DOE/ORO/2186

ENVIRONMENTAL MONITORING ON THE OAK RIDGE RESERVATION: 2003 RESULTS

Compiled by
Sharon D. Thompson

List of Tables

East Tennessee Technology Park

List of Tables (continued)

Oak Ridge National Laboratory

ORR Surveillance

Y-12 National Security Complex

List of Tables (continued)

Y-12 National Security Complex

Constituents Detected in Groundwater at the Y-12 Complex Site for 2003

Regime = Bear Creek

Regime = Chestnut Ridge

List of Tables (continued)

Y-12 National Security Complex

Constituents Detected in Groundwater at the Y-12 Complex Site for 2003

Table 1.1. 2003 NPDES Permit Number TN 0002950
ETTP Storm Drain Discharge Points

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
Discharge Point SD 05A						
Flow, GPD	12	47300	1200	10300		
Total Suspended Solids	12	16.0	<2.0	<3.2		
pH, Standard Units	12	7.3	6.8	7.0	4.0 - 9.0	0
Oil & Grease	12	8.4	<5.0	<4.7		
Discharge Point SD 100						
Flow, GPD	52	6216500	483700	118400		
Total Suspended Solids	52	36.2	<2.0	<7.5		
pH, Standard Units	52	7.6	6.6	7.2	6.0 - 9.0	0
Oil & Grease	52	4.2	<2.35	<3.5		
Total Residual Chlorine	52	0.06	0	0.005	0.14	0
Discharge Point SD 120						
Flow, GPD	6	506900	0	290416		
Total Suspended Solids	6	13	<2.0	<2.2		
pH, Standard Units	6	7.2	6.7	7.0	4.0 - 9.0	0
Discharge Point SD 124						
Flow, GPD	52	769200	0	120500		
Total Suspended Solids	52	16.0	<2.0	<4.3		
pH, Standard Units	52	8.2	6.9	7.6	6.0 - 9.0	0
Oil & Grease	52	5.9	<5.0	<4.0		
Total Residual Chlorine	52	0.003	0	0.00025	0.14	0
Discharge Point SD 130						
Flow, GPD	52	11746300	120200	1020250		
Total Suspended Solids	52	11.0	<2.0	<6.9		
pH, Standard Units	52	7.5	6.7	7.0	6.0 - 9.0	0
Oil & Grease	52	10.2	<5.0	<4.4		
Total Residual Chlorine	52	0.01	0	0.001	0.14	0
Discharge Point SD 140						
Flow, GPD	4	125000	33600	83725		
ph, Standard Units	4	7.7	7.3	7.6	4.0 - 9.0	0
Total Suspended Solids	4	6.0	<2.0	<3.0		
Discharge Point SD 142						
Flow, GPD	12	192600	18970	82925		
pH, Standard Units	12	8.3	6.9	7.5	4.0 - 9.0	0
Total Suspended Solids	12	6.0	<2.0	2.7		

Table 1.1 (continued)

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
		Discharge Point SD 144				
Flow, GPD	12	474800	9300	142780		
pH, Standard Units	12	7.4	6.9	7.2	4.0 - 9.0	0
Total Suspended Solids	12	17.0	<2.0	<3.5		
Oil & Grease	12	4.4	<5.0	<4.3		
		Discharge Point SD 146				
Flow, GPD	10	40890	0	20400		
pH, Standard Units	10	7.7	6.9	7.2	4.0 - 9.0	0
Oil & Grease	10	3.4	<5.0	<4.8		
		Discharge Point SD 148				
Oil & Grease	10	4.3	<5.0	<4.3		
Flow, GPD	10	24960	0	11110		
pH, Standard Units	10	7.9	7.0	7.4	4.0 - 9.0	0
Total Suspended Solids	10	4.8	<2.0	<2.3		
		Discharge Point SD 150				
Flow, GPD	10	699900	0	320590		
pH, Standard Units	10	7.6	6.8	7.1	4.0 - 9.0	0
		Discharge Point SD 154				
Flow, GPD	10	293500	0	138090		
pH, Standard Units	10	7.5	6.9	7.1	4.0 - 9.0	0
Oil & Grease	10	6.2	<5.0	<4.8		
		Discharge Point SD 156				
Flow, GPD	2	5822500	4177700	500010		
pH, Standard Units	2	7.3	6.7	7.0	4.0 - 9.0	
		Point SD 158				
Flow, GPD	4	81970	25130	56780		
pH, Standard Units	4	7.0	6.7	6.9	4.0 - 9.0	0
		Discharge Point SD 160				
Flow, GPD	3	242300	0	161900		
pH, Standard Units	3	7.5	6.9	7.2	4.0 - 9.0	0
		Discharge Point SD 162				
Flow, GPD	6	276700	0	150680		
Oil & Grease	6	<5.0	<2.3	<4.6		
pH, Standard Units	6	7.1	6.9	7.0	4.0 - 9.0	0
		Discharge Point SD 170				
Flow, GPD	52	2253300	36400	298070		
Total Suspended Solids	52	6.8	<2.0	<2.6		
pH, Standard Units	52	8.0	6.7	7.5	6.0 - 9.0	0
Oil & Grease	52	4.1	<5.0	<3.8		

Table 1.1 (continued)

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
		Discharge Point SD 180				
Flow, GPD	52	2012100	37800	284520		
Total Suspended Solids	52	34.8	<2.0	<11.4		
pH, Standard Units	52	8.2	6.8	7.6	6.0 - 9.0	0
Oil & Grease	52	6.7	<5.0	<4.4		
		Discharge Point SD 190				
Flow, GPD	52	2452800	89700	448180		
Total Suspended Solids	52	6.0	<2.0	<2.4		
pH, Standard Units	52	7.7	6.7	7.1	6.0 - 9.0	0
Oil & Grease	52	4.3	<5.0	<3.3		
		Discharge Point SD 192				
Flow, GPD	2	114900	80550	97715		
pH, Standard Units	2	7.1	7.0	7.1	4.0 - 9.0	0
		Discharge Point SD 194				
Flow, GPD	2	114900	80530	97715		
pH, Standard Units	2	7.3	7.1	7.2	4.0 - 9.0	0
		Discharge Point SD 195				
Flow, GPD	2	129200	90595	109900		
pH, Standard Units	2	7.2	6.7	7.0	4.0 - 9.0	0
		Discharge Point SD 196				
Flow, GPD	2	112200	79300	95750		
pH, Standard Units	2	7.2	6.7	7.0	4.0 - 9.0	0
		Discharge Point SD 197				
Flow, GPD	6	97150	0	56010		
pH, Standard Units	6	7.4	7.0	7.2	4.0 - 9.0	0
Oil & Grease	6	2.9	<5.0	<4.2		
Total Suspended Solids	6	14.0	<2.0	<4.0		
		Discharge Point SD 198				
Flow, GPD	3	400800	0	278430		
pH, Standard Units	3	7.7	7.1	7.3	4.0 - 9.0	0
Total Suspended Solids	3	15.0	<2.0	<6.3		
		Discharge Point SD 200				
Flow, GPD	12	851800	91700	379560		
pH, Standard Units	12	8.2	6.9	7.5	4.0-9.0	0
Oil & Grease	12	4.7	<5.0	<4.7		
		Discharge Point SD 210				
Flow, GPD	3	1378500	0	954300		
pH, Standard Units	3	7.2	6.8	7.0	4.0 - 9.0	0
Total Suspended Solids	3	15.0	<2.0	<6.3		

Table 1.1 (continued)

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
		Discharge Point SD 220				
Flow, GPD	9	119800	0	34713		
Total Suspended Solids	9	17.0	<2.0	<5.2		
pH, Standard Units	9	7.8	6.9	7.3	4.0 - 9.0	0
Oil & Grease	9	3.4	<5.0	<4.4		
		Discharge Point SD 230				
Flow, GPD	12	1582900	157000	678080		
pH, Standard Units	12	8.5	6.7	7.6	4.0 - 9.0	0
Oil & Grease	12	8.8	<5.0	<4.9		
		Discharge Point SD 240				
Flow, GPD	10	1124500	0	519340		
Oil & Grease	10	11.7	<5.0	<5.2		
pH, Standard Units	10	7.4	6.5	7.0	4.0 - 9.0	0
		Discharge Point SD 250				
Flow, GPD	3	500000	0	334030		
Total Suspended Solids	3	7.2	<2.0	<7.3		
pH, Standard Units	3	7.0	6.6	6.8		
		Discharge Point SD 270				
Flow, GPD	2	23650	0	11825		
pH, Standard Units	2	7.5	7.5	7.5		
		Discharge Point SD 280				
Flow, GPD	2	97580	70220	83900		
pH, Standard Units	2	7.8	7.4	7.6		
		Discharge Point SD 292				
Flow, GPD	2	88485	63970	76225		
pH, Standard Units	2	7.2	7.2	7.2	4.0 - 9.0	0
		Discharge Point SD 294				
Flow, GPD	2	162100	114600	138350		
pH, Standard Units	2	7.2	6.9	7.1	4.0 - 9.0	0
		Discharge Point SD 296				
Flow, GPD	2	30880	22170	26525		
pH, Standard Units	2	7.1	7.1	7.1		
		Discharge Point SD 297				
Flow, GPD	2	71435	50090	60760		
pH, Standard Units	2	7.0	6.9	7.0	4.0 - 9.0	0
		Discharge Point SD 300				
Flow, GPD	2	87270	62065	74670		
pH, Standard Units	2	7.2	7.0	7.1		

Table 1.1 (continued)

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
		Discharge Point SD 320				
Flow, GPD	2	363400	258400	310900		
pH, Standard Units	2	7.1	7.1	7.1		
		Discharge Point SD 322				
Flow, GPD	2	48610	32630	40620		
pH, Standard Units	2	7.0	6.9	7.0	4.0 - 9.0	0
		Discharge Point SD 326				
Flow, GPD	2	29490	19795	24640		
pH, Standard Units	2	7.0	6.8	6.9		
		Discharge Point SD 330				
Flow, GPD	3	700100	0	485150		
pH, Standard Units	3	7.2	6.6	7.0	4.0 - 9.0	0
Total Suspended Solids	3	11.0	<2.0	<5.0		
		Discharge Point SD 332				
Flow, GPD	2	35480	23820	29650		
pH, Standard Units	2	7.0	6.8	6.9		
		Discharge Point SD 334				
Flow, GPD	2	48660	32660	40660		
pH, Standard Units	2	7.0	6.9	7.0		
		Discharge Point SD 340				
Flow, GPD	2	685300	547600	616300		
pH, Standard Units	2	7.4	7.1	7.3	4.0 - 9.0	0
		Discharge Point SD 350				
Flow, GPD	2	77550	55485	66520		
pH, Standard Units	2	7.1	6.9	7.0	4.0 - 9.0	0
		Discharge Point SD 352				
Flow, GPD	3	450	0	316		
pH, Standard Units	3	7.2	6.6	7.0		
		Discharge Point SD 360				
Flow, GPD	2	41955	32070	37010		
pH, Standard Units	2	7.0	6.8	6.9		
		Discharge Point SD 370				
Flow, GPD	1	1440	0	1440		
pH, Standard Units	1	7.3	7.3	7.3		
		Discharge Point SD 380				
Flow, GPD	11	1389900	0	596370		
pH, Standard Units	11	8.8	6.5	7.5	4.0 - 9.0	0
Oil & Grease	11	4.4	<5.0	<4.2		
Total Suspended Solids	11	12.0	<2.0	<2.9		

Table 1.1 (continued)

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
		Discharge Point SD 382				
Flow, GPD	2	159700	125700	142700		
pH, Standard Units	2	7.3	6.9	7.1	4.0 - 9.0	0
		Discharge Point SD 390				
Flow, GPD	6	325500	0	165300		
pH, Standard Units	6	7.0	6.2	6.7	4.0 - 9.0	0
Total Suspended Solids	6	<4.6	<2.0	<2.4		
Oil & Grease	6	<4.4	<5.0	<4.9		
		Discharge Point SD 400				
Flow, GPD	2	630	510	570		
pH, Standard Units	2	7.5	7.4	7.5	4.0 - 9.0	0
		Discharge Point SD 410				
Flow, GPD	2	68575	51300	59940		
pH, Standard Units	2	7.4	7.2	7.3	4.0 - 9.0	0
		Discharge Point SD 420				
Flow, GPD	2	248300	188000	218150		
pH, Standard Units	2	7.4	7.3	7.4	4.0 - 9.0	0
		Discharge Point SD 430				
Flow, GPD	12	1300300	119300	545360		
pH, Standard Units	12	7.3	7.0	7.2	4.0 - 9.0	0
Oil & Grease	12	6.0	<5.0	<4.6		
		Discharge Point SD 440				
Oil & Grease	12	6.9	<5.0	<4.0		
Flow, GPD	12	839300	25100	266670		
pH, Standard Units	12	7.6	7.0	7.2	4.0 - 9.0	0
Total Suspended Solids	12	7.6	<2.0	<2.8		
		Discharge Point SD 450				
Flow, GPD	1	79210	0	79210		
pH, Standard Units	1	7.4	7.4	7.4	4.0 - 9.0	0
		Discharge Point SD 460				
Flow, GPD	2	21230	14250	17740		
pH, Standard Units	2	7.5	7.1	7.3		
		Discharge Point SD 470				
Flow, GPD	2	52455	35210	43830		
pH, Standard Units	2	7.3	7.3	7.3	4.0 - 9.0	0
		Discharge Point SD 490				
Flow, GPD	12	5749100	522800	2305200		
pH, Standard Units	12	7.6	6.9	7.3	4.0 - 9.0	0
Oil & Grease	12	2.2	<5.0	<4.5		
Total Suspended Solids	12	14.0	<2.0	<3.0		

Table 1.1 (continued)

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
		Discharge Point SD 500				
Flow, GPD	2	49930	35930	38930		
pH, Standard Units	2	7.4	7.3	7.4	4.0 - 9.0	0
		Discharge Point SD 510				
Flow, GPD	12	1012000	134700	434710		
Total Suspended Solids	12	12.0	<2.0	<4.2		
pH, Standard Units	12	7.3	6.7	7.0	4.0 - 9.0	0
Oil & Grease	12	5.4	<5.0	<4.8		
		Discharge Point SD 520				
Flow, GPD	2	68735	47910	58320		
pH, Standard Units	2	6.9	6.9	6.9	4.0 - 9.0	0
		Discharge Point SD 522				
Flow, GPD	2	145900	103700	124800		
pH, Standard Units	2	7.0	7.0	7.0	4.0 - 9.0	0
		Discharge Point SD 530				
Flow, GPD	1	541400	0	541400		
Total Suspended Solids	1	18.0	18.0	18.0		
pH, Stnadard Units	1	7.0	7.0	7.0		
		Discharge Point SD 532				
Flow, GPD	2	41140	29680	35410		
pH, Standard Units	2	7.4	7.4	7.4		
		Discharge Point SD 540				
Flow, GPD	2	68440	47100	57770		
pH, Standard Units	2	7.0	6.6	6.8		
		Discharge Point SD 550				
Flow, GPD	2	72590	50025	61310		
pH, Standard Units	2	6.9	6.9	6.9		
		Discharge Point SD 560				
Flow, GPD	7	345200	0	171910		
Total Suspended Solids	7	14.0	<2.0	<4.4		
pH, Standard Units	7	8.1	6.5	7.2	4.0 - 9.0	0
Oil & Grease	7	3.3	<5.0	<3.8		
		Discharge Point SD 570				
Flow, GPD	2	190400	136600	163500		
pH, Standard Units	2	7.4	6.7	7.1		
		Discharge Point SD 580				
Flow, GPD	2	163200	112900	138050		
pH, Standard Units	2	6.6	6.5	6.6		

Table 1.1 (continued)

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
		Discharge Point SD 590				
Flow, GPD	1	36020	0	36020		
pH, Standard Units	1	7.0	7.0	7.0	4.0 - 9.0	0
		Discharge Point SD 600				
Flow, GPD	2	840000	0	692450		
Total Suspended Solids	2	254.0	<2.0	<128.0		
pH, Standard Units	2	7.2	7.1	7.2		
		Discharge Point SD 610				
Flow, GPD	8	618600	0	275060		
Total Suspended Solids	8	30.0	<2.0	<11.4		
Oil & Grease	8	3.5	<5.0	<4.3		
pH, Standard Units	8	7.4	6.8	7.2		
		Discharge Point SD 620				
Flow, GPD	2	87535	60080	73810		
pH, Standard Units	2	6.7	6.5	6.6		
		Discharge Point SD 640				
Flow, GPD	4	106100	20510	66350		
Total Suspended Solids	4	17.0	<2.0	<8.8		
pH, Standard Units	4	7.5	7.0	7.3	4.0 - 9.0	0
		Discharge Point SD 650				
Flow, GPD	2	48370	27015	37690		
pH, Standard Units	2	7.3	7.2	7.3		
		Discharge Point SD 660				
Flow, GPD	4	29020	6	13600		
pH, Standard Units	4	7.7	7.3	7.5	4.0 - 9.0	0
Total Suspended Solids	4	39.6	<2.0	<17.1		
		Discharge Point SD 680				
Flow, GPD	4	123900	30900	81650		
pH, Standard Units	4	7.8	7.4	7.6	4.0 - 9.0	0
		Discharge Point SD 690				
Flow, GPD	7	2433600	0	1160870		
Oil & Grease	7	5.8	<5.0	<4.8		
pH, Standard Units	7	7.4	6.7	7.0	4.0 - 9.0	0
		Discharge Point SD 692				
Flow, GPD	2	37430	27485	32460		
pH, Standard Units	2	7.1	6.9	7.0	4.0 - 9.0	0
		Discharge Point SD 694				
Flow, GPD	2	74065	54505	64285		0
pH, Standard Units	2	7.3	7.3	7.3	4.0 - 9.0	0

Table 1.1 (continued)

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
		Discharge Point SD 696				
Flow, GPD	2	84580	62780	73680		
pH, Standard Units	2	7.5	7.1	7.3		
		Discharge Point SD 700				
Flow, GPD	9	1993400	0	774610		
Oil & Grease	9	2.6	<5.0	<4.5		
pH, Standard Units	9	7.7	6.8	7.1	4.0 - 9.0	0
Total Suspended Solids	9	9.6	<2.0	<3.4		
		Discharge Point SD 710				
Flow, GPD	12	2881600	362200	1210290		
Total Suspended Solids	12	4.8	<2.0	<2.4		
pH, Standard Units	12	7.5	7.1	7.3	4.0 - 9.0	0
Oil & Grease	12	5.7	<5.0	<4.5		
		Discharge Point SD 720				
Flow, GPD	7	559300	0	212530		
pH, Standard Units	7	7.5	6.8	7.1	4.0 - 9.0	0
Total Suspended Solids	7	7.6	<2.0	<3.3		
Oil & Grease	7	6.0	<5.0	<5.0		
		Discharge Point SD 724				
Flow, GPD	1	1152200	0	1152200		
pH, Standard Units	1	7.5	7.5	7.5		
		Discharge Point SD 730				
Flow, GPD	1	64090	0	64090		
pH, Standard Units	1	7.1	7.1	7.1		
		Discharge Point SD 740				
Flow, GPD	2	50465	34635	42550		
pH, Standard Units	2	7.3	7.1	7.2	4.0 - 9.0	
		Discharge Point SD 750				
Flow, GPD	3	46190	0	18340		
pH, Standard Units	3	7.9	6.9	7.3	4.0 - 9.0	0
Oil & Grease	3	3.1	<5.0	<4.4		
		Discharge Point SD 760				
Flow, GPD	3	42035	0	16690		
pH, Standard Units	3	7.8	7.0	7.3	4.0 - 9.0	0
		Discharge Point SD 770				
Flow, GPD	1	19090	0	19090		
pH, Standard Units	1	7.3	7.3	7.3	4.0 - 9.0	0
Total Suspended Solids	1	3.8	0	3.8		

Table 1.1 (continued)

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
		Discharge Point SD 780				
Flow, GPD	2	409700	0	261500		
pH, Standard Units	2	8.1	7.4	7.8	4.0 - 9.0	0
		Discharge Point SD 810				
Flow, GPD	2	2280	0	1520		
pH, Standard Units	2	7.8	6.8	7.3	4.0 - 9.0	0
		Discharge Point SD 820				
Flow, GPD	2	156300	0	101030		
pH, Standard Units	2	8.0	7.2	7.6	4.0 - 9.0	0
Total Suspended Solids	2	6.0	<2.0	<4.0		
		Discharge Point SD 830				
Flow, GPD	2	267400	0	174800		
pH, Standard Units	2	8.1	7.1	7.6	4.0 - 9.0	0
		Discharge Point SD 850				
Flow, GPD	2	380	0	290		
pH, Standard Units	2	8.0	6.8	7.4	4.0 - 9.0	
		Discharge Point SD 870				
Flow, GPD	1	132400	0	132400		
pH, Standard Units	1	7.8	7.8	7.8	4.0 - 9.0	0
		Discharge Point SD 880				
Flow, GPD	2	89710	0	59740		
pH, Standard Units	2	7.9	7.6	7.8	4.0 - 9.0	0
		Discharge Point SD 890				
Flow, GPD	2	300300	0	188900		
pH, Standard Units	2	8.0	7.1	7.6	4.0 - 9.0	0
		Discharge Point SD 892				
Flow, GPD	1	3750	0	3750		
pH, Standard Units	1	7.3	7.3	7.3		
		Discharge Point SD 900				
Flow, GPD	4	137800	0	80090		
pH, Standard Units	4	8.0	7.1	7.4	4.0 - 9.0	0
Total Suspended Solids	4	10.0	<2.0	<4.0		
		Discharge Point SD 910				
Flow, GPD	2	275600	193300	234450		
pH, Standard Units	2	7.6	7.3	7.5	4.0 - 9.0	0
		Discharge Point SD 920				
Flow, GPD	1	161100	0	161100		
pH, Standard Units	1	7.0	7.0	7.0		

Table 1.1 (continued)

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
		Discharge Point SD 929				
Flow, GPD	2	1060	740	900		
pH, Standard Units	2	6.8	6.7	6.8	4.0 - 9.0	0
		Discharge Point SD 930				
Flow, GPD	2	123300	94350	108825		
pH, Standard Units	2	7.6	7.6	7.6	4.0 - 9.0	0
		Discharge Point SD 934				
Flow, GPD	2	38495	26420	32460		
pH, Standard Units	2	7.6	7.3	7.5	4.0-9.0	0
		Discharge Point SD 940				
Flow, GPD	1	1815	0	1815		
pH, Standard Units	1	6.9	6.9	6.9		
		Discharge Point SD 950				
Flow, GPD	1	905	0	905		
pH, Standard Units	1	6.8	6.8	6.8		
		Discharge Point SD 960				
Flow, GPD	2	2780	1870	2325		
pH, Standard Units	2	7.2	7.1	7.2	4.0-9.0	0
		Discharge Point SD 970				
Flow, GPD	1	236800	0	236800		
pH, Standard Units	1	6.8	6.8	6.8		
		Discharge Point SD 980				
Flow, GPD	1	521900	0	521900		
pH, Standard Units	1	6.9	6.9	6.9		
		Discharge Point SD 990				
Flow, GPD	1	53170	0	53170		
pH, Standard Units	1	7.0	7.0	7.0		
		Discharge Point SD 992				
Flow, GPD	1	2740	0	2740		
Total Suspended Solids	1	5.2	5.2	5.2		
pH, Standard Units	1	7.3	7.3	7.3	4.0 - 9.0	0
Oil & Grease	1	2.5	2.5	2.5		
		Discharge Point SD 996				
Flow, GPD	2	267200	181600	224400		
pH, Standard Units	2	7.3	7.1	7.2		

[a] - Units are mg/L unless otherwise noted

[b] - NPDES permit limit

Table 1.2. 2003 NPDES Permit Number TN 0002950

This table covers information submitted under NPDES permit TN0002950 from 1/1/03 - 7/31/03. Outfall 005 is now covered by NPDES permit TN0074241, which became effective on August 1, 2003. Operations Management International is responsible for all data reported since permit TN0074241 became effective.

Discharge Point 005, Sewage Treatment Plant, ETTP

Parameter	Number samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
			K-1203			
Biochemical Oxygen	90	11.0	<5.0	<5.1	20	0
Dissolved Oxygen	212	9.0	6.0	7.7	5.0 min[c]	0
Fecal Coliform, col/100ml	90	19	<2.0	<6.1	400	0
Flow Total (GPD)	212	890100	190400	299430		
Total Suspended Solids	90	26.0	6.8	9.8	45	0
pH, Standard Units	212	8.7	7.4	7.9	6.0 - 9.0	0

[a] - Units are mg/L unless otherwise noted
[b] - NPDES permit limit
[c] - Daily minimum

Table 1.3. 2003 NPDES Permit Number TN 0002950

This table covers information submitted under NPDES permit TN0002950 from 1/1/03 - 10/31/03. Outfall 014 is now covered by NPDES permit TN0074225, which became effective on November 1, 2003. URS - Radian, Inc. is responsible for all data reported since permit TN0074225 became effective.

Discharge Point 014, Central Neutralization Facility to Clinch River, ETTP

Parameter	Number samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
			K-1407J			
Oil & Grease	88	1.6	<1.0	<1.1	30	0
Cadmium	3	0.004	<0.001	< 0.002	0.69	0
Chemical Oxygen Demand	44	34	7.3	16.5		
Chloride	176	563	123	187.7	70000	0
Chloroform	10	0.002	<0.001	<0.001	0.5	0
Chromium	3	0.037	0.024	0.03	2.77	0
Copper	3	0.003	0.002	<0.0023	2.15	
Flow, GPD	304	198700	82300	113210		
Lead	3	0.004	0.002	0.003	0.69	0
Methylene chloride	20	0.01	<0.001	<0.004		
Nickel	3	0.015	0.002	0.007	3.98	0
pH, Standard Units	304	7.8	6.0	6.8	6.0 - 9.0	0
Total Suspended Solids	176	10.2	5.2	8.0	40	0
Uranium	10	0.3660	0.0101	0.0624		
Zinc	3	0.093	0.007	0.037	2.6	0

[a] - Units are mg/L unless otherwise noted
[b] - NPDES permit limit

Table 1.4. Radionuclide concentrations at ETTP discharges and surface water monitoring locations

Radionuclide	No. of samples	Concentration (pCi/L)				DCG	Percent of DCG	Sum of the fractions of the DCGs
		Max	Min	Median	Average			
				CRK-16				
Potassium-40	1	9.0e+01	9.0e+01	9.0e+01	9.0e+01	7.0e+03	1.3e+00	1.3e-02
U-234	4	3.7e-01	1.2e-01	2.5e-01	2.6e-01	5.0e+02	5.2e-02	5.2e-04
U-235	1	2.4e-01	2.4e-01	2.4e-01	2.4e-01	6.0e+02	4.0e-02	4.0e-04
U-238	2	1.4e-01	1.2e-01	1.3e-01	1.3e-01	6.0e+02	2.2e-02	2.2e-04
Beta activity	1	5.0e+00	5.0e+00	5.0e+00	5.0e+00	a	a	[a]
All listed isotopes								1.4e-02

[a]Not applicable

Table 1.5. Radionuclide concentrations at ETTP discharges and surface water monitoring locations

Radionuclide	No. of samples	Concentration (pCi/L)				DCG	Percent of DCG	Sum of the fractions of the DCGs
		Max	Min	Median	Average			
K-716 (Poplar Creek)								
U-235	1	1.6e-01	1.6e-01	1.6e-01	1.6e-01	6.0e+02	2.7e-02	2.7e-04
U-238	2	3.4e-01	1.9e-01	2.7e-01	2.7e-01	6.0e+02	4.4e-02	4.4e-04
All listed isotopes								7.1e-04

[a]Not applicable

Table 1.6. Radionuclide concentrations at ETTP discharges and surface water monitoring locations

Radionuclide	No. of samples	Concentration (pCi/L)				DCG	Percent of DCG	Sum of the fractions of the DCGs
		Max	Min	Median	Average			
K-901-A (settling basin for surface water runoff)								
U-234	2	1.1e+00	5.2e-01	8.1e-01	8.1e-01	5.0e+02	1.6e-01	1.6e-03
U-238	2	8.8e-01	3.0e-01	5.9e-01	5.9e-01	6.0e+02	9.9e-02	9.9e-04
Tc-99	2	2.5e+01	1.5e+01	2.0e+01	2.0e+01	1.0e+05	2.0e-02	2.0e-04
Gross Beta	2	1.3e+01	7.4e+00	1.0e+01	1.0e+01	*a*	*a*	*a*
All listed isotopes								2.8e-03

[a]Not applicable

Table 1.7. Radionuclide concentrations at ETTP discharges and surface water monitoring locations

Radionuclide	No. of samples	Concentration (pCi/L)				DCG	Percent of DCG	Sum of the fractions of the DCGs
		Max	Min	Median	Average			
K-1007-B (settling basin for surface water runoff)								
U-234	2	1.0e+00	1.8e-01	6.0e-01	6.0e-01	5.0e+02	1.2e-01	1.2e-03
U-238	1	3.4e-01	3.4e-01	3.4e-01	3.4e-01	6.0e+02	5.7e-02	5.7e-04
Tc-99	1	1.2e+01	1.2e+01	1.2e+01	1.2e+01	1.0e+05	1.2e-02	1.2e-04
Beta Activity	1	6.0e+00	6.0e+00	6.0e+00	6.0e+00	a	a	a
All listed isotopes								1.9e-03

[a]Not applicable

Table 1.8. Radionuclide concentrations at ETTP discharges and surface water monitoring locations

Radionuclide	No. of samples	Concentration (pCi/L)				DCG	Percent of DCG	Sum of the fractions of the DCGs
		Max	Min	Median	Average			
K-1407-J (treated effluents from Central Neutralization Facility and TSCA Incinerator)								
Am-241	12	1.4e-01	0.0e+00	0.0e+00	1.9e-02	3.0e+01	6.4e-02	6.4e-04
C-14	12	1.2e+03	0.0e+00	1.2e+02	2.6e+02	7.0e+04	3.7e-04	3.7e-06
Co-60	12	1.6e+00	0.0e+00	0.0e+00	2.7e-01	5.0e+03	5.3e-03	5.3e-05
Cs-137	12	1.9e+01	-4.8e+00	0.0e+00	2.0e+00	3.0e+03	6.6e-02	6.6e-04
H-3	12	5.8e+02	-2.4e+02	0.0e+00	1.3e+02	2.0e+06	6.6e-03	6.6e-05
K-40	12	6.9e+00	0.0e+00	0.0e+00	5.8e-01	7.0e+03	8.3e-03	8.3e-05
Np-237	12	5.0e-02	-1.2e-02	0.0e+00	1.0e-02	3.0e+01	3.3e-02	3.3e-04
Pa-234	6	1.2e+00	0.0e+00	0.0e+00	2.0e-01	7.0e+04	2.8e-04	2.8e-06
Pu-238	12	3.0e-02	-3.0e-02	0.0e+00	0.0e+00	4.0e+01	0.0e+00	0.0e+00
Pu-239	12	4.0e-02	-2.0e-02	0.0e+00	5.0e-03	3.0e+01	1.7e-02	1.7e-04
Sr-90	3	2.1e+00	0.0e+00	0.0e+00	7.0e-01	1.0e+03	7.1e-02	7.1e-04
Tc-99	12	9.2e+02	5.0e+01	3.3e+02	3.4e+02	1.0e+05	3.4e-01	3.4e-03
Th-228	1	2.0e-02	2.0e-02	2.0e-02	2.0e-02	4.0e+02	5.0e-03	5.0e-05
Th-230	7	4.0e+01	0.0e+00	0.0e+00	5.7e+00	3.0e+02	1.9e+00	1.9e-02
Th-234	5	2.7e+02	0.0e+00	0.0e+00	5.4e+01	1.0e+04	5.4e+01	5.4e+03
U-234	12	5.2e+01	1.5e+00	7.9e+00	1.2e+01	5.0e+02	2.4e+00	2.4e-02
U-235	12	4.2e+00	2.1e-01	7.8e-01	1.3e+00	6.0e+02	2.1e-01	2.1e-03
U-236	12	3.0e+00	0.0e+00	5.3e-01	7.8e-01	5.0e+02	1.6e-01	1.6e-03
U-238	12	1.3e+02	2.0e+00	1.3e+01	2.2e+01	6.0e+02	3.7e+00	3.7e-02
Gross Alpha	12	1.6e+02	0.0e+00	2.1e+01	4.1e+01	*a*	*a*	*a*
Gross Beta	12	3.2e+02	2.6e+01	1.1e+02	1.1e+02	*a*	*a*	*a*
All listed isotopes								8.4e-02

[a]Not applicable

Table 1.9. Radionuclide concentrations at ETTP discharges and surface water monitoring locations

Radionuclide	No. of samples	Concentration (pCi/L)				DCG	Percent of DCG	Sum of the fractions of the DCGs
		Max	Min	Median	Average			
K-1700 (Mitchell Branch)								
U-234	4	5.8e+00	3.0e+00	3.7e+00	4.0e+00	5.0e+02	8.0e-01	8.0e-03
U-235	3	4.6e-01	1.2e-01	1.3e-01	2.4e-01	6.0e+02	4.0e-02	4.0e-04
U-238	4	2.3e+00	1.2e+00	1.8e+00	1.8e+00	6.0e+02	2.9e-01	2.9e-03
Tc-99	2	1.4e+01	1.1e+01	5.6e+00	1.3e+01	1.0e+05	1.3e-02	1.3e-04
Gross Alpha	4	1.1e+01	5.1e+00	6.9e+00	7.4e+00	*a*	*a*	*a*
Gross Beta	2	7.2e+00	6.1e+00	6.7e+01	6.7e+01	*a*	*a*	*a*
All listed isotopes								1.2e-02

[a]Not applicable

Table 1.10. Radionuclide concentrations at ETTP discharges and surface water monitoring locations

Radionuclide	No. of samples	Concentration (pCi/L)				DCG	Percent of DCG	Sum of the fractions of the DCGs
		Max	Min	Median	Average			
K-1710 (Poplar Creek upstream of the ETTP)								
U-234	2	4.7e-01	1.9e-01	3.3e-01	3.3e-01	5.0e+02	6.6e-02	6.6e-04
U-238	2	5.6e-01	2.3e-01	3.9e-01	3.9e-01	6.0e+02	6.6e-02	6.6e-04
Beta Activity	1	3.8e+00	3.8e+00	3.8e+00	3.8e+00	*a*	*a*	*a*
All listed isotopes								1.3e-03

[a]Not applicable

Table 1.11. Radionuclide concentrations at ETTP discharges and surface water monitoring locations

Radionuclide	No. of samples	Concentration (pCi/L)				DCG	Percent of DCG	Sum of the fractions of the DCGs
		Max	Min	Median	Average			
				MIK 0.4				
U-234	1	6.6e-01	6.6e-01	6.6e-01	6.6e-01	5.0e+02	1.3e-01	1.3e-03
U-238	1	4.5e-01	4.5e-01	4.5e-01	4.5e-01	6.0e+02	7.6e-02	7.6e-04
All listed isotopes								2.1e-03

[a]Not applicable

Table 1.12. Radionuclide concentrations at ETTP discharges and surface water monitoring locations

Radionuclide	No. of samples	Concentration (pCi/L)				DCG	Percent of DCG	Sum of the fractions of the DCGs
		Max	Min	Median	Average			
				MIK 1.4				
U-235	1	8.2e-02	8.2e-02	8.2e-02	8.2e-02	6.0e+02	1.4e-02	1.4e-04
All listed isotopes								1.4e-04

[a]Not applicable

Table 1.13. 2003 ETTP parameters detected at CRK-16

Parameter	Number detected/ number of samples	Detected results			Reference Value[a]	Number of values exceeding reference
		Max	Min	Avg		
Aluminum (mg/L)	2/12	0.13	0.12	0.13		
Barium (mg/L)	9/12	0.034	0.026	0.031		
Calcium (mg/L)	12/12	39	25	33		
Chloroethane (mg/L)	5/12	0.011	0.002	0.006		
Dissolved oxygen (mg/L)	12/12	14	7.3	10.0	5.0 min	0
Iron (mg/L)	12/12	1.6	0.054	0.26		
Magnesium (mg/L)	12/12	11	6.5	9.0		
Manganese (mg/L)	12/12	0.077	0.022	0.042		
Nickel (mg/L)	1/12	0.011	0.011	0.011	1.4	0
pH (standard units)	12/12	7.7	7.1	7.5	6.5-8.5	0
Potassium (mg/L)	3/12	2.1	1.9	2.0		
Sodium (mg/L)	12/12	7.0	3.5	5.2		
Temperature (C°)	12/12	23	8.0	16		
Zinc (mg/L)	3/12	0.01	0.0057	0.0074	0.12	0

a All reference values are Tennessee Water Quality Criteria for fish and aquatic life.

Table 1. 14. 2003 ETTP parameters detected at K-716

Parameter	Number detected/ number of samples	Detected results			Reference Value[a]	Number of values exceeding reference
		Max	Min	Avg		
Dissolved Oxygen (mg/L)	2/2	9.4	6.4	7.9	5.0 min	0
pH (standard units)	2/2	7.2	7.2	7.2	6.5 - 8.5	0
Temperature (C^o)	2/2	19	14	17		

a All reference values are Tennessee Water Quality Criteria for fish and aquatic life.

Table 1.15. 2003 ETTP parameters detected at K-901-A

Parameter	Number detected/ number of samples	Detected Results			Reference Value[a]	Number of values exceeding reference
		Max	Min	Avg		
Barium (mg/L)	1/2	0.040	0.040	0.040		
Calcium (mg/L)	2/2	36	35	36		
Dissolved Oxygen (mg/L)	3/3	6.9	6.2	6.6	5.0 min	0
Iron (mg/L)	2/2	0.28	0.19	0.23		
Magnesium (mg/L)	2/2	11	10	11		
Manganese (mg/L)	2/2	0.047	0.024	0.036		
pH (standard units)	3/3	7.8	7.4	7.6	6.5-8.5	0
Potassium	1/2	1.1	1.1	1.1		
Sodium (mg/L)	2/2	0.96	0.82	0.89		
Temperature (C°)	3/3	22	15	19		
Zinc (mg/L)	1/2	0.0083	0.0083	0.0083	0.12	0

a All reference values are Tennessee Water Quality Criteria for fish and aquatic life.

Table 1.16. 2003 ETTP parameters detected at K-1007-B

Parameter	Number detected/ number of samples	Detected results			Reference Value[a]	Number of exceeding reference
		Max	Min	Avg		
Aluminum (mg/L)	1/2	0.11	0.11	0.11		
Barium	1/2	0.029	0.029	0.029		
Calcium	2/2	36	28	32		
Dissolved Oxygen	3/3	8.2	5.7	7.2	5.0 min	0
Iron	2/2	0.33	0.21	0.27		
Magnesium	2/2	10	6.5	8.3		
Manganese	2/2	0.1	0.064	0.082		
pH (standard units)	3/3	7.9	6.7	7.4	6.5 - 8.5	1
Potassium (mg/L)	1/2	2.6	2.6	2.6		
Sodium	2/2	3.1	2.5	2.8		
Temperature (C^o)	3/3	23	16	20		
Zinc (mg/L)	1/2	0.012	0.012	0.012	0.12	0

a All Reference values are Tennessee Water Quality Standards for fish and aquatic life.

Table 1.17. 2003 ETTP parameters detected at K-1700

Parameter	Number detected/ number of samples	Detected results			Reference Value[a]	Number of values exceeding reference
		Max	Min	Avg		
1,1-Dichloroethane (mg/L)	1/4	0.0011	0.0011	0.0011		
Barium (mg/L)	4/4	0.054	0.047	0.050		
Calcium (mg/L)	4/4	61	47	55		
Carbontetrachloride (mg/L)	1/4	0.0028	0.0028	0.0028	0.044	0
Chloroform (mg/L)	1/4	0.0026	0.0026	0.0026	4.7	0
Chloroethane (mg/L)	2/4	0.014	0.0033	0.0076		
cis-1,2 Dichloroethene	3/4	0.048	0.021	0.030		
Dissolved Oxygen (mg/L)	7/7	15	6.2	9.7	5.0 min	0
Iron (mg/L)	4/4	0.23	0.19	0.21		
Magnesium (mg/L)	4/4	12	10	11		
Manganese (mg/L)	4/4	0.18	0.13	0.16		
Nickel (mg/Kg)	1/5	0.13	0.13	0.13		
Potassium (mg/L)	1/4	2.3	2.3	2.3		
Sodium (mg/L)	4/4	6.8	5.4	5.9		
Temperature (C^o)	7/7	21	13	17		
Trichloroethene (mg/L)	4/4	0.059	0.027	0.035	0.810	0
Vinyl Chloride (mg/L)	4/4	0.059	0.0037	0.0045	5.3	
pH (standard units)	7/7	7.6	6.8	7.1	6.5 - 8.5	0
Zinc (mg/L)	2/4	0.022	0.017	0.02	0.12	0

a All Reference values are Tennessee Water Quality Standards for fish and aquatic life.

Table 1.18. 2003 ETTP parameters detected at K-1710

Parameter	Number detected/ number of samples	Detected results			Reference Value[a]	Number of values exceeding reference
		Max	Min	Avg		
Dissolved Oxygen (mg/L)	2/2	9.8	8.0	8.9	5.0 min	0
pH (standard units)	2/2	7.2	6.9	7.1	6.5 - 8.5	0
Temperature (C^o)	2/2	17	13	15		

a All Reference values are Tennessee Water Quality Standards for fish and aquatic life.

Table 1.19. 2003 ETTP parameters detected at MIK 1.4

Parameter	Number detected/ number of samples	Detected results			Reference Value[a]	Number of values exceeding reference
		Max	Min	Avg		
Calcium (mg/L)	1/1	17	17	17		
Chloromethane (mg/L)	1/4	0.0015	0.0015	0.0015		
Chloroethane (mg/L)	2/4	0.012	0.006	0.009		
Dissolved Oxygen (mg/L)	4/4	10	7.5	8.4	5.0 min.	0
Iron (mg/L)	1/1	0.27	0.27	0.27		
Magnesium (mg/L)	1/1	9.4	9.4	9.4		
Manganese (mg/L)	1/1	0.32	0.32	0.32		
pH (standard units)	4/4	7.3	6.4	6.9	6.5 - 8.5	1
Potassium	1/1	1.2	1.2	1.2		
Sodium (mg/L)	1/1	0.87	0.87	0.87		
Temperature (C^o)	4/4	20	13	17		
Zinc (mg/L)	1/1	0.0068	0.0068	0.0068	0.12	0

a All Reference values are Tennessee Water Quality Standards for fish and aquatic life.

Table 1.20. 2003 ETTP parameters detected at MIK 0.4

Parameter	Number detected/ number of samples	Detected results			Reference Value[a]	Number of values exceeding reference
		Max	Min	Avg		
1,1 Dichloroethane (mg/L)	1/1	0.0037	0.0037	0.0037		
1,1 Dichloroethene (mg/L)	1/1	0.002	0.002	0.002		
Barium (mg/L)	1/1	0.085	0.085	0.085		
Calcium (mg/L)	1/1	113	113	113		
Chloroethane (mg/L)	1/1	0.0042	0.0042	0.0042		
Chloromethane	1/1	0.0055	0.0055	0.0055		
cis-1,2 Dichloroethene (mg/L)	1/1	0.30	0.30	0.30	140	0
Dissolved Oxygen (mg/L)	1/1	2.0	2.0	2.0	5.0 min	1
Iron (mg/L)	1/1	0.15	0.15	0.15		
Magnesium (mg/L)	1/1	13	13	13		
Manganese (mg/L)	1/1	0.62	0.62	0.62		
pH (standard units)	1/1	6.5	6.5	6.5	6.5 - 8.5	0
Sodium (mg/L)	1/1	7.2	7.2	7.2		
Temperature (C^o)	1/1	16	16	16		
trans-1,2-Dichloroethene (mg/L)	1/1	0.004	0.004	0.004		
Trichloroethene (mg/L)	1/1	0.2	0.2	0.2	0.810	0
Vinyl chloride (mg/L)	1/1	0.037	0.037	0.037	5.3	0

a All Reference values are Tennessee Water Quality Standards for fish and aquatic life.

Table 1.21. K2 Soil Sample Results

Parameter	Concentration
Mercury (mg/Kg)	6.4e-02
U-233/234 (pCi/g)	1.4e+00
U-235 (pCi/g)	6.4e-02
U-238 (pCi/g)	1.3e+00
Tc-99 (pCi/g)	2.9e-01

Table 1.22. K6 Soil Sample Results

Parameter	Concentration
Chromium(mg/Kg)	2.5e+01
Tc-99 (pCi/g)	2.8e-01
U-233/234 (pCi/g)	7.2e-01
U-235 (pCi/g)	3.0e-02
U-238 (pCi/g)	7.5e-01

Table 1.23. K9 Soil Sample Results

Parameter	Concentration
Mercury (mg/Kg)	4.7e-02
U-233/234 (pCi/g)	3.1e-01
U-238 (pCi/g)	2.9e-01
Tc-99 (pCi/g)	1.1e+00

Table 1.24. K10 Soil Sample Results

Parameter	Concentration
Chromium (mg/Kg)	3.3e+01
Mercury (mg/Kg)	4.1e-02
U-233/234 (pCi/g)	8.0e-01
U-235 (pCi/g)	3.5e-02
U-238 (pCi/g)	7.6e-01

Table 1.25. PAM 35 Soil Sample Results

Parameter	Concentration
Mercury (mg/Kg)	4.3e-02
U-233/234 (pCi/g)	8.5e-01
U-235 (pCi/g)	2.5e-02
U-238 (pCi/g)	7.9e-01

Table 1.26. PAM 42 Soil Sample Results

Parameter	Concentration
Chromium(mg/Kg)	5.3e+01
Mercury (mg/Kg)	1.7e-01
U-233/234 (pCi/g)	6.7e-01
U-238 (pCi/g)	7.1e-01

Table 2.1. Major sources of radiological airborne emissions at Oak Ridge National Laboratory, 2003 (Ci)[a]

Isotope	Stack				
	X-2026	X-3020	X-3039	X-7503[b]	X-7911
^{241}Am	2.84E-07	2.19E-04	1.76E-07	1.76E-06	9.45E-06
^{41}Ar					2.31E+03
^{139}Ba					1.44E+00
^{140}Ba			3.41E-06		2.90E-04
^{7}Be	8.69E-07	1.76E-07	9.46E-06	1.03E-07	
^{252}Cf					2.01E-08
^{244}Cm	2.91E-06	1.84E-05	5.85E-08	1.49E-05	7.71E-05
^{60}Co			9.63E-06	4.48E-08	
^{137}Cs	1.01E-05	1.26E-03	6.39E-05	1.75E-05	7.10E-03
^{138}Cs					2.81E+03
^{152}Eu			1.50E-06		
^{3}H	9.45E-02		1.30E+01	2.36E+00	8.71E+01
^{130}I					1.34E-10
^{131}I			3.85E-05		5.92E-02
^{132}I					6.98E-01
^{133}I			5.58E-04		3.04E-01
^{134}I					9.26E-01
^{135}I					9.18E-01
^{85}Kr					8.58E+02
^{85m}Kr					3.77E+01
^{87}Kr					1.42E+02
^{88}Kr					1.06E+02
^{89}Kr					6.65E+01
^{140}La					1.92E-04
^{191}Os			3.10E+00		1.57E-05
^{212}Pb	6.38E-01	1.54E-01	1.18E+00	1.06E-01	7.64E-02
^{238}Pu	1.24E-07	1.26E-04	1.85E-08	9.66E-07	2.31E-09
^{239}Pu	4.07E-07	2.33E-04	6.52E-07	3.16E-06	1.61E-06
^{75}Se			3.34E-05		
^{90}Sr	1.31E-06	1.21E-03	7.32E-05	7.03E-06	1.50E-03
^{228}Th	1.51E-08	2.03E-06	1.34E-08	5.28E-07	1.32E-08
^{230}Th	3.71E-09	1.68E-06	1.74E-08	9.35E-10	1.09E-08
^{232}Th	2.54E-09	1.38E-06	1.84E-08	9.33E-10	1.10E-08
^{234}U	4.38E-07	9.09E-05	1.20E-07	4.75E-06	1.34E-05
^{235}U	1.18E-08	8.39E-06	2.03E-08	5.97E-07	3.94E-06
^{238}U	1.63E-08	5.59E-06	4.37E-08	5.45E-07	3.32E-06
^{131m}Xe					1.64E+02
^{133}Xe					1.64E+02
^{133m}Xe	3.97E-05				1.80E+01
^{135}Xe			3.17E-05		1.25E+02
^{135m}Xe					7.17E+01
^{137}Xe					2.61E+02
^{138}Xe					4.04E+02
^{90}Y	1.31E-06		7.32E-05		1.50E-03

[a]1 Ci = 3.7E+10 Bq.
[b]Formerly 7512.

Table 2.2. Constituents in Waste Area Grouping (WAG) 1 at ORNL, April 2003 (a)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Reference value	Number of values exceeding reference [ref] (d)
			Downgradient Wells			
Field measurements						
Conductivity (mS/cm)	4/4	0.69	1.2	0.98	n/a	n/a
Dissolved Oxygen (ppm)	4/4	3.4	10	5.9	n/a	n/a
pH (Std Unit)	4/4	6.9	8.6	n/a	n/a	n/a
RedOx (mV)	4/4	110	190	150	n/a	n/a
Temperature (deg C)	4/4	14	19	16	30.5	0[1]
Turbidity (NTU)	4/4	0.0	1.0	0.25	1	0[2]
Radionuclides (pCi/L) (e)						
Beta activity	1/4	U1.3	14*	~6.4	50	0[2]
Potassium-40	1/4	U0.0	28*	~8.8	280	0[4]
Strontium-89/90	2/4	U-0.18	1.5*	~0.61	n/a	n/a
Tritium	1/4	U-82	1,200*	~340	20,000	0[2]

(a) All values were included in the calculations. Only parameters that have detections in one or more samples are listed in the table. The sampling and analysis plan contains a complete list of analyses performed.
(b) Prefix "U" indicates that the value was undetected at the MDA.
(c) A tilde (~) indicates that estimated values and/or detection limits were used in the calculation.
(d) If a reference limit exists, the source is coded as:
1 Rules of Tennessee Department of Environment and Conservation, Division of Water Pollution Control, Chapter 1200-4-3, General Water Quality Criteria, Domestic Water Supply, as amended.
2 40 CFR Part 141--National Primary Drinking Water Regulations, Subparts B and G, as amended.
3 40 CFR Part 143--National Secondary Drinking Water Regulations, as amended.
4 DOE Order 5400.5, Chapter III, Derived Concentration Guides for Air and Water.
(e) Individual and average radionuclide concentrations significantly greater than zero are identified by an *. Detected radionuclides are those detected above MDA.

Table 2.3. Constituents in Waste Area Grouping (WAG) 2 at ORNL, February 2003 (a)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Reference value	Number of values exceeding reference [ref] (d)
			Downgradient Wells			
Field measurements						
Conductivity (mS/cm)	8/8	0.26	0.96	0.6	n/a	n/a
Dissolved Oxygen (ppm)	8/8	1.6	8.4	3.8	n/a	n/a
pH (Std Unit)	8/8	6.7	9.5	n/a	n/a	n/a
RedOx (mV)	8/8	130	180	150	n/a	n/a
Temperature (deg C)	8/8	9.5	18	15	30.5	0[1]
Turbidity (NTU)	8/8	0.0	84	11	1	2[2]
Metals (mg/L)						
Aluminum	3/4	<0.003	0.039	~0.014	(0.05, 0.2)	4[3]
Antimony	2/4	0.00003		0.000053	0.006	0[1]
Arsenic	4/4	0.001	0.005	0.0028	0.05	0[1]
Barium	4/4	0.068	0.9	0.32	2	0[1]
Boron	4/4	0.009	0.042	0.027	n/a	n/a
Cadmium	2/4	<0.00002		~0.00002	0.005	0[1]
Calcium	4/4	43	150	96	n/a	n/a
Chromium	2/4	<0.0001	0.12	~0.032	1	0[1]
Cobalt	4/4	0.0003	0.001	0.00065	n/a	n/a
Copper	4/4	E0.001	E0.001	~0.001	1.3	0[2]
Iron	4/4	0.57	6.9	2.6	0.3	4[3]
Lead	4/4	E0.000004		~0.000044	0.005	0[1]
Lithium	4/4	0.001	0.026	0.01	n/a	n/a
Magnesium	4/4	9.3	20	14	n/a	n/a
Manganese	4/4	0.013	0.26	0.12	0.05	3[3]

Table 2.3. (continued)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Reference value	Number of values exceeding reference [ref] (d)
Molybdenum	4/4	0.00001	0.001	0.00055	n/a	n/a
Nickel	4/4	0.002	0.012	0.006	0.1	0[1]
Phosphorous	4/4	0.003	0.069	0.034	n/a	n/a
Potassium	4/4	E1.2	E4.5	~2.5	n/a	n/a
Selenium	3/4	<0.0004	0.001	~0.0007	0.05	0[1]
Silicon	4/4	2.1	9.3	5.2	n/a	n/a
Silver	3/4	0.000006	0.0002	0.000079	0.1	0[3]
Sodium	4/4	11	17	13	n/a	n/a
Strontium	4/4	0.076	0.74	0.32	n/a	n/a
Sulfur	4/4	E1.1	E5.3	~3.3	n/a	n/a
Thallium	4/4	0.00002		0.000033	0.002	0[1]
Thorium	1/4	0.000002		~0.000008	n/a	n/a
Titanium	3/4	<0.0002	0.001	~0.0008	n/a	n/a
Uranium	4/4	0.0001	0.002	0.00083	n/a	n/a
Vanadium	3/4	<0.001	0.012	~0.0045	n/a	n/a
Zinc	4/4	0.002	0.004	0.0028	5	0[3]
Zirconium	1/4	<0.0001	0.0001	~0.0001	n/a	n/a
Radionuclides (pCi/L) (e)						
Alpha activity	2/8	U-0.81	23*	~3.5	15	1[2]
Beta activity	5/8	U-0.27	420*	~56	50	1[2]
Bismuth-214	5/5	13*	180*	87*	24,000	0[4]
Lead-212	2/2	4.8*	6.2*	5.5*	120	0[4]
Lead-214	5/5	19*	210*	97*	n/a	n/a
Strontium-89/90	1/8	U-0.027	200*	~25	n/a	n/a
Tritium	5/8	U13	1,000*	~17,000	20,000	3[2]

Table 2.3. (continued)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Reference value	Number of values exceeding reference [ref] (d)
			Upgradient Wells			
Field measurements						
Conductivity (mS/cm)	12/12	0.28	0.71	0.53	n/a	n/a
Dissolved Oxygen (ppm)	12/12	1.2	7.6	4.3	n/a	n/a
pH (Std Unit)	12/12	6.4	9.2	n/a	n/a	n/a
RedOx (mV)	12/12	110	260	180	n/a	n/a
Temperature (deg C)	12/12	11	15	13	30.5	0[1]
Turbidity (NTU)	12/12	0.0	4.0	0.75	1	3[2]
Radionuclides (pCi/L) (e)						
Alpha activity	1/12	U-0.54	12*	~1.8*	15	0[2]
Beta activity	9/12	U1.3*	200*	~21	50	1[2]
Bismuth-214	1/1	36*	36*	n/a	24,000	0[4]
Cobalt-60	2/2	0.82	26*	13	200	0[4]
Lead-214	1/1	34*	34*	n/a	n/a	n/a
Potassium-40	1/12	U0.0	60*	~17*	280	0[4]
Strontium-89/90	2/12	U-0.32	5.0*	~0.81*	n/a	n/a
Thorium-230	2/2	19*	36*	27	12	2[4]
Thorium-234	1/1	96	96	n/a	n/a	n/a

Table 2.3. (continued)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Reference value	Number of values exceeding reference [ref] (d)
Tritium	8/12	U-24	480,000*	~41,000	20,000	1[2]
Uranium-238	1/1	96	96	n/a	24	1[4]

(a) All values were included in the calculations. Only parameters that have detections in one or more samples are listed in the table. The sampling and analysis plan contains a complete list of analyses performed.
(b) Prefix "U" indicates that the value was undetected at the MDA; "E" indicates that the percent difference between the parent sample and its serial dilution's concentration exceeds 10%; and "<" indicates the value for a parameter was not quantifiable at the analytical detection limit.
(c) A tilde (~) indicates that estimated values and/or detection limits were used in the calculation.
(d) If a reference limit exists, the source is coded as:
1 Rules of Tennessee Department of Environment and Conservation, Division of Water Pollution Control, Chapter 1200-4-3, General Water Quality Criteria, Domestic Water Supply, as amended.
2 40 CFR Part 141--National Primary Drinking Water Regulations, Subparts B and G, as amended.
3 40 CFR Part 143--National Secondary Drinking Water Regulations, as amended.
4 DOE Order 5400.5, Chapter III, Derived Concentration Guides for Air and Water.
(e) Individual and average radionuclide concentrations significantly greater than zero are identified by an *. Detected radionuclides are those detected above MDA.

