ES/ESH-80

Annual Site Environmental Data

Compiled by S. D. Thompson

List of Tables

East Tennessee Technology Park

Y-12 Plant

Y-12 Plant (continued)

Constituents Detected in Groundwater at the Y-12 Plant for 1997 (continued)

OAK RIDGE NATIONAL LABORATORY

ORR Surveillance

Table 1.1. 1997 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	53000	8700	32000		
Total Suspended Solids, mg/L	12	12	<1.0	<1.9		
pH, Standard Units	12	8.2	6.7	7.2	4.0 - 9.0	0
Discharge Point SD 100						
Flow, GPD	57	4800000	400000	990000		
Total Suspended Solids, mg/L	53	18	<1.0	<1.9		
pH, Standard Units	53	8.3	6.6	7.3	6.0 - 9.0	0
Discharge Point SD 120						
Flow, GPD	26	650000	0	110000		
Total Suspended Solids, mg/L	10	18	<1.0	<5.4		
pH, Standard Units	10	7.2	6.4	6.7	4.0 - 9.0	0
Discharge Point SD 124						
Chlorine, Total Residual, mg/L	44	0.18	<0.050	<.053		
Flow, GPD	100	590000	0	50000		
Total Suspended Solids, mg/L	46	13	<1.0	<1.5		
pH, Standard Units	46	8.3	6.8	7.5	6.0 - 9.0	0
Discharge Point SD 130						
Flow, GPD	57	8400000	440000	1000000		
Total Suspended Solids, mg/L	57	16	<1.0	<6.2		
pH, Standard Units	57	7.7	6.3	7.1	6.0 - 9.0	0
Discharge Point SD 140						
Flow, GPD	4	97000	42000	64000		
Total Suspended Solids, mg/L	4	2.0	<1.0	<1.3		
pH, Standard Units	4	7.4	6.9	7.2	4.0 - 9.0	0
Discharge Point SD 142						
Flow, GPD	13	150000	25000	76000		
Total Suspended Solids, mg/L	13	13	<1.0	<2.5		
pH, Standard Units	13	7.9	6.9	7.5	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 144						
Flow, GPD	20	330000	0	65000		
Total Suspended Solids, mg/L	10	21	<1.0	<4.1		
pH, Standard Units	10	7.9	6.9	7.4	4.0 - 9.0	0
Discharge Point SD 146						
Flow, GPD	19	33000	0	11000		
Total Suspended Solids, mg/L	11	19	<1.0	<3.5		
pH, Standard Units	11	8.2	6.6	7.4	4.0 - 9.0	0
Discharge Point SD 148						
Flow, GPD	17	19000	0	6300		
Total Suspended Solids, mg/L	11	3.0	<1.0	<1.4		
pH, Standard Units	11	8.0	7.0	7.5	4.0 - 9.0	0
Discharge Point SD 150						
Flow, GPD	16	560000	0	180000		
Total Suspended Solids, mg/L	9	3.4	<1.0	<1.6		
pH, Standard Units	9	7.4	6.2	6.8	4.0 - 9.0	0
Discharge Point SD 154						
Flow, GPD	17	240000	0	87000		
Total Suspended Solids, mg/L	11	5.8	<1.0	<1.5		
pH, Standard Units	11	7.5	6.6	7.0	4.0 - 9.0	0
Discharge Point SD 156						
Flow, GPD	4	23000000	0	5700000		
Discharge Point SD 158						
Flow, GPD	5	66000	0	36000		
Total Suspended Solids, mg/L	4	1.8	<1.0	<1.2		
pH, Standard Units	4	7.1	6.6	6.8	4.0 - 9.0	0
Discharge Point SD 160						
Flow, GPD	4	190000	93000	130000		
Total Suspended Solids, mg/L	4	3.0	<1.0	<1.7		
pH, Standard Units	4	7.5	7.0	7.2	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 162						
Flow, GPD	21	140000	0	42000		
Total Suspended Solids, mg/L	5	1.4	<1.0	<1.1		
pH, Standard Units	5	7.8	6.5	7.0	4.0 - 9.0	0
Discharge Point SD 168						
Flow, GPD	6	18000	0	6400		
Total Suspended Solids, mg/L	3	9.2	2.6	6.2		
pH, Standard Units	3	7.7	6.5	7.2	4.0 - 9.0	0
Discharge Point SD 170						
Flow, GPD	60	1800000	0	340000		
Total Suspended Solids, mg/L	48	11	<1.0	<1.4		
pH, Standard Units	49	8.3	6.8	7.5	6.0 - 9.0	0
Discharge Point SD 180						
Flow, GPD	55	1600000	71000	290000		
Total Suspended Solids, mg/L	52	40	<1.0	<4.3		
pH, Standard Units	52	8.3	6.7	7.6	6.0 - 9.0	0
Discharge Point SD 190						
Flow, GPD	54	2100000	190000	520000		
Total Suspended Solids, mg/L	52	19	<1.0	<2.3		
pH, Standard Units	52	8.2	6.7	7.5	6.0 - 9.0	0
Discharge Point SD 192						
Flow, GPD	1	81000	81000	81000		
pH, Standard Units	1	7.9	7.9	7.9	4.0 - 9.0	0
Discharge Point SD 194						
Flow, GPD	1	81000	81000	81000		
pH, Standard Units	1	7.5	7.5	7.5	4.0 - 9.0	0
Discharge Point SD 195						
Flow, GPD	2	250000	63000	160000		
pH, Standard Units	2	7.3	6.9	7.1	4.0 - 9.0	0
Discharge Point SD 196						
Flow, GPD	2	80000	22000	51000		
pH, Standard Units	2	7.4	7.3	7.4	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 197						
Flow, GPD	21	47000	0	17000		
Oil and Grease, mg/L	10	7.9	<5.7	<5.8		
Total Suspended Solids, mg/L	10	40	<1.0	<9		
pH, Standard Units	10	8.2	6.7	7.4	4.0 - 9.0	0
Discharge Point SD 198						
Flow, GPD	5	320000	0	180000		
Total Suspended Solids, mg/L	4	1.2	<1.0	<1.1		
pH, Standard Units	4	8.0	7.6	7.8	4.0 - 9.0	0
Discharge Point SD 200						
Flow, GPD	21	680000	0	190000		
Total Suspended Solids, mg/L	11	9.4	<1.0	<2.2		
pH, Standard Units	11	8.0	6.5	7.2	4.0 - 9.0	0
Discharge Point SD 210						
Flow, GPD	11	1100000	0	270000		
Total Suspended Solids, mg/L	4	8.4	1.8	3.9		
pH, Standard Units	4	7.8	6.7	7.2	4.0 - 9.0	0
Discharge Point SD 220						
Flow, GPD	24	84000	0	12000		
Total Suspended Solids, mg/L	9	40	1.4	13		
pH, Standard Units	9	8.1	7.2	7.6	4.0 - 9.0	0
Discharge Point SD 230						
Flow, GPD	13	1300000	210000	630000		
Total Suspended Solids, mg/L	12	3.2	<1.0	<1.3		
pH, Standard Units	12	8.2	6.7	7.6	4.0 - 9.0	0
Discharge Point SD 238						
Flow, GPD	1	7500	7500	7500		
pH, Standard Units	1	8.0	8.0	8.0	4.0 - 9.0	0
Discharge Point SD 240						
Flow, GPD	16	900000	0	360000		
Total Suspended Solids, mg/L	11	10	<1.0	<2.3		
pH, Standard Units	11	7.9	6.9	7.4	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 250						
Flow, GPD	8	110000	0	14000		
Total Suspended Solids, mg/L	1	24	24	24		
pH, Standard Units	1	6.3	6.3	6.3	4.0 - 9.0	0
Discharge Point SD 264						
Flow, GPD	2	13000	5200	9300		
pH, Standard Units	2	7.7	7.5	7.6	4.0 – 9.0	0
Discharge Point SD 270						
Flow, GPD	2	24000	0	12000		
pH, Standard Units	1	7.7	7.7	7.7	4.0 - 9.0	0
Discharge Point SD 280						
Flow, GPD	3	71000	34000	46000		
pH, Standard Units	2	7.5	7.3	7.4	4.0 - 9.0	0
Discharge Point SD 292						
Flow, GPD	2	64000	19000	42000		
pH, Standard Units	3	7.1	6.9	7.0	4.0 - 9.0	0
Discharge Point SD 294						
Flow, GPD	4	120000	0	42000		
pH, Standard Units	2	7.9	6.7	7.3	4.0 - 9.0	0
Discharge Point SD 296						
Flow, GPD	5	22000	0	7900		
pH, Standard Units	3	7.9	7.4	7.6	4.0 - 9.0	0
Discharge Point SD 297						
Flow, GPD	6	50000	0	14000		
pH, Standard Units	3	7.5	7.0	7.3	4.0 - 9.0	0
Discharge Point SD 310						
Flow, GPD	1	65000	65000	65000		
pH, Standard Units	1	7.7	7.7	7.7	4.0 - 9.0	0
Discharge Point SD 320						
Flow, GPD	7	260000	0	55000		
pH, Standard Units	2	7.1	6.7	6.9	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 322						
Flow, GPD	5	33000	0	10000		
pH, Standard Units	4	7.5	6.9	7.2	4.0 - 9.0	0
Discharge Point SD 326						
Flow, GPD	6	20000	0	4600		
pH, Standard Units	2	7.0	6.9	7.0	4.0 - 9.0	0
Discharge Point SD 330						
Flow, GPD	5	540000	0	240000		
Total Suspended Solids, mg/L	3	24	1.4	9.5		
pH, Standard Units	3	7.6	6.9	7.3	4.0 - 9.0	0
Discharge Point SD 332						
Flow, GPD	9	9400	0	1000		
pH, Standard Units	1	7.0	7.0	7.0	4.0 - 9.0	0
Discharge Point SD 334						
Flow, GPD	7	33000	0	7400		
pH, Standard Units	3	7.1	6.9	7.0	4.0 - 9.0	0
Discharge Point SD 340						
Flow, GPD	2	550000	350000	450000		
pH, Standard Units	2	7.1	6.9	7.0	4.0 - 9.0	0
Discharge Point SD 350						
Flow, GPD	2	56000	27000	41000		
pH, Standard Units	2	7.7	7.4	7.6	4.0 - 9.0	0
Discharge Point SD 352						
Flow, GPD	2	230	0	120		
Total Suspended Solids, mg/L	3	1.0	<1.0	<1.0		
pH, Standard Units	3	7.5	7.4	7.5	4.0 - 9.0	0
Discharge Point SD 360						
Flow, GPD	2	32000	18000	25000		
pH, Standard Units	3	7.5	7.0	7.2	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 362						
Flow, GPD	2	150000	83000	120000		
pH, Standard Units	2	7.0	6.9	7.0	4.0 - 9.0	0
Discharge Point SD 374						
Flow, GPD	1	5600	5600	5600		
pH, Standard Units	1	6.8	6.8	6.8	4.0 - 9.0	0
Discharge Point SD 380						
Flow, GPD	15	1100000	0	500000		
Total Suspended Solids, mg/L	12	15	<1.0	4.0		
pH, Standard Units	12	7.9	6.6	6.9	4.0 - 9.0	0
Discharge Point SD 382						
Flow, GPD	2	130000	77000	100000		
pH, Standard Units	2	6.9	6.6	6.8	4.0 - 9.0	0
Discharge Point SD 390						
Flow, GPD	30	220000	0	37000		
Suspended Solids,	5	80	1.4	18		
pH, Standard Units	5	7.6	6.6	7.0	4.0 - 9.0	0
Discharge Point SD 400						
Flow, GPD	3	510	0	170		
pH, Standard Units	1	7.3	7.3	7.3	4.0 - 9.0	0
Discharge Point SD 410						
Flow, GPD	3	52000	0	17000		
pH, Standard Units	1	7.2	7.2	7.2	4.0 - 9.0	0
Discharge Point SD 420						
Flow, GPD	3	190000	0	63000		
pH, Standard Units	1	7.9	7.9	7.9	4.0 - 9.0	0
Discharge Point SD 430						
Flow, GPD	13	1000000	160000	490000		
Suspended Solids,	12	2.6	<1.0	<1.3		
pH, Standard Units	12	8.0	6.7	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 440						
Flow, GPD	16	600000	0	170000		
Total Suspended Solids, mg/L	12	7.8	<1.0	<2.4		
pH, Standard Units	12	7.8	6.7	7.2	4.0 - 9.0	0
Discharge Point SD 450						
Flow, GPD	3	54000	0	18000		
pH, Standard Units	1	7.9	7.9	7.9	4.0 - 9.0	0
Discharge Point SD 460						
Flow, GPD	3	14000	0	4800		
pH, Standard Units	1	7.8	7.8	7.8	4.0 - 9.0	0
Discharge Point SD 470						
Flow, GPD	3	35000	0	12000		
pH, Standard Units	1	8.0	8.0	8.0	4.0 - 9.0	0
Discharge Point SD 480						
Flow, GPD	11	4800000	1500000	2800000		
Suspended Solids, mg/L	10	23	<1.0	<4.3		
pH, Standard Units	9	7.7	6.7	7.1	4.0 - 9.0	0
Discharge Point SD 500						
Flow, GPD	3	11000	0	3700		
pH, Standard Units	1	7.4	7.4	7.4	4.0 - 9.0	0
Discharge Point SD 510						
Flow, MGD	15	800000	0	340000		
Total Suspended Solids, mg/L	13	4.4	<1.0	<1.4		
pH, Standard Units	13	7.4	6.4	6.8	4.0 - 9.0	0
Discharge Point SD 520						
Flow, GPD	3	48000	0	16000		
pH, Standard Units	2	7.1	7.0	7.1	4.0 - 9.0	0
Discharge Point SD 522						
Flow, GPD	3	100000	0	45000		
pH, Standard Units	2	7.5	6.9	7.2	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 532						
Flow, GPD	2	30000	9400	20000		
pH, Standard Units	2	7.0	6.7	6.9	4.0 - 9.0	0
Discharge Point SD 540						
Flow, GPD	2	47000	0	24000		
pH, Standard Units	1	6.7	6.7	6.7	4.0 - 9.0	0
Discharge Point SD 550						
Flow, GPD	2	50000	0	25000		
pH, Standard Units	1	6.7	6.7	6.7	4.0 - 9.0	0
Discharge Point SD 560						
Flow, GPD	22	150000	0	57000		
Total Suspended Solids, mg/L	8	3.8	1.0	2.0		
pH, Standard Units	8	6.8	6.2	6.6	4.0 - 9.0	0
Discharge Point SD 570						
Flow, GPD	3	140000	0	60000		
pH, Standard Units	2	6.8	6.7	6.8	4.0 - 9.0	0
Discharge Point SD 590						
Flow, GPD	7	7200	0	1200		
pH, Standard Units	2	7.3	6.6	7.0	4.0 - 9.0	0
Discharge Point SD 610						
Flow, GPD	18	460000	0	140000		
Total Suspended Solids, mg/L	11	8.0	<1.0	<4.69		
pH, Standard Units	11	6.8	6.1	6.6	4.0 - 9.0	0
Discharge Point SD 620						
Flow, GPD	3	60000	0	20000		
pH, Standard Units	1	6.7	6.7	6.7	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 640						
Flow, GPD	7	79000	0	27000		
Total Suspended Solids, mg/L	5	34	6.6	13		
pH, Standard Units	5	7.7	6.9	7.3	4.0 - 9.0	0
Discharge Point SD 650						
Flow, GPD	3	27000	0	11000		
pH, Standard Units	3	7.4	7.2	7.3	4.0 - 9.0	0
Discharge Point SD 660						
Flow, GPD	4	16000	530	5900		
Total Suspended Solids, mg/L	4	460	4.0	120		
pH, Standard Units	4	8.0	7.2	7.7	4.0 - 9.0	0
Discharge Point SD 670						
Flow, GPD	5	15000	0	3500		
Total Suspended Solids, mg/L	2	3.6	<1.0	<2.3		
pH, Standard Units	2	7.4	7.0	7.2	4.0 - 9.0	0
Discharge Point SD 680						
Flow, GPD	5	96000	0	49000		
Total Suspended Solids, mg/L	4	6.2	2.0	4.25		
pH, Standard Units	4	7.9	7.4	7.6	4.0 - 9.0	0
Discharge Point SD 690						
Flow, GPD	13	1900000	310000	960000		
Total Suspended Solids, mg/L	13	66	<1.0	<8.2		
pH, Standard Units	13	7.9	5.9	7.0	4.0 - 9.0	0
Discharge Point SD 692						
Flow, GPD	3	28000	0	12000		
pH, Standard Units	3	7.3	7.1	7.2	4.0 - 9.0	0
Discharge Point SD 694						
Flow, GPD	2	55000	19000	37000		
pH, Standard Units	2	7.1	6.7	6.9	4.0 - 9.0	0
Discharge Point SD 696						
Flow, GPD	3	63000	0	32000		
pH, Standard Units	2	7.7	7.4	7.6	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 700						
Flow, GPD	14	1500000	0	610000		
Total Suspended Solids, mg/L	12	8.6	<1.0	<2.6		
pH, Standard Units	12	7.6	6.5	7.0	4.0 - 9.0	0
Discharge Point SD 710						
Flow, GPD	13	2300000	340000	1100000		
Total Suspended Solids, mg/L	12	7.4	<1.0	<2.0		
pH, Standard Units	12	7.5	6.7	7.1	4.0 - 9.0	0
Discharge Point SD 720						
Flow, GPD	28	200000	0	36000		
Total Suspended Solids, mg/L	7	19	3.2	7.0		
pH, Standard Units	7	7.2	6.4	6.9	4.0 - 9.0	0
Discharge Point SD 724						
Flow, GPD	8	490000	0	95000		
pH, Standard Units	2	7.9	6.8	7.4	4.0 - 9.0	0
Discharge Point SD 730						
Flow, GPD	6	15000	0	2500		
pH, Standard Units	2	7.9	7.4	7.7	4.0 - 9.0	0
Discharge Point SD 740						
Flow, GPD	9	15000	0	1600		
pH, Standard Units	1	7.4	7.4	7.4	4.0 - 9.0	0
Discharge Point SD 750						
Flow, GPD	17	21000	0	3000		
Total Suspended Solids, mg/L	5	5.6	<1.0	<2.3		
pH, Standard Units	5	7.3	6.6	7.0	4.0 - 9.0	0
Discharge Point SD 760						
Flow, GPD	16	19000	0	3000		
Total Suspended Solids, mg/L	4	3.0	<1.0	<2.0		
pH, Standard Units	4	7.5	6.9	7.2	4.0 - 9.0	0

