

EDEN NORTH CAROLINA COAL ASH SPILL SURFACE WATER RESULTS

NOTE: The data below represents surface water samples that were collected on April 8, 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 with the exception of aluminum, beryllium, copper, iron, lead, manganese and vanadium. EPA typically screens the surface water concentrations using total metals samples, because this is a conservative practice for screening. Beryllium, copper, iron, lead, manganese, and vanadium were not detected above screening levels in any of the samples of the dissolved fraction of surface water (i.e., samples that were filtered to remove particulates), therefore there is no threat of toxicity from these compounds to aquatic organisms. 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 Standard for Surface Water Samples ¹		Abreu-Grogan Park Boat Dock		S Boston WTP Intake		Mud Flats at Kerr Reservoir	
Sample Information								
Sample ID	-		EDEN-DWTP-RAW-2-20140408		EDEN-SBWTP-RAW-2-20140408		EDEN-MF-C-SW-20140408	
Date	-		04/08/2014		04/08/2014		04/08/2014	
Time	-		0820		0900		1047	
Status	-		Validation Complete		Validation Complete		Validation Complete	
Type	-		Surface Water		Surface Water		Surface Water	
Dissolved metals								
Aluminum	87	µg/L	425	µg/L	360	µg/L	200	µg/L
Antimony	5.6	µg/L	5U	µg/L	5U	µg/L	5U	µg/L
Arsenic	10	µg/L	0.276J	µg/L	0.431J	µg/L	0.214J	µg/L
Barium	220	µg/L	20.1	µg/L	22.6	µg/L	21.9	µg/L
Beryllium	0.66	µg/L	0.65U	µg/L	0.12J	µg/L	0.65U	µg/L
Boron	0.36	mg/L	0.0561J+	mg/L	0.0672J+	mg/L	0.05U	mg/L
Cadmium	0.1	µg/L	0.1U	µg/L	0.044J	µg/L	0.1U	µg/L
Calcium	-	-	4,770J	µg/L	5,310	µg/L	8,640	µg/L
Chromium	25	µg/L	0.594J	µg/L	0.827J	µg/L	0.413J	µg/L
Cobalt	3	µg/L	0.105J	µg/L	0.188J	µg/L	5U	µg/L
Copper	3	µg/L	2.14J+	µg/L	2U	µg/L	2U	µg/L
Iron	1,000	µg/L	652	µg/L	597	µg/L	456	µg/L
Lead	0.59	µg/L	0.319J	µg/L	0.447J	µg/L	0.15J	µg/L
Magnesium	-	-	1,880J	µg/L	2,170J	µg/L	3,570J	µg/L
Manganese	200	µg/L	5.35	µg/L	4.44J	µg/L	5.36	µg/L
Mercury	0.000012	mg/L	0.0002U	mg/L	0.0002U	mg/L	0.0002U	mg/L
Molybdenum	800	µg/L	5U	µg/L	5U	µg/L	5U	µg/L
Nickel	17	µg/L	0.702J	µg/L	0.701J	µg/L	0.509J	µg/L
Potassium	53,000	µg/L	1,930J	µg/L	2,150J	µg/L	5,000U	µg/L
Selenium	5	µg/L	4.5U	µg/L	0.719J	µg/L	4.5U	µg/L
Silver	0.06	µg/L	0.05U	µg/L	0.03J	µg/L	0.05U	µg/L
Sodium	680,000	µg/L	3,650J	µg/L	5,510	µg/L	4,070J	µg/L
Thallium	0.24	µg/L	0.2U	µg/L	0.14J	µg/L	0.2U	µg/L
Vanadium	27	µg/L	1.7J	µg/L	1.8J	µg/L	1.5J	µg/L
Zinc	39	µg/L	10U	µg/L	3.42J	µg/L	10U	µg/L