Table 2.4. Constituents in Waste Area Groupings (WAGs) 8 and 9 at ORNL, March 2003 (a)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Reference value	Number of values exceeding reference [ref] (d)
			Downgradient Wells			
Field measurements						
Conductivity (mS/cm)	9/9	0.27	0.93	0.5	n/a	n/a
Dissolved Oxygen (ppm)	9/9	1.5	4.5	3.1	n/a	n/a
pH (Std Unit)	9/9	5.9	9.4	n/a	n/a	n/a
RedOx (mV)	9/9	110	190	150	n/a	n/a
Temperature (deg C)	9/9	10	17	14	30.5	0[1]
Turbidity (NTU)	9/9	0.0	33	6.6	1	4[2]
Radionuclides (pCi/L) (e)						
Alpha activity	2/9	U-0.59	6.7*	~1.2	15	0[2]
Beta activity	7/9	U1.7*	2,700*	~580	50	3[2]
Strontium-89/90	3/9	U-0.18	1,100*	~240	n/a	n/a
Tritium	4/9	U-56	31,000*	~3,600	20,000	1[2]
			Upgradient Wells			
Field measurements						
Conductivity (mS/cm)	2/2	0.17	0.4	0.29	n/a	n/a
Dissolved Oxygen (ppm)	2/2	3.9	6.2	5.1	n/a	n/a
pH (Std Unit)	2/2	5.8	8.5	n/a	n/a	n/a
RedOx (mV)	2/2	140	160	150	n/a	n/a
Temperature (deg C)	2/2	14	16	15	30.5	0[1]
Turbidity (NTU)	2/2	0.0	2.0	1.0	1	1[2]

Table 2.4. (continued)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Reference value	Number of values exceeding reference [ref] (d)
Radionuclides (pCi/L) (e)						
Beta activity	1/2	U2.1*	3.7*	~2.9	50	0[2]
Potassium-40	1/2	U18*	78*	~48	280	0[4]
Thorium-234	1/1	200*	200*	n/a	n/a	n/a
Uranium-238	1/1	200*	200*	n/a	24	1[4]

(a) All values were included in the calculations. Only parameters that have detections in one or more samples are listed in the table. The sampling and analysis plan contains a complete list of analyses performed.
(b) Prefix "U" indicates that the value was undetected at the MDA.
(c) A tilde (~) indicates that estimated values and/or detection limits were used in the calculation.
(d) If a reference limit exists, the source is coded as:
1 Rules of Tennessee Department of Environment and Conservation, Division of Water Pollution Control, Chapter 1200-4-3, General Water Quality Criteria, Domestic Water Supply, as amended.
2 40 CFR Part 141--National Primary Drinking Water Regulations, Subparts B and G, as amended.
3 40 CFR Part 143--National Secondary Drinking Water Regulations, as amended.
4 DOE Order 5400.5, Chapter III, Derived Concentration Guides for Air and Water.
(e) Individual and average radionuclide concentrations significantly greater than zero are identified by an *. Detected radionuclides are those detected above MDA.

Table 2.5. Constituents in Waste Area Grouping (WAG) 17 at ORNL, March through April, 2003 (a)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Reference value	Number of values exceeding reference [ref] (d)
			Downgradient Wells			
Field measurements						
Conductivity (mS/cm)	4/4	0.42	0.86	0.68	n/a	n/a
Dissolved Oxygen (ppm)	4/4	1.7	4.5	2.6	n/a	n/a
pH (Std Unit)	4/4	6.9	7.2	n/a	n/a	n/a
RedOx (mV)	4/4	140	190	160	n/a	n/a
Temperature (deg C)	4/4	14	20	17	30.5	0[1]
Turbidity (NTU)	4/4	0.0	1.0	0.5	1	0[2]
Radionuclides (pCi/L) (e)						
Lead-214	1/1	15*	15*	n/a	n/a	n/a
Tritium	4/4	340*	2,400*	1,100*	20,000	0[2]
Volatile organics (ug/L)						
1,1,1-Trichloroethane	1/4	U1.0	1.8	~1.2	200	0[1]
1,1-Dichloroethene	1/4	U1.0	19	~5.5	7	1[1]
1,2-Dichloroethene	3/4	J0.89	D2,800	~720	n/a	n/a
Acetone	1/4	U5.0	11	~6.5	n/a	n/a
Benzene	1/4	U1.0	10	~3.3	5	1[1]
Ethylbenzene	1/4	J0.24	U1.0	~0.81	700	0[1]
Tetrachloroethene	1/4	U1.0	22	~6.2	5	1[1]
Toluene	1/4	J0.6	U1.0	~0.9	1,000	0[1]
Trichloroethene	3/4	U1.0	D15,000	~3,800	5	2[1]
Vinyl chloride	1/4	U1.0	130	~33	2	1[1]

Table 2.5. (continued)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Reference value	Number of values exceeding reference [ref] (d)
			Upgradient Wells			
Field measurements						
Conductivity (mS/cm)	4/4	0.46	0.73	0.62	n/a	n/a
Dissolved Oxygen (ppm)	4/4	2.7	8.1	5.5	n/a	n/a
pH (Std Unit)	4/4	6.9	7.6	n/a	n/a	n/a
RedOx (mV)	4/4	120	150	140	n/a	n/a
Temperature (deg C)	4/4	14	17	16	30.5	0[1]
Turbidity (NTU)	4/4	0.0	10	3.0	1	2[2]
Radionuclides (pCi/L) (e)						
Bismuth-214	2/2	30*	59*	44	24,000	0[4]
Lead-212	1/1	6.7*	6.7*	n/a	120	0[4]
Lead-214	3/3	16*	59*	35	n/a	n/a
Thorium-230	3/3	22*	59*	37*	12	3[4]
Tritium	4/4	570*	3,200*	1,900*	20,000	0[2]

Table 2.5. (continued)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Reference value	Number of values exceeding reference [ref] (d)
Volatile organics (ug/L)						
Acetone	1/4	U5.0	6.4	~5.4	n/a	n/a

(a) All values were included in the calculations. Only parameters that have detections in one or more samples are listed in the table. The sampling and analysis plan contains a complete list of analyses performed.
(b) Prefix "J" indicates the value was estimated at or below the analytical detection limit by the laboratory; "U" indicates that the value was undetected at the analytical detection limit; and "D" indicates analyte was quantified in an analysis performed at a secondary dilution factor.
(c) A tilde (~) indicates that estimated values and/or detection limits were used in the calculation.
(d) If a reference limit exists, the source is coded as:
1 Rules of Tennessee Department of Environment and Conservation, Division of Water Pollution Control, Chapter 1200-4-3, General Water Quality Criteria, Domestic Water Supply, as amended.
2 40 CFR Part 141--National Primary Drinking Water Regulations, Subparts B and G, as amended.
3 40 CFR Part 143--National Secondary Drinking Water Regulations, as amended.
4 DOE Order 5400.5, Chapter III, Derived Concentration Guides for Air and Water.
(e) Individual and average radionuclide concentrations significantly greater than zero are identified by an *. Detected radionuclides are those detected above MDA.

Table 2.6. ORNL Plant Perimeter Monitoring summary statistics from 2003 sampling events (a)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Reference value	Number of values exceeding reference [ref] (d)
Melton Valley Exit Pathway						
Field measurements						
Conductivity (mS/cm)	11/11	0.03	0.82	0.37	n/a	n/a
Dissolved Oxygen (ppm)	11/11	2.2	12	6.5	n/a	n/a
pH (Std Unit)	11/11	4.8	9.4	n/a	n/a	n/a
RedOx (mV)	10/10	130	240	160	n/a	n/a
Temperature (deg C)	11/11	9.5	21	15	30.5	0[2]
Turbidity (NTU)	10/10	0.0	1.0	0.4	1	0[3]
Metals (mg/L) -- Unfiltered						
Aluminum	9/10	<0.003	0.41	~0.092	(0.05, 0.2)	10[4]
Antimony	4/10	<0.00003	0.0003	~0.000073	0.006	0[2]
Arsenic	9/10	<0.001	0.007	~0.0027	0.05	0[2]
Barium	10/10	0.011	0.9	0.18	2	0[2]
Beryllium	3/10	<0.00002	0.0002	~0.000046	0.004	0[2]
Boron	10/10	0.008	E0.77	~0.12	n/a	n/a
Cadmium	4/10	<0.00001	0.00008	~0.000024	0.005	0[2]
Calcium	10/10	0.31	150	45	n/a	n/a
Chromium	7/10	<0.0001	0.12	~0.016	1	0[2]
Cobalt	10/10	0.00002	0.001	0.00048	n/a	n/a
Copper	10/10	E0.001	0.005	~0.0018	1.3	0[3]
Iron	10/10	0.024	6.9	1.1	0.3	5[4]
Lead	10/10	E0.000004	E0.003	~0.00048	0.005	0[2]
Lithium	10/10	0.001	E0.037	~0.013	n/a	n/a
Magnesium	10/10	0.27	20	7.0	n/a	n/a
Manganese	10/10	E0.001	0.26	~0.052	0.05	3[4]
Molybdenum	8/10	0.00001	0.003	0.00089	n/a	n/a
Nickel	10/10	0.0004	0.012	0.0046	0.1	0[2]
Phosphorous	9/10	0.003	0.069	0.027	n/a	n/a
Potassium	10/10	0.43	E4.5	~2.1	n/a	n/a
Selenium	9/10	<0.0004	0.001	~0.00088	0.05	0[2]
Silicon	10/10	2.1	9.3	5.5	n/a	n/a
Silver	8/10	<0.000003	0.0002	~0.00008	0.1	0[4]
Sodium	10/10	0.85	220	34	n/a	n/a
Strontium	10/10	0.002	0.74	0.18	n/a	n/a
Sulfur	10/10	0.068	11	3.2	n/a	n/a

Table 2.6. (continued)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Reference value	Number of values exceeding reference [ref] (d)
Thallium	10/10	0.00002	0.0003	0.000098	0.002	0[2]
Thorium	4/10	<0.000002	E0.0003	~0.000047	n/a	n/a
Titanium	9/10	<0.0002	E0.008	~0.0021	n/a	n/a
Uranium	10/10	0.00001	0.002	0.00047	n/a	n/a
Vanadium	5/10	<0.001	0.012	~0.0026	n/a	n/a
Zinc	10/10	0.002	0.015	0.005	5	0[4]
Zirconium	4/10	<0.00007	0.002	~0.0003	n/a	n/a
Radionuclides (pCi/L) (e) -- Filtered						
Beta activity	1/1	160*	160*	n/a	50	3[3]
Cesium-137	1/1	47*	47*	n/a	120	0[1]
Strontium-89/90	1/1	59*	59*	n/a	n/a	n/a
Total Uranium Activity	1/1	1.4	1.4	n/a	n/a	n/a
Tritium	1/1	18,000*	18,000*	n/a	80,000	0[1]
Uranium-234	1/1	1.1*	1.1*	n/a	20	0[1]
Uranium-236	1/1	-0.01	-0.01	n/a	20	0[1]
Uranium-238	1/1	0.31*	0.31*	n/a	24	0[1]
Radionuclides (pCi/L) (e) -- Unfiltered						
Alpha activity	1/11	U-5.5	2.1*	~-0.3	15	0[3]
Beta activity	4/11	U1.4	420*	~56	50	3[3]
Bismuth-214	4/4	46*	180*	110*	24,000	0[1]
Cesium-137	1/1	73*	73*	n/a	120	0[1]
Lead-210	2/2	260*	290*	280*	n/a	n/a
Lead-212	2/2	4.8*	6.2*	5.5*	120	0[1]
Lead-214	4/4	56*	210*	120*	n/a	n/a
Strontium-89/90	2/11	U-0.21	200*	~24	n/a	n/a
Tritium	8/11	U-160	71,000*	~12,000	80,000	0[1]

Table 2.6. (continued)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Reference value	Number of values exceeding reference [ref] (d)
Volatile organics (ug/L) -- Unfiltered						
Methylene chloride	4/11	J3.1	U5.0	~4.4	5	0[2]

(a) All values were included in the calculations. Only parameters that have detections in one or more samples are listed in the table. The sampling and analysis plan contains a complete list of analyses performed.
(b) Prefix "J" indicates the value was estimated at or below the analytical detection limit by the laboratory; "U" indicates that the value was undetected at the analytical detection limit or MDA; "E" indicates that the percent difference between the parent sample and its serial dilution's concentration exceeds 10%; and "<" indicates the value for a parameter was not quantifiable at the analytical detection limit.
(c) A tilde (~) indicates that estimated values and/or detection limits were used in the calculation.
(d) If a reference limit exists, the source is coded as:
1 DOE Order 5400.5, Chapter III, Derived Concentration Guides for Air and Water.
2 Rules of Tennessee Department of Environment and Conservation, Division of Water Pollution Control, Chapter 1200-4-3, General Water Quality Criteria, Domestic Water Supply, as amended.
3 40 CFR Part 141--National Primary Drinking Water Regulations, Subparts B and G, as amended.
4 40 CFR Part 143--National Secondary Drinking Water Regulations, as amended.
(e) Individual and average radionuclide concentrations significantly greater than zero are identified by an *. Detected radionuclides are those detected above MDA.

Table 2.7. 2003 radionuclide concentrations in surface waters around ORNL

Parameter	N det/ N total	Concentration (pCi/L) Min(a)	Max(a)	Avg(b)	error(c)	Standard DCG(d)	Percent of DCG(e)
White Oak Creek Headwaters							
Alpha activity	1/12	-0.053	3.2*	1.4*	0.26	n/a	n/a
Beta activity	1/12	-3.9	8.2*	2.2*	1.1	n/a	n/a
Carbon-14	0/12	-160	170*	5.1	29	70,000	n/a
Cesium-137	0/12	-1.9	1.5	-0.22	0.32	3,000	n/a
Cobalt-60	0/12	-0.98	2.9*	0.96*	0.29	5,000	0.019
Tritium	0/12	-310	470	27	58	2,000,000	n/a

(a) Individual radionuclide concentrations significantly greater than zero are identified by an *.
(b) Average radionuclide concentrations significantly greater than zero are identified by an *.
(c) Standard error of the mean.
(d) Derived concentration guide for ingestion of water. From DOE Order 5400.5.
(e) Average concentration as a percentage of the derived concentration guide (DCG), calculated only when a DCG exists and the average concentration is significantly greater than zero.

Table 2.8. 2003 radionuclide concentrations in stormwater at ORNL NPDES permitted locations

Parameter	Concentration (pCi/L) (a)	DCG(b)	Percent of DCG(c)
	Outfall 004		
Alpha activity	5.0*	n/a	n/a
Beta activity	250*	n/a	n/a
Cesium-137	190*	3,000	6.3
Cobalt-60	2.2*	5,000	0.044
Tritium	-660	2,000,000	n/a
	Outfall 005		
Alpha activity	6.5*	n/a	n/a
Beta activity	18*	n/a	n/a
Cesium-137	-0.53	3,000	n/a
Cobalt-60	1.5*	5,000	0.03
Tritium	-630	2,000,000	n/a
	Outfall 006		
Alpha activity	2.2*	n/a	n/a
Beta activity	-2.5	n/a	n/a
Cesium-137	0.84	3,000	n/a
Cobalt-60	-0.56	5,000	n/a
Tritium	450*	2,000,000	0.023
	Outfall 043		
Alpha activity	1.4*	n/a	n/a
Beta activity	-2.3	n/a	n/a
Cesium-137	1.8	3,000	n/a
Cobalt-60	1.3	5,000	n/a
Tritium	260	2,000,000	n/a
	Outfall 082		
Alpha activity	6.8*	n/a	n/a
Beta activity	12*	n/a	n/a
Cesium-137	0.39	3,000	n/a
Cobalt-60	1.5	5,000	n/a
Tritium	-330	2,000,000	n/a

Table 2.8. (continued)

Parameter	Concentration (pCi/L) (a)	DCG(b)	Percent of DCG(c)
	Outfall 092		
Alpha activity	7.2*	n/a	n/a
Beta activity	690*	n/a	n/a
Cesium-137	0.0053	3,000	n/a
Cobalt-60	1.1	5,000	n/a
Tritium	560,000*	2,000,000	28
	Outfall 102		
Alpha activity	5.1*	n/a	n/a
Beta activity	11*	n/a	n/a
Cesium-137	0.9	3,000	n/a
Cobalt-60	-0.049	5,000	n/a
Tritium	-800	2,000,000	n/a
	Outfall 108		
Alpha activity	0.6	n/a	n/a
Beta activity	-0.48	n/a	n/a
Cesium-137	0.17	3,000	n/a
Cobalt-60	1.4	5,000	n/a
Tritium	400	2,000,000	n/a
	Outfall 162		
Alpha activity	1.1	n/a	n/a
Beta activity	33*	n/a	n/a
Cesium-137	-0.46	3,000	n/a
Cobalt-60	1.2	5,000	n/a
Tritium	210	2,000,000	n/a
	Outfall 207		
Alpha activity	6.3*	n/a	n/a
Beta activity	36*	n/a	n/a
Cesium-137	10*	3,000	0.33
Cobalt-60	-0.35	5,000	n/a
Tritium	-450	2,000,000	n/a

Table 2.8. (continued)

Parameter	Concentration (pCi/L) (a)	DCG(b)	Percent of DCG(c)
	Outfall 211		
Alpha activity	1.5*	n/a	n/a
Beta activity	2.9	n/a	n/a
Cesium-137	1.7*	3,000	0.057
Cobalt-60	0.91	5,000	n/a
Tritium	310	2,000,000	n/a
	Outfall 227		
Alpha activity	0.92	n/a	n/a
Beta activity	2.5	n/a	n/a
Cesium-137	1.9*	3,000	0.063
Cobalt-60	-0.34	5,000	n/a
Tritium	460*	2,000,000	0.023
	Outfall 245		
Alpha activity	0.35	n/a	n/a
Beta activity	23*	n/a	n/a
Cesium-137	-0.75	3,000	n/a
Cobalt-60	0.0028	5,000	n/a
Tritium	510*	2,000,000	0.026
	Outfall 287		
Alpha activity	7.2*	n/a	n/a
Beta activity	720*	n/a	n/a
Cesium-137	0.67	3,000	n/a
Cobalt-60	2.3*	5,000	0.046
Tritium	490,000*	2,000,000	25
	Outfall 293		
Alpha activity	1.3*	n/a	n/a
Beta activity	6.8*	n/a	n/a
Cesium-137	2.4*	3,000	0.08
Cobalt-60	1.1	5,000	n/a
Tritium	77	2,000,000	n/a

Table 2.8. (continued)

Parameter	Concentration (pCi/L) (a)	DCG(b)	Percent of DCG(c)
	Outfall 314		
Alpha activity	3.9*	n/a	n/a
Beta activity	-1.1	n/a	n/a
Cesium-137	-1.1	3,000	n/a
Cobalt-60	2.6*	5,000	0.052
Tritium	280	2,000,000	n/a
	Outfall 361		
Alpha activity	0.39	n/a	n/a
Beta activity	36*	n/a	n/a
Cesium-137	1.7	3,000	n/a
Cobalt-60	0.76	5,000	n/a
Tritium	-760	2,000,000	n/a

(a) Individual radionuclide concentrations significantly greater than zero are identified by an *.
(b) Derived concentration guide for ingestion of water. From DOE Order 5400.5.
(c) The concentration as a percentage of the derived concentration guide (DCG), calculated only when a DCG exists and the average concentration is significantly greater than zero.

Table 2.9. 2003 radionuclide concentrations at ORNL NPDES permitted locations

Parameter	N det/ N total	Concentration (pCi/L) Min(a)	Max(a)	Avg(b)	Standard error(c)	DCG(d)	Percent of DCG(e)
Sewage Treatment Plant (X01)							
Alpha activity	2/12	-1.3	7.7*	1.5*	0.72	n/a	n/a
Beta activity	12/12	210*	480*	330*	25	n/a	n/a
Cesium-137	2/2	6.0*	7.2*	6.6*	0.6	3,000	0.22
Cobalt-60	0/2	1.3	2.9*	2.1	0.8	5,000	n/a
Strontium-89/90	12/12	89*	200*	140*	11	1,000	14
Coal Yard Runoff Treatment Facility (X02)							
Alpha activity	0/12	-20	6.3	-6.4	2.4	n/a	n/a
Beta activity	12/12	250*	830*	480*	50	n/a	n/a
Process Waste Treatment Complex (X12)							
Alpha activity	12/12	15*	110*	50*	8.1	n/a	n/a
Americium-241	1/1	0.5*	0.5*	N/A	n/a	30	n/a
Beta activity	12/12	340*	1,100*	640*	68	n/a	n/a
Cesium-137	12/12	110*	660*	380*	53	3,000	13
Cm-243/244	0/1	0.11*	0.11*	N/A	n/a	n/a	n/a
Cobalt-60	0/12	-0.33	3.2*	1.7*	0.33	5,000	0.033
Osmium-191	2/2	29	260	150	120	n/a	n/a
Plutonium-238	0/1	0.044	0.044	N/A	n/a	40	n/a
Plutonium-239/240	1/1	0.068*	0.068*	N/A	n/a	30	n/a
Strontium-89/90	12/12	70*	130*	100*	5.1	1,000	10

Table 2.9. (continued)

Parameter	N det/ N total	Concentration (pCi/L) Min(a)	Max(a)	Avg(b)	Standard error(c)	DCG(d)	Percent of DCG(e)
Tritium	12/12	41,000*	220,000*	110,000*	14,000	2,000,000	5.5
Uranium-Alpha Activity	12/12	15*	100*	38*	6.9	500	7.6
Uranium-233/234	12/12	12*	78*	28*	5.2	n/a	n/a
Uranium-235	10/12	0.052	1.1*	0.45*	0.092	600	0.076
Uranium-236	6/12	-0.026	0.62*	0.14*	0.048	500	0.027
Uranium-238	12/12	1.9*	25*	9.8*	2.1	600	1.6
			Melton Branch 1 (X13)				
Alpha activity	7/12	0.19	8.0*	3.9*	0.68	n/a	n/a
Beta activity	12/12	320*	880*	650*	44	n/a	n/a
Cesium-137	0/12	-0.45	3.0*	0.74*	0.36	3,000	0.025
Cobalt-60	0/12	-2.4	2.0*	0.5	0.43	5,000	n/a
Strontium-89/90	12/12	130*	410*	290*	22	1,000	29
Tritium	12/12	170,000*	500,000*	350,000*	29,000	2,000,000	18
			White Oak Creek (X14))				
Alpha activity	10/12	1.9	16*	7.9*	1.2	n/a	n/a
Beta activity	12/12	95*	190*	140*	9.0	n/a	n/a
Cesium-137	12/12	8.6*	81*	23*	5.9	3,000	0.76
Cobalt-60	0/12	-1.5	2.4	0.41	0.42	5,000	n/a
Osmium-191	1/1	29	29	n/a	n/a	n/a	n/a
Strontium-89/90	12/12	37*	68*	48*	2.9	1,000	4.8
Tritium	12/12	14,000*	59,000*	34,000*	3,900	2,000,000	1.7

Table 2.9. (continued)

Parameter	N det/ N total	Concentration (pCi/L) Min(a)	Max(a)	Avg(b)	Standard error(c)	DCG(d)	Percent of DCG(e)
Uranium - Alpha Activity	1/1	6.6*	6.6*	n/a	n/a	500	n/a
Uranium-233/234	1/1	3.9*	3.9*	n/a	n/a	n/a	n/a
Uranium-235	1/1	0.14*	0.14*	n/a	n/a	600	n/a
Uranium-236	0/1	0.032	0.032	n/a	n/a	500	n/a
Uranium-238	1/1	2.5*	2.5*	n/a	n/a	600	n/a
			White Oak Dam (X15)				
Alpha activity	12/12	3.1*	17*	8.0*	1.2	n/a	n/a
Beta activity	12/12	240*	510*	340*	26	n/a	n/a
Cesium-137	12/12	3.7*	240*	63*	23	3,000	2.1
Cobalt-60	1/12	-0.56	5.0*	1.3*	0.43	5,000	0.026
Osmium-191	1/1	20	20	n/a	n/a	n/a	n/a
Strontium-89/90	12/12	87*	140*	120*	5.0	1,000	12
Tritium	12/12	63,000*	110,000*	86,000*	4,600	2,000,000	4.3
			Outfall 001				
Alpha activity	0/1	1.2	1.2	n/a	n/a	n/a	n/a
Beta activity	1/1	140*	140*	n/a	n/a	n/a	n/a
			Outfall 080				
Alpha activity	0/1	0.41	0.41	n/a	n/a	n/a	n/a
Beta activity	1/1	310*	310*	n/a	n/a	n/a	n/a

Table 2.9. (continued)

Parameter	N det/ N total	Concentration (pCi/L) Min(a)	Max(a)	Avg(b)	Standard error(c)	DCG(d)	Percent of DCG(e)
Cesium-137	1/1	4.4*	4.4*	n/a	n/a	3,000	n/a
Cobalt-60	0/1	1.6	1.6	n/a	n/a	5,000	n/a
Strontium-89/90	1/1	160*	160*	n/a	n/a	1,000	n/a
Tritium	0/1	370	370	n/a	n/a	2,000,000	n/a
			Outfall 081				
Alpha activity	0/1	0.3	0.3	n/a	n/a	n/a	n/a
Beta activity	0/1	5.3	5.3	n/a	n/a	n/a	n/a
			Outfall 085				
Alpha activity	4/4	4.7*	16*	12*	2.6	n/a	n/a
Beta activity	4/4	560*	1,200*	850*	150	n/a	n/a
			Outfall 086				
Alpha activity	0/2	-0.96	0.48	-0.24	0.72	n/a	n/a
Beta activity	1/2	7.3*	8.0*	7.7*	0.35	n/a	n/a
Tritium	2/2	120,000*	150,000*	140,000*	15,000	2,000,000	6.8
			Outfall 087				
Alpha activity	0/1	0.0	0.0	n/a	n/a	n/a	n/a
Beta activity	1/1	420*	420*	n/a	n/a	n/a	n/a

Table 2.9. (continued)

Parameter	N det/ N total	Concentration (pCi/L) Min(a)	Max(a)	Avg(b)	Standard error(c)	DCG(d)	Percent of DCG(e)
Cesium-137	0/1	3.3*	3.3*	n/a	n/a	3,000	n/a
Cobalt-60	0/1	1.6	1.6	n/a	n/a	5,000	n/a
			Outfall 204				
Alpha activity	3/4	6.1*	17*	9.7*	2.5	n/a	n/a
Beta activity	4/4	110*	170*	140*	15	n/a	n/a
Strontium-89/90	4/4	31*	40*	36*	1.9	1,000	3.6
			Outfall 205				
Alpha activity	1/1	5.0*	5.0*	n/a	n/a	n/a	n/a
Beta activity	1/1	61*	61*	n/a	n/a	n/a	n/a
			Outfall 207				
Alpha activity	1/1	9.6*	9.6*	n/a	n/a	n/a	n/a
Beta activity	1/1	100*	100*	n/a	n/a	n/a	n/a
Cesium-137	0/1	1.7	1.7	n/a	n/a	3,000	n/a
Cobalt-60	0/1	1.2	1.2	n/a	n/a	5,000	n/a
Strontium-89/90	1/1	49*	49*	n/a	n/a	1,000	n/a

Table 2.9. (continued)

Parameter	N det/ N total	Concentration (pCi/L) Min(a)	Max(a)	Avg(b)	Standard error(c)	DCG(d)	Percent of DCG(e)
			Outfall 211				
Alpha activity	0/4	-0.95	0.59	-0.13	0.37	n/a	n/a
Beta activity	0/4	2.1	5.5*	3.6*	0.78	n/a	n/a
Strontium-89/90	0/4	0.45	1.7*	1.1*	0.28	1,000	0.11
			Outfall 217				
Alpha activity	0/1	0.21	0.21	n/a	n/a	n/a	n/a
Beta activity	0/1	2.6	2.6	n/a	n/a	n/a	n/a
			Outfall 219				
Alpha activity	0/1	0.53	0.53	n/a	n/a	n/a	n/a
Beta activity	0/1	-2.9	-2.9	n/a	n/a	n/a	n/a
			Outfall 234				
Alpha activity	0/1	1.2*	1.2*	n/a	n/a	n/a	n/a
Beta activity	0/1	1.3	1.3	n/a	n/a	n/a	n/a
			Outfall 265				
Alpha activity	1/1	3.1*	3.1*	n/a	n/a	n/a	n/a
Beta activity	1/1	57*	57*	n/a	n/a	n/a	n/a

Table 2.9. (continued)

Parameter	N det/ N total	Concentration (pCi/L) Min(a)	Max(a)	Avg(b)	Standard error(c)	DCG(d)	Percent of DCG(e)
Cesium-137	0/1	2.5*	2.5*	n/a	n/a	3,000	n/a
Cobalt-60	0/1	-0.12	-0.12	n/a	n/a	5,000	n/a
			Outfall 281				
Alpha activity	0/4	-2.2	2.9*	0.17	1.1	n/a	n/a
Beta activity	2/4	2.4	99*	32	23	n/a	n/a
Cesium-137	0/4	-1.6	1.0	-0.19	0.54	3,000	n/a
Cobalt-60	0/4	0.071	1.2	0.54	0.24	5,000	n/a
Tritium	4/4	5,800*	35,000*	15,000	6,800	2,000,000	n/a
			Outfall 282				
Alpha activity	0/4	-1.7	3.0*	0.85	0.98	n/a	n/a
Beta activity	2/4	5.4*	14*	9.1*	2.1	n/a	n/a
			Outfall 290				
Cesium-137	0/1	0.27	0.27	n/a	n/a	3,000	n/a
Cobalt-60	0/1	1.8*	1.8*	n/a	n/a	5,000	n/a

Table 2.9. (continued)

Parameter	N det/ N total	Concentration (pCi/L) Min(a)	Max(a)	Avg(b)	Standard error(c)	DCG(d)	Percent of DCG(e)
			Outfall 302				
Alpha activity	2/12	-2.8	9.5*	1.9*	0.83	n/a	n/a
Beta activity	12/12	12*	460*	120*	43	n/a	n/a
Cesium-137	5/12	-0.89	110*	17	9.8	3,000	n/a
Cobalt-60	0/12	-0.3	2.3*	0.91*	0.22	5,000	0.018
Strontium-89/90	12/12	3.9*	220*	54*	23	1,000	5.4
Tritium	7/12	57	11,000*	2,500*	900	2,000,000	0.12
			Outfall 304				
Alpha activity	6/12	1.6*	15*	5.7*	1.3	n/a	n/a
Beta activity	12/12	140*	930*	390*	73	n/a	n/a
Cesium-137	12/12	9.1*	250*	73*	23	3,000	2.4
Cobalt-60	0/12	-0.71	6.5	1.2*	0.55	5,000	0.023
Strontium-89/90	12/12	63*	360*	160*	27	1,000	16
Tritium	2/12	-450	2,300*	500*	210	2,000,000	0.025
			Outfall 365				
Alpha activity	2/4	1.4	6.4*	3.3*	1.2	n/a	n/a
Beta activity	4/4	23*	44*	38*	5.1	n/a	n/a

Table 2.9. (continued)

Parameter	N det/ N total	Concentration (pCi/L) Min(a)	Max(a)	Avg(b)	Standard error(c)	DCG(d)	Percent of DCG(e)
			Outfall 368				
Alpha activity	0/4	-0.11	3.3*	1.6	0.7	n/a	n/a
Beta activity	3/4	3.5	12*	9.2*	2.0	n/a	n/a
Cesium-137	0/4	-0.79	1.2	0.23	0.48	3,000	n/a
Cobalt-60	0/4	-0.85	1.2	0.47	0.45	5,000	n/a
			Outfall 381				
Alpha activity	0/4	0.0	2.8*	1.2	0.59	n/a	n/a
Beta activity	4/4	71*	77*	74*	1.3	n/a	n/a
Cesium-137	0/4	-1.0	2.4*	0.63	0.71	3,000	n/a
Cobalt-60	4/4	55*	69*	62*	3.2	5,000	1.3
Tritium	4/4	42,000*	69,000*	49,000*	6,600	2,000,000	2.5
			Outfall 383				
Alpha activity	0/1	1.6*	1.6*	n/a	n/a	n/a	n/a
Beta activity	0/1	3.9*	3.9*	n/a	n/a	n/a	n/a
Tritium	1/1	27,000*	27,000*	n/a	n/a	2,000,000	n/a

(a) Individual radionuclide concentrations significantly greater than zero are identified by an *.
(b) Average radionuclide concentrations significantly greater than zero are identified by an *.
(c) Standard error of the mean.
(d) Derived concentration guide for ingestion of water. From DOE Order 5400.5.
(e) Average concentration as a percentage of the derived concentration guide (DCG), calculated only when a DCG exists and the average concentration is significantly greater than zero.

Table 2.10. 2003 analyses for ORNL reference surface waters

Parameter	N det/ N total	Concentration (pCi/L) Min(a)	Max(a)	Avg(b)	Standard error(c)	Standard Value (d)	Ref. Value(e)
White Oak Creek Headwaters							
Field measurements							
Conductivity	53/53	0.088	0.29	0.21	0.0063	n/a	n/a
Dissolved Oxygen	53/53	8.2	11	9.6	0.079	5	190
pH	53/53	7.1	8.3	n/a	0.037	n/a	n/a
Temperature	53/53	5.5	21	13	0.46	30.5	44
Turbidity	53/53	2.0	150	15	3.7	n/a	n/a
Metals (mg/L)							
Antimony	0/12	<0.0005	<0.0005	~0.0005	0.0	n/a	n/a
Arsenic	0/12	<0.001	<0.001	~0.001	0.0	0.36	0.28
Cadmium	0/12	<0.0005	<0.0005	~0.0005	0.0	0.0039	13
Chromium	0/12	<0.002	<0.002	~0.002	0.0	n/a	n/a
Copper	2/12	<0.001	0.0013	~0.001	0.000027	0.0177	5.9
Iron	7/12	<0.25	0.78	~0.37	0.047	n/a	n/a
Lead	11/12	<0.0001	0.00094	~0.00033	0.000068	0.0817	0.4
Nickel	2/12	<0.001	0.0014	~0.001	0.000034	1.418	0.073
Selenium	0/12	<0.002	<0.002	~0.002	0.0	0.02	10
Silver	0/12	<0.0002	<0.0002	~0.0002	0.0	0.0041	4.9
Zinc	12/12	0.0081	0.028	0.019	0.0021	0.117	16

(a) Prefix "<" indicates the value of a parameter was not quantifiable at the analytical detection limit.
(b) A tilde (~) indicates that estimated values and/or detection limits were used in the calculation.
(c) Standard error of the mean.
(d) Tennessee General Water Quality Criteria for Fish and Aquatic Life is used as a reference value for White Oak Creek headwaters.
(e) Average concentration as a percentage of the reference value, calculated only when a reference exists , the parameter is a contaminant, and the parameter is detected.

Table 2.11. NPDES Permit Number TN0002941, 2003 ORNL outfall monitoring

Parameter	N det/ N total	Concentration			Standard error(c)
		Min(a)	Max(a)	Avg(b)	
Category 1 outfalls					
Field measurements					
Flow (gpm)	18/18	0.1	28	5.9	2.0
pH (Std Unit)	18/18	7.3	8.3	n/a	n/a
Category 2 outfalls					
Field measurements					
Flow (gpm)	22/22	0.1	250	25	14
pH (Std Unit)	22/22	7.3	8.0	n/a	n/a
Category 3 outfalls					
Field measurements					
Flow (gpm)	48/48	0.1	45	8.8	1.7
pH (Std Unit)	48/48	7.4	8.0	n/a	n/a
Category 4 outfalls					
Field measurements					
Flow (gpm)	318/318	0.1	350	57	3.9
pH (Std Unit)	318/318	6.9	9.5	n/a	n/a
Temperature (deg C)	318/318	5.2	34	18	0.33
Cooling Tower Blowdown outfalls					
Field measurements					
Flow (gpm)	4/4	40	190	98	31
pH (Std Unit)	4/4	8.2	8.4	n/a	n/a
Temperature (deg C)	4/4	22	26	24	0.91
Total Residual Oxidant (mg/L)	0/4	<0.05	<0.05	~0.05	0.0
Physical					
Suspended Solids (mg/L)	4/4	2.8	6.4	5.2	0.85
Cooling Tower Blowdown/Cooling Water outfalls					
Field measurements					
Flow (gpm)	48/48	16	85	40	2.7
pH (Std Unit)	48/48	7.0	8.0	n/a	n/a
Total Residual Oxidant (mg/L)	0/48	<0.05	<0.05	~0.05	0.0
Groundwater/Pumpwater outfalls					
Field measurements					
Flow (gpm)	5/5	0.1	10	2.3	1.9
pH (Std Unit)	5/5	7.8	7.9	n/a	n/a
Steam Condensate outfalls					
Field measurements					
Flow (gpm)	11/11	0.1	0.25	0.11	0.014
pH (Std Unit)	11/11	7.4	8.1	n/a	n/a
Temperature (deg C)	11/11	33	56	41	2.5

(a) Prefix "<" indicates the value for a parameter was not quantifiable at the analytical detection limit.
(b) A tilde (~) indicates that estimated values and/or detection limits were used in the calculation.
(c) Standard error of the mean.

Table 2.12. NPDES Permit Number TN0002941, 2003 ORNL Instream Chlorine monitoring

Parameter	N det/ N total	Concentration Min(a)	Max(a)	Avg(b)	Standard error(c)
First Creek					
Field measurements					
pH (Std Unit)	48/48	7.4	8.2	n/a	0.025
Temperature (deg C)	48/48	9.4	19	14	0.39
Total Residual Oxidant (mg/L)	0/48	<0.05	<0.05	~0.05	0.0
Fifth Creek					
Field measurements					
pH (Std Unit)	72/72	7.4	8.2	n/a	0.019
Temperature (deg C)	72/72	9.9	21	15	0.34
Total Residual Oxidant (mg/L)	0/72	<0.05	<0.05	~0.05	0.0
White Oak Creek					
Field measurements					
pH (Std Unit)	144/144	7.0	8.2	n/a	0.018
Temperature (deg C)	144/144	8.1	23	16	0.37
Total Residual Oxidant (mg/L)	0/144	<0.05	<0.05	~0.05	0.0

(a) Prefix "<" indicates the value for a parameter was not quantifiable at the analytical detection limit.
(b) A tilde (~) indicates that estimated values and/or detection limits were used in the calculation.
(c) Standard error of the mean.

Table 2.13. Surface water analyses (2003) at ORNL Environmental Monitoring Plan surface water locations (a)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Standard error(c)	TWQC(e)
First Creek just upstream of Northwest Tributary (1STCK 0.1)						
Field measurements						
Dissolved Oxygen (ppm)	2/2	6.5	7.2	6.9	0.35	n/a
pH (Std Unit)	2/2	7.1	7.4	n/a	n/a	n/a
Temperature (deg C)	2/2	14	18	16	1.9	n/a
Radionuclides (pCi/L) (f)						
Beta activity	2/2	6.4*	39*	23	17	n/a
Lead-214	1/2	0.0	9.6*	4.8	4.8	n/a
Strontium-89/90	2/2	2.7*	21*	12	8.9	40
Bear Creek downstream from Y-12 Complex inputs (BCK 0.6)						
Field measurements						
Dissolved Oxygen (ppm)	2/2	6.2	7.4	6.8	0.6	5
pH (Std Unit)	2/2	6.5	7.5	n/a	n/a	n/a
Temperature (deg C)	2/2	14	18	16	2.0	30.5
Radionuclides (pCi/L) (f)						
Alpha activity	2/2	4.8*	8.0*	6.4	1.6	n/a
Beta activity	2/2	5.1*	9.0*	7.1	1.9	n/a
Potassium-40	1/2	U12	54*	~33	21	280
Thorium-232	1/1	0.27*	0.27*	n/a	n/a	2
Uranium-233/234	2/2	1.0*	2.4*	1.7	0.69	20
Uranium-238	2/2	1.6*	4.4*	3.0	1.4	24
Clinch River downstream from ORNL (CRK 32)						
Field measurements						
Dissolved Oxygen (ppm)	12/12	5.6	15	9.1	0.79	n/a
pH (Std Unit)	12/12	7.0	8.5	n/a	n/a	n/a
Temperature (deg C)	12/12	5.6	20	15	1.5	30.5
Radionuclides (pCi/L) (f)						
Alpha activity	2/12	U-0.32	4.4*	~0.87*	0.38	n/a
Beta activity	7/12	U0.69*	12*	~4.4*	1.2	n/a
Bismuth-212	1/12	0.0	17*	1.4	1.4	n/a

Table 2.13. (continued)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Standard error(c)	TWQC(e)
Field measurements						
Bismuth-214	2/12	0.0	12*	1.7	1.2	24,000
Lead-214	1/12	0.0	5.7*	0.47	0.47	n/a
Strontium-89/90	4/12	U-0.4	3.5*	~0.87*	0.36	40
Tritium	6/12	U-110	2,000*	~540*	210	80,000
Uranium-233/234	1/1	0.52*	0.52*	n/a	n/a	20
Uranium-238	1/1	0.34*	0.34*	n/a	n/a	24
Water supply intake for Knox County (CRK 58)						
Field measurements						
Dissolved Oxygen (ppm)	12/12	6.0	15	9.2	0.72	n/a
pH (Std Unit)	12/12	7.3	8.7	n/a	n/a	n/a
Temperature (deg C)	12/12	6.2	23	16	1.7	30.5
Radionuclides (pCi/L) (f)						
Alpha activity	2/12	U-0.55	3.0*	~0.58*	0.25	n/a
Beta activity	7/12	U0.47	6.2*	~2.2*	0.42	n/a
Bismuth-214	2/12	0.0	11*	1.8	1.2	24,000
Lead-214	1/12	0.0	14*	1.2	1.2	n/a
Potassium-40	2/12	U0.0	67*	~32*	5.9	280
Melton Hill Reservoir above city of Oak Ridge water intake (CRK 66)						
Field measurements						
Dissolved Oxygen (ppm)	12/12	6.1	17	9.2	0.83	n/a
pH (Std Unit)	12/12	7.2	8.4	n/a	n/a	n/a
Temperature (deg C)	12/12	6.4	23	16	1.7	30.5
Radionuclides (pCi/L) (f)						
Alpha activity	2/12	U0.089	4.1*	~0.97*	0.3	n/a
Beta activity	2/12	U0.26	7.4*	~2.0*	0.58	n/a
Bismuth-214	1/12	0.0	53*	4.4	4.4	24,000
Lead-214	1/12	0.0	60*	5.0	5.0	n/a

Table 2.13. (continued)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Standard error(c)	TWQC(e)
East Fork Poplar Creek prior to entering Poplar Creek (EFK 0.1)						
Field measurements						
Dissolved Oxygen (ppm)	2/2	6.4	7.3	6.9	0.45	5
pH (Std Unit)	2/2	7.3	7.5	n/a	n/a	n/a
Temperature (deg C)	2/2	14	20	17	2.6	30.5
Radionuclides (pCi/L) (f)						
Alpha activity	2/2	2.3*	3.0*	2.6*	0.37	n/a
Beta activity	2/2	3.1*	4.0*	3.6*	0.45	n/a
Cesium-137	1/2	0.0	7.4*	3.7	3.7	120
Potassium-40	1/2	U2.6	37*	~20	17	280
Uranium-233/234	1/1	1.0*	1.0*	n/a	n/a	20
Uranium-235/236	1/1	0.46*	0.46*	n/a	n/a	n/a
Uranium-238	1/1	1.6*	1.6*	n/a	n/a	24
East Fork Poplar Creek downstream from floodplain (EFK 5.4)						
Field measurements						
Dissolved Oxygen (ppm)	2/2	6.1	7.3	6.7	0.6	5
pH (Std Unit)	2/2	7.2	7.4	n/a	n/a	n/a
Temperature (deg C)	2/2	14	20	17	2.6	30.5
Radionuclides (pCi/L) (f)						
Alpha activity	2/2	2.6*	5.0*	3.8	1.2	n/a
Beta activity	2/2	2.9*	4.8*	3.8	0.96	n/a
Potassium-40	1/2	25*	U36*	~31	5.5	280
Uranium-233/234	1/1	0.91*	0.91*	n/a	n/a	20
Uranium-238	1/1	1.5*	1.5*	n/a	n/a	24
Fifth Creek just upstream of White Oak Creek at ORNL (FIFTHCK 0.1)						
Field measurements						
Dissolved Oxygen (ppm)	2/2	6.9	8.1	7.5	0.6	n/a
pH (Std Unit)	2/2	7.2	7.8	n/a	n/a	n/a
Temperature (deg C)	2/2	15	19	17	2.2	n/a

Table 2.13. (continued)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Standard error(c)	TWQC(e)
Radionuclides (pCi/L) (f)						
Beta activity	2/2	19*	35*	27	7.9	n/a
Bismuth-214	1/2	0.0	12*	6.0	6.0	24,000
Strontium-89/90	2/2	7.1*	18*	12	5.2	40
Tritium	1/2	U170*	430*	~300	130	80,000
Grassy Creek upstream of SEG and IT Corp. (GCK 3.6)						
Field measurements						
Dissolved Oxygen (ppm)	2/2	5.5	6.6	6.1	0.55	n/a
pH (Std Unit)	2/2	7.4	7.6	n/a	n/a	n/a
Temperature (deg C)	2/2	13	17	15	2.0	n/a
Metals (mg/L)						
Aluminum	2/2	3.1	E5.6	~4.3	1.2	n/a
Arsenic	2/2	0.0011	0.002	0.0016	0.00044	n/a
Barium	2/2	E0.057	0.072	~0.065	0.0076	n/a
Beryllium	2/2	0.0001	0.00021	0.00016	0.000055	n/a
Boron	2/2	0.012	0.013	0.013	0.0004	n/a
Cadmium	2/2	0.00006	0.0001	0.00008	0.00002	n/a
Calcium	2/2	18	40	29	11	n/a
Chromium	2/2	0.002	0.0075	0.0048	0.0028	n/a
Cobalt	2/2	E0.0018	0.002	~0.0019	0.00012	n/a
Copper	2/2	0.002	0.0034	0.0027	0.00071	n/a
Iron	2/2	3.0	3.5	3.3	0.28	n/a
Lead	2/2	E0.0018	0.002	~0.0019	0.0001	n/a
Lithium	2/2	0.006	0.0063	0.0062	0.00015	n/a
Magnesium	2/2	3.0	5.4	4.2	1.2	n/a
Manganese	2/2	0.18	0.81	0.49	0.32	n/a
Nickel	2/2	0.004	E0.0046	~0.0043	0.00032	n/a
Phosphorous	2/2	0.039	0.044	0.041	0.0027	n/a
Potassium	2/2	1.9	E2.3	~2.1	0.17	n/a
Selenium	1/2	<0.002	0.0023	~0.0021	0.00013	n/a

Table 2.13. (continued)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Standard error(c)	TWQC(e)
Silver	1/2	<0.00001	0.00001	~0.00001	0.0	n/a
Sodium	2/2	E4.4	E5.9	~5.1	0.79	n/a
Strontium	2/2	0.049	0.11	0.078	0.029	n/a
Sulfur	2/2	1.7	3.0	2.4	0.64	n/a
Thallium	2/2	0.00004	0.00004	0.00004	0.0	n/a
Titanium	2/2	0.045	E0.059	~0.052	0.0068	n/a
Uranium	2/2	0.00013	E0.0002	~0.00017	0.000035	n/a
Vanadium	2/2	0.004	0.0045	0.0042	0.00023	n/a
Zinc	2/2	E0.0081	0.047	~0.028	0.02	n/a
Zirconium	2/2	0.001	0.0018	0.0014	0.00042	n/a
Radionuclides (pCi/L) (f)						
Beta activity	1/2	U2.5*	5.2*	~3.9	1.4	n/a
Lead-212	1/2	0.0	4.0*	2.0	2.0	120
Potassium-40	1/2	U12	19	~16	3.4	280
Ish Creek prior to entering CRK 30.8 (ICK 0.7)						
Field measurements						
Dissolved Oxygen (ppm)	2/2	6.1	7.0	6.6	0.45	n/a
pH (Std Unit)	2/2	7.1	7.9	n/a	n/a	n/a
Temperature (deg C)	2/2	14	17	15	1.9	n/a
Radionuclides (pCi/L) (f)						
Bismuth-214	1/2	0.0	14*	6.9	6.9	24,000
Lead-214	1/2	0.0	7.8*	3.9	3.9	n/a
Potassium-40	1/2	U0.0	29*	~14	14	280
McCoy Branch prior to entering CRK 60.3 (McCBK 1.8)						
Field measurements						
Dissolved Oxygen (ppm)	2/2	6.1	7.6	6.9	0.75	n/a
pH (Std Unit)	2/2	7.2	7.2	n/a	n/a	n/a
Temperature (deg C)	2/2	15	22	19	3.1	n/a

Table 2.13. (continued)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Standard error(c)	TWQC(e)
Radionuclides (pCi/L) (f)						
Alpha activity	1/2	U0.18	1.1*	~0.65	0.47	n/a
Bismuth-214	1/2	0.0	18*	8.9	8.9	24,000
Melton Branch downstream from ORNL (MEK 0.2)						
Field measurements						
Dissolved Oxygen (ppm)	6/6	8.9	16	11	1.1	5
pH (Std Unit)	6/6	7.7	8.6	n/a	n/a	n/a
Temperature (deg C)	6/6	5.1	22	14	2.7	30.5
Radionuclides (pCi/L) (f)						
Alpha activity	5/6	U1.9*	11*	~4.1*	1.5	n/a
Beta activity	6/6	400*	960*	660*	99	n/a
Plutonium-238	1/1	0.81*	0.81*	n/a	n/a	1.6
Strontium-89/90	6/6	160*	480*	300*	49	40
Thorium-230	1/1	0.28*	0.28*	n/a	n/a	12
Tritium	6/6	75,000*	510,000*	340,000*	67,000	80,000
Uranium-233/234	1/1	0.74*	0.74*	n/a	n/a	20
Uranium-238	3/3	0.47*	1.4*	0.94*	0.26	24
Northwest Tributary prior to entering 1st Creek at ORNL (NWTK 0.1)						
Field measurements						
Dissolved Oxygen (ppm)	2/2	5.7	6.2	6.0	0.25	n/a
pH (Std Unit)	2/2	7.0	7.2	n/a	n/a	n/a
Temperature (deg C)	2/2	14	18	16	2.5	n/a
Radionuclides (pCi/L) (f)						
Alpha activity	1/2	U1.7*	2.4*	~2.0	0.36	n/a
Beta activity	2/2	63*	120*	90	27	n/a
Potassium-40	1/2	U4.1	83*	~43	39	280
Strontium-89/90	2/2	24*	60*	42	18	40
Thallium-208	1/2	0.0	8.1*	4.0	4.0	n/a

Table 2.13. (continued)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Standard error(c)	TWQC(e)
Raccoon Creek sampling station prior to entering CRK 31 (RCK 2.0)						
Field measurements						
Dissolved Oxygen (ppm)	2/2	4.0	5.6	4.8	0.8	n/a
pH (Std Unit)	2/2	6.4	7.6	n/a	n/a	n/a
Temperature (deg C)	2/2	14	17	16	1.6	n/a
Radionuclides (pCi/L) (f)						
Alpha activity	1/2	U0.9	2.2*	~1.6	0.67	n/a
Beta activity	2/2	5.5*	67*	36	31	n/a
Bismuth-214	1/2	0.0	30*	15	15	24,000
Strontium-89/90	1/2	U0.54*	34*	~17	17	40
Tritium	1/2	U170*	310*	~240	73	80,000
Walker Branch prior to entering CRK 53.4 (WBK 0.1)						
Field measurements						
Dissolved Oxygen (ppm)	2/2	6.2	6.3	6.3	0.05	n/a
pH (Std Unit)	2/2	7.0	7.4	n/a	n/a	n/a
Temperature (deg C)	2/2	14	20	17	3.3	n/a
Radionuclides (pCi/L) (f)						
Beta activity	1/2	U0.25	1.5*	~0.88	0.64	n/a
White Oak Lake at White Oak Dam (WCK 1.0)						
Field measurements						
Dissolved Oxygen (ppm)	12/12	5.7	12	8.8	0.57	5
pH (Std Unit)	12/12	7.2	8.5	n/a	n/a	n/a
Temperature (deg C)	12/12	6.0	26	16	2.1	30.5
Metals (mg/L)						
Aluminum	12/12	E0.14	4.1	~1.5	0.33	n/a
Antimony	11/12	<0.0001	0.0003	~0.00015	0.000019	n/a
Arsenic	11/12	<0.001	0.004	~0.0023	0.00025	0.36
Barium	12/12	0.037	0.057	0.046	0.0018	n/a
Beryllium	9/12	<0.00002	0.0002	~0.000069	0.000014	n/a