Table 1.1 (continued)

Parameter	Number of samples	Concentration[a]			Reference Value[b]	Number of exceeding reference
		Max	Min	Avg		
Discharge Point SD 770						
Flow, GPD	16	8100	0	760		
Total Suspended Solids, mg/L	2	3.0	<1.0	<2.0		
pH, Standard Units	2	7.1	7.1	7.1	4.0 - 9.0	0
Discharge Point SD 780						
Flow, GPD	8	230000	0	47000		
Total Suspended Solids, mg/L	2	7.0	2.0	5.0		
pH, Standard Units	2	7.2	6.9	7.1	4.0 - 9.0	0
Discharge Point SD 800						
Flow, GPD	9	23000	0	5000		
Total Suspended Solids, mg/L	2	22	9.0	16		
pH, Standard Units	2	7.2	6.9	7.1	4.0 - 9.0	0
Discharge Point SD 810						
Flow, GPD	9	14000	0	1600		
Total Suspended Solids, mg/L	2	5.0	<1.0	<3.0		
pH, Standard Units	2	7.3	6.9	7.1	4.0 - 9.0	0
Discharge Point SD 820						
Flow, GPD	10	88000	0	8800		
Total Suspended Solids, mg/L	1	14	14	14		
pH, Standard Units	1	6.9	6.9	6.9	4.0 - 9.0	0
Discharge Point SD 830						
Flow, GPD	9	150000	0	29000		
Total Suspended Solids, mg/L	2	40	7.8	24		
pH, Standard Units	2	6.9	6.9	6.9	4.0 - 9.0	0
Discharge Point SD 850						
Flow, GPD	10	7000	0	700		
Total Suspended Solids, mg/L	2	3.8	<1.0	<2.4		
pH, Standard Units	2	7.9	7.0	7.5	4.0 - 9.0	0
Discharge Point SD 860						
Flow, GPD	9	190	0	21.1		
Total Suspended Solids, mg/L	1	2.4	2.4	2.4		
pH, Standard Units	1	6.9	6.9	6.9	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 870						
Flow, GPD	8	76000	0	9600		
Total Suspended Solids, mg/L	1	46	46	46		
pH, Standard Units	1	6.9	6.9	6.9	4.0 - 9.0	0
Discharge Point SD 880						
Flow, GPD	9	54000	0	10000		
Total Suspended Solids, mg/L	2	8.8	1.8	5.3		
pH, Standard Units	2	7.2	6.8	7.0	4.0 - 9.0	0
Discharge Point SD 890						
Flow, GPD	9	160000	0	30000		
Total Suspended Solids, mg/L	2	59	11	35		
pH, Standard Units	2	7.6	6.8	7.2	4.0 - 9.0	0
Discharge Point SD 900						
Flow, GPD	9	97000	0	14000		
Total Suspended Solids, mg/L	2	5.2	<1.0	<3.1		
pH, Standard Units	2	7.0	7.0	7.0	4.0 - 9.0	0
Discharge Point SD 910						
Flow, GPD	6	19000	0	47000		
pH, Standard Units	2	7.5	7.1	7.3	4.0 - 9.0	0
Discharge Point SD 920						
Flow, GPD	8	72000	0	14000		
pH, Standard Units	3	7.5	7.2	7.4	4.0 - 9.0	0
Discharge Point SD 929						
Flow, GPD	3	750	0	360		
pH, Standard Units	2	7.6	6.8	7.2	4.0 - 9.0	0
Discharge Point SD 930						
Flow, GPD	2	95000	39000	67000		
pH, Standard Units	2	7.5	7.2	7.4	4.0 - 9.0	0
Discharge Point SD 934						
Flow, GPD	4	27000	0	9500		
pH, Standard Units	2	7.5	7.4	7.5	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 960						
Flow, GPD	1	1900	1900	1900		
pH, Standard Units	1	7.5	7.5	7.5	4.0 - 9.0	0
Discharge Point SD 970						
Flow, GPD	4	110000	0	27000		
pH, Standard Units	1	6.9	6.9	6.9	4.0 - 9.0	0
Discharge Point SD 980						
Flow, GPD	4	250000	0	64000		
pH, Standard Units	1	7.1	7.1	7.1	4.0 - 9.0	0
Discharge Point SD 982						
Flow, GPD	4	240000	0	60000		
pH, Standard Units	1	7.0	7.0	7.0	4.0 - 9.0	0
Discharge Point SD 990						
Flow, GPD	5	26000	0	5200		
pH, Standard Units	1	7.3	7.3	7.3	4.0 - 9.0	0
Discharge Point SD 992						
Flow, GPD	25	450000	0	46000		
Total Suspended Solids, mg/L	5	240	13	64		
pH, Standard Units	5	7.0	5.7	6.4	4.0 - 9.0	0
Discharge Point SD 996						
Flow, GPD	4	52000	0	13000		
pH, Standard Units	1	7.5	7.5	7.5	4.0 - 9.0	0

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

[b] - NPDES permit limit

Table 1.2. 1997 NPDES Permit Number TN 0002950

Discharge Point 005, Sewage Treatment Plant, ETTP

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
			K-1203			
Biochemical Oxygen	13	<5	<5	2.0	0	
Dissolved Oxygen, mg/L	381	13	6.8	9.2	5.0 min[c]	0
Fecal Coliform, col/100ml	166	410	<1.0	<7.1	400	1
Flow Total (MGD)	366	520000	0	270000		
Settleable Solids, ml/L	275	0.2	<.01	<.1	0.5	0
Suspended Solids, mg/L	165	27	<1	<10		
pH, Standard Units	382	8.1	6.5	7.6	6.0 - 9.0	0

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

[b] - NPDES permit limit

[c] - Daily minimum

Table 1.3. 1997 NPDES Permit Number TN 0002950

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

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
			K-1407J			
2-Chloroethylvinyl Ether,	1	0.01	0.01	0.01		
Acetone, mg/L	4	0.012	0.003	0.006		
Antimony, mg/L	1	0.005	0.005	0.005		
Barium, mg/L	1	0.054	0.054	0.054		
Cadmium, mg/L	4	0.0022	<0.0005	<0.0009	0.069	0
Chemical Oxygen, mg/L	54	34	<5	<10		
Chloride, mg/L	220	3300	93	420	70000	0
Chlorine, Total Residual, mg/L	105	0.35	<0.05	<0.06	1.0	0
Chromium, mg/L	4	0.011	0.0025	0.007	2.8	0
Copper, mg/L	4	0.012	<0.005	<0.007	2.2	0
Flow, GPD	366	1800000	0	78000		
Lead, mg/L	4	0.003	0.00051	0.0014	0.69	0
Manganese, mg/L	1	0.0079	0.0079	0.0079		
Molybdenum, mg/L	1	0.0065	0.0065	0.0065		
Nickel, mg/L	4	0.012	<0.005	<0.008	4.0	0
Petroleum Hydrocarbons,	11	1.6	<0.37	<0.6		
pH, Standard Units	377	9.5	6.0	0	6.0 - 9.0	1
Suspended Solids, mg/L	221	6.0	<1.0	<1.2	40	0
Uranium, mg/L	12	0.73	0.011	0.27		
Zinc, mg/L	4	0.043	0.0099	0.026		

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

[b] - NPDES permit limit

Table 1.4. 1997 NPDES Permit Number TN 0002950

Discharge Point 009, Holding Pond, ETTP

Parameter	Number of samples	Concentration[a]			Reference Value[b]	No. of values exceeding reference
		Max	Min	Avg		
K-1515F						
Aluminum, mg/L	56	1.1	.21	.46	2.0	0
Chlorine, Total	52	0.45	<.05	<.11	1.0	0
Flow, MGD	364	890000	0	90000		
Settleable Solids, ml/L	55	0.2	<.1	<.1	0.5	0
Suspended Solids, mg/L	56	6.0	<1.0	<2.4	40	0
pH, Standard Units	57	8.7	6.8	7.7	6.0 - 9.0	0

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

[b] - NPDES permit limit

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[b]	Average[b]			
K-716 (Poplar Creek)								
U-234	12	9.7e-01	1.6e-01	5.9e-01	5.6e-01	5.0e+02	1.1e-01	1.1e-03
U-235	12	4.8e-02	7.8e-03	2.7e-02	2.6e-02	6.0e+02	4.4e-03	4.4e-05
U-238	12	1.0e+00	1.7e-01	6.4e-01	6.0e-01	6.0e+02	9.9e-02	9.9e-04
Tc-99	12	1.1e+01	-9.4e+00	1.0e+00	1.4e+00	1.0e+05	1.4e-03	1.4e-05
Gross Alpha	12	3.5e+00	-5.2e-01	9.8e-01	1.3e+00	*a*	*a*	*a*
Gross Beta	12	2.1e+01	1.2e+00	4.0e+00	5.2e+00	*a*	*a*	*a*
All listed isotopes								2.2e-03

[a]Not applicable
[b]This calculated value includes sampling results that are at or below the detection limits and/or below background activities.

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 fractions the DCGs
		Max	Min	Median[b]	Average[b]			
K-901-A (settling basin for surface water runoff)								
U-234	12	9.7e-01	3.4e-01	4.9e-01	5.6e-01	5.0e+02	1.1e-01	1.1e-03
U-235	12	5.1e-02	1.7e-02	2.4e-02	2.9e-02	6.0e+02	4.8e-03	4.8e-05
U-238	12	1.0e+00	3.7e-01	5.2e-01	6.0e-01	6.0e+02	9.9e-02	9.9e-04
Tc-99	12	3.1e+01	-3.6e-01	9.0e+00	1.1e+01	1.0e+05	1.1e-02	1.1e-04
Gross Alpha	12	4.5e+00	-1.7e+00	6.2e-01	1.0e+00	*a*	*a*	*a*
Gross Beta	12	2.4e+01	2.9e+00	8.3e+00	9.6e+00	*a*	*a*	*a*
All listed isotopes								2.3e-03

[a]Not applicable
[b]This calculated value includes sampling results that are at or below the detection limits and/or below background activities.

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[b]	Average[b]			
K-1007-B (settling basin for surface water runoff)								
U-234	12	3.1e-01	3.8e-02	2.6e-01	2.2e-01	5.00e+02	4.5e-02	4.5e-04
U-235	12	3.6e-02	7.8e-03	1.3e-02	1.4e-02	6.00e+02	2.3e-03	2.3e-05
U-238	12	4.0e-01	1.7e-01	2.8e-01	2.7e-01	6.00e+02	4.5e-02	4.5e-04
Tc-99	12	1.5e+01	-9.5e+00	5.2e+00	3.7e+00	1.00e+05	3.7e-03	3.7e-05
Gross Alpha	12	7.4e+00	-3.0e+00	9.9e-01	1.1e+00	*a*	*a*	*a*
Gross Beta	12	1.2e+01	-6.6e-01	5.0e+00	4.3e+00	*a*	*a*	*a*
All listed isotopes								9.6e-04

[a]Not applicable
[b]This calculated value includes sampling results that are at or below the detection limits and/or below background activities.

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[b]	Average[b]			
K-1203 (sewage treatment plant)								
U-234	12	1.1e+00	2.7e-01	6.4e-01	6.6e-01	5.0e+02	1.3e-01	1.3e-03
U-235	12	3.1e-01	1.4e-02	1.4e-01	1.4e-01	6.0e+02	2.4e-02	2.4e-04
U-238	12	1.1e+00	2.9e-01	6.7e-01	6.9e-01	6.0e+02	1.2e-01	1.2e-03
Tc-99	12	8.4e+01	-5.4e+00	4.2e+00	1.0e+01	1.0e+05	1.0e-02	1.0e-04
Gross Alpha	12	1.2e+01	3.2e+00	4.8e+00	6.1e+00	*a*	*a*	*a*
Gross Beta	12	1.1e+01	4.9e+00	6.4e+00	7.3e+00	*a*	*a*	*a*
All listed isotopes								2.8e-03

[a]Not applicable
[b]This calculated value includes sampling results that are at or below the detection limits and/or below background activities.

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 fractions the DCGs
		Max	Min	Median[b]	Average[b]			
K-1407-J (treated effluents from Central Neutralization Facility and TSCA Incinerator)								
U-234	12	1.7e+02	2.5e+00	5.1e+01	5.7e+01	5.0e+02	1.2e+01	1.2e-01
U-235	12	1.0e+01	0.0e+00	4.2e+00	4.2e+00	6.0e+02	7.0e-01	7.0e-03
U-236	12	1.9e+00	0.0e+00	7.1e-01	7.5e-01	5.0e+02	1.5e-01	1.5e-03
U-238	12	2.6e+02	3.5e+00	9.5e+01	9.5e+01	6.0e+02	1.6e+01	1.6e-01
Cs-137	12	4.1e+00	-2.8e+00	6.1e-01	7.5e-01	3.0e+03	2.5e-02	2.5e-04
Tc-99	12	9.4e+02	6.6e+01	5.5e+02	5.3e+02	1.0e+05	5.3e-01	5.3e-03
Np-237	12	6.9e-01	0.0e+00	1.5e-01	2.2e-01	3.0e+01	7.5e-01	7.5e-03
Pu-238	12	3.3e+00	-8.2e-02	3.9e-01	5.9e-01	4.0e+01	1.5e+00	1.4e-02
Pu-239	12	1.0e+00	-2.9e-02	0.0e+00	1.1e-01	3.0e+01	3.5e-01	3.5e-03
Gross Alpha	12	4.1e+02	-4.4e+00	9.0e+01	1.2e+02	*a*	*a*	*a*
Gross Beta	12	2.2e+02	1.6e+01	1.2e+02	1.1e+02	*a*	*a*	*a*
All listed isotopes								3.2e-01

[a]Not applicable
[b]This calculated value includes sampling results that are at or below the detection limits and/or below background activities.

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 fractions the DCGs
		Max	Min	Median[b]	Average[b]			
K-1700 (Mitchell Branch)								
U-234	12	1.0e+01	2.5e+00	3.4e+00	4.4e+00	5.0e+02	8.8e-01	8.8e-03
U-235	12	7.0e-01	2.5e-01	3.9e-01	4.1e-01	6.0e+02	6.8e-02	6.8e-04
U-238	12	7.6e+00	2.6e+00	3.7e+00	4.3e+00	6.0e+02	7.1e-01	7.1e-03
Tc-99	12	4.5e+01	-3.2e+00	1.7e+01	1.7e+01	1.0e+05	1.7e-02	1.7e-04
Gross Alpha	12	2.3e+01	6.0e+00	9.2e+00	1.2e+01	*a*	*a*	*a*
Gross Beta	12	3.3e+01	3.4e+00	1.6e+01	1.8e+01	*a*	*a*	*a*
All listed isotopes								1.7e-02

[a]Not applicable
[b]This calculated value includes sampling results that are at or below the detection limits and/or below background activities

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 the DCGs
		Max	Min	Median[b]	Average[b]			
K-1710 (Poplar Creek upstream of the ETTP)								
U-234	12	1.2e+00	1.6e-01	4.1e-01	5.6e-01	5.0e+02	1.1e-01	1.1e-03
U-235	12	7.8e-01	9.5e-03	2.7e-02	8.9e-02	6.0e+02	1.5e-02	1.5e-04
U-238	12	1.2e+00	1.7e-01	4.3e-01	6.0e-01	6.0e+02	1.0e-01	1.0e-03
Tc-99	12	1.1e+01	-1.5e+01	3.7e+00	3.2e-01	1.0e+05	3.2e-04	3.2e-06
Gross Alpha	12	4.2e+00	-1.1e+00	1.0e+00	1.3e+00	*a*	*a*	*a*
Gross Beta	12	7.5e+00	3.2e-01	4.0e+00	3.8e+00	*a*	*a*	*a*
All listed isotopes								2.3e-03

[a]Not applicable
[b]This calculated value includes sampling results that are at or below the detection limits and/or below background activities.

Table 1.12. 1997 ETTP parameters detected at K-716

Parameter	Number detected/ number of samples	Detected results[a]			Reference Value[b]	Number of values exceeding reference
		Max	Min	Avg		
Alkalinity	4/4	120	100	110		
Cadmium	1/12	0.0018	<0.0005	<0.00061		
Chromium	5/12	0.0059	<0.0025	<0.0020	0.016	0
Dissolved Oxygen	4/4	11.0	6.8	1.0	5.0 min	0
Dissolved Solids	4/4	160	140	150		
Fluoride	3/4	0.18	<0.1	<0.13		
Lead	8/12	0.0037	<0.0005	<0.0010	0.082	0
Manganese	12/12	0.140	0.039	0.094		
Selenium	1/12	0.02	<0.01	<0.011		
Silver	1/12	0.00061	<0.0005	<0.00051	0.0041	0
Suspended Solids	4/4	13	2.4	9.8		
Temperature (C^o)	4/4	25	7.6	15		
Uranium	10/12	0.0031	<0.0005	<0.0018		
Zinc	7/12	0.0079	<0.005	<0.0062	0.120	0
pH (standard units)	4/4	7.8	7.3	7.5	6.5 - 8.5	0

a Units in mg/L unless otherwise noted.
b All reference values are Tennessee Water Quality Criteria for fish and aquatic life.

