

EDEN NORTH CAROLINA COAL ASH SPILL SEDIMENT RESULTS

NOTE: The data below represents sediment samples that were collected on March 13, 2014 by EPA Sample Team 1. Sediment sample measurement is in micrograms per kilogram ($\mu\text{g}/\text{kg}$) and 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, antimony, arsenic, barium, chromium, copper, iron, manganese, selenium, and vanadium. 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	Abreu-Grogan Park (LD01)		Abreu-Grogan Park (LD02)		Abreu-Grogan Park (LD03)	
Sample Information							
Sample ID	-	EDEN-DNVL-SD-031314-LD-01		EDEN-DNVL-SD-031314-LD-02		EDEN-DNVL-SD-031314-LD-03	
Date	-	03/13/2014		03/13/2014		03/13/2014	
Time	-	1049		1226		1534	
Status	-	Validation Complete		Validation Complete		Validation Complete	
Type	-	Sediment		Sediment		Sediment	
Semi Volatile Organics							
1,1'-Biphenyl	-	750U	$\mu\text{g}/\text{kg}$	690U	$\mu\text{g}/\text{kg}$	840U	$\mu\text{g}/\text{kg}$
2,4,5-Trichlorophenol	-	3,800U	$\mu\text{g}/\text{kg}$	3,600U	$\mu\text{g}/\text{kg}$	4,300U	$\mu\text{g}/\text{kg}$
2,4,6-Trichlorophenol	-	750U	$\mu\text{g}/\text{kg}$	690U	$\mu\text{g}/\text{kg}$	840U	$\mu\text{g}/\text{kg}$
2,4-Dichlorophenol	-	750U	$\mu\text{g}/\text{kg}$	690U	$\mu\text{g}/\text{kg}$	840U	$\mu\text{g}/\text{kg}$
2,4-Dimethylphenol	-	750U	$\mu\text{g}/\text{kg}$	690U	$\mu\text{g}/\text{kg}$	840U	$\mu\text{g}/\text{kg}$
2,4-Dinitrophenol	-	3,800U	$\mu\text{g}/\text{kg}$	3,600U	$\mu\text{g}/\text{kg}$	4,300U	$\mu\text{g}/\text{kg}$
2,4-Dinitrotoluene	-	750U	$\mu\text{g}/\text{kg}$	690U	$\mu\text{g}/\text{kg}$	840U	$\mu\text{g}/\text{kg}$
2,6-Dinitrotoluene	-	750U	$\mu\text{g}/\text{kg}$	690U	$\mu\text{g}/\text{kg}$	840U	$\mu\text{g}/\text{kg}$
2-Chloronaphthalene	-	750U	$\mu\text{g}/\text{kg}$	690U	$\mu\text{g}/\text{kg}$	840U	$\mu\text{g}/\text{kg}$
2-Chlorophenol	-	750U	$\mu\text{g}/\text{kg}$	690U	$\mu\text{g}/\text{kg}$	840U	$\mu\text{g}/\text{kg}$
2-Methylnaphthalene	-	750U	$\mu\text{g}/\text{kg}$	690U	$\mu\text{g}/\text{kg}$	840U	$\mu\text{g}/\text{kg}$
2-Methylphenol	-	750U	$\mu\text{g}/\text{kg}$	690U	$\mu\text{g}/\text{kg}$	840U	$\mu\text{g}/\text{kg}$
2-Nitroaniline	-	3,800U	$\mu\text{g}/\text{kg}$	3,600U	$\mu\text{g}/\text{kg}$	4,300U	$\mu\text{g}/\text{kg}$
2-Nitrophenol	-	750U	$\mu\text{g}/\text{kg}$	690U	$\mu\text{g}/\text{kg}$	840U	$\mu\text{g}/\text{kg}$
3,3'-Dichlorobenzidine	-	1,500U	$\mu\text{g}/\text{kg}$	1,400U	$\mu\text{g}/\text{kg}$	1,700U	$\mu\text{g}/\text{kg}$
3-Nitroaniline	-	3,800U	$\mu\text{g}/\text{kg}$	3,600U	$\mu\text{g}/\text{kg}$	4,300U	$\mu\text{g}/\text{kg}$
4,6-Dinitro-2-methylphenol	-	3,800U	$\mu\text{g}/\text{kg}$	3,600U	$\mu\text{g}/\text{kg}$	4,300U	$\mu\text{g}/\text{kg}$
4-Bromophenyl phenyl ether	-	750U	$\mu\text{g}/\text{kg}$	690U	$\mu\text{g}/\text{kg}$	840U	$\mu\text{g}/\text{kg}$
4-Chloro-3-methylphenol	-	750U	$\mu\text{g}/\text{kg}$	690U	$\mu\text{g}/\text{kg}$	840U	$\mu\text{g}/\text{kg}$
4-Chloroaniline	-	750U	$\mu\text{g}/\text{kg}$	690U	$\mu\text{g}/\text{kg}$	840U	$\mu\text{g}/\text{kg}$
4-Chlorophenyl phenyl ether	-	750U	$\mu\text{g}/\text{kg}$	690U	$\mu\text{g}/\text{kg}$	840U	$\mu\text{g}/\text{kg}$
4-Methylphenol	-	750U	$\mu\text{g}/\text{kg}$	690U	$\mu\text{g}/\text{kg}$	840U	$\mu\text{g}/\text{kg}$
4-Nitroaniline	-	3,800U	$\mu\text{g}/\text{kg}$	3,600U	$\mu\text{g}/\text{kg}$	4,300U	$\mu\text{g}/\text{kg}$
4-Nitrophenol	-	3,800U	$\mu\text{g}/\text{kg}$	3,600U	$\mu\text{g}/\text{kg}$	4,300U	$\mu\text{g}/\text{kg}$
Acenaphthene	-	750U	$\mu\text{g}/\text{kg}$	690U	$\mu\text{g}/\text{kg}$	840U	$\mu\text{g}/\text{kg}$
Acenaphthylene	-	750U	$\mu\text{g}/\text{kg}$	690U	$\mu\text{g}/\text{kg}$	840U	$\mu\text{g}/\text{kg}$
Acetophenone	-	750U	$\mu\text{g}/\text{kg}$	690U	$\mu\text{g}/\text{kg}$	840U	$\mu\text{g}/\text{kg}$
Anthracene	-	750U	$\mu\text{g}/\text{kg}$	690U	$\mu\text{g}/\text{kg}$	840U	$\mu\text{g}/\text{kg}$
Atrazine	-	750U	$\mu\text{g}/\text{kg}$	690U	$\mu\text{g}/\text{kg}$	840U	$\mu\text{g}/\text{kg}$