Table 2.13. (continued)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Standard error(c)	TWQC(e)
Boron	12/12	0.015	0.034	0.024	0.0016	n/a
Cadmium	11/12	0.0	0.0001	0.000046	0.0000081	0.0039
Calcium	12/12	22	51	40	2.3	n/a
Chromium	11/12	<0.0002	0.007	~0.0035	0.00065	n/a
Cobalt	12/12	0.0	0.001	0.0007	0.00012	n/a
Copper	12/12	0.0019	0.005	0.0035	0.00031	0.0177
Iron	12/12	0.35	3.2	1.3	0.22	n/a
Lead	12/12	0.00027	0.003	0.0014	0.00021	0.0817
Lithium	12/12	0.003	0.0071	0.0039	0.00035	n/a
Magnesium	12/12	4.0	12	7.9	0.75	n/a
Manganese	12/12	0.057	0.3	0.12	0.02	n/a
Mercury	5/12	<0.00003	0.0002	~0.000077	0.000015	0.00169
Molybdenum	12/12	0.001	0.009	0.0035	0.00079	n/a
Nickel	12/12	0.00089	0.003	0.002	0.0002	1.418
Phosphorous	12/12	0.051	0.22	0.13	0.015	n/a
Potassium	12/12	1.6	E3.1	~2.3	0.15	n/a
Selenium	8/12	0.001	0.003	0.0016	0.00019	0.02
Silver	12/12	0.00003	0.0003	0.00011	0.000023	0.0041
Sodium	12/12	2.4	E29	~14	2.4	n/a
Strontium	12/12	0.047	0.13	0.092	0.0068	n/a
Sulfur	12/12	3.9	23	13	1.8	n/a
Thallium	12/12	0.00003	0.00032	0.00017	0.000029	n/a
Titanium	12/12	E0.0025	E0.04	~0.019	0.0035	n/a
Uranium	12/12	0.002	E0.008	~0.0041	0.00044	n/a
Vanadium	9/12	0.00094	0.007	0.0023	0.0005	n/a
Zinc	12/12	E0.006	0.051	~0.017	0.0034	0.117
Zirconium	12/12	0.00022	0.002	0.00098	0.00013	n/a
Radionuclides (pCi/L) (f)						
Alpha activity	12/12	1.8*	12*	6.3*	0.81	n/a
Beta activity	12/12	220*	350*	270*	12	n/a

Table 2.13. (continued)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Standard error(c)	TWQC(e)
Bismuth-214	2/12	0.0	12*	1.5	1.1	24,000
Cesium-137	12/12	7.0*	53*	21*	4.4	120
Lead-214	1/12	0.0	9.6*	0.8	0.8	n/a
Plutonium-238	1/1	2.2*	2.2*	n/a	n/a	1.6
Plutonium-239/240	1/1	0.3*	0.3*	n/a	n/a	1.2
Strontium-89/90	12/12	35*	150*	110*	9.2	40
Thorium-230	3/3	0.37*	1.2*	0.7*	0.24	12
Thorium-232	1/1	0.15*	0.15*	n/a	n/a	2
Tritium	12/12	45,000*	96,000*	71,000*	5,200	80,000
Uranium-233/234	10/10	1.2*	4.9*	2.9*	0.36	20
Uranium-235/236	1/1	0.49*	0.49*	n/a	n/a	n/a
Uranium-238	10/10	0.4*	2.2*	1.3*	0.18	24
Volatile organics (ug/L)						
Acetone	2/12	JB2.9	U5.0	~4.7	0.2	n/a
Chloroform	11/12	J0.53	1.3	~0.84	0.064	n/a
White Oak Creek downstream from ORNL (WCK 2.6)						
Field measurements						
Dissolved Oxygen (ppm)	6/6	8.0	12	9.9	0.66	5
pH (Std Unit)	6/6	7.6	8.5	n/a	n/a	n/a
Temperature (deg C)	6/6	8.5	22	16	2.1	30.5
Radionuclides (pCi/L) (f)						
Alpha activity	6/6	2.9*	11*	5.8*	1.3	n/a
Beta activity	6/6	100*	270*	150*	26	n/a
Cesium-137	6/6	11*	48*	27*	4.9	120
Potassium-40	1/6	U0.0	28*	~12*	5.6	280
Strontium-89/90	6/6	25*	160*	67*	20	40
Thorium-232	1/1	0.15*	0.15*	n/a	n/a	2
Tritium	6/6	14,000*	53,000*	26,000*	6,000	80,000

Table 2.13. (continued)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Standard error(c)	TWQC(e)
Uranium-233/234	4/4	0.59*	4.2*	2.2*	0.79	20
Uranium-235/236	1/1	0.37*	0.37*	n/a	n/a	n/a
Uranium-238	4/4	0.59*	2.9*	1.6*	0.53	24
White Oak Creek upstream from ORNL (WCK 6.8)						
Field measurements						
Dissolved Oxygen (ppm)	4/4	8.5	12	9.9	0.64	5
pH (Std Unit)	4/4	6.9	7.7	n/a	n/a	n/a
Temperature (deg C)	4/4	9.2	16	14	1.6	30.5
Radionuclides (pCi/L) (f)						
Alpha activity	1/4	U0.45	1.9*	~0.98*	0.33	n/a
Beta activity	1/4	U-0.34	4.9*	~1.9	1.1	n/a
Bismuth-214	1/4	0.0	20*	5.1	5.1	24,000
Lead-212	1/4	0.0	6.0*	1.5	1.5	120
Lead-214	1/4	0.0	22*	5.6	5.6	n/a

(a) All values were included in the calculations. Only parameters that have detections in one or more samples are listed in the table. The sampling and analysis plan contains a complete list of analyses performed.
(b) Prefix "J" indicates the value was estimated at or below the analytical detection limit by the laboratory; "U" indicates that the value was undetected at the analytical detection limit or MDA; "JB" indicates that the value was estimated at or below the analytical detection limit and the analyte was detected in the associated lab blank; "E" indicates that the percent difference between the parent sample and its serial dilution's concentration exceeds 10%; and "<" indicates the value for a parameter was not quantifiable at the analytical detection limit.
(c) A tilde (~) indicates that estimated values and/or detection limits were used in the calculation.
(d) Standard error of the mean.
(e) Tennessee General Water Quality Criteria for Recreation and Domestic Use, as amended (CRK 32, CRK 58, CRK 66) or Tennessee General Water Quality Criteria for Freshwater Fish and Aquatic Life, as amended (BCK 0.6, EFK 0.1, EFK 5.4, MEK 0.2, WCK 1.0, WCK 2.6, WCK 6.8). 4% of DOE DCG used for radionuclides, where applicable.
*(f) Individual and average radionuclide concentrations significantly greater than zero are identified by an *. Detected radionuclides are those detected above MDA.*

Table 3.1. 2003 tissue concentrations in Sunfish(a)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Standard error(d)
Clinch River downstream from all DOE inputs (CRK 16)					
Anions (mg/kg)					
Sulfate	2/2	64	65	65	0.5
Metals (mg/kg)					
Aluminum	2/2	1.6	2.7	2.2	0.55
Antimony	1/2	<0.054	0.08	~0.067	0.013
Arsenic	2/2	0.063	0.14	0.1	0.039
Barium	2/2	0.2	0.39	0.3	0.095
Beryllium	2/2	0.0028	0.025	0.014	0.011
Cadmium	1/2	<0.0027	0.018	~0.01	0.0077
Calcium	2/2	2100	4500	3300	1200
Chromium	2/2	0.091	0.14	0.12	0.025
Cobalt	1/2	<0.011	0.013	~0.012	0.001
Copper	2/2	0.29	0.36	0.33	0.035
Iron	2/2	3.4	5.3	4.4	0.95
Lead	1/2	<0.022	0.037	~0.03	0.0075
Magnesium	2/2	290	310	300	10
Manganese	2/2	1.4	2.8	2.1	0.7
Mercury	2/2	0.1	0.13	0.12	0.015
Nickel	1/2	<0.013	0.025	~0.019	0.006
Phosphorous	2/2	2700	3500	3100	400
Potassium	2/2	2300	2600	2500	150
Selenium	2/2	0.83	0.87	0.85	0.02
Silicon	2/2	2.9	3.4	3.2	0.25
Sodium	2/2	390	430	410	20
Strontium	2/2	1.4	2.8	2.1	0.7
Thallium	2/2	0.0077	0.0081	0.0079	0.0002
Titanium	2/2	0.022	0.14	0.081	0.059
Uranium	2/2	0.00078	0.0014	0.0011	0.00031
Vanadium	1/2	<0.013	0.036	~0.025	0.012
Zinc	2/2	15	15	15	0.0
Pesticides and PCBs (ug/kg)					
PCB-1260	2/2	22	24	23	1.0
Radionuclides (pCi/g) (e)					
Beta activity	2/2	2.2*	2.5*	2.4*	0.12
Potassium-40	2/2	2.7*	3.1*	2.9*	0.18
Strontium-90	1/2	U0.0091*	0.012*	~0.011*	0.0017
Clinch River downstream from ORNL (CRK 32)					
Anions (mg/kg)					
Sulfate	2/2	91	100	96	4.5
Metals (mg/kg)					
Aluminum	2/2	1.8	2	1.9	0.1
Arsenic	2/2	0.053	0.12	0.087	0.034
Barium	2/2	0.24	0.37	0.31	0.065
Beryllium	2/2	0.0022	0.0038	0.003	0.0008
Calcium	2/2	2000	2900	2500	450
Chromium	2/2	0.094	0.13	0.11	0.018
Copper	2/2	0.41	0.42	0.42	0.005
Iron	2/2	4.9	5.1	5	0.1
Lead	2/2	0.023	0.033	0.028	0.005
Magnesium	2/2	340	360	350	10
Manganese	2/2	1.2	1.6	1.4	0.2
Mercury	2/2	0.056	0.17	0.11	0.057
Nickel	1/2	<0.013	0.026	~0.02	0.0065
Phosphorous	2/2	3000	3500	3300	250
Potassium	2/2	3300	3300	3300	0.0
Selenium	2/2	0.92	0.95	0.94	0.015
Silicon	2/2	3.2	3.3	3.3	0.05
Sodium	2/2	490	540	520	25

Table 3.1 (continued)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Standard error(d)
Strontium	2/2	1.4	2.1	1.8	0.35
Thallium	2/2	0.0096	0.01	0.0098	0.0002
Titanium	2/2	0.034	0.05	0.042	0.008
Uranium	2/2	0.00056	0.00056	0.00056	0.0
Vanadium	1/2	<0.013	0.02	~0.017	0.0035
Zinc	2/2	15	18	17	1.5
Pesticides and PCBs (ug/kg)					
PCB-1260	2/2	J15	22	~19	3.5
Radionuclides (pCi/g) (e)					
Beta activity	2/2	3.3*	3.4*	3.4*	0.045
Cesium-137	1/1	0.11*	0.11*	n/a	n/a
Potassium-40	2/2	3.7*	3.7*	3.7*	0.015
Strontium-90	2/2	0.024*	0.049*	0.036	0.013
Tritium	2/2	1.3*	3.9*	2.6	1.3
Clinch River (Solway Bridge) upstream from all DOE inputs (CRK 70)					
Anions (mg/kg)					
Sulfate	2/2	93	100	97	3.5
Metals (mg/kg)					
Aluminum	2/2	1.2	1.3	1.3	0.05
Arsenic	2/2	0.12	0.13	0.13	0.005
Barium	2/2	0.21	0.26	0.24	0.025
Beryllium	2/2	0.0014	0.002	0.0017	0.0003
Calcium	2/2	2000	2400	2200	200
Chromium	2/2	0.09	0.12	0.11	0.015
Copper	2/2	0.34	0.38	0.36	0.02
Iron	2/2	4	4.4	4.2	0.2
Magnesium	2/2	310	320	320	5.0
Manganese	2/2	1.4	1.6	1.5	0.1
Mercury	2/2	0.024	0.028	0.026	0.002
Nickel	2/2	0.014	0.033	0.024	0.0095
Phosphorous	2/2	2700	2800	2800	50
Potassium	2/2	2800	3000	2900	100
Selenium	2/2	1	1.1	1.1	0.05
Silicon	2/2	2.9	3	3	0.05
Sodium	2/2	430	450	440	10
Strontium	2/2	1.5	1.7	1.6	0.1
Thallium	2/2	0.0076	0.0076	0.0076	0.0
Titanium	2/2	0.035	0.04	0.038	0.0025
Uranium	2/2	0.00045	0.0005	0.00048	0.000025
Vanadium	1/2	<0.013	0.02	~0.017	0.0035
Zinc	2/2	17	18	18	0.5
Pesticides and PCBs (ug/kg)					
PCB-1260	2/2	18	29	24	5.5

Table 3.1 (continued)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Standard error(d)
Radionuclides (pCi/g) (e)					
Beta activity	2/2	2.4*	2.6*	2.5*	0.09
Potassium-40	2/2	3.5*	3.6*	3.6*	0.06

(a) All values were included in the calculations. Only parameters that have detections in one or more samples are listed in the table. The sampling and analysis plan contains a complete list of analyses performed.
(b) Prefix "J" indicates the value was estimated at or below the analytical detection limit by the laboratory; "U" indicates that the radionuclide was not detected above the MDA; and "<" indicates the value for a parameter was not quantifiable at the analytical detection limit.
(c) A tilde (~) indicates that estimated values and/or detection limits were used in the calculation.
(d) Standard error of the mean.
(e) Individual and average radionuclide concentrations significantly greater than zero are identified by an *. Detected radionuclides are those detected above MDA.

Table 3.2. 2003 tissue concentrations in Catfish(a)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Standard error(d)
Clinch River downstream from all DOE inputs (CRK 16)					
Metals (mg/kg)					
Aluminum	2/2	0.85	1.1	0.98	0.13
Arsenic	1/2	<0.049	0.17	~0.11	0.061
Barium	2/2	0.024	0.061	0.043	0.019
Cadmium	1/2	<0.0054	0.0068	~0.0061	0.0007
Calcium	2/2	100	130	120	15
Chromium	1/2	<0.017	0.02	~0.019	0.0015
Copper	2/2	0.25	0.33	0.29	0.04
Iron	2/2	3.3	4.1	3.7	0.4
Lead	2/2	0.023	0.024	0.024	0.0005
Lithium	2/2	0.029	0.03	0.03	0.0005
Magnesium	2/2	220	230	230	5.0
Manganese	2/2	0.21	0.23	0.22	0.01
Mercury	2/2	0.053	0.063	0.058	0.005
Phosphorous	2/2	1900	2000	2000	50
Potassium	2/2	3400	3600	3500	100
Selenium	2/2	0.35	0.42	0.39	0.035
Silicon	2/2	1.7	2.1	1.9	0.2
Sodium	2/2	330	390	360	30
Strontium	2/2	0.12	0.15	0.14	0.015
Thallium	2/2	0.0045	0.0051	0.0048	0.0003
Uranium	2/2	0.00044	0.00047	0.00046	0.000015
Zinc	2/2	6.2	6.8	6.5	0.3
Pesticides and PCBs (ug/kg)					
Endosulfan sulfate	1/2	J0.45	U1.7	~1.1	0.63
gamma-Chlordane	2/2	2.9	3.2	3.1	0.15
Heptachlor epoxide	1/2	U1.7	2.9	~2.3	0.6
PCB-1254	2/2	29	31	30	1.0
PCB-1260	2/2	110	160	140	25
Radionuclides (pCi/g) (e)					
Beta activity	2/2	3.2*	3.3*	3.3*	0.05
Potassium-40	2/2	2.2*	3.1*	2.7	0.47
Clinch River downstream from ORNL (CRK 32)					
Metals (mg/kg)					
Aluminum	2/2	0.91	0.97	0.94	0.03
Arsenic	2/2	0.071	0.096	0.084	0.013
Barium	2/2	0.049	0.061	0.055	0.006
Beryllium	1/2	<0.00035	0.0004	~0.00038	0.000025
Cadmium	1/2	<0.0054	0.0078	~0.0066	0.0012
Calcium	2/2	71	74	73	1.5
Copper	2/2	0.28	0.32	0.3	0.02
Iron	2/2	2.4	2.9	2.7	0.25
Lead	1/2	<0.021	0.029	~0.025	0.004
Lithium	2/2	0.022	0.032	0.027	0.005
Magnesium	2/2	200	210	210	5.0
Manganese	2/2	0.15	0.15	0.15	0.0
Mercury	2/2	0.13	0.16	0.15	0.015
Phosphorous	2/2	1600	1800	1700	100
Potassium	2/2	2900	3400	3200	250
Selenium	2/2	0.25	0.26	0.26	0.005
Silicon	2/2	1.4	1.7	1.6	0.15
Sodium	2/2	290	320	310	15
Strontium	2/2	0.094	0.12	0.11	0.013
Thallium	2/2	0.0025	0.0037	0.0031	0.0006

Table 3.2 (continued)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Standard error(d)
Uranium	2/2	0.00045	0.00054	0.0005	0.00045
Zinc	2/2	6.8	6.9	6.9	0.05
Pesticides and PCBs (ug/kg)					
gamma-Chlordane	2/2	J0.79	3	~1.9	1.1
PCB-1254	1/2	U17	110	~64	47
PCB-1260	2/2	470	1000	740	270
Radionuclides (pCi/g) (e)					
Beta activity	2/2	2.6*	3.1*	2.9*	0.24
Potassium-40	2/2	1.7*	3.7*	2.7	1.0
Tritium	2/2	0.59*	0.63*	0.61*	0.021
Clinch River (Solway Bridge) upstream from all DOE inputs (CRK 70)					
Metals (mg/kg)					
Aluminum	2/2	1.1	1.3	1.2	0.1
Arsenic	2/2	0.083	0.12	0.1	0.019
Barium	2/2	0.051	0.08	0.066	0.015
Beryllium	1/2	<0.00035	0.0032	~0.0018	0.0014
Cadmium	2/2	0.006	0.013	0.0095	0.0035
Calcium	2/2	75	140	110	33
Chromium	2/2	0.021	0.087	0.054	0.033
Cobalt	2/2	0.018	0.027	0.023	0.0045
Copper	2/2	0.26	0.39	0.33	0.065
Iron	2/2	4.1	4.2	4.2	0.05
Lead	2/2	0.03	0.032	0.031	0.001
Lithium	2/2	0.024	0.026	0.025	0.001
Magnesium	2/2	220	230	230	5.0
Manganese	2/2	0.22	0.26	0.24	0.02
Mercury	2/2	0.19	0.21	0.2	0.01
Nickel	1/2	<0.018	0.053	~0.036	0.018
Phosphorous	2/2	1900	1900	1900	0.0
Potassium	2/2	3600	3600	3600	0.0
Selenium	2/2	0.29	0.35	0.32	0.03
Silicon	2/2	2.2	2.6	2.4	0.2
Silver	1/2	<0.022	0.037	~0.03	0.0075
Sodium	2/2	320	330	330	5.0
Strontium	2/2	0.11	0.2	0.16	0.045
Thallium	2/2	0.0039	0.0047	0.0043	0.0004
Uranium	2/2	0.0005	0.00052	0.00051	0.00001
Zinc	2/2	5.9	7.1	6.5	0.6
Pesticides and PCBs (ug/kg)					
gamma-Chlordane	2/2	J1.1	J1.4	~1.3	0.15
PCB-1254	2/2	28	52	40	12
PCB-1260	2/2	150	230	190	40
Radionuclides (pCi/g) (e)					
Beta activity	2/2	3.2*	3.3*	3.2*	0.04
Potassium-40	2/2	2.6*	3.1*	2.8*	0.24

(a) All values were included in the calculations. Only parameters that have detections in one or more samples are listed in the table. The sampling and analysis plan contains a complete list of analyses performed.
(b) Prefix "J" indicates the value was estimated at or below the analytical detection limit by the laboratory; "U" indicates that the value was undetected at the analytical detection limit; and "<" indicates the value for a parameter was not quantifiable at the analytical detection limit.
(c) A tilde (~) indicates that estimated values and/or detection limits were used in the calculation.
(d) Standard error of the mean.
(e) Individual and average radionuclide concentrations significantly greater than zero are identified by an *. Detected radionuclides are those detected above MDA.

Table 3.3. Concentration of radionuclides in raw milk, 2003

Parameter	N det/ N total	Detected concentration (pCi/L) (a, b) Min	Max	Avg	Standard error
Claxton					
Potassium-40	6/6	1,100*	1,600*	1,300*	85
Total rad Sr	1/6	-0.31	1.2*	~0.37	0.2
Maryville					
Potassium-40	6/6	1,200*	1,500*	1,300*	40
Total rad Sr	1/6	0.44*	1.2*	0.8*	0.12
Powell					
Potassium-40	6/6	1,100*	1,500*	1,300*	55

(a) 1 pCi=3.7 x 10 -2 Bq. Detected radionuclides are those detected above minimum detectable activity.
(b) Individual and average concentrations significantly greater than zero at the 95% confidence level are identified by an asterisk (*).

Table 3.4. Surface water analyses (2003) at ORR Environmental Monitoring Plan surface water locations (a)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Standard error(d)	TWQC(e)
			Clinch River downstream from all DOE ORR inputs (CRK 16)			
Field measurements						
Dissolved Oxygen (ppm)	12/12	6.1	15	9.0	0.74	n/a
pH (Std Unit)	12/12	7.3	8.8	n/a	n/a	n/a
Temperature (deg C)	12/12	5.9	22	16	1.5	30.5
Metals (mg/L)						
Aluminum	12/12	E0.16	E2.9	~1.1	0.29	n/a
Antimony	9/12	0.00006	0.0004	0.00013	0.000027	0.014
Arsenic	7/12	<0.0009	0.004	~0.0022	0.00037	0.05
Barium	12/12	0.033	0.051	0.038	0.0017	n/a
Beryllium	7/12	0.0	0.0004	0.000069	0.000031	n/a
Boron	12/12	0.01	0.022	0.015	0.00082	n/a
Cadmium	8/12	<0.00002	0.0005	~0.00007	0.000039	n/a
Calcium	12/12	21	39	30	1.9	n/a
Chromium	7/12	<0.0001	0.003	~0.0011	0.0003	n/a
Cobalt	12/12	0.0002	0.001	0.00055	0.0001	n/a
Copper	12/12	0.001	0.003	0.0021	0.00016	n/a
Iron	12/12	0.25	E2.4	~0.92	0.21	n/a
Lead	12/12	0.00026	E0.003	~0.00078	0.00022	n/a
Lithium	12/12	E0.002	0.0054	~0.0031	0.00028	n/a
Magnesium	12/12	5.1	10	7.9	0.59	n/a
Manganese	12/12	0.045	0.13	0.07	0.0073	n/a
Mercury	3/12	<0.00003	<0.0003	~0.000093	0.000024	0.00005
Molybdenum	12/12	0.0001	0.001	0.00049	0.000094	n/a
Nickel	12/12	0.00087	E0.003	~0.0015	0.00019	0.61
Phosphorous	12/12	0.012	0.095	0.045	0.0077	n/a
Potassium	12/12	1.5	2.8	1.9	0.1	n/a
Selenium	8/12	0.001	0.0024	0.0016	0.00016	n/a
Silver	4/12	<0.000003	0.00003	~0.000012	0.0000022	n/a

Table 3.4. (continued)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Standard error(d)	TWQC(e)
Sodium	12/12	2.1	6.0	4.1	0.35	n/a
Strontium	12/12	0.047	0.11	0.079	0.0066	n/a
Sulfur	12/12	3.3	8.4	5.8	0.45	n/a
Thallium	12/12	0.00003	0.0004	0.00016	0.000036	0.0017
Titanium	12/12	0.003	0.051	0.016	0.0043	n/a
Uranium	12/12	E0.0002	0.00059	~0.00028	0.000034	n/a
Vanadium	5/12	<0.00076	0.003	~0.0013	0.00019	n/a
Zinc	12/12	0.003	0.21	0.027	0.017	n/a
Zirconium	12/12	0.00013	0.005	0.00093	0.0004	n/a
Radionuclides (pCi/L) (f)						
Alpha activity	1/12	U-0.13	2.4*	~0.44*	0.2	n/a
Beta activity	8/12	U0.33	5.4*	~2.2*	0.41	n/a
Bismuth-212	1/12	0.0	24*	2.0	2.0	n/a
Bismuth-214	1/12	0.0	21*	1.7	1.7	24,000
Lead-214	1/12	0.0	22*	1.8	1.8	n/a
Niobium-95	1/12	0.0	2.8*	0.24	0.24	n/a
Potassium-40	3/12	U0.0	48*	~21*	5.7	280
Thallium-208	1/12	0.0	3.0*	0.25	0.25	n/a
Volatile organics (ug/L)						
Acetone	2/12	J3.0	U5.0	~4.7	0.2	n/a
Water supply intake for the ETTP (CRK 23)						
Field measurements						
Dissolved Oxygen (ppm)	12/12	6.0	16	9.5	0.77	n/a
pH (Std Unit)	12/12	7.5	8.8	n/a	n/a	n/a
Temperature (deg C)	12/12	5.8	22	15	1.6	30.5

Table 3.4. (continued)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Standard error(d)	TWQC(e)
Radionuclides (pCi/L) (f)						
Alpha activity	2/12	U-1.2	4.9*	~0.87*	0.43	n/a
Beryllium-7	1/12	U-28	U46*	~6.2	5.4	40,000
Beta activity	7/12	U0.64*	8.3*	~3.5*	0.8	n/a
Bismuth-214	2/12	0.0	24*	2.9	2.1	24,000
Lead-214	1/12	0.0	17*	1.4	1.4	n/a
Potassium-40	2/12	U-12	50*	~13*	5.5	280
Strontium-89/90	3/12	U-0.37	6.5*	~1.0*	0.53	40
Thallium-208	1/12	0.0	4.9*	0.41	0.41	n/a
Thorium-232	1/1	0.19*	0.19*	n/a	n/a	2
Tritium	7/12	U-110	3,100*	~710*	300	80,000
Clinch River (Solway Bridge) upstream from all DOE ORR inputs (CRK 70)						
Field measurements						
Dissolved Oxygen (ppm)	12/12	4.8	15	8.4	0.79	n/a
pH (Std Unit)	12/12	7.1	8.7	n/a	n/a	n/a
Temperature (deg C)	12/12	7.2	23	16	1.7	30.5
Metals (mg/L)						
Aluminum	12/12	0.14	E1.6	~0.54	0.12	n/a
Antimony	9/12	<0.00009	0.0002	~0.00014	0.000015	0.014
Arsenic	10/12	<0.0009	0.005	~0.0021	0.00034	0.05
Barium	12/12	0.029	0.041	0.035	0.00094	n/a
Beryllium	8/12	<0.00002	0.00009	~0.000043	0.0000076	n/a
Boron	12/12	0.013	0.018	0.015	0.00053	n/a
Cadmium	9/12	<0.00002	0.0003	~0.000052	0.000023	n/a
Calcium	12/12	23	41	35	1.3	n/a
Chromium	5/12	<0.0001	0.002	~0.00074	0.0002	n/a
Cobalt	12/12	0.0002	0.001	0.00044	0.000077	n/a
Copper	12/12	0.001	0.0038	0.0023	0.00025	n/a
Iron	12/12	0.24	E1.5	~0.57	0.1	n/a

Table 3.4. (continued)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Standard error(d)	TWQC(e)
Lead	12/12	0.0003	0.001	0.00059	0.000089	n/a
Lithium	12/12	E0.003	0.0056	~0.0037	0.00024	n/a
Magnesium	12/12	E5.0	11	~9.3	0.5	n/a
Manganese	12/12	0.043	0.13	0.068	0.0074	n/a
Mercury	2/12	<0.00003	0.0002	~0.000071	0.000015	0.00005
Molybdenum	12/12	0.00004	0.0012	0.0007	0.00011	n/a
Nickel	12/12	0.001	0.002	0.0014	0.00014	0.61
Phosphorous	12/12	0.012	0.054	0.024	0.0033	n/a
Potassium	12/12	1.5	2.1	1.8	0.048	n/a
Selenium	9/12	0.0005	0.0027	0.0017	0.00018	n/a
Silver	3/12	<0.000003	0.00001	~0.0000088	0.00000073	n/a
Sodium	12/12	E1.2	6.5	~5.2	0.41	n/a
Strontium	12/12	0.036	0.12	0.096	0.0065	n/a
Sulfur	12/12	2.9	8.8	6.9	0.42	n/a
Thallium	12/12	0.00005	0.0005	0.00021	0.00005	0.0017
Titanium	12/12	0.002	0.017	0.0089	0.0014	n/a
Uranium	12/12	0.0001	0.0003	0.00021	0.000013	n/a
Vanadium	4/12	<0.00076	0.003	~0.0014	0.00021	n/a
Zinc	12/12	E0.003	0.02	~0.0062	0.0014	n/a
Zirconium	12/12	0.0002	0.001	0.00051	0.000091	n/a
Radionuclides (pCi/L) (f)						
Beta activity	6/12	U1.0*	3.8*	~1.9*	0.23	n/a
Bismuth-212	1/12	0.0	12*	1.0	1.0	n/a
Bismuth-214	2/12	0.0	12*	1.8	1.2	24,000
Lead-214	1/12	0.0	12*	0.96	0.96	n/a
Potassium-40	4/12	U0.0	93*	~25*	8.3	280

Table 3.4. (continued)

Parameter	N det/ N total	Min(b)	Max(b)	Avg(c)	Standard error(d)	TWQC(e)
Volatile organics (ug/L)						
Acetone	1/12	JB3.4	U5.0	~4.9	0.13	n/a

(a) All values were included in the calculations. Only parameters that have detections in one or more samples are listed in the table. The sampling and analysis plan contains a complete list of analyses performed.
(b) Prefix "J" indicates the value was estimated at or below the analytical detection limit by the laboratory; "U" indicates that the value was undetected at the analytical detection limit or MDA; "JB" indicates that the value was estimated at or below the analytical detection limit and the analyte was detected in the associated lab blank; "E" indicates that the percent difference between the parent sample and its serial dilution's concentration exceeds 10%; and "<" indicates the value for a parameter was not quantifiable at the analytical detection limit.
(c) A tilde (~) indicates that estimated values and/or detection limits were used in the calculation.
(d) Standard error of the mean.
(e) Tennessee General Water Quality Criteria for Recreation and Domestic Use, as amended (CRK 16, CRK 23,CRK 70). 4% of DOE DCG used for radionuclides, where applicable.
*(f) Individual and average radionuclide concentrations significantly greater than zero are identified by an *. Detected radionuclides are those detected above MDA.*

Table 3.5. Radiological constituents in settleable solids sites near the ORR, 2003[a]

Event	Co-60	Cs-137	Gross alpha	Gross beta
	White Oak Creek Headwaters upstream from ORNL (WOCHW)			
April	b	b	b	b
May	b	b	b	26,000
Melton Branch upstream from ORNL (MEK 2.1)				
April	b	10,000	9,200	590,000
May	b	11,000	b	150,000
	White Oak Creek downstream from ORNL (WCK2.6)			
April	b	340,000	b	b
May	b	150,000	b	150,000
White Oak Dam Lake (WCK 1.0)				
April	b	330,000	b	250,000
May	b	230,000	23,000	290,000

[a]All data are given in picocuries per kilogram (1 pCi = 3.7E-02 Bq).
[b]No value detected above MDA.

Table 4.1. Y-12 Plant Discharge Point 017, OUTFALL 017
From: 2003/01/01 To: 2003/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	363	0.925	0.007	0.08	d	d
pH, Standard Unit	55	7.4	6.6	d	9/ 6(e)	0
Kjeldahl Nitrogen	54	7.61	<1.0	<2.2	d	d
Ammonia as Nitrogen	52	7.79	0.372	1.79	64.8	0

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

1

Table 4.2. Y-12 Plant Discharge Point 021, OUTFALL 021

From: 2003/01/01 To: 2003/12/31

		Concentration(a)			Reference	Number of Values
Parameter	Number of Samples	Max	Min	Avg	Value(b)	Exceeding Reference
Flow, mgd	328	5.135	0.108	0.367	d	d
pH, Standard Unit	158	7.9	7.1	d	9/ 6(e)	0
Temperature, degrees C	158	23.4	8.3	18	30.5	0
Total Residual Chlorine	157	<0.05	<0.05	<0.05	0.188	0

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

1

Table 4.3. Y-12 Plant Discharge Point 051, OUTFALL 051
From: 2003/01/01 To: 2003/12/31

		Concentration(a)			Reference	Number of Values
Parameter	Number of Samples	Max	Min	Avg	Value(b)	Exceeding Reference
Flow, mgd	292	5.264	0.333	0.880	d	d
pH, Standard Unit	106	7.86	6.6	d	9/ 6(e)	0
Mercury	52	0.0106	0.001	0.002	d	d

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

1

Table 4.4. Y-12 Plant Discharge Point 055, OUTFALL 055

From: 2003/01/01 To: 2003/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	365	0.141	0.0004	0.032	d	d
pH, Standard Unit	105	8.0	6.8	d	9/ 6(e)	0
Total Residual Chlorine	118	1.92	<0.05	<0.09	0.5	1
Mercury	105	0.0069	<0.0002	<0.0003	0.004	2

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

1

Table 4.5. Y-12 Plant Discharge Point 077, OUTFALL 077

From: 2003/01/01 To: 2003/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	12	0.0114	0.0114	0.0114	d	d
pH, Standard Unit	12	8.4	7.4	d	9/ 6(e)	0
Total Residual Chlorine	12	<0.05	<0.05	<0.05	0.5	0

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

1

Table 4.6. Y-12 Plant Discharge Point 125, OUTFALL 125
From: 2003/01/01 To: 2003/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	12	1.21	0.691	0.973	d	d
pH, Standard Unit	12	7.2	6.8	d	9/ 6(e)	0
Total Residual Chlorine	12	<0.05	<0.05	<0.05	0.5	0
Mercury	4	0.0002	<0.0002	<0.0002	d	d
Lead	4	0.0012	<0.0002	<0.0005	d	d

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

1

Table 4.7. Y-12 Plant Discharge Point 135, OUTFALL 135
From: 2003/01/01 To: 2003/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	366	1.545	0.121	0.260	d	d

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

1

Table 4.8. Y-12 Plant Discharge Point 200, OUTFALL 200

From: 2003/01/01 To: 2003/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	159	116.38	0.21	3.9	d	d
Beryllium	16	<0.0005	<0.0005	<0.0005	d	d
Cadmium	16	<0.01	<0.01	<0.01	d	d
Copper	16	<0.02	<0.02	<0.02	d	d
Iron	16	1.82	0.0808	0.387	d	d
Fluoride	12	1.19	0.388	0.822	d	d
Hexane Extractable	82	<6.6	<5.7	<6.1	15	0
Mercury	57	0.0041	0.0006	0.0009	d	d
Nitrate/Nitrite as Nitrogen	12	7.04	3.68	5.24	d	d
Oil and Grease	77	24.9	<5.9	<6.5	15	1
Lead	16	<0.1	<0.1	<0.1	d	d
Phosphate as Phosphorus	14	0.644	<0.307	<0.410	d	d
Sulfate	56	50.7	15.3	30.6	d	d
Zinc	16	0.145	<0.05	<0.06	d	d

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

1

Table 4.9. Y-12 Plant Discharge Point 200, OUTFALL 200

From: 2003/01/01 To: 2003/12/31

Parameter	Number of Samples	Concentration Max	+/-	Min	+/-	Average	Standard	Percentage of DCG	Total Curies
Alpha activity (pCi/L)	52	74.0	+/-9.1	5.0	+/-2.5	18	1.6	e	9.8E-02
Americium-241 (pCi/L)	52	0.46	+/-.26	-0.35*	+/-.23	-0.0017	0.025	-0.0057	-9.1E-06
Beta activity (pCi/L)	52	51.0	+/-7.9	3.2*	+/-4.9	15	1.1	e	8.2E-02
Cobalt-60 (pCi/L)	52	3.0*	+/-2.2	-3.0*	+/-2.8	0.39	0.17	0.0077	2.1E-03
Cesium-137 (pCi/L)	52	3.2*	+/-2.3	-1.9*	+/-2.5	0.23	0.16	0.0075	1.2E-03
Gamma Activity (pCi/L)	52	19.0*	+/-15	-23.0*	+/-15	-1.65	1.31	e	-8.78E-03
Neptunium-237 (pCi/L)	52	0.13*	+/-.15	-0.19*	+/-.054	-0.016	0.0089	-0.052	-8.3E-05
Plutonium-238 (pCi/L)	52	0.63	+/-.4	-0.33*	+/-.12	-0.026	0.020	-0.066	-1.4E-04
Plutonium-239/240 (pCi/L)	52	0.099*	+/-.14	-0.13*	+/-.051	-0.011	0.0082	-0.035	-5.6E-05
Radium-226 (pCi/L)	52	1.3	+/-.44	-1.3*	+/-1.2	0.24	0.051	0.24	1.3E-03
Radium-228 (pCi/L)	52	3.1	+/-.91	-0.9*	+/-1.2	0.8	0.1	0.8	4E-03
Strontium-89/90 (pCi/L)	52	4.9	+/-2	-4.2*	+/-2.5	-0.24	0.18	e	-1.2E-03
Total Radium Alpha (pCi/L)	52	1.2	+/-.44	-0.034*	+/-.083	0.28	0.035	e	1.5E-03
Technetium-99 (pCi/L)	52	32.0	+/-7.3	-5.4*	+/-8.1	11	0.96	0.011	5.7E-02
Thorium-228 (pCi/L)	52	0.8	+/-.38	-1.2*	+/-.1	0.009	0.05	0.002	5E-05
Thorium-230 (pCi/L)	52	3.9	+/-1.4	-1.8*	+/-.48	0.016	0.11	0.0055	8.8E-05
Thorium-232 (pCi/L)	52	0.22*	+/-.24	-0.52*	+/-0	-0.00060	0.014	-0.0012	-3.3E-06
Thorium-234 (pCi/L)	52	70.0	+/-7.9	3.2	+/-.64	14	1.5	0.14	7.5E-02
Tritium (pCi/L)	52	810.0	+/-530	-270.0*	+/-490	379.1	37.82	0.01900	2.020E+00
Uranium-234 (pCi/L)	52	11.0	+/-1.6	1.2	+/-.38	3.6	0.24	0.73	1.9E-02
Uranium-235 (pCi/L)	52	1.4	+/-.48	-0.055*	+/-.14	0.23	0.032	0.038	1.2E-03
Uranium-236 (pCi/L)	52	0.51	+/-.27	-0.031*	+/-0	0.084	0.012	0.017	4.5E-04
Uranium-238 (pCi/L)	52	70.0	+/-7.9	3.2	+/-.64	14	1.5	2.3	7.5E-02

(e) Not applicable

1

* Provisional Result

Table 4.10. Y-12 Plant Discharge Point 201, OUTFALL 201

From: 2003/01/01 To: 2003/12/31

		Concentration(a)			Reference	Number of Values
Parameter	Number of Samples	Max	Min	Avg	Value(b)	Exceeding Reference
96 Hour Toxicity Test with Ceriodaphnia	4	>100.0	>100.0	>100.0	d/ 100(e)	0
96 Hour Toxicity Test with Fathead Minnows	4	>100.0	>100.0	>100.0	d/ 100(e)	0
NOEC, Reproduction/Growth With Ceriodaphnia	4	100.0	100.0	100.0	d/ 100(e)	0
NOEC, Reproduction/Growth With Fathead Minnows	4	100.0	100.0	100.0	d/ 100(e)	0
pH, Standard Unit	157	8.0	7.0	d	8.5/ 6.5(e)	0
Temperature, degree C	157	20.9	7.3	15.	30.5	0
Total Residual Chlorine	156	0.237	<0.05	<0.05	0.019	2
Suspended Solids	52	69.6	<1.0	<4.1	d	d

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

1

Table 4.11. Y-12 Plant Discharge Point 501, CENTRAL POLLUTION CONTROL FACILITY

From: 2003/01/01 To: 2003/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
48 Hour Toxicity Test with Ceriodaphnia	1	>100.0	>100.0	>100.0	d	d
Flow, mgd	2	0.013	0.0124	0.013	d	d
pH, Std Unit	2	7.4	6.7	d	9/ 6(e)	0
Temperature, degrees C	2	22.8	20.3	21.6	d	d
Silver	2	<0.0004	<0.0004	<0.0004	0.05	0
Boron	2	0.678	0.309	0.494	d	d
Beryllium	2	<0.0005	<0.0002	<0.0004	d	d
Calcium	2	506.0	372.0	439.0	d	d
Cadmium	2	<0.001	<0.001	<0.001	0.15	0
Chloride	2	93.3	53.7	73.5	d	d
Chromium	2	<0.004	<0.004	<0.004	1	0
Copper	2	0.0374	0.0087	0.023	1	0
Cyanide	2	0.0055	<0.005	<0.005	1.2	0
Iron	2	<0.05	<0.05	<0.05	d	d
Fluoride	2	0.448	0.287	0.368	d	d
Mercury	2	<0.0002	<0.0002	<0.0002	d	d
Potassium	2	47.3	35.7	41.5	d	d
Lithium	2	4.05	2.91	3.48	d	d
Magnesium	2	9.29	9.18	9.24	d	d
Sodium	2	72.2	41.7	57.0	d	d
Nickel	2	0.054	0.0496	0.052	3.98	0
Nitrate/Nitrite as Nitrogen	2	2.35	1.6	2.0	100	0
Oil and Grease	2	<6.1	<5.7	<5.9	15	0
Lead	2	0.0016	<0.0002	<0.0009	0.2	0
PCB, Total	1	0.0005U	0.0005U	0.0005U	0.001	0
Phosphate as Phosphorus	2	<0.307	<0.307	<0.307	d	d
Sulfate	2	1290.0	941.0	1116	d	d

(a) Units in mg/L unless otherwise indicated.

(b) NPDES permit limits.

(c) Flow during operations and/or discharging.

(d) Not applicable.

(e) Maximum value/minimum value.

1

Table 4.12. Y-12 Plant Discharge Point 501, CENTRAL POLLUTION CONTROL FACILITY

From: 2003/01/01 To: 2003/12/31

		Concentration(a)			Reference	Number of Values
Parameter	Number of Samples	Max	Min	Avg	Value(b)	Exceeding Reference
Surfactant	1	<0.1	<0.1	<0.1	d	d
Suspended Solids	2	<1.0	<1.0	<1.0	40	0
Sum of TTO Analysis	1	<0.01	<0.01	<0.01	2.13	0
Zinc	2	0.0275	0.0158	0.0217	2	0

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

2

Table 4.13. Y-12 Plant Discharge Point 512, OUTFALL 512 (GWTF)
From: 2003/01/01 To: 2003/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
48 Hour Toxicity Test with Ceriodaphnia	4	>100.0	44.1	>69.8	d	d
Flow, mgd	225	0.019	0.002	0.01	d	d
pH, Standard Unit	143	8.1	7.0	d	9/ 6(e)	0
Copper	142	<0.02	<0.02	<0.02	d	d
Iron	142	0.697	<0.05	<0.1	1	0
Manganese	142	3.95	0.0274	0.435	d	d
Lead	142	<0.1	<0.1	<0.1	d	d
PCB, Total	12	0.0005U	0.0005U	0.0005U	0.001	0

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

1

Table 4.14. Y-12 Plant Discharge Point 512, OUTFALL 512 (GWTF)

From: 2003/01/01 To: 2003/12/31

		Concentration						Percentage of	
Parameter	**Number of Samples**	**Max**	**+/-**	**Min**	**+/-**	**Average**	**Standard**	**DCG**	**Total Curies**
Alpha activity (pCi/L)	47	24.0	+/-6.2	2.0*	+/-5.2	9.3	0.84	e	1.2E-04
Americium-241 (pCi/L)	47	0.62	+/-.48	-0.45*	+/-.17	-0.035	0.033	-0.12	-4.7E-07
Beta activity (pCi/L)	47	24.0	+/-6.3	-36.0*	+/-42	7.60	1.20	e	1.01E-04
Cobalt-60 (pCi/L)	47	2.9*	+/-2.3	-1.7*	+/-2.3	0.59	0.15	0.012	7.8E-06
Cesium-137 (pCi/L)	47	2.7*	+/-2.1	-3.4*	+/-2.6	0.43	0.19	0.014	5.7E-06
Gamma Activity (pCi/L)	47	18.0*	+/-15	-23.0*	+/-16	-2.18	1.26	e	-2.90E-05
Neptunium-237 (pCi/L)	47	0.29	+/-.2	-0.16*	+/-.067	-0.0051	0.012	-0.017	-6.7E-08
Plutonium-238 (pCi/L)	47	0.41	+/-.19	-0.31*	+/-.16	-0.030	0.019	-0.076	-4.0E-07
Plutonium-239/240 (pCi/L)	47	0.17	+/-.13	-0.16*	+/-.052	-0.012	0.0095	-0.040	-1.6E-07
Radium-226 (pCi/L)	47	0.95	+/-.78	-0.46*	+/-.98	0.26	0.040	0.26	3.4E-06
Radium-228 (pCi/L)	47	2.1	+/-1.1	-1.3*	+/-1.6	0.57	0.099	0.57	7.5E-06
Strontium-89/90 (pCi/L)	47	4.9	+/-1.9	-3.0*	+/-2.2	0.32	0.19	e	4.3E-06
Total Radium Alpha (pCi/L)	47	1.3	+/-.54	0.038*	+/-.13	0.32	0.033	e	4.3E-06
Technetium-99 (pCi/L)	47	20.0	+/-7	-8.4*	+/-7.2	3.1	0.80	0.0031	4.1E-05
Thorium-228 (pCi/L)	47	1.5	+/-.49	-1.3*	+/-.11	0.031	0.059	0.0077	4.1E-07
Thorium-230 (pCi/L)	47	1.9	+/-.65	-1.5*	+/-.28	-0.059	0.076	-0.020	-7.8E-07
Thorium-232 (pCi/L)	47	0.16*	+/-.16	-0.17*	+/-.13	-0.014	0.0080	-0.028	-1.9E-07
Thorium-234 (pCi/L)	47	18.0	+/-2.6	1.1	+/-.44	6.3	0.56	0.063	8.3E-05
Tritium (pCi/L)	47	4200.0	+/-810	-310.0*	+/-420	1256	95.52	0.06280	1.670E-02
Uranium-234 (pCi/L)	47	7.0	+/-1.1	0.6	+/-.31	2	0.2	0.4	3E-05
Uranium-235 (pCi/L)	47	0.41	+/-.39	-0.043*	+/-.071	0.14	0.016	0.024	1.9E-06
Uranium-236 (pCi/L)	47	0.36	+/-.28	-0.025*	+/-.051	0.058	0.011	0.012	7.8E-07
Uranium-238 (pCi/L)	47	18.0	+/-2.6	1.1	+/-.44	6.3	0.56	1.0	8.3E-05

(e) Not applicable

* Provisional Result

1

Table 4.15. Y-12 Plant Discharge Point 520, OUTFALL 520

From: 2003/01/01 To: 2003/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
pH, Standard Unit	25	8.5	6.3	d	9/ 6(e)	0
Dissolved Solids	25	225.0	<1.0	<22	d	d

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

1

Table 4.16. Y-12 Plant Discharge Point 520, OUTFALL 520

From: 2003/01/01 To: 2003/12/31

Parameter	Number of Samples	Concentration Max	+/-	Min	+/-	Average	Standard	Percentage of DCG
Alpha activity (pCi/L)	8	4.0	+/-2.8	-3.1*	+/-1.9	0.070	0.80	e
Americium-241 (pCi/L)	8	0.44	+/-.28	-0.087*	+/-.26	0.15	0.060	0.51
Beta activity (pCi/L)	8	5.3*	+/-4.9	-6.6*	+/-4.4	-0.75	1.4	e
Cobalt-60 (pCi/L)	8	1.4*	+/-2.2	-0.41*	+/-2.1	0.82	0.20	0.016
Cesium-137 (pCi/L)	8	1.4*	+/-1.7	-2.3*	+/-2.5	-0.024	0.40	-0.00080
Gamma Activity (pCi/L)	8	7.3*	+/-14	-7.5*	+/-14	-1.4	1.9	e
Neptunium-237 (pCi/L)	8	0.041*	+/-.099	-0.091*	+/-.064	-0.0069	0.014	-0.023
Plutonium-238 (pCi/L)	8	0.064*	+/-.26	-0.25*	+/-.088	-0.032	0.035	-0.079
Plutonium-239/240 (pCi/L)	8	0.19*	+/-.14	-0.035*	+/-.068	0.039	0.025	0.13
Radium-226 (pCi/L)	8	0.77	+/-.9	0.003*	+/-.003	0.2	0.08	0.2
Radium-228 (pCi/L)	8	1.3	+/-.56	0.01*	+/-1.3	0.5	0.2	0.5
Strontium-89/90 (pCi/L)	8	0.55*	+/-1.2	-0.36*	+/-1.9	0.054	0.11	e
Total Radium Alpha (pCi/L)	8	0.41	+/-.26	0.042*	+/-.12	0.19	0.049	e
Technetium-99 (pCi/L)	8	20.0	+/-13	-1.0*	+/-7.6	5.5	2.4	0.0055
Thorium-228 (pCi/L)	8	0.59	+/-.34	-0.25*	+/-.28	0.035	0.088	0.0088
Thorium-230 (pCi/L)	8	0.36	+/-.22	-1.1*	+/-.17	-0.19	0.20	-0.064
Thorium-232 (pCi/L)	8	0.022*	+/-.044	-0.26*	+/-.098	-0.052	0.032	-0.10
Thorium-234 (pCi/L)	8	0.07*	+/-.1	-0.063*	+/-.041	-0.004	0.02	0.0
Tritium (pCi/L)	8	19000.0	+/-960	1100.0	+/-610	8112.5	2013.4	0.4056
Uranium-234 (pCi/L)	8	0.12*	+/-.19	-0.13*	+/-.12	-0.028	0.032	-0.0056
Uranium-235 (pCi/L)	8	0.049*	+/-.07	-0.028*	+/-.055	-0.00030	0.0083	-0.00010
Uranium-238 (pCi/L)	8	0.07*	+/-.1	-0.063*	+/-.041	-0.004	0.02	-0.0006

(e) Not applicable

* Provisional Result

1

Table 4.17. Y-12 Plant Discharge Point 550, OUTFALL 550

From: 2003/01/01 To: 2003/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	365	0.044	0.009	0.02	d	d
pH, Standard Unit	52	7.6	6.8	d	9/ 6(e)	0
Mercury	52	0.0005	<0.0002	<0.0002	0.004	0

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

1

Table 4.18. Y-12 Plant Discharge Point 551, CENTRAL MERCURY TREATMENT UNIT

From: 2003/01/01 To: 2003/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	365	0.062	0.004	0.01	d	d
pH, Standard Unit	52	7.6	6.6	d	9/ 6(e)	0
Mercury	52	0.0004	<0.0002	<0.0002	0.004	0

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

1

Table 4.19. Y-12 Plant Discharge Point 551, CENTRAL MERCURY TREATMENT UNIT

From: 2003/01/01 To: 2003/12/31

		Concentration						Percentage of	
Parameter	Number of Samples	Max	+/-	Min	+/-	Average	Standard	DCG	Total Curies
Alpha activity (pCi/L)	12	35.0	+/-13	-5.4*	+/-6.7	8.9	3.3	e	1.4E-04
Americium-241 (pCi/L)	12	0.44	+/-.34	-0.4*	+/-.18	-0.006	0.07	-0.02	-1E-07
Beta activity (pCi/L)	12	77.0	+/-17	1.6*	+/-45	22	6.0	e	3.5E-04
Cobalt-60 (pCi/L)	12	0.96*	+/-1.7	-1.5*	+/-2	0.22	0.20	0.0044	3.5E-06
Cesium-137 (pCi/L)	12	1.3*	+/-2	-2.1*	+/-2.3	-0.31	0.30	-0.010	-4.8E-06
Gamma Activity (pCi/L)	12	3.1*	+/-17	-13.0*	+/-15	-3.5	1.5	e	-5.6E-05
Neptunium-237 (pCi/L)	12	0.037*	+/-.093	-0.052*	+/-.12	-0.013	0.0082	-0.042	-2.0E-07
Plutonium-238 (pCi/L)	12	0.3*	+/-.37	-0.15*	+/-.086	0.05	0.04	0.1	7E-07
Plutonium-239/240 (pCi/L)	12	0.054*	+/-.12	-0.11*	+/-.096	-0.032	0.015	-0.11	-5.1E-07
Radium-226 (pCi/L)	12	0.92	+/-.68	-0.24*	+/-.17	0.34	0.095	0.34	5.3E-06
Radium-228 (pCi/L)	12	2.1	+/-1	-0.18*	+/-.61	1.0	0.18	1.0	1.6E-05
Strontium-89/90 (pCi/L)	12	4.1	+/-2.1	-1.6*	+/-2.1	0.022	0.43	e	3.5E-07
Total Radium Alpha (pCi/L)	12	1.2	+/-.32	0.31*	+/-.27	0.63	0.070	e	1.0E-05
Technetium-99 (pCi/L)	12	82.0	+/-8.6	5.5*	+/-8	32	8.1	0.032	5.1E-04
Thorium-228 (pCi/L)	12	0.94	+/-.45	-0.33*	+/-.24	0.068	0.096	0.017	1.1E-06
Thorium-230 (pCi/L)	12	0.32	+/-.25	-1.7*	+/-.24	-0.26	0.17	-0.086	-4.1E-06
Thorium-232 (pCi/L)	12	0.037*	+/-.13	-0.071*	+/-.093	-0.0062	0.0095	-0.012	-9.7E-08
Thorium-234 (pCi/L)	12	9.5	+/-1.3	0.46	+/-.24	3.6	0.82	0.036	5.7E-05
Tritium (pCi/L)	12	1000.0	+/-600	-220.0*	+/-500	219.4	103.4	0.01100	3.470E-03
Uranium-234 (pCi/L)	12	5.0	+/-.85	0.41	+/-.23	2.0	0.47	0.41	3.2E-05
Uranium-235 (pCi/L)	12	0.45	+/-.29	0.0*	+/-0	0.14	0.042	0.024	2.2E-06
Uranium-236 (pCi/L)	12	0.12*	+/-.17	-0.024*	+/-.037	0.038	0.014	0.0076	6.0E-07
Uranium-238 (pCi/L)	12	9.5	+/-1.3	0.46	+/-.24	3.6	0.82	0.60	5.7E-05

