12/2014	
Time	-		0630	
Status	-		Validation Complete	
Type	-		Surface Water	
Dissolved metals				
Aluminum	87	µg/L	245	µg/L
Antimony	5.6	µg/L	5U	µg/L
Arsenic	10	µg/L	0.122J	µg/L
Barium	220	µg/L	24.2	µg/L
Beryllium	0.66	µg/L	0.65U	µg/L
Boron	0.36	mg/L	0.062J+	mg/L
Cadmium	0.1	µg/L	0.1U	µg/L
Calcium	-	-	7,630	µg/L
Chromium	25	µg/L	0.334J	µg/L
Cobalt	3	µg/L	5U	µg/L
Copper	3	µg/L	2.08	µg/L
Iron	1,000	µg/L	577	µg/L
Lead	0.59	µg/L	0.21J	µg/L
Magnesium	-	-	3,000J	µg/L
Manganese	200	µg/L	4.78J	µg/L
Mercury	0.000012	mg/L	0.0002U	mg/L
Molybdenum	800	µg/L	5U	µg/L
Nickel	17	µg/L	0.497J	µg/L
Potassium	53,000	µg/L	2,130J+	µg/L
Selenium	5	µg/L	4.5U	µg/L
Silver	0.06	µg/L	0.05U	µg/L
Sodium	680,000	µg/L	4,380J	µg/L
Thallium	0.24	µg/L	0.2U	µg/L
Vanadium	27	µg/L	1.28J	µg/L
Zinc	39	µg/L	10U	µg/L

