

**EDEN NORTH CAROLINA COAL ASH SPILL
SEDIMENT RESULTS**

Analyte	Ecological Screening Standard for Sediment Samples ²		Upstream Sample - approximately 500 yards downstream of dam at plant		Approximately 0.5 mile downstream of outfall pipe		Approximately 1.5 mile downstream of outfall pipe	
Sample Information								
Sample ID	-		DRREF-F1814SD		DR1-F1814SD		DR2-F1814SD	
Date	-		02/18/2014		02/18/2014		02/18/2014	
Time	-		1330		1335		1406	
Status	-		Validation Complete		Validation Complete		Validation Complete	
Media	-		Sediment		Sediment		Sediment	
Total Metals								
Aluminum	3,200 (bkg)	mg/kg	2,800	mg/kg	6,800	mg/kg	4,500	mg/kg
Antimony	2 ^a	mg/kg	0.2U	mg/kg	0.2U,J,QM-1	mg/kg	0.2U	mg/kg
Arsenic	9.8	mg/kg	0.29	mg/kg	1	mg/kg	0.63	mg/kg
Barium	60 ^b	mg/kg	35	mg/kg	100	mg/kg	59	mg/kg
Beryllium	-	-	0.3U	mg/kg	0.6U	mg/kg	0.37	mg/kg
Boron	-	-	5U	mg/kg	10U	mg/kg	5U	mg/kg
Cadmium	0.99	mg/kg	0.099U	mg/kg	0.13	mg/kg	0.1U	mg/kg
Calcium	-	-	290	mg/kg	790	mg/kg	470	mg/kg
Chromium	43.4	mg/kg	10	mg/kg	17	mg/kg	12	mg/kg
Cobalt	50	mg/kg	3.3	mg/kg	7.2	mg/kg	4.1	mg/kg
Copper	31.6	mg/kg	3	mg/kg	9.4	mg/kg	5.1	mg/kg
Iron	6,800 (bkg)	mg/kg	6,100	mg/kg	14,000	mg/kg	8,800	mg/kg
Lead	35.8	mg/kg	3	mg/kg	7.4	mg/kg	4.3	mg/kg
Magnesium	-	-	1,200	mg/kg	2,500J,QM-1	mg/kg	1,700	mg/kg
Manganese	460 ^c	mg/kg	110	mg/kg	360	mg/kg	160	mg/kg
Mercury	0.18	mg/kg	0.029U	mg/kg	0.04U	mg/kg	0.047U	mg/kg
Molybdenum	-	-	0.99U	mg/kg	2U	mg/kg	1U	mg/kg
Nickel	22.7	mg/kg	3.4	mg/kg	7.2	mg/kg	4.5	mg/kg
Potassium	-	-	940	mg/kg	1,800	mg/kg	1,300	mg/kg
Selenium	2 ^d	mg/kg	0.4U	mg/kg	0.4U	mg/kg	0.4U	mg/kg
Silver	0.733	mg/kg	0.099U	mg/kg	0.1U	mg/kg	0.1U	mg/kg
Sodium	-	-	99U	mg/kg	200U	mg/kg	100U	mg/kg
Strontium	3.1 (bkg)	mg/kg	2.8	mg/kg	9.2	mg/kg	5.6	mg/kg
Thallium	-	-	0.2U	mg/kg	0.2U	mg/kg	0.2U	mg/kg
Tin	-	-	1.5U	mg/kg	3U	mg/kg	1.5U	mg/kg
Titanium	-	-	300	mg/kg	560	mg/kg	410	mg/kg
Vanadium	57 ^c	mg/kg	11	mg/kg	24	mg/kg	16	mg/kg
Yttrium	3.8 (bkg)	mg/kg	2.8	mg/kg	9.4	mg/kg	5.1	mg/kg
Zinc	121	mg/kg	15	mg/kg	32	mg/kg	20	mg/kg
Physical Properties								
% Solids	-	-	69	%	61	%	67	%

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.