(e) Not applicable

* Provisional Result

1

Table 4.20. Y-12 Plant Category I Outfalls

From: 2003/01/01 To: 2003/12/31

Outfall	Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
003	Flow, mgd	2	0.11414	0.007609	0.06087	d	d
	pH, Standard Units	2	7.6	7.3	d	9/ 4(e)	0
006	Flow, mgd	2	0.02283	0.00152	0.0122	d	d
	pH, Standard Units	2	7.9	7.8	d	9/ 4(e)	0
007	Flow, mgd	2	0.13696	0.03044	0.08370	d	d
	pH, Standard Units	2	8.0	7.9	d	9/ 4(e)	0
008	Flow, mgd	2	0.00381	0.00304	0.00342	d	d
	pH, Standard Units	2	7.7	7.4	d	9/ 4(e)	0
009	Flow, mgd	2	0.045654	0.01522	0.03044	d	d
	pH, Standard Units	2	8.3	7.7	d	9/ 4(e)	0
011	Flow, mgd	2	0.15218	0.00019	0.076	d	d
	pH, Standard Units	2	7.6	6.8	d	9/ 4(e)	0
015	Outfall closed						
018	Outfall closed						
032	Outfall was eliminated						
033	Flow, mgd	2	0.02283	0.00228	0.0125	d	d
	pH, Standard Units	2	7.8	7.7	d	9/ 4(e)	0
045	Flow, mgd	2	0.00761	0.00038	0.00057	d	d
	pH, Standard Units	2	7.7	7.6	d	9/ 4(e)	0

Table 4.20. Y-12 Plant Category I Outfalls (continued)

Outfall	Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
046	Flow, mgd	2	0.00761	0.00152	0.00456	d	d
	pH, Standard Units	2	8.3	7.7	d	9/ 4(e)	0
058	Flow, mgd	2	0.01141	0.00228	0.00684	d	d
	pH, Standard Units	2	8.5	7.7	d	9/ 4(e)	0
062	Flow, mgd	2	0.00228	0.00038	0.0013	d	d
	pH, Standard Units	2	7.6	7.4	d	9/ 4(e)	0
086	Flow, mgd	2	0.00152	0.00076	0.0011	d	d
	pH, Standard Units	2	8.1	7.8	d	9/ 4(e)	0
087	Flow, mgd	2	0.01141	0.00076	0.0061	d	d
	pH, Standard Units	2	8.6	7.7	d	9/ 4(e)	0
098	Flow, mgd	1	0.00381	0.00381	0.00381	d	d
	pH, Standard Units	1	7.9	7.9	d	9/ 4(e)	0
110	Flow, mgd	2	0.01712	0.00761	0.0124	d	d
	pH, Standard Units	2	8.1	8.0	d	9/ 4(e)	0
134	Flow, mgd	2	0.00114	0.00038	0.00076	d	d
	pH, Standard Units	2	7.9	7.8	d	9/ 4(e)	0
213	Flow, mgd	2	0.01141	0.00304	0.00722	d	d
	pH, Standard Units	2	8.4	7.2	d	9/ 4(e)	0
S01	Flow, mgd	3	0.078	0.000095	0.034	d	d
	pH, Standard Units	3	8.0	7.0	d	9/ 4(e)	0
S03	Flow, mgd	3	0.053	0.00228	0.023	d	d
	pH, Standard Units	3	8.0	7.0	d	9/ 4(e)	0
S04	Flow, mgd	3	0.053	0.00228	0.023	d	d
	pH, Standard Units	3	7.9	7.5	d	9/ 4(e)	0

Table 4.20. Y-12 Plant Category I Outfalls (continued)

Outfall	Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
S06	Flow, mgd	362	10.4	0.0178	0.35	d	d
	pH, Standard Units	11	7.8	7.1	d	9/ 4(e)	0
S07	Flow, mgd	362	3.45	0.0297	0.3	d	d
	pH, Standard Units	13	8.0	6.8	d	9/ 4(e)	0
S09	Flow, mgd	2	0.02283	0.01522	0.01286	d	d
	pH, Standard Units	2	7.0	6.9	d	9/ 4(e)	0
S15	Flow, mgd	2	0.13316	0.01141	0.07228	d	d
	pH, Standard Units	2	7.7	7.7	d	10/ 6(e)	0
S16	Flow, mgd	2	0.00304	0.00190	0.00247	d	d
	pH, Standard Units	2	7.7	7.4	d	10/ 6(e)	0
S18	Flow, mgd	2	0.3245	0.02283	0.1737	d	d
	pH, Standard Units	2	8.1	7.8	d	9/ 4(e)	0

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 4.21. Y-12 Plant Category II Outfalls

From: 2003/01/01 To: 2003/12/31

Outfall	Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
004	Flow, mgd	5	1.003	0.00266	0.223	d	d
	pH, Standard Units	5	7.8	7.4	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
010	Flow, mgd	4	0.288	0.0022	0.093	d	d
	pH, Standard Units	4	7.6	7.4	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
014	Flow, mgd	4	0.576	0.003	0.2	d	d
	pH, Standard Units	4	7.7	7.4	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
016	Flow, mgd	4	0.0432	0.00152	0.0174	d	d
	pH, Standard Units	4	7.9	7.6	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
019	Flow, mgd	4	0.01141	0.00038	0.0067	d	d
	pH, Standard Units	4	7.7	7.1	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
020	Flow, mgd	4	0.2	0.00114	0.07	d	d
	pH, Standard Units	4	7.9	7.3	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
041	Flow, mgd	4	0.01712	0.000048	0.0051	d	d
	pH, Standard Units	4	7.8	7.6	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
044	Flow, mgd	5	0.072	0.000024	0.034	d	d
	pH, Standard Units	5	8.1	7.6	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0

Table 4.21. Y-12 Plant Category II Outfalls (continued)

Outfall	Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
057	Flow, mgd	4	0.1064	0.000032	0.035	d	d
	pH, Standard Units	4	7.8	6.9	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
063	Flow, mgd	5	0.12	0.0019	0.039	d	d
	pH, Standard Units	5	8.1	7.6	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
064	Flow, mgd	4	0.0288	0.000095	0.0096	d	d
	pH, Standard Units	4	8.0	7.6	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
067	Flow, mgd	4	0.288	0.02	0.14	d	d
	pH, Standard Units	4	7.9	7.3	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
083	Flow, mgd	5	0.072	0.000095	0.018	d	d
	pH, Standard Units	5	8.1	7.2	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
088	Flow, mgd	4	0.0288	0.000095	0.0083	d	d
	pH, Standard Units	4	7.9	7.6	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
099	Flow, mgd	4	0.04	0.0114	0.02	d	d
	pH, Standard Units	4	8.2	7.4	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
102	Flow, mgd	4	0.1	0.00038	0.04	d	d
	pH, Standard Units	4	8.1	7.8	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0

Table 4.21. Y-12 Plant Category II Outfalls (continued)

Outfall	Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
126	Flow, mgd	4	0.216	0.00019	0.074	d	d
	pH, Standard Units	4	7.8	7.4	d	9/ 4(e)	0
	Total Residual Chlorine	4	<0.05	<0.05	<0.05	0.5	0
S02	Flow, mgd	276	1.08	0.0018	0.043	d	d
	pH, Standard Units	15	7.8	7.2	d	9/ 4(e)	0
	Total Residual Chlorine	5	<0.05	<0.05	<0.06	0.5	0
S08	Flow, mgd	350	2.6	0.00048	0.14	d	d
	pH, Standard Units	12	8.6	6.3	d	9/ 4(e)	0
S10	Flow, mgd	6	2.50128	0.029	0.66	d	d
	pH, Standard Units	6	8.0	7.3	d	9/ 4(e)	0
S11	Flow, mgd	4	1.09872	0.13378	0.63144	d	d
	pH, Standard Units	4	7.7	7.1	d	9/ 4(e)	0
S12	Flow, mgd	5	0.0288	0.00038	0.011	d	d
	pH, Standard Units	5	7.6	6.5	d	9/ 4(e)	0
S13	Flow, mgd	4	1.09872	0.05494	0.6117	d	d
	pH, Standard Units	5	7.93	7.1	d	9/ 4(e)	0
S17	Flow, mgd	7	0.98208	0.1008	0.4284	d	d
	pH, Standard Units	5	7.6	7.2	d	9/ 4(e)	0
S20	Flow, mgd	7	0.36	0.0007	0.1	d	d
	pH, Standard Units	6	7.9	7.0	d	9/ 4(e)	0
S21	Outfall eliminated						
S22	Flow, mgd	4	0.1296	0.0015	0.047	d	d
	pH, Standard Units	5	7.8	7.5	d	10/ 6(e)	0
S24	Flow, mgd	355	113.6	0.0007	3	d	d
	pH, Standard Units	7	7.9	7.4	d	9/ 4(e)	0

Table 4.21. Y-12 Plant Category II Outfalls (continued)

Outfall	Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
S25	Flow, mgd	4	0.72	0.00019	0.20	d	d
	pH, Standard Units	4	8.2	7.0	d	10/ 6(e)	0
S26	Flow, mgd	4	0.0864	0.018	0.048	d	d
	pH, Standard Units	4	8.2	7.0	d	10/ 6(e)	0
S27	Flow, mgd	4	0.432	0.0014	0.11	d	d
	pH, Standard Units	4	8.1	7.1	d	10/ 6(e)	0
S28	Flow, mgd	4	0.0432	0.0072	0.018	d	d
	pH, Standard Units	4	7.9	6.9	d	10/ 6(e)	0
S29	Flow, mgd	4	0.5	0.0014	0.1	d	d
	pH, Standard Units	4	7.8	7.3	d	10/ 6(e)	0

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 4.22. Y-12 Plant Category III Outfalls

From: 2003/01/01 To: 2003/12/31

Outfall	Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
002	Flow, mgd	13	2.399	0.022827	0.29118	d	d
	pH, Standard Units	13	7.8	7.3	d	9/ 4(e)	0
	Total Residual Chlorine	12	<0.05	<0.05	<0.05	0.5	0
034	Flow, mgd	12	0.251097	0.062774	0.14410	d	d
	pH, Standard Units	12	7.8	7.3	d	9/ 4(e)	0
	Total Residual Chlorine	12	0.375	<0.05	<0.08	0.5	0
042	Flow, mgd	12	0.027392	0.000385	0.00986	d	d
	pH, Standard Units	12	8.2	7.4	d	9/ 4(e)	0
	Total Residual Chlorine	12	<0.05	<0.05	<0.05	0.5	0
047	Flow, mgd	12	0.182616	0.00913	0.0323	d	d
	pH, Standard Units	12	7.9	7.2	d	9/ 4(e)	0
	Total Residual Chlorine	12	<0.05	<0.05	<0.05	0.5	0
048	Flow, mgd	12	0.068481	0.00038	0.022	d	d
	pH, Standard Units	13	7.9	7.3	d	9/ 4(e)	0
	Total Residual Chlorine	12	<0.05	<0.05	<0.05	0.5	0
054	Flow, mgd	14	0.008752	0.000038	0.0012	d	d
	pH, Standard Units	14	8.6	6.9	d	9/ 4(e)	0
	Total Residual Chlorine	12	<0.05	<0.05	<0.05	0.5	0
071	Flow, mgd	12	0.018262	0.011414	0.015598	d	d
	pH, Standard Units	12	7.9	7.5	d	9/ 4(e)	0
	Total Residual Chlorine	12	<0.05	<0.05	<0.05	0.5	0
109	Flow, mgd	13	0.273924	0.091308	0.14228	d	d
	pH, Standard Units	13	8.0	7.5	d	9/ 4(e)	0
	Total Residual Chlorine	12	0.188	<0.05	<0.1	0.5	0

Table 4.22. Y-12 Plant Category III Outfalls (continued)

Outfall	Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
113	Flow, mgd	12	0.011414	0.000038	0.0031	d	d
	pH, Standard Units	12	8.5	7.4	d	9/ 4(e)	0
	Total Residual Chlorine	12	<0.05	<0.05	<0.05	0.5	0
114	Flow, mgd	12	0.025109	0.009131	0.01522	d	d
	pH, Standard Units	12	8.2	7.7	d	9/ 4(e)	0
	Total Residual Chlorine	12	<0.05	<0.05	<0.05	0.5	0
S05	Flow, mgd	10	0.159789	0.015979	0.067948	d	d
	pH, Standard Units	22	7.64	6.4	d	9/ 4(e)	0
	Total Residual Chlorine	12	<0.05	<0.05	<0.05	0.5	0
S14	Flow, mgd	12	0.665712	0.004565	0.09797	d	d
	pH, Standard Units	14	8.74	7.2	d	9/ 4(e)	0
	Total Residual Chlorine	12	<0.05	<0.05	<0.05	0.5	0

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 4.23. Y-12 Plant Discharge Point S17, UNNAMED TRIBUTARY TO THE CLINCH RIVER

From: 2003/01/01 To: 2003/12/31

		Concentration						Percentage of	
Parameter	Number of Samples	Max	+/-	Min	+/-	Average	Standard	DCG	Total Curies
Alpha activity (pCi/L)	12	9.0	+/-4.7	0.33*	+/-2.5	2.7	0.73	e	1.6E-03
Americium-241 (pCi/L)	12	0.24	+/-.26	-0.64*	+/-.11	-0.061	0.075	-0.20	-3.6E-05
Beta activity (pCi/L)	12	8.4	+/-4.7	-3.7*	+/-4.6	1.8	1.1	e	1.0E-03
Cobalt-60 (pCi/L)	12	1.6*	+/-2.1	-0.56*	+/-2.2	0.42	0.22	0.0083	2.5E-04
Cesium-137 (pCi/L)	12	2.5*	+/-1.8	-1.9*	+/-2.9	0.27	0.43	0.0091	1.6E-04
Gamma Activity (pCi/L)	12	9.6*	+/-15	-8.4*	+/-15	-2.4	1.5	e	-1.4E-03
Neptunium-237 (pCi/L)	12	0.048*	+/-.068	-0.1*	+/-.067	-0.04	0.01	-0.1	-2E-05
Plutonium-238 (pCi/L)	12	0.64	+/-.29	-0.12*	+/-.12	0.065	0.062	0.16	3.9E-05
Plutonium-239/240 (pCi/L)	12	0.17	+/-.15	-0.087*	+/-.071	0.010	0.018	0.034	6.1E-06
Radium-226 (pCi/L)	12	0.83	+/-2.6	-0.21*	+/-.29	0.26	0.090	0.26	1.5E-04
Radium-228 (pCi/L)	12	1.2*	+/-1	-0.67*	+/-.95	0.40	0.15	0.40	2.4E-04
Strontium-89/90 (pCi/L)	12	0.93*	+/-1.6	-2.2*	+/-1.7	-0.23	0.24	e	-1.3E-04
Total Radium Alpha (pCi/L)	12	0.91	+/-.45	-0.081*	+/-.11	0.30	0.075	e	1.8E-04
Technetium-99 (pCi/L)	12	19.0	+/-7.7	-8.3*	+/-8	2.5	2.2	0.0025	1.5E-03
Thorium-228 (pCi/L)	12	3.1	+/-.77	-0.27*	+/-.12	0.28	0.26	0.071	1.7E-04
Thorium-230 (pCi/L)	12	0.97	+/-.39	-1.4*	+/-.32	-0.21	0.17	-0.069	-1.2E-04
Thorium-232 (pCi/L)	12	0.084*	+/-.098	-0.05*	+/-.064	0.009	0.01	0.02	5E-06
Thorium-234 (pCi/L)	12	0.36	+/-.2	0.035*	+/-.1	0.23	0.035	0.0023	1.3E-04
Tritium (pCi/L)	12	700.0*	+/-560	-180.0*	+/-500	117.6	80.24	0.005900	6.960E-02
Uranium-234 (pCi/L)	12	1.8	+/-.48	0.16*	+/-.2	0.89	0.14	0.18	5.2E-04
Uranium-235 (pCi/L)	12	0.072*	+/-.12	-0.027*	+/-.055	0.021	0.010	0.0035	1.2E-05
Uranium-236 (pCi/L)	12	0.082*	+/-.093	-0.038*	+/-0	0.011	0.0092	0.0021	6.2E-06
Uranium-238 (pCi/L)	12	0.36	+/-.2	0.035*	+/-.1	0.23	0.035	0.038	1.3E-04

(e) Not applicable

* Provisional Result

1

Table 4.24. Y-12 Plant Discharge Point S19, S19, ROGER'S QUARRY
From: 2003/01/01 To: 2003/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	347	2.222	0.078	0.44	d	d
pH, Standard Unit	14	8.5	7.0	d	9/ 6(e)	0
Silver	14	<0.02	<0.02	<0.02	d	d
Aluminum	14	0.341	<0.2	<0.2	d	d
Arsenic	14	<0.2	<0.2	<0.2	d	d
Boron	14	0.101	<0.1	<0.1	d	d
Barium	14	0.0582	0.0454	0.0495	d	d
Beryllium	14	<0.0005	<0.0005	<0.0005	d	d
Calcium	14	40.9	29.5	36.3	d	d
Cadmium	14	<0.01	<0.01	<0.01	d	d
CARBON MONOXIDE	14	<0.02	<0.02	<0.02	d	d
Chromium	14	<0.02	<0.02	<0.02	d	d
Copper	14	<0.02	<0.02	<0.02	d	d
Iron	14	0.204	<0.05	<0.06	d	d
Potassium	14	2.09	<2.0	<2.0	d	d
Lithium	14	0.0138	<0.01	<0.01	d	d
Magnesium	14	11.5	8.45	9.70	d	d
Manganese	14	0.145	<0.005	<0.03	d	d
Molybdenum	14	<0.05	<0.05	<0.05	d	d
Sodium	14	2.07	1.05	1.46	d	d
Nickel	14	<0.05	<0.05	<0.05	d	d
Lead	14	<0.1	<0.1	<0.1	d	d
Antimony	14	<0.2	<0.2	<0.2	d	d
Strontium	14	0.234	0.169	0.193	d	d
Thallium	14	<0.2	<0.2	<0.2	d	d
Vanadium	14	<0.02	<0.02	<0.02	d	d
Zinc	14	0.136	<0.05	<0.06	d	d

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 4.25. Y-12 Plant Discharge Point S19, S19, ROGER'S QUARRY

From: 2003/01/01 To: 2003/12/31

		Concentration						Percentage of	
Parameter	Number of Samples	Max	+/-	Min	+/-	Average	Standard	DCG	Total Curies
Alpha activity (pCi/L)	12	3.1	+/-2	-0.27*	+/-1.8	1.1	0.27	e	6.9E-04
Americium-241 (pCi/L)	12	0.22	+/-.23	-0.29*	+/-.23	0.011	0.050	0.035	6.4E-06
Beta activity (pCi/L)	12	6.1*	+/-5	-2.4*	+/-5	1.9	0.71	e	1.2E-03
Cobalt-60 (pCi/L)	12	1.5*	+/-1.6	-2.3*	+/-2.3	-0.12	0.35	-0.0024	-7.2E-05
Cesium-137 (pCi/L)	12	2.3*	+/-2.1	-1.7*	+/-2.2	0.45	0.40	0.015	2.8E-04
Gamma Activity (pCi/L)	12	12.0*	+/-15	-14.0*	+/-15	-1.49	2.21	e	-9.08E-04
Neptunium-237 (pCi/L)	12	0.072*	+/-.17	-0.098*	+/-.11	0.00090	0.014	0.0029	5.3E-07
Plutonium-238 (pCi/L)	12	0.63	+/-.31	-0.14*	+/-.074	0.052	0.061	0.13	3.2E-05
Plutonium-239/240 (pCi/L)	12	0.098*	+/-.11	-0.081*	+/-.095	-0.0047	0.016	-0.016	-2.8E-06
Radium-226 (pCi/L)	12	1.3	+/-.73	-0.2*	+/-.44	0.3	0.1	0.3	2E-04
Radium-228 (pCi/L)	12	1.3*	+/-1.1	-0.33*	+/-.76	0.60	0.16	0.60	3.6E-04
Strontium-89/90 (pCi/L)	12	1.1*	+/-1.2	-1.1*	+/-1.9	0.49	0.18	e	3.0E-04
Total Radium Alpha (pCi/L)	12	1.3	+/-.6	-0.051*	+/-.21	0.30	0.10	e	1.8E-04
Technetium-99 (pCi/L)	12	16.0	+/-7.3	-9.0*	+/-8.1	3.0	2.0	0.0030	1.9E-03
Thorium-228 (pCi/L)	12	0.21	+/-.15	-0.25*	+/-.23	-0.037	0.041	-0.0092	-2.2E-05
Thorium-230 (pCi/L)	12	0.69	+/-.59	-1.3*	+/-.26	-0.054	0.14	-0.018	-3.3E-05
Thorium-232 (pCi/L)	12	0.23	+/-.19	-0.16*	+/-.12	0.0066	0.027	0.013	4.0E-06
Thorium-234 (pCi/L)	12	0.42	+/-.21	0.0055*	+/-0	0.14	0.036	0.0014	8.6E-05
Tritium (pCi/L)	12	690.0*	+/-560	-400.0*	+/-420	-3.333	90.28	-0.0002	-2.030E-03
Uranium-234 (pCi/L)	12	0.44	+/-.26	-0.015*	+/-.15	0.18	0.040	0.037	1.1E-04
Uranium-235 (pCi/L)	12	0.083*	+/-.11	-0.11*	+/-.08	-0.012	0.017	-0.0020	-7.5E-06
Uranium-236 (pCi/L)	12	0.074*	+/-.086	-0.039*	+/-.036	0.014	0.0089	0.0028	8.7E-06
Uranium-238 (pCi/L)	12	0.42	+/-.21	0.0055*	+/-0	0.14	0.036	0.024	8.6E-05

(e) Not applicable

* Provisional Result

1

Table 4.26. Sediment

Location	Date Taken	Parameter	Result	EPA Qual	Unit	Prec	MDA
94221	13-Aug-03	Hg	37.1		ug/g		
94221	13-Aug-03	Moisture	9.4		%		
94221	13-Aug-03	PCB	310		ug/kg		
94221	13-Aug-03	PCB-1016	51	U	ug/kg		
94221	13-Aug-03	PCB-1221	51	U	ug/kg		
94221	13-Aug-03	PCB-1232	51	U	ug/kg		
94221	13-Aug-03	PCB-1242	51	U	ug/kg		
94221	13-Aug-03	PCB-1248	51	U	ug/kg		
94221	13-Aug-03	PCB-1254	210		ug/kg		
94221	13-Aug-03	PCB-1260	100		ug/kg		
94221	13-Aug-03	Ra-226	0.42		pCi/g	+/-.32	1.3
94221	13-Aug-03	Ra-228	4.9		pCi/g	+/-3.5	6.9
94221	13-Aug-03	T_Ra_Alpha	2.6		pCi/g	+/-1.2	0.94
94221	13-Aug-03	T_U_alpha	2.1		pCi/g	+/-.52	.17
94221	13-Aug-03	Th-228	0.46		pCi/g	+/-.24	.19
94221	13-Aug-03	Th-230	0.77		pCi/g	+/-.4	.15
94221	13-Aug-03	Th-232	0.36		pCi/g	+/-.2	.15
94221	13-Aug-03	Th-234	1.2		pCi/g	+/-.26	.050
94221	13-Aug-03	U	7.56		ug/g	+/-.76	
94221	13-Aug-03	U-234	0.81		pCi/g	+/-.21	.060
94221	13-Aug-03	U-235	0.047		pCi/g	+/-.057	.062
94221	13-Aug-03	U-238	1.2		pCi/g	+/-.26	.050
94221	13-Aug-03	U235%	0.535		wt %	+/-.05	
S24	13-Aug-03	Hg	0.167		ug/g		
S24	13-Aug-03	Moisture	38.3		%		
S24	13-Aug-03	PCB	490		ug/kg		
S24	13-Aug-03	PCB-1016	51	U	ug/kg		
S24	13-Aug-03	PCB-1221	51	U	ug/kg		

Table 4.26. Sediment (continued)

Location	Date Taken	Parameter	Result	EPA Qual	Unit	Prec	MDA
S24	13-Aug-03	PCB-1232	51	U	ug/kg		
S24	13-Aug-03	PCB-1242	51	U	ug/kg		
S24	13-Aug-03	PCB-1248	51	U	ug/kg		
S24	13-Aug-03	PCB-1254	51	U	ug/kg		
S24	13-Aug-03	PCB-1260	490		ug/kg		
S24	13-Aug-03	Ra-226	-0.16		pCi/g	+/-.1	1.2
S24	13-Aug-03	Ra-228	1.9		pCi/g	+/-4	9.4
S24	13-Aug-03	T_Ra_Alpha	3.7		pCi/g	+/-1.3	1.3
S24	13-Aug-03	T_U_alpha	12		pCi/g	+/-1.6	0.15
S24	13-Aug-03	Th-228	0.52		pCi/g	+/-.17	.10
S24	13-Aug-03	Th-230	0.39		pCi/g	+/-.2	.088
S24	13-Aug-03	Th-232	0.25		pCi/g	+/-.11	.069
S24	13-Aug-03	Th-234	8.4		pCi/g	+/-.98	.055
S24	13-Aug-03	U	36.9		ug/g	+/-3.7	
S24	13-Aug-03	U-234	3.9		pCi/g	+/-.53	.056
S24	13-Aug-03	U-235	0.25		pCi/g	+/-.11	.047
S24	13-Aug-03	U-238	8.2		pCi/g	+/-.96	.050
S24	13-Aug-03	U235%	0.379		wt %	+/-.05	

Table 4.27. Y-12 Plant Discharge Point SS6, SANITARY SEWER STATION 6

From: 2003/01/01 To: 2003/12/31

		Concentration(a)			Reference	Number of Values
Parameter	Number of Samples	Max	Min	Avg	Value(b)	Exceeding Reference
Flow, gpd	365	3072000.0	372000.0	642000.0	d	d
pH, Sandard Unit	55	7.9	7.0	d	9/ 6(e)	0
Silver	53	0.0162	0.0005	0.003	0.1	0
Aluminum	53	2.15	<0.2	<0.4	d	d
Arsenic	53	0.0262	<0.002	<0.003	0.015	2
Boron	53	<0.1	<0.1	<0.1	d	d
Beryllium	53	<0.0005	<0.0002	<0.0002	d	d
Benzene	11	0.005U	0.005U	0.005U	0.015	0
Biochemical Oxygen	53	82.8	10.1	33.7	300	0
Cadmium	53	<0.001	<0.001	<0.001	0.005	0
Cobalt	46	0.0076	0.0005	0.002	d	d
Chromium	53	0.0632	<0.004	<0.006	0.075	0
Copper	53	0.0954	0.0095	0.031	0.21	0
Cyanide	13	0.0068	<0.005	<0.006	0.062	0
Iron	53	19.1	0.203	1.57	15	1
Mercury	53	0.0249	<0.0002	<0.001	0.035	0
Kjeldahl Nitrogen	53	19.5	<2.0	<12	90	0
Methylene chloride	11	0.005U	0.005U	0.005U	0.041	0
Manganese	53	0.122	0.0267	0.0501	d	d
Nickel	53	0.0235	<0.002	<0.004	0.032	0
Nitrate/Nitrite as Nitrogen	53	2.11	0.275	1.10	10	0
Oil and Grease	26	15.3	<5.5	<7.2	50	0
Lead	53	0.0097	<0.0002	<0.001	0.074	0
Phenols - Total Recoverable	53	0.0273	<0.005	<0.01	0.5	0
Selenium	53	<0.2	<0.004	<0.02	d	d
Suspended Solids	53	203.0	10.0	49.1	300	0
Toluene	11	0.005U	0.005U	0.005U	0.02	0

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

1

Table 4.28. Y-12 Plant Discharge Point SS6, SANITARY SEWER STATION 6

From: 2003/01/01 To: 2003/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Trichloroethene	11	0.005U	0.005U	0.005U	0.027	0
Zinc	53	0.17	0.0294	0.080	0.75	0

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

2

Table 4.29. Y-12 Plant Discharge Point SS6, SANITARY SEWER STATION 6

From: 2003/01/01 To: 2003/12/31

Parameter	Number of Samples	Concentration Max	+/-	Min	+/-	Average	Percentage of Standard	DCG	Total Curies
Alpha activity (pCi/L)	52	12.0*	+/-15	-3.5*	+/-3.9	4.8	0.48	e	4.3E-03
Beta activity (pCi/L)	52	28.0	+/-13	-12.0*	+/-10	6.37	0.888	e	5.65E-03
Cobalt-60 (pCi/L)	1	0.67*	+/-2.2	0.67*	+/-2.2	0.67		0.013	5.9E-04
Cesium-137 (pCi/L)	1	0.77*	+/-2.1	0.77*	+/-2.1	0.77		0.026	6.8E-04
Gamma Activity (pCi/L)	52	17.0*	+/-15	-18.0*	+/-15	-2.01	1.09	e	-1.78E-03
Plutonium-238 (pCi/L)	1	-0.058*	+/-.11	-0.058*	+/-.11	-0.058		-0.14	-5.2E-05
Plutonium-239/240 (pCi/L)	1	0.072*	+/-.12	0.072*	+/-.12	0.072		0.24	6.4E-05
Radium-228 (pCi/L)	1	-9.4*	+/-12	-9.4*	+/-12	-9.4		-9.4	-8.3E-03
Uranium-234 (pCi/L)	52	5.7	+/-1.4	1.0	+/-.3	2.8	0.14	0.55	2.5E-03
Uranium-235 (pCi/L)	52	0.47	+/-.27	-0.1*	+/-.051	0.0885	0.01	0.01	8E-05
Uranium-236 (pCi/L)	52	0.31	+/-.19	-0.052*	+/-.057	0.043	0.0084	0.0086	3.8E-05
Uranium-238 (pCi/L)	52	3.8	+/-.65	0.56	+/-.29	1.9	0.11	0.32	1.7E-03

(e) Not applicable

* Provisional Result

1

Table 4.30. Y-12 Plant Discharge Point 94221, SWHISS STATION 9422-1

From: 2003/01/01 To: 2003/12/31

		Concentration(a)			Reference	Number of Values
Parameter	Number of Samples	Max	Min	Avg	Value(b)	Exceeding Reference
Flow, mgd	365	95.8	3.7	9.7	d	d
pH, Standard Unit	151	8.6	7.1	d	9/ 6(e)	0
Silver	148	<0.02	<0.02	<0.02	0.0041	0
Aluminum	148	4.27	<0.2	<0.5	d	d
Arsenic	148	<0.2	<0.2	<0.2	0.0014	0
Boron	148	<0.1	<0.1	<0.1	d	d
Barium	148	0.0786	0.0386	0.0449	d	d
Beryllium	148	<0.0005	<0.0005	<0.0005	0.0013	0
Calcium	148	51.2	22.1	39.7	d	d
Cadmium	148	<0.01	<0.01	<0.01	0.0039	0
Cobalt	148	<0.02	<0.02	<0.02	d	d
Chromium	148	<0.02	<0.02	<0.02	0.016	0
Copper	148	0.0307	<0.02	<0.02	0.0177	1
Iron	148	4.0	0.0784	0.40	d	d
Mercury	398	0.0086	<0.0002	<0.0005	0.00015	393
Potassium	148	3.72	<2.0	<2.1	d	d
Lithium	148	0.0618	<0.01	<0.02	d	d
Magnesium	148	12.5	4.51	10.2	d	d
Manganese	148	0.418	0.0158	0.0532	d	d
Molybdenum	148	<0.05	<0.05	<0.05	d	d
Sodium	148	38.4	3.44	8.75	d	d
Ammonia as Nitrogen	148	0.868	<0.2	<0.2	d	d
Nickel	148	<0.05	<0.05	<0.05	1.418	0
Nitrate/Nitrite as Nitrogen	148	4.13	0.384	1.15	10	0
Lead	148	<0.1	<0.1	<0.1	0.0817	0
Antimony	148	<0.2	<0.2	<0.2	4.31	0
Selenium	148	<0.2	<0.2	<0.2	0.02	0

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

1

Table 4.31. Y-12 Plant Discharge Point 94221, SWHISS STATION 9422-1

From: 2003/01/01 To: 2003/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Strontium	148	0.138	0.0568	0.105	d	d
Suspended Solids	148	147.0	1.0	11	d	d
Thorium	148	<0.2	<0.2	<0.2	d	d
Titanium	148	0.083	<0.05	<0.05	d	d
Thallium	148	<0.2	<0.2	<0.2	0.0063	0
Vanadium	296	<0.02	<0.02	<0.02	d	d
Zinc	148	0.138	<0.05	<0.05	0.117	1
Zirconium	148	<0.2	<0.2	<0.2	d	d

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

2

Table 4.32. Y-12 Plant Discharge Point STA304, STATION 304, BEAR CREEK AT HIGHWAY 95.

From: 2003/01/01 To: 2003/12/31

		Concentration(a)			Reference	Number of Values
Parameter	Number of Samples	Max	Min	Avg	Value(b)	Exceeding Reference
Flow, mgd	365	62.04	0.417	6.50	d	d
pH, Std Unit	23	7.6	6.9	d	9/ 6(e)	0
Silver	12	<0.02	<0.02	<0.02	0.0041	0
Aluminum	12	2.09	<0.2	<0.6	d	d
Arsenic	12	<0.2	<0.2	<0.2	0.0014	0
Boron	12	<0.1	<0.1	<0.1	d	d
Barium	12	0.0742	0.0496	0.0595	d	d
Beryllium	12	<0.0005	<0.0005	<0.0005	0.0013	0
Calcium	12	55.8	29.7	42.7	d	d
Cadmium	12	<0.01	<0.01	<0.01	0.0039	0
Chloride	12	10.4	4.89	6.7067	d	d
Cobalt	12	<0.02	<0.02	<0.02	d	d
Chromium	12	<0.02	<0.02	<0.02	0.016	0
Copper	12	<0.02	<0.02	<0.02	0.0177	0
Iron	12	1.43	0.0929	0.445	d	d
Mercury	12	<0.0002	<0.0002	<0.0002	0.00015	0
Potassium	12	<2.0	<2.0	<2.0	d	d
Lithium	12	<0.01	<0.01	<0.01	d	d
Magnesium	12	16.0	9.33	11.9	d	d
Manganese	12	0.186	0.0107	0.0639	d	d
Molybdenum	12	<0.05	<0.05	<0.05	d	d
Sodium	12	5.58	3.12	4.34	d	d
Nickel	12	<0.05	<0.05	<0.05	1.418	0
Nitrite as Nitrogen	12	<0.3	<0.015	<0.1	d	d
Nitrate as Nitrogen	12	4.29	1.1	2.3	d	d
Lead	12	<0.1	<0.1	<0.1	0.0817	0
Phenols - Total Recoverable	12	0.0054	<0.005	<0.005	d	d

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 4.33. Y-12 Plant Discharge Point STA304, STATION 304, BEAR CREEK AT HIGHWAY 95.

From: 2003/01/01 To: 2003/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Antimony	12	<0.2	<0.2	<0.2	4.31	0
Selenium	12	<0.2	<0.2	<0.2	0.02	0
Strontium	12	0.0989	0.0523	0.0743	d	d
Sulfate	12	13.8	6.42	9.54	d	d
Suspended Solids	12	21.8	<1.0	<5.7	d	d
Thorium	12	<0.2	<0.2	<0.2	d	d
Titanium	12	0.0539	<0.05	<0.05	d	d
Thallium	12	<0.2	<0.2	<0.2	0.0063	0
Vanadium	12	<0.02	<0.02	<0.02	d	d
Zinc	12	<0.05	<0.05	<0.05	0.117	0
Zirconium	12	<0.2	<0.2	<0.2	d	d

(a) Units in mg/L unless otherwise indicated.
(b) NPDES permit limits.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

2

Table 4.34. Y-12 Plant Discharge Point STA304, STATION 304, BEAR CREEK AT HIGHWAY 95.

From: 2003/01/01 To: 2003/12/31

Parameter	Number of Samples	Concentration Max	+/-	Min	+/-	Average	Standard	Percentage of DCG	Total Curies
Alpha activity (pCi/L)	12	19.0	+/-5.2	5.8	+/-2.8	12	1.1	e	1.1E-01
Americium-241 (pCi/L)	12	0.28*	+/-.33	-0.49*	+/-.49	-0.098	0.068	-0.33	-8.8E-04
Beta activity (pCi/L)	12	27.0	+/-7.1	-35.0*	+/-30	13.1	4.75	e	1.18E-01
Cobalt-60 (pCi/L)	12	2.1*	+/-2.1	-2.5*	+/-2.1	0.51	0.34	0.010	4.6E-03
Cesium-137 (pCi/L)	12	2.5*	+/-2.1	-0.97*	+/-2.4	0.27	0.29	0.0091	2.5E-03
Gamma Activity (pCi/L)	12	13.0*	+/-16	-14.0*	+/-15	1.90	2.27	e	1.70E-02
Neptunium-237 (pCi/L)	12	0.093*	+/-.11	-0.16*	+/-.12	-0.0099	0.021	-0.033	-8.9E-05
Plutonium-238 (pCi/L)	12	0.41	+/-.2	-0.33*	+/-.093	0.010	0.054	0.026	9.5E-05
Plutonium-239/240 (pCi/L)	12	0.08*	+/-.13	-0.14*	+/-.09	-0.003	0.02	-0.01	-3E-05
Radium-226 (pCi/L)	12	0.91	+/-1.9	-0.048*	+/-.036	0.39	0.089	0.39	3.5E-03
Radium-228 (pCi/L)	12	1.3*	+/-.87	-0.67*	+/-.47	0.33	0.16	0.33	3.0E-03
Strontium-89/90 (pCi/L)	12	3.7	+/-2.2	-1.0*	+/-1.3	0.13	0.36	e	1.2E-03
Total Radium Alpha (pCi/L)	12	0.93	+/-.37	-0.011*	+/-.11	0.27	0.070	e	2.4E-03
Technetium-99 (pCi/L)	12	32.0	+/-7.3	-1.5*	+/-8.2	14	2.8	0.014	1.2E-01
Thorium-228 (pCi/L)	12	0.43	+/-.34	-1.4*	+/-.26	-0.080	0.13	-0.020	-7.2E-04
Thorium-230 (pCi/L)	12	0.98	+/-.41	-0.52*	+/-.24	0.070	0.10	0.023	6.2E-04
Thorium-232 (pCi/L)	12	0.12*	+/-.12	-0.096*	+/-.083	0.0047	0.016	0.0094	4.2E-05
Thorium-234 (pCi/L)	12	8.3	+/-1.2	3.0	+/-.6	5.8	0.47	0.058	5.2E-02
Tritium (pCi/L)	12	440.0*	+/-590	-510.0*	+/-500	-1.917	83.50	-0.00010000	-1.7200E-02
Uranium-234 (pCi/L)	12	4.1	+/-.71	1.7	+/-.56	2.8	0.21	0.56	2.5E-02
Uranium-235 (pCi/L)	12	0.3	+/-.18	0.0*	+/-0	0.1	0.03	0.02	1E-03
Uranium-236 (pCi/L)	12	0.14	+/-.11	-0.0099*	+/-.057	0.051	0.015	0.010	4.6E-04
Uranium-238 (pCi/L)	12	8.3	+/-1.2	3.0	+/-.6	5.8	0.47	0.97	5.2E-02

(e) Not applicable

* Provisional Result

1

Table 4.35. Storm Water Data Above Screening Levels

Location (Outfall) *048*

Parameter	Taken Date	Result	Result Units	Screening Level	Units	Rationale
Copper	2/14/2003 10:00:00	.0385	mg/L	0.0177	mg/L	TN Water Quality Criteria/Fish and Aquatic Life
Copper	2/14/2003 1:05:00 PM	.0498	mg/L	0.0177	mg/L	TN Water Quality Criteria/Fish and Aquatic Life
Dieldrin	2/14/2003 1:05:00 PM	.000011	mg/L	0.0000014	mg/L	TN Water Quality Criteria/Recreation
Mercury	2/14/2003 10:00:00	.00058	mg/L	0.000051	mg/L	TN Water Quality Criteria/Recreation
Mercury	2/14/2003 1:05:00 PM	.000422	mg/L	0.000051	mg/L	TN Water Quality Criteria/Recreation
Zinc	2/14/2003 1:05:00 PM	.355	mg/L	0.117	mg/L	TN Water Quality Criteria/Fish and Aquatic Life
Zinc	2/14/2003 10:00:00	.221	mg/L	0.117	mg/L	TN Water Quality Criteria/Fish and Aquatic Life

Location (Outfall) *054*

Parameter	Taken Date	Result	Result Units	Screening Level	Units	Rationale
Copper	7/9/2003 4:35:00 PM	.0343	mg/L	0.0177	mg/L	TN Water Quality Criteria/Fish and Aquatic Life
Copper	7/9/2003 7:45:00 PM	.031	mg/L	0.0177	mg/L	TN Water Quality Criteria/Fish and Aquatic Life

Location (Outfall) *057*

Parameter	Taken Date	Result	Result Units	Screening Level	Units	Rationale
Copper	7/28/2003 9:26:00 PM	.0322	mg/L	0.0177	mg/L	TN Water Quality Criteria/Fish and Aquatic Life
Fecal Coliform Bacteria	7/28/2003 6:45:00 PM	7000.	col/100ml	1000	col/100mL	TN Water Quality Criteria/Recreation
Phosphorus	7/28/2003 9:26:00 PM	.178	mg/L	0.1	mg/L	EPA Ambient Water Quality Criteria Guideline
Zinc	7/28/2003 9:26:00 PM	.137	mg/L	0.117	mg/L	TN Water Quality Criteria/Fish and Aquatic Life

Table 4.35. Storm Water Data Above Screening Levels (continued)

Location (Outfall) *135*

Parameter	Taken Date	Result	Result Units	Screening Level	Units	Rationale
Copper	7/9/2003 4:45:00 PM	.0346	mg/L	0.0177	mg/L	TN Water Quality Criteria/Fish and Aquatic Life
Phosphorus	7/9/2003 10:15:00 PM	.138	mg/L	0.1	mg/L	EPA Ambient Water Quality Criteria Guideline
Total Suspended Solids	7/9/2003 4:45:00 PM	87.5	mg/L	60	mg/L	Effluent Guideline 40 CFR 433
Zinc	7/9/2003 4:45:00 PM	.441	mg/L	0.117	mg/L	TN Water Quality Criteria/Fish and Aquatic Life
Zinc	7/9/2003 10:15:00 PM	.181	mg/L	0.117	mg/L	TN Water Quality Criteria/Fish and Aquatic Life

Location (Outfall) *200*

Parameter	Taken Date	Result	Result Units	Screening Level	Units	Rationale
Mercury	7/22/2003 4:09:00 PM	.000734	mg/L	0.000051	mg/L	TN Water Quality Criteria/Recreation
Mercury	7/22/2003 1:30:00 PM	.000731	mg/L	0.000051	mg/L	TN Water Quality Criteria/Recreation
Phosphorus	7/22/2003 4:09:00 PM	.115	mg/L	0.1	mg/L	EPA Ambient Water Quality Criteria Guideline

Location (Outfall) *S02*

Parameter	Taken Date	Result	Result Units	Screening Level	Units	Rationale
Alpha activity	1/21/2003 7:30:00 AM	170.	pCi/L	15	pCi/L	SDWA MCL 40 CFR 141.15
Uranium-234	1/21/2003 7:30:00 AM	61.	pCi/L	25	pCi/L	5% Derived Concentration Guideline
Uranium-238	1/21/2003 7:30:00 AM	120.	pCi/L	30	pCi/L	5% Derived Concentration Guideline

Location (Outfall) *S03*

Parameter	Taken Date	Result	Result Units	Screening Level	Units	Rationale
Fecal Coliform Bacteria	7/22/2003 1:55:00 PM	3000.	col/100ml	1000	col/100mL	TN Water Quality Criteria/Recreation
Phosphorus	7/22/2003 5:45:00 PM	.145	mg/L	0.1	mg/L	EPA Ambient Water Quality Criteria Guideline

Table 4.35. Storm Water Data Above Screening Levels (continued)

Location (Outfall) *S05*

Parameter	Taken Date	Result	Result Units	Screening Level	Units	Rationale
Alpha activity	1/21/2003 7:50:00 AM	27.	pCi/L	15	pCi/L	SDWA MCL 40 CFR 141.15
Cadmium	1/21/2003 7:50:00 AM	.0134	mg/L	0.0039	mg/L	TN Water Quality Criteria/Fish and Aquatic Life
Manganese	1/21/2003 7:50:00 AM	1.58	mg/L	0.5	mg/L	NPDES Permit, Part III-A (Toxic Pollutants)
Neptunium-237	1/21/2003 7:50:00 AM	2.	pCi/L	1.5	pCi/L	5% Derived Concentration Guideline
Nitrate as Nitrogen	1/21/2003 7:50:00 AM	82.8	mg/L	10	mg/L	SDWA MCL 40 CFR 141.23

Location (Outfall) *S12*

Parameter	Taken Date	Result	Result Units	Screening Level	Units	Rationale
Fecal Coliform Bacteria	7/22/2003 1:45:00 PM	2100.	col/100ml	1000	col/100mL	TN Water Quality Criteria/Recreation
Manganese	7/22/2003 5:20:00 PM	1.54	mg/L	0.5	mg/L	NPDES Permit, Part III-A (Toxic Pollutants)
Manganese	7/22/2003 1:45:00 PM	5.68	mg/L	0.5	mg/L	NPDES Permit, Part III-A (Toxic Pollutants)
Phosphorus	7/22/2003 1:45:00 PM	.762	mg/L	0.1	mg/L	EPA Ambient Water Quality Criteria Guideline
Phosphorus	7/22/2003 5:20:00 PM	.144	mg/L	0.1	mg/L	EPA Ambient Water Quality Criteria Guideline
Total Suspended Solids	7/22/2003 1:45:00 PM	122.	mg/L	60	mg/L	Effluent Guideline 40 CFR 433

Location (Outfall) *S17*

Parameter	Taken Date	Result	Result Units	Screening Level	Units	Rationale
Fecal Coliform Bacteria	7/22/2003 1:45:00 PM	2500.	col/100ml	1000	col/100mL	TN Water Quality Criteria/Recreation
Total Suspended Solids	7/22/2003 5:40:00 PM	63.	mg/L	60	mg/L	Effluent Guideline 40 CFR 433

Table 4.35. Storm Water Data Above Screening Levels (continued)

Location (Outfall) *S20*

Parameter	*Taken Date*	*Result*	*Result Units*	*Screening Level*	*Units*	*Rationale*
Fecal Coliform Bacteria	7/22/2003 2:25:00 PM	44000.	col/100ml	1000	col/100mL	TN Water Quality Criteria/Recreation
Total Suspended Solids	7/22/2003 2:25:00 PM	256.	mg/L	60	mg/L	Effluent Guideline 40 CFR 433
Total Suspended Solids	7/22/2003 5:27:00 PM	90.8	mg/L	60	mg/L	Effluent Guideline 40 CFR 433

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.36. REGIME=Bear Creek AREA NAME=Bear Creek Burial Grounds WMA

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Bicarbonate	(mg/L)		10	10	198	40.7	125.1	NR	NA
Chloride	(mg/L)		20	20	168	0.88	37.887	250	0
Fluoride	(mg/L)		20	11	4.82	0.103	0.995727	4	2
Nitrate/Nitrite	(mg/L)		10	9	1.2	0.033	0.334111	NR	NA
Sulfate	(mg/L)		20	20	14.3	1.74	6.8675	250	0
Aluminum, ICAP	(mg/L)		20	5	2.1	0.224	0.852	0.2	5
Antimony, ICAP	(mg/L)		20	10	0.2	0.2	0.2	0.006	10
Arsenic, ICAP	(mg/L)		20	10	0.2	0.2	0.2	0.05	10
Barium, ICAP	(mg/L)		20	20	1.23	0.0336	0.356455	2	0
Boron, ICAP	(mg/L)		20	14	22.6	0.0126	5.659679	NR	NA
Cadmium, ICAP	(mg/L)		20	10	0.01	0.01	0.01	0.005	10
Calcium, ICAP	(mg/L)		20	20	184	1.24	52.196	NR	NA
Chromium, PMS	(mg/L)		10	4	0.00935	0.00561	0.00702	NR	NA
Cobalt, ICAP	(mg/L)		20	4	0.019	0.0057	0.0106	NR	NA
Iron, ICAP	(mg/L)		20	18	8.69	0.0238	1.284111	0.3	11
Lead, PMS	(mg/L)		10	3	0.000926	0.000679	0.000773	0.015 c	0
Lead, ICAP	(mg/L)		20	10	0.1	0.1	0.1	0.015 c	10
Lithium, ICAP	(mg/L)		20	14	0.733	0.0108	0.233286	NR	NA
Magnesium, ICAP	(mg/L)		20	20	19.6	0.246	7.72475	NR	NA
Manganese, ICAP	(mg/L)		20	18	1.37	0.0143	0.4578	0.05	13
Mercury, CVAA	(mg/L)		12	1	0.00039	0.00039	0.00039	0.002	0
Nickel, PMS	(mg/L)		10	5	0.0431	0.00521	0.030862	NR	NA
Nickel, ICAP	(mg/L)		20	2	0.0238	0.0235	0.02365	0.1 d	0
Niobium, ICAP	(mg/L)		10	10	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		10	10	0.5	0.5	0.5	NR	NA
Potassium, ICAP	(mg/L)		20	13	3.39	1.21	2.04	NR	NA
Selenium, PMS	(mg/L)		10	1	0.0113	0.0113	0.0113	0.05	0
Selenium, ICAP	(mg/L)		20	10	0.2	0.2	0.2	0.05	10
Silicon, ICAP	(mg/L)		10	10	13.3	2.15	9.458	NR	NA
Sodium, ICAP	(mg/L)		20	20	306	2.13	36.227	NR	NA
Strontium, ICAP	(mg/L)		20	20	1.31	0.0176	0.24745	NR	NA

Table 4.36. (continued) REGIME=Bear Creek AREA NAME=Bear Creek Burial Grounds WMA

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Sulfur, ICAP	(mg/L)		10	10	3.66	0.522	1.6778	NR	NA
Thallium, ICAP	(mg/L)		20	10	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		10	10	0.05	0.05	0.05	NR	NA
Uranium, PMS	(mg/L)		20	2	0.00571	0.000689	0.0032	0.03	0
Uranium, ICAP	(mg/L)		10	10	2	2	2	NR	NA
Zinc, ICAP	(mg/L)		20	2	0.0152	0.0112	0.0132	5	0
Zirconium, ICAP	(mg/L)		10	10	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		29	NA	23.84	-24.26	3.056897	NR	NA
Alkalinity as CO3	(mg/L)		10	2	91.2	88.8	90	NR	NA
Alkalinity as HCO3	(mg/L)		10	10	493	12	223.46	NR	NA
Conductivity	(umho/cm)		20	20	1485	32.4	659.78	NR	NA
Dissolved Solids	(mg/L)		20	20	955	28	317.75	500	6
pH	(pH)		20	20	9.18	4.46	6.789	6.5/8.5	12
Total Suspended Solids	(mg/L)		20	5	46	2	21.48	NR	NA
Turbidity	(NTU)		10	10	22.5	0.316	4.2611	1	6
Uranium-233/234	(pCi/L)		10	7	1.45	0.16	0.622857	NR	NA
Uranium-235	(pCi/L)		10	1	0.33	0.33	0.33	24	0
Uranium-236	(pCi/L)		10	1	0.36	0.36	0.36	NR	NA
Neptunium-237	(pCi/L)		2	1	0.13	0.13	0.13	1.2	0
Uranium-238	(pCi/L)		10	1	0.31	0.31	0.31	24	0
Gross Alpha	(pCi/L)		20	4	10.26 Q	1.48	4.46	15 f	0
Gross Beta	(pCi/L)		20	7	10.78 Q	2.42	5.554286	50 a	0
Radium - Total Alpha	(pCi/L)		2	1	0.56	0.56	0.56	5 g	0
1,1,1-Trichloroethane	(ug/L)		20	6	260	5	68.16667	200	1
1,1-Dichloroethane	(ug/L)		20	12	2200	3 J	581.4167	NR	NA
1,1-Dichloroethene	(ug/L)		20	12	190	1 J	46.83333	7	8
1,2-Dichloroethane	(ug/L)		20	2	13	4 J	8.5	5	1
1,2-Dichloroethene (Total)	(ug/L)		10	10	1900	19	599.8	NR b	NA
Benzene	(ug/L)		20	6	240 J	18	87.5	5	6
Bromoform	(ug/L)		20	1	3 J	3 J	3	100 i	0

Table 4.36. (continued) REGIME=Bear Creek AREA NAME=Bear Creek Burial Grounds WMA

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloroform	(ug/L)		20	2	33	8	20.5	100 i	0
cis-1,2-Dichloroethene	(ug/L)		20	12	7100	17	1316.083	70	8
Methylene chloride	(ug/L)		20	1	1 J	1 J	1	5	0
Tetrachloroethene	(ug/L)		20	8	5100	4 J	930.875	5	7
Toluene	(ug/L)		20	1	2 J	2 J	2	1000	0
trans-1,2-Dichloroethene	(ug/L)		20	5	100	2 J	23.8	100	0
Trichloroethene	(ug/L)		20	8	3200	2 J	593.5	5	6
Vinyl chloride	(ug/L)		20	8	1300	21	359.125	2	8
Xylenes	(ug/L)		20	2	28	8	18	10000	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.37. REGIME=Bear Creek AREA NAME=EMWMF

