

EDEN NORTH CAROLINA COAL ASH SPILL SURFACE WATER RESULTS

NOTE: The data below represents surface water samples that were collected on Feb 11, 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.

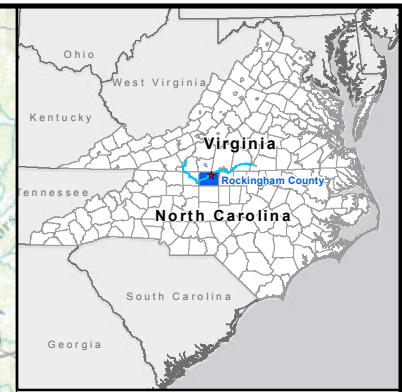
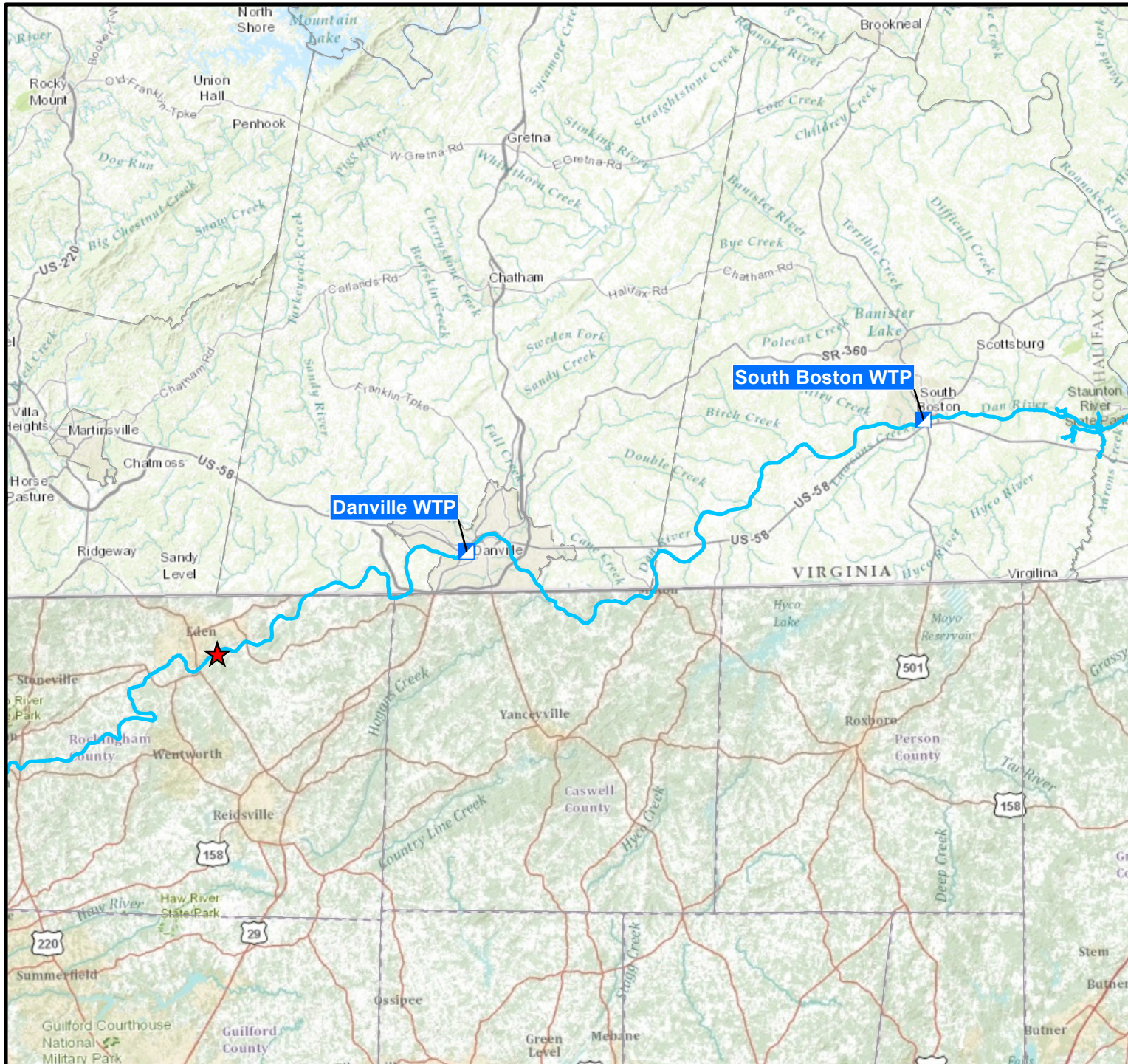
Analyte	Ecological Screening Standard for Surface Water Samples ¹		Danville Water Intake		Danville Water Intake		Danville WTP		S Boston WTP Intake	
Sample Information										
Sample ID	-		EDEN-DANIN-20140211		EDEN-DANIN-20140211-DUP		EDEN-DWTP-RAW-20140211		EDEN-SBWTP-RAW-20140211	
Date	-		2/11/2014		2/11/2014		2/11/2014		2/11/2014	
Time	-		1225		1230		1200		1055	
Status	-		Validation Complete		Validation Complete		Validation Complete		Validation Complete	
Type	-		Surface Water		Surface Water		Surface Water		Surface Water	
Water Quality Monitoring										
Temperature	-		4.43	°C	-	-	-	-	-	-
Dissolved Oxygen	<6	mg/L	8	mg/L	-	-	-	-	-	-
Specific Conductance	-		0.097	mS/cm	-	-	-	-	-	-
pH	6.5 - 9.0	std	7.26	std	-	-	-	-	-	-
Turbidity	50	NTU	12	NTU	-	-	-	-	-	-
Dissolved metals SW6010C/6020A/7470A										
Aluminum	87	µg/L	12.5J+	µg/L	12.3J+	µg/L	8.19J	µg/L	14.4J+	µg/L
Antimony	5.6	µg/L	5.00U	µg/L	5.00U	µg/L	5.00U	µg/L	5.00U	µg/L
Arsenic	10	µg/L	4.50U	µg/L	4.50U	µg/L	4.50U	µg/L	4.50U	µg/L
Barium	220	µg/L	20.7	µg/L	21.2	µg/L	18.4	µg/L	20.4	µg/L
Beryllium	0.66	µg/L	1.00U	µg/L	1.00U	µg/L	1.00U	µg/L	1.00U	µg/L
Boron	0.36	mg/L	0.140J+	mg/L	0.267J+	mg/L	0.14J+	mg/L	0.113J+	mg/L
Cadmium	0.1	µg/L	0.700U	µg/L	0.700U	µg/L	0.700U	µg/L	0.700U	µg/L
Calcium	-	-	6,910	µg/L	7,190	µg/L	6,730	µg/L	6,970	µg/L
Chromium	25	µg/L	2.50U	µg/L	2.50U	µg/L	2.50U	µg/L	2.50U	µg/L
Cobalt	3	µg/L	5.00U	µg/L	5.00U	µg/L	5.00U	µg/L	5.00U	µg/L
