Please see page 2 for explanation of data.

Data from Ash Release at Duke Energy Dan River Station

Storm Drain # 2 (36 inch pipe) Inlet & Outlet Samples

Sampling Dates and Sample ID

			2/14/2014				2/17/2014					
			INLET		OUTLET		INLET		OUTLET			
		Report #s	AC04983		AC04981		AC05082		AC05079		Applicable	
		DISSOLVED	AC04985		AC04980		AC05083		AC05080		Water Quality	Basis for
PARAMETER	Lab PQL	UNITS/HG 1631					AC05102		AC05100		Standard	Standard
Residue_Suspended	6.2	mg/L	18		21		60		6.2	U	N	
Residue_Total	12	mg/L	172		208		343		269		N	
Turbidity							21		2.5		50	Aquatic Life
Fluoride	0.4	mg/L	0.4	U	0.4	U	0.4	U	0.4	U	1.8	Aquatic Life
Chloride	1.0	mg/L	5.8		15		18		21		230	Aquatic Life
Sulfate	2.0	mg/L	64		37		160		71			
Total Dissolved Solids	12	mg/L	157		94		286		250			
Aluminum_Al	50	ug/L	2400		1800		2000		140		87*	Aquatic Life
Arsenic_As	2.0	ug/L	2.0	U	140		2.0	U	180		10	Human Health
Boron_B	50	ug/L	100		230		300		370		750,000	Aquatic Life
Barium_Ba	10	ug/L	45		130		82		160		200,000	Human Health
Calcium_Ca	0.10	mg/L	19		28		39		41			
Cadmium_Cd	0.50	ug/L	0.50	U	0.50	U	0.50	U	0.50	U	2	Aquatic Life
Chromium_Cr	10	ug/L	10	U	10	U	10	U	10	U	50	Aquatic Life
Copper_Cu	2.0	ug/L	3.3		2.1		2.2		2.0	U	7	Aquatic Life
Iron_Fe	50	ug/L	3000		3300		5300		260		1000	Aquatic Life
Potassium_K	0.10	mg/L	3.6		5.3		2.6		6.7			
Magnesium_Mg	0.10	mg/L	8.3		7.8		19		11			
Manganese_Mn	10	ug/L	360		590		940		420			
Mercury_Hg 1631 Low Level							0.003		0.001	U	0.012	Aquatic Life
Sodium_Na	0.10	mg/L	8.6		18		21		29			
Nickel_Ni	2.0	ug/L	3.3		2.7		4.8		2.0		88	Aquatic Life
Lead_Pb	2.0	ug/L	2.0	U	2.0	U	2.0	U	2.0	U	25	Aquatic Life
Selenium_Se	5.0	ug/L	5.0	U	5.0	U	5.0	U	5.0	U	5	Aquatic Life
Strontium_Sr	10	ug/L	210		480		460		800		40,000	Human Health
Thallium_Tl	2.0	ug/L	2.0	U	2.0	U	2.0	U	2.0	U	0.47 **	Human Health
Titanium_Ti	10	ug/L	46		41		52		10	U		
Vanadium_V	25	ug/L	25	U	25	U	25	U	25	U		
Zinc_Zn	10	ug/L	22		18		24		10	U	50	Aquatic Life
Al - Dissolved Aluminum by ICP	50	ug/L	630		70		50	U	50	U	*No applicable NC surface*	
As Dissolved by furnace	2.0	ug/L	2.0	U	97		2.0	U	160		*water quality standards*	
B by ICP	50	ug/L	99		200		310		330		*for dissolved metals*	
Ba- Dissolved Barium by ICP	10	ug/L	36		89		62		150			
Ca-Dissolved Calcium by ICP	0.10	mg/L	17		25		38		38			
Cd- Dissolved Cadmium by ICPMS	0.50	ug/L	0.50	U	0.50	U	0.50	U	0.50	U		
Cr- Dissolved Chromium by ICPMS	10	ug/L	10	U	10	U	10	U	10	U		
Cu- Dissolved Copper by ICPMS	2.0	ug/L	2.1		2.0	U	2.0	U	2.0	U		
Dissolved Mn by ICP	10	ug/L	270		280		520		370			
Fe- Dissolved Iron by ICP	50	ug/L	640		89		91		50	U		
K-Dissolved Potassium by ICP	0.10	mg/L	3.4		4.8		2.4		6.1			
Mg- Dissolved Magnesium by ICP	0.10	mg/L	7.7		7.3		19		10			
Na-Dissolved Sodium by ICP	0.10	mg/L	8.2		17		21		26			
Ni-Dissolved Nickel by ICPMS	2.0	ug/L	2.3		2.0	U	3.6		2.1			
Pb-Dissolved Lead by ICPMS	2.0	ug/L	2.0	U	2.0	U	2.0	U	2.0	U		
Se Dissolved by furnace	5.0	ug/L	5.0	U	5.0	U	5.0	U	5.0	U		
Stronium Dissolved by ICPMS	10	ug/L	210		490		450		720			
Thallium (Tl) Dissolved by ICPMS	2.0	ug/L	2.0	U	2.0	U	2.0	U	2.0	U		
Ti (Titanium) Dissolved by ICP	10	ug/L	11		10	U	10	U	10	U		
V Dissolved by ICP	25	ug/L	25	U	25	U	25	U	25	U		
Zn-Dissolved Zinc by ICP	10	ug/L	19		10	U	19		10	U		

U = Indicates that the analyte was annlyzed for but not detected above the reported practical quantitation limit.

N = Narrative standard per 15A NCAC 02B .0211(3)(c)- Floating solids, settleable solids, or sludge deposits: only such amounts attributable to sewage, industrial wastes or other wastes as shall not make the water unsafe or unsuitable for aquatic life and wildlife or impair the water for any designated uses

Blanks mean no sample taken or standard available or data is not available yet.

* Aluminum is pH and hardness dependent and is based on National Reccomended Water Quality Criteria.

** National Recommended Water Quality Criteria

NOTE: This data is from the 36-inch reinforced concrete pipe that runs below the same coal ash pond where a broken 48-inch pipe spilled ash into the Dan River on Feb. 2. Inlet data is from where materials entered the 36-inch pipe; outlet data is from the end of the pipe that was discharging to the Dan River. It is worth noting that some metals – aluminum, iron and manganese particularly – have lower levels at the outlet that at the inlet. It is thought that these metals may have precipitated out, or settled, in the pipe when low flows allowed.

In the course of the Dan River spill response and investigation it was discovered that elevated levels of arsenic were discharging from the 36-inch pipe, that there are separations at several places where the 4-foot lengths of pipe were joined, and that are were cracks running lengthwise through several pipe segments. Due to these factors the Division of Water Resources ordered Duke Energy to grout and seal this pipe so that it would not discharge. The 48-inch pipe that broke and resulted in the spill was also filled with grout and sealed.