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Aluminum, ICAP	(mg/L)		59	43	6.92 J	0.0132	0.866849	0.2	24
Aluminum, ICAP	(mg/L)	FILTERED	7	6	5.77	0.0295	1.13625	0.2	3
Antimony, ICAP	(mg/L)	FILTERED	7	4	0.0038 J	0.002 J	0.003025	0.006	0
Arsenic, ICAP	(mg/L)		24	4	0.0037	0.0026	0.00305	0.05	0
Barium, ICAP	(mg/L)		63	63	0.704	0.0553	0.197167	2	0
Barium, ICAP	(mg/L)	FILTERED	7	7	0.152	0.0174	0.063857	2	0
Boron, ICAP	(mg/L)		59	56	0.621	0.0063	0.100377	NR	NA
Boron, ICAP	(mg/L)	FILTERED	7	7	0.0305	0.0118	0.018829	NR	NA
Cadmium, ICAP	(mg/L)		24	1	0.00028 J	0.00028 J	0.00028	0.005	0
Calcium, ICAP	(mg/L)		59	59	163	1.27	40.26153	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	7	7	116	4.32	32.82	NR	NA
Chromium, ICAP	(mg/L)		63	35	0.033	0.00027	0.00404	0.1	0
Chromium, ICAP	(mg/L)	FILTERED	7	1	0.0067	0.0067	0.0067	0.1	0
Cobalt, ICAP	(mg/L)		24	1	0.0037	0.0037	0.0037	NR	NA
Cobalt, ICAP	(mg/L)	FILTERED	7	2	0.0037	0.0031	0.0034	NR	NA
Copper, ICAP	(mg/L)		24	3	0.0212	0.0127	0.0165	1.3	0
Copper, ICAP	(mg/L)	FILTERED	7	3	0.0048	0.0036	0.004333	1.3	0
Iron, ICAP	(mg/L)		59	55	24.1	0.0205	1.078316	0.3	24
Iron, ICAP	(mg/L)	FILTERED	7	7	6.06	0.133	1.371857	0.3	4
Lead, ICAP	(mg/L)		63	16	0.0066	0.00051	0.002548	0.015 c	0
Lead, ICAP	(mg/L)	FILTERED	7	1	0.0043	0.0043	0.0043	0.015 c	0
Lithium, ICAP	(mg/L)		24	24	0.0922	0.008	0.025042	NR	NA
Magnesium, ICAP	(mg/L)		59	59	26.6	0.438	6.947305	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	7	7	21	1.29	6.758571	NR	NA
Manganese, ICAP	(mg/L)		59	56	5.86	0.00032	0.367892	0.05	19
Manganese, ICAP	(mg/L)	FILTERED	7	7	1.19	0.0074	0.3708	0.05	5
Mercury, CVAA	(mg/L)		59	2	0.00019	0.00012	0.000155	0.002	0
Nickel, ICAP	(mg/L)		63	34	0.026	0.00054 J	0.004438	0.1 d	0
Nickel, ICAP	(mg/L)	FILTERED	7	3	0.0056	0.0025 J	0.0037	0.1 d	0
Potassium, ICAP	(mg/L)		59	59	6.05	0.681	2.080932	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	7	7	5.18	0.841	2.254429	NR	NA

Table 4.37. (continued) REGIME=Bear Creek AREA NAME=EMWMF

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Selenium, ICAP	(mg/L)		63	4	0.0011	0.00077 J	0.000928	0.05	0
Sodium, ICAP	(mg/L)		59	59	216	1.01	38.27712	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	7	7	7.31	0.508	2.538286	NR	NA
Strontium, ICAP	(mg/L)		63	63	1.33	0.04	0.346038	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	7	7	0.344	0.0223	0.096943	NR	NA
Uranium, PMS	(mg/L)		17	17	0.00781	0.000391 J	0.001245	0.03	0
Vanadium, ICAP	(mg/L)		63	23	0.0099	0.00032	0.002367	NR	NA
Vanadium, ICAP	(mg/L)	FILTERED	7	1	0.0081	0.0081	0.0081	NR	NA
Zinc, ICAP	(mg/L)		59	36	0.284	0.00085 J	0.018248	5	0
Zinc, ICAP	(mg/L)	FILTERED	7	5	0.0222	0.0027 J	0.01326	5	0
Static Water Level	(ft - toc)		56	NA	29.7	0.1	9.618036	NR	NA
Iodine-129	(pCi/L)		70	14	11.8	0.31	3.014286	NR	NA
Radium-226	(pCi/L)		35	20	0.28	0.04	0.123	5 g	0
Thorium-228	(pCi/L)		70	14	0.63	0.09	0.289286	16	0
Thorium-230	(pCi/L)		70	44	1.71	0.14	0.637273	12	0
Thorium-232	(pCi/L)		70	26	0.87	0.11 J	0.343846	2	0
Uranium-233/234	(pCi/L)		70	44	15.3 J	0.09	1.014773	NR	NA
Uranium-235	(pCi/L)		35	10	1.87 J	0.15 J	0.426	24	0
Uranium-236	(pCi/L)		35	13	0.85 R	0.06 R	0.225385	NR	NA
Neptunium-237	(pCi/L)		70	1	0.4 J	0.4 J	0.4	1.2	0
Plutonium-238	(pCi/L)		35	1	0.58	0.58	0.58	1.6	0
Uranium-238	(pCi/L)		70	37	25.24 J	0.06	1.415405	24	1
Americium-241	(pCi/L)		70	3	0.39 J	0.15	0.243333	1.2	0
Technetium-99	(pCi/L)		70	4	120.58	3.8 J	33.1825	4000	0
Gross Alpha	(pCi/L)		17	6	4.66	1.89	3.516667	15 f	0
Gross Beta	(pCi/L)		17	10	11.08	2.64	5.367	50 a	0
Radium - Total Alpha	(pCi/L)		17	8	2.5	0.34	1.71875	5 g	0
Tritium	(pCi/L)		72	6	1431.83	181.71	522.6683	20000	0
1,2-Dichloroethene (Total)	(ug/L)		17	1	5.5	5.5	5.5	NR b	NA
Acetone	(ug/L)		72	9	7.8 J	0.3 J	1.877778	NR	NA
cis-1,2-Dichloroethene	(ug/L)		17	1	5.5	5.5	5.5	70	0

Table 4.37. (continued) REGIME=Bear Creek AREA NAME=EMWMF

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Tetrachloroethene	(ug/L)		72	1	2	2	2	5	0
Toluene	(ug/L)		72	1	0.1 J	0.1 J	0.1	1000	0
Trichloroethene	(ug/L)		72	1	10	10	10	5	1

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.38. REGIME=Bear Creek AREA NAME=Exit Pathway Monitoring Location A

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Bicarbonate	(mg/L)		4	4	209	157	187.5	NR	NA
Carbonate	(mg/L)		4	1	2.1	2.1	2.1	NR	NA
Chloride	(mg/L)		4	4	11.9	3.8	8.7	250	0
Fluoride	(mg/L)		4	3	0.21	0.13	0.16	4	0
Nitrate/Nitrite	(mg/L)		4	4	2.6	1.5	1.875	NR	NA
Sulfate	(mg/L)		4	4	19.4	8.9	13.575	250	0
Aluminum, ICAP	(mg/L)		4	3	2	0.496	1.019333	0.2	3
Arsenic, ICAP	(mg/L)		4	1	0.0051	0.0051	0.0051	0.05	0
Barium, ICAP	(mg/L)		4	4	0.137	0.0765	0.1029	2	0
Boron, ICAP	(mg/L)		4	4	0.0241	0.0103	0.017325	NR	NA
Calcium, ICAP	(mg/L)		4	4	58.3	44.1	49.725	NR	NA
Chromium, ICAP	(mg/L)		4	2	0.0193	0.0115	0.0154	0.1	0
Copper, ICAP	(mg/L)		4	2	0.007	0.006	0.0065	1.3	0
Iron, ICAP	(mg/L)		4	4	3.92	0.0157	1.422925	0.3	3
Lead, ICAP	(mg/L)		4	1	0.0082	0.0082	0.0082	0.015 c	0
Lithium, ICAP	(mg/L)		4	2	0.0243	0.0225	0.0234	NR	NA
Magnesium, ICAP	(mg/L)		4	4	20.9	16.4	18.975	NR	NA
Manganese, ICAP	(mg/L)		4	4	0.115	0.0145	0.0703	0.05	2
Nickel, ICAP	(mg/L)		4	2	0.0184	0.0149	0.01665	0.1 d	0
Potassium, ICAP	(mg/L)		4	4	4.45	0.952	2.6905	NR	NA
Sodium, ICAP	(mg/L)		4	4	5.38	2.23	3.63	NR	NA
Strontium, ICAP	(mg/L)		4	4	0.15	0.116	0.128	NR	NA
Uranium, PMS	(mg/L)		4	4	0.0257	0.0103	0.0166	0.03	0
Zinc, ICAP	(mg/L)		4	3	0.0445	0.0106	0.028167	5	0
Static Water Level	(ft - toc)		4	NA	88.98	15.22	52.1125	NR	NA
Dissolved Solids	(mg/L)		4	4	319	210	258.25	500	0
Total Suspended Solids	(mg/L)		4	3	58.7	10.1	29	NR	NA
Uranium-233/234	(pCi/L)		4	4	4.23	2.44	3.5625	NR	NA
Uranium-235	(pCi/L)		4	4	0.84	0.31	0.5525	24	0
Uranium-236	(pCi/L)		4	2	0.39	0.28	0.335	NR	NA
Uranium-238	(pCi/L)		4	4	7.81	2.09	5.17	24	0

Table 4.38. (continued) REGIME=Bear Creek AREA NAME=Exit Pathway Monitoring Location A

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Technetium-99	(pCi/L)		4	3	8.7	6.8	7.64	4000	0
Gross Alpha	(pCi/L)		4	4	14.52	7.81	11.3775	15 f	0
Gross Beta	(pCi/L)		4	4	20.66	9.1	16.0675	50 a	0
Acetone	(ug/L)		4	1	3 Q	3 Q	3	NR	NA

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.39. REGIME=Bear Creek AREA NAME=Exit Pathway Monitoring Location B

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		8	8	44.3	12.8	26.9	250	0
Fluoride	(mg/L)		8	8	0.285	0.105	0.185	4	0
Nitrate Nitrogen	(mg/L)		8	8	25.9	7.61	16.495	10	6
Sulfate	(mg/L)		8	8	33	12.3	23.25	250	0
Antimony, ICAP	(mg/L)		8	8	0.2	0.2	0.2	0.006	8
Arsenic, ICAP	(mg/L)		8	8	0.2	0.2	0.2	0.05	8
Barium, ICAP	(mg/L)		8	8	0.162	0.0443	0.094338	2	0
Boron, ICAP	(mg/L)		8	1	0.122	0.122	0.122	NR	NA
Cadmium, ICAP	(mg/L)		8	8	0.01	0.01	0.01	0.005	8
Calcium, ICAP	(mg/L)		8	8	104	33.9	69.15	NR	NA
Chromium, PMS	(mg/L)		8	4	0.00876	0.0048	0.006258	NR	NA
Iron, ICAP	(mg/L)		8	7	1.53	0.0924	0.448557	0.3	3
Lead, PMS	(mg/L)		8	4	0.00697	0.00069	0.00266	0.015 c	0
Lead, ICAP	(mg/L)		8	8	0.1	0.1	0.1	0.015 c	8
Lithium, ICAP	(mg/L)		8	7	0.0245	0.0115	0.019643	NR	NA
Magnesium, ICAP	(mg/L)		8	8	33.7	20.1	27.8625	NR	NA
Manganese, ICAP	(mg/L)		8	4	0.0166	0.00969	0.012198	0.05	0
Niobium, ICAP	(mg/L)		8	8	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		8	8	0.5	0.5	0.5	NR	NA
Potassium, ICAP	(mg/L)		8	8	12.6	2.08	5.48875	NR	NA
Selenium, ICAP	(mg/L)		8	8	0.2	0.2	0.2	0.05	8
Silicon, ICAP	(mg/L)		8	8	4.88	2.28	4.3275	NR	NA
Sodium, ICAP	(mg/L)		8	8	18.5	6.49	12.83	NR	NA
Strontium, ICAP	(mg/L)		8	8	0.414	0.0924	0.248675	NR	NA
Sulfur, ICAP	(mg/L)		8	8	11	4.12	7.715	NR	NA
Thallium, PMS	(mg/L)		8	2	0.00104	0.000697	0.000869	0.002	0
Thallium, ICAP	(mg/L)		8	8	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		8	8	0.05	0.05	0.05	NR	NA
Uranium, PMS	(mg/L)		8	8	0.12	0.0058	0.028833	0.03	2
Uranium, ICAP	(mg/L)		8	8	2	2	2	NR	NA
Zirconium, ICAP	(mg/L)		8	8	0.2	0.2	0.2	NR	NA

Table 4.39. (continued) REGIME=Bear Creek AREA NAME=Exit Pathway Monitoring Location B

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Static Water Level	(ft - toc)		16	NA	42.58	-42.58	-4.44E-16	NR	NA
Alkalinity as HCO3	(mg/L)		8	8	228	167	207	NR	NA
Conductivity	(umho/cm)		16	16	1000	505	694.3125	NR	NA
Dissolved Solids	(mg/L)		8	8	480	264	351.875	500	0
pH	(pH)		16	16	7.96	7.27	7.57875	6.5/8.5	0
Total Suspended Solids	(mg/L)		8	1	3	3	3	NR	NA
Turbidity	(NTU)		8	8	14.8	0.743	3.399625	1	5
Gross Alpha	(pCi/L)		8	7	60	4.7	19.97143	15 f	3
Gross Beta	(pCi/L)		8	8	110	13	53.375	50 a	3
1,1-Dichloroethene	(ug/L)		8	2	6	3 J	4.5	7	0
1,2-Dichloroethene (Total)	(ug/L)		8	8	12	2 J	4.875	NR b	NA
Chloromethane	(ug/L)		8	1	5	5	5	NR	NA
cis-1,2-Dichloroethene	(ug/L)		8	8	12	2 J	4.875	70	0
Methylene chloride	(ug/L)		8	1	2 J	2 J	2	5	0
Trichloroethene	(ug/L)		8	8	57	6	20	5	8

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.40. REGIME=Bear Creek AREA NAME=Exit Pathway Monitoring Location C

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		8	8	84.9	6.78	44.46	250	0
Fluoride	(mg/L)		8	6	0.245	0.181	0.213833	4	0
Nitrate Nitrogen	(mg/L)		8	8	22.9	2.17	13.12625	10	6
Sulfate	(mg/L)		8	8	42.2	11.5	29.2	250	0
Antimony, ICAP	(mg/L)		8	8	0.2	0.2	0.2	0.006	8
Arsenic, ICAP	(mg/L)		8	8	0.2	0.2	0.2	0.05	8
Barium, ICAP	(mg/L)		8	8	0.247	0.0607	0.136663	2	0
Cadmium, ICAP	(mg/L)		8	8	0.01	0.01	0.01	0.005	8
Calcium, ICAP	(mg/L)		8	8	148	51.2	101.1125	NR	NA
Chromium, PMS	(mg/L)		8	4	0.00622	0.00376	0.005403	NR	NA
Iron, ICAP	(mg/L)		8	6	2.21	0.133	0.570833	0.3	2
Lead, PMS	(mg/L)		8	1	0.00444	0.00444	0.00444	0.015 c	0
Lead, ICAP	(mg/L)		8	8	0.1	0.1	0.1	0.015 c	8
Lithium, ICAP	(mg/L)		8	4	0.0196	0.0156	0.017325	NR	NA
Magnesium, ICAP	(mg/L)		8	8	40.7	23.2	30.175	NR	NA
Manganese, ICAP	(mg/L)		8	3	0.71	0.0229	0.366633	0.05	2
Niobium, ICAP	(mg/L)		8	8	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		8	8	0.5	0.5	0.5	NR	NA
Potassium, ICAP	(mg/L)		8	6	4.98	2.66	3.33	NR	NA
Selenium, ICAP	(mg/L)		8	8	0.2	0.2	0.2	0.05	8
Silicon, ICAP	(mg/L)		8	8	6.24	3.14	5.26	NR	NA
Sodium, ICAP	(mg/L)		8	8	32.6	1.84	17.29375	NR	NA
Strontium, ICAP	(mg/L)		8	8	1.21	0.0559	0.407713	NR	NA
Sulfur, ICAP	(mg/L)		8	8	13.3	3.99	9.62375	NR	NA
Thallium, ICAP	(mg/L)		8	8	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		8	8	0.05	0.05	0.05	NR	NA
Uranium, PMS	(mg/L)		8	4	0.00972	0.0023	0.005455	0.03	0
Uranium, ICAP	(mg/L)		8	8	2	2	2	NR	NA
Zirconium, ICAP	(mg/L)		8	8	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		16	NA	71.08	-71.08	0	NR	NA
Alkalinity as HCO3	(mg/L)		8	8	342	173	283.375	NR	NA

Table 4.40. (continued) REGIME=Bear Creek AREA NAME=Exit Pathway Monitoring Location C

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Conductivity	(umho/cm)		16	16	1221	542	868.875	NR	NA
Dissolved Solids	(mg/L)		8	8	624	294	453.25	500	2
pH	(pH)		16	16	7.82	6.51	7.3	6.5/8.5	0
Total Suspended Solids	(mg/L)		8	1	2	2	2	NR	NA
Turbidity	(NTU)		8	8	12.5	0.4	3.463375	1	3
Gross Alpha	(pCi/L)		8	4	9.7	2.4	6.025	15 f	0
Gross Beta	(pCi/L)		8	6	60	9.3	33.21667	50 a	1
1,2-Dichloroethene (Total)	(ug/L)		8	8	3 J	1 J	2	NR b	NA
Carbon tetrachloride	(ug/L)		8	1	2 J	2 J	2	5	0
cis-1,2-Dichloroethene	(ug/L)		8	8	3 J	1 J	2	70	0
Tetrachloroethene	(ug/L)		8	4	3 J	2 J	2.75	5	0
Trichloroethene	(ug/L)		8	8	100	19	56.625	5	8

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.41. REGIME=Bear Creek AREA NAME=Exit Pathway Monitoring Location W

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Bicarbonate	(mg/L)		9	9	238	146	185.5556	NR	NA
Chloride	(mg/L)		13	13	1440	8.7	311.3	250	4
Fluoride	(mg/L)		13	10	1.59	0.37	0.714	4	0
Nitrate/Nitrite	(mg/L)		9	9	1.6	0.13	0.72	NR	NA
Sulfate	(mg/L)		13	13	2310	9.7	639.4923	250	4
Aluminum, ICAP	(mg/L)		13	2	0.308	0.112	0.21	0.2	1
Antimony, ICAP	(mg/L)		13	3	0.4	0.2	0.333333	0.006	3
Arsenic, PMS	(mg/L)		4	2	0.0303	0.0168	0.02355	0.05	0
Arsenic, ICAP	(mg/L)		13	3	0.4	0.2	0.333333	0.05	3
Barium, ICAP	(mg/L)		13	12	0.0759	0.00914	0.04437	2	0
Boron, ICAP	(mg/L)		13	13	0.963	0.0142	0.264577	NR	NA
Cadmium, ICAP	(mg/L)		13	3	0.02	0.01	0.016667	0.005	3
Calcium, ICAP	(mg/L)		13	13	566	52	183.3538	NR	NA
Chromium, PMS	(mg/L)		4	2	0.0042	0.00407	0.004135	NR	NA
Chromium, ICAP	(mg/L)		13	3	3.26	0.0083	1.1461	0.1	2
Cobalt, ICAP	(mg/L)		13	1	0.0182	0.0182	0.0182	NR	NA
Copper, ICAP	(mg/L)		13	1	0.0399	0.0399	0.0399	1.3	0
Iron, ICAP	(mg/L)		13	13	11.3	0.0364	3.029492	0.3	11
Lead, PMS	(mg/L)		4	1	0.000577	0.000577	0.000577	0.015 c	0
Lead, ICAP	(mg/L)		13	3	0.2	0.1	0.166667	0.015 c	3
Lithium, ICAP	(mg/L)		13	7	0.641	0.0104	0.2561	NR	NA
Magnesium, ICAP	(mg/L)		13	13	234	9.12	82.37615	NR	NA
Manganese, ICAP	(mg/L)		13	11	2.08	0.0202	0.538809	0.05	9
Molybdenum, ICAP	(mg/L)		9	1	0.0315	0.0315	0.0315	NR	NA
Nickel, PMS	(mg/L)		4	3	0.0108	0.00687	0.00829	NR	NA
Nickel, ICAP	(mg/L)		13	3	0.13	0.0145	0.058033	0.1 d	1
Niobium, ICAP	(mg/L)		4	3	0.4	0.2	0.333333	NR	NA
Phosphorus, ICAP	(mg/L)		4	3	1	0.5	0.833333	NR	NA
Potassium, ICAP	(mg/L)		13	13	26.2	1.31	8.588462	NR	NA
Selenium, PMS	(mg/L)		4	2	0.125	0.0754	0.1002	0.05	2
Selenium, ICAP	(mg/L)		13	3	0.4	0.2	0.333333	0.05	3

Table 4.41. (continued) REGIME=Bear Creek AREA NAME=Exit Pathway Monitoring Location W

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Silicon, ICAP	(mg/L)		4	2	2	1.93	1.965	NR	NA
Sodium, ICAP	(mg/L)		13	13	963	5.26	201.9962	NR	NA
Strontium, ICAP	(mg/L)		13	13	9.79	0.0672	2.864292	NR	NA
Sulfur, ICAP	(mg/L)		4	4	757	475	599	NR	NA
Thallium, PMS	(mg/L)		4	2	0.00215	0.00158	0.001865	0.002	1
Thallium, ICAP	(mg/L)		13	3	0.4	0.2	0.333333	NR	NA
Titanium, ICAP	(mg/L)		4	3	0.1	0.05	0.083333	NR	NA
Uranium, PMS	(mg/L)		13	2	0.0092	0.00405	0.006625	0.03	0
Uranium, ICAP	(mg/L)		4	3	4	2	3.333333	NR	NA
Vanadium, ICAP	(mg/L)		13	1	0.0145	0.0145	0.0145	NR	NA
Zinc, ICAP	(mg/L)		13	1	0.0161	0.0161	0.0161	5	0
Zirconium, ICAP	(mg/L)		4	3	0.4	0.2	0.333333	NR	NA
Static Water Level	(ft - toc)		17	NA	65.44	-65.44	17.04118	NR	NA
Alkalinity as HCO3	(mg/L)		4	4	121	13.5	65.2	NR	NA
Conductivity	(umho/cm)		8	8	7260	4710	5940	NR	NA
Dissolved Solids	(mg/L)		13	13	4720	282	1595.692	500	5
pH	(pH)		8	8	9.7	7.04	8.215	6.5/8.5	3
Total Suspended Solids	(mg/L)		13	6	24.4	5.1	11.18333	NR	NA
Turbidity	(NTU)		4	4	101	1.23	40.665	1	4
Uranium-233/234	(pCi/L)		9	9	4.45	0.22	1.408889	NR	NA
Uranium-235	(pCi/L)		9	4	1.33	0.14	0.6175	24	0
Neptunium-237	(pCi/L)		9	1	0.15	0.15	0.15	1.2	0
Uranium-238	(pCi/L)		9	6	3.02	0.73	1.498333	24	0
Americium-241	(pCi/L)		9	1	0.11	0.11	0.11	1.2	0
Gross Alpha	(pCi/L)		13	7	12.31 Q	1.82	5.611429	15 f	0
Gross Beta	(pCi/L)		13	7	12.71	2.56	7.135714	50 a	0
Radium - Total Alpha	(pCi/L)		9	5	1.24	0.3	0.656	5 g	0
Benzene	(ug/L)		13	2	10	10	10	5	2
Chloromethane	(ug/L)		13	1	1 J	1 J	1	NR	NA

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.42. REGIME=Bear Creek AREA NAME=Exit Pathway Spring/Surface Water

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Bicarbonate	(mg/L)		33	33	222	31.9	128.1939	NR	NA
Carbonate	(mg/L)		33	1	5.4	5.4	5.4	NR	NA
Chloride	(mg/L)		49	49	119	1.2	22.27224	250	0
Fluoride	(mg/L)		49	32	8.7	0.108	0.565469	4	1
Nitrate Nitrogen	(mg/L)		16	16	378	0.979	42.78494	10	8
Nitrate/Nitrite	(mg/L)		85	79	123	0.029	28.46033	NR	NA
Sulfate	(mg/L)		49	49	59.6	2.1	17.45061	250	0
Aluminum, ICAP	(mg/L)		63	57	46.5 Q	0.0596	1.251744	0.2	31
Antimony, ICAP	(mg/L)		63	16	0.4	0.2	0.2125	0.006	16
Arsenic, ICAP	(mg/L)		63	18	0.4	0.0066	0.190567	0.05	16
Barium, ICAP	(mg/L)		63	63	1.31	0.0214	0.127751	2	0
Beryllium, ICAP	(mg/L)		63	2	0.0041 Q	0.00128	0.00269	0.004	1
Boron, ICAP	(mg/L)		63	40	1.91	0.0105	0.196145	NR	NA
Cadmium, PMS	(mg/L)		16	3	0.0619	0.00237	0.02315	0.005	2
Cadmium, ICAP	(mg/L)		63	19	0.0644	0.0013	0.011542	0.005	16
Calcium, ICAP	(mg/L)		63	63	492	10.2	70.16032	NR	NA
Chromium, PMS	(mg/L)		16	4	0.00655	0.00419	0.005408	NR	NA
Chromium, ICAP	(mg/L)		63	2	0.0546 J	0.0067	0.03065	0.1	0
Cobalt, ICAP	(mg/L)		63	2	0.0251	0.003	0.01405	NR	NA
Copper, ICAP	(mg/L)		63	2	0.0427	0.0062	0.02445	1.3	0
Iron, ICAP	(mg/L)		63	61	53.4 Q	0.0833	1.447513	0.3	33
Lead, PMS	(mg/L)		16	6	0.00187	0.000554	0.001172	0.015 c	0
Lead, ICAP	(mg/L)		63	19	0.2	0.0047	0.096447	0.015 c	18
Lithium, ICAP	(mg/L)		63	23	0.653	0.0101 J	0.09573	NR	NA
Magnesium, ICAP	(mg/L)		63	63	63.9	2.29	12.15952	NR	NA
Manganese, ICAP	(mg/L)		63	61	12.6	0.0064	0.379862	0.05	39
Mercury, CVAA	(mg/L)		49	14	339.4	0.00062	38.91433	0.002	13
Nickel, PMS	(mg/L)		16	8	0.247	0.00506	0.04106	NR	NA
Nickel, ICAP	(mg/L)		63	1	0.228	0.228	0.228	0.1 d	1
Niobium, ICAP	(mg/L)		16	16	0.4	0.2	0.2125	NR	NA
Phosphorus, ICAP	(mg/L)		16	16	1	0.5	0.53125	NR	NA

Table 4.42. (continued) REGIME=Bear Creek AREA NAME=Exit Pathway Spring/Surface Water

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Potassium, ICAP	(mg/L)		63	57	9.05	0.497	2.246667	NR	NA
Selenium, ICAP	(mg/L)		63	17	0.4	0.0055	0.200324	0.05	16
Silicon, ICAP	(mg/L)		16	16	7.72	3.73	5.02375	NR	NA
Sodium, ICAP	(mg/L)		63	63	69.4	0.542	10.5594	NR	NA
Strontium, ICAP	(mg/L)		63	63	1.31	0.0135	0.191067	NR	NA
Sulfur, ICAP	(mg/L)		16	16	18.6	3.28	7.8025	NR	NA
Thallium, ICAP	(mg/L)		63	16	0.4	0.2	0.2125	NR	NA
Titanium, ICAP	(mg/L)		16	16	0.1	0.05	0.054244	NR	NA
Uranium, PMS	(mg/L)		68	55	2.2	0.00118 J	0.103527	0.03	32
Uranium, ICAP	(mg/L)		16	16	4	2	2.125	NR	NA
Vanadium, ICAP	(mg/L)		63	1	0.0706	0.0706	0.0706	NR	NA
Zinc, ICAP	(mg/L)		63	9	0.264	0.0107	0.064444	5	0
Zirconium, ICAP	(mg/L)		16	16	0.4	0.2	0.2125	NR	NA
Alkalinity as HCO3	(mg/L)		16	16	370	67.6	184.2625	NR	NA
Conductivity	(umho/cm)		32	32	3420	320	908.9063	NR	NA
Dissolved Solids	(mg/L)		44	44	2550	57	360.8636	500	8
pH	(pH)		32	32	8.16	6.71	7.444062	6.5/8.5	0
Total Suspended Solids	(mg/L)		44	26	1070 Q	2	54.35385	NR	NA
Turbidity	(NTU)		16	16	36.1	0.709	11.38431	1	15
Thorium-231+234	(pCi/L)		2	2	47	18	32.5	400	0
Uranium-233/234	(pCi/L)		290	289	134.9	0.57	11.80315	NR	NA
Uranium-234	(pCi/L)		2	2	24	11	17.5	20	1
Uranium-235	(wt %)		2	2	0.402	0.36	0.381	NR	NA
Uranium-235	(pCi/L)		292	167	16.51	0.24	1.48485	24	0
Uranium-236	(wt %)		1	1	0.01	0.01	0.01	NR	NA
Uranium-236	(pCi/L)		290	122	16.45	0.19	1.12041	NR	NA
Neptunium-237	(pCi/L)		2	2	1	0.56	0.78	1.2	0
Uranium-238	(wt %)		2	2	99.63	99.57	99.6	NR	NA
Uranium-238	(pCi/L)		292	290	625.8	0.31	22.01372	24	82
Technetium-99	(pCi/L)		26	16	622	6.62	87.56	4000	0
Gross Alpha	(pCi/L)		18	16	42	4.3	20.0025	15 f	11

Table 4.42. (continued) REGIME=Bear Creek AREA NAME=Exit Pathway Spring/Surface Water

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Gross Beta	(pCi/L)		37	33	1000	3.31	88.72576	50 a	12
1,1,1-Trichloroethane	(ug/L)		49	3	3 J	1 J	1.666667	200	0
1,1-Dichloroethane	(ug/L)		49	6	11	1 J	4.5	NR	NA
1,1-Dichloroethene	(ug/L)		49	3	5 J	1 J	2.666667	7	0
1,2-Dichloroethane	(ug/L)		49	2	1 J	1 J	1	5	0
1,2-Dichloroethene (Total)	(ug/L)		16	6	8	1 J	4	NR b	NA
Chloroform	(ug/L)		49	3	3 J	1 J	1.666667	100 i	0
cis-1,2-Dichloroethene	(ug/L)		49	15	120	1 J	23.13333	70	2
Methylene chloride	(ug/L)		49	1	2 J	2 J	2	5	0
Tetrachloroethene	(ug/L)		49	8	59	2 J	18	5	5
Trichloroethene	(ug/L)		49	7	32	2 J	10	5	4
Vinyl chloride	(ug/L)		49	2	5	3	4	2	2

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.43. REGIME=Bear Creek AREA NAME=Oil Landfarm WMA

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Bicarbonate	(mg/L)		2	2	42.7	35.7	39.2	NR	NA
Chloride	(mg/L)		16	16	160	6.8	56.6125	250	0
Fluoride	(mg/L)		16	7	0.43	0.103	0.255714	4	0
Nitrate Nitrogen	(mg/L)		14	12	659	0.213 Q	158.2094	10	11
Nitrate/Nitrite	(mg/L)		2	1	0.27	0.27	0.27	NR	NA
Sulfate	(mg/L)		16	16	53.3	1.3	20.75375	250	0
Aluminum, ICAP	(mg/L)		16	8	43.1	0.0736	9.410175	0.2	6
Antimony, ICAP	(mg/L)		16	14	0.4	0.2	0.228571	0.006	14
Antimony, ICAP	(mg/L)	FILTERED	1	1	0.2	0.2	0.2	0.006	1
Arsenic, PMS	(mg/L)		14	4	0.0247	0.0053	0.013225	0.05	0
Arsenic, ICAP	(mg/L)		16	14	0.4	0.2	0.228571	0.05	14
Arsenic, ICAP	(mg/L)	FILTERED	1	1	0.2	0.2	0.2	0.05	1
Barium, ICAP	(mg/L)		16	16	2.35	0.073	0.720919	2	2
Barium, ICAP	(mg/L)	FILTERED	1	1	0.24 J	0.24 J	0.24	2	0
Beryllium, ICAP	(mg/L)		16	2	0.00269	0.00174	0.002215	0.004	0
Boron, ICAP	(mg/L)		16	8	4.29	0.121	1.14125	NR	NA
Boron, ICAP	(mg/L)	FILTERED	1	1	0.188 J	0.188 J	0.188	NR	NA
Cadmium, PMS	(mg/L)		14	2	0.000556	0.000523	0.00054	0.005	0
Cadmium, ICAP	(mg/L)		16	14	0.02	0.01	0.011429	0.005	14
Cadmium, ICAP	(mg/L)	FILTERED	1	1	0.01	0.01	0.01	0.005	1
Calcium, ICAP	(mg/L)		16	16	972	8.78	255.35	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	1	1	158 J	158 J	158	NR	NA
Chromium, PMS	(mg/L)		14	2	0.0521	0.0191	0.0356	NR	NA
Chromium, ICAP	(mg/L)		16	2	0.0439	0.0321	0.038	0.1	0
Cobalt, ICAP	(mg/L)		16	4	0.0593	0.0138	0.03515	NR	NA
Copper, ICAP	(mg/L)		16	2	0.039	0.0286	0.0338	1.3	0
Iron, ICAP	(mg/L)		16	14	96.8	0.0574	17.9921	0.3	10
Iron, ICAP	(mg/L)	FILTERED	1	1	0.104 J	0.104 J	0.104	0.3	0
Lead, PMS	(mg/L)		14	5	0.0693	0.00088	0.023822	0.015 c	2
Lead, ICAP	(mg/L)		16	14	0.2	0.1	0.114286	0.015 c	14
Lead, ICAP	(mg/L)	FILTERED	1	1	0.1	0.1	0.1	0.015 c	1

Table 4.43. (continued) REGIME=Bear Creek AREA NAME=Oil Landfarm WMA

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Lithium, ICAP	(mg/L)		16	14	0.145	0.0184	0.050029	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	1	1	0.0157 J	0.0157 J	0.0157	NR	NA
Magnesium, ICAP	(mg/L)		16	16	70.9	5.17	39.45	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	1	1	42.6 J	42.6 J	42.6	NR	NA
Manganese, ICAP	(mg/L)		16	13	7.37	0.00634	1.932395	0.05	8
Manganese, ICAP	(mg/L)	FILTERED	1	1	1.89 J	1.89 J	1.89	0.05	1
Mercury, CVAA	(mg/L)		16	2	0.00187	0.000448	0.001159	0.002	0
Nickel, PMS	(mg/L)		14	10	0.137	0.00647	0.04046	NR	NA
Nickel, PMS	(mg/L)	FILTERED	1	1	0.0311 J	0.0311 J	0.0311	NR	NA
Nickel, ICAP	(mg/L)		16	5	0.12	0.0219	0.06366	0.1 d	1
Niobium, ICAP	(mg/L)		14	14	0.4	0.2	0.228571	NR	NA
Niobium, ICAP	(mg/L)	FILTERED	1	1	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		14	14	1.77	0.5	0.736357	NR	NA
Phosphorus, ICAP	(mg/L)	FILTERED	1	1	0.895	0.895	0.895	NR	NA
Potassium, ICAP	(mg/L)		16	14	12.8	0.981	4.969357	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	1	1	3.43 J	3.43 J	3.43	NR	NA
Selenium, PMS	(mg/L)		14	3	0.0158	0.0109	0.012667	0.05	0
Selenium, ICAP	(mg/L)		16	14	0.4	0.2	0.228571	0.05	14
Selenium, ICAP	(mg/L)	FILTERED	1	1	0.2	0.2	0.2	0.05	1
Silicon, ICAP	(mg/L)		14	14	56.8	5.18	13.47714	NR	NA
Silicon, ICAP	(mg/L)	FILTERED	1	1	5.7	5.7	5.7	NR	NA
Sodium, ICAP	(mg/L)		16	16	84.3	2.06	29.77625	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	1	1	24.2 J	24.2 J	24.2	NR	NA
Strontium, ICAP	(mg/L)		16	16	2.67	0.0215	1.0301	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	1	1	0.59 J	0.59 J	0.59	NR	NA
Sulfur, ICAP	(mg/L)		14	14	18.3	1.4	8.817857	NR	NA
Sulfur, ICAP	(mg/L)	FILTERED	1	1	12.3	12.3	12.3	NR	NA
Thallium, PMS	(mg/L)		14	2	0.00179	0.00111	0.00145	0.002	0
Thallium, ICAP	(mg/L)		16	14	0.4	0.2	0.228571	NR	NA
Thallium, ICAP	(mg/L)	FILTERED	1	1	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		14	14	0.43	0.05	0.099429	NR	NA

Table 4.43. (continued) REGIME=Bear Creek AREA NAME=Oil Landfarm WMA

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Titanium, ICAP	(mg/L)	FILTERED	1	1	0.05	0.05	0.05	NR	NA
Uranium, PMS	(mg/L)		16	14	0.248	0.000501	0.039928	0.03	3
Uranium, PMS	(mg/L)	FILTERED	1	1	0.0157 J	0.0157 J	0.0157	0.03	0
Uranium, ICAP	(mg/L)		14	14	4	2	2.285714	NR	NA
Uranium, ICAP	(mg/L)	FILTERED	1	1	2	2	2	NR	NA
Vanadium, ICAP	(mg/L)		16	2	0.0596	0.0419	0.05075	NR	NA
Zinc, ICAP	(mg/L)		16	3	0.492	0.0144	0.282133	5	0
Zirconium, ICAP	(mg/L)		14	14	0.4	0.2	0.228571	NR	NA
Zirconium, ICAP	(mg/L)	FILTERED	1	1	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		30	NA	24.01	-24.01	0.964333	NR	NA
Alkalinity as HCO3	(mg/L)		14	14	576	77.6 Q	322.4714	NR	NA
Conductivity	(umho/cm)		28	28	5550	353	1917.25	NR	NA
Dissolved Solids	(mg/L)		16	16	4060	69	1126.313	500	13
pH	(pH)		28	28	8.79	4.38	6.906071	6.5/8.5	4
Total Suspended Solids	(mg/L)		16	9	864	3	189.3333	NR	NA
Turbidity	(NTU)		14	14	931	0.44	139.4404	1	10
Uranium-233/234	(pCi/L)		2	1	2.5	2.5	2.5	NR	NA
Uranium-236	(pCi/L)		2	1	0.56	0.56	0.56	NR	NA
Uranium-238	(pCi/L)		2	2	0.88	0.14	0.51	24	0
Gross Alpha	(pCi/L)		16	9	150	2.4 Q	39.05111	15 f	5
Gross Alpha	(pCi/L)	FILTERED	1	1	6.4 J	6.4 J	6.4	15 f	0
Gross Beta	(pCi/L)		16	14	650	16	154.5014	50 a	5
Radium - Total Alpha	(pCi/L)		2	1	0.59	0.59	0.59	5 g	0
1,1,1-Trichloroethane	(ug/L)		16	2	2 J	2 J	2	200	0
1,1-Dichloroethane	(ug/L)		16	5	12	1 J	7.4	NR	NA
1,1-Dichloroethene	(ug/L)		16	11	20	1 J	6.272727	7	2
1,2-Dichloroethene (Total)	(ug/L)		14	10	170	2 J	37.5	NR b	NA
1,2-Dichloropropane	(ug/L)		16	2	2 J	2 J	2	5	0
1,3-Dichlorobenzene	(ug/L)		2	2	4	3	3.5	NR	NA
1,4-Dichlorobenzene	(ug/L)		14	2	4 J	3 J	3.5	75	0
Benzene	(ug/L)		16	4	9	1 J	4.5	5	2

Table 4.43. (continued) REGIME=Bear Creek AREA NAME=Oil Landfarm WMA

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Carbon disulfide	(ug/L)		16	1	3 J	3 J	3	NR	NA
Carbon tetrachloride	(ug/L)		16	6	7	2 J	4.333333	5	2
Chlorobenzene	(ug/L)		16	6	11	1 J	4.333333	100	0
Chloroethane	(ug/L)		16	2	2 J	2 J	2	NR	NA
Chloroform	(ug/L)		16	8	2 J	1 J	1.5	100 i	0
Chloromethane	(ug/L)		16	1	4 J	4 J	4	NR	NA
cis-1,2-Dichloroethene	(ug/L)		16	12	170	2 J	34.91667	70	2
Tetrachloroethene	(ug/L)		16	5	42	2 J	13.2	5	2
Trichloroethene	(ug/L)		16	12	280 J	8	132.0833	5	12
Vinyl chloride	(ug/L)		16	2	29	21	25	2	2

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.44. REGIME=Bear Creek AREA NAME=Rust Spoil Area

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	1.74	1.68	1.71	250	0
Nitrate Nitrogen	(mg/L)		2	2	0.324	0.308	0.316	10	0
Sulfate	(mg/L)		2	2	3.11	2.93	3.02	250	0
Antimony, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.006	2
Arsenic, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.05	2
Barium, ICAP	(mg/L)		2	2	0.0211	0.0208	0.02095	2	0
Cadmium, ICAP	(mg/L)		2	2	0.01	0.01	0.01	0.005	2
Calcium, ICAP	(mg/L)		2	2	89.9	89.7	89.8	NR	NA
Chromium, PMS	(mg/L)		2	2	0.00657	0.00379	0.00518	NR	NA
Lead, PMS	(mg/L)		2	1	0.000664	0.000664	0.000664	0.015 c	0
Lead, ICAP	(mg/L)		2	2	0.1	0.1	0.1	0.015 c	2
Magnesium, ICAP	(mg/L)		2	2	6.29	6.2	6.245	NR	NA
Niobium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		2	2	0.5	0.5	0.5	NR	NA
Selenium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.05	2
Silicon, ICAP	(mg/L)		2	2	5.57	5.43	5.5	NR	NA
Sodium, ICAP	(mg/L)		2	2	3.71	3.32	3.515	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.0778	0.0765	0.07715	NR	NA
Sulfur, ICAP	(mg/L)		2	2	0.976	0.892	0.934	NR	NA
Thallium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		2	2	0.05	0.05	0.05	NR	NA
Uranium, ICAP	(mg/L)		2	2	2	2	2	NR	NA
Zirconium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		4	NA	36.56	-36.56	0	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	262	245	253.5	NR	NA
Conductivity	(umho/cm)		4	4	576	482	523	NR	NA
Dissolved Solids	(mg/L)		2	2	284	274	279	500	0
pH	(pH)		4	4	7.47	6.89	7.2225	6.5/8.5	0
Turbidity	(NTU)		2	2	0.302	0.283	0.2925	1	0
Trichloroethene	(ug/L)		2	2	4 J	3 J	3.5	5	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.45. REGIME=Bear Creek AREA NAME=S-3 Site

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Bicarbonate	(mg/L)		9	7	318	43.1	203.9571	NR	NA
Chloride	(mg/L)		11	11	328	13.9	67.14545	250	1
Fluoride	(mg/L)		11	9	7.34	0.1	2.368889	4	2
Nitrate/Nitrite	(mg/L)		9	9	1360	0.11	302.9389	NR	NA
Sulfate	(mg/L)		11	9	110	2.7	48.87778	250	0
Aluminum, ICAP	(mg/L)		11	2	5.72	4.01	4.865	0.2	2
Antimony, ICAP	(mg/L)		11	2	0.2	0.2	0.2	0.006	2
Arsenic, ICAP	(mg/L)		11	2	0.2	0.2	0.2	0.05	2
Barium, ICAP	(mg/L)		11	11	16.6	0.0502	3.081727	2	2
Beryllium, ICAP	(mg/L)		11	2	0.0063	0.0049	0.0056	0.004	2
Boron, ICAP	(mg/L)		11	11	0.526	0.0141	0.158036	NR	NA
Cadmium, ICAP	(mg/L)		11	5	0.0267	0.0019	0.01316	0.005	4
Calcium, ICAP	(mg/L)		11	11	171	0.93	93.38455	NR	NA
Chromium, ICAP	(mg/L)		11	2	0.0346	0.0058	0.0202	0.1	0
Cobalt, ICAP	(mg/L)		11	2	0.109	0.0796	0.0943	NR	NA
Copper, ICAP	(mg/L)		11	2	0.0105	0.0067	0.0086	1.3	0
Iron, ICAP	(mg/L)		11	8	3.81	0.0375	0.776625	0.3	4
Lead, ICAP	(mg/L)		11	2	0.1	0.1	0.1	0.015 c	2
Lithium, ICAP	(mg/L)		11	10	0.972	0.0199	0.16584	NR	NA
Magnesium, ICAP	(mg/L)		11	11	61	0.434	21.72509	NR	NA
Manganese, ICAP	(mg/L)		11	9	4.67	0.0301	1.5774	0.05	7
Nickel, ICAP	(mg/L)		11	2	0.344	0.213	0.2785	0.1 d	2
Niobium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		2	2	0.5	0.5	0.5	NR	NA
Potassium, ICAP	(mg/L)		11	10	26.8	1.94	7.622	NR	NA
Selenium, ICAP	(mg/L)		11	2	0.2	0.2	0.2	0.05	2
Silicon, ICAP	(mg/L)		2	2	0.53	0.518	0.524	NR	NA
Sodium, ICAP	(mg/L)		11	11	1830	11.2	429.2455	NR	NA
Strontium, ICAP	(mg/L)		11	11	20.6	0.141	3.841636	NR	NA
Sulfur, ICAP	(mg/L)		2	2	0.5	0.5	0.5	NR	NA
Thallium, ICAP	(mg/L)		11	2	0.2	0.2	0.2	NR	NA

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.45. (continued) REGIME=Bear Creek AREA NAME=S-3 Site

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Titanium, ICAP	(mg/L)		2	2	0.05	0.05	0.05	NR	NA
Uranium, PMS	(mg/L)		11	5	1.32	0.624	0.9272	0.03	5
Uranium, ICAP	(mg/L)		2	2	2	2	2	NR	NA
Zinc, ICAP	(mg/L)		11	3	0.073	0.0125	0.048333	5	0
Zirconium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		13	NA	15.05	-3.89	7.799231	NR	NA
Alkalinity as CO3	(mg/L)		2	2	520	512	516	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	452	450	451	NR	NA
Conductivity	(umho/cm)		4	4	2380	1946	2126.5	NR	NA
Dissolved Solids	(mg/L)		8	8	13100	365	3172.5	500	5
pH	(pH)		4	4	10.12	9.8	9.9375	6.5/8.5	4
Total Suspended Solids	(mg/L)		8	2	14.7	11.9	13.3	NR	NA
Turbidity	(NTU)		2	2	1.47	0.829	1.1495	1	1
Uranium-233/234	(pCi/L)		9	7	177.4	0.23	101.06	NR	NA
Uranium-235	(pCi/L)		9	5	15.88	0.13	10.33	24	0
Uranium-236	(pCi/L)		9	6	16.03	0.13	9.778333	NR	NA
Neptunium-237	(pCi/L)		4	2	11.81	11.1	11.455	1.2	2
Uranium-238	(pCi/L)		9	5	414	210.3	316.94	24	5
Technetium-99	(pCi/L)		6	2	381.29	349.46	365.375	4000	0
Gross Alpha	(pCi/L)		8	4	516.16	2.74	205.14	15 f	2
Gross Beta	(pCi/L)		8	6	366.31	3.57	136.8533	50 a	3
Radium - Total Alpha	(pCi/L)		4	3	2.63	1.02	1.76	5 g	0
Acetone	(ug/L)		11	1	20	20	20	NR	NA
Benzene	(ug/L)		11	1	2 J	2 J	2	5	0
Tetrachloroethene	(ug/L)		11	5	10	4 J	6.2	5	2

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.46. REGIME=Bear Creek AREA NAME=Spoil Area I

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	12.9	11.9	12.4	250	0
Nitrate Nitrogen	(mg/L)		2	2	7.12	6.04	6.58	10	0
Sulfate	(mg/L)		2	2	74.6	70.5	72.55	250	0
Antimony, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.006	2
Arsenic, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.05	2
Barium, ICAP	(mg/L)		2	2	0.069	0.0624	0.0657	2	0
Cadmium, ICAP	(mg/L)		2	2	0.01	0.01	0.01	0.005	2
Calcium, ICAP	(mg/L)		2	2	129	124	126.5	NR	NA
Lead, ICAP	(mg/L)		2	2	0.1	0.1	0.1	0.015 c	2
Magnesium, ICAP	(mg/L)		2	2	16.9	15.9	16.4	NR	NA
Manganese, ICAP	(mg/L)		2	2	0.0706	0.0492	0.0599	0.05	1
Nickel, PMS	(mg/L)		2	1	0.00727	0.00727	0.00727	NR	NA
Niobium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		2	2	0.5	0.5	0.5	NR	NA
Potassium, ICAP	(mg/L)		2	2	4.04	3.71	3.875	NR	NA
Selenium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.05	2
Silicon, ICAP	(mg/L)		2	2	5.1	4.86	4.98	NR	NA
Sodium, ICAP	(mg/L)		2	2	8.34	7.09	7.715	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.23	0.204	0.217	NR	NA
Sulfur, ICAP	(mg/L)		2	2	27.3	24.4	25.85	NR	NA
Thallium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		2	2	0.05	0.05	0.05	NR	NA
Uranium, PMS	(mg/L)		2	2	0.00273	0.00221	0.00247	0.03	0
Uranium, ICAP	(mg/L)		2	2	2	2	2	NR	NA
Zirconium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		4	NA	55.58	-55.58	0	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	288	278	283	NR	NA
Conductivity	(umho/cm)		4	4	925	752	814.75	NR	NA
Dissolved Solids	(mg/L)		2	2	457	452	454.5	500	0
pH	(pH)		4	4	7.55	6.96	7.2575	6.5/8.5	0
Turbidity	(NTU)		2	2	1.15	0.541	0.8455	1	1

Table 4.46. (continued) REGIME=Bear Creek AREA NAME=Spoil Area I

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Gross Beta	(pCi/L)		2	2	30	25	27.5	50 a	0
1,2-Dichloroethene (Total)	(ug/L)		2	2	2 J	2 J	2	NR b	NA
cis-1,2-Dichloroethene	(ug/L)		2	2	2 J	2 J	2	70	0
Tetrachloroethene	(ug/L)		2	2	13	10	11.5	5	2
Trichloroethene	(ug/L)		2	2	5	5	5	5	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.47. REGIME=Chestnut Ridge AREA NAME=Chestnut Ridge Borrow Area Waste Pile

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Barium, ICAP	(mg/L)		2	2	0.0207	0.0198	0.02025	2	0
Calcium, ICAP	(mg/L)		2	2	41.6	40.4	41	NR	NA
Iron, ICAP	(mg/L)		2	1	0.0116	0.0116	0.0116	0.3	0
Magnesium, ICAP	(mg/L)		2	2	27.3	26.4	26.85	NR	NA
Potassium, ICAP	(mg/L)		2	2	0.81	0.741	0.7755	NR	NA
Sodium, ICAP	(mg/L)		2	2	0.794	0.737	0.7655	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.0218	0.0215	0.02165	NR	NA
Static Water Level	(ft - toc)		2	NA	130.8	130.25	130.525	NR	NA
Dissolved Solids	(mg/L)		2	2	212	203	207.5	500	0
Total Suspended Solids	(mg/L)		2	1	5.3	5.3	5.3	NR	NA
Gross Alpha	(pCi/L)		2	2	5.62	1.22	3.42	15 f	0
Gross Beta	(pCi/L)		2	1	5	5	5	50 a	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.48. REGIME=Chestnut Ridge AREA NAME=Chestnut Ridge Security Pits

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Alkalinity	(mg/L)		2	2	130	130	130	NR	NA
Chloride	(mg/L)		2	2	2 J	1.9 J	1.95	250	0
Fluoride	(mg/L)		2	2	0.15 J	0.14 J	0.145	4	0
Nitrate/Nitrite	(mg/L)		2	2	0.82	0.79	0.805	NR	NA
Sulfate	(mg/L)		2	2	3.6 J	2.9 J	3.25	250	0
Antimony, ICAP	(mg/L)		8	1	0.00026 J	0.00026 J	0.00026	0.006	0
Arsenic, ICAP	(mg/L)		8	1	0.0059 J	0.0059 J	0.0059	0.05	0
Barium, ICAP	(mg/L)		8	8	0.0187	0.0101	0.014463	2	0
Calcium, ICAP	(mg/L)		8	8	45.2	29 J	35.3375	NR	NA
Chromium, ICAP	(mg/L)		8	2	0.0096	0.00088 J	0.00524	0.1	0
Iron, ICAP	(mg/L)		8	5	0.0629	0.0136	0.0389	0.3	0
Magnesium, ICAP	(mg/L)		8	8	28.9	16.4	21.8375	NR	NA
Manganese, ICAP	(mg/L)		8	3	0.0171	0.0015 J	0.0117	0.05	0
Molybdenum, ICAP	(mg/L)		2	1	0.0029 J	0.0029 J	0.0029	NR	NA
Potassium, ICAP	(mg/L)		8	8	3.16	1.1 J	1.715	NR	NA
Silver, ICAP	(mg/L)		8	1	0.0012 J	0.0012 J	0.0012	0.1	0
Sodium, ICAP	(mg/L)		8	6	1.26	0.414	0.625667	NR	NA
Strontium, ICAP	(mg/L)		8	8	0.0252	0.0157	0.019213	NR	NA
Thallium, ICAP	(mg/L)		8	1	0.00002 J	0.00002 J	0.00002	NR	NA
Uranium, PMS	(mg/L)		8	2	0.00035 J	0.00034 J	0.000345	0.03	0
Zinc, ICAP	(mg/L)		8	2	0.0383	0.0319	0.0351	5	0
Static Water Level	(ft - toc)		7	NA	128.58	67.56	101.58	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	130	130	130	NR	NA
Conductivity	(umho/cm)		2	2	260 J	240 J	250	NR	NA
Dissolved Solids	(mg/L)		8	8	255	100	174.5	500	0
pH	(pH)		2	2	8	7.9	7.95	6.5/8.5	0
Turbidity	(NTU)		2	2	0.21	0.13	0.17	1	0
Gross Alpha	(pCi/L)		8	4	3.97	1.11	2.5575	15 f	0
Gross Beta	(pCi/L)		8	3	6.41	4.81	5.79	50 a	0
1,1,1-Trichloroethane	(ug/L)		8	6	13	2.1	5.316667	200	0
1,1-Dichloroethane	(ug/L)		8	6	23	2	7.45	NR	NA

Table 4.48. (continued) REGIME=Chestnut Ridge AREA NAME=Chestnut Ridge Security Pits

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
1,1-Dichloroethene	(ug/L)		8	5	6	0.99 J	4.138	7	0
Carbon tetrachloride	(ug/L)		8	1	0.66 J	0.66 J	0.66	5	0
cis-1,2-Dichloroethene	(ug/L)		8	4	11	4.5	7.875	70	0
Tetrachloroethene	(ug/L)		8	4	12	5.7	8.925	5	4
trans-1,2-Dichloroethene	(ug/L)		8	1	0.38 J	0.38 J	0.38	100	0
Trichloroethene	(ug/L)		8	3	2 J	0.54 J	1.213333	5	0
Trichlorofluoromethane	(ug/L)		2	2	19	8.5	13.75	NR	NA