EPA U.S. Environmental Protection Agency
 µg/kg micrograms per kilogram
 mg/kg milligrams per kilogram
 % percent

**EDEN NORTH CAROLINA COAL ASH SPILL
SEDIMENT RESULTS**

Analyte	Ecological Screening Standard for Sediment Samples ²		Approximately 0.5 mile downstream of Hwy 700 Bridge	
Sample Information				
Sample ID	-		DR3-F1814SD	
Date	-		02/18/2014	
Time	-		1052	
Status	-		Validation Complete	
Media	-		Sediment	
Total Metals				
Aluminum	3,200 (bkg)	mg/kg	4,300	mg/kg
Antimony	2 ^a	mg/kg	0.2U	mg/kg
Arsenic	9.8	mg/kg	1.3	mg/kg
Barium	60 ^b	mg/kg	74	mg/kg
Beryllium	-	-	0.43	mg/kg
Boron	-	-	5U	mg/kg
Cadmium	0.99	mg/kg	0.099U	mg/kg
Calcium	-	-	490	mg/kg
Chromium	43.4	mg/kg	12	mg/kg
Cobalt	50	mg/kg	4.5	mg/kg
Copper	31.6	mg/kg	6	mg/kg
Iron	6,800 (bkg)	mg/kg	8,300	mg/kg
Lead	35.8	mg/kg	4.2	mg/kg
Magnesium	-	-	1,700	mg/kg
Manganese	460 ^c	mg/kg	170	mg/kg
Mercury	0.18	mg/kg	0.042U	mg/kg
Molybdenum	-	-	0.99U	mg/kg
Nickel	22.7	mg/kg	4.9	mg/kg
Potassium	-	-	1,300	mg/kg
Selenium	2 ^d	mg/kg	0.4U	mg/kg
Silver	0.733	mg/kg	0.099U	mg/kg
Sodium	-	-	99U	mg/kg
Strontium	3.1 (bkg)	mg/kg	8.8	mg/kg
Thallium	-	-	0.2U	mg/kg
Tin	-	-	1.5U	mg/kg
Titanium	-	-	400	mg/kg
Vanadium	57 ^c	mg/kg	16	mg/kg
Yttrium	3.8 (bkg)	mg/kg	5.1	mg/kg
Zinc	121	mg/kg	20	mg/kg
Physical Properties				
% Solids	-	-	68	%

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.

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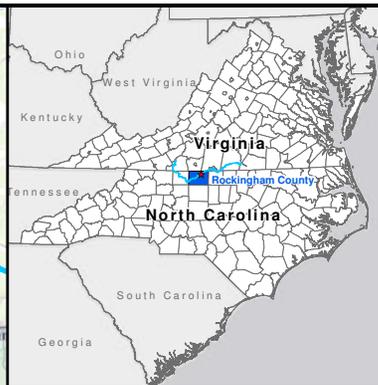
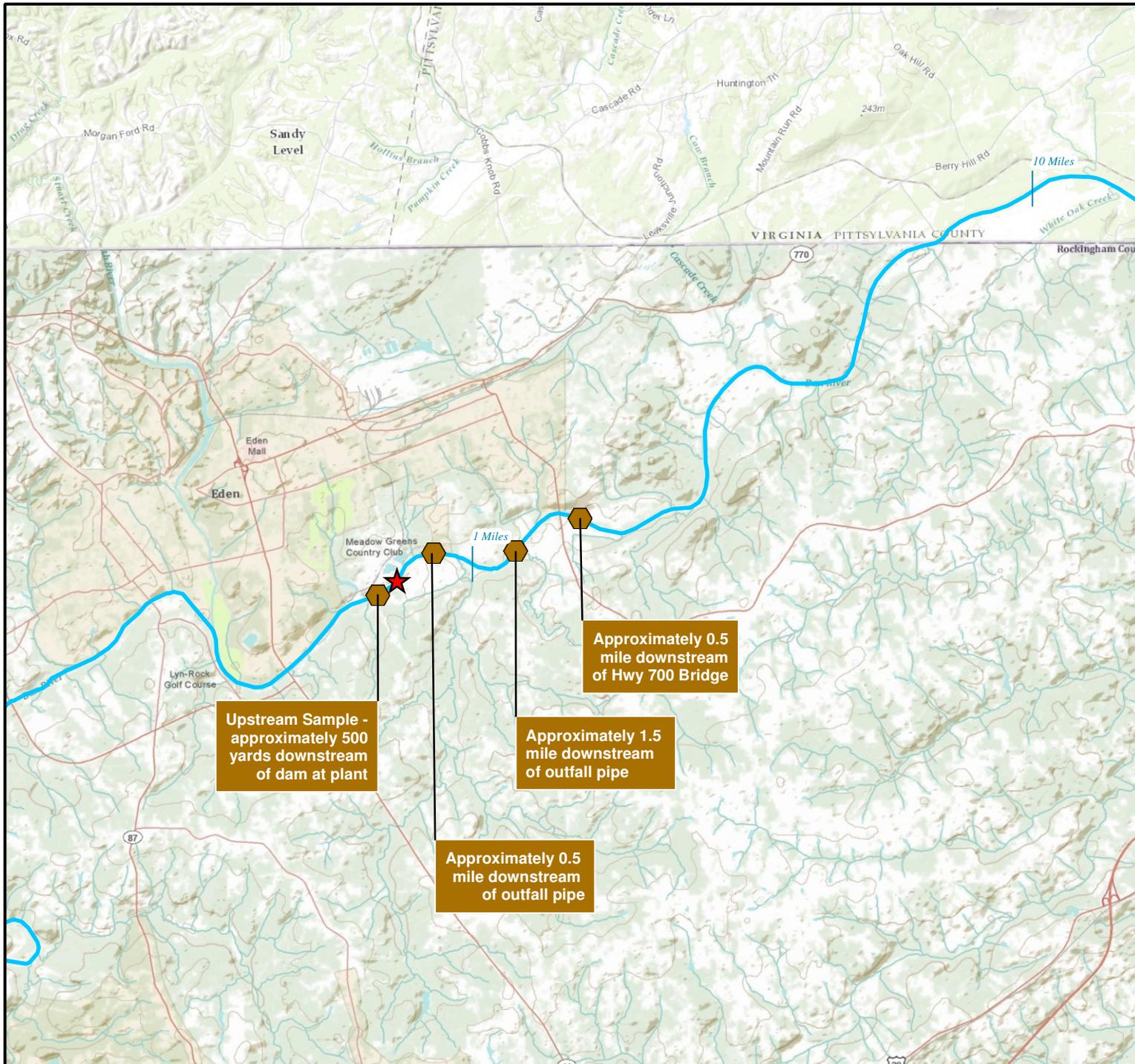
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EPA U.S. Environmental Protection Agency
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mg/kg milligrams per kilogram
% percent