**EDEN NORTH CAROLINA COAL ASH SPILL
SURFACE WATER RESULTS**

Analyte	Ecological Screening Standard for Surface Water Samples ¹		Abreu-Grogan Park Boat Dock		S Boston WTP Intake		Mud Flats at Kerr Reservoir	
Sample Information								
Sample ID	-		EDEN-DWTP-RAW-2-20140408		EDEN-SBWTP-RAW-2-20140408		EDEN-MF-C-SW-20140408	
Date	-		04/08/2014		04/08/2014		04/08/2014	
Time	-		0820		0900		1047	
Status	-		Validation Complete		Validation Complete		Validation Complete	
Type	-		Surface Water		Surface Water		Surface Water	
Total Dissolved Solids								
Total Dissolved Solids	-	-	78	mg/L	93	mg/L	104	mg/L
Total Suspended Solids								
Total Suspended Solids	-	-	241	mg/L	178	mg/L	31.5	mg/L
Total Metals								
Aluminum	2,000	µg/L	10,600	µg/L	7,480	µg/L	1,120	µg/L
Antimony	5.6	µg/L	0.954J	µg/L	0.967J	µg/L	5U	µg/L
Arsenic	10	µg/L	1.92J	µg/L	0.904J	µg/L	4.5U	µg/L
Barium	220	µg/L	143	µg/L	96.9	µg/L	39.2	µg/L
Beryllium	0.66	µg/L	0.931	µg/L	0.587J	µg/L	0.157J	µg/L
Boron	0.36	mg/L	0.0673J+	mg/L	0.0685J+	mg/L	0.05U	mg/L
Cadmium	2	µg/L	0.071J	µg/L	0.037J	µg/L	0.1U	µg/L
Calcium	-	-	5,640	µg/L	6,130	µg/L	9,450J-	µg/L
Chromium	29	µg/L	15.9	µg/L	11.7	µg/L	2.5U	µg/L
Cobalt	24	µg/L	7.06	µg/L	4.67J	µg/L	1.18J	µg/L
Copper	3	µg/L	14.5	µg/L	8.43	µg/L	3.45U	µg/L
Iron	2,300	µg/L	2,250	µg/L	2,020	µg/L	4,040J-	µg/L
Lead	0.6	µg/L	11.8	µg/L	8.97	µg/L	2.06	µg/L
Magnesium	-	-	2,100J	µg/L	2,410J	µg/L	3,990J	µg/L
Manganese	200	µg/L	438	µg/L	352	µg/L	103	µg/L
Mercury	0.000012	mg/L	0.0002U	mg/L	0.0002U	mg/L	0.0002U	mg/L
Molybdenum	-	-	0.2J	µg/L	0.243J	µg/L	5U	µg/L
Nickel	17	µg/L	8.01	µg/L	4.87J	µg/L	5U	µg/L
Potassium	53,000	µg/L	1,840J	µg/L	2,050J	µg/L	5,000U	µg/L
Selenium	5	µg/L	4.5U	µg/L	4.5U	µg/L	4.5U	µg/L
Silver	0.06	µg/L	0.036J	µg/L	0.022J	µg/L	0.05U	µg/L
Sodium	680,000	µg/L	3,480J	µg/L	5,330	µg/L	4,190J	µg/L
Thallium	0.24	µg/L	0.152J	µg/L	0.139J	µg/L	0.0172J	µg/L
Vanadium	27	µg/L	29.1	µg/L	21.4	µg/L	5.78	µg/L
Zinc	39	µg/L	34.1J+	µg/L	34.3J+	µg/L	10U	µg/L
Anions								
Bromide	-	-	1U	mg/L	1U	mg/L	1U	mg/L
Chloride	230	mg/L	5.74	mg/L	8.44	mg/L	5.04	mg/L
Sulfate	-	-	4.82	mg/L	5.2	mg/L	5.74	mg/L

EDEN NORTH CAROLINA COAL ASH SPILL SURFACE WATER RESULTS

Analyte	Ecological Screening Standard for Surface Water Samples ¹		Abreu-Grogan Park Boat Dock		S Boston WTP Intake		Mud Flats at Kerr Reservoir	
Sample Information								
Sample ID	-		EDEN-DWTP-RAW-2-20140408		EDEN-SBWTP-RAW-2-20140408		EDEN-MF-C-SW-20140408	
Date	-		04/08/2014		04/08/2014		04/08/2014	
Time	-		0820		0900		1047	
Status	-		Validation Complete		Validation Complete		Validation Complete	
Type	-		Surface Water		Surface Water		Surface Water	
Wet Chemistry								
Alkalinity, Total (As CaCO ₃)	-	-	8.6J	mg/L	11.9	mg/L	29.4	mg/L
Hardness, Calcium/Magnesium (As CaCO ₃)	-	-	22.7	mg/L	25.2	mg/L	40	mg/L
Organic Carbon, Dissolved	-	-	7.51	mg/L	8.75	mg/L	7.72	mg/L
pH	6.5 - 9.0		std	6.55J	std	6.58J	std	7.08J

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

J- Value is estimated with a possible low bias

µg/L micrograms per liter

mg/L milligrams per liter

std standard

U Analyte was not detected at the listed reporting limit.