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

Analyte	Ecological Screening Standards for Sediment ²	Abreu-Grogan Park (LD01)		Abreu-Grogan Park (LD02)		Abreu-Grogan Park (LD03)	
Sample Information							
Sample ID	-	EDEN-DNVL-SD-031314-LD-01		EDEN-DNVL-SD-031314-LD-02		EDEN-DNVL-SD-031314-LD-03	
Date	-	03/13/2014		03/13/2014		03/13/2014	
Time	-	1049		1226		1534	
Status	-	Validation Complete		Validation Complete		Validation Complete	
Type	-	Sediment		Sediment		Sediment	
Benz(a)anthracene	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Benzaldehyde	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Benzo(a)pyrene	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Benzo(b)fluoranthene	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Benzo(g,h,i)perylene	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Benzo(k)fluoranthene	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Bis(2-chloroethoxy)methane	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Bis(2-chloroethyl)ether	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Bis(2-chloroisopropyl)ether	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Bis(2-ethylhexyl)phthalate	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Butyl benzyl phthalate	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Caprolactam	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Carbazole	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Chrysene	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Dibenz(a,h)anthracene	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Dibenzofuran	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Diethyl phthalate	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Dimethyl phthalate	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Di-n-butyl phthalate	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Di-n-octyl phthalate	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Fluoranthene	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Fluorene	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Hexachlorobenzene	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Hexachlorobutadiene	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Hexachlorocyclopentadiene	-	1,500U	µg/kg	1,400U	µg/kg	1,700U	µg/kg
Hexachloroethane	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Indeno(1,2,3-cd)pyrene	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Isophorone	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Naphthalene	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Nitrobenzene	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
N-Nitrosodi-n-propylamine	630 µg/kg	750U	µg/kg	690U	µg/kg	460J	µg/kg
N-Nitrosodiphenylamine	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Pentachlorophenol	-	3,800U	µg/kg	3,600U	µg/kg	4,300U	µg/kg
Phenanthrene	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Phenol	-	750U	µg/kg	690U	µg/kg	840U	µg/kg
Pyrene	-	750U	µg/kg	690U	µg/kg	840U	µg/kg