DATA QUALIFIER DEFINITIONS

B-2	Reporting level elevated due to trace amounts of analyte present in the method blank
B-3	Level in blank does not impact data quality
B-4	Level in blank impacts MRLs
B-5	Qualitative evidence of contamination in the blank at a concentration less than the MDL
C-2	Improper sample container used
H-1	Recommended holding time exceeded
J	The identification of the analyte is acceptable; the reported value is an estimate
MRL-1	MRL verification for Potable Water matrix (Drinking Water)
MRL-2	MRL verification for Non-Potable Water matrix
MRL-3	MRL verification for Soil matrix
MRL-6	MRL verification for Waste matrix
N	There is presumptive evidence that the analyte is present; the analyte is reported as a tentative identification
NA-5	Not Analyzed. Cannot exceed TCLP regulatory levels based on Total Scan analyses
NA-9	Not Analyzed. No sample container received.
NJ	Presumptive evidence that the analyte is present; reported as a tentative identification with an estimated value
P-6	Incorrect reagent or technique used to preserve sample
Q-2	Result greater than MDL but less than MRL
QC-1	Analyte concentration low in continuing calibration verification standard
QC-2	Analyte concentration high in continuing calibration verification standard
QC-5	Calibration check standard less than method control limits
QC-6	Calibration check standard greater than method control limits
QI-1	Internal standard was outside of method control limits
QL-1	Laboratory Control Spike Recovery less than method control limits
QL-2	Laboratory Control Spike Recovery greater than method control limits
QL-3	Laboratory Control Spike Precision outside of method control limits
QM-1	Matrix Spike Recovery less than method control limits
QM-2	Matrix Spike Recovery greater than method control limits
QM-3	Matrix Spike Precision outside method control limits
QR-1	MRL verification recovery less than lower control limits
QR-2	MRL verification recovery greater than upper control limits
TIC	Tentatively Identified Compound - AN analyte identified based on a match with the instrument software's mass spectral library. A calibration standard has not been analyzed to confirm the compound's identification or the estimated concentration reported.
U	The analyte was not detected at or above the reporting limit
XD-2	Duplicate results less than 5X MRL
XM-1	Sample background/spike ratio higher than method evaluation criteria



Legend

-  River Miles Downstream from 48" Outfall
-  Sediment Sample Location
-  Approximate Spill Location
-  Dan River



Map Source: ArcGIS Online World Map Topo, 2014

**Sediment Sample Locations
February 18, 2014**