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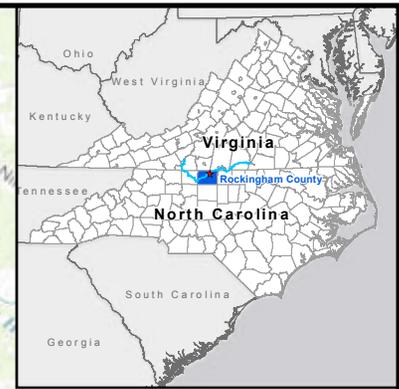
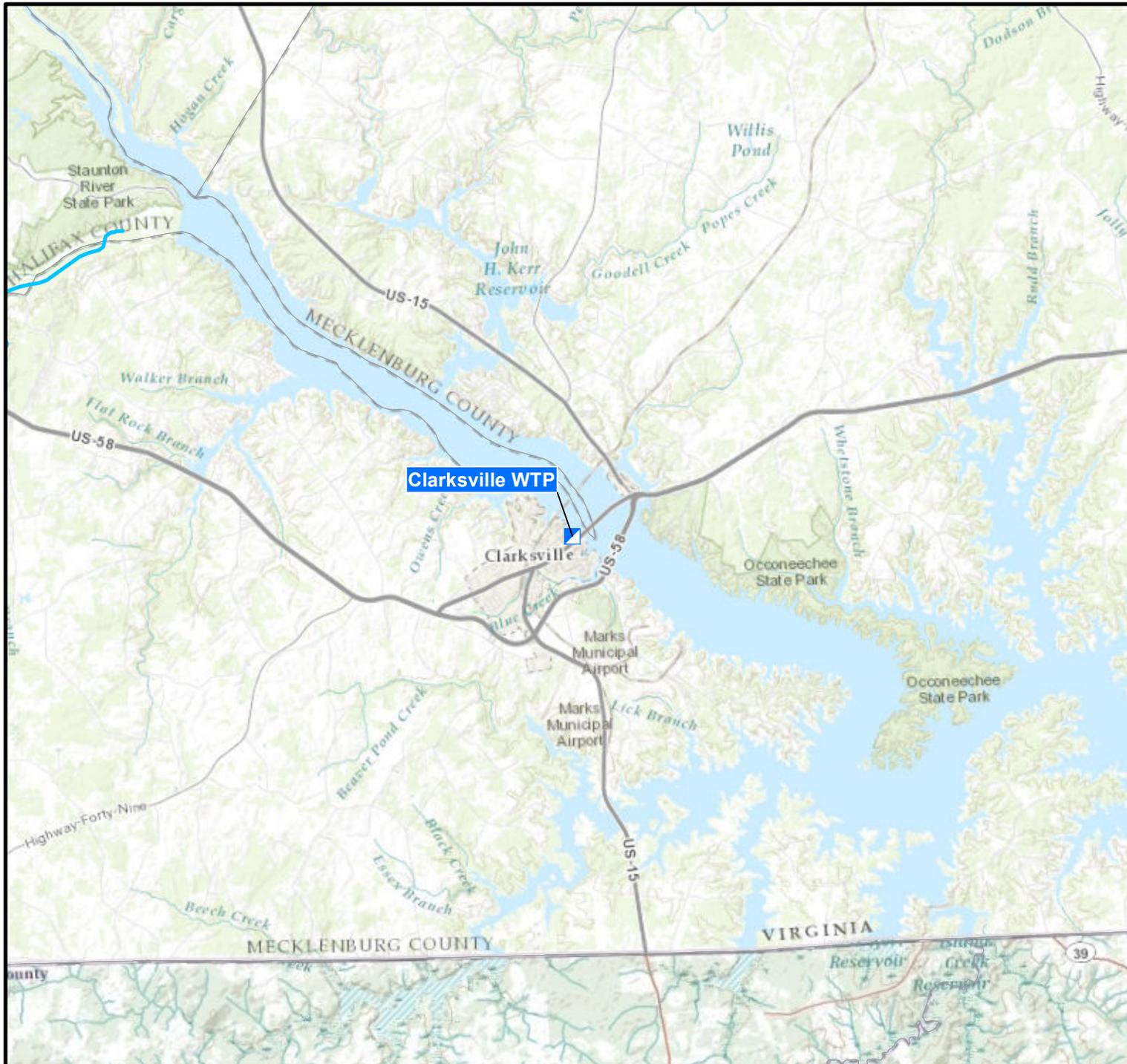
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Sample Information				
Sample ID	-		EDEN-CWTP-RAW-1-20140412	
Total Dissolved Solids				
Total Dissolved Solids	-	-	112	mg/L
Total Suspended Solids				
Total Suspended Solids	-	-	28.5	mg/L
Total Metals				
Aluminum	2,000	µg/L	1,310	µg/L
Antimony	5.6	µg/L	5U	µg/L
Arsenic	10	µg/L	0.224J	µg/L
Barium	220	µg/L	33.9	µg/L
Beryllium	0.66	µg/L	0.126J	µg/L
Boron	0.36	mg/L	0.105J+	mg/L
Cadmium	2	µg/L	0.1U	µg/L
Calcium	-	-	8,130	µg/L
Chromium	29	µg/L	2.5U	µg/L
Cobalt	24	µg/L	0.681J	µg/L
Copper	3	µg/L	3.39	µg/L
Iron	2,300	µg/L	3,400	µg/L
Lead	0.6	µg/L	1.56	µg/L
Magnesium	-	-	3,460J	µg/L
Manganese	200	µg/L	57.3	µg/L
Mercury	0.000012	mg/L	0.0002U	mg/L
Molybdenum	-	-	5U	µg/L
Nickel	17	µg/L	1.23J	µg/L
Potassium	53,000	µg/L	1,920J+	µg/L
Selenium	5	µg/L	4.5U	µg/L
Silver	0.06	µg/L	0.05U	µg/L
Sodium	680,000	µg/L	5,180J+	µg/L
Thallium	0.24	µg/L	0.2U	µg/L
Vanadium	27	µg/L	3.71J	µg/L
Zinc	39	µg/L	9.98J	µg/L
Anions				
Bromide	-	-	1U	mg/L
Chloride	230	mg/L	7.29	mg/L
Sulfate	-	-	6.52	mg/L

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Sample Information				
Sample ID	-		EDEN-CWTP-RAW-1-20140412	
Wet Chemistry				
Alkalinity, Total (As CaCO ₃)	-	-	18.9	mg/L
Hardness, Calcium/Magnesium (As CaCO ₃)	-	-	34.6	mg/L
Organic Carbon, Dissolved	-	-	6.46	mg/L
pH	6.5 - 9.0	std	6.76J	std

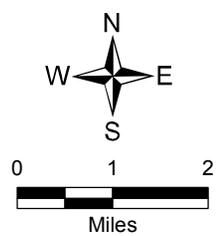
Notes

- 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
- °C degrees Celsius
- EPA U.S. Environmental Protection Agency
- J Value is estimated
- J+ Value is estimated with a possible high bias
- J- Value is estimated with a possible low bias
- µg/L micrograms per liter
- mg/L milligrams per liter
- std standard
- 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
April 12, 2014**