Table 1.13. 1997 ETTP parameters detected at K-901-A

Parameter	Number number of samples	Detected results[a] Max	Min	Avg	Reference Value[b]	Number of values exceeding reference
Alkalinity	4/4	150	120	130		
Cadmium	2/12	0.0015	<0.0005	<0.00058		
Chromium	11/12	0.011	<0.0025	<0.0045	.016	0
Dissolved Oxygen	4/4	10	4.0	7.6	5.0 min	1
Dissolved Solids	4/4	180	130	160		
Fluoride	1/4	0.12	<0.1	<0.11		
Lead	8/12	0.0044	<0005	<0.0011	0.082	0
Manganese	12/12	0.28	0.024	0.077		
Suspended Solids	4/4	17	5.0	10		
Temperature (C^o)	4/4	28	8.3	16		
Uranium	12/12	0.0031	0.0011	0.0018		
Zinc	6/12	0.0087	<0.005	<0.0060	0.12	0
pH (standard units)	4/4	7.5	7.0	7.2	6.5 - 8.5	0

a **Units in mg/L unless otherwise noted.**
b **All reference values are Tennessee Water Quality Criteria for fish and aquatic life.**

Table 1.14. 1997 ETTP parameters detected at K-1007-B

Parameter	Number detected/ number of samples	Detected results[a]			Reference Value[b]	Number of exceeding reference
		Max	Min	Avg		
Alkalinity	4/4	120	84	110		
Biochemical	1/4	5.8	<5.0	<5.2		
Chromium	7/12	0.0048	<0.0025	<0.0022	0.016	0
Dissolved	4/4	13	8.3	10	5.0 min	0
Dissolved Solids	4/4	160	150	150		
Fluoride	4/4	0.14	0.10	0.12		
Lead	9/12	0.005	<0.0005	<0.0017	.082	0
Manganese	12/12	0.150	0.031	0.078		
Silver	1/12	0.00071	<0.0005	<0.00052	0.004	0
Suspended	4/4	18	5.0	11		
Temperature (C^o)	4/4	32	7.7	18		
Uranium	11/12	0.0012	0.0005	0.00081		
Zinc	5 /12	0.013	<0.005	<0.0063	0.12	0
pH (standard	4/4	9.2	8.2	8.6	6.5 - 8.5	2

a **Units in mg/L unless otherwise noted.**
b **All Reference values are Tennessee Water Quality Standards for fish and aquatic life.**

Table 1.15. 1997 ETTP parameters detected at K-1203

Parameter	Number detected/ number of samples	Detected results[a]			Reference Value[b]	Number of exceeding reference
		Max	Min	Avg		
Cadmium	1/12	0.00028	<0.0005	<0.00048		
Chromium	8/12	0.0046	<0.005	<0.0032	0.016	0
Lead	12/12	0.0024	0.00048	0.0015	0.082	0
Manganese	12/12	0.078	0.023	0.057		
Nickel	5/12	0.0081	<0.005	<0.0055		
Silver	12/12	0.0015	0.00037	0.00091		
Uranium	12/12	0.0035	0.00087	0.0021		
Zinc	12/12	0.057	0.025	0.045	0.12	0

a **Units in mg/L unless otherwise noted.**
b **All Reference values are Tennessee Water Quality Standards for fish and aquatic life.**

Table 1.16. 1997 ETTP parameters detected at K-1407-J

Parameter	Number detected/ number of samples	Detected results[a]			Reference Value	Number of values exceeding reference
		Max	Min	Avg		
Uranium	12/12	0.73	0.011	0.31		

a Units in mg/L unless otherwise noted.

Table 1.17. 1997 ETTP parameters detected at K-1700

Parameter	Number number of samples	Detected results[a]			Reference Value[b]	Number of values exceeding reference
		Max	Min	Avg		
1,2 Dichloroethene (µg/L)	4/4	68	24	42		
Alkalinity	4/4	200	40	140		
Aroclor-1254	2/5	1.9	0.079	0.70		
Biochemical Oxygen Demand	1/4	6.8	<5.0	<5.5		
Chromium	11/12	0.011	<0.001	<0.0059	0.016	0
Dissolved Oxygen	4/4	13	6.9	9.0	5.0 min	0
Dissolved Solids	4/4	280	73	200		
Fluoride	3/4	0.29	<0.1	<0.19		
Lead	3/12	0.0055	<0.0005	<0.00099	0.082	0
Manganese	12/12	.26	.12	.19		
Mercury	1/4	0.0006	<0.0002	<0.0003		
Nickel	10/12	0.016	<0.005	<0.0087	1.4	0
Suspended Solids	3/4	360	<1.0	<93		
Temperature (C°)	4/4	23	9.7	14		
Trichloroethene (µg/L)	4/4	130	56	79	810	0
Uranium	12/12	0.023	0.0079	0.013		
Vinyl Chloride	1/4	12	3.0	5.5		
Zinc	8/12	0.021	<0.005	0.008	0.12	0
pH (standard units)	4/4	7.6	6.8	7.2	6.5 - 8.5	0

a **Units in mg/L unless otherwise noted.**
b **All Reference values are Tennessee Water Quality Standards for fish and aquatic life.**

Table 1.18. 1997 ETTP parameters detected at K-1710*

Parameter	Number detected/ number of samples	Detected results[a]			Reference Value[b]	Number of values exceeding reference
		Max	Min	Avg		
Alkalinity	4/4	120	84	99		
Cadmium	1/12	0.0018	<0.0005	<0.00061		
Chromium	5/12	0.0067	<0.0025	<0.002016	0.016	0
Dissolved Oxygen	4/4	11	5.7	7.9	5.0 min	0
Dissolved Solids	4/4	190	130	160		
Fluoride	4/4	0.20	0.10	0.15		
Lead	9/12	0.0045	<0.00050	<0.0012	0.082	0
Manganese	12/12	0.15	0.052	0.096		
Selenium	1/12	0.049	<0.010	<0.013		
Suspended Solids	4/4	16	5.0	9.5		
Temperature (Co)	4/4	24	7.6	15		
Uranium	11/12	0.0037	<0.0005	<0.0018		
Zinc	6/12	0.022	<0.005	<0.0085	0.12	0
pH (standard units)	4/4	7.7	6.8	7.1	6.5 - 8.5	0

a **All Reference values are Tennessee Water Quality Standards for fish and aquatic life.**
b **Units in mg/L unless otherwise noted.**

Table 2.1. Y-12 Plant Discharge Point SS6, SANITARY SEWER STATION 6

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, gpd	365	1814831.0	456418.0	754190.7	d/1.4	d
pH, Std Unit	54	7.9	7.0	d	9/6(e)	0
Silver, mg/L	53	0.011	0.0014	<0.0066	0.1/0.1	0
Arsenic, mg/L	53	<0.042	<0.003	<0.03	0.1/0.0045	0
Boron, mg/L	53	0.47	<0.02	<0.04	d/d	d
Benzene, mg/L	13	0.01	0.005	0.008	0.87/0.015	0
Biochemical Oxygen Demand	53	90.0	11.0	39.2	300/300	0
Cadmium, mg/L	53	<0.004	<0.0015	<0.003	0.004/0.0045	0
Chemical Oxygen Demand	8	103.0	41.0	71.4	d/d	d
Chromium, mg/L	53	<0.006	0.0013	<0.005	0.44/0.075	0
Chromium, hexavalent, mg/L	8	<0.01	<0.01	<0.01	0.01/d	0
Copper, mg/L	53	0.217	0.007	0.03	0.04/0.092	1
Cyanide, mg/L	13	0.015	<0.01	<0.01	0.01/0.062	1
Iron, mg/L	53	1.91	0.34	0.61	1.5/15	1
Mercury, mg/L	248	0.013	0.0003	0.002	0.035/0.035	0
Kjeldahl Nitrogen, mg/L	53	20.0	0.34	9.6	90/90	0
Methylene chloride, mg/L	13	0.01	0.005	0.008	0.22/0.041	0
Manganese, mg/L	53	0.085	0.031	0.056	1/d	0
Nickel, mg/L	53	<0.008	<0.003	<0.008	0.1/0.032	0
Oil and Grease, mg/L	53	20.1	2.2	<6.2	50/50	0
Lead, mg/L	53	<0.02	<0.003	<0.02	0.02/0.074	0
Phenols - Total Recoverable,	22	0.032	<0.005	<0.02	5/0.5	0
Selenium, mg/L	53	<0.1	<0.003	<0.1	d/d	d
Suspended Solids, mg/L	58	85.5	<5.0	<55	300/300	0
Toluene, mg/L	13	0.01	0.005	0.008	5.35/0.02	0
Trichloroethene, mg/L	13	0.002	0.001	0.002	0.045/0.027	0
Zinc, mg/L	53	0.37	0.07	0.1	2/0.75	0
Uranium, mg/L	56	0.014	0.0026	0.006	d/d	d
Uranium-235, weight %	56	2.2	0.38	0.80	d/d	d

(a) Units in mg/L unless otherwise indicated.
(b) Sanitary sewer permit limits prior to August 25/ limits effective August 25 or after.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.2. Y-12 Plant Discharge Point SS6, SANITARY SEWER STATION 6
From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration Max	+/-	Min	+/-	Median	+/-	Percentage of Standard Error	DCG	Total Curies
Alpha activity (pCi/L)	56	44.0*	56	-1.1*	3.2	3.9	e	0.96	e	5.43E-03
Beta activity (pCi/L)	56	290.0*	100	0.57*	3.6	7.5	e	6.2	e	2.05E-02
Gamma Activity (pCi/L)	56	300.0	45	-8.0*	30	17.0	e	6.5	e	3.52E-02
Plutonium-238 (pCi/L)	1	-0.066*	0.076	-0.066*	0.076	-0.066*	0.076	e	-0.16	-6.88E-05
Plutonium-239/240 (pCi/L)	1	-0.087*	0.088	-0.087*	0.088	-0.087*	0.088	e	-0.29	-9.07E-05
Uranium-234 (pCi/L)	56	8.3	1.4	1.2	0.58	3.2	e	0.18	0.64	3.62E-03
Uranium-235 (pCi/L)	57	6.4*	15	-0.73*	0.15	0.11*	0.16	0.11	0.018	2.23E-04
Uranium-236 (pCi/L)	19	0.17*	0.24	-0.016*	0.031	0.054*	0.11	0.012	0.011	5.93E-05
Uranium-238 (pCi/L)	56	5.1	1.0	1.2	0.42	1.85	e	0.14	0.31	2.33E-03

(e) Not applicable
* Result was below the minimum detectable activity.

Table 2.3. Y-12 Plant Discharge Point 05A, OUTFALL 05A

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	26	0.2246	0.0155	0.0518	d	d
pH, Standard Units	4	7.4	7.2	d	9/ 6(e)	0
Carbon tetrachloride, mg/L	4	0.008	0.001	0.005	d	d
Tetrachloroethene, mg/L	4	0.004	0.001	0.003	d	d
Methylene chloride, mg/L	4	0.01	0.005	0.008	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 2.4. Y-12 Plant Discharge Point 017,

OUTFALL 017

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	322	3.8282	0.0059	0.1349	d	d
pH, Standard Units	54	7.5	6.8	d	9/ 6(e)	0
Kjeldahl Nitrogen, mg/L	56	24.0	0.37	4.1	d	d
Ammonia as Nitrogen, mg/L	54	21.7	0.82	3.9	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.

Table 2.5. Y-12 Plant Discharge Point 021, OUTFALL 021

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	158	3.7613	0.2232	0.5321	d	d
pH, Standard Unit	159	8.3	6.7	d	9/ 6(e)	0
Temperatue, degrees C	158	26.4	11.4	21.8	30.5	0
Total Residual Chlorine, mg/L	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.

Table 2.6. Y-12 Plant Discharge Point 051, OUTFALL 051

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	360	1.0564	0.0464	0.3906	d	d
pH, Standard Units	103	7.8	6.6	d	9/ 6(e)	0
Mercury, mg/L	52	0.0052	<0.0002	<0.0028	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 2.7. Y-12 Plant Discharge Point 055, OUTFALL 055

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	344	0.2903	0.0027	0.057	d	d
pH, Standard Units	104	8.0	7.0	d	9/ 6(e)	0
Total Residual Chlorine, mg/L	105	0.33	<0.05	<0.05	0.5	0
Mercury, mg/L	108	0.01	<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.

Table 2.8. Y-12 Plant Discharge Points, Outfalls 066,068, and 117

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Outfall 066						
Flow, mgd	3	0.0004	0.0002	0.0003	d	d
pH, Standard Units	3	8.2	7.2	d	9/ 6(e)	0
Outfall 068						
Flow, mgd	12	0.0004	0.000159	0.0002	d	d
pH, Standard Units	12	8.7	6.9	d	9/ 6(e)	0
Outfall 117						
Flow, mgd	12	0.0008	0.0001	0.0003	d	d
pH, Standard Units	12	8.4	7.2	d	9/ 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 2.9. Y-12 Plant Discharge Points, Outfalls 073, 077, 122, and 133

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Outfall 073						
Flow, mgd	11	0.0019	0.00003	0.0007	d	d
pH, Standard Units	11	8.5	7.6	d	9/ 6(e)	0
Total Residual Chlorine, mg/L	12	<0.05	<0.05	<0.05	0.5	0
Outfall 077						
Flow, mgd	12	0.00005	0.00003	0.00004	d	d
pH, Standard Units	12	7.8	7.1	d	9/ 6(e)	0
Total Residual Chlorine, mg/L	13	0.06	<0.05	<0.0508	0.5	0
Outfall 122						
Eliminated						
Outfall 133						
Eliminated						

(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 2.10. Y-12 Plant Discharge Point 125, OUTFALL 125

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	14	0.5573	0.1728	0.2958	d	d
pH, Standard Units	14	7.6	6.5	d	9/ 6(e)	0
Total Residual Chlorine, mg/L	12	<0.05	<0.05	<0.05	0.5	0
Mercury, mg/L	6	<0.0002	<0.0002	<0.0002	d	d
Lead, mg/L	5	<0.02	<0.0005	<0.0067	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 2.11. Y-12 Plant Discharge Point 135, OUTFALL 135

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	169	0.4349	0.1138	0.1575	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 2.12. Y-12 Plant Discharge Point 200, OUTFALL 200

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	174	20.99	1.03	2.73	d	d
Beryllium, mg/L	13	<0.0004	<0.0004	<0.0004	d	d
Cadmium, mg/L	13	<0.004	<0.004	<0.004	d	d
Copper, mg/L	13	0.012	<0.006	<0.007	d	d
Iron, mg/L	13	0.26	<0.06	<0.1	d	d
Fluoride, mg/L	12	1.2	0.49	0.79	d	d
Mercury, mg/L	52	0.0017	0.0007	0.0009	d	d
Nitrate/Nitrite as Nitrogen, mg/L	12	56.0	5.1	11	d	d
Oil and Grease, mg/L	159	8.4	<2.0	<5.2	15	0
Lead, mg/L	13	<0.02	<0.02	<0.02	d	d
Phosphate as Phosphorus,	12	2.6	0.37	1.5	d	d
Sulfate, mg/L	52	90.3	29.0	44.3	d	d
Uranium, mg/L	52	0.228	0.011	0.047	d	d
Uranium-235, weight %	52	0.56	0.17	0.30	d	d
Zinc, mg/L	13	0.11	0.02	0.08	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 2.13. Y-12 Plant Discharge Point 200, OUTFALL 200

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration Max	+/-	Min	+/-	Median	+/-	Standard Error	Percentage of DCG	Total Curies
Alpha activity (pCi/L)	52	61.0	13	-1.2*	0.43	14.5	e	1.79	e	6.30E-02
Americium-241 (pCi/L)	52	0.27	.19	-0.25*	.22	0.063	e	0.015	0.21	2.03E-04
Beta activity (pCi/L)	52	40.0	10	-29.0*	30	13.0	e	1.4	e	5.47E-02
Cobalt-60 (pCi/L)	52	4.7*	3	-2.6*	3.4	0.665	e	0.19	0.013	2.68E-03
Cesium-137 (pCi/L)	52	4.6	4.5	-2.2*	2.2	0.68	e	0.19	0.023	2.29E-03
Gamma Activity (pCi/L)	52	420.0	54	-55.0*	30	20.0	e	9.36	e	1.22E-01
Neptunium-237 (pCi/L)	52	0.64	0.49	-0.061*	.07	0.019	e	0.017	0.063	1.91E-04
Plutonium-238 (pCi/L)	52	2.0	0.58	-0.11*	0.093	0.056	e	0.041	0.14	3.99E-04
Plutonium-239/240 (pCi/L)	52	0.087*	.12	-0.082*	.12	-0.0115	e	0.0047	-0.038	-3.07E-05
Radium-228 (pCi/L)	52	32.0	14	-13.0*	12	2.45	e	1.1	2.4	1.12E-02
Strontium-89/90 (pCi/L)	52	6.4	2.9	-5.0*	6.2	0.2	e	0.30	e	9.66E-04
Total Radium Alpha (pCi/L)	52	1.5*	1.2	-0.8*	0.14	0.23	e	0.08	e	1.31E-03
Technetium-99 (pCi/L)	52	29.0	8	-10.0*	9.7	14.5	e	1.07	0.0145	4.96E-02
Thorium-228 (pCi/L)	52	0.46	.3	-0.11*	0.14	0.0595	e	0.017	0.015	3.23E-04
Thorium-230 (pCi/L)	52	4.5	1.2	0.047*	0.11	0.275	e	0.10	0.092	1.89E-03
Thorium-232 (pCi/L)	52	0.14*	.13	-0.088*	.17	0.0	e	0.0059	0.0	5.08E-05
Thorium-234 (pCi/L)	52	84.0	12	4.0	.92	15.0	e	2.0	0.15	6.77E-02
Tritium (pCi/L)	52	4300.0	400	-180.0*	500	455.0	e	108.5	0.0227	2.17E+00
Uranium-234 (pCi/L)	52	13.0	2.3	1.4	.49	4.2	e	0.36	0.84	1.71E-02
Uranium-235 (pCi/L)	52	1.5	0.57	0.0*	0	0.25	e	0.037	0.042	1.21E-03
Uranium-236 (pCi/L)	20	0.26	0.20	0.0*	0	0.115	e	0.016	0.023	4.78E-04
Uranium-238 (pCi/L)	52	84.0	12	4.0	.92	15.0	e	2.0	2.5	6.77E-02

(e) Not applicable
* Result was below the minimum detectable activity.