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.49. Regime=Chestnut Ridge AREA NAME=Chestnut Ridge Sediment Disposal Basin

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Aluminum, ICAP	(mg/L)		8	2	0.052	0.0501	0.05105	0.2	0
Barium, ICAP	(mg/L)		8	8	0.0433	0.0089	0.018838	2	0
Calcium, ICAP	(mg/L)		8	8	65.5	24.3	39.8625	NR	NA
Iron, ICAP	(mg/L)		8	7	0.124	0.0125	0.048871	0.3	0
Magnesium, ICAP	(mg/L)		8	8	41.2	16.1	26.2	NR	NA
Potassium, ICAP	(mg/L)		8	8	30.1	1.41	7.47125	NR	NA
Sodium, ICAP	(mg/L)		8	8	6.83	0.475	2.145125	NR	NA
Strontium, ICAP	(mg/L)		8	8	0.028	0.0106	0.022238	NR	NA
Zinc, ICAP	(mg/L)		8	1	0.0258	0.0258	0.0258	5	0
Static Water Level	(ft - toc)		8	NA	157.92	116.7	134.655	NR	NA
Dissolved Solids	(mg/L)		8	8	368	126	212.375	500	0
Total Suspended Solids	(mg/L)		8	1	5.1	5.1	5.1	NR	NA

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.50. REGIME=Chestnut Ridge AREA NAME=Const./Debris Landfill VI

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Alkalinity	(mg/L)		8	8	250	83	182.875	NR	NA
Chloride	(mg/L)		8	8	9.1 J	1.7 J	3.8375	250	0
Fluoride	(mg/L)		8	6	0.15 J	0.11 J	0.131667	4	0
Nitrate/Nitrite	(mg/L)		8	8	0.66 J	0.22 J	0.4375	NR	NA
Sulfate	(mg/L)		8	8	28 J	1.9 J	11.1	250	0
Aluminum, ICAP	(mg/L)		8	4	0.09 J	0.037 J	0.0675	0.2	0
Antimony, ICAP	(mg/L)		8	1	0.00013 J	0.00013 J	0.00013	0.006	0
Arsenic, ICAP	(mg/L)		8	3	0.007 J	0.0042 J	0.005933	0.05	0
Barium, ICAP	(mg/L)		8	8	0.015	0.0081 J	0.0127	2	0
Beryllium, ICAP	(mg/L)		8	4	0.0006 J	0.00038 J	0.00052	0.004	0
Boron, ICAP	(mg/L)		8	7	0.04 J	0.0079 J	0.020229	NR	NA
Calcium, ICAP	(mg/L)		8	8	62 J	20 J	41.625	NR	NA
Chromium, ICAP	(mg/L)		8	1	0.0024 J	0.0024 J	0.0024	0.1	0
Copper, ICAP	(mg/L)		8	4	0.0022 J	0.00087 J	0.001543	1.3	0
Iron, ICAP	(mg/L)		8	6	0.081 J	0.013 J	0.037333	0.3	0
Lead, ICAP	(mg/L)		8	1	0.0022 J	0.0022 J	0.0022	0.015 c	0
Magnesium, ICAP	(mg/L)		8	8	35 J	7.7	23.3375	NR	NA
Manganese, ICAP	(mg/L)		8	6	0.0031 J	0.00091 J	0.001735	0.05	0
Molybdenum, ICAP	(mg/L)		8	1	0.0036 J	0.0036 J	0.0036	NR	NA
Nickel, ICAP	(mg/L)		8	2	0.0029 J	0.0019 J	0.0024	0.1 d	0
Potassium, ICAP	(mg/L)		8	8	2.2 J	0.49 J	1.21	NR	NA
Silver, ICAP	(mg/L)		8	4	0.0016 J	0.0009 J	0.001275	0.1	0
Sodium, ICAP	(mg/L)		8	4	5.2	3.1 J	4.325	NR	NA
Strontium, ICAP	(mg/L)		8	8	0.046	0.017	0.02725	NR	NA
Thallium, ICAP	(mg/L)		8	2	0.00003 J	0.00002 J	0.000025	NR	NA
Uranium, PMS	(mg/L)		8	8	0.0012 J	0.00009 J	0.000475	0.03	0
Zinc, ICAP	(mg/L)		8	3	0.028	0.0081 J	0.015367	5	0
Static Water Level	(ft - toc)		8	NA	70.13	36.15	57.515	NR	NA
Alkalinity as HCO3	(mg/L)		8	8	250	83	182.875	NR	NA
Conductivity	(umho/cm)		8	8	460 J	160 J	327.5	NR	NA
Dissolved Solids	(mg/L)		8	8	290	120 J	203.75	500	0

Table 4.50. (continued) REGIME=Chestnut Ridge AREA NAME=Const./Debris Landfill VI

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
pH	(pH)		8	8	7.9	7	7.5375	6.5/8.5	0
Total Suspended Solids	(mg/L)		8	1	1.8 J	1.8 J	1.8	NR	NA
Turbidity	(NTU)		8	7	3.9	0.08 J	0.821429	1	1
Gross Beta	(pCi/L)		8	7	2.8	1.9	2.385714	50 a	0
Bromodichloromethane	(ug/L)		8	1	0.25 J	0.25 J	0.25	100 i	0
Bromoform	(ug/L)		8	1	4	4	4	100 i	0
Chlorodibromomethane	(ug/L)		8	1	1.5	1.5	1.5	100 i	0
Chloroform	(ug/L)		8	2	4.6	2.9	3.75	100 i	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.51. REGIME=Chestnut Ridge AREA NAME=Const./Debris Landfill VII

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Alkalinity	(mg/L)		6	6	200	140	166.6667	NR	NA
Chloride	(mg/L)		6	6	3	1.6 J	2.316667	250	0
Fluoride	(mg/L)		6	3	0.15 J	0.12 J	0.14	4	0
Nitrate/Nitrite	(mg/L)		6	6	0.53	0.29 J	0.416667	NR	NA
Sulfate	(mg/L)		6	6	3.5 J	2.2 J	2.733333	250	0
Aluminum, ICAP	(mg/L)		7	5	0.572	0.031 J	0.1814	0.2	1
Antimony, ICAP	(mg/L)		7	3	0.0001 J	0.00004 J	0.000067	0.006	0
Arsenic, ICAP	(mg/L)		7	1	0.0041 J	0.0041 J	0.0041	0.05	0
Barium, ICAP	(mg/L)		7	7	0.27 J	0.012	0.084157	2	0
Boron, ICAP	(mg/L)		7	1	0.0098 J	0.0098 J	0.0098	NR	NA
Cadmium, ICAP	(mg/L)		7	4	0.00013 J	0.00003 J	0.000073	0.005	0
Calcium, ICAP	(mg/L)		7	7	45 J	33 J	40.11429	NR	NA
Copper, ICAP	(mg/L)		7	3	0.0019 J	0.0012 J	0.001533	1.3	0
Iron, ICAP	(mg/L)		7	5	1.08	0.015 J	0.2576	0.3	1
Magnesium, ICAP	(mg/L)		7	7	26	15	19.95714	NR	NA
Manganese, ICAP	(mg/L)		7	3	0.0219	0.0018 J	0.009867	0.05	0
Mercury, CVAA	(mg/L)		7	1	0.00006 J	0.00006 J	0.00006	0.002	0
Potassium, ICAP	(mg/L)		7	5	1.2 J	0.64	0.934	NR	NA
Selenium, ICAP	(mg/L)		7	1	0.0049 J	0.0049 J	0.0049	0.05	0
Silver, ICAP	(mg/L)		7	2	0.0011 J	0.00079 J	0.000945	0.1	0
Sodium, ICAP	(mg/L)		7	3	2.76	1.1 J	1.786667	NR	NA
Strontium, ICAP	(mg/L)		7	7	0.03 J	0.02	0.024571	NR	NA
Thorium, ICAP	(mg/L)		6	1	0.0052 J	0.0052 J	0.0052	NR	NA
Uranium, PMS	(mg/L)		8	6	0.00032 J	0.00015 J	0.000195	0.03	0
Zinc, ICAP	(mg/L)		7	5	0.023	0.0099 J	0.01656	5	0
Static Water Level	(ft - toc)		7	NA	40.78	1.45	16.01857	NR	NA
Alkalinity as HCO3	(mg/L)		6	6	200	140	166.6667	NR	NA
Conductivity	(umho/cm)		6	6	350 J	250 J	296.6667	NR	NA
Dissolved Solids	(mg/L)		7	7	193	81	163.4286	500	0
pH	(pH)		6	6	7.7	7.4	7.566667	6.5/8.5	0
Total Suspended Solids	(mg/L)		7	1	4.4	4.4	4.4	NR	NA

Table 4.51. (continued) REGIME=Chestnut Ridge AREA NAME=Const./Debris Landfill VII

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Turbidity	(NTU)		6	5	13	0.06 J	4.102	1	2
Gross Alpha	(pCi/L)		7	1	2.91	2.91	2.91	15 f	0
Gross Beta	(pCi/L)		7	4	5.02	1.8	2.88	50 a	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.52. Regime=Chestnut Ridge AREA NAME=Exit Pathway Spring/Surface Water

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Alkalinity	(mg/L)		2	2	140	110	125	NR	NA
Bicarbonate	(mg/L)		8	8	176	106	153.5	NR	NA
Chloride	(mg/L)		20	20	2.8 J	1.5	2.0665	250	0
Fluoride	(mg/L)		20	10	0.19	0.11	0.1379	4	0
Nitrate Nitrogen	(mg/L)		10	10	2.96	0.121	0.9609	10	0
Nitrate/Nitrite	(mg/L)		6	6	0.83	0.088	0.424333	NR	NA
Sulfate	(mg/L)		20	20	47.3	4.77	15.433	250	0
Aluminum, ICAP	(mg/L)		20	12	1.7 Q	0.0621	0.371058	0.2	7
Antimony, ICAP	(mg/L)		20	11	0.2	0.0003 J	0.181845	0.006	10
Arsenic, ICAP	(mg/L)		20	14	0.339 Q	0.0111	0.171086	0.05	11
Barium, ICAP	(mg/L)		20	20	0.129	0.0193	0.06288	2	0
Boron, ICAP	(mg/L)		20	8	0.256	0.011 J	0.134588	NR	NA
Cadmium, ICAP	(mg/L)		20	10	0.01	0.01	0.01	0.005	10
Calcium, ICAP	(mg/L)		20	20	54.7	18.5	40.805	NR	NA
Chromium, ICAP	(mg/L)		20	1	0.0171	0.0171	0.0171	0.1	0
Cobalt, ICAP	(mg/L)		20	1	0.0103	0.0103	0.0103	NR	NA
Iron, ICAP	(mg/L)		20	19	10.2 Q	0.0508	0.738468	0.3	3
Lead, PMS	(mg/L)		10	1	0.000654	0.000654	0.000654	0.015 c	0
Lead, ICAP	(mg/L)		20	11	0.1	0.003	0.091182	0.015 c	10
Lithium, ICAP	(mg/L)		18	7	0.0945	0.0203	0.057471	NR	NA
Magnesium, ICAP	(mg/L)		20	20	17.7	5.14	13.42	NR	NA
Manganese, ICAP	(mg/L)		20	18	3.23	0.0022 J	0.321449	0.05	6
Molybdenum, ICAP	(mg/L)		20	1	0.0024 J	0.0024 J	0.0024	NR	NA
Niobium, ICAP	(mg/L)		10	10	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		10	10	0.5	0.5	0.5	NR	NA
Potassium, ICAP	(mg/L)		20	11	5.42	0.889	2.812636	NR	NA
Selenium, ICAP	(mg/L)		20	10	0.2	0.2	0.2	0.05	10
Silicon, ICAP	(mg/L)		10	10	5.58	3.22	3.979	NR	NA
Sodium, ICAP	(mg/L)		20	20	2.68	0.806	1.60155	NR	NA
Strontium, ICAP	(mg/L)		20	20	1.11	0.0258	0.273125	NR	NA
Sulfur, ICAP	(mg/L)		10	10	4.64	1.65	2.532	NR	NA

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.52. (continued) Regime=Chestnut Ridge AREA NAME=Exit Pathway Spring/Surface Water

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Thallium, ICAP	(mg/L)		20	10	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		10	10	0.05	0.05	0.05	NR	NA
Uranium, PMS	(mg/L)		21	11	0.00523	0.00026 J	0.001448	0.03	0
Uranium, ICAP	(mg/L)		10	10	2	2	2	NR	NA
Zinc, ICAP	(mg/L)		20	4	0.0265	0.0073 J	0.016375	5	0
Zirconium, ICAP	(mg/L)		10	10	0.2	0.2	0.2	NR	NA
Alkalinity as HCO3	(mg/L)		12	12	176	64.8	128.8333	NR	NA
Conductivity	(umho/cm)		22	22	428	144.9	304.2818	NR	NA
Dissolved Solids	(mg/L)		20	20	260	78	179.9	500	0
pH	(pH)		22	22	8.14	6.88	7.360455	6.5/8.5	0
Total Suspended Solids	(mg/L)		20	9	41.3 Q	2	8.133333	NR	NA
Turbidity	(NTU)		12	12	14.5	1.58	5.614167	1	12
Gross Alpha	(pCi/L)		20	10	14.06 Q	1.8	4.753	15 f	0
Gross Beta	(pCi/L)		20	9	11	2	5.56	50 a	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.53. Regime=Chestnut Ridge AREA NAME=Industrial Landfill II

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Alkalinity	(mg/L)		6	6	240	110	170	NR	NA
Chloride	(mg/L)		6	6	3.3	2 J	2.55	250	0
Fluoride	(mg/L)		6	6	1.6	0.11 J	0.615	4	0
Nitrate/Nitrite	(mg/L)		6	4	0.36 J	0.2 J	0.285	NR	NA
Sulfate	(mg/L)		6	6	16	4.9 J	9.466667	250	0
Aluminum, ICAP	(mg/L)		6	3	0.056 J	0.035 J	0.042667	0.2	0
Antimony, ICAP	(mg/L)		6	3	0.0009 J	0.00006 J	0.000603	0.006	0
Arsenic, ICAP	(mg/L)		6	3	0.0098 J	0.0048 J	0.007767	0.05	0
Barium, ICAP	(mg/L)		6	6	0.47	0.012	0.174333	2	0
Beryllium, ICAP	(mg/L)		6	3	0.00055 J	0.00048 J	0.000527	0.004	0
Boron, ICAP	(mg/L)		6	6	0.021 J	0.0084 J	0.013667	NR	NA
Cadmium, ICAP	(mg/L)		6	1	0.00004 J	0.00004 J	0.00004	0.005	0
Calcium, ICAP	(mg/L)		6	6	44 J	2.8	22.66667	NR	NA
Cobalt, ICAP	(mg/L)		6	1	0.0011 J	0.0011 J	0.0011	NR	NA
Iron, ICAP	(mg/L)		6	3	0.044 J	0.014 J	0.025333	0.3	0
Lead, ICAP	(mg/L)		6	1	0.0029 J	0.0029 J	0.0029	0.015 c	0
Magnesium, ICAP	(mg/L)		6	6	29	3	19.86667	NR	NA
Manganese, ICAP	(mg/L)		6	5	0.0014 J	0.00084 J	0.001188	0.05	0
Molybdenum, ICAP	(mg/L)		6	5	0.017 J	0.0022 J	0.00976	NR	NA
Nickel, ICAP	(mg/L)		6	2	0.0044 J	0.002 J	0.0032	0.1 d	0
Potassium, ICAP	(mg/L)		6	6	19	1.2 J	7.35	NR	NA
Selenium, ICAP	(mg/L)		6	1	0.007 J	0.007 J	0.007	0.05	0
Silver, ICAP	(mg/L)		6	2	0.0014 J	0.0011 J	0.00125	0.1	0
Sodium, ICAP	(mg/L)		6	6	44	2.9 J	18.2	NR	NA
Strontium, ICAP	(mg/L)		6	6	0.18	0.032	0.081	NR	NA
Thallium, ICAP	(mg/L)		6	1	0.00002 J	0.00002 J	0.00002	NR	NA
Thorium, ICAP	(mg/L)		6	1	0.0054 J	0.0054 J	0.0054	NR	NA
Uranium, PMS	(mg/L)		6	6	0.0013 J	0.00002 J	0.000523	0.03	0
Vanadium, ICAP	(mg/L)		6	2	0.014	0.013	0.0135	NR	NA
Zinc, ICAP	(mg/L)		6	1	0.014 J	0.014 J	0.014	5	0
Static Water Level	(ft - toc)		6	NA	84.38	29.2	65.31333	NR	NA

Table 4.53. (continued) Regime=Chestnut Ridge AREA NAME=Industrial Landfill II

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Alkalinity as CO3	(mg/L)		6	4	72	2.4 J	37.85	NR	NA
Alkalinity as HCO3	(mg/L)		6	6	240	39	143.5	NR	NA
Conductivity	(umho/cm)		6	6	400 J	250 J	310	NR	NA
Dissolved Solids	(mg/L)		6	6	270 J	100 J	186.6667	500	0
pH	(pH)		6	6	10	8	8.833333	6.5/8.5	2
Total Suspended Solids	(mg/L)		6	1	3.8 J	3.8 J	3.8	NR	NA
Turbidity	(NTU)		6	6	1.2	0.11	0.38	1	1
Gross Alpha	(pCi/L)		6	2	3.5	2.5	3	15 f	0
Gross Beta	(pCi/L)		6	3	16.8	2	11.6	50 a	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.54. Regime=Chestnut Ridge AREA NAME=Industrial Landfill IV

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Alkalinity	(mg/L)		12	12	220	150	176.6667	NR	NA
Chloride	(mg/L)		12	12	6.3	1.8 J	3.116667	250	0
Fluoride	(mg/L)		12	6	0.16 J	0.11 J	0.128333	4	0
Nitrate/Nitrite	(mg/L)		12	12	0.69	0.34 J	0.501667	NR	NA
Sulfate	(mg/L)		12	12	11	2 J	4.241667	250	0
Aluminum, ICAP	(mg/L)		12	7	0.12	0.021 J	0.066	0.2	0
Antimony, ICAP	(mg/L)		12	7	0.00038 J	0.00003 J	0.000154	0.006	0
Arsenic, ICAP	(mg/L)		12	2	0.0048 J	0.0044 J	0.0046	0.05	0
Barium, ICAP	(mg/L)		12	12	0.037	0.0083 J	0.015233	2	0
Beryllium, ICAP	(mg/L)		12	2	0.00056 J	0.00043 J	0.000495	0.004	0
Boron, ICAP	(mg/L)		12	9	0.096 J	0.0083 J	0.033189	NR	NA
Cadmium, ICAP	(mg/L)		12	5	0.00007 J	0.00003 J	0.00005	0.005	0
Calcium, ICAP	(mg/L)		12	12	42 J	24	32.66667	NR	NA
Chromium, ICAP	(mg/L)		12	7	0.017	0.00081 J	0.004816	0.1	0
Cobalt, ICAP	(mg/L)		12	1	0.00076 J	0.00076 J	0.00076	NR	NA
Copper, ICAP	(mg/L)		12	3	0.041	0.0015 J	0.015333	1.3	0
Iron, ICAP	(mg/L)		12	5	0.12	0.025 J	0.0644	0.3	0
Lead, ICAP	(mg/L)		12	2	0.0027 J	0.0021 J	0.0024	0.015 c	0
Magnesium, ICAP	(mg/L)		12	12	26	10	21.16667	NR	NA
Manganese, ICAP	(mg/L)		12	9	0.014 J	0.0012 J	0.005867	0.05	0
Mercury, CVAA	(mg/L)		12	4	0.00005 J	0.00003 J	0.000038	0.002	0
Molybdenum, ICAP	(mg/L)		12	4	0.02 J	0.0025 J	0.007075	NR	NA
Nickel, ICAP	(mg/L)		12	6	0.47	0.0084 J	0.214733	0.1 d	4
Potassium, ICAP	(mg/L)		12	12	3 J	0.61 J	1.24	NR	NA
Silver, ICAP	(mg/L)		12	3	0.01 J	0.00093 J	0.006977	0.1	0
Sodium, ICAP	(mg/L)		12	8	6.9	1.4 J	4	NR	NA
Strontium, ICAP	(mg/L)		12	12	0.021	0.01	0.016417	NR	NA
Thallium, ICAP	(mg/L)		12	4	0.00008 J	0.00002 J	0.000038	NR	NA
Thorium, ICAP	(mg/L)		12	1	0.015 J	0.015 J	0.015	NR	NA
Uranium, PMS	(mg/L)		13	12	0.00022 J	0.00004 J	0.000131	0.03	0
Zinc, ICAP	(mg/L)		12	8	0.031	0.008 J	0.016963	5	0

Table 4.54. (continued) Regime=Chestnut Ridge AREA NAME=Industrial Landfill IV

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Static Water Level	(ft - toc)		13	NA	125	81.82	101.6731	NR	NA
Alkalinity as CO3	(mg/L)		12	1	4.8 J	4.8 J	4.8	NR	NA
Alkalinity as HCO3	(mg/L)		12	12	220	140	175.8333	NR	NA
Conductivity	(umho/cm)		12	12	370 J	270 J	305	NR	NA
Dissolved Solids	(mg/L)		12	12	240	150	180	500	0
pH	(pH)		12	12	8.3	7.2	7.916667	6.5/8.5	0
Total Suspended Solids	(mg/L)		12	1	2.8 J	2.8 J	2.8	NR	NA
Turbidity	(NTU)		12	12	4.4	0.05 J	0.854167	1	3
Gross Beta	(pCi/L)		12	2	2.1	2	2.05	50 a	0
1,1,1-Trichloroethane	(ug/L)		12	4	20	17	18.5	200	0
1,1-Dichloroethane	(ug/L)		12	4	17	14	15.5	NR	NA
1,1-Dichloroethene	(ug/L)		12	4	6.4	4.3	5.325	7	0
Acetone	(ug/L)		12	1	3.3 J	3.3 J	3.3	NR	NA
Xylenes	(ug/L)		12	1	0.51 J	0.51 J	0.51	10000	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.55. Regime=Chestnut Ridge AREA NAME=Industrial Landfill V

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Alkalinity	(mg/L)		10	10	180	120	149	NR	NA
Chloride	(mg/L)		10	10	4.8	1.4 J	2.25	250	0
Fluoride	(mg/L)		10	3	0.25 J	0.12 J	0.17	4	0
Nitrate/Nitrite	(mg/L)		10	10	1.6	0.16 J	0.726	NR	NA
Sulfate	(mg/L)		10	10	31	1.3 J	8.02	250	0
Aluminum, ICAP	(mg/L)		10	6	0.12	0.023 J	0.075333	0.2	0
Antimony, ICAP	(mg/L)		10	8	0.00039 J	0.00003 J	0.000184	0.006	0
Barium, ICAP	(mg/L)		10	10	0.012	0.002 J	0.00762	2	0
Cadmium, ICAP	(mg/L)		10	1	0.0001 J	0.0001 J	0.0001	0.005	0
Calcium, ICAP	(mg/L)		10	10	45 J	23 J	34.3	NR	NA
Chromium, ICAP	(mg/L)		10	10	0.046	0.001 J	0.01078	0.1	0
Copper, ICAP	(mg/L)		10	3	0.022	0.0012 J	0.008867	1.3	0
Iron, ICAP	(mg/L)		10	5	0.18	0.021 J	0.0942	0.3	0
Lead, ICAP	(mg/L)		10	2	0.003 J	0.0025 J	0.00275	0.015 c	0
Magnesium, ICAP	(mg/L)		10	10	27	16	20.1	NR	NA
Manganese, ICAP	(mg/L)		10	7	0.0049 J	0.00054 J	0.001976	0.05	0
Mercury, CVAA	(mg/L)		10	3	0.00004 J	0.00004 J	0.00004	0.002	0
Molybdenum, ICAP	(mg/L)		10	2	0.0055 J	0.0045 J	0.005	NR	NA
Potassium, ICAP	(mg/L)		10	10	4.1	0.49 J	1.354	NR	NA
Silver, ICAP	(mg/L)		10	2	0.00093 J	0.00072 J	0.000825	0.1	0
Sodium, ICAP	(mg/L)		10	2	3.4 J	3.2 J	3.3	NR	NA
Strontium, ICAP	(mg/L)		10	10	0.029	0.014	0.0198	NR	NA
Uranium, PMS	(mg/L)		14	10	0.00105 J	0.0001 J	0.000399	0.03	0
Zinc, ICAP	(mg/L)		10	4	0.015 J	0.0071 J	0.01035	5	0
Static Water Level	(ft - toc)		10	NA	121.65	11.9	76.85	NR	NA
Alkalinity as CO3	(mg/L)		10	2	4.4 J	3.7 J	4.05	NR	NA
Alkalinity as HCO3	(mg/L)		10	10	180	120	149	NR	NA
Conductivity	(umho/cm)		10	10	380 J	200 J	279	NR	NA
Dissolved Solids	(mg/L)		10	10	220	100	151	500	0
pH	(pH)		10	10	8.5	7.7	8.07	6.5/8.5	0
Total Suspended Solids	(mg/L)		10	4	5.6	1.8 J	4	NR	NA

Table 4.55. (continued) Regime=Chestnut Ridge AREA NAME=Industrial Landfill V

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Turbidity	(NTU)		10	10	11	0.04 J	3.196	1	4
Gross Beta	(pCi/L)		10	2	2.6	2.5	2.55	50 a	0
1,1,1-Trichloroethane	(ug/L)		10	2	0.66 J	0.6 J	0.63	200	0
Acetone	(ug/L)		10	2	4.2 J	3.6 J	3.9	NR	NA
Chloromethane	(ug/L)		10	1	0.26 J	0.26 J	0.26	NR	NA

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.56. Regime=Chestnut Ridge AREA NAME=Kerr Hollow Quarry

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Barium, ICAP	(mg/L)		10	10	0.404	0.0451	0.12982	2	0
Boron, ICAP	(mg/L)		10	8	0.835	0.0133	0.272575	NR	NA
Calcium, ICAP	(mg/L)		10	10	60.1	26.2	39.17	NR	NA
Iron, ICAP	(mg/L)		10	10	5.91	0.012	1.37027	0.3	5
Lithium, ICAP	(mg/L)		10	8	0.31	0.023	0.113075	NR	NA
Magnesium, ICAP	(mg/L)		10	10	36.6	16.3	25.88	NR	NA
Manganese, ICAP	(mg/L)		10	6	0.0642	0.0072	0.024167	0.05	1
Potassium, ICAP	(mg/L)		10	10	19.3	1.32	7.424	NR	NA
Sodium, ICAP	(mg/L)		10	10	20.6	0.748	5.4358	NR	NA
Strontium, ICAP	(mg/L)		10	10	7.15	0.0321	2.08129	NR	NA
Uranium, PMS	(mg/L)		10	2	0.012	0.0116	0.0118	0.03	0
Zinc, ICAP	(mg/L)		10	1	0.0303	0.0303	0.0303	5	0
Static Water Level	(ft - toc)		10	NA	138.16	4.55	65.687	NR	NA
Dissolved Solids	(mg/L)		10	10	303	170	228.8	500	0
Total Suspended Solids	(mg/L)		10	4	14.3	5.4	10.5	NR	NA
Gross Alpha	(pCi/L)		10	5	17.51	1.76	5.518	15 f	1
Gross Beta	(pCi/L)		10	7	18.59	2.12 Q	8.514286	50 a	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.57. Regime=Chestnut Ridge AREA NAME=United Nuclear Corporation Site

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Bicarbonate	(mg/L)		12	11	285	65.3	205.0273	NR	NA
Carbonate	(mg/L)		12	2	93.8	73.4 Q	83.6	NR	NA
Chloride	(mg/L)		12	12	21.7	1.3	9.733333	250	0
Fluoride	(mg/L)		12	1	0.43	0.43	0.43	4	0
Nitrate/Nitrite	(mg/L)		12	12	1.5	0.14	0.761667	NR	NA
Sulfate	(mg/L)		12	12	3.8	0.69	2.640833	250	0
Aluminum, ICAP	(mg/L)		12	1	0.0681	0.0681	0.0681	0.2	0
Barium, ICAP	(mg/L)		12	10	0.0317	0.0075	0.01843	2	0
Calcium, ICAP	(mg/L)		12	12	59.2	1.2	37.6825	NR	NA
Chromium, ICAP	(mg/L)		12	4	0.141	0.0072	0.051175	0.1	1
Iron, ICAP	(mg/L)		12	8	1.37	0.0203	0.331713	0.3	2
Lithium, ICAP	(mg/L)		12	2	0.143	0.131	0.137	NR	NA
Magnesium, ICAP	(mg/L)		12	12	34.9	9.5	24.03333	NR	NA
Manganese, ICAP	(mg/L)		12	2	0.0352	0.0255	0.03035	0.05	0
Nickel, ICAP	(mg/L)		12	4	0.226	0.0432	0.1448	0.1 d	3
Potassium, ICAP	(mg/L)		12	12	79.1	0.716	13.17042	NR	NA
Sodium, ICAP	(mg/L)		12	12	11.8	0.45	6.634583	NR	NA
Strontium, ICAP	(mg/L)		12	11	0.0274	0.0068	0.017409	NR	NA
Zinc, ICAP	(mg/L)		12	2	0.0165	0.0153	0.0159	5	0
Static Water Level	(ft - toc)		12	NA	97.83	50.62	73.25	NR	NA
Dissolved Solids	(mg/L)		12	12	305	143	225.0833	500	0
Uranium-233/234	(pCi/L)		12	12	0.86	0.24	0.503333	NR	NA
Uranium-235	(pCi/L)		12	1	0.23	0.23	0.23	24	0
Uranium-236	(pCi/L)		12	1	0.15	0.15	0.15	NR	NA
Uranium-238	(pCi/L)		12	7	0.49	0.15	0.32	24	0
Potassium-40	(pCi/L)		2	1	80.59	80.59	80.59	280	0
Gross Alpha	(pCi/L)		12	5	18.13	1.68	6.73	15 f	1
Gross Beta	(pCi/L)		12	5	72.13	4.46	31.156	50 a	2

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.58. Regime=Upper East Fork Poplar Creek AREA NAME=B8110

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		5	5	20.3	8.92	14.134	250	0
Nitrate Nitrogen	(mg/L)		5	4	160	0.0978	42.24095	10	1
Sulfate	(mg/L)		5	5	96.9	2.53	52.746	250	0
Antimony, ICAP	(mg/L)		5	5	0.2	0.2	0.2	0.006	5
Arsenic, PMS	(mg/L)		5	1	0.0374	0.0374	0.0374	0.05	0
Arsenic, ICAP	(mg/L)		5	5	0.2	0.2	0.2	0.05	5
Barium, ICAP	(mg/L)		5	5	0.665	0.038	0.2123	2	0
Boron, ICAP	(mg/L)		5	2	0.111	0.102	0.1065	NR	NA
Cadmium, ICAP	(mg/L)		5	5	0.01	0.01	0.01	0.005	5
Calcium, ICAP	(mg/L)		5	5	236	56.5	117.28	NR	NA
Chromium, PMS	(mg/L)		5	1	0.00362	0.00362	0.00362	NR	NA
Iron, ICAP	(mg/L)		5	3	21.7	0.0726	7.282933	0.3	1
Lead, ICAP	(mg/L)		5	5	0.1	0.1	0.1	0.015 c	5
Magnesium, ICAP	(mg/L)		5	5	72.2	7.95	29.644	NR	NA
Manganese, ICAP	(mg/L)		5	5	4.02	0.0326	0.92912	0.05	4
Mercury, CVAA	(mg/L)		5	2	0.00138	0.000622	0.001001	0.002	0
Nickel, PMS	(mg/L)		5	3	0.121	0.00537	0.045757	NR	NA
Niobium, ICAP	(mg/L)		5	5	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		5	5	0.781	0.5	0.5562	NR	NA
Potassium, ICAP	(mg/L)		5	2	3.72	3.59	3.655	NR	NA
Selenium, PMS	(mg/L)		5	1	0.187	0.187	0.187	0.05	1
Selenium, ICAP	(mg/L)		5	5	0.2	0.2	0.2	0.05	5
Silicon, ICAP	(mg/L)		5	5	5	1.88	3.592	NR	NA
Sodium, ICAP	(mg/L)		5	5	26.6	5.72	14.212	NR	NA
Strontium, ICAP	(mg/L)		5	5	0.722	0.13	0.2542	NR	NA
Sulfur, ICAP	(mg/L)		5	5	33.9	0.946	18.2452	NR	NA
Thallium, ICAP	(mg/L)		5	5	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		5	5	0.05	0.05	0.05	NR	NA
Uranium, PMS	(mg/L)		5	3	0.00109	0.000789	0.000911	0.03	0
Uranium, ICAP	(mg/L)		5	5	2	2	2	NR	NA
Zinc, ICAP	(mg/L)		5	1	0.105	0.105	0.105	5	0

Table 4.58. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=B8110

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Zirconium, ICAP	(mg/L)		5	5	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		10	NA	32.9	-32.9	0	NR	NA
Alkalinity as HCO3	(mg/L)		5	5	284	185	236.6	NR	NA
Conductivity	(umho/cm)		10	10	2210	576	938.7	NR	NA
Dissolved Solids	(mg/L)		5	5	1170	305	522.6	500	1
pH	(pH)		10	10	7.26	6.37	6.912	6.5/8.5	1
Total Suspended Solids	(mg/L)		5	1	3	3	3	NR	NA
Turbidity	(NTU)		5	5	5.29	1.12	2.676	1	5
Gross Alpha	(pCi/L)		5	1	3.9	3.9	3.9	15 f	0
1,2-Dichloroethene (Total)	(ug/L)		5	4	46	3 J	29	NR b	NA
Carbon tetrachloride	(ug/L)		5	1	10	10	10	5	1
Chloroform	(ug/L)		5	1	16	16	16	100 i	0
cis-1,2-Dichloroethene	(ug/L)		5	4	46	3 J	29	70	0
Tetrachloroethene	(ug/L)		5	4	160	18	100.75	5	4
Trichloroethene	(ug/L)		5	4	440	9	123.25	5	4

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.59. Regime=Upper East Fork Poplar Creek AREA NAME=Beta-4 Security Pits

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	10.3	8.95	9.625	250	0
Fluoride	(mg/L)		2	2	0.177	0.151	0.164	4	0
Nitrate Nitrogen	(mg/L)		2	2	0.0594	0.0497	0.05455	10	0
Sulfate	(mg/L)		2	2	25.7	23.8	24.75	250	0
Antimony, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.006	2
Arsenic, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.05	2
Barium, ICAP	(mg/L)		2	2	0.172	0.127	0.1495	2	0
Cadmium, ICAP	(mg/L)		2	2	0.01	0.01	0.01	0.005	2
Calcium, ICAP	(mg/L)		2	2	48	44.7	46.35	NR	NA
Chromium, PMS	(mg/L)		2	2	0.296	0.00582	0.15091	NR	NA
Chromium, ICAP	(mg/L)		2	1	0.306	0.306	0.306	0.1	1
Iron, ICAP	(mg/L)		2	2	1.92	0.0917	1.00585	0.3	1
Lead, ICAP	(mg/L)		2	2	0.1	0.1	0.1	0.015 c	2
Lithium, ICAP	(mg/L)		2	2	0.0118	0.0116	0.0117	NR	NA
Magnesium, ICAP	(mg/L)		2	2	7.45	7.03	7.24	NR	NA
Manganese, ICAP	(mg/L)		2	2	1.21	0.325	0.7675	0.05	2
Nickel, PMS	(mg/L)		2	2	0.112	0.0124	0.0622	NR	NA
Nickel, ICAP	(mg/L)		2	1	0.12	0.12	0.12	0.1 d	1
Niobium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		2	2	0.5	0.5	0.5	NR	NA
Selenium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.05	2
Silicon, ICAP	(mg/L)		2	2	10.6	10.4	10.5	NR	NA
Sodium, ICAP	(mg/L)		2	2	9.36	8.89	9.125	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.156	0.145	0.1505	NR	NA
Sulfur, ICAP	(mg/L)		2	2	8.01	7.54	7.775	NR	NA
Thallium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		2	2	0.05	0.05	0.05	NR	NA
Uranium, ICAP	(mg/L)		2	2	2	2	2	NR	NA
Zirconium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		4	NA	12.33	-12.33	0	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	133	126	129.5	NR	NA

Table 4.59. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=Beta-4 Security Pits

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Conductivity	(umho/cm)		4	4	430	155.8	323.45	NR	NA
Dissolved Solids	(mg/L)		2	2	209	201	205	500	0
pH	(pH)		4	4	6.96	5.66	6.5525	6.5/8.5	1
Total Suspended Solids	(mg/L)		2	1	3	3	3	NR	NA
Turbidity	(NTU)		2	2	9.2	0.811	5.0055	1	1

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.60. Regime=Upper East Fork Poplar Creek AREA NAME=Building 9201-2

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		6	6	21.4	8.47	12.76333	250	0
Fluoride	(mg/L)		6	6	0.234	0.13	0.193833	4	0
Sulfate	(mg/L)		6	6	53.8	1.22	30.475	250	0
Aluminum, ICAP	(mg/L)		6	2	0.419	0.311	0.365	0.2	2
Antimony, ICAP	(mg/L)		6	6	0.2	0.2	0.2	0.006	6
Arsenic, PMS	(mg/L)		6	2	0.00879	0.00695	0.00787	0.05	0
Arsenic, ICAP	(mg/L)		6	6	0.2	0.2	0.2	0.05	6
Barium, ICAP	(mg/L)		6	6	0.248	0.191	0.213333	2	0
Cadmium, ICAP	(mg/L)		6	6	0.01	0.01	0.01	0.005	6
Calcium, ICAP	(mg/L)		6	6	84.7	63.8	73.03333	NR	NA
Chromium, PMS	(mg/L)		6	1	0.00604	0.00604	0.00604	NR	NA
Iron, ICAP	(mg/L)		6	5	5.87	0.056	2.4294	0.3	3
Lead, PMS	(mg/L)		6	1	0.00117	0.00117	0.00117	0.015 c	0
Lead, ICAP	(mg/L)		6	6	0.1	0.1	0.1	0.015 c	6
Lithium, ICAP	(mg/L)		6	2	0.241	0.223	0.232	NR	NA
Magnesium, ICAP	(mg/L)		6	6	24.1	10.1	15.41667	NR	NA
Manganese, ICAP	(mg/L)		6	6	0.682	0.0299	0.471817	0.05	5
Nickel, PMS	(mg/L)		6	2	0.00892	0.00521	0.007065	NR	NA
Niobium, ICAP	(mg/L)		6	6	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		6	6	0.5	0.5	0.5	NR	NA
Potassium, ICAP	(mg/L)		6	4	2.52	2.19	2.365	NR	NA
Selenium, PMS	(mg/L)		6	2	0.0183	0.013	0.01565	0.05	0
Selenium, ICAP	(mg/L)		6	6	0.2	0.2	0.2	0.05	6
Silicon, ICAP	(mg/L)		6	6	7.59	4.03	5.213333	NR	NA
Sodium, ICAP	(mg/L)		6	6	15.1	6.75	10.91833	NR	NA
Strontium, ICAP	(mg/L)		6	6	0.319	0.142	0.250167	NR	NA
Sulfur, ICAP	(mg/L)		6	6	16.8	0.5	9.986667	NR	NA
Thallium, ICAP	(mg/L)		6	6	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		6	6	0.05	0.05	0.05	NR	NA
Uranium, PMS	(mg/L)		6	1	0.00127	0.00127	0.00127	0.03	0
Uranium, ICAP	(mg/L)		6	6	2	2	2	NR	NA

Table 4.60. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=Building 9201-2

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Zirconium, ICAP	(mg/L)		6	6	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		12	NA	13.39	-13.39	0	NR	NA
Alkalinity as HCO3	(mg/L)		6	6	252	185	212.5	NR	NA
Conductivity	(umho/cm)		12	12	594	492	544.6667	NR	NA
Dissolved Solids	(mg/L)		6	6	315	267	289.1667	500	0
pH	(pH)		12	12	7.8	6.75	7.338333	6.5/8.5	0
Total Suspended Solids	(mg/L)		6	2	12	9	10.5	NR	NA
Turbidity	(NTU)		6	6	55.4	1.51	21.32833	1	6
1,1-Dichloroethene	(ug/L)		6	2	9	7	8	7	1
1,2,4-Trichlorobenzene	(ug/L)		2	2	2	2	2	70	0
1,2-Dichloroethene (Total)	(ug/L)		6	2	2800	1900	2350	NR b	NA
1,3-Dichlorobenzene	(ug/L)		2	2	5	4	4.5	NR	NA
1,4-Dichlorobenzene	(ug/L)		6	2	4 J	3 J	3.5	75	0
Chlorobenzene	(ug/L)		6	2	2 J	1 J	1.5	100	0
cis-1,2-Dichloroethene	(ug/L)		6	2	2800	1900	2350	70	2
Dichlorodifluoromethane	(ug/L)		6	2	3 J	2 J	2.5	NR	NA
Tetrachloroethene	(ug/L)		6	2	6500	5000	5750	5	2
trans-1,2-Dichloroethene	(ug/L)		6	2	13	9	11	100	0
Trichloroethene	(ug/L)		6	2	1100	980	1040	5	2
Vinyl chloride	(ug/L)		6	3	220	1 J	113.6667	2	2

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.61. Regime=Upper East Fork Poplar Creek AREA NAME=Building 9202

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		6	6	44.7	3.77	27.42833	250	0
Fluoride	(mg/L)		6	2	0.176	0.171	0.1735	4	0
Nitrate Nitrogen	(mg/L)		6	6	1.05	0.0768	0.411233	10	0
Sulfate	(mg/L)		6	6	21.7	9.83	16.605	250	0
Aluminum, ICAP	(mg/L)		6	2	6.68	4.7	5.69	0.2	2
Antimony, ICAP	(mg/L)		6	6	0.2	0.2	0.2	0.006	6
Arsenic, ICAP	(mg/L)		6	6	0.2	0.2	0.2	0.05	6
Barium, ICAP	(mg/L)		6	6	0.325	0.125	0.218167	2	0
Cadmium, ICAP	(mg/L)		6	6	0.01	0.01	0.01	0.005	6
Calcium, ICAP	(mg/L)		6	6	99.1	53.8	77.46667	NR	NA
Chromium, PMS	(mg/L)		6	4	0.201	0.00972	0.082705	NR	NA
Chromium, ICAP	(mg/L)		6	2	0.178	0.128	0.153	0.1	2
Iron, ICAP	(mg/L)		6	6	4.56	0.0588	1.61835	0.3	3
Lead, PMS	(mg/L)		6	2	0.00607	0.00535	0.00571	0.015 c	0
Lead, ICAP	(mg/L)		6	6	0.1	0.1	0.1	0.015 c	6
Lithium, ICAP	(mg/L)		6	2	0.0162	0.0157	0.01595	NR	NA
Magnesium, ICAP	(mg/L)		6	6	14.2	4.54	10.65667	NR	NA
Manganese, ICAP	(mg/L)		6	6	2.15	0.00705	0.41163	0.05	3
Nickel, PMS	(mg/L)		6	6	0.437	0.00791	0.128202	NR	NA
Nickel, ICAP	(mg/L)		6	3	0.453	0.126	0.247667	0.1 d	3
Niobium, ICAP	(mg/L)		6	6	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		6	6	0.5	0.5	0.5	NR	NA
Potassium, ICAP	(mg/L)		6	2	2.74	2.45	2.595	NR	NA
Selenium, ICAP	(mg/L)		6	6	0.2	0.2	0.2	0.05	6
Silicon, ICAP	(mg/L)		6	6	21.6	3.71	10.49833	NR	NA
Sodium, ICAP	(mg/L)		6	6	8.22	3.66	6.336667	NR	NA
Strontium, ICAP	(mg/L)		6	6	0.492	0.196	0.307	NR	NA
Sulfur, ICAP	(mg/L)		6	6	6.78	3.53	5.36	NR	NA
Thallium, ICAP	(mg/L)		6	6	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		6	6	0.0745	0.05	0.054533	NR	NA
Uranium, PMS	(mg/L)		6	4	0.0167	0.000737	0.006179	0.03	0

Table 4.61. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=Building 9202

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Uranium, ICAP	(mg/L)		6	6	2	2	2	NR	NA
Zirconium, ICAP	(mg/L)		6	6	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		12	NA	5.89	-5.89	0	NR	NA
Alkalinity as HCO3	(mg/L)		6	6	220	149	178.6667	NR	NA
Conductivity	(umho/cm)		12	12	632	404	508.9167	NR	NA
Dissolved Solids	(mg/L)		6	6	397	235	302.1667	500	0
pH	(pH)		12	12	7.72	6.75	7.26	6.5/8.5	0
Total Suspended Solids	(mg/L)		6	3	176	2	99	NR	NA
Turbidity	(NTU)		6	6	83	1.74	27.69833	1	6
Gross Alpha	(pCi/L)		6	2	11	6.5	8.75	15 f	0
Gross Beta	(pCi/L)		6	1	10	10	10	50 a	0
Trichloroethene	(ug/L)		6	1	6	6	6	5	1

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.62. Regime=Upper East Fork Poplar Creek AREA NAME=CPT

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	44.8	40.6	42.7	250	0
Nitrate Nitrogen	(mg/L)		2	2	4.32	3.16	3.74	10	0
Sulfate	(mg/L)		2	2	388	360	374	250	2
Aluminum, ICAP	(mg/L)		2	1	0.27	0.27	0.27	0.2	1
Antimony, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.006	2
Arsenic, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.05	2
Barium, ICAP	(mg/L)		2	2	0.028	0.027	0.0275	2	0
Cadmium, ICAP	(mg/L)		2	2	0.01	0.01	0.01	0.005	2
Calcium, ICAP	(mg/L)		2	2	257	253	255	NR	NA
Chromium, PMS	(mg/L)		2	1	0.0101	0.0101	0.0101	NR	NA
Iron, ICAP	(mg/L)		2	2	0.168	0.112	0.14	0.3	0
Lead, ICAP	(mg/L)		2	2	0.1	0.1	0.1	0.015 c	2
Magnesium, ICAP	(mg/L)		2	2	32.2	28.3	30.25	NR	NA
Manganese, ICAP	(mg/L)		2	2	0.0131	0.0115	0.0123	0.05	0
Niobium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		2	2	0.5	0.5	0.5	NR	NA
Potassium, ICAP	(mg/L)		2	2	4.88	4.75	4.815	NR	NA
Selenium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.05	2
Silicon, ICAP	(mg/L)		2	2	8.14	7.54	7.84	NR	NA
Sodium, ICAP	(mg/L)		2	2	7.61	7.37	7.49	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.38	0.357	0.3685	NR	NA
Sulfur, ICAP	(mg/L)		2	2	145	125	135	NR	NA
Thallium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		2	2	0.05	0.05	0.05	NR	NA
Uranium, ICAP	(mg/L)		2	2	2	2	2	NR	NA
Zirconium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		4	NA	10.85	-10.85	0	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	284	268	276	NR	NA
Conductivity	(umho/cm)		4	4	1500	1305	1402.5	NR	NA
Dissolved Solids	(mg/L)		2	2	956	954	955	500	2
pH	(pH)		4	4	7.03	6.78	6.9225	6.5/8.5	0

Table 4.62. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=CPT

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Total Suspended Solids	(mg/L)		2	2	3	2	2.5	NR	NA
Turbidity	(NTU)		2	2	2.71	2.21	2.46	1	2
Gross Beta	(pCi/L)		2	1	15	15	15	50 a	0
1,2-Dichloroethene (Total)	(ug/L)		2	2	27	6	16.5	NR b	NA
cis-1,2-Dichloroethene	(ug/L)		2	2	27	6	16.5	70	0
Tetrachloroethene	(ug/L)		2	2	48	42	45	5	2
Trichloroethene	(ug/L)		2	2	7	4 J	5.5	5	1

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.63. Regime=Upper East Fork Poplar Creek AREA NAME=East End Fuel Facility

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	12.7	11.8	12.25	250	0
Nitrate Nitrogen	(mg/L)		2	2	740	712	726	10	2
Sulfate	(mg/L)		2	2	18.6	13.8	16.2	250	0
Antimony, ICAP	(mg/L)		2	2	0.4	0.2	0.3	0.006	2
Arsenic, ICAP	(mg/L)		2	2	0.4	0.2	0.3	0.05	2
Barium, ICAP	(mg/L)		2	2	4.42	3.59	4.005	2	2
Cadmium, PMS	(mg/L)		2	2	0.00093	0.000567	0.000749	0.005	0
Cadmium, ICAP	(mg/L)		2	2	0.02	0.01	0.015	0.005	2
Calcium, ICAP	(mg/L)		2	2	879	794	836.5	NR	NA
Chromium, PMS	(mg/L)		2	2	0.0233	0.0187	0.021	NR	NA
Chromium, ICAP	(mg/L)		2	1	0.028	0.028	0.028	0.1	0
Lead, PMS	(mg/L)		2	1	0.00103	0.00103	0.00103	0.015 c	0
Lead, ICAP	(mg/L)		2	2	0.2	0.1	0.15	0.015 c	2
Lithium, ICAP	(mg/L)		2	2	0.0727	0.0714	0.07205	NR	NA
Magnesium, ICAP	(mg/L)		2	2	196	185	190.5	NR	NA
Manganese, ICAP	(mg/L)		2	2	0.108	0.0798	0.0939	0.05	2
Nickel, PMS	(mg/L)		2	2	0.0446	0.0179	0.03125	NR	NA
Niobium, ICAP	(mg/L)		2	2	0.4	0.2	0.3	NR	NA
Phosphorus, ICAP	(mg/L)		2	2	1	0.5	0.75	NR	NA
Potassium, ICAP	(mg/L)		2	2	13.4	12.9	13.15	NR	NA
Selenium, ICAP	(mg/L)		2	2	0.4	0.2	0.3	0.05	2
Silicon, ICAP	(mg/L)		2	2	6.44	6.37	6.405	NR	NA
Sodium, ICAP	(mg/L)		2	2	34	32.4	33.2	NR	NA
Strontium, ICAP	(mg/L)		2	2	23.5	21.5	22.5	NR	NA
Sulfur, ICAP	(mg/L)		2	2	6.3	4.35	5.325	NR	NA
Thallium, ICAP	(mg/L)		2	2	0.4	0.2	0.3	NR	NA
Titanium, ICAP	(mg/L)		2	2	0.1	0.05	0.075	NR	NA
Uranium, PMS	(mg/L)		2	2	0.00334	0.00308	0.00321	0.03	0
Uranium, ICAP	(mg/L)		2	2	4	2	3	NR	NA
Zirconium, ICAP	(mg/L)		2	2	0.4	0.2	0.3	NR	NA
Static Water Level	(ft - toc)		4	NA	4.56	-4.56	0	NR	NA

Table 4.63. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=East End Fuel Facility

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Alkalinity as HCO3	(mg/L)		2	2	121	118	119.5	NR	NA
Conductivity	(umho/cm)		4	4	5900	5480	5675	NR	NA
Dissolved Solids	(mg/L)		2	2	4840	4190	4515	500	2
pH	(pH)		4	4	7.37	6.99	7.1125	6.5/8.5	0
Turbidity	(NTU)		2	2	0.921	0.901	0.911	1	0
Uranium-234	(pCi/L)		2	2	1.9	1.6	1.75	20	0
Uranium-238	(pCi/L)		2	2	0.84	0.7	0.77	24	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.64. Regime=Upper East Fork Poplar Creek AREA NAME=Exit Pathway Monitoring Location E

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Bicarbonate	(mg/L)		2	2	374	310	342	NR	NA
Chloride	(mg/L)		2	2	12.9	11.1	12	250	0
Fluoride	(mg/L)		2	2	0.29	0.23	0.26	4	0
Nitrate/Nitrite	(mg/L)		2	2	1.8	0.17	0.985	NR	NA
Sulfate	(mg/L)		2	2	20.1	17.9	19	250	0
Aluminum, ICAP	(mg/L)		2	1	0.0736	0.0736	0.0736	0.2	0
Barium, ICAP	(mg/L)		2	2	0.0542	0.0534	0.0538	2	0
Boron, ICAP	(mg/L)		2	2	0.116	0.108	0.112	NR	NA
Cadmium, ICAP	(mg/L)		2	1	0.0023	0.0023	0.0023	0.005	0
Calcium, ICAP	(mg/L)		2	2	107	103 J	105	NR	NA
Iron, ICAP	(mg/L)		2	2	0.237	0.102	0.1695	0.3	0
Magnesium, ICAP	(mg/L)		2	2	9.22	9.08	9.15	NR	NA
Manganese, ICAP	(mg/L)		2	2	0.967	0.816	0.8915	0.05	2
Potassium, ICAP	(mg/L)		2	2	4.15	3.74	3.945	NR	NA
Sodium, ICAP	(mg/L)		2	2	16.9	16.5	16.7	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.211	0.208	0.2095	NR	NA
Static Water Level	(ft - toc)		2	NA	14.22	12.65	13.435	NR	NA
Dissolved Solids	(mg/L)		2	2	393	388	390.5	500	0
Gross Beta	(pCi/L)		2	2	4.96	4.15	4.555	50 a	0
cis-1,2-Dichloroethene	(ug/L)		2	2	24	17	20.5	70	0
Methane	(ug/L)		2	2	63	8	35.5	NR	NA
Tetrachloroethene	(ug/L)		2	2	7	4 J	5.5	5	1
Trichloroethene	(ug/L)		2	2	14	7	10.5	5	2
Vinyl chloride	(ug/L)		2	1	3	3	3	2	1

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.65. Regime=Upper East Fork Poplar Creek AREA NAME=Exit Pathway Monitoring Location I

