

DWR Data from Ash Release at Duke Energy Dan River Station
 UPSTREAM DAN RIVER UPSTREAM OF RELEASE AT HWY 14

Sampling Dates and Sample ID

Above standard or screening level

Parameter	Lab PQL	Report Number Dissolved Units/Hg 1631	2/3/2014	2/4/2014	2/5/2014	2/6/2014	2/7/2014	2/8/2014	2/9/2014	2/10/2014	2/11/2014	2/17/2014	2/18/2014	2/19/2014
			AC04608	AC04666	AC04679	AC04728	AC04805	AC04832	AC04857	AC04874	AC04966	AC05062	AC05106	AC05215
			NS	NS	AC04680	AC04730	AC04806	AC04831	AC04858	AC04876	AC04967	AC05063	AC05107	AC05216
			NS	NS	NS	AC04740	AC04814	AC04843	AC04863	AC04922	NS	AC05092	AC05118	AC05234
Chloride	1.0	mg/L	14	14	9.8	13	12	11	11	11	10	15	13	13
Fluoride	0.4	mg/L	0.4 U,J2	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
NH3 as N	0.02	mg/L			0.02 U	0.02 U	X2	0.02 U	0.02 U	0.02 U	0.02 U			
NO2 plus NO3 as N	0.02	mg/L	0.38	0.34	0.35	0.36	X2	0.32	0.32	0.31	0.31			
P:Total P	0.02	mg/L	0.03	0.05	0.05	0.04	X2	0.02	0.02	0.03	0.02			
Residue_Suspended	6.2	mg/L	15	28	18	10	17 U,P	6.2 U	6.2 U	10 U,P	12 U,P	18	12	30
Residue_Total	12	mg/L			89	84	70	70	72		62	100	102	96
Sulfate	2.0	mg/L	4.4	3.8	4.2	4.2	5.7	5.4	5.2	5.4	5.5	4.6	4.4	4.9
Total Dissolved Solids	12	mg/L								60	59	78	86	76
TKN as N	0.2	mg/L	0.24	0.24	0.26	0.23	X2	0.2 U	0.2 U	0.2 U	0.20			
Turbidity	1.0	NTU			31	26	16	10	7.3	11	7.8	30	25	28
Aluminum_Al	50	ug/L	770	1100	1300	1100	760	430	310	620	330	1500	1700	1400
Antimony_Sb	10	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U				
Arsenic_As	2.0	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Barium_Ba	10	ug/L	29	34	32	30	26	26	23	25	24	34	30	35
Beryllium_Be	5.0	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U				
Boron_B	50	ug/L	230	200	140	170	170	190	180	180	190	140	140	120
Cadmium_Cd	0.50	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Calcium_Ca	0.10	mg/L	8.7	8.5	7.8	7.6	8.0	8.4	8.0	8.5	8.6	7.2	7.2	7.0
Chromium_Cr	10	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cobalt_Co	50	ug/L	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U				
Copper_Cu	2.0	ug/L	2.0 U	3.3	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0	2.0 U	2.2
Iron_Fe	50	ug/L	1200	1700	1900	1400	950	770	620	860	600	2000	1800	1900
Lead_Pb	2.0	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Lithium_Li	25	ug/L	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U				
Magnesium_Mg	0.10	mg/L	3.0	3.0	3.0	2.8	2.8	2.9	2.8	3.0	3.0	2.8	2.8	2.8
Manganese_Mn	10	ug/L	36	41	38	29	26	27	32	29	25	35	31	42
Mercury_Hg 245.1	0.2	ug/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U				
Mercury_Hg 1631 Low Level	0.001	ug/L				0.003	0.002	0.002	0.001	0.001		0.004	0.003	0.004
Molybdenum_Mo	10	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U				
Nickel_Ni	2.0	ug/L	2.0 U	2.1	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Potassium_K	0.10	mg/L	1.5	1.6	1.8	1.7	1.6	1.6	1.4	1.5	1.5	1.9	1.8	1.9
Selenium_Se	5.0	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Silver_Ag	1.0	ug/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U	1.0 U				
Sodium_Na	0.10	mg/L	4.4	4.9	5.0	4.7	4.2	4.4	4.1	4.3	4.2	6.2	5.6	5.1
Strontium_Sr	10	ug/L	52	52	44	48	49	47	49	48	45	46	43	39
Thallium_Tl	2.0	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Tin_Sn	10	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U				
Titanium_Ti	10	ug/L	39	54	54	54	23	42	25	30	10 U	85	48	180 J2
Vanadium_V	25	ug/L	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Zinc_Zn	10	ug/L	13	13	13	11	10 U	13	10 U	10 U	10 U	10 U	10 U	10 U