**EDEN NORTH CAROLINA COAL ASH SPILL
SURFACE WATER RESULTS**

Analyte	Ecological Screening Standard for Surface Water Samples ¹		SW of Staunton River State Park		Staunton River State Park Boat Ramp		Staunton River State Park Boat Ramp	
Sample Information								
Sample ID	-		EDEN-SWSRSP-R-SW-20140408		EDEN-SRSP-L-SW-20140408		EDEN-SRSP-L-SW-20140408-DUP	
Date	-		04/08/2014		04/08/2014		04/08/2014	
Time	-		0950		1330		1335	
Status	-		Validation Complete		Validation Complete		Validation Complete	
Type	-		Surface Water		Surface Water		Surface Water	
Dissolved metals								
Aluminum	87	µg/L	349	µg/L	355	µg/L	325	µg/L
Antimony	5.6	µg/L	5U	µg/L	5U	µg/L	5U	µg/L
Arsenic	10	µg/L	0.316J	µg/L	0.308J	µg/L	0.299J	µg/L
Barium	220	µg/L	19.8	µg/L	19.7	µg/L	18.5	µg/L
Beryllium	0.66	µg/L	0.65U	µg/L	0.65U	µg/L	0.65U	µg/L
Boron	0.36	mg/L	0.0785U	mg/L	0.05U	mg/L	0.05U	mg/L
Cadmium	0.1	µg/L	0.1U	µg/L	0.1U	µg/L	0.1U	µg/L
Calcium	-	-	5,710	µg/L	4,950J	µg/L	4,930J	µg/L
Chromium	25	µg/L	0.537J	µg/L	0.635J	µg/L	0.605J	µg/L
Cobalt	3	µg/L	0.159J	µg/L	0.338J	µg/L	0.313J	µg/L
Copper	3	µg/L	2.03	µg/L	2U	µg/L	2U	µg/L
Iron	1,000	µg/L	646	µg/L	664	µg/L	679	µg/L
Lead	0.59	µg/L	0.236J	µg/L	0.307J	µg/L	0.297J	µg/L
Magnesium	-	-	2,470J	µg/L	2,080J	µg/L	2,070J	µg/L
Manganese	200	µg/L	19.9	µg/L	60.8	µg/L	56	µg/L
Mercury	0.000012	mg/L	0.0002U	mg/L	0.0002U	mg/L	0.0002U	mg/L
Molybdenum	800	µg/L	0.27J	µg/L	5U	µg/L	5U	µg/L
Nickel	17	µg/L	0.636J	µg/L	0.755J	µg/L	0.517J	µg/L
Potassium	53,000	µg/L	5,000U	µg/L	5,000U	µg/L	5,000U	µg/L
Selenium	5	µg/L	4.5U	µg/L	4.5U	µg/L	4.5U	µg/L
Silver	0.06	µg/L	0.05U	µg/L	0.05U	µg/L	0.05U	µg/L
Sodium	680,000	µg/L	4,590J	µg/L	4,860J	µg/L	4,820J	µg/L
Thallium	0.24	µg/L	0.2U	µg/L	0.2U	µg/L	0.2U	µg/L
Vanadium	27	µg/L	1.88J	µg/L	1.72J	µg/L	1.78J	µg/L
Zinc	39	µg/L	2.6J	µg/L	10U	µg/L	10U	µg/L