Table 2.14. Y-12 Plant Discharge Point 201, OUTFALL 201
From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
96 Hour Toxicity Test with Fathead Minnows, %	4	>100.0	>100.0	>100.0	d/ 100(e)	0
96 Hour Toxicity Test with Ceriodaphnia, %	4	>100.0	>100.0	>100.0	d/ 100(e)	0
NOEC, Reproduction/Growth In Fathead Minnows, %	4	100.0	100.0	100.0	d/ 100(e)	0
NOEC, Reproduction/Growth In Ceriodaphnia, %	4	100.0	100.0	100.0	d/ 100(e)	0
pH, Standard Unit	157	8.3	6.9	d	8.5/ 6.5(e)	0
Temperature, deg C	157	25.1	8.2	15.1248	30.5	0
Total Residual Chlorine, mg/L	157	<0.05	<0.05	<0.05	0.019	0
Suspended Solids, mg/L	53	80.4	1.0	<11	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 2.15. Y-12 Plant Discharge Point 501, CENTRAL POLLUTION CONTROL FACILITY

From: 1997/01/01 To: 1997/12/31

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	73.8	>93.4	d	d
Flow, mgd	16	0.0229	0.0023	0.0092	d	d
pH, Standard Units	18	9.2	6.1	d	9/ 6(e)	1
Temperature, degrees C	18	29.3	19.2	23.8	d	d
Silver, mg/L	16	<0.03	<0.03	<0.03	0.05	0
Boron, mg/L	16	23.5	0.3	3	d	d
Beryllium, mg/L	16	<0.002	<0.002	<0.002	d	d
Calcium, mg/L	16	1000.0	12.1	371	d	d
Cadmium, mg/L	16	<0.02	<0.02	<0.02	0.15	0
Chloride, mg/L	16	320.0	24.7	95.8	d	d
Chromium, mg/L	16	0.04	<0.03	<0.03	1	0
Copper, mg/L	16	<0.03	<0.03	<0.03	1	0
Cyanide, mg/L	16	0.036	<0.01	<0.01	1.2	0
Iron, mg/L	16	1.7	<0.3	<0.4	d	d
Fluoride, mg/L	16	5.0	0.62	2.0	d	d
Mercury, mg/L	16	0.0022	<0.0002	<0.0003	d	d
Potassium, mg/L	16	74.0	4.0	14	d	d
Lithium, mg/L	16	3.97	<0.08	<0.5	d	d
Magnesium, mg/L	16	6.3	<0.2	<1	d	d
Sodium, mg/L	16	939.0	60.6	293	d	d
Nickel, mg/L	16	0.49	<0.04	<0.09	3.98	0
Nitrate/Nitrite as Nitrogen, mg/L	16	290.0	0.86	49	100	2
Oil and Grease, mg/L	16	<5.7	<2.0	<5.2	15	0
Lead, mg/L	16	<0.1	<0.1	<0.1	0.2	0
PCB, Total, mg/L	1	<0.0005	<0.0005	<0.0005	0.001	0
Phosphate as Phosphorus,	16	1.1	<0.1	<0.3	d	d
Sulfate, mg/L	16	2950.0	180.0	1134	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 2.16. Y-12 Plant Discharge Point 501, CENTRAL POLLUTION CONTROL FACILITY

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Surfactant, mg/L	1	<0.05	<0.05	<0.05	d	d
Suspended Solids, mg/L	16	6.8	<1.0	<4.0	40	0
Thorium, mg/L	16	<0.05	<0.05	<0.05	d	d
Sum of TTO Analysis, mg/L	1	0	0	0	2.13	0
Zinc, mg/L	16	<0.05	<0.05	<0.05	2	0
Uranium, mg/L	12	0.011	0.001	0.005	d	0
Uranium-235, weight %	12	0.92	0.51	0.69	d	0

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

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration Max	+/-	Min	+/-	Median	+/-	Percentage of Standard Error	DCG	Total Curies
Alpha activity (pCi/L)	12	16.0*	30	-9.9*	7	3.0	e	2.0	e	5.64E-05
Americium-241 (pCi/L)	12	0.33	0.24	-0.12*	0.16	0.034	e	0.032	0.11	6.23E-07
Beta activity (pCi/L)	12	120.0*	50	-4.0*	40	36	e	12	e	5.73E-04
Cobalt-60 (pCi/L)	12	2.0*	2.5	-1.2*	2.2	0.72	e	0.35	0.014	6.30E-06
Cesium-137 (pCi/L)	12	10.0	3	-1.4*	2.1	0.68	e	0.94	0.022	2.07E-05
Gamma Activity (pCi/L)	12	85.0	32	-11.0*	30	18	e	8.2	e	3.45E-04
Neptunium-237 (pCi/L)	12	0.1	0.10	-0.1*	.11	-0.0015	e	0.017	-0.005	1.25E-07
Plutonium-238 (pCi/L)	12	0.71	.35	-0.084*	0.13	0.082	e	0.061	0.20	1.46E-06
Plutonium-239/240 (pCi/L)	12	0.023*	.13	-0.03*	0.043	0.0	e	0.0044	0.0	-7.01E-08
Radium-228 (pCi/L)	10	8.4*	7.9	-10.0*	14	2.4	e	2.0	2.4	9.93E-06
Strontium-89/90 (pCi/L)	12	27.0*	52	-8.1*	6.8	-0.7	e	2.5	e	2.18E-05
Total Radium Alpha (pCi/L)	12	1.9	1.2	-0.35*	.96	0.53	e	0.20	e	8.92E-06
Technetium-99 (pCi/L)	12	120.0	16	-5.0*	9.3	7.5	e	14	0.0075	3.96E-04
Thorium-228 (pCi/L)	12	0.31*	.3	-0.13*	.13	0.018	e	0.032	0.0045	5.40E-07
Thorium-230 (pCi/L)	12	1.5	.45	0.056*	0.14	0.30	e	0.14	0.098	5.96E-06
Thorium-232 (pCi/L)	12	0.24	0.18	-0.028*	.056	0.033	e	0.024	0.066	6.99E-07
Thorium-234 (pCi/L)	12	5.0	1.3	0.46	.23	1.4	e	0.47	0.014	2.55E-05
Tritium (pCi/L)	12	3500.0	370	-600.0*	520	325.0	e	292.2	0.0162	5.62E-03
Uranium-234 (pCi/L)	12	3.9	2.1	0.21*	.18	1.2	e	0.39	0.25	1.99E-05
Uranium-235 (pCi/L)	12	0.11*	0.18	-0.31*	0.45	0.038	e	0.032	0.0063	8.17E-08
Uranium-236 (pCi/L)	6	0.11*	0.15	0.0*	0	0.052	e	0.020	0.010	6.52E-07
Uranium-238 (pCi/L)	12	5.0	1.3	0.46	.23	1.4	e	0.47	0.23	2.55E-05

(e) Not applicable

* Result was below the minimum detectable activity.

Table 2.18. Y-12 Plant Discharge Point 502, WEST END TREATMENT FACILITY

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
48 Hour Toxicity Test with Ceriodaphnia	3	>100.0	43.5	>78.2	d	d
Flow, mgd	54	0.0329	0.0012	0.012	d	d
pH, Standard Units	35	8.4	6.3	d	9/ 6(e)	0
Temperature, degrees C	35	26.9	13.5	20.1	d	d
Silver, mg/L	35	<0.03	<0.03	<0.03	0.05	0
Arsenic, mg/L	35	<0.2	0.014	<0.18	d	d
Boron, mg/L	35	5.9	<0.1	<3	d	d
Beryllium, mg/L	35	<0.002	<0.002	<0.002	d	d
Calcium, mg/L	35	89.0	14.0	31.6	d	d
Cadmium, mg/L	35	<0.02	0.0006	<0.02	0.15	0
Chloride, mg/L	35	465.0	4.8	320	d	d
Chromium, mg/L	35	<0.03	<0.03	<0.03	1	0
Copper, mg/L	35	<0.03	<0.03	<0.03	1	0
Cyanide, mg/L	35	<0.01	<0.01	<0.01	1.2	0
Iron, mg/L	35	1.0	<0.3	<0.4	d	d
Fluoride, mg/L	13	3.75	0.17	2.2	d	d
Mercury, mg/L	35	<0.0002	<0.0002	<0.0002	d	d
Potassium, mg/L	35	110.0	<3.0	<76	d	d
Lithium, mg/L	35	11.3	<0.08	<7.4	d	d
Magnesium, mg/L	35	21.3	1.2	12	d	d
Manganese, mg/L	35	22.0	<0.009	<1.	d	d
Sodium, mg/L	35	3340.0	9.7	2000	d	d
Nickel, mg/L	35	1.5	<0.04	<0.4	3.98	0
Nitrate/Nitrite as Nitrogen, mg/L	35	8.13	<0.1	<1	150	0
Oil and Grease, mg/L	35	<5.8	<5.5	<5.6	15	0
Lead, mg/L	35	<0.004	<0.0005	<0.002	0.2	0
PCB, Total, mg/L	5	<0.0005	<0.0005	<0.0005	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.

Table 2.19. Y-12 Plant Discharge Point 502, WEST END TREATMENT FACILITY

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Phosphate as Phosphorus,	35	1.08	<0.1	<0.5	d	d
Selenium, mg/L	35	<0.5	0.071	<0.5	d	d
Sulfate, mg/L	35	12180.0	30.0	4640	d	d
Suspended Solids, mg/L	35	9.0	<1.0	<2.0	40	0
Thorium, mg/L	35	<0.05	<0.05	<0.05	d	d
Sum of TTO Analysis, mg/L	5	<0.01	<0.010	<0.010	2.13	0
Zinc, mg/L	35	0.6	<0.05	<0.2	2	0
Uranium, mg/L	13	0.048	<0.001	<0.01	d	0
Uranium-235, weight %	11	0.68	0.31	0.45	d	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 2.20. Y-12 Plant Discharge Point 502, WEST END TREATMENT FACILITY

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration Max	+/-	Min	+/-	Median	+/-	Standard Error	Percentage of DCG	Total Curies
Alpha activity (pCi/L)	13	34.0*	34	-60.0*	25	1.1*	3.3	6.1	e	-7.27E-06
Americium-241 (pCi/L)	13	0.18*	.16	-0.063*	.073	0.054*	0.092	0.022	0.18	9.07E-07
Beta activity (pCi/L)	13	110.0*	76	-250.0*	300	18.0*	8.3	25.4	e	3.69E-04
Cobalt-60 (pCi/L)	13	2.0*	2.2	-2.5*	2.8	0.4*	1.6	0.3	0.008	8.43E-06
Cesium-137 (pCi/L)	13	6.8	4.4	-0.99*	2.4	5.3	4.1	0.65	0.18	6.87E-05
Gamma Activity (pCi/L)	13	100.0	32	-32.0*	30	24.0*	28	9.66	e	3.84E-04
Neptunium-237 (pCi/L)	13	0.15	0.13	-0.032*	.093	0.03*	.061	0.01	0.1	6.82E-07
Plutonium-238 (pCi/L)	13	1.8	.46	-0.5*	.45	0.064*	.15	0.10	0.16	3.09E-06
Plutonium-239/240 (pCi/L)	13	0.075	.087	-0.036*	0.072	-0.016*	.033	0.0094	-0.053	-6.27E-08
Radium-228 (pCi/L)	13	18.0	10	-7.0*	10	1.4*	9.7	1.7	1.4	5.46E-05
Strontium-89/90 (pCi/L)	13	4.0*	3.4	-5.5*	7.8	0.3*	6.4	0.8	e	-5.24E-06
Total Radium Alpha (pCi/L)	13	3.5	1.6	-0.43*	0.10	0.63*	.95	0.29	e	1.47E-05
Technetium-99 (pCi/L)	13	17.0	8	-8.0*	7.9	1.0*	8.5	2.1	0.001	2.43E-05
Thorium-228 (pCi/L)	13	0.37*	.34	-0.22*	.18	0.052*	0.13	0.042	0.013	1.34E-06
Thorium-230 (pCi/L)	13	0.91	.4	0.068*	0.11	0.26	.17	0.074	0.087	5.89E-06
Thorium-232 (pCi/L)	13	0.17*	0.17	-0.028*	.057	0.0*	0	0.015	0.0	4.27E-07
Thorium-234 (pCi/L)	13	15.0	2.0	0.25	.18	1.0	.32	1.4	0.01	5.32E-05
Tritium (pCi/L)	13	900.0	540	20.0*	350	500.0*	540	77.7	0.025	7.04E-03
Uranium-234 (pCi/L)	13	8.4	1.5	0.11*	.15	0.5	.21	0.8	0.1	3.10E-05
Uranium-235 (pCi/L)	13	0.65	0.28	-0.026*	.051	0.02*	.16	0.05	0.0033	1.42E-06
Uranium-236 (pCi/L)	3	0.27	0.16	0.022*	0.045	0.023*	0.047	0.082	0.0046	1.75E-06
Uranium-238 (pCi/L)	13	15.0	2.0	0.25	.18	1.0	.32	1.4	0.1667	5.32E-05

(e) Not applicable

* Result was below the minimum detectable activity.

Table 2.21. Y-12 Plant Discharge Point 512, OUTFALL 512 (GWTF)

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
48 Hour Toxicity Test with Ceriodaphnia	6	>100.0	30.5	>60.95	d	d
Flow, mgd	209	0.0291	0.0001	0.0125	d	d
pH, Standard Units	147	8.1	7.0	d	9/ 6(e)	0
Copper, mg/L	147	<0.03	<0.03	<0.03	d	d
Iron, mg/L	147	0.5	<0.3	<0.3	1	0
Manganese, mg/L	147	2.84	0.014	0.51	d	d
Lead, mg/L	147	<0.1	<0.1	<0.1	d	d
PCB, Total, mg/L	12	<0.0005	<0.0005	<0.0005	0.001	0
Uranium, mg/L	52	0.057	0.008	0.03	d	d
Uranium-235, weight %	52	0.53	0.23	0.31	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 2.22. Y-12 Plant Discharge Point 512, OUTFALL 512 (GWTF)

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration Max	+/-	Min	+/-	Median	+/-	Standard Error	Percentage of DCG	Total Curies
Alpha activity (pCi/L)	52	31.0	11	-0.94*	2.8	9.4	e	0.69	e	1.75E-04
Americium-241 (pCi/L)	52	0.4	0.20	-0.14*	.11	0.04	e	0.01	0.1	1.05E-06
Beta activity (pCi/L)	52	21.0*	9.8	1.1*	7.2	10	e	0.56	e	1.82E-04
Cobalt-60 (pCi/L)	52	2.9*	2.3	-3.0*	3.8	0.79	e	0.18	0.016	1.24E-05
Cesium-137 (pCi/L)	52	4.8*	2.6	-1.3*	2.3	0.45	e	0.15	0.015	9.91E-06
Gamma Activity (pCi/L)	52	170.0	36	-21.0*	27	24.5	e	4.83	e	4.96E-04
Neptunium-237 (pCi/L)	52	0.17*	.18	-0.11*	0.15	0.0095	e	0.0092	0.032	3.00E-07
Plutonium-238 (pCi/L)	52	0.34	0.26	-0.059*	0.11	0.046	e	0.013	0.12	1.11E-06
Plutonium-239/240 (pCi/L)	52	0.089*	0.13	-0.074*	.067	0.0	e	0.0044	0.0	-8.89E-08
Radium-228 (pCi/L)	51	23.0	13	-17.0*	9.8	1.0*	12	1.1	1.0	2.98E-05
Strontium-89/90 (pCi/L)	52	9.6*	8.5	-5.8*	7.1	0.82	e	0.39	e	1.66E-05
Total Radium Alpha (pCi/L)	52	2.1	1.1	-0.6*	.18	0.1	e	0.06	e	2.57E-06
Technetium-99 (pCi/L)	52	43.0	9	-20.0*	9.6	1.9	e	1.4	0.0019	3.01E-05
Thorium-228 (pCi/L)	52	0.61	.28	-0.2*	.21	0.03	e	0.02	0.008	1.18E-06
Thorium-230 (pCi/L)	52	2.2	.87	0.029*	0.059	0.30	e	0.06	0.098	7.64E-06
Thorium-232 (pCi/L)	52	0.18	0.21	-0.06*	.085	0.01	e	0.006	0.02	4.02E-07
Thorium-234 (pCi/L)	52	25.0	3.2	-0.003*	.021	11.0	e	0.71	0.11	1.94E-04
Tritium (pCi/L)	52	5800.0	480	190.0*	110	1900.0	e	121.3	0.095	3.49E-02
Uranium-234 (pCi/L)	52	6.9	1.1	0.93	0.34	3.6	e	0.20	0.73	6.34E-05
Uranium-235 (pCi/L)	52	0.63	0.30	-0.069*	0.14	0.18	e	0.021	0.031	3.47E-06
Uranium-236 (pCi/L)	21	0.4	0.34	0.0*	0	0.08*	0.16	0.02	0.02	1.90E-06
Uranium-238 (pCi/L)	52	25.0	3.2	3.0	0.67	11	e	0.65	1.8	1.99E-04

(e) Not applicable
* Result was below the minimum detectable activity.