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

Analyte	Ecological Screening Standards for Sediment ²		Abreu-Grogan Park (LD01)		Abreu-Grogan Park (LD02)		Abreu-Grogan Park (LD03)	
Sample Information								
Sample ID	-		EDEN-DNVL-SD-031314-LD-01		EDEN-DNVL-SD-031314-LD-02		EDEN-DNVL-SD-031314-LD-03	
Date	-		03/13/2014		03/13/2014		03/13/2014	
Time	-		1049		1226		1534	
Status	-		Validation Complete		Validation Complete		Validation Complete	
Type	-		Sediment		Sediment		Sediment	
Polychlorinated Biphenyls								
Aroclor 1016	-		75U	µg/kg	70U	µg/kg	85U	µg/kg
Aroclor 1221	-		75U	µg/kg	70U	µg/kg	85U	µg/kg
Aroclor 1232	-		75U	µg/kg	70U	µg/kg	85U	µg/kg
Aroclor 1242	-		75U	µg/kg	70U	µg/kg	85U	µg/kg
Aroclor 1248	-		75U	µg/kg	70U	µg/kg	85U	µg/kg
Aroclor 1254	-		75U	µg/kg	70U	µg/kg	85U	µg/kg
Aroclor 1260	-		75U	µg/kg	70U	µg/kg	85U	µg/kg
Total Metals								
Aluminum	3,200 (bkg)	mg/kg	20,600	mg/kg	23,700	mg/kg	22,200	mg/kg
Antimony	2 ^a	mg/kg	1.56J	mg/kg	1.79J	mg/kg	1.76J	mg/kg
Arsenic	9.8	mg/kg	5.31J	mg/kg	5.13J	mg/kg	18.2	mg/kg
Barium	60 ^b	mg/kg	177	mg/kg	187	mg/kg	249	mg/kg
Beryllium	-	-	5.29U	mg/kg	5.01U	mg/kg	6.03U	mg/kg
Boron	-	-	56U	mg/kg	50U	mg/kg	62U	mg/kg
Cadmium	0.99	mg/kg	5.29U	mg/kg	5.01U	mg/kg	0.13J	mg/kg
Calcium	-	-	1,630	mg/kg	1,870	mg/kg	2,540	mg/kg
Chromium	43.4	mg/kg	38.5	mg/kg	42.5	mg/kg	39.4	mg/kg
Cobalt	50	mg/kg	14.2	mg/kg	14.7	mg/kg	15	mg/kg
Copper	31.6	mg/kg	27.1	mg/kg	28.7	mg/kg	39.7	mg/kg
Iron	6,800 (bkg)	mg/kg	34,400	mg/kg	36,500	mg/kg	32,200	mg/kg
Lead	35.8	mg/kg	16.8	mg/kg	15.4	mg/kg	16.6	mg/kg
Magnesium	-	-	3,760	mg/kg	4,480	mg/kg	3,690	mg/kg
Manganese	460 ^c	mg/kg	653	mg/kg	652	mg/kg	640	mg/kg
Mercury	0.18	mg/kg	0.0533J	mg/kg	0.0467J	mg/kg	0.109J	mg/kg
Molybdenum	-	-	1.09J	mg/kg	1.02J	mg/kg	1.23J	mg/kg
Nickel	22.7	mg/kg	15.2	mg/kg	17	mg/kg	20.4	mg/kg
Potassium	-	-	2,640	mg/kg	2,960	mg/kg	2,550	mg/kg
Selenium	2 ^d	mg/kg	4.64J	mg/kg	5.03J	mg/kg	8.01J	mg/kg
Silver	0.733	mg/kg	0.413J	mg/kg	0.424J	mg/kg	0.342J	mg/kg
Sodium	-	-	212U	mg/kg	200U	mg/kg	241U	mg/kg
Thallium	-	mg/kg	10.6U	mg/kg	10U	mg/kg	12.1U	mg/kg
Vanadium	57 ^c	mg/kg	64.7	mg/kg	67.7	mg/kg	70.6	mg/kg
Zinc	121	mg/kg	75.4	mg/kg	76.4	mg/kg	82.8	mg/kg