**EDEN NORTH CAROLINA COAL ASH SPILL
SURFACE WATER RESULTS**

Analyte	Ecological Screening Standard for Surface Water Samples ¹		SW of Staunton River State Park		Staunton River State Park Boat Ramp		Staunton River State Park Boat Ramp	
Sample Information								
Sample ID	-		EDEN-SWSRSP-R-SW-20140408		EDEN-SRSP-L-SW-20140408		EDEN-SRSP-L-SW-20140408-DUP	
Date	-		04/08/2014		04/08/2014		04/08/2014	
Time	-		0950		1330		1335	
Status	-		Validation Complete		Validation Complete		Validation Complete	
Type	-		Surface Water		Surface Water		Surface Water	
Total Dissolved Solids								
Total Dissolved Solids	-	-	116	mg/L	111	mg/L	98	mg/L
Total Suspended Solids								
Total Suspended Solids	-	-	25	mg/L	28.5J	mg/L	117J	mg/L
Total Metals								
Aluminum	2,000	µg/L	2,050	µg/L	1,840	µg/L	2,430	µg/L
Antimony	5.6	µg/L	5U	µg/L	5U	µg/L	5U	µg/L
Arsenic	10	µg/L	4.5U	µg/L	4.5U	µg/L	4.5U	µg/L
Barium	220	µg/L	38	µg/L	38.1	µg/L	41.6	µg/L
Beryllium	0.66	µg/L	0.28J	µg/L	0.232J	µg/L	0.281J	µg/L
Boron	0.36	mg/L	0.0749U	mg/L	0.05U	mg/L	0.05U	mg/L
Cadmium	2	µg/L	0.1U	µg/L	0.1U	µg/L	0.1U	µg/L
Calcium	-	-	6,510J-	µg/L	5,670J-	µg/L	6,030J-	µg/L
Chromium	29	µg/L	3.96	µg/L	3.92	µg/L	5.87	µg/L
Cobalt	24	µg/L	1.86J	µg/L	1.58J	µg/L	2.6J	µg/L
Copper	3	µg/L	6.51	µg/L	4.63	µg/L	6.47	µg/L
Iron	2,300	µg/L	8,260J-	µg/L	7,220J-	µg/L	8,960J-	µg/L
Lead	0.6	µg/L	3.68	µg/L	3.06	µg/L	3.25	µg/L
Magnesium	-	-	3,180J	µg/L	2,750J	µg/L	3,460J	µg/L
Manganese	200	µg/L	130	µg/L	137	µg/L	158	µg/L
Mercury	0.000012	mg/L	0.0002U	mg/L	0.0002U	mg/L	0.0002U	mg/L
Molybdenum	-	-	5U	µg/L	5U	µg/L	5U	µg/L
Nickel	17	µg/L	5U	µg/L	5U	µg/L	5U	µg/L
Potassium	53,000	µg/L	5,000U	µg/L	5,000U	µg/L	5,000U	µg/L
Selenium	5	µg/L	4.5U	µg/L	4.5U	µg/L	4.5U	µg/L
Silver	0.06	µg/L	0.05U	µg/L	0.05U	µg/L	0.0193J	µg/L
Sodium	680,000	µg/L	4,630J	µg/L	4,950J	µg/L	4,870J	µg/L
Thallium	0.24	µg/L	0.0339J	µg/L	0.0332J	µg/L	0.0393J	µg/L
Vanadium	27	µg/L	8.18	µg/L	7.7	µg/L	9.64	µg/L
Zinc	39	µg/L	12.1U	µg/L	12.2U	µg/L	14.5U	µg/L
Anions								
Bromide	-	-	1U	mg/L	1U	mg/L	1U	mg/L
Chloride	230	mg/L	7.92	mg/L	6.27	mg/L	6.28	mg/L
Sulfate	-	-	6.14	mg/L	4.76	mg/L	4.73	mg/L

EDEN NORTH CAROLINA COAL ASH SPILL SURFACE WATER RESULTS

Analyte	Ecological Screening Standard for Surface Water Samples ¹		SW of Staunton River State Park		Staunton River State Park Boat Ramp		Staunton River State Park Boat Ramp	
Sample Information								
Sample ID	-		EDEN-SWSRSP-R-SW-20140408		EDEN-SRSP-L-SW-20140408		EDEN-SRSP-L-SW-20140408-DUP	
Date	-		04/08/2014		04/08/2014		04/08/2014	
Time	-		0950		1330		1335	
Status	-		Validation Complete		Validation Complete		Validation Complete	
Type	-		Surface Water		Surface Water		Surface Water	
Wet Chemistry								
Alkalinity, Total (As CaCO ₃)	-	-	12.4	mg/L	12.7	mg/L	13.1	mg/L
Hardness, Calcium/Magnesium (As CaCO ₃)	-	-	29.3	mg/L	25.5	mg/L	29.3	mg/L
Organic Carbon, Dissolved	-	-	11	mg/L	9.2	mg/L	9.53	mg/L
pH	6.5 - 9.0		std	6.46J	std	6.78J	std	6.91J

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

J- Value is estimated with a possible low bias

µg/L micrograms per liter

mg/L milligrams per liter

std standard

U Analyte was not detected at the listed reporting limit.

