

EDEN NORTH CAROLINA COAL ASH SPILL SEDIMENT RESULTS

NOTE: The data below represents sediment samples that were collected on April 24, 2014 by EPA START Team 1. Sediment sample measurements are in milligrams per kilogram (mg/kg). The data is being compared to ecological risk screening levels (ERSLs) to protect aquatic life in the sediments 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 sediment are all below the ERSLs with the exception of aluminum and iron. There were no exceedances of human health screening criteria for sediment. 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 Standards for Sediment ²		Leaksville Boat Access Dock		Confluence of Dan and Staunton Kerr Reservoir	
Sample Information						
Sample ID	-		EDEN-LBA-R-SD-20140424		EDEN-DSS-L-SD-20140424	
Date	-		04/24/2014		04/24/2014	
Time	-		1140		1200	
Status	-		Validation Complete		Validation Complete	
Type	-		Sediment		Sediment	
Total Metals						
Aluminum	3,200 (bkg)	mg/kg	4,700	mg/kg	-	-
Antimony	2 ^a	mg/kg	1.4U	mg/kg	-	-
Arsenic	9.8	mg/kg	2.8U	mg/kg	-	-
Barium	60 ^b	mg/kg	46	mg/kg	-	-
Beryllium	-	-	0.28J	mg/kg	-	-
Boron	-	-	14U	mg/kg	-	-
Cadmium	0.99	mg/kg	0.041J	mg/kg	-	-
Calcium	-	-	460	mg/kg	-	-
Chromium	43.4	mg/kg	12	mg/kg	-	-
Cobalt	50	mg/kg	3.9	mg/kg	-	-
Copper	31.6	mg/kg	4.6	mg/kg	-	-
Iron	6,800 (bkg)	mg/kg	8,300	mg/kg	-	-
Lead	35.8	mg/kg	3.8	mg/kg	-	-
Magnesium	-	-	1,600	mg/kg	-	-
Manganese	460 ^c	mg/kg	130	mg/kg	-	-
Mercury	0.18	mg/kg	0.028U	mg/kg	-	-
Molybdenum	-	-	1.4U	mg/kg	-	-
Nickel	22.7	mg/kg	4.8J	mg/kg	-	-
Potassium	-	-	1,300	mg/kg	-	-
Selenium	2 ^d	mg/kg	0.7U	mg/kg	-	-
Silver	0.733	mg/kg	0.14U	mg/kg	-	-
Sodium	-	-	280U	mg/kg	-	-
Thallium	-	mg/kg	0.12J	mg/kg	-	-
Vanadium	57 ^c	mg/kg	15	mg/kg	-	-
Zinc	121	mg/kg	21	mg/kg	-	-

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Date	-	04/24/2014	04/24/2014
Time	-	1140	1200
Status	-	Validation Complete	Validation Complete
Type	-	Sediment	Sediment
Physical Properties			
Percent Ash	-	-	-

Notes

² MacDonald, D.D.; Ingersoll, C.G.; Smorong, D.E.; Lindskoog, R.A.; Sloane, G; and T. Biernacki. 2003. Development and Evaluation of Numerical Sediment Quality Assessment Guidelines for Florida Inland Waters. Florida Department of Environmental Protection, Tallahassee, FL. Development and Evaluation of Numerical Sediment Quality Assessment Guidelines for Florida Inland Waters.

^a The screening value for antimony is from Long, Edward R., and Lee G. Morgan. 1991. The Potential for Biological Effects of Sediment-Sorbed Contaminants Tested in the National Status and Trends Program. NOAA Technical Memorandum NOS OMA 52.

^b The screening value for barium was the probable effect level (PEL) instead of the threshold effect level (TEL) because the TEL was below background

^c Sediment screening values for manganese and vanadium come from the NOAA SQuIRT.

<http://response.restoration.noaa.gov/sites/default/files/SQuIRTs.pdf>

^d The screening value for selenium is from Region 3 after Lemley, A.D. 2002. Selenium assessment in aquatic ecosystems. US Forest Service, Blacksburg, VA.