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Parameter	Lab	Report Number Dissolved Units/Hg 1631	2/3/2014	2/4/2014	2/5/2014	2/6/2014	2/7/2014	2/8/2014	2/9/2014	2/10/2014	2/11/2014	2/17/2014	2/18/2014	2/19/2014
			AC04608	AC04666	AC04679	AC04728	AC04805	AC04832	AC04857	AC04874	AC04966	AC05062	AC05106	AC05215
			NS	NS	AC04680	AC04730	AC04806	AC04831	AC04858	AC04876	AC04967	AC05063	AC05107	AC05216
PQL			NS	NS	NS	AC04740	AC04814	AC04843	AC04863	AC04922	NS	AC05092	AC05118	AC05234
Aluminum_Al Dissolved	50	ug/L			50 U	50 U	50 U	50 U	50 U	50 U	50 U	300	50 U	50 U
Antimony_Sb Dissolved	10	ug/L			10 U	10 U	10 U	10 U	10 U	10 U				
Arsenic_As Dissolved	2.0	ug/L			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Barium_Ba Dissolve	10	ug/L			22	21	20	21	22	21	23	26	23	23
Beryllium_Be Dissolved	5.0	ug/L			5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U				
Boron_B Dissolved	50	ug/L			140	160	160	170	180	170	190	140	140	130
Cadmium_Cd Dissolved	0.50	ug/L			0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Calcium_Ca Dissolved	0.10	mg/L			7.3	7.4	7.3	7.8	8.4	8.1	8.9	6.9	7.1	6.8
Chromium_Cr Dissolved	10	ug/L			10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cobalt_Co Dissolved	50	ug/L			50 U	50 U	50 U	50 U	50 U	50 U				
Copper_Cu Dissolved	2.0	ug/L			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Iron_Fe Dissolved	50	ug/L			53	64	52	92	64	50 U	59	390	50 U	71
Lead_Pb Dissolved	2.0	ug/L			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Lithium_Li Dissolved	25	ug/L			25 U	25 U	25 U	25 U	25 U	25 U				
Magnesium_Mg Dissolved	0.10	mg/L			2.7	2.5	2.5	2.7	2.9	2.8	3.0	2.6	2.7	2.5
Manganese_Mn Dissolved	10	ug/L			13	13	13	19	24	18	19	19	10 U	13
Mercury_Hg Dissolved	0.2	ug/L			0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U				
Molybdenum_Mo Dissolved	10	ug/L			10 U	10 U	10 U	10 U	10 U	10 U				
Nickel_Ni Dissolved	2.0	ug/L			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Potassium_K Dissolved	0.10	mg/L			1.6	1.5	1.4	1.4	1.5	1.4	1.5	1.7	1.7	1.7
Selenium_Se Dissolved	5.0	ug/L			5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Silver_Ag Dissolved	1.0	ug/L			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
Sodium_Na Dissolved	0.10	mg/L			4.8	4.5	3.9	4.2	4.4	4.1	4.4	6.1	5.8	5.1
Strontium_Sr Dissolved	10	ug/L			44	44	45	46	49	46	49	45	45	44
Thallium_Tl Dissolved	2.0	ug/L			2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Tin_Sn Dissolved	10	ug/L			10 U	10 U	10 U	10 U	10 U	10 U				
Titanium_Ti Dissolved	10	ug/L			10 U	10 U	10 U	10 U	10 U	10 U	10 U	17	10 U	10 U
Vanadium_V Dissolved	25	ug/L			25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Zinc_Zn Dissolved	10	ug/L			10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

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

P = Elevated PQL due to matrix interference and/or sample dilution

J2 = Quality control failure(estimated reported value).

X2 = Sampled, but analysis not performed-field error

NCAC 02B .0211(3)(c)- Floating

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

** National Recommended Water Quality Criteria

Sediment sample also taken (AC05427)

DWR Data from Ash Release at Duke Energy Dan River Station
UPSTREAM DAN RIVER UPSTREAM OF RELEASE AT HWY 14