**EDEN NORTH CAROLINA COAL ASH SPILL
SURFACE WATER RESULTS**

Analyte	Ecological Screening Standard for Surface Water Samples ¹		Eof Staunton River State Park		SE of Staunton River State Park		Buffalo Swim Beach - Public Swimming Area	
Sample Information								
Sample ID	-		EDEN-ESRSP-L-SW-20140408		EDEN-SESRSP-R-SW-20140408		EDEN-BSB-L-SW-20140408	
Date	-		04/08/2014		04/08/2014		04/08/2014	
Time	-		1047		1131		1158	
Status	-		Validation Complete		Validation Complete		Validation Complete	
Type	-		Surface Water		Surface Water		Surface Water	
Dissolved metals								
Aluminum	87	µg/L	183	µg/L	36.7	µg/L	45.1	µg/L
Antimony	5.6	µg/L	5U	µg/L	5U	µg/L	5U	µg/L
Arsenic	10	µg/L	0.228J	µg/L	0.281J	µg/L	0.228J	µg/L
Barium	220	µg/L	22.6	µg/L	22.7	µg/L	21.7	µg/L
Beryllium	0.66	µg/L	0.65U	µg/L	0.65U	µg/L	0.65U	µg/L
Boron	0.36	mg/L	0.0596U	mg/L	0.149U	mg/L	0.109U	mg/L
Cadmium	0.1	µg/L	0.1U	µg/L	0.1U	µg/L	0.1U	µg/L
Calcium	-	-	6,180	µg/L	7,970	µg/L	8,700	µg/L
Chromium	25	µg/L	0.409J	µg/L	0.252J	µg/L	0.137J	µg/L
Cobalt	3	µg/L	0.256J	µg/L	0.151J	µg/L	5U	µg/L
Copper	3	µg/L	2U	µg/L	2U	µg/L	2U	µg/L
Iron	1,000	µg/L	414	µg/L	592	µg/L	171	µg/L
Lead	0.59	µg/L	0.205J	µg/L	0.141J	µg/L	0.5U	µg/L
Magnesium	-	-	2,440J	µg/L	3,320J	µg/L	3,500J	µg/L
Manganese	200	µg/L	62.5	µg/L	47.4	µg/L	23.2	µg/L
Mercury	0.000012	mg/L	0.0002U	mg/L	0.0002U	mg/L	0.0002U	mg/L
Molybdenum	800	µg/L	5U	µg/L	0.562J	µg/L	0.374J	µg/L
Nickel	17	µg/L	0.434J	µg/L	0.541J	µg/L	0.122J	µg/L
Potassium	53,000	µg/L	5,000U	µg/L	5,000U	µg/L	5,000U	µg/L
Selenium	5	µg/L	4.5U	µg/L	0.407J	µg/L	4.5U	µg/L
Silver	0.06	µg/L	0.05U	µg/L	0.05U	µg/L	0.05U	µg/L
Sodium	680,000	µg/L	6,290	µg/L	5,400	µg/L	6,770	µg/L
Thallium	0.24	µg/L	0.2U	µg/L	0.2U	µg/L	0.2U	µg/L
Vanadium	27	µg/L	1.45J	µg/L	0.814J	µg/L	0.572J	µg/L
Zinc	39	µg/L	10U	µg/L	10U	µg/L	10U	µg/L