Table 2.23. Y-12 Plant Discharge Point 551, CENTRAL MERCURY TREATMENT UNIT

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	312	0.06	0.0003	0.0078	d	d
pH, Standard Units	52	8.0	6.8	d	9/ 6(e)	0
Mercury, mg/L	52	0.0016	<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.

Table 2.24. Y-12 Plant Category I Outfalls

From: 1997/01/01 To: 1997/12/31

Outfall	Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
003	Flow, mgd	2	0.0038	0.0008	0.0023	d	d
	pH, Standard Units	2	7.6	7.4	d	9/ 4(e)	0
006	Flow, mgd	2	0.1522	0.019	0.0856	d	d
	pH, Standard Units	3	7.9	7.3	d	9/ 4(e)	0
007	Flow, mgd	2	0.1141	0.0344	0.0742	d	d
	pH, Standard Units	2	7.6	7.2	d	9/ 4(e)	0
008	Flow, mgd	2	0.0015	0.0008	0.0012	d	d
	pH, Standard Units	2	7.4	7.2	d	9/ 4(e)	0
009	Flow, mgd	2	0.144	0.0761	0.11	d	d
	pH, Standard Units	3	8.0	7.6	d	9/ 4(e)	0
011	Flow, mgd	2	0.0015	0.0008	0.0012	d	d
	pH, Standard Units	3	8.3	7.9	d	9/ 4(e)	0
015	Flow, mgd	2	0.0061	0.003	0.0046	d	d
	pH, Standard Units	2	8.2	7.5	d	9/ 4(e)	0
018	Flow, mgd	2	0.0045	0.0041	0.0043	d	d
	pH, Standard Units	2	8.0	7.3	d	9/ 4(e)	0
032	Outfall was eliminated						
033	Flow, mgd	2	0.0171	0.0044	0.0108	d	d
	pH, Standard Units	2	8.0	7.5	d	9/ 4(e)	0
045	Flow, mgd	2	0.0133	0.0008	0.007	d	d
	pH, Standard Units	2	8.0	7.4	d	9/ 4(e)	0
046	Flow, mgd	2	0.0114	0.0057	0.0086	d	d
	pH, Standard Units	2	7.9	7.6	d	9/ 4(e)	0

Table 2.24 (continued)

Outfall	Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
058	Flow, mgd	3	0.0057	0.0023	0.0035	d	d
	pH, Standard Units	3	7.9	7.3	d	9/ 4(e)	0
062	Flow, mgd	2	0.0008	0.0004	0.0006	d	d
	pH, Standard Units	2	7.5	7.4	d	9/ 4(e)	0
086	Flow, mgd	2	0.0005	0.0004	0.0004	d	d
	pH, Standard Units	2	7.8	7.5	d	9/ 4(e)	0
087	Flow, mgd	2	0.0038	0.0004	0.0021	d	d
	pH, Standard Units	2	8.1	7.5	d	9/ 4(e)	0
098	Flow, mgd	2	0.0068	0.0038	0.0053	d	d
	pH, Standard Units	2	7.5	7.5	d	9/ 4(e)	0
110	Flow, mgd	3	0.108	0.0015	0.039	d	d
	pH, Standard Units	3	8.0	7.6	d	9/ 4(e)	0
134	Flow, mgd	2	0.0019	0.0008	0.0013	d	d
	pH, Standard Units	2	8.4	7.9	d	9/ 4(e)	0
213	Flow, mgd	2	0.0032	0.0011	0.0022	d	d
	pH, Standard Units	2	7.9	7.1	d	9/ 4(e)	0
S01	Flow, mgd	2	0.5202	0.0015	0.2608	d	d
	pH, Standard Units	2	7.6	7.5	d	9/ 4(e)	0
S03	Flow, mgd	2	0.0015	0.0011	0.0013	d	d
	pH, Standard Units	2	7.5	7.3	d	9/ 4(e)	0
S04	Flow, mgd	2	0.0183	0.0015	0.0099	d	d
	pH, Standard Units	2	7.6	7.1	d	9/ 4(e)	0
S06	Flow, mgd	3	0.5184	0.2592	0.3672	d	d
	pH, Standard Units	3	8.0	7.3	d	9/ 4(e)	0

Table 2.24 (continued)

Outfall	Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
S07	Flow, mgd	3	0.4032	0.0095	0.1568	d	d
	pH, Standard Units	3	8.2	7.2	d	9/ 4(e)	0
S09	Flow, mgd	2	0.0504	0.0288	0.0396	d	d
	pH, Standard Units	2	7.2	6.9	d	9/ 4(e)	0
S15	Flow, mgd	2	0.0864	0.0504	0.0684	d	d
	pH, Standard Units	3	7.6	6.8	d	10/ 6(e)	0
S16	Flow, mgd	2	0.0115	0.0114	0.0115	d	d
	pH, Standard Units	2	7.6	7.4	d	10/ 6(e)	0
S18	Flow, mgd	3	1.1131	0.1141	0.4859	d	d
	pH, Standard Units	3	7.6	7.1	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 2.25. Y-12 Plant Category II Outfalls

From: 1997/01/01 To: 1997/12/31

Outfall	Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
004	Flow, mgd	5	1.01	0.0130	0.2407	d	d
	pH, Standard Units	6	8.0	7.1	d	9/ 4(e)	0
	Total Residual Chlorine, mg/L	4	<0.05	<0.05	<0.05	0.5	0
010	Flow, mgd	4	0.0571	0.0114	0.0271	d	d
	pH, Standard Units	4	8.3	7.7	d	9/ 4(e)	0
	Total Residual Chlorine, mg/L	4	<0.05	<0.05	<0.05	0.5	0
014	Flow, mgd	4	0.114	0.0228	0.055	d	d
	pH, Standard Units	4	8.3	7.4	d	9/ 4(e)	0
	Total Residual Chlorine, mg/L	4	0.07	<0.05	<0.06	0.5	0
016	Flow, mgd	4	0.0114	0.000190	0.0044	d	d
	pH, Standard Units	4	8.2	7.4	d	9/ 4(e)	0
	Total Residual Chlorine, mg/L	4	0.06	<0.05	<0.05	0.5	0
019	Flow, mgd	4	0.00457	0.000133	0.0016	d	d
	pH, Standard Units	4	8.7	7.8	d	9/ 4(e)	0
	Total Residual Chlorine, mg/L	4	<0.05	<0.05	<0.05	0.5	0
020	Flow, mgd	4	0.0228	0.000380	0.0082	d	d
	pH, Standard Units	4	8.2	7.4	d	9/ 4(e)	0
	Total Residual Chlorine, mg/L	4	<0.05	<0.05	<0.05	0.5	0
041	Flow, mgd	4	0.00685	0.00114	0.0036	d	d
	pH, Standard Units	4	8.7	7.4	7.9	9/ 4(e)	0
	Total Residual Chlorine, mg/L	4	<0.05	<0.05	d	0.5	0
044	Flow, mgd	5	0.137	0.00006	0.029	d	d
	pH, Standard Units	5	8.2	7.4	d	9/ 4(e)	0
	Total Residual Chlorine, mg/L	4	<0.05	<0.05	<0.05	0.5	0
057	Flow, mgd	4	0.00457	0.000380	0.0019	d	d
	pH, Standard Units	4	8.0	7.3	d	9/ 4(e)	0
	Total Residual Chlorine, mg/L	4	<0.05	<0.05	<0.05	0.5	0

Table 2.25 (continued)

Outfall	Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
063	Flow, mgd	4	0.0137	0.0046	0.0068	d	d
	pH, Standard Units	4	8.3	7.2	d	9/ 4(e)	0
	Total Residual Chlorine, mg/L	4	<0.05	<0.05	<0.05	0.5	0
064	Flow, mgd	4	0.0152	0.00114	0.0058	d	d
	pH, Standard Units	4	8.1	7.7	d	9/ 4(e)	0
	Total Residual Chlorine, mg/L	4	<0.05	<0.05	<0.05	0.5	0
067	Flow, mgd	5	0.9778	0.0045	0.2467	d	d
	pH, Standard Units	5	8.2	7.2	d	9/ 4(e)	0
	Total Residual Chlorine, mg/L	4	0.34	<0.05	<0.2	0.5	0
083	Flow, mgd	4	0.0228	0.000380	0.0107	d	d
	pH, Standard Units	4	8.1	7.3	d	9/ 4(e)	0
	Total Residual Chlorine, mg/L	4	<0.05	<0.05	<0.05	0.5	0
088	Flow, mgd	4	0.0068	0.000019	0.0046	d	d
	pH, Standard Units	4	8.5	7.7	d	9/ 4(e)	0
	Total Residual Chlorine, mg/L	4	<0.05	<0.05	<0.05	0.5	0
099	Flow, mgd	4	0.0761	0.00228	0.0249	d	d
	pH, Standard Units	4	8.1	7.5	d	9/ 4(e)	0
	Total Residual Chlorine, mg/L	4	0.44	<0.05	<0.1	0.5	0
126	Flow, mgd	4	0.00913	0.000761	0.004	d	d
	pH, Standard Units	4	8.0	7.3	d	9/ 4(e)	0
	Total Residual Chlorine, mg/L	4	<0.05	<0.05	<0.05	0.5	0
S02	Flow, mgd	4	0.216	0.0288	0.1314	d	d
	pH, Standard Units	4	7.8	7.5	d	9/ 4(e)	0
S08	Flow, mgd	4	0.288	0.000380	0.1301	d	d
	pH, Standard Units	4	7.9	7.4	d	9/ 4(e)	0
S10	Flow, mgd	4	0.102	0.000711	0.0509	d	d
	pH, Standard Units	4	7.6	7.4	d	9/ 4(e)	0

Table 2.25 (continued)

Outfall	Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
S11	Flow, mgd	4	0.328320	0.00200	0.1156	d	d
	pH, Standard Units	4	7.9	7.4	d	9/ 4(e)	0
S12	Flow, mgd	4	0.00380	0.000190	0.0014	d	d
	pH, Standard Units	4	7.6	7.4	d	9/ 4(e)	0
S13	Flow, mgd	5	0.989280	0.00472	0.3409	d	d
	pH, Standard Units	5	7.8	7.4	d	9/ 4(e)	0
S17	Flow, mgd	4	0.432	0.288	0.36	d	d
	pH, Standard Units	5	7.8	7.2	d	9/ 4(e)	0
S20	Flow, mgd	4	0.216	0.00609	0.1015	d	d
	pH, Standard Units	5	8.1	7.3	d	9/ 4(e)	0
	Total Residual Chlorine, mg/L	4	<0.05	<0.05	<0.05	0.5	0
S21	Outfall eliminated						
S22	Flow, mgd	4	0.0130	0.002228	0.0064	d	d
	pH, Standard Units	5	8.2	7.6	d	10/ 6(e)	0
S24	Flow, mgd	5	3.8016	0.216	1.2751	d	d
	pH, Standard Units	5	8.1	7.5	d	9/ 4(e)	0
S25	Flow, mgd	4	0.0130	0.000190	0.006	d	d
	pH, Standard Units	4	8.0	7.1	d	10/ 6(e)	0
S26	Flow, mgd	4	0.1296	0.00457	0.0479	d	d
	pH, Standard Units	4	7.4	7.1	d	10/ 6(e)	0
S27	Flow, mgd	4	0.432	0.1728	0.2484	d	d
	pH, Standard Units	5	8.2	7.2	d	10/ 6(e)	0

Table 2.25 (continued)

Outfall	Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
S28	Flow, mgd	4	0.432	0.144	0.2412	d	d
	pH, Standard Units	4	8.1	6.9	d	10/ 6(e)	0
S29	Flow, mgd	4	0.1296	0.0288	0.072	d	d
	pH, Standard Units	4	7.5	7.0	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 2.26. Y-12 Plant Category III Outfalls

From: 1997/01/01 To: 1997/12/31

Outfall	Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
002	Flow, mgd	12	0.576	0.029	0.1059	d	d
	pH, Standard Units	12	8.0	7.2	d	9/ 4(e)	0
	Total Residual Chlorine, mg/L	13	0.05	<0.05	<0.05	0.5	0
034	Flow, mgd	13	0.2016	0.0432	0.1018	d	d
	pH, Standard Units	13	7.9	6.9	d	9/ 4(e)	0
	Total Residual Chlorine, mg/L	13	0.25	<0.05	<0.07	0.5	0
042	Flow, mgd	12	0.0576	0.0011	0.0136	d	d
	pH, Standard Units	12	8.2	7.6	d	9/ 4(e)	0
	Total Residual Chlorine, mg/L	13	0.42	<0.05	<0.1	0.5	0
047	Flow, mgd	14	0.0576	0.0072	0.0295	d	d
	pH, Standard Units	14	8.3	7.3	d	9/ 4(e)	0
	Total Residual Chlorine, mg/L	13	0.13	<0.05	<0.06	0.5	0
048	Flow, mgd	12	0.0171	0.0001	0.0029	d	d
	pH, Standard Units	13	8.5	7.2	d	9/ 4(e)	0
	Total Residual Chlorine, mg/L	12	0.11	<0.05	<0.06	0.5	0
054	Flow, mgd	13	0.0605	0.0008	0.0073	d	d
	pH, Standard Units	13	8.4	7.2	d	9/ 4(e)	0
	Total Residual Chlorine, mg/L	14	<0.05	<0.05	<0.05	0.5	0
071	Flow, mgd	12	0.0114	0.0002	0.0059	d	d
	pH, Standard Units	12	8.1	7.0	d	9/ 4(e)	0
	Total Residual Chlorine, mg/L	13	0.07	<0.05	<0.05	0.5	0
109	Flow, mgd	14	0.432	0.0864	0.1612	d	d
	pH, Standard Units	14	8.3	7.4	d	9/ 4(e)	0
	Total Residual Chlorine, mg/L	13	0.07	<0.05	<0.05	0.5	0
113	Flow, mgd	15	0.0389	0.0001	0.0045	d	d
	pH, Standard Units	15	8.3	7.3	d	9/ 4(e)	0
	Total Residual Chlorine, mg/L	13	<0.05	<0.05	<0.05	0.5	0

Table 2.26 (continued)

Outfall	Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
114	Flow, mgd	12	0.0009	0.0004	0.0007	d	d
	pH, Standard Units	12	8.0	7.0	d	9/ 4(e)	0
	Total Residual Chlorine, mg/L	13	0.21	<0.05	<0.06	0.5	0
S05	Flow, mgd	11	0.0022	0.0003	0.0006	d	d
	pH, Standard Units	14	8.0	6.1	d	9/ 4(e)	0
S14	Flow, mgd	13	0.6192	0.0265	0.1475	d	d
	pH, Std Unit	13	7.6	7.2	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 2.27. Y-12 Plant Discharge Point 94223, SWHISS STATION 9422-3

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	5	7.3	5.0	6.2	d	d
Mercury, mg/L	16	0.003	0.0003	0.001	0.00015	0
Uranium, mg/L	45	0.056	0.004	0.02	d	d
Uranium-235, weight %	45	0.65	0.21	0.36	d	d

(a) Units in mg/L unless otherwise indicated.
(b) Tennessee water quality criteria.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.28. Y-12 Plant Discharge Point 94223, SWHISS STATION 9422-3

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration Max	+/-	Min	+/-	Median	+/-	Standard Error	Percentage of DCG	Total Curies
Alpha activity (pCi/L)	45	33.0	16	-0.55*	2.9	7.3	3.3	1.1	e	7.40E-02
Americium-241 (pCi/L)	45	0.3*	.43	-0.16*	.15	0.037*	0.15	0.01	0.1	3.40E-04
Beta activity (pCi/L)	45	20.0*	7.9	-1.3*	6.5	5.4*	6.9	0.73	e	5.45E-02
Cobalt-60 (pCi/L)	45	3.6	1.7	-120.0*	12	0.98*	2.1	5.2	0.020	-8.36E-02
Cesium-137 (pCi/L)	45	3.2*	2.6	-9.7*	6.6	0.41*	2.2	0.44	0.014	-2.90E-03
Gamma Activity (pCi/L)	45	350.0	48	-21.0*	31	19.0*	27	8.61	e	2.91E-01
Neptunium-237 (pCi/L)	45	0.14	0.16	-0.13*	0.93	0.008*	.066	0.008	0.03	1.22E-04
Plutonium-238 (pCi/L)	45	0.93	.32	-0.067*	.19	0.047*	.19	0.023	0.12	7.30E-04
Plutonium-239/240 (pCi/L)	45	0.13*	0.19	-0.1*	0.15	-0.008*	.058	0.0059	-0.027	-3.49E-05
Radium-228 (pCi/L)	44	25.0*	9.4	-19.0*	15	6.2	e	1.6	6.2	4.10E-02
Strontium-89/90 (pCi/L)	45	240.0	13	-43.0*	45	0.89*	6.1	5.4	e	4.44E-02
Total Radium Alpha (pCi/L)	45	1.8	1.2	-0.77*	.2	0.18*	.49	0.076	e	2.92E-03
Technetium-99 (pCi/L)	45	19.0	8	-18.0*	18	4.0*	13	1.1	0.0040	2.22E-02
Thorium-228 (pCi/L)	45	1.1	.44	-0.16*	.15	0.058*	0.14	0.035	0.014	8.65E-04
Thorium-230 (pCi/L)	45	2.9	.74	0.0*	0	0.24	.18	0.075	0.080	3.33E-03
Thorium-232 (pCi/L)	45	1.2	.44	-0.068*	0.14	0.016*	.13	0.030	0.032	5.56E-04
Thorium-234 (pCi/L)	45	24.0	3.1	1.1	.36	6.6	1.9	0.85	0.066	6.71E-02
Tritium (pCi/L)	45	3800.0	380	-440.0*	500	100.0*	140	119.0	0.0050	2.10E+00
Uranium-234 (pCi/L)	45	6.4	1.1	0.53*	.41	2.4	.59	0.21	0.48	2.22E-02
Uranium-235 (pCi/L)	45	0.83	.47	-0.12*	.14	0.1*	0.15	0.02	0.017	1.28E-03
Uranium-236 (pCi/L)	21	0.24*	0.26	0.0*	0	0.092	0.11	0.019	0.018	8.18E-04
Uranium-238 (pCi/L)	45	24.0	3.1	1.1	.36	6.6	1.9	0.85	1.1	6.71E-02

(e) Not applicable
* Result was below the minimum detectable activity.