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

Analyte	Ecological Screening Standards for Sediment ²	Abreu-Grogan Park (LD01)	Abreu-Grogan Park (LD02)	Abreu-Grogan Park (LD03)
Sample Information				
Sample ID	-	EDEN-DNVL-SD-031314-LD-01	EDEN-DNVL-SD-031314-LD-02	EDEN-DNVL-SD-031314-LD-03
Date	-	03/13/2014	03/13/2014	03/13/2014
Time	-	1049	1226	1534
Status	-	Validation Complete	Validation Complete	Validation Complete
Type	-	Sediment	Sediment	Sediment
Physical Properties				
% Moisture	-	55.8	52.4	60.8

Notes

² MacDonal, 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

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
 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.

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

Analyte	Ecological Screening Standards for Sediment ²	Abreu-Grogan Park (RD01)		Abreu-Grogan Park (RD02)	
Sample Information					
Sample ID	-	EDEN-DNVL-SD-031314-RD-01		EDEN-DNVL-SD-031314-RD-02	
Date	-	03/13/2014		03/13/2014	
Time	-	1322		1412	
Status	-	Validation Complete		Validation Complete	
Type	-	Sediment		Sediment	
Semi Volatile Organics					
1,1'-Biphenyl	-	810U	µg/kg	980U	µg/kg
2,4,5-Trichlorophenol	-	4,200U	µg/kg	5,000U	µg/kg
2,4,6-Trichlorophenol	-	810U	µg/kg	980U	µg/kg
2,4-Dichlorophenol	-	810U	µg/kg	980U	µg/kg
2,4-Dimethylphenol	-	810U	µg/kg	980U	µg/kg
2,4-Dinitrophenol	-	4,200U	µg/kg	5,000U	µg/kg
2,4-Dinitrotoluene	-	810U	µg/kg	980U	µg/kg
2,6-Dinitrotoluene	-	810U	µg/kg	980U	µg/kg
2-Chloronaphthalene	-	810U	µg/kg	980U	µg/kg
2-Chlorophenol	-	810U	µg/kg	980U	µg/kg
2-Methylnaphthalene	-	810U	µg/kg	980U	µg/kg
2-Methylphenol	-	810U	µg/kg	980U	µg/kg
2-Nitroaniline	-	4,200U	µg/kg	5,000U	µg/kg
2-Nitrophenol	-	810U	µg/kg	980U	µg/kg
3,3'-Dichlorobenzidine	-	1,600U	µg/kg	2,000U	µg/kg
3-Nitroaniline	-	4,200U	µg/kg	5,000U	µg/kg
4,6-Dinitro-2-methylphenol	-	4,200U	µg/kg	5,000U	µg/kg
4-Bromophenyl phenyl ether	-	810U	µg/kg	980U	µg/kg
4-Chloro-3-methylphenol	-	810U	µg/kg	980U	µg/kg
4-Chloroaniline	-	810U	µg/kg	980U	µg/kg
4-Chlorophenyl phenyl ether	-	810U	µg/kg	980U	µg/kg
4-Methylphenol	-	810U	µg/kg	980U	µg/kg
4-Nitroaniline	-	4,200U	µg/kg	5,000U	µg/kg
4-Nitrophenol	-	4,200U	µg/kg	5,000U	µg/kg
Acenaphthene	-	810U	µg/kg	980U	µg/kg
Acenaphthylene	-	810U	µg/kg	980U	µg/kg
Acetophenone	-	810U	µg/kg	980U	µg/kg
Anthracene	-	810U	µg/kg	980U	µg/kg
Atrazine	-	810U	µg/kg	980U	µg/kg