**EDEN NORTH CAROLINA COAL ASH SPILL
SURFACE WATER RESULTS**

Analyte	Ecological Screening Standard for Surface Water Samples ¹		Eof Staunton River State Park		SE of Staunton River State Park		Buffalo Swim Beach - Public Swimming Area	
Sample Information								
Sample ID	-		EDEN-ESRSP-L-SW-20140408		EDEN-SESRSP-R-SW-20140408		EDEN-BSB-L-SW-20140408	
Date	-		04/08/2014		04/08/2014		04/08/2014	
Time	-		1047		1131		1158	
Status	-		Validation Complete		Validation Complete		Validation Complete	
Type	-		Surface Water		Surface Water		Surface Water	
Total Dissolved Solids								
Total Dissolved Solids	-	-	127	mg/L	104	mg/L	91	mg/L
Total Suspended Solids								
Total Suspended Solids	-	-	11	mg/L	38.5	mg/L	36.5	mg/L
Total Metals								
Aluminum	2,000	µg/L	987	µg/L	1,150	µg/L	544	µg/L
Antimony	5.6	µg/L	5U	µg/L	5U	µg/L	5U	µg/L
Arsenic	10	µg/L	4.5U	µg/L	4.5U	µg/L	4.5U	µg/L
Barium	220	µg/L	32.2	µg/L	33	µg/L	28.1	µg/L
Beryllium	0.66	µg/L	0.107J	µg/L	0.106J	µg/L	0.65U	µg/L
Boron	0.36	mg/L	0.0596U	mg/L	0.137U	mg/L	0.106U	mg/L
Cadmium	2	µg/L	0.1U	µg/L	0.1U	µg/L	0.1U	µg/L
Calcium	-	-	6,660J-	µg/L	8,280J-	µg/L	9,280J-	µg/L
Chromium	29	µg/L	2.5U	µg/L	2.5U	µg/L	2.5U	µg/L
Cobalt	24	µg/L	1.01J	µg/L	1.25J	µg/L	0.792J	µg/L
Copper	3	µg/L	2.92U	µg/L	3.39U	µg/L	2U	µg/L
Iron	2,300	µg/L	3,800J-	µg/L	4,270J-	µg/L	2,300J-	µg/L
Lead	0.6	µg/L	1.82	µg/L	1.74	µg/L	1.02	µg/L
Magnesium	-	-	2,740J	µg/L	3,560J	µg/L	3,720J	µg/L
Manganese	200	µg/L	122	µg/L	136	µg/L	104	µg/L
Mercury	0.000012	mg/L	0.0002U	mg/L	0.0002U	mg/L	0.0002U	mg/L
Molybdenum	-	-	5U	µg/L	5U	µg/L	5U	µg/L
Nickel	17	µg/L	5U	µg/L	5U	µg/L	5U	µg/L
Potassium	53,000	µg/L	5,000U	µg/L	5,000U	µg/L	5,000U	µg/L
Selenium	5	µg/L	4.5U	µg/L	4.5U	µg/L	4.5U	µg/L
Silver	0.06	µg/L	0.05U	µg/L	0.05U	µg/L	0.05U	µg/L
Sodium	680,000	µg/L	6,250	µg/L	5,320	µg/L	6,850	µg/L
Thallium	0.24	µg/L	0.0178J	µg/L	0.0154J	µg/L	0.2U	µg/L
Vanadium	27	µg/L	4.86J	µg/L	4.99J	µg/L	2.58J	µg/L
Zinc	39	µg/L	10U	µg/L	10U	µg/L	10U	µg/L
Anions								
Bromide	-	-	1U	mg/L	1U	mg/L	1U	mg/L
Chloride	230	mg/L	9.36	mg/L	11.7	mg/L	10.9	mg/L
Sulfate	-	-	5.22	mg/L	8.4	mg/L	6.9	mg/L

EDEN NORTH CAROLINA COAL ASH SPILL SURFACE WATER RESULTS

Analyte	Ecological Screening Standard for Surface Water Samples ¹		Eof Staunton River State Park		SE of Staunton River State Park		Buffalo Swim Beach - Public Swimming Area	
Sample Information								
Sample ID	-		EDEN-ESRSP-L-SW-20140408		EDEN-SESRSP-R-SW-20140408		EDEN-BSB-L-SW-20140408	
Date	-		04/08/2014		04/08/2014		04/08/2014	
Time	-		1047		1131		1158	
Status	-		Validation Complete		Validation Complete		Validation Complete	
Type	-		Surface Water		Surface Water		Surface Water	
Wet Chemistry								
Alkalinity, Total (As CaCO ₃)	-	-	18.7	mg/L	15.9	mg/L	28.3	mg/L
Hardness, Calcium/Magnesium (As CaCO ₃)	-	-	27.9	mg/L	35.3	mg/L	38.5	mg/L
Organic Carbon, Dissolved	-	-	6.6	mg/L	9.54	mg/L	3.49	mg/L
pH	6.5 - 9.0		std	6.87J	std	6.59J	std	7.19J

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

J- Value is estimated with a possible low bias

µg/L micrograms per liter

mg/L milligrams per liter

std standard

U Analyte was not detected at the listed reporting limit.