Table 2.29. Y-12 Plant Discharge Point S17, UNNAMED TRIBUTARY TO THE CLINCH RIVER

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration Max	+/-	Min	+/-	Median	+/-	Percentage of Standard Error	DCG	Total Curies
Alpha activity (pCi/L)	12	5.3	4.1	-0.19*	.5	2.0	e	0.45	e	1.1E-03
Americium-241 (pCi/L)	12	0.16*	0.20	-0.063*	0.17	0.056	e	0.019	0.19	3.1E-05
Beta activity (pCi/L)	12	16.0	4.7	0.6*	3.4	2.25	e	1.3	e	2.2E-03
Cobalt-60 (pCi/L)	12	2.7*	2.6	-120.0*	12	1.2	e	10.	0.024	-4.6E-03
Cesium-137 (pCi/L)	12	2.3*	2	-7.5*	6.5	0.76	e	0.80	0.025	-1.0E-04
Gamma Activity (pCi/L)	12	72.0	32	-13.0*	30	31.5	e	6.89	e	1.41E-02
Neptunium-237 (pCi/L)	12	0.17	.17	-0.061*	0.087	0.026	e	0.018	0.087	1.8E-05
Plutonium-238 (pCi/L)	12	0.31	.17	-0.014*	.097	0.0625	e	0.030	0.16	4.8E-05
Plutonium-239/240 (pCi/L)	12	0.13	.12	-0.078*	0.090	0.0	e	0.017	0.0	2.0E-06
Radium-228 (pCi/L)	12	9.9	8.3	-12.0*	13	0.2	e	2.2	0.2	-2.9E-04
Strontium-89/90 (pCi/L)	12	5.0*	5.4	-1.7*	3.1	-0.057	e	0.56	e	2.9E-04
Total Radium Alpha (pCi/L)	12	2.2	1.3	-0.85*	.6	0.365	e	0.22	e	1.7E-04
Technetium-99 (pCi/L)	12	21.0	8	-8.0*	7.7	1.5	e	2.1	0.0015	1.2E-03
Thorium-228 (pCi/L)	12	0.28*	.25	-0.037*	.11	0.095	e	0.036	0.024	5.6E-05
Thorium-230 (pCi/L)	12	1.2	.56	-0.031*	.062	0.27	e	0.10	0.09	1.8E-04
Thorium-232 (pCi/L)	12	0.28*	.25	-0.03*	.086	0.0285	e	0.02	0.06	2E-05
Thorium-234 (pCi/L)	12	0.8	.38	0.21*	0.23	0.555	e	0.05	0.006	3E-04
Tritium (pCi/L)	12	3600.0	390	-270.0*	500	125.0	e	295.7	0.0063	2.04E-01
Uranium-234 (pCi/L)	12	1.5	.43	0.31	.21	0.805	e	0.088	0.16	4.1E-04
Uranium-235 (pCi/L)	12	0.13	.13	-0.08*	0.11	0.0265	e	0.02	0.004	8E-06
Uranium-236 (pCi/L)	4	0.049*	0.099	0.0*	0	0.021	e	0.013	0.0042	1.1E-05
Uranium-238 (pCi/L)	12	0.8	.38	0.21*	0.23	0.555	e	0.052	0.092	2.5E-04

(e) Not applicable
* Result was below the minimum detectable activity.

Table 2.30. Y-12 Plant Discharge Point S19, S19, ROGER'S QUARRY

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration Max	+/-	Min	+/-	Median	+/-	Percentage of Standard Error	DCG	Total Curies
Alpha activity (pCi/L)	12	2.7	2.1	-1.5*	2.1	0.010	e	0.35	e	6.76E-06
Americium-241 (pCi/L)	12	0.35	.23	-0.14*	.15	0.074	e	0.035	0.24	5.83E-06
Beta activity (pCi/L)	12	6.5*	6.4	-0.1*	3.3	2	e	0.7	e	2.00E-04
Cobalt-60 (pCi/L)	12	3.1*	2.7	-1.7*	2.7	1.2	e	0.39	0.025	7.28E-05
Cesium-137 (pCi/L)	12	1.7*	2.3	-1.4*	3.9	0.70	e	0.29	0.024	2.85E-05
Gamma Activity (pCi/L)	12	66.0	32	-24.0*	30	18.5	e	7.85	e	1.26E-03
Neptunium-237 (pCi/L)	12	0.12*	.13	-0.1*	0.14	0.03	e	0.02	0.1	1.96E-06
Plutonium-238 (pCi/L)	12	3.7	0.84	-0.07*	.099	0.02	e	0.3	0.05	2.75E-05
Plutonium-239/240 (pCi/L)	12	0.064*	0.16	-0.035*	.07	0.0	e	0.0087	0.0	4.96E-08
Radium-228 (pCi/L)	12	13.0*	9	-12.0*	12	1.00	e	2.02	1.00	5.27E-05
Strontium-89/90 (pCi/L)	12	0.98*	3.2	-1.9*	3.7	0.0070	e	0.28	e	-1.24E-05
Total Radium Alpha (pCi/L)	12	1.0*	.95	-0.63*	.56	-0.14	e	0.15	e	-2.58E-06
Technetium-99 (pCi/L)	12	20.0	8	-6.7*	7.7	0.0	e	2.3	0.0	1.07E-04
Thorium-228 (pCi/L)	12	0.15*	.17	-0.19*	0.36	-0.010	e	0.026	-0.0025	-2.11E-07
Thorium-230 (pCi/L)	12	1.5	.51	0.076*	.11	0.33	e	0.11	0.11	3.05E-05
Thorium-232 (pCi/L)	12	0.043*	.1	-0.072*	0.15	0.0045	e	0.011	0.0090	8.06E-08
Thorium-234 (pCi/L)	12	0.35	.21	0.031*	.027	0.16	e	0.028	0.0016	1.35E-05
Tritium (pCi/L)	12	3800.0	370	-200.0*	500	240.0	e	309.5	0.012	3.77E-02
Uranium-234 (pCi/L)	12	0.56	0.30	-0.03*	.19	0.2	e	0.06	0.04	1.66E-05
Uranium-235 (pCi/L)	12	0.18*	.3	-0.067*	0.13	0.010	e	0.017	0.0018	1.17E-06
Uranium-236 (pCi/L)	4	0.077*	0.15	-0.032*	0.064	0.027	e	0.030	0.0054	1.84E-06
Uranium-238 (pCi/L)	12	0.35	.21	0.031*	.027	0.16	e	0.028	0.028	1.35E-05

(e) Not applicable

* Result was below the minimum detectable activity.

Table 2.31. Y-12 Plant Discharge Point S19, ROGERS QUARRY

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	367	1.8226	0.1769	0.634	d	d
pH, Standard Units	12	7.9	7.1	d	9/ 6(e)	0
Silver, mg/L	12	<0.006	<0.006	<0.006	d	d
Aluminum, mg/L	12	0.28	<0.04	<0.06	d	d
Arsenic, mg/L	12	<0.04	<0.04	<0.04	d	d
Boron, mg/L	12	0.07	<0.02	<0.06	d	d
Barium, mg/L	12	0.0583	<0.0008	<0.04	d	d
Beryllium, mg/L	12	<0.0004	<0.0004	<0.0004	d	d
Calcium, mg/L	12	40.2	0.2	30	d	d
Cadmium, mg/L	12	<0.004	<0.004	<0.004	d	d
Cobalt, mg/L	12	<0.002	<0.002	<0.002	d	d
Chromium, mg/L	12	<0.006	<0.006	<0.006	d	d
Copper, mg/L	12	<0.006	<0.006	<0.006	d	d
Iron, mg/L	12	0.35	<0.06	<0.09	d	d
Potassium, mg/L	12	1.9	<0.6	<2	d	d
Lithium, mg/L	12	<0.02	<0.02	<0.02	d	d
Magnesium, mg/L	12	10.0	0.05	8	d	d
Manganese, mg/L	12	0.666	<0.002	<0.09	d	d
Molybdenum, mg/L	12	<0.006	<0.006	<0.006	d	d
Sodium, mg/L	12	2.12	<0.04	<1.5	d	d
Nickel, mg/L	12	<0.008	<0.008	<0.008	d	d
Lead, mg/L	12	<0.02	<0.02	<0.02	d	d
Antimony, mg/L	12	<0.04	<0.04	<0.04	d	d
Strontium, mg/L	12	0.227	0.001	0.2	d	d
Thallium, mg/L	12	<0.03	<0.03	<0.03	d	d
Vanadium, mg/L	12	<0.004	<0.004	<0.004	d	d
Zinc, mg/L	12	<0.01	<0.01	<0.01	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 2.32. Y-12 Plant Discharge Point STA304, STATION 304, BEAR CREEK AT HIGHWAY 95

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	365	104.7006	0.4072	6.029	d	d
pH, Standard Units	15	7.9	7.0	d	8.5/ 6.5(e)	0
Silver, mg/L	12	<0.006	<0.006	<0.006	0.0041	0
Aluminum, mg/L	12	0.53	<0.04	<0.2	d	d
Arsenic, mg/L	12	<0.04	<0.04	<0.04	0.014	0
Boron, mg/L	12	0.08	0.02	0.03	d	d
Barium, mg/L	12	0.0782	0.04	0.06	d	d
Beryllium, mg/L	12	<0.0004	<0.0004	<0.0004	d	d
Calcium, mg/L	12	65.3	28.5	42.3	d	d
Cadmium, mg/L	12	<0.004	<0.004	<0.004	0.0039	0
Chloride, mg/L	12	12.8	3.84	6.62	d	d
Cobalt, mg/L	12	<0.002	<0.002	<0.002	d	d
Chromium, mg/L	12	<0.006	<0.006	<0.006	0.016	0
Copper, mg/L	12	<0.006	<0.006	<0.006	0.0177	0
Iron, mg/L	12	0.56	<0.06	<0.2	d	d
Mercury, mg/L	12	<0.0002	<0.0002	<0.0002	0.00015	0
Potassium, mg/L	12	2.2	1.0	1.3	d	d
Lithium, mg/L	12	<0.02	<0.02	<0.02	d	d
Magnesium, mg/L	12	18.7	8.35	12.8	d	d
Manganese, mg/L	12	0.145	0.01	0.04	d	d
Molybdenum, mg/L	12	<0.006	<0.006	<0.006	d	d
Sodium, mg/L	12	7.48	2.65	3.99	d	d
Nickel, mg/L	12	<0.008	<0.008	<0.008	1.418	0
Nitrite as Nitrogen, mg/L	12	<0.076	<0.02	<0.04	d	d
Nitrate as Nitrogen, mg/L	12	10.2	0.97	3.0	d	d
Lead, mg/L	12	<0.02	<0.02	<0.02	0.0817	0
Phenols - Total Recoverable,	12	<0.005	<0.005	<0.005	d	d

(a) Units in mg/L unless otherwise indicated.
(b) Tennessee water quality criteria.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.33. Y-12 Plant Discharge Point STA304, STATION 304, BEAR CREEK AT HIGHWAY 95
From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Antimony, mg/L	12	<0.04	<0.04	<0.04	4.30	0
Selenium, mg/L	12	<0.1	<0.1	<0.1	0.02	0
Strontium, mg/L	12	0.141	0.047	0.074	d	d
Sulfate, mg/L	12	19.1	5.44	9.89	d	d
Suspended Solids, mg/L	12	<5.0	<1.0	<2.4	d	d
Thorium, mg/L	12	<0.01	<0.01	<0.01	d	d
Titanium, mg/L	12	<0.02	<0.02	<0.02	d	d
Thallium, mg/L	12	<0.03	<0.03	<0.03	0.0063	0
Vanadium, mg/L	12	<0.004	<0.004	<0.004	d	d
Zinc, mg/L	12	<0.01	<0.01	<0.01	0.117	0
Zirconium, mg/L	12	<0.004	<0.004	<0.004	d	d
Uranium, mg/L	12	0.045	0.010	0.024	d	d
Uranium-235, weight%	12	0.47	0.30	0.39	d	d

(a) Units in mg/L unless otherwise indicated.
(b) Tennessee water quality criteria.
(c) Flow during operations and/or discharging.
(d) Not applicable.
(e) Maximum value/minimum value.

Table 2.34. Y-12 Plant Discharge Point STA304, STATION 304, BEAR CREEK AT HIGHWAY 95

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration Max	+/-	Min	+/-	Median	+/-	Percentage of Standard Error	DCG	Total Curies
Alpha activity (pCi/L)	12	19.0	5	4.7	2.8	8.2	e	1.3	e	7.98E-02
Americium-241 (pCi/L)	12	0.24	0.17	-0.045*	0.16	0.08	e	0.02	0.3	6.76E-04
Beta activity (pCi/L)	12	27.0	6	0.8*	3.3	11	e	2.2	e	1.03E-01
Cobalt-60 (pCi/L)	12	1.8*	2.2	-1.5*	2.7	0.45	e	0.29	0.0091	2.92E-03
Cesium-137 (pCi/L)	12	3.4*	2.2	-0.52*	2.5	0.49	e	0.37	0.016	5.98E-03
Gamma Activity (pCi/L)	12	50.0	31	4.8*	31	15	e	4.0	e	1.74E-01
Neptunium-237 (pCi/L)	12	0.48	0.32	-0.043*	.061	0.057	e	0.043	0.19	8.85E-04
Plutonium-238 (pCi/L)	12	0.18*	0.22	-0.11*	.18	0.028	e	0.023	0.071	3.13E-04
Plutonium-239/240 (pCi/L)	12	0.07*	.099	-0.075*	0.15	-0.01	e	0.01	-0.04	-6.27E-05
Radium-228 (pCi/L)	11	15.0	11	-5.6*	12	3.5*	8.5	1.9	3.5	3.54E-02
Strontium-89/90 (pCi/L)	12	4.0*	9.3	-2.1*	2.6	0.90	e	0.54	e	8.55E-03
Total Radium Alpha (pCi/L)	12	1.5	.9	-0.17*	0.35	0.18	e	0.17	e	3.73E-03
Technetium-99 (pCi/L)	12	44.0	8	-15.0*	7.9	6.50	e	4.46	0.0065	7.87E-02
Thorium-228 (pCi/L)	12	5.3	0.89	-0.16*	.21	-0.0070	e	0.44	-0.0018	3.67E-03
Thorium-230 (pCi/L)	12	2.1	.71	0.18	.18	0.28	e	0.16	0.095	4.44E-03
Thorium-232 (pCi/L)	12	0.066*	.094	-0.04*	0.057	0.0	e	0.0083	0.0	2.86E-05
Thorium-234 (pCi/L)	12	16.0	1.8	3.5	.8	9.0	e	1.1	0.090	7.61E-02
Tritium (pCi/L)	12	3800.0	370	-140.0*	500	146.0	e	310.8	0.0073	3.87E+00
Uranium-234 (pCi/L)	12	7.6	1	2.1	.62	4.6	e	0.52	0.92	3.75E-02
Uranium-235 (pCi/L)	12	0.51	0.25	0.046*	.091	0.21	e	0.040	0.035	1.91E-03
Uranium-236 (pCi/L)	5	0.084*	0.12	0.031*	0.061	0.069	0.080	0.010	0.014	5.23E-04
Uranium-238 (pCi/L)	12	16.0	1.8	3.5	.8	9.0	e	1.1	1.5	7.61E-02

(e) Not applicable
* Result was below the minimum detectable activity.