^e Cadmium from diet

^f Chromium (VI)

^g Methyl Mercury

^h Thallium Chloride

% Percent

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

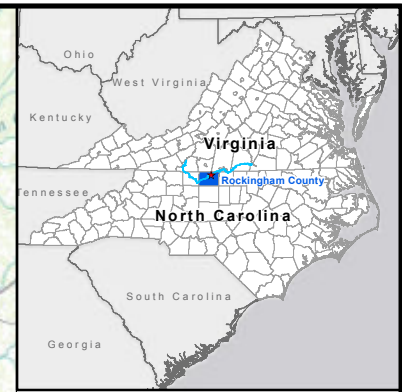
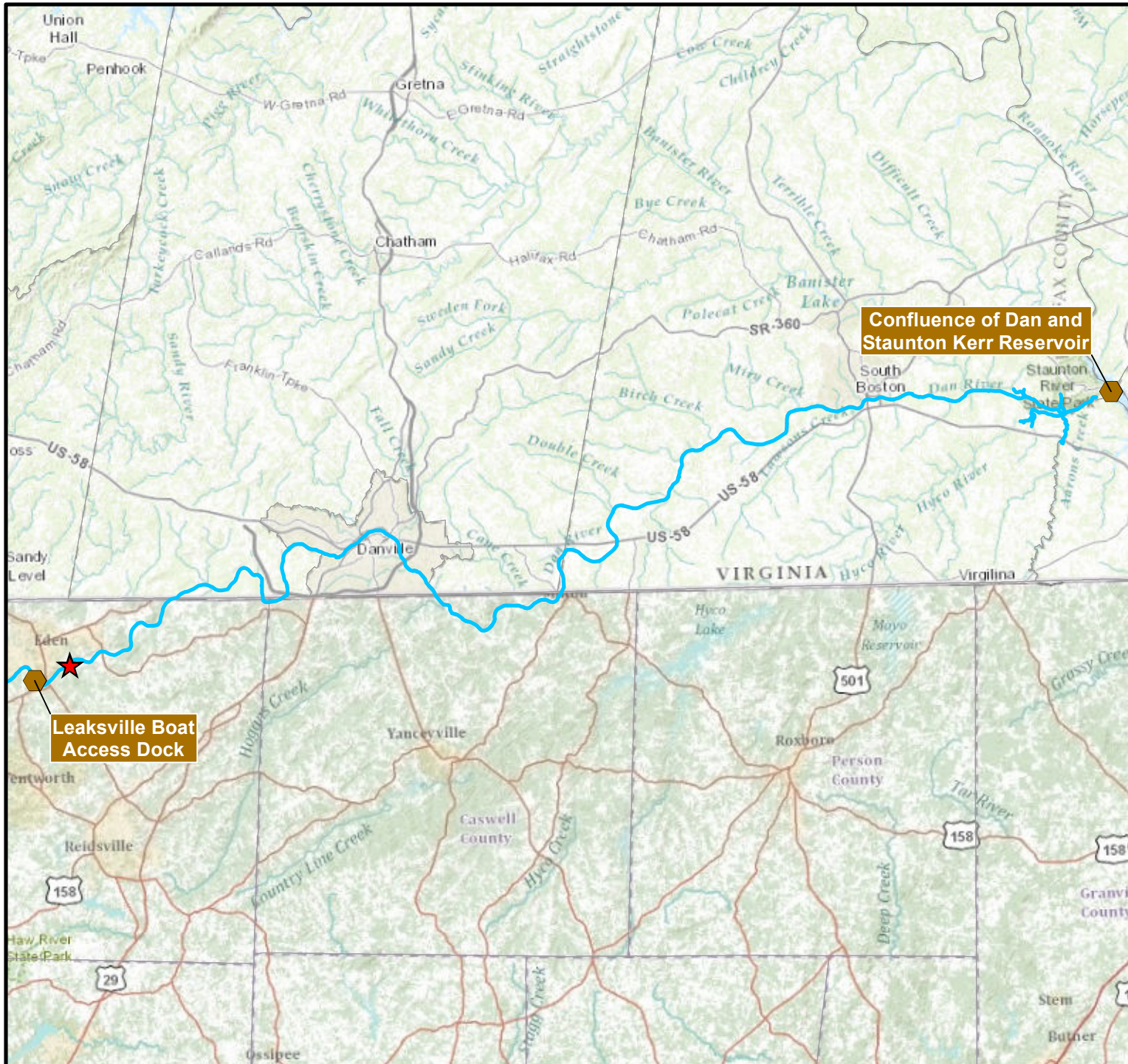
mg/kg milligrams per kilogram

ND No fly ash detected at a PLM reporting limit of 1 percent

PLM Polarized light microscopy

U Analyte was not detected at the listed reporting limit.

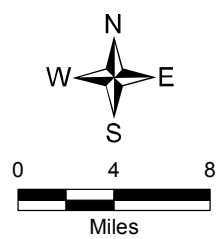
UJ Analyte was not detected at the listed reporting limit, which is an estimated quantitation.



Confluence of Dan and Staunton Kerr Reservoir

Leaksville Boat Access Dock

- Legend**
- ★ Approximate Spill Location
 - ⬡ Sediment Sample Location
 - Dan River



Map Source: ArcGIS Online World Map Topo, 2014

Sediment Sample Locations
April 24, 2014