**EDEN NORTH CAROLINA COAL ASH SPILL
SURFACE WATER RESULTS**

Analyte	Ecological Screening Standard for Surface Water Samples ¹		Bluestone Location on Kerr Reservoir	
Sample Information				
Sample ID	-		EDEN-BLST-L-SW-20140408	
Date	-		04/08/2014	
Time	-		1230	
Status	-		Validation Complete	
Type	-		Surface Water	
Dissolved metals				
Aluminum	87	μg/L	117	μg/L
Antimony	5.6	μg/L	5U	μg/L
Arsenic	10	μg/L	0.274J	μg/L
Barium	220	μg/L	20.4	μg/L
Beryllium	0.66	μg/L	0.65U	μg/L
Boron	0.36	mg/L	0.0612U	mg/L
Cadmium	0.1	μg/L	0.1U	μg/L
Calcium	-	-	8,400	μg/L
Chromium	25	μg/L	0.274J	μg/L
Cobalt	3	μg/L	5U	μg/L
Copper	3	μg/L	2U	μg/L
Iron	1,000	μg/L	180	μg/L
Lead	0.59	μg/L	0.5U	μg/L
Magnesium	-	-	3,590J	μg/L
Manganese	200	μg/L	1.88J	μg/L
Mercury	0.000012	mg/L	0.0002U	mg/L
Molybdenum	800	μg/L	0.414J	μg/L
Nickel	17	μg/L	0.141J	μg/L
Potassium	53,000	μg/L	5,000U	μg/L
Selenium	5	μg/L	4.5U	μg/L
Silver	0.06	μg/L	0.05U	μg/L
Sodium	680,000	μg/L	6,750	μg/L
Thallium	0.24	μg/L	0.2U	μg/L
Vanadium	27	μg/L	0.671J	μg/L
Zinc	39	μg/L	10U	μg/L

**EDEN NORTH CAROLINA COAL ASH SPILL
SURFACE WATER RESULTS**

Analyte	Ecological Screening Standard for Surface Water Samples ¹		Bluestone Location on Kerr Reservoir	
Sample Information				
Sample ID	-		EDEN-BLST-L-SW-20140408	
Date	-		04/08/2014	
Time	-		1230	
Status	-		Validation Complete	
Type	-		Surface Water	
Total Dissolved Solids				
Total Dissolved Solids	-	-	83	mg/L
Total Suspended Solids				
Total Suspended Solids	-	-	9	mg/L
Total Metals				
Aluminum	2,000	μg/L	176	μg/L
Antimony	5.6	μg/L	5U	μg/L
Arsenic	10	μg/L	4.5U	μg/L
Barium	220	μg/L	23.3	μg/L
Beryllium	0.66	μg/L	0.65U	μg/L
Boron	0.36	mg/L	0.0598U	mg/L
Cadmium	2	μg/L	0.1U	μg/L
Calcium	-	-	8,520J-	μg/L
Chromium	29	μg/L	2.5U	μg/L
Cobalt	24	μg/L	0.227J	μg/L
Copper	3	μg/L	2U	μg/L
Iron	2,300	μg/L	553J-	μg/L
Lead	0.6	μg/L	0.371J	μg/L
Magnesium	-	-	3,590J	μg/L
Manganese	200	μg/L	47.4	μg/L
Mercury	0.000012	mg/L	0.0002U	mg/L
Molybdenum	-	-	5U	μg/L
Nickel	17	μg/L	5U	μg/L
Potassium	53,000	μg/L	5,000U	μg/L
Selenium	5	μg/L	4.5U	μg/L
Silver	0.06	μg/L	0.05U	μg/L
Sodium	680,000	μg/L	6,600	μg/L
Thallium	0.24	μg/L	0.2U	μg/L
Vanadium	27	μg/L	1.28J	μg/L
Zinc	39	μg/L	10U	μg/L
Anions				
Bromide	-	-	1U	mg/L
Chloride	230	mg/L	9.14	mg/L
Sulfate	-	-	6.36	mg/L

EDEN NORTH CAROLINA COAL ASH SPILL SURFACE WATER RESULTS

Analyte	Ecological Screening Standard for Surface Water Samples ¹		Bluestone Location on Kerr Reservoir	
Sample Information				
Sample ID	-		EDEN-BLST-L-SW-20140408	
Date	-		04/08/2014	
Time	-		1230	
Status	-		Validation Complete	
Type	-		Surface Water	
Wet Chemistry				
Alkalinity, Total (As CaCO ₃)	-	-	28.8	mg/L
Hardness, Calcium/Magnesium (As CaCO ₃)	-	-	36.1	mg/L
Organic Carbon, Dissolved	-	-	4.03	mg/L
pH	6.5 - 9.0	std	7.39J	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