Table 2.35. Y-12 Plant Discharge Point 94221, SWHISS STATION 9422-1

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Flow, mgd	365	80.7875	4.5887	8.8589	d	d
pH, Standard Units	164	8.5	6.9	d	8.5/6.5(e)	0
Silver, mg/L	158	0.01	<0.006	<0.006	0.0041	1
Aluminum, mg/L	158	2.39	<0.04	<0.2	d	d
Arsenic, mg/L	158	<0.04	<0.04	<0.04	0.0014	0
Boron, mg/L	158	0.65	<0.02	<0.07	d	d
Barium, mg/L	158	0.0722	0.0179	0.0444	d	d
Beryllium, mg/L	158	<0.0004	<0.0004	<0.0004	d	d
Calcium, mg/L	158	50.2	14.8	40.3	d	d
Cadmium, mg/L	158	<0.004	<0.004	<0.004	0.0039	0
Cobalt, mg/L	158	<0.002	<0.002	<0.002	d	d
Chromium, mg/L	158	0.007	<0.006	<0.006	0.016	0
Copper, mg/L	158	0.015	<0.006	<0.006	0.0177	0
Iron, mg/L	158	3.17	0.06	0.3	d	d
Mercury, mg/L	408	0.011	0.0002	0.0007	0.00015	408
Potassium, mg/L	158	3.1	0.7	2	d	d
Lithium, mg/L	158	0.17	<0.02	<0.03	d	d
Magnesium, mg/L	158	12.5	4.04	10.1	d	d
Manganese, mg/L	158	0.324	0.016	0.066	d	d
Molybdenum, mg/L	158	<0.03	<0.006	<0.006	d	d
Sodium, mg/L	158	50.9	5.31	8.56	d	d
Ammonia as Nitrogen, mg/L	158	1.03	<0.2	<0.2	d	d
Nickel, mg/L	158	0.01	<0.008	<0.008	1.418	0
Lead, mg/L	158	<0.02	<0.02	<0.02	0.0817	0
Antimony, mg/L	158	<0.04	<0.04	<0.04	4.30	0
Selenium, mg/L	158	<0.1	<0.1	<0.1	0.02	0
Strontium, mg/L	158	0.136	0.041	0.098	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 2.36. Y-12 Plant Discharge Point 94221, SWHISS STATION 9422-1

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration(a) Max	Min	Avg	Reference Value(b)	Number of Values Exceeding Reference
Suspended Solids, mg/L	158	78.0	<1.0	<8.5	d	d
Thorium, mg/L	316	<0.01	<0.01	<0.01	d	d
Titanium, mg/L	158	0.03	0.01	<0.02	d	d
Thallium, mg/L	158	<0.03	<0.03	<0.03	0.0063	0
Vanadium, mg/L	158	<0.004	<0.004	<0.004	d	d
Zinc, mg/L	158	0.15	0.02	0.04	0.117	1
Zirconium, mg/L	158	<0.004	<0.004	<0.004	d	d
Uranium, mg/L	53	0.042	<0.001	<0.015	d	d
Uranium-235, weight%	52	0.66	0.23	0.37	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 2.37. Y-12 Plant Discharge Point 94221, SWHISS STATION 9422-1

From: 1997/01/01 To: 1997/12/31

Parameter	Number of Samples	Concentration Max	+/-	Min	+/-	Median	+/-	Standard Error	Percentage of DCG	Total Curies
Alpha activity (pCi/L)	53	19.0	7.4	0.7*	2.9	5.4*	4.5	0.6	e	8.05E-02
Americium-241 (pCi/L)	53	0.39*	.29	-0.15*	0.23	0.032*	.17	0.014	0.11	5.76E-04
Beta activity (pCi/L)	53	18.0*	9	-7.2*	0.10	5.6*	7.8	0.64	e	7.10E-02
Cobalt-60 (pCi/L)	53	4.2*	2.6	-3.5*	3.7	0.8*	1.7	0.2	0.02	8.42E-03
Cesium-137 (pCi/L)	53	4.3*	2.6	-1.8*	3.8	0.65*	2.2	0.17	0.022	7.74E-03
Gamma Activity (pCi/L)	53	210.0	38	-23.0*	30	21.0*	31	5.67	e	3.28E-01
Neptunium-237 (pCi/L)	53	0.72	0.45	-0.044*	0.062	0.027*	0.12	0.015	0.090	5.59E-04
Plutonium-238 (pCi/L)	53	3.7	0.88	-0.18*	0.25	0.071*	0.25	0.071	0.18	1.97E-03
Plutonium-239/240 (pCi/L)	53	0.14*	0.20	-0.11*	0.11	0.0*	0	0.0055	0.0	9.72E-05
Radium-228 (pCi/L)	52	16.0	13	-14.0*	12	1.0	e	0.85	1.0	2.27E-02
Strontium-89/90 (pCi/L)	53	9.4*	21	-9.1*	5.6	0.022*	2.3	0.45	e	9.72E-04
Total Radium Alpha (pCi/L)	53	2.2	1.4	-0.59*	.77	0.3*	0.55	0.08	e	5.33E-03
Technetium-99 (pCi/L)	53	26.0	8	-15.0*	8.7	4.0*	9.6	1.0	0.0040	2.99E-02
Thorium-228 (pCi/L)	53	0.87	.44	-0.25*	.3	0.089*	0.20	0.027	0.022	1.31E-03
Thorium-230 (pCi/L)	53	2.7	.74	-0.54*	1.1	0.31	.21	0.067	0.10	4.84E-03
Thorium-232 (pCi/L)	53	0.35	0.27	-0.051*	.073	0.014*	.11	0.010	0.028	4.44E-04
Thorium-234 (pCi/L)	53	20.0	2.3	0.75	.3	5.0	.93	0.56	0.050	7.32E-02
Tritium (pCi/L)	53	4000.0	390	-440.0*	500	180.0*	600	105.2	0.009	3.54E+00
Uranium-234 (pCi/L)	53	6.1	1.2	0.2	.15	2.1	0.75	0.1	0.4	2.77E-02
Uranium-235 (pCi/L)	53	0.52	.3	-12.0*	17	0.11*	.17	0.23	0.018	-1.06E-03
Uranium-236 (pCi/L)	21	0.13*	0.18	0.0*	0	0.046*	0.11	0.0098	0.0092	6.06E-04
Uranium-238 (pCi/L)	53	16.0	2.4	0.75	.3	5.0	.93	0.51	0.83	7.11E-02

(e) Not applicable
* Result was below the minimum detectable activity.

Table 2. 38. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=BC AREA NAME=Background

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		28	28	14.4	0.6	2.298571	250	0
Fluoride	(mg/L)		28	19	1.53	0.1	0.321053	2	0
Nitrate Nitrogen	(mg/L)		28	9	0.2	0.03	0.077222	10	0
Sulfate	(mg/L)		28	28	30	5.51	13.07821	250	0
Aluminum, ICAP	(mg/L)		28	23	21	0.023	2.102913	0.2	10
Aluminum, ICAP	(mg/L)	FILTERED	28	16	0.36	0.02	0.096813	0.2	3
Barium, ICAP	(mg/L)		28	28	0.3	0.015	0.146357	2	0
Barium, ICAP	(mg/L)	FILTERED	28	28	0.25	0.013	0.118393	2	0
Beryllium, ICAP	(mg/L)		28	3	0.0013	0.00061	0.000857	0.004	0
Beryllium, ICAP	(mg/L)	FILTERED	28	1	0.00061	0.00061	0.00061	0.004	0
Boron, ICAP	(mg/L)		28	27	0.17	0.0052	0.026852	NR	NA
Boron, ICAP	(mg/L)	FILTERED	28	27	0.16	0.0047	0.025978	NR	NA
Cadmium, ICAP	(mg/L)		28	3	0.03	0.0047	0.013333	0.005	2
Cadmium, ICAP	(mg/L)	FILTERED	28	3	0.02	0.003	0.009133	0.005	1
Calcium, ICAP	(mg/L)		28	28	81	1.4	29.77143	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	28	28	80	1.4	29.375	NR	NA
Chromium, ICAP	(mg/L)		28	5	0.042	0.011	0.027	0.1	0
Chromium, ICAP	(mg/L)	FILTERED	28	1	0.015	0.015	0.015	0.1	0
Cobalt, ICAP	(mg/L)		28	3	0.017	0.0059	0.011633	NR	NA
Cobalt, ICAP	(mg/L)	FILTERED	28	1	0.014	0.014	0.014	NR	NA
Copper, ICAP	(mg/L)		28	10	0.054	0.0053	0.01969	1	0
Copper, ICAP	(mg/L)	FILTERED	28	5	0.021	0.0059	0.01078	1	0
Iron, ICAP	(mg/L)		28	26	33	0.0076	4.006177	0.3	18
Iron, ICAP	(mg/L)	FILTERED	28	26	4.1	0.0056	0.484054	0.3	6
Lead, PMS	(mg/L)		28	20	0.022	0.00053	0.005598	NR	NA
Lead, PMS	(mg/L)	FILTERED	28	12	0.0032	0.00053	0.001308	NR	NA
Lithium, ICAP	(mg/L)		28	28	0.052	0.0042	0.0197	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	28	28	0.041	0.0052	0.017489	NR	NA
Magnesium, ICAP	(mg/L)		28	28	12	0.15	5.861429	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	28	28	12	0.12	5.381071	NR	NA
Manganese, ICAP	(mg/L)		28	26	1.3	0.0031	0.2756	0.05	15

Table 2.38 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Manganese, ICAP	(mg/L)	FILTERED	28	26	1.3	0.001	0.234427	0.05	12
Mercury, CVAA	(mg/L)		28	2	0.0068 k	0.00036	0.00358	0.002	1
Nickel, ICAP	(mg/L)		28	6	0.041	0.014	0.022667	0.1 d	0
Nickel, ICAP	(mg/L)	FILTERED	28	1	0.014 p	0.014 p	0.014	0.1 d	0
Potassium, ICAP	(mg/L)		28	26	9.2	0.65	2.141538	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	28	24	6.2	0.65	1.740833	NR	NA
Silver, ICAP	(mg/L)		28	3	0.015	0.007	0.01	0.1	0
Sodium, ICAP	(mg/L)		28	28	120	3.3	15.16429	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	28	28	120	3.3 p	15.11071	NR	NA
Strontium, ICAP	(mg/L)		28	28	0.8	0.017	0.15425	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	28	28	0.79	0.013	0.151643	NR	NA
Uranium, PMS	(mg/L)		28	1	0.00054	0.00054	0.00054	NR	NA
Uranium, PMS	(mg/L)	FILTERED	28	1	0.00062	0.00062	0.00062	NR	NA
Vanadium, ICAP	(mg/L)		28	3	0.035	0.011	0.023333	NR	NA
Zinc, ICAP	(mg/L)		28	23	0.07	0.0022	0.017213	5	0
Zinc, ICAP	(mg/L)	FILTERED	28	25	0.044	0.0022	0.008576	5	0
Conductivity, field measurement	(umhos/cm)		28	NA	492	79	230.0357	NR	NA
Dissolved Oxygen, field measurement	(ppm)		28	NA	5.9	0.8	2.492857	NR	NA
pH, field measurement	(pH)		28	NA	9.1	5.3	6.975	6.5/8.5	10
REDOX, field measurement	(mV)		28	NA	230	-78	98.75	NR	NA
Static Water Level	(ft - toc)		28	NA	-1.25	-24.3	-17.0425	NR	NA
Temperature, field measurement	(Deg C)		28	NA	22.5	11.6	15.43214	NR	NA
Alkalinity as CO3	(mg/L)		28	2	40	40	40	NR	NA
Alkalinity as HCO3	(mg/L)		28	28	260	34	117	NR	NA
Conductivity	(umhos/cm)		28	28	526	80.9	257.8643	NR	NA
Dissolved Solids	(mg/L)		28	28	350	53	176.7143	500	0
pH	(pH)		28	28	9.26	5.94	7.17	6.5/8.5	10
Total Suspended Solids	(mg/L)		28	21	2750	1	218.7714	NR	NA
Turbidity	(NTU)		28	28	3243	0.338	187.3322	1	23
Iodine-129	(pCi/L)		28	28	17	-12	2.658571	NR	NA
Radium - Total Alpha	(pCi/L)		28	28	39	-0.57	2.286786	5 g	3

Table 2.38 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Uranium-234	(pCi/L)		28	28	0.32	-0.096	0.081786	20	0
Uranium-235	(pCi/L)		28	28	0.17	-0.096	0.004857	24	0
Neptunium-237	(pCi/L)		28	28	0.07	-0.06	0.00625	1.2	0
Plutonium-238	(pCi/L)		28	28	0.32	-0.18	0.005321	1.6	0
Uranium-238	(pCi/L)		28	28	0.37	-0.075	0.15125	24	0
Plutonium-239	(pCi/L)		28	28	0.11	-0.079	-0.00361	1.2	0
Americium-241	(pCi/L)		28	28	0.67	-0.17	0.111964	1.2	0
Strontium-89/90	(pCi/L)		28	28	3.5	-1.6	0.622214	8	0
Technetium-99	(pCi/L)		28	28	14	-6	2.410714	4000	0
Gross Alpha	(pCi/L)		28	28	15	-4.6	0.813929	15 f	0
Gross Beta	(pCi/L)		28	28	35	-14	1.048571	50 a	0
Tritium	(pCi/L)		28	28	570	-400	58.07143	20000	0
2-Butanone	(ug/L)		28	1	3 BJ	3 BJ	3	NR	NA
Acetone	(ug/L)		28	6	7 J	1 BJ	2.833333	NR	NA

Table 2.39. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=BC AREA NAME=Bear Creek Burial Grounds WMA

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		10	10	56.8	0.82	24.318	250	0
Fluoride	(mg/L)		10	4	5.03	0.11	2.56	2	2
Nitrate Nitrogen	(mg/L)		10	3	0.37	0.05	0.163333	10	0
Sulfate	(mg/L)		10	10	32.3	1.67	13.067	250	0
Aluminum, ICAP	(mg/L)		10	7	3	0.025	0.511	0.2	2
Aluminum, ICAP	(mg/L)	FILTERED	10	2	0.062	0.056	0.059	0.2	0
Arsenic, PMS	(mg/L)		10	2	0.013	0.0054	0.0092	NR	NA
Arsenic, PMS	(mg/L)	FILTERED	10	1	0.017	0.017	0.017	NR	NA
Barium, ICAP	(mg/L)		10	10	0.37	0.035	0.1485	2	0
Barium, ICAP	(mg/L)	FILTERED	10	10	0.38	0.03	0.1462	2	0
Beryllium, ICAP	(mg/L)		10	1	0.00034	0.00034	0.00034	0.004	0
Beryllium, ICAP	(mg/L)	FILTERED	10	1	0.00048	0.00048	0.00048	0.004	0
Boron, ICAP	(mg/L)		10	10	0.49	0.0042	0.1714	NR	NA
Boron, ICAP	(mg/L)	FILTERED	10	9	0.49	0.005	0.186556	NR	NA
Cadmium, ICAP	(mg/L)		10	1	0.0035	0.0035	0.0035	0.005	0
Calcium, ICAP	(mg/L)		10	10	120	0.9	29.84	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	10	10	110	0.95	29.524	NR	NA
Chromium, ICAP	(mg/L)		10	1	1.2	1.2	1.2	0.1	1
Cobalt, ICAP	(mg/L)		10	1	0.0071	0.0071	0.0071	NR	NA
Copper, ICAP	(mg/L)		10	4	0.025	0.0043	0.010725	1	0
Iron, ICAP	(mg/L)		10	10	5	0.009	0.7489	0.3	4
Iron, ICAP	(mg/L)	FILTERED	10	8	0.4	0.0058	0.0639	0.3	1
Lead, PMS	(mg/L)		10	6	0.0083	0.00085	0.003658	NR	NA
Lead, PMS	(mg/L)	FILTERED	10	2	0.00092	0.0007	0.00081	NR	NA
Lithium, ICAP	(mg/L)		10	7	0.38	0.0046	0.133371	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	10	8	0.38	0.0046	0.11785	NR	NA
Magnesium, ICAP	(mg/L)		10	10	14	0.21	4.823	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	10	10	14	0.21	4.943	NR	NA
Manganese, ICAP	(mg/L)		10	10	0.39	0.0016	0.07057	0.05	4
Manganese, ICAP	(mg/L)	FILTERED	10	10	0.082	0.0012	0.02983	0.05	3
Molybdenum, ICAP	(mg/L)		10	1	0.019	0.019	0.019	NR	NA

Table 2.39 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Nickel, ICAP	(mg/L)		10	3	0.029	0.017	0.022	0.1 d	0
Nickel, ICAP	(mg/L)	FILTERED	10	1	0.019	0.019	0.019	0.1 d	0
Potassium, ICAP	(mg/L)		10	8	4.5	1.1	2.3125	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	10	9	4.6	0.66	2.273333	NR	NA
Sodium, ICAP	(mg/L)		10	10	300	2.5	75.23	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	10	10	300	2.5	74.77	NR	NA
Strontium, ICAP	(mg/L)		10	10	0.89	0.019	0.2842	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	10	10	0.9	0.018	0.2868	NR	NA
Thallium, PMS	(mg/L)		10	1	0.0005	0.0005	0.0005	NR	NA
Thallium, PMS	(mg/L)	FILTERED	10	1	0.00058	0.00058	0.00058	NR	NA
Uranium, PMS	(mg/L)		10	4	0.0017	0.0006	0.001145	NR	NA
Uranium, PMS	(mg/L)	FILTERED	10	3	0.002	0.00072	0.00134	NR	NA
Vanadium, ICAP	(mg/L)		10	1	0.0067	0.0067	0.0067	NR	NA
Zinc, ICAP	(mg/L)		10	10	0.083	0.0023	0.01512	5	0
Zinc, ICAP	(mg/L)	FILTERED	10	9	0.04	0.0025	0.010044	5	0
Conductivity, field measurement	(umhos/cm)		10	NA	1008	34	429.9	NR	NA
Dissolved Oxygen, field measurement	(ppm)		10	NA	5.9	0.6	2.44	NR	NA
pH, field measurement	(pH)		10	NA	9.1	4.9	7.01	6.5/8.5	6
REDOX, field measurement	(mV)		10	NA	230	-149	69.6	NR	NA
Static Water Level	(ft - toc)		10	NA	-3.81	-24	-13.931	NR	NA
Temperature, field measurement	(Deg C)		10	NA	18.1	7.9	14.29	NR	NA
Alkalinity as CO3	(mg/L)		10	3	80	12 X	52	NR	NA
Alkalinity as HCO3	(mg/L)		10	10	564	14	214.6	NR	NA
Conductivity	(umhos/cm)		10	10	1197 L	33.5	486.66	NR	NA
Dissolved Solids	(mg/L)		10	10	740	38	319.5	500	2
pH	(pH)		10	10	9.17 L	5.3	7.19	6.5/8.5	7
Total Suspended Solids	(mg/L)		10	6	92.8	2	18.73333	NR	NA
Turbidity	(NTU)		10	10	50.2	0.263	7.6453	1	9
Iodine-129	(pCi/L)		2	2	3.2	2.8	3	NR	NA
Radium - Total Alpha	(pCi/L)		2	2	1.4	0.91	1.155	5 g	0
Uranium-234	(pCi/L)		2	2	0	-0.024	-0.012	20	0