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

Analyte	Ecological Screening Standards for Sediment ²	Abreu-Grogan Park (RD01)		Abreu-Grogan Park (RD02)	
Sample Information					
Sample ID	-	EDEN-DNVL-SD-031314-RD-01		EDEN-DNVL-SD-031314-RD-02	
Date	-	03/13/2014		03/13/2014	
Time	-	1322		1412	
Status	-	Validation Complete		Validation Complete	
Type	-	Sediment		Sediment	
Benz(a)anthracene	-	810U	µg/kg	980U	µg/kg
Benzaldehyde	-	810U	µg/kg	980U	µg/kg
Benzo(a)pyrene	-	810U	µg/kg	980U	µg/kg
Benzo(b)fluoranthene	-	810U	µg/kg	980U	µg/kg
Benzo(g,h,i)perylene	-	810U	µg/kg	980U	µg/kg
Benzo(k)fluoranthene	-	810U	µg/kg	980U	µg/kg
Bis(2-chloroethoxy)methane	-	810U	µg/kg	980U	µg/kg
Bis(2-chloroethyl)ether	-	810U	µg/kg	980U	µg/kg
Bis(2-chloroisopropyl)ether	-	810U	µg/kg	980U	µg/kg
Bis(2-ethylhexyl)phthalate	-	810U	µg/kg	980U	µg/kg
Butyl benzyl phthalate	-	810U	µg/kg	980U	µg/kg
Caprolactam	-	810U	µg/kg	980U	µg/kg
Carbazole	-	810U	µg/kg	980U	µg/kg
Chrysene	-	810U	µg/kg	980U	µg/kg
Dibenz(a,h)anthracene	-	810U	µg/kg	980U	µg/kg
Dibenzofuran	-	810U	µg/kg	980U	µg/kg
Diethyl phthalate	-	810U	µg/kg	980U	µg/kg
Dimethyl phthalate	-	810U	µg/kg	980U	µg/kg
Di-n-butyl phthalate	-	810U	µg/kg	980U	µg/kg
Di-n-octyl phthalate	-	810U	µg/kg	980U	µg/kg
Fluoranthene	-	810U	µg/kg	980U	µg/kg
Fluorene	-	810U	µg/kg	980U	µg/kg
Hexachlorobenzene	-	810U	µg/kg	980U	µg/kg
Hexachlorobutadiene	-	810U	µg/kg	980U	µg/kg
Hexachlorocyclopentadiene	-	1,600U	µg/kg	2,000U	µg/kg
Hexachloroethane	-	810U	µg/kg	980U	µg/kg
Indeno(1,2,3-cd)pyrene	-	810U	µg/kg	980U	µg/kg
Isophorone	-	810U	µg/kg	980U	µg/kg
Naphthalene	-	810U	µg/kg	980U	µg/kg
Nitrobenzene	-	810U	µg/kg	980U	µg/kg
N-Nitrosodi-n-propylamine	630 µg/kg	810U	µg/kg	980U	µg/kg
N-Nitrosodiphenylamine	-	810U	µg/kg	980U	µg/kg
Pentachlorophenol	-	4,200U	µg/kg	5,000U	µg/kg
Phenanthrene	-	810U	µg/kg	980U	µg/kg
Phenol	-	810U	µg/kg	980U	µg/kg
Pyrene	-	810U	µg/kg	980U	µg/kg