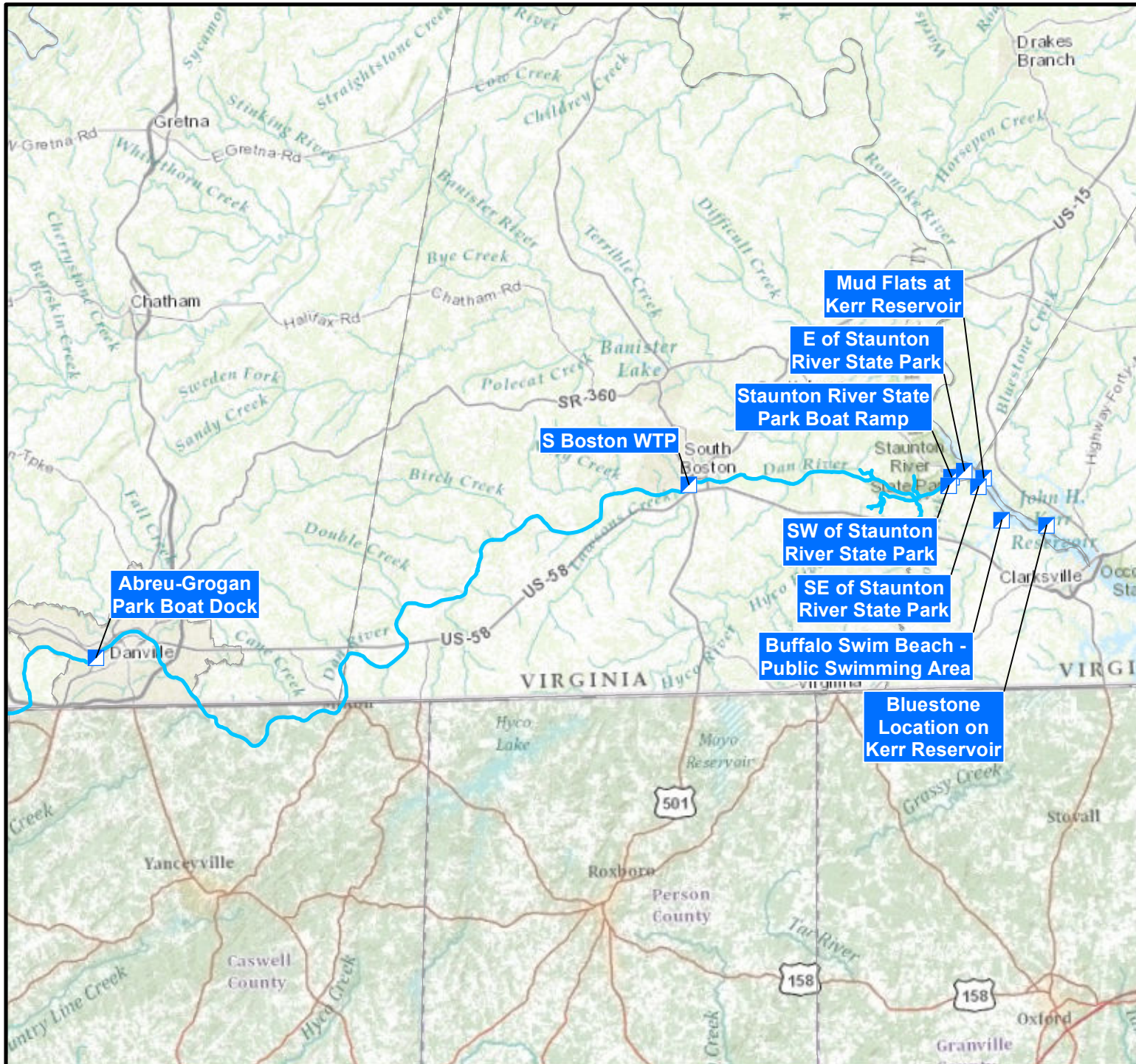
J- Value is estimated with a possible low bias

µg/L micrograms per liter

mg/L milligrams per liter

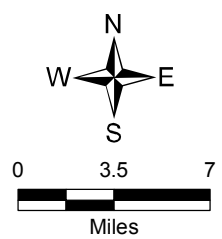
std standard

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
April 8, 2014