Copper	3	µg/L	2.00U	µg/L	2.00U	µg/L	2.00U	µg/L	2.00U	µg/L
Iron	1,000	µg/L	116	µg/L	127	µg/L	54.9J	µg/L	146	µg/L
Lead	0.59	µg/L	0.0997J	µg/L	1.00U	µg/L	1.00U	µg/L	1.00U	µg/L
Magnesium	-	-	2,520	µg/L	2,550	µg/L	2,470	µg/L	2,600	µg/L
Manganese	200	µg/L	11.3	µg/L	10.8	µg/L	33.5	µg/L	10	µg/L
Mercury	0.000012	mg/L	0.00020U	mg/L	0.00020U	mg/L	0.00020U	mg/L	0.00020U	mg/L
Molybdenum	800	µg/L	5.00U	µg/L	5.00U	µg/L	5.00U	µg/L	5.00U	µg/L
Nickel	17	µg/L	0.199J	µg/L	0.237J	µg/L	0.170J	µg/L	0.214J	µg/L
Potassium	53,000	µg/L	1330	µg/L	1,420	µg/L	1,390	µg/L	1,480	µg/L
Selenium	5	µg/L	5.00U	µg/L	5.00U	µg/L	5.00U	µg/L	5.00U	µg/L
Silica	-	-	7300	mg/L	7230	mg/L	7160	mg/L	7740	mg/L
Silver	0.06	µg/L	1.00U	µg/L	1.00U	µg/L	1.00U	µg/L	1.00U	µg/L
Sodium	680,000	µg/L	4610	µg/L	4,730	µg/L	4,470	µg/L	6,200	µg/L
Thallium	0.24	µg/L	0.200U	µg/L	0.200U	µg/L	0.200U	µg/L	0.200U	µg/L
Vanadium	27	µg/L	5.00U	µg/L	5.00U	µg/L	5.00U	µg/L	5.00U	µg/L
Zinc	39	µg/L	10.0U	µg/L	10.0U	µg/L	10.0U	µg/L	10.0U	µg/L
Total Dissolved Solids EPA 160.1										
Total Dissolved Solids	-	-	78J	mg/L	58J	mg/L	77	mg/L	85	mg/L
Total Suspended Solids EPA 160.2										
Total Suspended Solids	-	-	9.5	mg/L	9.5	mg/L	16	mg/L	15	mg/L
Total Metals SW6010C/6020A/7470A										
Aluminum	2,000	µg/L	273J	µg/L	390J	µg/L	411	µg/L	255	µg/L
Antimony	5.6	µg/L	5.00U	µg/L	5.00U	µg/L	5.00U	µg/L	5.00U	µg/L
Arsenic	10	µg/L	4.50U	µg/L	4.50U	µg/L	0.635J	µg/L	4.50U	µg/L
Barium	220	µg/L	22.7	µg/L	23.3	µg/L	23.7	µg/L	23.5	µg/L
Beryllium	0.66	µg/L	1.00U	µg/L	1.00U	µg/L	1.00U	µg/L	1.00U	µg/L
Boron	0.36	mg/L	0.278J+	mg/L	0.150J+	mg/L	0.14J+	mg/L	0.123J+	mg/L
Cadmium	2	µg/L	0.700U	µg/L	0.700U	µg/L	0.700U	µg/L	0.700U	µg/L
Calcium	-	-	6,730	µg/L	6,330	µg/L	6,740	µg/L	6,680	µg/L