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

Analyte	Ecological Screening Standards for Sediment ²		Abreu-Grogan Park (RD01)		Abreu-Grogan Park (RD02)	
Sample Information						
Sample ID	-		EDEN-DNVL-SD-031314-RD-01		EDEN-DNVL-SD-031314-RD-02	
Date	-		03/13/2014		03/13/2014	
Time	-		1322		1412	
Status	-		Validation Complete		Validation Complete	
Type	-		Sediment		Sediment	
Polychlorinated Biphenyls						
Aroclor 1016	-		82U	µg/kg	99U	µg/kg
Aroclor 1221	-		82U	µg/kg	99U	µg/kg
Aroclor 1232	-		82U	µg/kg	99U	µg/kg
Aroclor 1242	-		82U	µg/kg	99U	µg/kg
Aroclor 1248	-		82U	µg/kg	99U	µg/kg
Aroclor 1254	-		82U	µg/kg	99U	µg/kg
Aroclor 1260	-		82U	µg/kg	99U	µg/kg
Total Metals						
Aluminum	3,200 (bkg)	mg/kg	24,400	mg/kg	31,700	mg/kg
Antimony	2 ^a	mg/kg	1.98J	mg/kg	2.11J	mg/kg
Arsenic	9.8	mg/kg	10.2J	mg/kg	7.12J	mg/kg
Barium	60 ^b	mg/kg	227	mg/kg	250	mg/kg
Beryllium	-	-	5.65U	mg/kg	7.11U	-
Boron	-	-	56U	mg/kg	73U	-
Cadmium	0.99	mg/kg	5.65U	mg/kg	7.11U	mg/kg
Calcium	-	-	2,250	mg/kg	2,240	-
Chromium	43.4	mg/kg	43	mg/kg	54.3	mg/kg
Cobalt	50	mg/kg	15.8	mg/kg	18.5	mg/kg
Copper	31.6	mg/kg	32.7	mg/kg	36.2	mg/kg
Iron	6,800 (bkg)	mg/kg	37,000	mg/kg	44,500	mg/kg
Lead	35.8	mg/kg	16.4	mg/kg	21.7	mg/kg
Magnesium	-	-	4,530	mg/kg	5,410	-
Manganese	460 ^c	mg/kg	632	mg/kg	697	mg/kg
Mercury	0.18	mg/kg	0.0795J	mg/kg	0.0715J	mg/kg
Molybdenum	-	-	1.2J	mg/kg	1.2J	-
Nickel	22.7	mg/kg	19.6	mg/kg	22.1	mg/kg
Potassium	-	-	3,170	mg/kg	3,590	-
Selenium	2 ^d	mg/kg	5.83J	mg/kg	4.58J	mg/kg
Silver	0.733	mg/kg	0.468J	mg/kg	0.504J	mg/kg
Sodium	-	-	226U	mg/kg	284U	-
Thallium	-	mg/kg	22.6U	mg/kg	14.2U	mg/kg
Vanadium	57 ^c	mg/kg	71.7	mg/kg	92.5	mg/kg
Zinc	121	mg/kg	79.9	mg/kg	101	mg/kg

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

Analyte	Ecological Screening Standards for Sediment ²	Abreu-Grogan Park (RD01)	Abreu-Grogan Park (RD02)
Sample Information			
Sample ID	-	EDEN-DNVL-SD-031314-RD-01	EDEN-DNVL-SD-031314-RD-02
Date	-	03/13/2014	03/13/2014
Time	-	1322	1412
Status	-	Validation Complete	Validation Complete
Type	-	Sediment	Sediment
Physical Properties			
% Moisture	-	59.4	66.3