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Bicarbonate	(mg/L)		4	4	270	226	245.25	NR	NA
Chloride	(mg/L)		4	4	27.3	19	24.5	250	0
Fluoride	(mg/L)		4	4	0.21	0.17	0.195	4	0
Nitrate/Nitrite	(mg/L)		4	4	14.7	0.34	6.675	NR	NA
Sulfate	(mg/L)		4	4	56	27	40.325	250	0
Aluminum, ICAP	(mg/L)		4	2	0.14	0.0561	0.09805	0.2	0
Antimony, ICAP	(mg/L)		4	1	0.006	0.006	0.006	0.006	0
Barium, ICAP	(mg/L)		4	4	0.175	0.0439	0.10855	2	0
Boron, ICAP	(mg/L)		4	4	0.0819	0.0169	0.05025	NR	NA
Calcium, ICAP	(mg/L)		4	4	76.5	62.6	70.075	NR	NA
Chromium, ICAP	(mg/L)		4	1	0.0188	0.0188	0.0188	0.1	0
Iron, ICAP	(mg/L)		4	2	0.368	0.0927	0.23035	0.3	1
Magnesium, ICAP	(mg/L)		4	4	46	17.2	31.325	NR	NA
Manganese, ICAP	(mg/L)		4	4	0.315	0.0081	0.1198	0.05	2
Nickel, ICAP	(mg/L)		4	1	0.0369	0.0369	0.0369	0.1 d	0
Potassium, ICAP	(mg/L)		4	4	3.61	2.15	2.8175	NR	NA
Sodium, ICAP	(mg/L)		4	4	13.1	7.33	9.6625	NR	NA
Strontium, ICAP	(mg/L)		4	4	0.452	0.144	0.29525	NR	NA
Uranium, PMS	(mg/L)		4	4	0.0879	0.00526	0.045483	0.03	2
Static Water Level	(ft - toc)		4	NA	13.31	11.09	12.1325	NR	NA
Dissolved Solids	(mg/L)		4	4	427	293	355	500	0
Total Suspended Solids	(mg/L)		4	1	6	6	6	NR	NA
Gross Alpha	(pCi/L)		4	4	51.98	5.27	28.7125	15 f	2
Gross Beta	(pCi/L)		4	4	26.23	7.33	14.86	50 a	0
Bromodichloromethane	(ug/L)		4	1	1 J	1 J	1	100 i	0
Carbon tetrachloride	(ug/L)		4	4	120	21	62.25	5	4
Chloroform	(ug/L)		4	4	140	14	75.75	100 i	2
cis-1,2-Dichloroethene	(ug/L)		4	2	95	63	79	70	1
Tetrachloroethene	(ug/L)		4	4	61	6	27.75	5	4
trans-1,2-Dichloroethene	(ug/L)		4	1	2 J	2 J	2	100	0
Trichloroethene	(ug/L)		4	2	66	47	56.5	5	2

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.66. REGIME=Upper East Fork Poplar Creek AREA NAME=Exit Pathway Monitoring Location J

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Bicarbonate	(mg/L)		22	22	299	136	218.7727	NR	NA
Carbonate	(mg/L)		22	1	14	14	14	NR	NA
Chloride	(mg/L)		46	46	125	2.39	26.9363	250	0
Fluoride	(mg/L)		46	34	1.3	0.18	0.575088	4	0
Nitrate Nitrogen	(mg/L)		24	14	0.833	0.0915	0.493607	10	0
Nitrate/Nitrite	(mg/L)		22	19	2.6	0.038	0.564211	NR	NA
Sulfate	(mg/L)		46	45	63.6	0.258	23.70284	250	0
Aluminum, ICAP	(mg/L)		46	5	0.241	0.0569	0.15064	0.2	2
Antimony, ICAP	(mg/L)		46	24	0.2	0.2	0.2	0.006	24
Arsenic, ICAP	(mg/L)		46	24	0.2	0.2	0.2	0.05	24
Barium, ICAP	(mg/L)		46	46	0.734	0.0235	0.113285	2	0
Boron, ICAP	(mg/L)		46	29	0.731	0.0112	0.225269	NR	NA
Cadmium, ICAP	(mg/L)		46	24	0.01	0.01	0.01	0.005	24
Calcium, ICAP	(mg/L)		46	46	135	17.9	52.65652	NR	NA
Chromium, PMS	(mg/L)		24	5	0.00716	0.00262	0.005812	NR	NA
Chromium, ICAP	(mg/L)		46	4	0.0057	0.0051	0.005325	0.1	0
Iron, ICAP	(mg/L)		46	41	1.9	0.0185	0.191437	0.3	4
Lead, PMS	(mg/L)		24	7	0.00533	0.000522	0.001766	0.015 c	0
Lead, ICAP	(mg/L)		46	25	0.1	0.0125	0.0965	0.015 c	24
Lithium, ICAP	(mg/L)		46	26	0.163	0.0103	0.048969	NR	NA
Magnesium, ICAP	(mg/L)		46	46	29	9.17	19.11087	NR	NA
Manganese, ICAP	(mg/L)		46	13	0.122	0.00551	0.046272	0.05	6
Nickel, PMS	(mg/L)		24	2	0.0108	0.00761	0.009205	NR	NA
Niobium, ICAP	(mg/L)		24	24	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		24	24	0.5	0.5	0.5	NR	NA
Potassium, ICAP	(mg/L)		46	36	5.89	1.01	2.672222	NR	NA
Selenium, PMS	(mg/L)		24	1	0.0201	0.0201	0.0201	0.05	0
Selenium, ICAP	(mg/L)		46	24	0.2	0.2	0.2	0.05	24
Silicon, ICAP	(mg/L)		24	24	8.87	3.79	4.930417	NR	NA
Sodium, ICAP	(mg/L)		46	46	180	0.684	32.62793	NR	NA
Strontium, ICAP	(mg/L)		46	46	4.3	0.0625	1.046378	NR	NA

Table 4.66. (continued) REGIME=Upper East Fork Poplar Creek AREA NAME=Exit Pathway Monitoring Location J

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Sulfur, ICAP	(mg/L)		24	24	18.9	0.5	8.032958	NR	NA
Thallium, ICAP	(mg/L)		46	24	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		24	24	0.05	0.05	0.05	NR	NA
Uranium, PMS	(mg/L)		46	2	0.0212 Q	0.000582	0.010891	0.03	0
Uranium, ICAP	(mg/L)		24	24	2	2	2	NR	NA
Zinc, ICAP	(mg/L)		46	36	0.746	0.0111	0.10385	5	0
Zirconium, ICAP	(mg/L)		24	24	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		56	NA	78.83	-78.83	2.097321	NR	NA
Alkalinity as HCO3	(mg/L)		24	24	328	145	233.3333	NR	NA
Conductivity	(umho/cm)		51	51	980	274.1	550.9275	NR	NA
Dissolved Solids	(mg/L)		46	46	555	169	303.0652	500	4
pH	(pH)		51	51	8.23	6.6	7.572157	6.5/8.5	0
Total Suspended Solids	(mg/L)		46	4	4	2	2.75	NR	NA
Turbidity	(NTU)		24	24	16.5	0.514	2.756708	1	20
Gross Alpha	(pCi/L)		46	6	11.13	1.46	4.241667	15 f	0
Gross Beta	(pCi/L)		46	16	342.64 Q	2.32	36.32063	50 a	2
1,2-Dichloroethene (Total)	(ug/L)		24	2	2 J	2 J	2	NR b	NA
Acetone	(ug/L)		46	1	5 J	5 J	5	NR	NA
Benzene	(ug/L)		46	1	1 J	1 J	1	5	0
Carbon tetrachloride	(ug/L)		46	18	390	5	80.77778	5	17
Chloroform	(ug/L)		46	21	40	1 J	11.47619	100 i	0
cis-1,2-Dichloroethene	(ug/L)		46	4	2 J	2 J	2	70	0
Ethylbenzene	(ug/L)		46	6	3 J	2 J	2.5	700	0
Methylene chloride	(ug/L)		46	1	1 J	1 J	1	5	0
Styrene	(ug/L)		46	4	4 J	2 J	2.5	100	0
Tetrachloroethene	(ug/L)		46	18	24	2 J	10.16667	5	15
Toluene	(ug/L)		46	5	3 J	1 J	2.4	1000	0
Trichloroethene	(ug/L)		46	17	4 J	1 J	2.352941	5	0
Trichlorofluoromethane	(ug/L)		24	2	3 J	2 J	2.5	NR	NA
Xylenes	(ug/L)		46	4	1 J	1 J	1	10000	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.67. Regime=Upper East Fork Poplar Creek AREA NAME=Exit Pathway Scarboro Road/Pine Ridge

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		6	6	14.4	1.06	4.973333	250	0
Fluoride	(mg/L)		6	6	0.333	0.126	0.227	4	0
Sulfate	(mg/L)		6	6	120	0.64	61.69667	250	0
Antimony, ICAP	(mg/L)		6	6	0.2	0.2	0.2	0.006	6
Arsenic, ICAP	(mg/L)		6	6	0.2	0.2	0.2	0.05	6
Barium, ICAP	(mg/L)		6	6	0.128	0.0426	0.068217	2	0
Boron, ICAP	(mg/L)		6	4	0.247	0.127	0.185	NR	NA
Cadmium, PMS	(mg/L)		6	1	0.00151	0.00151	0.00151	0.005	0
Cadmium, ICAP	(mg/L)		6	6	0.01	0.01	0.01	0.005	6
Calcium, ICAP	(mg/L)		6	6	82.7	53.2	66.58333	NR	NA
Iron, ICAP	(mg/L)		6	6	21.4	0.211	6.367167	0.3	4
Lead, PMS	(mg/L)		6	2	0.00474	0.000572	0.002656	0.015 c	0
Lead, ICAP	(mg/L)		6	6	0.1	0.1	0.1	0.015 c	6
Lithium, ICAP	(mg/L)		6	4	0.0334	0.0312	0.032425	NR	NA
Magnesium, ICAP	(mg/L)		6	6	39.3	15.7	27.51667	NR	NA
Manganese, ICAP	(mg/L)		6	6	2.06	0.0111	0.559667	0.05	2
Niobium, ICAP	(mg/L)		6	6	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		6	6	0.5	0.5	0.5	NR	NA
Potassium, ICAP	(mg/L)		6	6	5.06	2.92	3.633333	NR	NA
Selenium, ICAP	(mg/L)		6	6	0.2	0.2	0.2	0.05	6
Silicon, ICAP	(mg/L)		6	6	12.8	3.32	9.291667	NR	NA
Sodium, ICAP	(mg/L)		6	6	16.5	5.39	11.38333	NR	NA
Strontium, ICAP	(mg/L)		6	6	1.6	0.0775	0.750533	NR	NA
Sulfur, ICAP	(mg/L)		6	6	41.7	0.5	21.29333	NR	NA
Thallium, ICAP	(mg/L)		6	6	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		6	6	0.05	0.05	0.05	NR	NA
Uranium, ICAP	(mg/L)		6	6	2	2	2	NR	NA
Zinc, ICAP	(mg/L)		6	2	2.28	0.929	1.6045	5	0

Table 4.67. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=Exit Pathway Scarboro Road/Pine Ridge

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Zirconium, ICAP	(mg/L)		6	6	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		12	NA	12.49	-12.49	0	NR	NA
Alkalinity as HCO3	(mg/L)		6	6	280	208	237	NR	NA
Conductivity	(umho/cm)		12	12	734	446	617.9167	NR	NA
Dissolved Solids	(mg/L)		6	6	455	224	352.1667	500	0
pH	(pH)		12	12	7.84	6.42	7.155	6.5/8.5	1
Total Suspended Solids	(mg/L)		6	3	27	4	15.66667	NR	NA
Turbidity	(NTU)		6	6	206	2.19	51.22667	1	6
Gross Alpha	(pCi/L)		6	1	2.9	2.9	2.9	15 f	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.68. Regime=Upper East Fork Poplar Creek AREA NAME=Exit Pathway Spring/Surface Water

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Ammonia as Nitrogen	(mg/L)		74	2	0.868	0.214	0.541	NR	NA
Bicarbonate	(mg/L)		14	14	204	54	131.5429	NR	NA
Carbonate	(mg/L)		14	2	8.6	4.4	6.5	NR	NA
Chloride	(mg/L)		14	14	62.7	5.7	18.11429	250	0
Fluoride	(mg/L)		23	20	0.99	0.16	0.5001	4	0
Nitrate Nitrogen	(mg/L)		2	2	5.61	2.7	4.155	10	0
Nitrate/Nitrite	(mg/L)		14	14	4	0.4	1.85	NR	NA
Sulfate	(mg/L)		54	54	50.7	7.2	28.8	250	0
Aluminum, ICAP	(mg/L)		86	53	4.27	0.0526	0.650998	0.2	47
Barium, ICAP	(mg/L)		86	86	0.0721	0.0367	0.044934	2	0
Boron, ICAP	(mg/L)		86	12	0.604	0.0128	0.116925	NR	NA
Calcium, ICAP	(mg/L)		86	86	53.3	26.2	39.44419	NR	NA
Copper, ICAP	(mg/L)		95	4	0.0249	0.0067	0.015175	1.3	0
Iron, ICAP	(mg/L)		95	95	3.81	0.0849	0.415796	0.3	30
Lead, ICAP	(mg/L)		95	1	0.0055	0.0055	0.0055	0.015 c	0
Lithium, ICAP	(mg/L)		86	85	0.173	0.0102	0.023422	NR	NA
Magnesium, ICAP	(mg/L)		86	86	22.9	4.91	10.11791	NR	NA
Manganese, ICAP	(mg/L)		86	86	0.329	0.012	0.05387	0.05	26
Mercury, CVAA	(mg/L)		341	339	0.0106	0.000213	0.000674	0.002	7
Molybdenum, ICAP	(mg/L)		86	3	0.0193	0.0133	0.016067	NR	NA
Nitrate/Nitrite as Nitrogen	(mg/L)		83	83	7.04	0.591	1.73494	NR	NA
Phosphorus, ICAP	(mg/L)		76	1	0.115	0.115	0.115	NR	NA
Potassium, ICAP	(mg/L)		86	34	2.91	1.45	2.081765	NR	NA
Sodium, ICAP	(mg/L)		86	86	38.4	3.44	9.389651	NR	NA
Strontium, ICAP	(mg/L)		86	86	0.138	0.0623	0.102728	NR	NA
Titanium, ICAP	(mg/L)		76	3	0.0699	0.0504	0.0576	NR	NA
Total Kjeldahl Nitrogen	(mg/L)		1	1	1.2	1.2	1.2	NR	NA
Uranium, PMS	(mg/L)		88	88	0.23	0.0042	0.028414	0.03	27
Zinc, ICAP	(mg/L)		95	15	0.138	0.0111	0.062047	5	0
Chemical Oxygen Demand	(mg/L)		1	1	14	14	14	NR	NA

Table 4.68. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=Exit Pathway Spring/Surface Water

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Dissolved Solids	(mg/L)		14	14	340	162	237.1429	500	0
Oil and Grease	(mg/L)		117	2	24.9	11.4	18.15	NR	NA
Phenols	(mg/L)		1	1	0.0356	0.0356	0.0356	NR	NA
Total Suspended Solids	(mg/L)		90	84	122	1.33	11.78071	NR	NA
Cesium-137	(pCi/L)		78	78	3.2	-2.2	0.216479	120	0
Radium-226	(pCi/L)		77	77	0.94	-1.3	0.227208	5 g	0
Radium-228	(pCi/L)		78	78	3.5	-0.93	0.743349	5 g	0
Thorium-228	(pCi/L)		78	78	1.5	-1.4	0.008528	16	0
Thorium-230	(pCi/L)		78	78	1	-1.8	-0.0446	12	0
Thorium-231+234	(pCi/L)		78	78	70	1.1	9.412821	400	0
Thorium-232	(pCi/L)		78	78	0.22	-0.52	-0.01176	2	0
Uranium-233/234	(pCi/L)		4	4	4.18	0.75	2.2575	NR	NA
Uranium-234	(pCi/L)		78	78	11	0.7	2.712949	20	0
Uranium-235	(wt %)		77	77	0.57	0.21	0.314675	NR	NA
Uranium-235	(pCi/L)		82	80	1.4	-0.086	0.165724	24	0
Uranium-236	(pCi/L)		82	78	0.51	-0.038	0.062369	NR	NA
Neptunium-237	(pCi/L)		78	78	0.13	-0.19	-0.01812	1.2	0
Plutonium-238	(pCi/L)		78	78	0.63	-0.65	0.008732	1.6	0
Uranium-238	(pCi/L)		82	82	70	1.1	9.162073	24	3
Americium-241	(pCi/L)		78	78	0.46	-0.38	-0.00346	1.2	0
Cobalt-60	(pCi/L)		78	78	3.6	-1.7	0.493192	200	0
Strontium-89/90	(pCi/L)		78	78	4.9	-4.2	0.036922	NR	NA
Technetium-99	(pCi/L)		78	78	32	-10	8.395641	4000	0
Gamma Activity	(pCi/L)		78	78	20	-26	-0.66949	NR	NA
Gross Alpha	(pCi/L)		88	83	74	2.1	12.15108	15 f	19
Gross Beta	(pCi/L)		88	87	51	-2.1	9.879195	50 a	1
Radium - Total Alpha	(pCi/L)		78	78	1.9	-0.034	0.270679	5 g	0
Tritium	(pCi/L)		77	77	1700	-620	267.1688	20000	0
1,1,1-Trichloroethane	(ug/L)		14	1	1 J	1 J	1	200	0
1,1-Dichloroethane	(ug/L)		14	1	1 J	1 J	1	NR	NA
Acetone	(ug/L)		14	1	7 J	7 J	7	NR	NA

Table 4.68. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=Exit Pathway Spring/Surface Water

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Benzoic acid	(ug/L)		8	2	6 J	6 J	6	NR	NA
Bis(2-ethylhexyl)phthalate	(ug/L)		8	2	1 J	1 J	1	NR	NA
Bromodichloromethane	(ug/L)		14	4	2 J	1 J	1.75	100 i	0
Carbon tetrachloride	(ug/L)		14	1	1 J	1 J	1	5	0
Chloroform	(ug/L)		14	10	7	1 J	4.3	100 i	0
cis-1,2-Dichloroethene	(ug/L)		14	2	5	3 J	4	70	0
Fluoranthene	(ug/L)		8	1	0.9 J	0.9 J	0.9	NR	NA
Pyrene	(ug/L)		8	1	0.5 J	0.5 J	0.5	NR	NA
Tetrachloroethene	(ug/L)		14	5	17	1 J	6.4	5	2
Trichloroethene	(ug/L)		14	4	5 J	1 J	3	5	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.69. Regime=Upper East Fork Poplar Creek AREA NAME=Fire Training Facility

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	1.86	1.78	1.82	250	0
Fluoride	(mg/L)		2	2	0.17	0.162	0.166	4	0
Nitrate Nitrogen	(mg/L)		2	2	1.14	1.08	1.11	10	0
Sulfate	(mg/L)		2	2	8.12	7.81	7.965	250	0
Aluminum, ICAP	(mg/L)		2	2	2.41	2.2	2.305	0.2	2
Antimony, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.006	2
Arsenic, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.05	2
Barium, ICAP	(mg/L)		2	2	0.0266	0.0244	0.0255	2	0
Cadmium, ICAP	(mg/L)		2	2	0.01	0.01	0.01	0.005	2
Calcium, ICAP	(mg/L)		2	2	138	118	128	NR	NA
Lead, ICAP	(mg/L)		2	2	0.1	0.1	0.1	0.015 c	2
Lithium, ICAP	(mg/L)		2	2	0.0182	0.0146	0.0164	NR	NA
Nickel, PMS	(mg/L)		2	1	0.00664	0.00664	0.00664	NR	NA
Niobium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		2	2	0.5	0.5	0.5	NR	NA
Potassium, ICAP	(mg/L)		2	2	13.2	11.1	12.15	NR	NA
Selenium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.05	2
Silicon, ICAP	(mg/L)		2	2	3.04	3	3.02	NR	NA
Sodium, ICAP	(mg/L)		2	2	2.27	1.91	2.09	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.387	0.373	0.38	NR	NA
Sulfur, ICAP	(mg/L)		2	2	2.83	2.73	2.78	NR	NA
Thallium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		2	2	0.05	0.05	0.05	NR	NA
Uranium, ICAP	(mg/L)		2	2	2	2	2	NR	NA
Zirconium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		4	NA	23.72	-23.72	0	NR	NA
Alkalinity as CO3	(mg/L)		2	2	64	44	54	NR	NA
Conductivity	(umho/cm)		4	4	1820	1335	1604.25	NR	NA
Dissolved Solids	(mg/L)		2	2	365	321	343	500	0
pH	(pH)		4	4	12.18	11.43	11.8	6.5/8.5	4
Turbidity	(NTU)		2	2	0.508	0.495	0.5015	1	0

Table 4.69. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=Fire Training Facility

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Gross Alpha	(pCi/L)		2	1	10 Q	10 Q	10	15 f	0
Gross Beta	(pCi/L)		2	1	13	13	13	50 a	0
1,2-Dichloroethene (Total)	(ug/L)		2	2	2 J	1 J	1.5	NR b	NA
cis-1,2-Dichloroethene	(ug/L)		2	2	2 J	1 J	1.5	70	0
Tetrachloroethene	(ug/L)		2	2	4 J	3 J	3.5	5	0
Trichloroethene	(ug/L)		2	1	1 J	1 J	1	5	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.70. Regime=Upper East Fork Poplar Creek AREA NAME=GW Monitoring Plan Grid Location B3

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	13.5	13.2	13.35	250	0
Nitrate Nitrogen	(mg/L)		2	2	182	181	181.5	10	2
Sulfate	(mg/L)		2	2	17.9	16.6	17.25	250	0
Antimony, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.006	2
Arsenic, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.05	2
Barium, ICAP	(mg/L)		2	2	1.38	1.34	1.36	2	0
Cadmium, ICAP	(mg/L)		2	2	0.01	0.01	0.01	0.005	2
Calcium, ICAP	(mg/L)		2	2	252	245	248.5	NR	NA
Lead, ICAP	(mg/L)		2	2	0.1	0.1	0.1	0.015 c	2
Lithium, ICAP	(mg/L)		2	2	0.0475	0.0447	0.0461	NR	NA
Magnesium, ICAP	(mg/L)		2	2	41	40.9	40.95	NR	NA
Manganese, ICAP	(mg/L)		2	2	0.573	0.553	0.563	0.05	2
Nickel, PMS	(mg/L)		2	1	0.00851	0.00851	0.00851	NR	NA
Niobium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		2	2	0.5	0.5	0.5	NR	NA
Potassium, ICAP	(mg/L)		2	2	12.9	12.9	12.9	NR	NA
Selenium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.05	2
Silicon, ICAP	(mg/L)		2	2	9.36	9.3	9.33	NR	NA
Sodium, ICAP	(mg/L)		2	2	74	71.1	72.55	NR	NA
Strontium, ICAP	(mg/L)		2	2	4.91	4.91	4.91	NR	NA
Sulfur, ICAP	(mg/L)		2	2	6.32	6.12	6.22	NR	NA
Thallium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		2	2	0.05	0.05	0.05	NR	NA
Uranium, PMS	(mg/L)		2	1	0.000585	0.000585	0.000585	0.03	0
Uranium, ICAP	(mg/L)		2	2	2	2	2	NR	NA
Zirconium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		4	NA	7.8	-7.8	0	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	238	212	225	NR	NA
Conductivity	(umho/cm)		4	4	2220	1986	2084	NR	NA
Dissolved Solids	(mg/L)		2	2	1380	1340	1360	500	2
pH	(pH)		4	4	7.05	6.83	6.955	6.5/8.5	0

Table 4.70. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=GW Monitoring Plan Grid Location B3

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Turbidity	(NTU)		2	2	1.41	0.473	0.9415	1	1
1,1,1-Trichloroethane	(ug/L)		2	2	4 J	3 J	3.5	200	0
1,1-Dichloroethane	(ug/L)		2	2	31	29	30	NR	NA
1,1-Dichloroethene	(ug/L)		2	2	30	30	30	7	2
1,2-Dichloroethene (Total)	(ug/L)		2	2	1100	1000	1050	NR b	NA
cis-1,2-Dichloroethene	(ug/L)		2	2	1100	1000	1050	70	2
Tetrachloroethene	(ug/L)		2	2	480	350	415	5	2
trans-1,2-Dichloroethene	(ug/L)		2	2	13	13	13	100	0
Trichloroethene	(ug/L)		2	2	240	210	225	5	2
Trichlorofluoromethane	(ug/L)		2	1	4 J	4 J	4	NR	NA
Vinyl chloride	(ug/L)		2	2	23	22	22.5	2	2

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.71. Regime=Upper East Fork Poplar Creek AREA NAME=GW Monitoring Plan Grid Location C3

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	25.9	23.1	24.5	250	0
Fluoride	(mg/L)		2	2	0.736	0.584	0.66	4	0
Nitrate Nitrogen	(mg/L)		2	2	1.37	1.03	1.2	10	0
Sulfate	(mg/L)		2	2	46.4	41.5	43.95	250	0
Antimony, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.006	2
Arsenic, PMS	(mg/L)		2	1	0.0072	0.0072	0.0072	0.05	0
Arsenic, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.05	2
Barium, ICAP	(mg/L)		2	2	0.164	0.159	0.1615	2	0
Boron, ICAP	(mg/L)		2	2	0.617	0.56	0.5885	NR	NA
Cadmium, ICAP	(mg/L)		2	2	0.01	0.01	0.01	0.005	2
Calcium, ICAP	(mg/L)		2	2	20.6	15.2	17.9	NR	NA
Chromium, PMS	(mg/L)		2	2	0.0131	0.00855	0.010825	NR	NA
Copper, ICAP	(mg/L)		2	1	0.0495	0.0495	0.0495	1.3	0
Iron, ICAP	(mg/L)		2	1	0.109	0.109	0.109	0.3	0
Lead, PMS	(mg/L)		2	1	0.000867	0.000867	0.000867	0.015 c	0
Lead, ICAP	(mg/L)		2	2	0.1	0.1	0.1	0.015 c	2
Lithium, ICAP	(mg/L)		2	2	0.0661	0.0607	0.0634	NR	NA
Magnesium, ICAP	(mg/L)		2	2	7.6	5.21	6.405	NR	NA
Molybdenum, ICAP	(mg/L)		2	2	0.129	0.103	0.116	NR	NA
Niobium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		2	2	0.5	0.5	0.5	NR	NA
Potassium, ICAP	(mg/L)		2	2	6.11	6.09	6.1	NR	NA
Selenium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.05	2
Silicon, ICAP	(mg/L)		2	2	5.44	5.08	5.26	NR	NA
Sodium, ICAP	(mg/L)		2	2	112	104	108	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.562	0.561	0.5615	NR	NA
Sulfur, ICAP	(mg/L)		2	2	16.8	14.7	15.75	NR	NA
Thallium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		2	2	0.05	0.05	0.05	NR	NA
Uranium, ICAP	(mg/L)		2	2	2	2	2	NR	NA
Zirconium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA

Table 4.71. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=GW Monitoring Plan Grid Location C3

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Static Water Level	(ft - toc)		4	NA	9.82	-9.82	0	NR	NA
Alkalinity as CO3	(mg/L)		2	1	17.2	17.2	17.2	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	226	201	213.5	NR	NA
Conductivity	(umho/cm)		4	4	729	597	658	NR	NA
Dissolved Solids	(mg/L)		2	2	366	361	363.5	500	0
pH	(pH)		4	4	8.83	8.25	8.5375	6.5/8.5	2
Turbidity	(NTU)		2	2	0.839	0.634	0.7365	1	0
1,1-Dichloroethene	(ug/L)		2	2	7	3 J	5	7	0
1,2-Dichloroethene (Total)	(ug/L)		2	2	370	180	275	NR b	NA
cis-1,2-Dichloroethene	(ug/L)		2	2	360	180	270	70	2
Tetrachloroethene	(ug/L)		2	2	570	460	515	5	2
trans-1,2-Dichloroethene	(ug/L)		2	2	5 J	2 J	3.5	100	0
Trichloroethene	(ug/L)		2	2	300	250	275	5	2
Vinyl chloride	(ug/L)		2	2	6	4	5	2	2

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.72. Regime=Upper East Fork Poplar Creek AREA NAME=GW Monitoring Plan Grid Location D2

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	9.4	8.84	9.12	250	0
Sulfate	(mg/L)		2	2	13.2	11.9	12.55	250	0
Antimony, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.006	2
Arsenic, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.05	2
Barium, ICAP	(mg/L)		2	2	0.247	0.234	0.2405	2	0
Cadmium, ICAP	(mg/L)		2	2	0.01	0.01	0.01	0.005	2
Calcium, ICAP	(mg/L)		2	2	69	68.3	68.65	NR	NA
Iron, ICAP	(mg/L)		2	1	0.0596	0.0596	0.0596	0.3	0
Lead, ICAP	(mg/L)		2	2	0.1	0.1	0.1	0.015 c	2
Lithium, ICAP	(mg/L)		2	2	0.0135	0.0131	0.0133	NR	NA
Magnesium, ICAP	(mg/L)		2	2	14.2	13.4	13.8	NR	NA
Manganese, ICAP	(mg/L)		2	2	0.0157	0.0141	0.0149	0.05	0
Niobium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		2	2	0.5	0.5	0.5	NR	NA
Potassium, ICAP	(mg/L)		2	1	2.02	2.02	2.02	NR	NA
Selenium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.05	2
Silicon, ICAP	(mg/L)		2	2	13.3	12.7	13	NR	NA
Sodium, ICAP	(mg/L)		2	2	7.15	7	7.075	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.408	0.389	0.3985	NR	NA
Sulfur, ICAP	(mg/L)		2	2	4.23	4.21	4.22	NR	NA
Thallium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		2	2	0.05	0.05	0.05	NR	NA
Uranium, ICAP	(mg/L)		2	2	2	2	2	NR	NA
Zirconium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		4	NA	23.97	-23.97	0	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	220	212	216	NR	NA
Conductivity	(umho/cm)		4	4	564	456	499.25	NR	NA
Dissolved Solids	(mg/L)		2	2	276	272	274	500	0
pH	(pH)		4	4	7.7	7.24	7.37	6.5/8.5	0
Turbidity	(NTU)		2	2	0.545	0.413	0.479	1	0
1,2-Dichloroethene (Total)	(ug/L)		2	2	3 J	3 J	3	NR b	NA

Table 4.72. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=GW Monitoring Plan Grid Location D2

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
cis-1,2-Dichloroethene	(ug/L)		2	2	3 J	3 J	3	70	0
Tetrachloroethene	(ug/L)		2	2	1400	570	985	5	2
Trichloroethene	(ug/L)		2	2	5 J	3 J	4	5	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.73. Regime=Upper East Fork Poplar Creek AREA NAME=GW Monitoring Plan Grid Location E1

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		4	4	32.1	2.11	16.4525	250	0
Fluoride	(mg/L)		4	4	0.137	0.105	0.12225	4	0
Sulfate	(mg/L)		4	4	19.7	9.14	14.51	250	0
Antimony, ICAP	(mg/L)		4	4	0.2	0.2	0.2	0.006	4
Arsenic, ICAP	(mg/L)		4	4	0.2	0.2	0.2	0.05	4
Barium, ICAP	(mg/L)		4	4	0.261	0.164	0.215	2	0
Cadmium, ICAP	(mg/L)		4	4	0.01	0.01	0.01	0.005	4
Calcium, ICAP	(mg/L)		4	4	122	34.2	76.125	NR	NA
Chromium, PMS	(mg/L)		4	2	0.00692	0.00659	0.006755	NR	NA
Iron, ICAP	(mg/L)		4	2	0.108	0.0647	0.08635	0.3	0
Lead, ICAP	(mg/L)		4	4	0.1	0.1	0.1	0.015 c	4
Lithium, ICAP	(mg/L)		4	4	0.0175	0.0152	0.016075	NR	NA
Magnesium, ICAP	(mg/L)		4	4	12.8	4.57	8.6325	NR	NA
Manganese, ICAP	(mg/L)		4	4	0.631	0.0689	0.308425	0.05	4
Nickel, PMS	(mg/L)		4	2	0.0811	0.0146	0.04785	NR	NA
Nickel, ICAP	(mg/L)		4	1	0.0731	0.0731	0.0731	0.1 d	0
Niobium, ICAP	(mg/L)		4	4	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		4	4	0.5	0.5	0.5	NR	NA
Potassium, ICAP	(mg/L)		4	1	2.44	2.44	2.44	NR	NA
Selenium, PMS	(mg/L)		4	1	0.0116	0.0116	0.0116	0.05	0
Selenium, ICAP	(mg/L)		4	4	0.2	0.2	0.2	0.05	4
Silicon, ICAP	(mg/L)		4	4	9.11	8.39	8.74	NR	NA
Sodium, ICAP	(mg/L)		4	4	28.8	10.7	19.8	NR	NA
Strontium, ICAP	(mg/L)		4	4	0.352	0.174	0.263	NR	NA
Sulfur, ICAP	(mg/L)		4	4	6.25	3.26	4.77	NR	NA
Thallium, ICAP	(mg/L)		4	4	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		4	4	0.05	0.05	0.05	NR	NA
Uranium, ICAP	(mg/L)		4	4	2	2	2	NR	NA
Zirconium, ICAP	(mg/L)		4	4	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		8	NA	20.5	-20.5	0	NR	NA
Alkalinity as HCO3	(mg/L)		4	4	326	142	235.25	NR	NA

Table 4.73. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=GW Monitoring Plan Grid Location E1

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Conductivity	(umho/cm)		8	8	829	322	546.625	NR	NA
Dissolved Solids	(mg/L)		4	4	407	204	304.25	500	0
pH	(pH)		8	8	8.15	7.04	7.56875	6.5/8.5	0
Turbidity	(NTU)		4	4	1.03	0.195	0.59075	1	1
Gross Beta	(pCi/L)		4	1	6.5	6.5	6.5	50 a	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.74. Regime=Upper East Fork Poplar Creek AREA NAME=GW Monitoring Plan Grid Location E2

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		4	4	9.39	3.97	6.835	250	0
Fluoride	(mg/L)		4	2	0.123	0.107	0.115	4	0
Nitrate Nitrogen	(mg/L)		4	1	0.0316	0.0316	0.0316	10	0
Sulfate	(mg/L)		4	4	8.21	0.769	4.13475	250	0
Antimony, ICAP	(mg/L)		4	4	0.2	0.2	0.2	0.006	4
Arsenic, ICAP	(mg/L)		4	4	0.2	0.2	0.2	0.05	4
Barium, ICAP	(mg/L)		4	4	0.388	0.0379	0.211675	2	0
Cadmium, ICAP	(mg/L)		4	4	0.01	0.01	0.01	0.005	4
Calcium, ICAP	(mg/L)		4	4	69.3	1.39	35.0975	NR	NA
Chromium, PMS	(mg/L)		4	2	0.0139	0.005	0.00945	NR	NA
Iron, ICAP	(mg/L)		4	4	0.579	0.0795	0.235875	0.3	1
Lead, ICAP	(mg/L)		4	4	0.1	0.1	0.1	0.015 c	4
Lithium, ICAP	(mg/L)		4	2	0.0154	0.0134	0.0144	NR	NA
Magnesium, ICAP	(mg/L)		4	4	13.4	1.27	7.3025	NR	NA
Manganese, ICAP	(mg/L)		4	4	0.0419	0.0115	0.03075	0.05	0
Nickel, PMS	(mg/L)		4	2	0.0165	0.00908	0.01279	NR	NA
Niobium, ICAP	(mg/L)		4	4	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		4	4	0.5	0.5	0.5	NR	NA
Selenium, ICAP	(mg/L)		4	4	0.2	0.2	0.2	0.05	4
Silicon, ICAP	(mg/L)		4	4	12.3	9.32	10.9	NR	NA
Sodium, ICAP	(mg/L)		4	4	9.3	3.07	6.1875	NR	NA
Strontium, ICAP	(mg/L)		4	4	0.196	0.0103	0.102675	NR	NA
Sulfur, ICAP	(mg/L)		4	4	2.33	0.5	1.3875	NR	NA
Thallium, ICAP	(mg/L)		4	4	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		4	4	0.05	0.05	0.05	NR	NA
Uranium, ICAP	(mg/L)		4	4	2	2	2	NR	NA
Zirconium, ICAP	(mg/L)		4	4	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		8	NA	16.78	-16.78	-2.22E-16	NR	NA
Alkalinity as HCO3	(mg/L)		4	4	236	9.62	119.455	NR	NA
Conductivity	(umho/cm)		8	8	530	37.7	267.1	NR	NA
Dissolved Solids	(mg/L)		4	4	270	40	155.5	500	0

Table 4.74. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=GW Monitoring Plan Grid Location E2

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
pH	(pH)		8	8	7.66	4.88	6.37	6.5/8.5	4
Turbidity	(NTU)		4	4	5.87	0.674	2.5935	1	3
Gross Alpha	(pCi/L)		4	1	8.1	8.1	8.1	15 f	0
Gross Beta	(pCi/L)		4	1	6.7	6.7	6.7	50 a	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.75. Regime=Upper East Fork Poplar Creek AREA NAME=GW Monitoring Plan Grid Location E3

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		4	4	12.1	9.95	11.0625	250	0
Nitrate Nitrogen	(mg/L)		4	2	0.0889	0.0411	0.065	10	0
Sulfate	(mg/L)		4	4	16.2	14.5	15.55	250	0
Antimony, ICAP	(mg/L)		4	4	0.2	0.2	0.2	0.006	4
Arsenic, ICAP	(mg/L)		4	4	0.2	0.2	0.2	0.05	4
Barium, ICAP	(mg/L)		4	4	0.509	0.458	0.47825	2	0
Boron, ICAP	(mg/L)		4	4	0.135	0.12	0.1285	NR	NA
Cadmium, ICAP	(mg/L)		4	4	0.01	0.01	0.01	0.005	4
Calcium, ICAP	(mg/L)		4	4	76.9	72.3	74.9	NR	NA
Chromium, PMS	(mg/L)		4	2	0.017	0.0101	0.01355	NR	NA
Iron, ICAP	(mg/L)		4	3	1.61	0.0791	0.631033	0.3	1
Lead, PMS	(mg/L)		4	1	0.00404	0.00404	0.00404	0.015 c	0
Lead, ICAP	(mg/L)		4	4	0.1	0.1	0.1	0.015 c	4
Lithium, ICAP	(mg/L)		4	4	0.0215	0.0195	0.02045	NR	NA
Magnesium, ICAP	(mg/L)		4	4	16.1	15.8	16.025	NR	NA
Manganese, ICAP	(mg/L)		4	4	0.0495	0.00554	0.03621	0.05	0
Nickel, PMS	(mg/L)		4	1	0.018	0.018	0.018	NR	NA
Niobium, ICAP	(mg/L)		4	4	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		4	4	0.5	0.5	0.5	NR	NA
Potassium, ICAP	(mg/L)		4	4	5.64	5.15	5.445	NR	NA
Selenium, ICAP	(mg/L)		4	4	0.2	0.2	0.2	0.05	4
Silicon, ICAP	(mg/L)		4	4	8.78	8.3	8.565	NR	NA
Sodium, ICAP	(mg/L)		4	4	9.39	8.68	9.0275	NR	NA
Strontium, ICAP	(mg/L)		4	4	1.23	1.14	1.185	NR	NA
Sulfur, ICAP	(mg/L)		4	4	5.57	4.95	5.3325	NR	NA
Thallium, ICAP	(mg/L)		4	4	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		4	4	0.05	0.05	0.05	NR	NA
Uranium, PMS	(mg/L)		4	4	0.000963	0.000772	0.000895	0.03	0
Uranium, ICAP	(mg/L)		4	4	2	2	2	NR	NA
Zirconium, ICAP	(mg/L)		4	4	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		8	NA	9.48	-9.48	-2.22E-16	NR	NA

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.75. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=GW Monitoring Plan Grid Location E3

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Alkalinity as HCO3	(mg/L)		4	4	252	185	226.75	NR	NA
Conductivity	(umho/cm)		8	8	634	509	564.25	NR	NA
Dissolved Solids	(mg/L)		4	4	305	302	303.25	500	0
pH	(pH)		8	8	7.58	7.13	7.3425	6.5/8.5	0
Total Suspended Solids	(mg/L)		4	1	5	5	5	NR	NA
Turbidity	(NTU)		4	4	11.1	0.41	3.4005	1	2
Gross Alpha	(pCi/L)		4	4	31	22	27.5	15 f	4
Gross Beta	(pCi/L)		4	4	11	7.2	8.25	50 a	0
1,1,1-Trichloroethane	(ug/L)		4	4	10	5 J	6.75	200	0
1,1-Dichloroethane	(ug/L)		4	4	160	95	136.25	NR	NA
1,1-Dichloroethene	(ug/L)		4	4	54	30	43	7	4
1,2-Dichloroethene (Total)	(ug/L)		4	4	18	6	13.5	NR b	NA
Acetone	(ug/L)		4	1	8 J	8 J	8	NR	NA
Chloroethane	(ug/L)		4	4	34	6	20.25	NR	NA
cis-1,2-Dichloroethene	(ug/L)		4	4	16	6	12	70	0
Tetrachloroethene	(ug/L)		4	4	150	91	132.75	5	4
trans-1,2-Dichloroethene	(ug/L)		4	3	2 J	1 J	1.666667	100	0
Trichloroethene	(ug/L)		4	4	49	28	41.75	5	4
Vinyl chloride	(ug/L)		4	2	3	2	2.5	2	1

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.76. Regime=Upper East Fork Poplar Creek AREA NAME=GW Monitoring Plan Grid Location G2

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		4	4	222	0.93	106.8425	250	0
Fluoride	(mg/L)		4	1	0.119	0.119	0.119	4	0
Nitrate Nitrogen	(mg/L)		4	4	1.55	0.0791	0.729525	10	0
Sulfate	(mg/L)		4	4	29.8	8.32	19.53	250	0
Antimony, ICAP	(mg/L)		4	4	0.2	0.2	0.2	0.006	4
Arsenic, ICAP	(mg/L)		4	4	0.2	0.2	0.2	0.05	4
Barium, ICAP	(mg/L)		4	4	0.339	0.0676	0.199425	2	0
Cadmium, ICAP	(mg/L)		4	4	0.01	0.01	0.01	0.005	4
Calcium, ICAP	(mg/L)		4	4	160	26.5	92.85	NR	NA
Chromium, PMS	(mg/L)		4	3	0.0562	0.0117	0.030333	NR	NA
Chromium, ICAP	(mg/L)		4	2	0.0252	0.0218	0.0235	0.1	0
Iron, ICAP	(mg/L)		4	2	0.273	0.178	0.2255	0.3	0
Lead, ICAP	(mg/L)		4	4	0.1	0.1	0.1	0.015 c	4
Lithium, ICAP	(mg/L)		4	2	0.02	0.0191	0.01955	NR	NA
Magnesium, ICAP	(mg/L)		4	4	18.4	2.66	10.3775	NR	NA
Manganese, ICAP	(mg/L)		4	2	0.103	0.097	0.1	0.05	2
Nickel, PMS	(mg/L)		4	2	0.289	0.246	0.2675	NR	NA
Nickel, ICAP	(mg/L)		4	2	0.264	0.255	0.2595	0.1 d	2
Niobium, ICAP	(mg/L)		4	4	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		4	4	0.5	0.5	0.5	NR	NA
Selenium, ICAP	(mg/L)		4	4	0.2	0.2	0.2	0.05	4
Silicon, ICAP	(mg/L)		4	4	10.9	9.81	10.2525	NR	NA
Sodium, ICAP	(mg/L)		4	4	27.1	4.97	16.08	NR	NA
Strontium, ICAP	(mg/L)		4	4	0.315	0.0442	0.176925	NR	NA
Sulfur, ICAP	(mg/L)		4	4	9.9	2.63	6.43	NR	NA
Thallium, ICAP	(mg/L)		4	4	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		4	4	0.05	0.05	0.05	NR	NA
Uranium, PMS	(mg/L)		4	1	0.000509	0.000509	0.000509	0.03	0
Uranium, ICAP	(mg/L)		4	4	2	2	2	NR	NA
Zirconium, ICAP	(mg/L)		4	4	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		8	NA	11.66	-11.66	0	NR	NA

Table 4.76. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=GW Monitoring Plan Grid Location G2

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Alkalinity as HCO3	(mg/L)		4	4	191	75.2	134.1	NR	NA
Conductivity	(umho/cm)		8	8	1212	180.4	674.15	NR	NA
Dissolved Solids	(mg/L)		4	4	1030	122	497.25	500	2
pH	(pH)		8	8	7.47	6.53	7.02125	6.5/8.5	0
Turbidity	(NTU)		4	4	3.02	0.507	2.13925	1	3
Gross Beta	(pCi/L)		4	1	24	24	24	50 a	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.77. Regime=Upper East Fork Poplar Creek AREA NAME=GW Monitoring Plan Grid Location G3

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		4	4	18.3	3.98	10.2	250	0
Fluoride	(mg/L)		4	2	0.258	0.202	0.23	4	0
Nitrate Nitrogen	(mg/L)		4	4	0.773	0.0679	0.385725	10	0
Sulfate	(mg/L)		4	4	22.1	18.2	20.175	250	0
Antimony, ICAP	(mg/L)		4	4	0.2	0.2	0.2	0.006	4
Arsenic, ICAP	(mg/L)		4	4	0.2	0.2	0.2	0.05	4
Barium, ICAP	(mg/L)		4	4	0.393	0.0563	0.22335	2	0
Cadmium, ICAP	(mg/L)		4	4	0.01	0.01	0.01	0.005	4
Calcium, ICAP	(mg/L)		4	4	81	49.2	66.4	NR	NA
Chromium, PMS	(mg/L)		4	2	0.0137	0.00531	0.009505	NR	NA
Iron, ICAP	(mg/L)		4	2	0.0556	0.054	0.0548	0.3	0
Lead, ICAP	(mg/L)		4	4	0.1	0.1	0.1	0.015 c	4
Lithium, ICAP	(mg/L)		4	2	0.015	0.015	0.015	NR	NA
Magnesium, ICAP	(mg/L)		4	4	9.95	4.56	7.1925	NR	NA
Manganese, ICAP	(mg/L)		4	2	0.01	0.00874	0.00937	0.05	0
Nickel, PMS	(mg/L)		4	2	0.0638	0.061	0.0624	NR	NA
Nickel, ICAP	(mg/L)		4	2	0.0764	0.0602	0.0683	0.1 d	0
Niobium, ICAP	(mg/L)		4	4	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		4	4	0.5	0.5	0.5	NR	NA
Potassium, ICAP	(mg/L)		4	4	2.75	2.12	2.4775	NR	NA
Selenium, ICAP	(mg/L)		4	4	0.2	0.2	0.2	0.05	4
Silicon, ICAP	(mg/L)		4	4	7.65	2.86	5.3375	NR	NA
Sodium, ICAP	(mg/L)		4	4	7.95	6.8	7.25	NR	NA
Strontium, ICAP	(mg/L)		4	4	0.396	0.0753	0.2333	NR	NA
Sulfur, ICAP	(mg/L)		4	4	7.4	6.27	6.735	NR	NA
Thallium, ICAP	(mg/L)		4	4	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		4	4	0.05	0.05	0.05	NR	NA
Uranium, PMS	(mg/L)		4	2	0.00123	0.00101	0.00112	0.03	0
Uranium, ICAP	(mg/L)		4	4	2	2	2	NR	NA
Zirconium, ICAP	(mg/L)		4	4	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		8	NA	14.65	-14.65	0	NR	NA

Table 4.77. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=GW Monitoring Plan Grid Location G3

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Alkalinity as HCO3	(mg/L)		4	4	208	128	171.75	NR	NA
Conductivity	(umho/cm)		8	8	577	317	440.375	NR	NA
Dissolved Solids	(mg/L)		4	4	300	186	241	500	0
pH	(pH)		8	8	7.36	6.98	7.2125	6.5/8.5	0
Turbidity	(NTU)		4	4	0.799	0.258	0.5575	1	0
Gross Alpha	(pCi/L)		4	1	3	3	3	15 f	0
1,1-Dichloroethene	(ug/L)		4	1	1 J	1 J	1	7	0
1,2-Dichloroethene (Total)	(ug/L)		4	2	3 J	3 J	3	NR b	NA
Carbon tetrachloride	(ug/L)		4	4	75	6	37	5	4
Chloroform	(ug/L)		4	4	4 J	3 J	3.25	100 i	0
cis-1,2-Dichloroethene	(ug/L)		4	2	3 J	3 J	3	70	0
Tetrachloroethene	(ug/L)		4	2	16	15	15.5	5	2
Trichloroethene	(ug/L)		4	2	3 J	3 J	3	5	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.78. Regime=Upper East Fork Poplar Creek AREA NAME=GW Monitoring Plan Grid Location J3

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Bicarbonate	(mg/L)		2	2	262	256	259	NR	NA
Chloride	(mg/L)		2	2	38.1	35.8	36.95	250	0
Nitrate/Nitrite	(mg/L)		2	2	0.12	0.059	0.0895	NR	NA
Sulfate	(mg/L)		2	2	15.4	14.9	15.15	250	0
Barium, ICAP	(mg/L)		2	2	0.553	0.525	0.539	2	0
Boron, ICAP	(mg/L)		2	2	0.0763	0.073	0.07465	NR	NA
Calcium, ICAP	(mg/L)		2	2	79.8	74.8	77.3	NR	NA
Iron, ICAP	(mg/L)		2	2	0.0259	0.0103	0.0181	0.3	0
Lithium, ICAP	(mg/L)		2	2	0.0152	0.0141	0.01465	NR	NA
Magnesium, ICAP	(mg/L)		2	2	23.9	22.2	23.05	NR	NA
Manganese, ICAP	(mg/L)		2	2	0.0523	0.0457	0.049	0.05	1
Potassium, ICAP	(mg/L)		2	2	3.84	3.26	3.55	NR	NA
Sodium, ICAP	(mg/L)		2	2	10.8	10.3	10.55	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.756	0.733	0.7445	NR	NA
Static Water Level	(ft - toc)		2	NA	13.62	13.45	13.535	NR	NA
Dissolved Solids	(mg/L)		2	2	385	358	371.5	500	0
Total Suspended Solids	(mg/L)		2	1	16.9	16.9	16.9	NR	NA
Gross Beta	(pCi/L)		2	1	7.89	7.89	7.89	50 a	0
1,1,1-Trichloroethane	(ug/L)		2	2	6	4 J	5	200	0
1,1-Dichloroethane	(ug/L)		2	2	15	12	13.5	NR	NA
1,1-Dichloroethene	(ug/L)		2	1	62	62	62	7	1
cis-1,2-Dichloroethene	(ug/L)		2	2	71	60	65.5	70	1
Methane	(ug/L)		2	2	55	26	40.5	NR	NA
Tetrachloroethene	(ug/L)		2	2	2200	2200	2200	5	2
trans-1,2-Dichloroethene	(ug/L)		2	2	3 J	2 J	2.5	100	0
Trichloroethene	(ug/L)		2	2	180	160	170	5	2
Vinyl chloride	(ug/L)		2	2	9	6	7.5	2	2

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.79. Regime=Upper East Fork Poplar Creek AREA NAME=GW Monitoring Plan Grid Location K1

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	14.2	12.7	13.45	250	0
Fluoride	(mg/L)		2	1	0.109	0.109	0.109	4	0
Sulfate	(mg/L)		2	2	20	16.4	18.2	250	0
Antimony, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.006	2
Arsenic, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.05	2
Barium, ICAP	(mg/L)		2	2	0.241	0.238	0.2395	2	0
Cadmium, ICAP	(mg/L)		2	2	0.01	0.01	0.01	0.005	2
Calcium, ICAP	(mg/L)		2	2	68.1	62.6	65.35	NR	NA
Iron, ICAP	(mg/L)		2	2	0.219	0.108	0.1635	0.3	0
Lead, ICAP	(mg/L)		2	2	0.1	0.1	0.1	0.015 c	2
Lithium, ICAP	(mg/L)		2	2	0.0291	0.029	0.02905	NR	NA
Magnesium, ICAP	(mg/L)		2	2	11.7	11.3	11.5	NR	NA
Manganese, ICAP	(mg/L)		2	2	0.168	0.155	0.1615	0.05	2
Niobium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		2	2	0.5	0.5	0.5	NR	NA
Potassium, ICAP	(mg/L)		2	2	3.54	3.51	3.525	NR	NA
Selenium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.05	2
Silicon, ICAP	(mg/L)		2	2	11.2	10.8	11	NR	NA
Sodium, ICAP	(mg/L)		2	2	34.2	33.8	34	NR	NA
Strontium, ICAP	(mg/L)		2	2	1.32	1.31	1.315	NR	NA
Sulfur, ICAP	(mg/L)		2	2	6.64	6.31	6.475	NR	NA
Thallium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		2	2	0.05	0.05	0.05	NR	NA
Uranium, ICAP	(mg/L)		2	2	2	2	2	NR	NA
Zirconium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		4	NA	7.11	-7.11	0	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	254	240	247	NR	NA
Conductivity	(umho/cm)		4	4	624	524	571.25	NR	NA
Dissolved Solids	(mg/L)		2	2	323	317	320	500	0
pH	(pH)		4	4	7.73	7.45	7.615	6.5/8.5	0
Turbidity	(NTU)		2	2	2.03	0.702	1.366	1	1

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.80. Regime=Upper East Fork Poplar Creek AREA NAME=GW Monitoring Plan Grid Location K2

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	1.72	1.66	1.69	250	0
Fluoride	(mg/L)		2	2	0.182	0.164	0.173	4	0
Sulfate	(mg/L)		2	2	15.4	14.9	15.15	250	0
Antimony, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.006	2
Arsenic, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.05	2
Barium, ICAP	(mg/L)		2	2	0.155	0.147	0.151	2	0
Cadmium, ICAP	(mg/L)		2	2	0.01	0.01	0.01	0.005	2
Calcium, ICAP	(mg/L)		2	2	48.1	44.8	46.45	NR	NA
Lead, ICAP	(mg/L)		2	2	0.1	0.1	0.1	0.015 c	2
Lithium, ICAP	(mg/L)		2	2	0.0146	0.0143	0.01445	NR	NA
Magnesium, ICAP	(mg/L)		2	2	10.5	10.4	10.45	NR	NA
Manganese, ICAP	(mg/L)		2	2	0.013	0.0123	0.01265	0.05	0
Niobium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		2	2	0.5	0.5	0.5	NR	NA
Potassium, ICAP	(mg/L)		2	1	2.08	2.08	2.08	NR	NA
Selenium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.05	2
Silicon, ICAP	(mg/L)		2	2	8.01	7.95	7.98	NR	NA
Sodium, ICAP	(mg/L)		2	2	26.6	25.5	26.05	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.612	0.581	0.5965	NR	NA
Sulfur, ICAP	(mg/L)		2	2	5.06	4.98	5.02	NR	NA
Thallium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		2	2	0.05	0.05	0.05	NR	NA
Uranium, ICAP	(mg/L)		2	2	2	2	2	NR	NA
Zirconium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		4	NA	5.44	-5.44	0	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	197	196	196.5	NR	NA
Conductivity	(umho/cm)		4	4	501	406	446	NR	NA
Dissolved Solids	(mg/L)		2	2	242	227	234.5	500	0
pH	(pH)		4	4	7.75	7.3	7.53	6.5/8.5	0
Turbidity	(NTU)		2	2	0.292	0.178	0.235	1	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.81. REGIME=Upper East Fork Poplar Creek AREA NAME=Grid J Primary