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Sample ID	-		EDEN-DANIN-20140211		EDEN-DANIN-20140211-DUP		EDEN-DWTP-RAW-20140211		EDEN-SBWTP-RAW-20140211	
Chromium	29	µg/L	2.50U	µg/L	0.929J	µg/L	1.08J	µg/L	2.50U	µg/L
Cobalt	24	µg/L	5.00U	µg/L	5.00U	µg/L	5.00U	µg/L	5.00U	µg/L
Copper	3	µg/L	0.824J	µg/L	0.915J	µg/L	1.57J	µg/L	0.828J	µg/L
Iron	2,300	µg/L	429	µg/L	480	µg/L	556	µg/L	529	µg/L
Lead	0.6	µg/L	0.324J	µg/L	0.385J	µg/L	0.524J	µg/L	0.378J	µg/L
Magnesium	-	-	2,460J-	µg/L	2,330J-	µg/L	2,410	µg/L	2,490	µg/L
Manganese	200	µg/L	17.3	µg/L	17.0	µg/L	138	µg/L	28.5	µg/L
Mercury	0.000012	mg/L	0.00020U	mg/L	0.00020U	mg/L	0.00020U	mg/L	0.00020U	mg/L
Molybdenum	-	-	5.00U	µg/L	5.00U	µg/L	5.00U	µg/L	5.00U	µg/L
Nickel	17	µg/L	0.360J	µg/L	0.486J	µg/L	1.04J	µg/L	0.375J	µg/L
Potassium	53,000	µg/L	1320	µg/L	1250	µg/L	1380	µg/L	1410	µg/L
Selenium	5	µg/L	5.00U	µg/L	5.00U	µg/L	5.00U	µg/L	5.00U	µg/L
Silica	-	-	7,460	mg/L	7,660	mg/L	7,310	mg/L	8,040	mg/L
Silver	0.06	µg/L	1.00U	µg/L	1.00U	µg/L	1.00U	µg/L	1.00U	µg/L
Sodium	680,000	µg/L	4,510	µg/L	4,240	µg/L	4,390	µg/L	5,920	µg/L
Thallium	0.24	µg/L	0.200U	µg/L	0.200U	µg/L	0.0788J	µg/L	0.200U	µg/L
Vanadium	27	µg/L	1.12J	µg/L	1.35J	µg/L	1.60J	µg/L	1.31J	µg/L
Zinc	39	µg/L	10.0U	µg/L	10.0U	µg/L	13.3	µg/L	6.80J	µg/L
Anions SW9056A										
Bromide	-	-	1.0U	mg/L	1.0U	mg/L	1.0U	mg/L	1.0U	mg/L
Chloride	230	mg/L	8.8	mg/L	8.9	mg/L	8.8	mg/L	11	mg/L
Sulfate	-	-	5.6	mg/L	5.6	mg/L	5.7	mg/L	6.4	mg/L
Wet Chemistry EPA 310.2/SM2340B/SW9040C/SW9060A										
Alkalinity, Total (As CaCO ₃)	-	-	27.2	mg/L	25.5	mg/L	28.2	mg/L	18.0	mg/L
Hardness, Calcium/Magnesium (As CaCO ₃)	-	-	26.9	mg/L	25.4	mg/L	26.8	mg/L	26.9	mg/L
Organic Carbon, Dissolved	-	-	4.16J	mg/L	2.84J	mg/L	4.96	mg/L	4.87	mg/L
pH	6.5 - 9.0	std	7.07J	std	7.05J	std	7.13J	std	7.14J	std

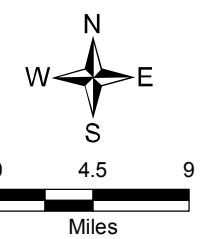
Notes

- 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
- µg/L micrograms per liter
- mg/L milligrams per liter
- mS/cm milliSiemens per centimeter
- NTU Nephelometric turbidity units
- 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
February 11, 2014**