Parameter	Lab PQL	Report Number Dissolved Units/Hg 1631	2/20/2014	2/21/2014	2/24/2014	2/26/2014	3/5/2014	3/12/2014	Applicable Water Quality Standard	Basis for Standard
			AC05253	AC05351	AC05428#	AC05562	AC05792	AC06096		
			AC05254	AC05352	NS	AC05563	AC05793	AC06094		
Chloride	1.0	mg/L	10	9.1	9.2				230	Aquatic Life
Fluoride	0.4	mg/L	0.4 U	0.4 U	0.4 U				1.8	Aquatic Life
NH3 as N	0.02	mg/L								
NO2 plus NO3 as N	0.02	mg/L								
P:Total P	0.02	mg/L								
Residue_Suspended	6.2	mg/L	84	82	22	13	6.2 U	19	N	
Residue_Total	12	mg/L	158	145	87	81	69		N	
Sulfate	2.0	mg/L	3.3	3.9	3.2					
Total Dissolved Solids	12	mg/L	69	62				71		
TKN as N	0.2	mg/L								
Turbidity	1.0	NTU	80	70					50	Aquatic Life
Aluminum_Al	50	ug/L	4000	3500 J2	1500	880	520	1300	87*	Aquatic Life
Antimony_Sb	10	ug/L							640 **	Human Health
Arsenic_As	2.0	ug/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	10	Human Health
Barium_Ba	10	ug/L	57	50	31				200,000	Human Health
Beryllium_Be	5.0	ug/L							6.5	Aquatic Life
Boron_B	50	ug/L	66	67	110				750,000	Aquatic Life
Cadmium_Cd	0.50	ug/L	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2	Aquatic Life
Calcium_Ca	0.10	mg/L	5.7	5.7	6.2					
Chromium_Cr	10	ug/L	10 U	10 U	10 U				50	Aquatic Life
Cobalt_Co	50	ug/L							4	Human Health
Copper_Cu	2.0	ug/L	3.8	3.1	2.0 U	2.0 U	2.0 U	2.0 U	7	Aquatic Life
Iron_Fe	50	ug/L	5500	4400	1900	1200	650	1400	1000	Aquatic Life
Lead_Pb	2.0	ug/L	3.4	2.7	2.0 U				25	Aquatic Life
Lithium_Li	25	ug/L								
Magnesium_Mg	0.10	mg/L	2.7	2.6	2.5					
Manganese_Mn	10	ug/L	120	93	36					
Mercury_Hg 245.1	0.2	ug/L							0.012	Aquatic Life
Mercury_Hg 1631 Low Level	0.001	ug/L	0.009	0.008				0.003	0.012	Aquatic Life
Molybdenum_Mo	10	ug/L							2000	Human Health
Nickel_Ni	2.0	ug/L	2.8	2.2	2.0 U	2.0 U	2.0 U	2.0 U	88	Aquatic Life
Potassium_K	0.10	mg/L	2.2	2.4	1.6					
Selenium_Se	5.0	ug/L	5.0 U	5.0 U	5.0 U				5	Aquatic Life
Silver_Ag	1.0	ug/L							0.06	Aquatic Life
Sodium_Na	0.10	mg/L	4.4	4.1	3.7					
Strontium_Sr	10	ug/L	33	34	39				40,000	Human Health
Thallium_Tl	2.0	ug/L	2.0 U	2.0 U	2.0 U				0.47 **	Human Health
Tin_Sn	10	ug/L							800	Human Health
Titanium_Ti	10	ug/L	400	200 J2	78 J2					
Vanadium_V	25	ug/L	25 U	25 U	25 U					
Zinc_Zn	10	ug/L	10 U	14	10 U	10 U	10 U	10 U	50	Aquatic Life

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Parameter	Lab PQL	Report Number Dissolved Units/Hg 1631	2/20/2014	2/21/2014	2/24/2014	2/26/2014	3/5/2014	3/12/2014	Applicable	Basis for
			AC05253	AC05351	AC05428#	AC05562	AC05792	AC06096	Water Quality	Standard
			AC05254	AC05352	NS	AC05563	AC05793	AC06094	Standard	Standard
			AC05265	AC05363	NS	NS	NS	AC06144		
Aluminum_Al Dissolved	50	ug/L	50 U	310		50 U	50 U	50 U		
Antimony_Sb Dissolved	10	ug/L							<i>No NC standards for dissolved metals</i>	
Arsenic_As Dissolved	2.0	ug/L	2.0 U	2.0 U		2.0 U	2.0 U	2.0 U		
Barium_Ba Dissolve	10	ug/L	20	23						
Beryllium_Be Dissolved	5.0	ug/L								
Boron_B Dissolved	50	ug/L	72	73						
Cadmium_Cd Dissolved	0.50	ug/L	0.50 U	0.50 U		0.50 U	0.50 U	0.5 U		
Calcium_Ca Dissolved	0.10	mg/L	5.1	5.4						
Chromium_Cr Dissolved	10	ug/L	10 U	10 U						
Cobalt_Co Dissolved	50	ug/L								
Copper_Cu Dissolved	2.0	ug/L	2.0 U	2.0 U		2.0 U	2.0 U	2.0 U		
Iron_Fe Dissolved	50	ug/L	54	310		50 U	50 U	50 U		
Lead_Pb Dissolved	2.0	ug/L	2.0 U	2.0 U						
Lithium_Li Dissolved	25	ug/L								
Magnesium_Mg Dissolved	0.10	mg/L	2.0	2.1						
Manganese_Mn Dissolved	10	ug/L	19	15						
Mercury_Hg Dissolved	0.2	ug/L								
Molybdenum_Mo Dissolved	10	ug/L								
Nickel_Ni Dissolved	2.0	ug/L	2.0 U	2.0 U		2.0 U	2.0 U	2.0 U		
Potassium_K Dissolved	0.10	mg/L	1.6	1.9						
Selenium_Se Dissolved	5.0	ug/L	5.0 U	5.0 U						
Silver_Ag Dissolved	1.0	ug/L								
Sodium_Na Dissolved	0.10	mg/L	4.2	4.0						
Strontium_Sr Dissolved	10	ug/L	34	37						
Thallium_Tl Dissolved	2.0	ug/L	2.0 U	2.0 U						
Tin_Sn Dissolved	10	ug/L								
Titanium_Ti Dissolved	10	ug/L	10 U	20						
Vanadium_V Dissolved	25	ug/L	25 U	25 U						
Zinc_Zn Dissolved	10	ug/L	10 U	10 U		10 U	10 U	10 U		

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