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

EPA U.S. Environmental Protection Agency

J Value is estimated

J+ Value is estimated with a possible high bias

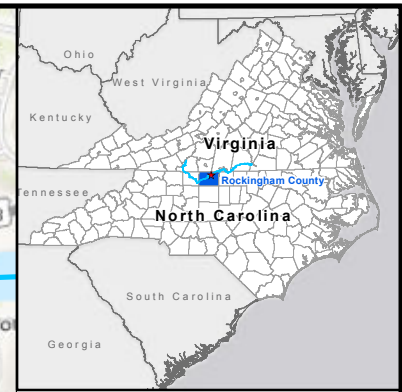
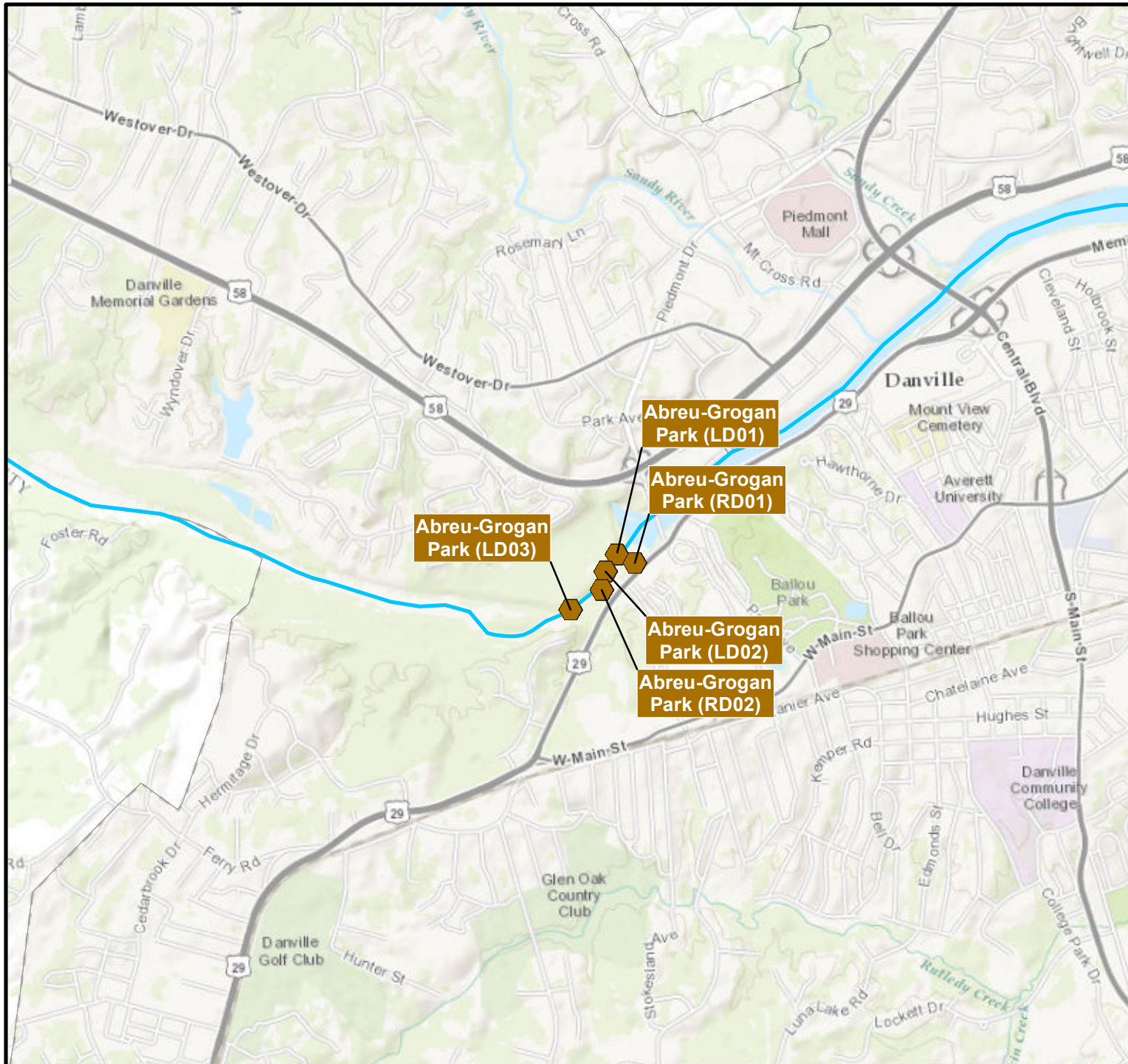
J- Value is estimated with a possible low bias

µg/L micrograms per liter

mg/L milligrams per liter

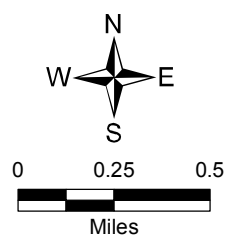
U Analyte was not detected at the listed reporting limit.

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
March 13, 2014