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	65.7	63.2	64.45	250	0
Fluoride	(mg/L)		2	2	0.246	0.208	0.227	4	0
Sulfate	(mg/L)		2	2	2.5	1.49	1.995	250	0
Antimony, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.006	2
Arsenic, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.05	2
Barium, ICAP	(mg/L)		2	2	0.0578	0.0569	0.05735	2	0
Cadmium, ICAP	(mg/L)		2	2	0.01	0.01	0.01	0.005	2
Calcium, ICAP	(mg/L)		2	2	117	113	115	NR	NA
Iron, ICAP	(mg/L)		2	2	21.9	19.6	20.75	0.3	2
Lead, ICAP	(mg/L)		2	2	0.1	0.1	0.1	0.015 c	2
Magnesium, ICAP	(mg/L)		2	2	14.7	14.6	14.65	NR	NA
Manganese, ICAP	(mg/L)		2	2	0.844	0.826	0.835	0.05	2
Niobium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		2	2	0.743	0.553	0.648	NR	NA
Selenium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.05	2
Silicon, ICAP	(mg/L)		2	2	3.82	3.76	3.79	NR	NA
Sodium, ICAP	(mg/L)		2	2	15.7	13.7	14.7	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.258	0.247	0.2525	NR	NA
Sulfur, ICAP	(mg/L)		2	2	0.761	0.521	0.641	NR	NA
Thallium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		2	2	0.05	0.05	0.05	NR	NA
Uranium, ICAP	(mg/L)		2	2	2	2	2	NR	NA
Zirconium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		4	NA	9.61	-9.61	0	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	284	276	280	NR	NA
Conductivity	(umho/cm)		4	4	944	747	846.75	NR	NA
Dissolved Solids	(mg/L)		2	2	448	403	425.5	500	0
pH	(pH)		4	4	6.95	6.82	6.9075	6.5/8.5	0
Total Suspended Solids	(mg/L)		2	2	36	23	29.5	NR	NA
Turbidity	(NTU)		2	2	230	183	206.5	1	2
1,1,1-Trichloroethane	(ug/L)		2	1	2 J	2 J	2	200	0

Table 4.81. (continued) REGIME=Upper East Fork Poplar Creek AREA NAME=Grid J Primary

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
1,1-Dichloroethane	(ug/L)		2	2	4 J	2 J	3	NR	NA
1,1-Dichloroethene	(ug/L)		2	2	13	6	9.5	7	1
1,2-Dichloroethene (Total)	(ug/L)		2	2	350	200	275	NR b	NA
cis-1,2-Dichloroethene	(ug/L)		2	2	350	200	275	70	2
Dichlorodifluoromethane	(ug/L)		2	2	4 J	3 J	3.5	NR	NA
Tetrachloroethene	(ug/L)		2	2	65	41	53	5	2
trans-1,2-Dichloroethene	(ug/L)		2	2	3 J	2 J	2.5	100	0
Trichloroethene	(ug/L)		2	2	18	11	14.5	5	2
Vinyl chloride	(ug/L)		2	2	26	19	22.5	2	2

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.82. Regime=Upper East Fork Poplar Creek AREA NAME=New Hope Pond

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Bicarbonate	(mg/L)		12	12	368	144	241.25	NR	NA
Chloride	(mg/L)		20	20	76.9	3.2	31.37	250	0
Fluoride	(mg/L)		20	14	0.33	0.11	0.1975	4	0
Nitrate Nitrogen	(mg/L)		8	4	0.883	0.577	0.69325	10	0
Nitrate/Nitrite	(mg/L)		12	10	2	0.14	1.006	NR	NA
Sulfate	(mg/L)		20	20	90.3	1.16	22.672	250	0
Aluminum, ICAP	(mg/L)		20	5	0.346	0.0565	0.1743	0.2	2
Antimony, ICAP	(mg/L)		20	8	0.2	0.2	0.2	0.006	8
Arsenic, ICAP	(mg/L)		20	8	0.2	0.2	0.2	0.05	8
Barium, ICAP	(mg/L)		20	20	0.664	0.0286	0.227755	2	0
Boron, ICAP	(mg/L)		20	12	0.139	0.0164	0.055533	NR	NA
Cadmium, ICAP	(mg/L)		20	8	0.01	0.01	0.01	0.005	8
Calcium, ICAP	(mg/L)		20	20	123	36	74.8	NR	NA
Chromium, PMS	(mg/L)		8	2	0.00444	0.00423	0.004335	NR	NA
Chromium, ICAP	(mg/L)		20	2	0.277	0.0498	0.1634	0.1	1
Cobalt, ICAP	(mg/L)		20	1	0.0075	0.0075	0.0075	NR	NA
Iron, ICAP	(mg/L)		20	17	11.1	0.0541	1.976576	0.3	9
Lead, PMS	(mg/L)		8	2	0.00127	0.00118	0.001225	0.015 c	0
Lead, ICAP	(mg/L)		20	8	0.1	0.1	0.1	0.015 c	8
Lithium, ICAP	(mg/L)		20	4	0.0164	0.0111	0.0138	NR	NA
Magnesium, ICAP	(mg/L)		20	20	26.8	10.9	19.105	NR	NA
Manganese, ICAP	(mg/L)		20	13	0.725	0.0092	0.242131	0.05	9
Molybdenum, ICAP	(mg/L)		20	1	0.0166	0.0166	0.0166	NR	NA
Nickel, ICAP	(mg/L)		20	2	0.299	0.0865	0.19275	0.1 d	1
Niobium, ICAP	(mg/L)		8	8	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		8	8	1.13	0.5	0.5935	NR	NA
Potassium, ICAP	(mg/L)		20	18	6.34	1.17	2.964444	NR	NA
Selenium, ICAP	(mg/L)		20	8	0.2	0.2	0.2	0.05	8
Silicon, ICAP	(mg/L)		8	8	7.61	4.01	5.64125	NR	NA
Sodium, ICAP	(mg/L)		20	20	28.6	4.92	12.2755	NR	NA
Strontium, ICAP	(mg/L)		20	20	0.587	0.0403	0.29424	NR	NA

Table 4.82. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=New Hope Pond

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Sulfur, ICAP	(mg/L)		8	8	6.06	0.5	4.004	NR	NA
Thallium, ICAP	(mg/L)		20	8	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		8	8	0.05	0.05	0.05	NR	NA
Uranium, PMS	(mg/L)		20	8	0.491	0.00103	0.123656	0.03	4
Uranium, ICAP	(mg/L)		8	8	2	2	2	NR	NA
Zinc, ICAP	(mg/L)		20	2	0.0155	0.0112	0.01335	5	0
Zirconium, ICAP	(mg/L)		8	8	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		28	NA	20.7	-20.7	4.52	NR	NA
Alkalinity as HCO3	(mg/L)		8	8	266	159	221.875	NR	NA
Conductivity	(umho/cm)		16	16	1005	390	633.1875	NR	NA
Dissolved Solids	(mg/L)		20	20	485	209	322.9	500	0
pH	(pH)		16	16	8.05	6.63	7.4525	6.5/8.5	0
Total Suspended Solids	(mg/L)		20	7	17	3	9.214286	NR	NA
Turbidity	(NTU)		8	8	178	1.22	41.67875	1	8
Uranium-233/234	(pCi/L)		8	8	428.8	0.55	101.7788	NR	NA
Uranium-235	(pCi/L)		8	3	20.78	1.32	13.47667	24	0
Uranium-236	(pCi/L)		8	3	9.88	0.34	3.573333	NR	NA
Uranium-238	(pCi/L)		8	6	151.6	2.67	54.475	24	2
Gross Alpha	(pCi/L)		20	10	829.14	0.94 R	141.083	15 f	3
Gross Beta	(pCi/L)		20	10	186.04	2.8	40.843	50 a	2
1,1-Dichloroethene	(ug/L)		20	4	2 J	2 J	2	7	0
1,2-Dichloroethene (Total)	(ug/L)		8	6	150	6	58.33333	NR b	NA
Bromoform	(ug/L)		20	1	1 J	1 J	1	100 i	0
Carbon tetrachloride	(ug/L)		20	14	1800	3 J	593.3571	5	12
Chloroform	(ug/L)		20	14	1500	1 J	168.6429	100 i	3
Chloromethane	(ug/L)		20	1	1 J	1 J	1	NR	NA
cis-1,2-Dichloroethene	(ug/L)		20	12	140	6	43.91667	70	2
Methane	(ug/L)		12	7	820	6	228.4286	NR	NA
Methylene chloride	(ug/L)		20	2	26	7	16.5	5	2
Tetrachloroethene	(ug/L)		20	16	690	2 J	207.5	5	11
trans-1,2-Dichloroethene	(ug/L)		20	1	1 J	1 J	1	100	0

Table 4.82. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=New Hope Pond

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Trichloroethene	(ug/L)		20	11	170	1 J	70.54545	5	9
Trichlorofluoromethane	(ug/L)		8	1	1 J	1 J	1	NR	NA
Vinyl chloride	(ug/L)		20	3	3	2 J	2.333333	2	1

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.83. Regime=Upper East Fork Poplar Creek AREA NAME=Rust Garage Area

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		8	8	71.6	10.8	47.775	250	0
Fluoride	(mg/L)		8	2	0.464	0.312	0.388	4	0
Nitrate Nitrogen	(mg/L)		8	8	1540	0.111	708.9384	10	4
Sulfate	(mg/L)		8	7	27.5	1.78	10.00143	250	0
Aluminum, ICAP	(mg/L)		8	1	0.855	0.855	0.855	0.2	1
Antimony, ICAP	(mg/L)		8	8	4	0.2	1.35	0.006	8
Arsenic, PMS	(mg/L)		8	1	0.00526	0.00526	0.00526	0.05	0
Arsenic, ICAP	(mg/L)		8	8	4	0.2	1.35	0.05	8
Barium, ICAP	(mg/L)		8	8	9.32	0.07	4.492125	2	4
Beryllium, ICAP	(mg/L)		8	1	0.0006	0.0006	0.0006	0.004	0
Cadmium, PMS	(mg/L)		8	3	0.000935	0.00053	0.000666	0.005	0
Cadmium, ICAP	(mg/L)		8	8	0.2	0.01	0.0675	0.005	8
Calcium, ICAP	(mg/L)		8	8	2030	14.5	1003.175	NR	NA
Chromium, PMS	(mg/L)		8	4	0.0571	0.00252	0.019405	NR	NA
Chromium, ICAP	(mg/L)		8	2	0.0788	0.0206	0.0497	0.1	0
Cobalt, ICAP	(mg/L)		8	2	0.0408	0.032	0.0364	NR	NA
Iron, ICAP	(mg/L)		8	3	1.09	0.224	0.685	0.3	2
Lead, PMS	(mg/L)		8	7	0.0103 Q	0.00065	0.003481	0.015 c	0
Lead, ICAP	(mg/L)		8	8	2	0.1	0.675	0.015 c	8
Lithium, ICAP	(mg/L)		8	2	0.181	0.137	0.159	NR	NA
Magnesium, ICAP	(mg/L)		8	8	184	4.49	92.5175	NR	NA
Manganese, ICAP	(mg/L)		8	8	6.03	0.0182	2.504863	0.05	7
Nickel, PMS	(mg/L)		8	8	0.393	0.00762	0.164628	NR	NA
Nickel, ICAP	(mg/L)		8	1	0.306	0.306	0.306	0.1 d	1
Niobium, ICAP	(mg/L)		8	8	4	0.2	1.35	NR	NA
Phosphorus, ICAP	(mg/L)		8	8	10	0.5	3.429125	NR	NA
Potassium, ICAP	(mg/L)		8	1	2.15	2.15	2.15	NR	NA
Selenium, PMS	(mg/L)		8	3	0.0214	0.0141	0.0186	0.05	0
Selenium, ICAP	(mg/L)		8	8	4	0.2	1.35	0.05	8
Silicon, ICAP	(mg/L)		8	8	27.5	2.77	14.98125	NR	NA
Sodium, ICAP	(mg/L)		8	8	102	5.09	53.59625	NR	NA

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.83.(continued) Regime=Upper East Fork Poplar Creek AREA NAME=Rust Garage Area

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Strontium, ICAP	(mg/L)		8	8	4.86	0.0487	2.3822	NR	NA
Sulfur, ICAP	(mg/L)		8	8	10	2.12	5.91375	NR	NA
Thallium, ICAP	(mg/L)		8	8	4	0.2	1.35	NR	NA
Titanium, ICAP	(mg/L)		8	8	1	0.05	0.3375	NR	NA
Uranium, PMS	(mg/L)		8	6	0.0232	0.00135	0.00717	0.03	0
Uranium, ICAP	(mg/L)		8	8	40	2	13.5	NR	NA
m,p-Xylene	(ug/L)		4	4	76	9	47.25	NR	NA
Zirconium, ICAP	(mg/L)		8	8	4	0.2	1.35	NR	NA
Static Water Level	(ft - toc)		16	NA	6.75	-6.75	1.11E-16	NR	NA
Alkalinity as HCO3	(mg/L)		8	8	298	10.1	180.2125	NR	NA
Conductivity	(umho/cm)		16	16	11890	250	5414.063	NR	NA
Dissolved Solids	(mg/L)		8	8	9250	188	4567.375	500	4
pH	(pH)		16	16	7.01	4.71	5.69375	6.5/8.5	13
Total Suspended Solids	(mg/L)		8	5	28	2	11.4	NR	NA
Turbidity	(NTU)		8	8	17.4	0.802	5.891125	1	6
Uranium-234	(pCi/L)		4	2	16	9.6	12.8	20	0
Uranium-235	(pCi/L)		4	2	0.73	0.43	0.58	24	0
Uranium-238	(pCi/L)		4	2	7.8	5.1	6.45	24	0
Gross Alpha	(pCi/L)		8	3	28	5.2	19.06667	15 f	2
Gross Beta	(pCi/L)		8	5	4200	23	3004.6	50 a	4
1,1-Dichloroethene	(ug/L)		8	4	3 J	2 J	2.75	7	0
1,2-Dichloroethene (Total)	(ug/L)		8	4	21	8	11.5	NR b	NA
1,2-Dimethylbenzene	(ug/L)		4	4	130	53	94.75	NR	NA
Benzene	(ug/L)		8	4	1200	900	1125	5	4
Bromoform	(ug/L)		8	4	6	3 J	4.25	100 i	0
Chloroform	(ug/L)		8	4	23	12	18.25	100 i	0
cis-1,2-Dichloroethene	(ug/L)		8	4	21	8	11.5	70	0
Ethylbenzene	(ug/L)		8	3	32	7	21.33333	700	0
Methylene chloride	(ug/L)		8	4	33	19	28.5	5	4
Naphthalene	(ug/L)		4	4	19	11	15.25	NR	NA
Styrene	(ug/L)		8	1	1 J	1 J	1	100	0

Table 4.83. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=Rust Garage Area

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Tetrachloroethene	(ug/L)		8	4	290	140	225	5	4
Toluene	(ug/L)		8	4	13	1 J	7.25	1000	0
Trichloroethene	(ug/L)		8	4	9	6	7.75	5	4
Xylenes	(ug/L)		8	4	190	62	140.5	10000	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.84. Regime=Upper East Fork Poplar Creek AREA NAME=S-2 Site

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Bicarbonate	(mg/L)		2	2	76.2	66.8	71.5	NR	NA
Chloride	(mg/L)		4	4	109	6.55	57.39	250	0
Fluoride	(mg/L)		4	4	3.9	1.25	2.3275	4	0
Nitrate Nitrogen	(mg/L)		2	2	62.6	52.2	57.4	10	2
Nitrate/Nitrite	(mg/L)		2	2	781	83 Q	432	NR	NA
Sulfate	(mg/L)		4	4	66.9	16	41.525	250	0
Aluminum, ICAP	(mg/L)		4	4	3.24	0.351	1.75375	0.2	4
Antimony, ICAP	(mg/L)		4	2	0.2	0.2	0.2	0.006	2
Arsenic, ICAP	(mg/L)		4	2	0.2	0.2	0.2	0.05	2
Barium, ICAP	(mg/L)		4	4	0.3	0.0876	0.19715	2	0
Beryllium, ICAP	(mg/L)		4	2	0.0115	0.0107	0.0111	0.004	2
Boron, ICAP	(mg/L)		4	2	0.348	0.345	0.3465	NR	NA
Cadmium, PMS	(mg/L)		2	2	0.0866	0.0768	0.0817	0.005	2
Cadmium, ICAP	(mg/L)		4	4	3.79	0.0832	1.912925	0.005	4
Calcium, ICAP	(mg/L)		4	4	538 J	109	259.25	NR	NA
Chromium, PMS	(mg/L)		2	1	0.00322	0.00322	0.00322	NR	NA
Cobalt, ICAP	(mg/L)		4	2	0.255	0.236	0.2455	NR	NA
Copper, ICAP	(mg/L)		4	4	47.6	0.175	22.46525	1.3	2
Iron, ICAP	(mg/L)		4	4	0.365	0.0674	0.21235	0.3	1
Lead, PMS	(mg/L)		2	2	0.00146	0.00105	0.001255	0.015 c	0
Lead, ICAP	(mg/L)		4	4	0.1	0.0184	0.059475	0.015 c	4
Lithium, ICAP	(mg/L)		4	2	0.0729 J	0.0489	0.0609	NR	NA
Magnesium, ICAP	(mg/L)		4	4	134	17.7	75.6	NR	NA
Manganese, ICAP	(mg/L)		4	4	44.7	2.51	18.3175	0.05	4
Nickel, PMS	(mg/L)		2	2	0.0235	0.0174	0.02045	NR	NA
Nickel, ICAP	(mg/L)		4	2	2.12	2.02	2.07	0.1 d	2
Niobium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		2	2	0.5	0.5	0.5	NR	NA
Potassium, ICAP	(mg/L)		4	4	11.4	3.11	6.7	NR	NA
Selenium, ICAP	(mg/L)		4	2	0.2	0.2	0.2	0.05	2
Silicon, ICAP	(mg/L)		2	2	2.84	2.74	2.79	NR	NA

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.84. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=S-2 Site

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Sodium, ICAP	(mg/L)		4	4	137	13	57.65	NR	NA
Strontium, ICAP	(mg/L)		4	4	1.01	0.171	0.59325	NR	NA
Sulfur, ICAP	(mg/L)		2	2	5.73	5.52	5.625	NR	NA
Thallium, PMS	(mg/L)		2	2	0.00243	0.00169	0.00206	0.002	1
Thallium, ICAP	(mg/L)		4	3	0.2	0.0086 J	0.1362	NR	NA
Titanium, ICAP	(mg/L)		2	2	0.05	0.05	0.05	NR	NA
Uranium, PMS	(mg/L)		4	2	0.00528	0.00426	0.00477	0.03	0
Uranium, ICAP	(mg/L)		2	2	2	2	2	NR	NA
Zinc, ICAP	(mg/L)		4	2	5.14	4.9	5.02	5	1
Zirconium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		6	NA	14.83	-14.83	3.383333	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	202	185	193.5	NR	NA
Conductivity	(umho/cm)		4	4	1094	862	989.5	NR	NA
Dissolved Solids	(mg/L)		4	4	6260	562	2895.75	500	4
pH	(pH)		4	4	6.98	6.53	6.8075	6.5/8.5	0
Total Suspended Solids	(mg/L)		4	2	3	3	3	NR	NA
Turbidity	(NTU)		2	2	6.08	5.2	5.64	1	2
Gross Alpha	(pCi/L)		4	2	37.09	17	27.045	15 f	2
Gross Beta	(pCi/L)		4	2	33.06	28.68	30.87	50 a	0
1,1-Dichloroethene	(ug/L)		4	2	4 J	3 J	3.5	7	0
1,2-Dichloroethene (Total)	(ug/L)		2	2	6	5 J	5.5	NR b	NA
Acetone	(ug/L)		4	1	10 J	10 J	10	NR	NA
Carbon tetrachloride	(ug/L)		4	3	31	3 J	20.66667	5	2
Chloroform	(ug/L)		4	4	47	9	26	100 i	0
cis-1,2-Dichloroethene	(ug/L)		4	4	280	5 J	130.25	70	2
Methane	(ug/L)		2	1	9	9	9	NR	NA
Tetrachloroethene	(ug/L)		4	4	570	150	362.5	5	4
Toluene	(ug/L)		4	2	2 J	1 J	1.5	1000	0
Trichloroethene	(ug/L)		4	4	450	68	259.5	5	4
Vinyl chloride	(ug/L)		4	2	87	65	76	2	2

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.85. Regime=Upper East Fork Poplar Creek AREA NAME=S-3 Site

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Bicarbonate	(mg/L)		2	2	732	678	705	NR	NA
Chloride	(mg/L)		6	6	179	14.7	105.25	250	0
Fluoride	(mg/L)		6	2	2.9	2.87	2.885	4	0
Nitrate Nitrogen	(mg/L)		4	4	10400	350	5063.75	10	4
Nitrate/Nitrite	(mg/L)		2	2	10400	9820	10110	NR	NA
Sulfate	(mg/L)		6	4	13.7	3.9	7.735	250	0
Aluminum, ICAP	(mg/L)		6	4	5.45	0.581	3.81275	0.2	4
Antimony, ICAP	(mg/L)		6	4	4	0.2	2.15	0.006	4
Arsenic, ICAP	(mg/L)		6	4	4	0.2	2.15	0.05	4
Barium, ICAP	(mg/L)		6	6	95	2.94	61.735	2	6
Cadmium, PMS	(mg/L)		4	4	1.62	0.00212	0.741095	0.005	2
Cadmium, ICAP	(mg/L)		6	4	1.71	0.01	0.8275	0.005	4
Calcium, ICAP	(mg/L)		6	6	11100	531	7561.833	NR	NA
Chromium, PMS	(mg/L)		4	2	0.00319	0.00293	0.00306	NR	NA
Cobalt, ICAP	(mg/L)		6	4	0.474	0.153	0.30875	NR	NA
Copper, ICAP	(mg/L)		6	2	0.124	0.0671	0.09555	1.3	0
Iron, ICAP	(mg/L)		6	2	4.17	0.477	2.3235	0.3	2
Lead, PMS	(mg/L)		4	4	0.00852	0.00277	0.005543	0.015 c	0
Lead, ICAP	(mg/L)		6	4	2	0.1	1.075	0.015 c	4
Lithium, ICAP	(mg/L)		6	5	0.547	0.0198	0.32268	NR	NA
Magnesium, ICAP	(mg/L)		6	6	1310	65.6	798.9333	NR	NA
Manganese, ICAP	(mg/L)		6	6	149	0.139 Q	57.204	0.05	6
Mercury, CVAA	(mg/L)		6	2	0.0164	0.0115	0.01395	0.002	2
Nickel, PMS	(mg/L)		4	4	3.57	0.0354	1.4483	NR	NA
Nickel, ICAP	(mg/L)		6	4	2.98	0.178	1.56	0.1 d	4
Niobium, ICAP	(mg/L)		4	4	4	0.2	2.15	NR	NA
Phosphorus, ICAP	(mg/L)		4	4	10	0.5	5.375	NR	NA
Potassium, ICAP	(mg/L)		6	6	85.1	2.61	36.78333	NR	NA

Table 4.85. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=S-3 Site

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Selenium, PMS	(mg/L)		4	1	0.012	0.012	0.012	0.05	0
Selenium, ICAP	(mg/L)		6	4	4	0.2	2.15	0.05	4
Silicon, ICAP	(mg/L)		4	4	22.1	5.48	15.245	NR	NA
Sodium, ICAP	(mg/L)		6	6	463	14	303.6	NR	NA
Strontium, ICAP	(mg/L)		6	6	63.6	1.23	32.36833	NR	NA
Sulfur, ICAP	(mg/L)		4	4	10	1.69	6.0325	NR	NA
Thallium, PMS	(mg/L)		4	2	0.00212	0.00194	0.00203	0.002	1
Thallium, ICAP	(mg/L)		6	4	4	0.2	2.15	NR	NA
Titanium, ICAP	(mg/L)		4	4	1	0.05	0.5375	NR	NA
Uranium, PMS	(mg/L)		6	6	0.0205	0.000832	0.011719	0.03	0
Uranium, ICAP	(mg/L)		4	4	40	2	21.5	NR	NA
Zinc, ICAP	(mg/L)		6	1	0.0815	0.0815	0.0815	5	0
Zirconium, ICAP	(mg/L)		4	4	4	0.2	2.15	NR	NA
Static Water Level	(ft - toc)		10	NA	9.48	-9.48	1.438	NR	NA
Alkalinity as HCO3	(mg/L)		4	4	644	85.6	356	NR	NA
Conductivity	(umho/cm)		8	8	48100	2790	23193.75	NR	NA
Dissolved Solids	(mg/L)		6	6	65600	2690	36651.67	500	6
pH	(pH)		8	8	6.87	5.57	6.15	6.5/8.5	5
Total Suspended Solids	(mg/L)		6	6	71	6	21.15	NR	NA
Turbidity	(NTU)		4	4	77.9	3.07	23.0475	1	4
Uranium-234	(pCi/L)		2	2	0.33	0.31	0.32	20	0
Uranium-238	(pCi/L)		2	2	0.33	0.16 R	0.245	24	0
Technetium-99	(pCi/L)		4	2	30624.69	28222.66	29423.68	4000	2
Gross Alpha	(pCi/L)		6	1	1334.57 Q	1334.57 Q	1334.57	15 f	1
Gross Beta	(pCi/L)		6	4	19000	13862.58	15843.29	50 a	4
1,1-Dichloroethene	(ug/L)		6	2	2 J	1 J	1.5	7	0
Acetone	(ug/L)		6	2	15	14	14.5	NR	NA
Benzene	(ug/L)		6	1	1 J	1 J	1	5	0
Bromoform	(ug/L)		6	4	4 J	3 J	3.25	100 i	0
Bromomethane	(ug/L)		6	2	22	19	20.5	NR	NA
Carbon disulfide	(ug/L)		6	1	2 J	2 J	2	NR	NA

Table 4.85. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=S-3 Site

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloroform	(ug/L)		6	4	36	13	24.5	100 i	0
Chloromethane	(ug/L)		6	2	22	21	21.5	NR	NA
Methylene chloride	(ug/L)		6	3	50	19	30.33333	5	3
Tetrachloroethene	(ug/L)		6	4	160	2 J	78.75	5	2
Toluene	(ug/L)		6	1	1 J	1 J	1	1000	0
Trichloroethene	(ug/L)		6	4	4 J	3 J	3.75	5	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.86. Regime=Upper East Fork Poplar Creek AREA NAME=Tank 2331-U, near Building 9201-1

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Bicarbonate	(mg/L)		2	2	264	157	210.5	NR	NA
Chloride	(mg/L)		2	2	5.1	3.2	4.15	250	0
Fluoride	(mg/L)		2	2	0.62	0.42	0.52	4	0
Nitrate/Nitrite	(mg/L)		2	1	0.43	0.43	0.43	NR	NA
Sulfate	(mg/L)		2	2	128	95.1	111.55	250	0
Barium, ICAP	(mg/L)		2	2	0.109	0.0821	0.09555	2	0
Boron, ICAP	(mg/L)		2	2	0.0741	0.0697	0.0719	NR	NA
Calcium, ICAP	(mg/L)		2	2	91.3	80.3	85.8	NR	NA
Iron, ICAP	(mg/L)		2	1	0.537	0.537	0.537	0.3	1
Magnesium, ICAP	(mg/L)		2	2	20.4	18.4	19.4	NR	NA
Manganese, ICAP	(mg/L)		2	2	1.55	0.62	1.085	0.05	2
Potassium, ICAP	(mg/L)		2	2	6.4	6	6.2	NR	NA
Sodium, ICAP	(mg/L)		2	2	6.45	4.98	5.715	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.379	0.359	0.369	NR	NA
Uranium, PMS	(mg/L)		2	1	0.00926	0.00926	0.00926	0.03	0
Dissolved Solids	(mg/L)		2	2	394	385	389.5	500	0
Gross Alpha	(pCi/L)		2	2	6.74	2.11	4.425	15 f	0
Gross Beta	(pCi/L)		2	2	10.31	7.8	9.055	50 a	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.87. Regime=Upper East Fork Poplar Creek AREA NAME=Underground Tank T0134-U

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		8	8	3.05	2.17	2.59	250	0
Fluoride	(mg/L)		8	8	0.529	0.456	0.50075	4	0
Nitrate Nitrogen	(mg/L)		8	6	0.902	0.0678	0.529267	10	0
Sulfate	(mg/L)		8	8	59.9	25.7	42.625	250	0
Aluminum, ICAP	(mg/L)		8	8	30.9	0.331	9.4975	0.2	8
Antimony, PMS	(mg/L)		8	2	0.00449	0.00449	0.00449	0.006	0
Antimony, ICAP	(mg/L)		8	8	0.2	0.2	0.2	0.006	8
Arsenic, ICAP	(mg/L)		8	8	0.2	0.2	0.2	0.05	8
Barium, ICAP	(mg/L)		8	8	0.4	0.0842	0.1743	2	0
Beryllium, ICAP	(mg/L)		8	2	0.0015	0.0015	0.0015	0.004	0
Cadmium, PMS	(mg/L)		8	4	0.00754	0.0013	0.00442	0.005	2
Cadmium, ICAP	(mg/L)		8	8	0.01	0.01	0.01	0.005	8
Calcium, ICAP	(mg/L)		8	8	96.5	47.5	63.325	NR	NA
Chromium, PMS	(mg/L)		8	4	0.12	0.00915	0.064575	NR	NA
Chromium, ICAP	(mg/L)		8	2	0.16	0.16	0.16	0.1	2
Cobalt, ICAP	(mg/L)		8	2	0.0369	0.0369	0.0369	NR	NA
Copper, ICAP	(mg/L)		8	2	0.153	0.153	0.153	1.3	0
Iron, ICAP	(mg/L)		8	8	38	0.212	10.67525	0.3	4
Lead, PMS	(mg/L)		8	6	0.106	0.000795	0.037692	0.015 c	2
Lead, ICAP	(mg/L)		8	8	0.1	0.1	0.1	0.015 c	8
Lithium, ICAP	(mg/L)		8	8	0.149	0.0893	0.109	NR	NA
Magnesium, ICAP	(mg/L)		8	8	21.1	6.56	11.305	NR	NA
Manganese, ICAP	(mg/L)		8	8	2.26	0.0446	0.7444	0.05	6
Mercury, CVAA	(mg/L)		8	2	0.000762	0.000762	0.000762	0.002	0
Nickel, PMS	(mg/L)		8	4	0.0935	0.0253	0.0594	NR	NA
Nickel, ICAP	(mg/L)		8	2	0.125	0.125	0.125	0.1 d	2
Niobium, ICAP	(mg/L)		8	8	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		8	8	0.771	0.5	0.56775	NR	NA
Potassium, ICAP	(mg/L)		8	6	12.6	2.19	6.386667	NR	NA
Selenium, ICAP	(mg/L)		8	8	0.2	0.2	0.2	0.05	8
Silicon, ICAP	(mg/L)		8	8	34.3	3.04	13.6025	NR	NA

Table 4.87. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=Underground Tank T0134-U

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Sodium, ICAP	(mg/L)		8	8	3.75	2.53	3.095	NR	NA
Strontium, ICAP	(mg/L)		8	8	0.184	0.108	0.13725	NR	NA
Sulfur, ICAP	(mg/L)		8	8	21	8.55	14.7775	NR	NA
Thallium, PMS	(mg/L)		8	2	0.000628	0.000628	0.000628	0.002	0
Thallium, ICAP	(mg/L)		8	8	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		8	8	0.45	0.05	0.17475	NR	NA
Uranium, PMS	(mg/L)		8	8	0.124	0.0478	0.073275	0.03	8
Uranium, ICAP	(mg/L)		8	8	2	2	2	NR	NA
Vanadium, ICAP	(mg/L)		8	2	0.0423	0.0423	0.0423	NR	NA
Zinc, ICAP	(mg/L)		8	2	0.54	0.54	0.54	5	0
Zirconium, ICAP	(mg/L)		8	8	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		16	NA	9.38	-9.38	1.11E-16	NR	NA
Alkalinity as HCO3	(mg/L)		8	8	132	117	123.25	NR	NA
Conductivity	(umho/cm)		16	16	469	295	371.875	NR	NA
Dissolved Solids	(mg/L)		8	8	265	172	218.5	500	0
pH	(pH)		16	16	7.86	7.29	7.62125	6.5/8.5	0
Total Suspended Solids	(mg/L)		8	8	181	3	69.75	NR	NA
Turbidity	(NTU)		8	8	106	3.87	54.69	1	8
Gross Alpha	(pCi/L)		8	8	69	44	53.75	15 f	8
Gross Beta	(pCi/L)		8	8	44	21	32.25	50 a	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.88. Regime=Upper East Fork Poplar Creek AREA NAME=Union Valley - Exit Pathway

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Bicarbonate	(mg/L)		15	11	363	107	233.5455	NR	NA
Carbonate	(mg/L)		15	8	185	14.8	105.1	NR	NA
Chloride	(mg/L)		15	15	90.7	1.3	13.57333	250	0
Fluoride	(mg/L)		15	7	2.2	0.1	1.231429	4	0
Nitrate/Nitrite	(mg/L)		15	13	1.4	0.025	0.398308	NR	NA
Sulfate	(mg/L)		15	14	7.3	0.76	3.925714	250	0
Aluminum, ICAP	(mg/L)		12	8	0.647	0.0819 J	0.331988	0.2	7
Barium, ICAP	(mg/L)		12	12	0.0563	0.0148	0.031708	2	0
Boron, ICAP	(mg/L)		12	8	1.42	0.0197	0.684675	NR	NA
Calcium, ICAP	(mg/L)		12	12	80.2	1.27	40.8925	NR	NA
Chromium, ICAP	(mg/L)		12	3	0.0139	0.0053	0.008833	0.1	0
Iron, ICAP	(mg/L)		12	12	1.16	0.0312 J	0.482833	0.3	7
Lead, ICAP	(mg/L)		12	1	0.0205	0.0205	0.0205	0.015 c	1
Lithium, ICAP	(mg/L)		12	8	0.204	0.02	0.111038	NR	NA
Magnesium, ICAP	(mg/L)		12	12	3.36	0.81	1.70625	NR	NA
Manganese, ICAP	(mg/L)		12	6	0.0262	0.0066	0.011917	0.05	0
Potassium, ICAP	(mg/L)		12	12	18.1	2.29	7.465833	NR	NA
Sodium, ICAP	(mg/L)		12	12	212	1.12	67.3875	NR	NA
Strontium, ICAP	(mg/L)		12	12	0.428	0.0544	0.244417	NR	NA
Zinc, ICAP	(mg/L)		12	2	0.0258	0.0156	0.0207	5	0
Static Water Level	(ft - toc)		15	NA	35.94	3.17	28.52067	NR	NA
Dissolved Solids	(mg/L)		15	15	578	141	329.5333	500	4
Total Suspended Solids	(mg/L)		15	9	56.2	5.6	15.01111	NR	NA
Gross Alpha	(pCi/L)		15	6	6.58	1.03	3.155	15 f	0
Gross Beta	(pCi/L)		15	12	17.93	2.49	8.474167	50 a	0
Acetone	(ug/L)		15	1	5 J	5 J	5	NR	NA
Benzene	(ug/L)		15	4	4 J	3 J	3.5	5	0
Carbon disulfide	(ug/L)		15	1	3 J	3 J	3	NR	NA
Carbon tetrachloride	(ug/L)		15	4	3 J	2 J	2.25	5	0
Chloroform	(ug/L)		15	4	5	3 J	3.75	100 i	0
cis-1,2-Dichloroethene	(ug/L)		15	1	9	9	9	70	0

Table 4.88. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=Union Valley - Exit Pathway

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Tetrachloroethene	(ug/L)		15	8	2 J	1 J	1.875	5	0
Trichloroethene	(ug/L)		15	4	2 J	2 J	2	5	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.89. Regime=Upper East Fork Poplar Creek AREA NAME=Uranium Oxide Vault

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		2	2	7.68	5.63	6.655	250	0
Fluoride	(mg/L)		2	1	0.106	0.106	0.106	4	0
Sulfate	(mg/L)		2	2	22	21.2	21.6	250	0
Antimony, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.006	2
Arsenic, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.05	2
Barium, ICAP	(mg/L)		2	2	0.0842	0.0841	0.08415	2	0
Cadmium, ICAP	(mg/L)		2	2	0.01	0.01	0.01	0.005	2
Calcium, ICAP	(mg/L)		2	2	103	93.4	98.2	NR	NA
Iron, ICAP	(mg/L)		2	2	3.32	0.174	1.747	0.3	1
Lead, ICAP	(mg/L)		2	2	0.1	0.1	0.1	0.015 c	2
Magnesium, ICAP	(mg/L)		2	2	12.2	10.2	11.2	NR	NA
Manganese, ICAP	(mg/L)		2	2	2.16	0.623	1.3915	0.05	2
Nickel, PMS	(mg/L)		2	2	0.0719	0.0247	0.0483	NR	NA
Nickel, ICAP	(mg/L)		2	1	0.0612	0.0612	0.0612	0.1 d	0
Niobium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		2	2	0.5	0.5	0.5	NR	NA
Potassium, ICAP	(mg/L)		2	2	4.09	3.28	3.685	NR	NA
Selenium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	0.05	2
Silicon, ICAP	(mg/L)		2	2	3.11	2.76	2.935	NR	NA
Sodium, ICAP	(mg/L)		2	2	17.3	13.4	15.35	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.206	0.172	0.189	NR	NA
Sulfur, ICAP	(mg/L)		2	2	7.6	7.14	7.37	NR	NA
Thallium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		2	2	0.05	0.05	0.05	NR	NA
Uranium, PMS	(mg/L)		2	2	0.485	0.285	0.385	0.03	2
Uranium, ICAP	(mg/L)		2	2	2	2	2	NR	NA
Zirconium, ICAP	(mg/L)		2	2	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		4	NA	9.98	-9.98	0	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	312	276	294	NR	NA
Conductivity	(umho/cm)		4	4	781	600	682.25	NR	NA
Dissolved Solids	(mg/L)		2	2	376	348	362	500	0

Table 4.89. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=Uranium Oxide Vault

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
pH	(pH)		4	4	7.31	6.72	6.975	6.5/8.5	0
Turbidity	(NTU)		2	2	29.8	1.35	15.575	1	2
Gross Alpha	(pCi/L)		2	2	120	91	105.5	15 f	2
Gross Beta	(pCi/L)		2	2	110	60	85	50 a	2

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.90. Regime=Upper East Fork Poplar Creek AREA NAME=Waste Coolant Processing Area

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		4	4	15.8	11.3	13.575	250	0
Nitrate Nitrogen	(mg/L)		4	2	1.79	1.68	1.735	10	0
Sulfate	(mg/L)		4	4	12.3	8.78	10.435	250	0
Aluminum, ICAP	(mg/L)		4	1	0.558	0.558	0.558	0.2	1
Antimony, ICAP	(mg/L)		4	4	0.2	0.2	0.2	0.006	4
Arsenic, ICAP	(mg/L)		4	4	0.2	0.2	0.2	0.05	4
Barium, ICAP	(mg/L)		4	4	0.211	0.18	0.195	2	0
Cadmium, ICAP	(mg/L)		4	4	0.01	0.01	0.01	0.005	4
Calcium, ICAP	(mg/L)		4	4	103	61.4	81.525	NR	NA
Chromium, PMS	(mg/L)		4	3	0.0104	0.00867	0.009603	NR	NA
Iron, ICAP	(mg/L)		4	1	0.242	0.242	0.242	0.3	0
Lead, PMS	(mg/L)		4	1	0.000564	0.000564	0.000564	0.015 c	0
Lead, ICAP	(mg/L)		4	4	0.1	0.1	0.1	0.015 c	4
Magnesium, ICAP	(mg/L)		4	4	9.11	5.73	7.4575	NR	NA
Manganese, ICAP	(mg/L)		4	4	0.052	0.00838	0.023745	0.05	1
Nickel, PMS	(mg/L)		4	2	0.00663	0.00653	0.00658	NR	NA
Niobium, ICAP	(mg/L)		4	4	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		4	4	0.5	0.5	0.5	NR	NA
Selenium, ICAP	(mg/L)		4	4	0.2	0.2	0.2	0.05	4
Silicon, ICAP	(mg/L)		4	4	7.29	6.39	6.805	NR	NA
Sodium, ICAP	(mg/L)		4	4	6.99	4.67	5.7475	NR	NA
Strontium, ICAP	(mg/L)		4	4	0.252	0.165	0.20725	NR	NA
Sulfur, ICAP	(mg/L)		4	4	4.4	3.16	3.7125	NR	NA
Thallium, ICAP	(mg/L)		4	4	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		4	4	0.05	0.05	0.05	NR	NA
Uranium, PMS	(mg/L)		4	2	0.00135	0.00131	0.00133	0.03	0
Uranium, ICAP	(mg/L)		4	4	2	2	2	NR	NA
Zirconium, ICAP	(mg/L)		4	4	0.2	0.2	0.2	NR	NA
Static Water Level	(ft - toc)		8	NA	11.13	-11.13	0	NR	NA
Alkalinity as HCO3	(mg/L)		4	4	262	147	206.75	NR	NA
Conductivity	(umho/cm)		8	8	699	364	506.25	NR	NA

Table 4.90. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=Waste Coolant Processing Area

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Dissolved Solids	(mg/L)		4	4	351	213	274	500	0
pH	(pH)		8	8	6.86	6.27	6.62625	6.5/8.5	3
Turbidity	(NTU)		4	4	0.492	0.232	0.41275	1	0
Gross Beta	(pCi/L)		4	1	11	11	11	50 a	0
1,1,1-Trichloroethane	(ug/L)		4	4	120	29	69.5	200	0
1,1-Dichloroethane	(ug/L)		4	4	98	53	74.25	NR	NA
1,1-Dichloroethene	(ug/L)		4	4	120	99	107.25	7	4
1,2-Dichloroethene (Total)	(ug/L)		4	4	4400	2300	3175	NR b	NA
cis-1,2-Dichloroethene	(ug/L)		4	4	4400	2300	3175	70	4
Dichlorodifluoromethane	(ug/L)		4	2	5 J	4 J	4.5	NR	NA
Tetrachloroethene	(ug/L)		4	4	770	270	590	5	4
trans-1,2-Dichloroethene	(ug/L)		4	4	46	19	30.75	100	0
Trichloroethene	(ug/L)		4	4	800	370	632.5	5	4
Trichlorofluoromethane	(ug/L)		4	2	9	6	7.5	NR	NA
Vinyl chloride	(ug/L)		4	4	46	32	38.75	2	4

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.91. Regime=Upper East Fork Poplar Creek AREA NAME=Y-12 Fuel Station

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Static Water Level	(ft - toc)		3	NA	10.5	4.32	6.813333	NR	NA
1,2-Dichloroethane	(ug/L)		3	1	440	440	440	5	1
1,2-Dichloropropane	(ug/L)		3	1	10	10	10	5	1
2-Butanone	(ug/L)		3	1	11	11	11	NR	NA
Acetone	(ug/L)		3	1	30	30	30	NR	NA
Benzene	(ug/L)		3	1	6300	6300	6300	5	1
Ethylbenzene	(ug/L)		3	1	1400	1400	1400	700	1
Toluene	(ug/L)		3	1	4300	4300	4300	1000	1
Xylenes	(ug/L)		3	1	8900	8900	8900	10000	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.92. Regime=Upper East Fork Poplar Creek AREA NAME=Y-12 Salvage Yard

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		14	14	80.3	3.83	24.54214	250	0
Nitrate Nitrogen	(mg/L)		14	10	7390	0.486	2114.756	10	8
Sulfate	(mg/L)		14	13	59.7	0.368	12.56369	250	0
Aluminum, ICAP	(mg/L)		14	1	1.89	1.89	1.89	0.2	1
Antimony, PMS	(mg/L)		14	1	0.00271	0.00271	0.00271	0.006	0
Antimony, ICAP	(mg/L)		14	14	5	0.2	1.071429	0.006	14
Arsenic, PMS	(mg/L)		14	1	0.00515	0.00515	0.00515	0.05	0
Arsenic, ICAP	(mg/L)		14	14	5	0.2	1.071429	0.05	14
Barium, ICAP	(mg/L)		14	14	126	0.0572	21.11299	2	4
Beryllium, ICAP	(mg/L)		14	1	0.0061	0.0061	0.0061	0.004	1
Cadmium, PMS	(mg/L)		14	2	0.00202	0.000816	0.001418	0.005	0
Cadmium, ICAP	(mg/L)		14	14	0.25	0.01	0.053571	0.005	14
Calcium, ICAP	(mg/L)		14	14	8980	16.9	1885.493	NR	NA
Chromium, PMS	(mg/L)		14	3	0.00603	0.00389	0.004613	NR	NA
Iron, ICAP	(mg/L)		14	8	2.04	0.0531	0.623938	0.3	5
Lead, PMS	(mg/L)		14	5	0.00201	0.000543	0.001165	0.015 c	0
Lead, ICAP	(mg/L)		14	14	2.5	0.1	0.535714	0.015 c	14
Lithium, ICAP	(mg/L)		14	9	0.36	0.0107	0.1021	NR	NA
Magnesium, ICAP	(mg/L)		14	14	1300	2.32	282.0536	NR	NA
Manganese, ICAP	(mg/L)		14	12	92.1	0.00526	15.51078	0.05	7
Mercury, CVAA	(mg/L)		14	1	0.000415	0.000415	0.000415	0.002	0
Nickel, PMS	(mg/L)		14	9	0.415	0.00505	0.094933	NR	NA
Niobium, ICAP	(mg/L)		14	14	5	0.2	1.071429	NR	NA
Phosphorus, ICAP	(mg/L)		14	14	12	0.5	2.642857	NR	NA
Potassium, ICAP	(mg/L)		14	7	31.5	2.96	8.037143	NR	NA
Selenium, PMS	(mg/L)		14	1	0.0197	0.0197	0.0197	0.05	0
Selenium, ICAP	(mg/L)		14	14	5	0.2	1.071429	0.05	14
Silicon, ICAP	(mg/L)		14	12	17.1	3.82	10.90083	NR	NA
Sodium, ICAP	(mg/L)		14	14	309	5.08	66.055	NR	NA
Strontium, ICAP	(mg/L)		14	14	66.9	0.0421	11.7955	NR	NA
Sulfur, ICAP	(mg/L)		14	14	16.5	0.5	5.545	NR	NA

Table 4.92. (continued) Regime=Upper East Fork Poplar Creek AREA NAME=Y-12 Salvage Yard

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Thallium, PMS	(mg/L)		14	1	0.00104	0.00104	0.00104	0.002	0
Thallium, ICAP	(mg/L)		14	14	5	0.2	1.071429	NR	NA
Titanium, ICAP	(mg/L)		14	14	1.2	0.05	0.264286	NR	NA
Uranium, PMS	(mg/L)		14	7	0.0377	0.0011	0.015084	0.03	1
Uranium, ICAP	(mg/L)		14	14	50	2	10.71429	NR	NA
Zirconium, ICAP	(mg/L)		14	14	5	0.2	1.071429	NR	NA
Static Water Level	(ft - toc)		30	NA	18.14	-18.14	0	NR	NA
Alkalinity as HCO3	(mg/L)		14	14	679	50.2	199.1143	NR	NA
Conductivity	(umho/cm)		29	29	41400	145.2	8574.786	NR	NA
Dissolved Solids	(mg/L)		14	14	41000	107	8765.786	500	8
pH	(pH)		29	29	7.89	5.3	6.687241	6.5/8.5	11
Total Suspended Solids	(mg/L)		14	5	39	3	17.2	NR	NA
Turbidity	(NTU)		14	14	22.4	0.451	3.851214	1	8
Gross Alpha	(pCi/L)		14	3	154 Q	2.2	53.8	15 f	1
Gross Beta	(pCi/L)		14	6	13000	13	3847	50 a	2
1,1,1,2-Tetrachloroethane	(ug/L)		14	2	2 J	1 J	1.5	NR	NA
1,1,1-Trichloroethane	(ug/L)		14	2	28	26	27	200	0
1,1-Dichloroethane	(ug/L)		14	2	6	6	6	NR	NA
1,1-Dichloroethene	(ug/L)		14	2	270	220	245	7	2
1,2-Dichloroethene (Total)	(ug/L)		14	4	70	12	38	NR b	NA
Benzene	(ug/L)		14	4	120	6	63.25	5	4
Bromoform	(ug/L)		14	2	8	8	8	100 i	0
Chloroform	(ug/L)		14	4	25	4 J	13	100 i	0
cis-1,2-Dichloroethene	(ug/L)		14	4	70	12	38	70	0
Methylene chloride	(ug/L)		14	2	48	33	40.5	5	2
Tetrachloroethene	(ug/L)		14	5	1200	2 J	473.4	5	4
Trichloroethene	(ug/L)		14	4	12	4 J	7.5	5	2
Trichlorofluoromethane	(ug/L)		14	2	3 J	1 J	2	NR	NA
Vinyl chloride	(ug/L)		14	1	1 J	1 J	1	2	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Table 4.93. Regime=Pine Ridge AREA NAME=Surface water sampling stations

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Chloride	(mg/L)		10	10	1.18	0.724	0.9448	250	0
Nitrate Nitrogen	(mg/L)		10	4	0.124	0.0429	0.084925	10	0
Sulfate	(mg/L)		10	10	11.4	4.76	9.077	250	0
Aluminum, ICAP	(mg/L)		10	8	0.883	0.33	0.59875	0.2	8
Antimony, PMS	(mg/L)		10	1	0.00289 Q	0.00289 Q	0.00289	0.006	0
Antimony, ICAP	(mg/L)		10	10	0.2	0.2	0.2	0.006	10
Arsenic, PMS	(mg/L)		10	1	0.0102	0.0102	0.0102	0.05	0
Arsenic, ICAP	(mg/L)		10	10	0.2	0.2	0.2	0.05	10
Barium, ICAP	(mg/L)		10	10	0.0564	0.0268	0.04098	2	0
Cadmium, PMS	(mg/L)		10	1	0.00196 Q	0.00196 Q	0.00196	0.005	0
Cadmium, ICAP	(mg/L)		10	10	0.01	0.01	0.01	0.005	10
Calcium, ICAP	(mg/L)		10	10	62.5	5.06	18.521	NR	NA
Chromium, PMS	(mg/L)		10	5	0.0122	0.0101	0.01144	NR	NA
Iron, ICAP	(mg/L)		10	10	0.903	0.148	0.4021	0.3	7
Lead, PMS	(mg/L)		10	3	0.0015	0.00055	0.001163	0.015 c	0
Lead, ICAP	(mg/L)		10	10	0.1	0.1	0.1	0.015 c	10
Magnesium, ICAP	(mg/L)		10	10	3.64	3.01	3.298	NR	NA
Manganese, ICAP	(mg/L)		10	10	0.0966	0.0126	0.04025	0.05	2
Niobium, ICAP	(mg/L)		10	10	0.2	0.2	0.2	NR	NA
Phosphorus, ICAP	(mg/L)		10	10	0.5	0.5	0.5	NR	NA
Potassium, ICAP	(mg/L)		10	8	3.25	2.1	2.80625	NR	NA
Selenium, ICAP	(mg/L)		10	10	0.2	0.2	0.2	0.05	10
Silicon, ICAP	(mg/L)		10	10	8.55	3.85	6.142	NR	NA
Sodium, ICAP	(mg/L)		10	10	2.62	0.728	1.5615	NR	NA
Strontium, ICAP	(mg/L)		10	10	0.0969	0.0237	0.04255	NR	NA
Sulfur, ICAP	(mg/L)		10	10	3.98	1.57	3.131	NR	NA
Thallium, PMS	(mg/L)		10	1	0.00104 Q	0.00104 Q	0.00104	0.002	0
Thallium, ICAP	(mg/L)		10	10	0.2	0.2	0.2	NR	NA
Titanium, ICAP	(mg/L)		10	10	0.05	0.05	0.05	NR	NA
Uranium, PMS	(mg/L)		10	1	0.0012	0.0012	0.0012	0.03	0
Uranium, ICAP	(mg/L)		10	10	2	2	2	NR	NA

Table 4.93. (continued) Regime=Pine Ridge AREA NAME=Surface water sampling stations

COMPOUND	UNITS	FILTERED STATUS	# SAMPLES	# DETECTED	MAXIMUM DETECTED MMT.	MINIMUM DETECTED MMT.	AVERAGE DETECTED MMTS.	REFERENCE VALUE	# MMTS. > REF
Zirconium, ICAP	(mg/L)		10	10	0.2	0.2	0.2	NR	NA
Alkalinity as HCO3	(mg/L)		10	10	153	21.6	52.16	NR	NA
Conductivity	(umho/cm)		20	20	461	69.8	159.495	NR	NA
Dissolved Solids	(mg/L)		10	10	184	42	78.8	500	0
pH	(pH)		20	20	7.86	6.3	7.0715	6.5/8.5	1
Total Suspended Solids	(mg/L)		10	7	49	2	11.42857	NR	NA
Turbidity	(NTU)		10	10	11.9	2.6	6.279	1	10
Gross Alpha	(pCi/L)		10	2	2.9	2.6	2.75	15 f	0
Gross Beta	(pCi/L)		10	1	6.1	6.1	6.1	50 a	0

CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 NATIONAL SECURITY COMPLEX

Footnote Definitions

[a] Regulatory guide for assessing compliance without further analysis.
[b] See *cis*-Dichloroethene and *trans*-Dichloroethene.
[c] Action level, which is applicable to community water systems and non-transient, non-community water systems.
[d] EPA has deleted the MCL for nickel from the *Code of Federal Regulations*. The state of Tennessee retains a nickel MCL of 0.1 mg/L in its currently effective drinking water regulations.
[f] Excludes radon and naturally occurring uranium.
[g] Applies to combined ^{226}Ra and ^{228}Ra.
[i] Limit for total trihalomethanes (bromodichloromethane + bromoform + chloroform + dibromochloromethane).

Qualifier Definitions

J - Indicates an estimated value (VOA)
J - Chemical tracer recovery is less than 50% or exceeds 125% (RAD)
Q - Inconsistent with historical measurements or other reported results
R - Rejected value

Other Definitions

NR - No reference value is available
NA – Not applicable