WVDEP Results from Davis Well (Marcellus) flowback water analysis. February 10th, 16th, 21st, March 5th and 13th, 2009

Parameter	Day 1	Day 5	Day 10	Day 20	Day 20 (Lab 2)	Day 30	Day 30 (lab 2)	unit
Aluminum	<0.03	<0.03	<0.03	0.14		<1		mg/L
Barium	0.121	136	159	238		NA[1]		mg/L
Boron	<0.01	26.3	31.2	43.7		NA		mg/L
Calcium	157	7,630	9,010	11,400		13,300		mg/L
Iron	0.083	38.3	63.6	82		100		mg/L
Magnesium	47.1	829	1,020	1,290		1,500		mg/L
Manganese	0.933	7.15	8.25	10.4		11		mg/L
Sodium	51.8	21,400	23,000	33,100		30,100		mg/L
Antimony	0.002	<0.1	<0.1	<0.1		NA		mg/L
Arsenic	0.0021	<0.4	<0.4	<0.2		<2.0		mg/L
Beryllium	<0.0002	<0.03	<0.03	<0.01		NA		mg/L
Cadmium	<0.0002	<0.08	<0.08	<0.01		<0.2		mg/L
Chromium	<0.001	<0.3	<0.3	<0.05		<1.0		mg/L
Copper	0.0051	<0.2	<0.2	<0.05		<1.0		mg/L
Lead	<0.0002	<0.4	<0.4	<0.4		<2.0		mg/L
Nickel	0.0083	<0.2	<0.2	<0.05		<1.0		mg/L
Selenium	0.0173	0.42	0.32	<0.1		<2.0		mg/L
Silver	<0.001	<0.35	<0.35	<0.05		<0.5		mg/L
Thallium	0.0002	<0.1	<0.1	<0.1		NA		mg/L
Zinc	0.0167	0.11	0.11	0.13		<0.5		mg/L
Mercury	<0.0001	<0.0001	0.0005	<0.0001		<0.001		mg/L
TPH (Diesel Range)	72.6	57.9	69.6	20		23		mg/L
Phenol	0.0113	0.013	0.0101	0.01		<0.0094		mg/L
Bis(2-ethylhexyl)phthalate	<0.0105	0.0074	0.0202	0.0062		<0.0094		mg/L
2,4- Dimethylphenol	<0.00351	0.0107	0.0068	0.0095		<0.0094		mg/L
TPH (Gasoline Range)	0.86	39.8	8.57	14.5		5.08		mg/L
Benzene	288	1,350	246	1,760		652		ug/L
Ethylbenzene	7.1	<144	24.4	52		<100		ug/L
Toluene	340	2,140	430	2,040		969		ug/L
MBAS	0.043	<0.2	1.65	0.181		NA		mg/L
Biochemical Oxygen Demand	452	528	48	171		149		mg/L
Chemical Oxygen Demand	1,130	1,180	838	2,580		1,530		mg/L
Cyanide, Total	<0.004	<0.004	<0.004	<0.004		NA		mg/L
Bromide	700	570	750	550	750	900	710	mg/L
Chloride	27,700	67,300	65,000	71,200	73,100	121,000	87,000	mg/L
Fluoride	3600	3500	<12.5	103	<500	NA	<750	mg/L
Sulfate	11,400	<500	<235	1,460		<5,000		mg/L
Nitrogen, Total as N	113	9.22	33.2	33.6		NA		mg/L
Phosphorus, Total	0.47	1.97	0.78	0.7		0.16		mg/L
Oil & Grease	<2.0	<2.0	<2.0	<2.0		<5.0		mg
Specific Conductivity	117,000	417,000	649,000	160,000	274,000	173,000	323,000	umhos/cn
Total Dissolved Solids	43,800	84,000	93,700	124,000		132,000		mg/L
Total Suspended Solids	127	193	328	388		212		mg/L
Alkalinity, Total (As CaCO3)	240	141	164	136		NA		mg/L
pH	7.09	6.55	6.51	6.24	6.19	6.4		SU
Total Organic Carbon	486	148	136	104		102		mg/L
Gross Alpha Radioactivity	281 ± 153	1,420 ± 355	3,330 ± 442	1,630 ± 686		NYA[2]		pci/L
Gross Beta Radioactivity	2.03 ± 132	591 ± 136	817 ± 169	1,202 ± 721		NYA[2]		pci/L
Radium 226	147 ± 15.1	302 ± 21.6	740 ± 35.1	621 ± 31.5		NYA[2]		pci/L
Radium 228	33.0 ± 2.05	151 ± 10.1	273 ± 13.7	416 ± 16.4		NYA[2]		pci/L
Toal Uranium	4.92 ± 0.01	2.30 ± 0.052	1.44 ± 0.051	0.979 ± 0.081		NYA[2]		ug/L

1- NA = Not Available

2- NYA = Not Yet Available - awaiting results

WVDEP Results from Davis Well (Marcellus) flowback water analysis. February 10th, 16th, 21st, March 5th and 13th, 2009