

EDEN NORTH CAROLINA COAL ASH SPILL SEDIMENT RESULTS

NOTE: The data below represents sediment samples that were collected on May 1, 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, barium, 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	
Sample Information				
Sample ID	-		EDEN-LBA-R-SD-20140501	
Date	-		05/01/2014	
Time	-		1310	
Status	-		Validation Complete	
Type	-		Sediment	
Total Metals				
Aluminum	3,200 (bkg)	mg/kg	6,000	mg/kg
Antimony	2 ^a	mg/kg	1.2UJ	mg/kg
Arsenic	9.8	mg/kg	1.3J	mg/kg
Barium	60 ^b	mg/kg	61	mg/kg
Beryllium	-	-	0.36J	mg/kg
Boron	-	-	13U	mg/kg
Cadmium	0.99	mg/kg	0.061U	mg/kg
Calcium	-	-	590	mg/kg
Chromium	43.4	mg/kg	16	mg/kg
Cobalt	50	mg/kg	5	mg/kg
Copper	31.6	mg/kg	5.9	mg/kg
Iron	6,800 (bkg)	mg/kg	10,000	mg/kg
Lead	35.8	mg/kg	4.1	mg/kg
Magnesium	-	-	2,200	mg/kg
Manganese	460 ^c	mg/kg	190	mg/kg
Mercury	0.18	mg/kg	0.023U	mg/kg
Molybdenum	-	-	1.3U	mg/kg
Nickel	22.7	mg/kg	6.7	mg/kg
Potassium	-	-	1,800	mg/kg
Selenium	2 ^d	mg/kg	0.61U	mg/kg
Silver	0.733	mg/kg	0.12U	mg/kg
Sodium	-	-	260U	mg/kg
Thallium	-	mg/kg	0.066J	mg/kg
Vanadium	57 ^c	mg/kg	18	mg/kg
Zinc	121	mg/kg	25	mg/kg

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Sample Information			
Sample ID	-	EDEN-LBA-R-SD-20140501	
Physical Properties			
Percent Ash	-	-	ND %

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

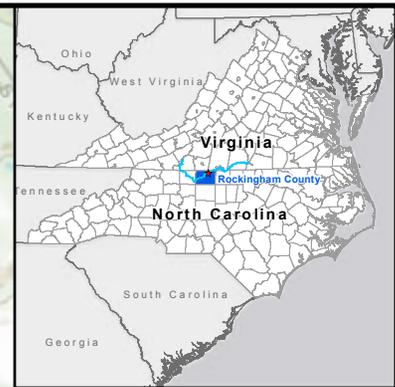
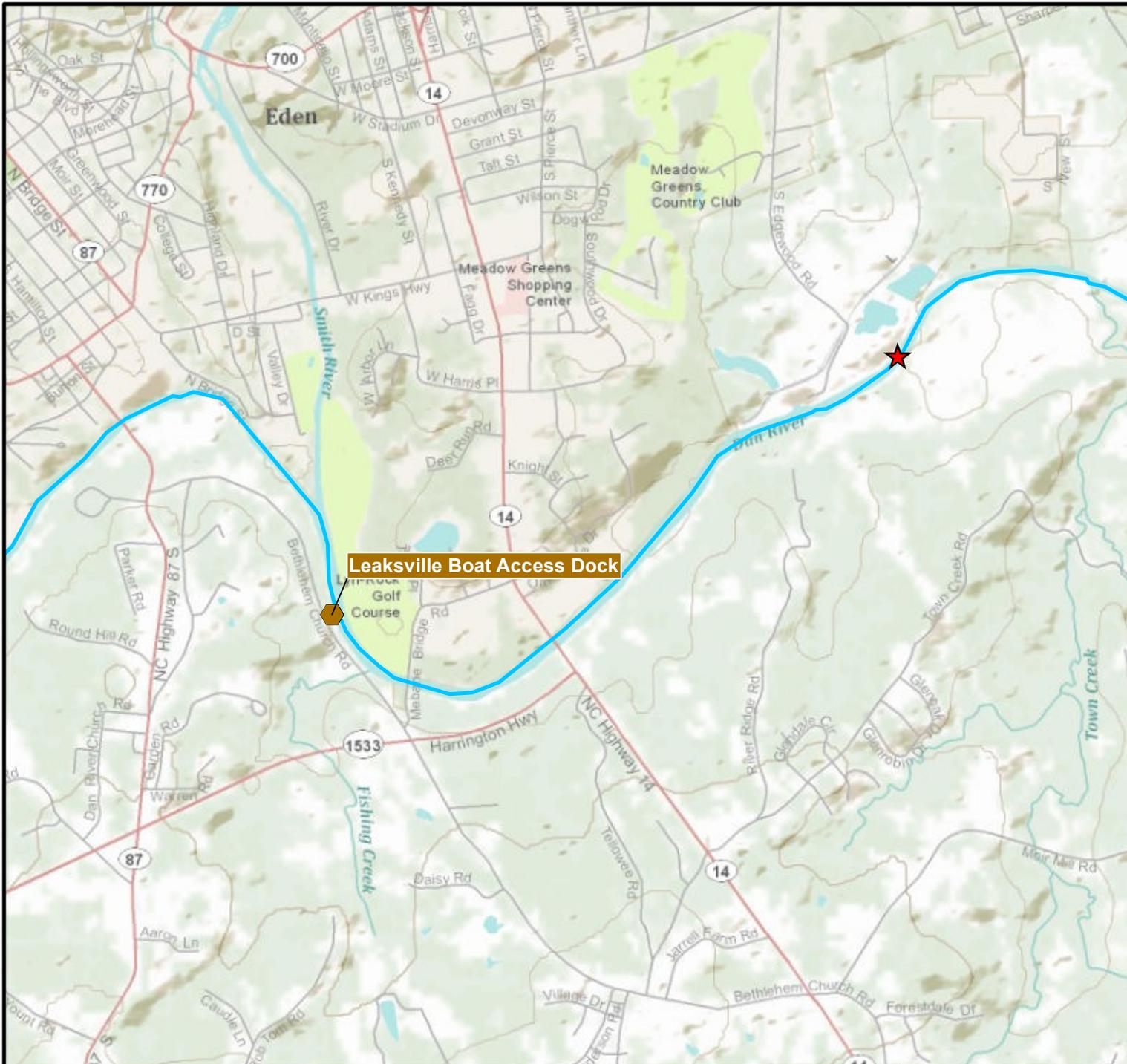
mg/kg milligrams per kilogram

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

PLM Polarized light microscopy

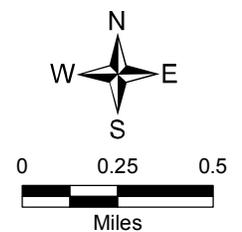
U Analyte was not detected at the listed reporting limit.

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



Legend

-  Approximate Spill Location
-  Sediment Sample Location
-  Dan River



Map Source: ArcGIS Online World Map Topo, 2014

**Sediment Sample Locations
May 1, 2014**