Table 2.39 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Uranium-235	(pCi/L)		2	2	0	0	0	24	0
Neptunium-237	(pCi/L)		2	2	0.037	-0.089	-0.026	1.2	0
Plutonium-238	(pCi/L)		2	2	0.4	0.034	0.217	1.6	0
Uranium-238	(pCi/L)		2	2	0.25	0.072	0.161	24	0
Plutonium-239	(pCi/L)		2	2	0.067	0.026	0.0465	1.2	0
Americium-241	(pCi/L)		2	2	0.19	0.13	0.16	1.2	0
Strontium-89/90	(pCi/L)		2	2	0.22	-0.4	-0.09	8	0
Technetium-99	(pCi/L)		2	2	9	-1	4	4000	0
Gross Alpha	(pCi/L)		10	10	1.8	-6.7	-1.059	15 f	0
Gross Beta	(pCi/L)		10	10	9.9	-2.6	3.38	50 a	0
Tritium	(pCi/L)		2	2	9.6	-180	-85.2	20000	0
1,1,1-Trichloroethane	(ug/L)		10	1	1 J	1 J	1	200	0
1,1-Dichloroethane	(ug/L)		10	5	8	2 J	6.2	NR	NA
1,1-Dichloroethene	(ug/L)		10	3	3 J	1 J	1.666667	7	0
1,2-Dichloroethene (TOTAL)	(ug/L)		10	4	26	6	14.5	NR b	NA
2-Butanone	(ug/L)		10	2	8 BJ	6 BJ	7	NR	NA
Acetone	(ug/L)		10	3	77	2 BJ	27.66667	NR	NA
cis-1,2-Dichloroethene	(ug/L)		10	4	26	6	14.5	70	0
Tetrachloroethene	(ug/L)		10	6	84	1 J	29.83333	5	2
Trichloroethene	(ug/L)		10	5	16	2 J	7.6	5	2
Vinyl chloride	(ug/L)		10	4	6 J	1 J	4	2	3

Table 2. 40. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=BC AREA NAME=Exit Pathway Monitoring Location A

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		8	8	117	8.1	42.225	250	0
Fluoride	(mg/L)		8	7	0.2	0.11	0.147143	2	0
Nitrate Nitrogen	(mg/L)		8	8	10.1	0.137	4.279625	10	1
Sulfate	(mg/L)		8	8	36.6	12.8	25.2	250	0
Aluminum, ICAP	(mg/L)		8	7	2	0.036	0.473429	0.2	4
Aluminum, ICAP	(mg/L)	FILTERED	8	3	0.076	0.021	0.050333	0.2	0
Barium, ICAP	(mg/L)		8	8	0.16	0.062	0.09725	2	0
Barium, ICAP	(mg/L)	FILTERED	8	8	0.099	0.06	0.08675	2	0
Boron, ICAP	(mg/L)		8	8	0.048	0.021	0.033625	NR	NA
Boron, ICAP	(mg/L)	FILTERED	8	8	0.049	0.02	0.0335	NR	NA
Calcium, ICAP	(mg/L)		8	8	110	40	70.25	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	8	8	94	41	68.25	NR	NA
Chromium, ICAP	(mg/L)		8	1	0.021	0.021	0.021	0.1	0
Copper, ICAP	(mg/L)		8	1	0.0076	0.0076	0.0076	1	0
Iron, ICAP	(mg/L)		8	8	4.3	0.034	1.230375	0.3	4
Iron, ICAP	(mg/L)	FILTERED	8	5	0.11	0.022	0.055	0.3	0
Lead, PMS	(mg/L)		8	5	0.014	0.00051	0.004208	NR	NA
Lead, PMS	(mg/L)	FILTERED	8	2	0.00087	0.00077	0.00082	NR	NA
Lithium, ICAP	(mg/L)		8	8	0.019	0.0044	0.009488	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	8	7	0.019	0.0041	0.009357	NR	NA
Magnesium, ICAP	(mg/L)		8	8	24	13	18.25	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	8	8	24	14	17.75	NR	NA
Manganese, ICAP	(mg/L)		8	8	0.37	0.0011	0.107813	0.05	4
Manganese, ICAP	(mg/L)	FILTERED	8	8	0.3	0.001	0.079125	0.05	3
Nickel, ICAP	(mg/L)		8	2	0.07	0.06	0.065	0.1 d	0
Nickel, ICAP	(mg/L)	FILTERED	8	2	0.046	0.044	0.045	0.1 d	0
Potassium, ICAP	(mg/L)		8	8	8.5	1.1	3.15	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	8	8	8.4	1.1	3.1625	NR	NA
Sodium, ICAP	(mg/L)		8	8	57	4	22.2625	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	8	8	56	4	20.2875	NR	NA

Table 2.40 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Strontium, ICAP	(mg/L)		8	8	0.52	0.072	0.1665	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	8	8	0.15	0.07	0.12025	NR	NA
Uranium, PMS	(mg/L)		8	8	0.034	0.0043	0.018913	NR	NA
Uranium, PMS	(mg/L)	FILTERED	8	8	0.035	0.0038	0.018475	NR	NA
Zinc, ICAP	(mg/L)		8	7	0.069	0.0023	0.018814	5	0
Zinc, ICAP	(mg/L)	FILTERED	8	7	0.0082	0.0025	0.004086	5	0
Conductivity, field measurement	(umhos/cm)		8	NA	588	236	414	NR	NA
Dissolved Oxygen, field measurement	(ppm)		8	NA	8.9	3.2	5.675	NR	NA
pH, field measurement	(pH)		8	NA	8.4	7.1	7.5125	6.5/8.5	0
REDOX, field measurement	(mV)		8	NA	181	-32	89.125	NR	NA
Static Water Level	(ft - toc)		8	NA	-6.35	-88.65	-29.6813	NR	NA
Temperature, field measurement	(Deg C)		8	NA	17.5	12.2	14.125	NR	NA
Alkalinity as HCO3	(mg/L)		8	8	312	158	232.5	NR	NA
Conductivity	(umhos/cm)		8	8	874	353	579	NR	NA
Dissolved Solids	(mg/L)		8	8	510	200	337	500	1
pH	(pH)		8	8	7.63 L	7.09	7.34625	6.5/8.5	0
Total Suspended Solids	(mg/L)		8	7	182	1	38.57143	NR	NA
Turbidity	(NTU)		8	8	270	0.923	49.43788	1	7
Gross Alpha	(pCi/L)		8	8	19	0	9.525	15 f	2
Gross Beta	(pCi/L)		8	8	38	4.9	17.325	50 a	0
1,2-Dichloroethene (Total)	(ug/L)		8	2	1 J	1 J	1	NR b	NA
2-Butanone	(ug/L)		8	3	6 BJ	5 BJ	5.666667	NR	NA
Acetone	(ug/L)		8	3	9 J	3 BJ	5	NR	NA
cis-1,2-Dichloroethene	(ug/L)		8	2	1 J	1 J	1	70	0
Trichloroethene	(ug/L)		8	1	1 J	1 J	1	5	0

Table 2. 41. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=BC AREA NAME=Exit Pathway Monitoring Location B

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		10	10	32.6	4.44	19.724	250	0
Fluoride	(mg/L)		10	8	0.4	0.11	0.21125	2	0
Nitrate Nitrogen	(mg/L)		10	10	33.1	1.5	13.706	10	6
Sulfate	(mg/L)		10	10	43.7	4.6	23.01	250	0
Aluminum, ICAP	(mg/L)		10	7	5.3	0.023	1.467	0.2	4
Aluminum, ICAP	(mg/L)	FILTERED	10	4	0.21	0.021	0.0725	0.2	1
Barium, ICAP	(mg/L)		10	10	0.14	0.022	0.0705	2	0
Barium, ICAP	(mg/L)	FILTERED	10	10	0.16	0.019	0.0687	2	0
Boron, ICAP	(mg/L)		10	10	0.11	0.013	0.0534	NR	NA
Boron, ICAP	(mg/L)	FILTERED	10	10	0.12	0.012	0.0536	NR	NA
Calcium, ICAP	(mg/L)		10	10	96	37	62.5	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	10	10	110	34	63.6	NR	NA
Chromium, ICAP	(mg/L)		10	3	0.07	0.014	0.037	0.1	0
Chromium, ICAP	(mg/L)	FILTERED	10	1	0.018	0.018	0.018	0.1	0
Copper, ICAP	(mg/L)		10	1	0.0059	0.0059	0.0059	1	0
Copper, ICAP	(mg/L)	FILTERED	10	1	0.0084	0.0084	0.0084	1	0
Iron, ICAP	(mg/L)		10	10	5.6	0.14	1.461	0.3	7
Iron, ICAP	(mg/L)	FILTERED	10	6	0.61	0.0085	0.136917	0.3	1
Lead, PMS	(mg/L)		10	4	0.003	0.00087	0.00176	NR	NA
Lithium, ICAP	(mg/L)		10	9	0.018	0.0078	0.014078	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	10	8	0.02	0.011	0.015125	NR	NA
Magnesium, ICAP	(mg/L)		10	10	31	9.8	21.38	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	10	10	32	10	21.7	NR	NA
Manganese, ICAP	(mg/L)		10	10	0.21	0.0019	0.04087	0.05	2
Manganese, ICAP	(mg/L)	FILTERED	10	8	0.031	0.001	0.011838	0.05	0
Nickel, ICAP	(mg/L)		10	2	0.062	0.02	0.041	0.1 d	0
Potassium, ICAP	(mg/L)		10	10	5.6	0.87	2.587	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	10	10	5.4	0.85	2.534	NR	NA
Sodium, ICAP	(mg/L)		10	10	31	1.9	12.39	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	10	10	30	2	12.61	NR	NA
Strontium, ICAP	(mg/L)		10	10	0.44	0.059	0.2078	NR	NA

Table 2.41 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Strontium, ICAP	(mg/L)	FILTERED	10	10	0.44	0.056	0.2113	NR	NA
Uranium, PMS	(mg/L)		10	10	0.13	0.001	0.02651	NR	NA
Uranium, PMS	(mg/L)	FILTERED	10	10	0.12	0.001	0.02522	NR	NA
Vanadium, ICAP	(mg/L)		10	1	0.0057	0.0057	0.0057	NR	NA
Zinc, ICAP	(mg/L)		10	10	0.013	0.0023	0.00661	5	0
Zinc, ICAP	(mg/L)	FILTERED	10	8	0.0075	0.0029	0.004213	5	0
Conductivity, field measurement	(umhos/cm)		10	NA	660	265	460.4	NR	NA
Dissolved Oxygen, field measurement	(ppm)		10	NA	8.5	1.7	5.23	NR	NA
pH, field measurement	(pH)		10	NA	8.2	7.3	7.66	6.5/8.5	0
REDOX, field measurement	(mV)		10	NA	209	-35	102.3	NR	NA
Static Water Level	(ft - toc)		10	NA	-10.95	-43.33	-25.042	NR	NA
Temperature, field measurment	(Deg C)		10	NA	16.5	12.7	14.67	NR	NA
Alkalinity as HCO3	(mg/L)		10	10	252	176	201.8	NR	NA
Conductivity	(umhos/cm)		10	10	803	359	553.9	NR	NA
Dissolved Solids	(mg/L)		10	10	515	210	342.6	500	1
pH	(pH)		10	10	8 L	7.21 L	7.613	6.5/8.5	0
Total Suspended Solids	(mg/L)		10	9	102	2	25.55556	NR	NA
Turbidity	(NTU)		10	10	55.4	1.59	20.664	1	10
Gross Alpha	(pCi/L)		10	10	45	-2.1	9.78	15 f	2
Gross Beta	(pCi/L)		10	10	73	7.1	28.61	50 a	2
1,1,1-Trichloroethane	(ug/L)		10	2	2 J	2 J	2	200	0
1,1-Dichloroethane	(ug/L)		10	2	1 J	1 J	1	NR	NA
1,1-Dichloroethene	(ug/L)		10	3	8	3 J	6	7	1
1,2-Dichloroethene (Total)	(ug/L)		10	7	5	2 J	3.428571	NR b	NA
2-Butanone	(ug/L)		10	4	9 BJ	5 BJ	7	NR	NA
4-Methyl-2-pentanone	(ug/L)		10	1	1 BJ	1 BJ	1	NR	NA
Acetone	(ug/L)		10	9	94	2 BJ	15.77778	NR	NA
Carbon tetrachloride	(ug/L)		10	2	2 J	2 J	2	5	0
cis-1,2-Dichloroethene	(ug/L)		10	7	5	2 J	3.428571	70	0
Ethylbenzene	(ug/L)		10	1	2 J	2 J	2	700	0

Table 2.41 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Iodomethane	(ug/L)		10	3	2 BJ	1 BJ	1.333333	NR	NA
Methylene chloride	(ug/L)		10	1	1 J	1 J	1	5	0
Toluene	(ug/L)		10	2	15	3 J	9	1000	0
Trichloroethene	(ug/L)		10	8	100 B	4 B	37.75	5	6
Xylenes	(ug/L)		10	2	13	2 J	7.5	10000	0
Xylenes	(ug/L)		10	2	13	2 J	7.5	10000	0

Table 2. 42. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=BC AREA NAME=Exit Pathway Monitoring Location C

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		8	8	113	6.86	49.795	250	0
Fluoride	(mg/L)		8	6	0.23	0.12	0.186667	2	0
Nitrate Nitrogen	(mg/L)		8	8	76.1	3.41	28.00625	10	6
Sulfate	(mg/L)		8	8	39.3	7.64	24.58	250	0
Aluminum, ICAP	(mg/L)		8	6	4.3	0.03	0.8585	0.2	2
Aluminum, ICAP	(mg/L)	FILTERED	8	4	0.047	0.021	0.03375	0.2	0
Barium, ICAP	(mg/L)		8	8	0.31	0.051	0.153	2	0
Barium, ICAP	(mg/L)	FILTERED	8	8	0.31	0.046	0.14725	2	0
Beryllium, ICAP	(mg/L)		8	1	0.00036	0.00036	0.00036	0.004	0
Boron, ICAP	(mg/L)		8	8	0.078	0.015	0.039125	NR	NA
Boron, ICAP	(mg/L)	FILTERED	8	8	0.1	0.0081	0.043888	NR	NA
Calcium, ICAP	(mg/L)		8	8	190	61	114	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	8	8	190	61	113	NR	NA
Iron, ICAP	(mg/L)		8	8	10	0.081	1.991375	0.3	4
Iron, ICAP	(mg/L)	FILTERED	8	8	0.13	0.0068	0.049475	0.3	0
Lead, PMS	(mg/L)		8	2	0.0023	0.0011	0.0017	NR	NA
Lithium, ICAP	(mg/L)		8	8	0.02	0.0056	0.011913	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	8	8	0.021	0.0041	0.011475	NR	NA
Magnesium, ICAP	(mg/L)		8	8	43	24	33.875	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	8	8	43	24	33.625	NR	NA
Manganese, ICAP	(mg/L)		8	8	0.39	0.0082	0.105538	0.05	4
Manganese, ICAP	(mg/L)	FILTERED	8	7	0.38	0.0012	0.100871	0.05	3
Potassium, ICAP	(mg/L)		8	8	3.3	1.5	2.4	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	8	8	3.3	1.6	2.275	NR	NA
Silver, ICAP	(mg/L)		8	1	0.06	0.06	0.06	0.1	0
Silver, ICAP	(mg/L)	FILTERED	8	1	0.0069	0.0069	0.0069	0.1	0
Sodium, ICAP	(mg/L)		8	8	28	1.8	14.6875	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	8	8	27	1.8	14.525	NR	NA
Strontium, ICAP	(mg/L)		8	8	1.4	0.048	0.554125	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	8	8	1.3	0.048	0.553	NR	NA
Uranium, PMS	(mg/L)		8	4	0.0058	0.0021	0.003625	NR	NA
Uranium, PMS	(mg/L)	FILTERED	8	4	0.006	0.002	0.00365	NR	NA
Vanadium, ICAP	(mg/L)		8	1	0.0052	0.0052	0.0052	NR	NA
Zinc, ICAP	(mg/L)		8	8	0.025	0.0029	0.010863	5	0

Table 2.42 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Zinc, ICAP	(mg/L)	FILTERED	8	8	0.026	0.0021	0.008525	5	0
Conductivity, field measurement	(umhos/cm)		8	NA	1216	459	749.875	NR	NA
Dissolved Oxygen, field measurement	(ppm)		8	NA	3.9	1.2	2.5375	NR	NA
pH, field measurement	(pH)		8	NA	7.8	6.9	7.3	6.5/8.5	0
REDOX, field measurement	(mV)		8	NA	194	-6	125	NR	NA
Static Water Level	(ft - toc)		8	NA	-7.9	-71.96	-34.3988	NR	NA
Temperature, field measurement	(Deg C)		8	NA	15.3	12.7	14.325	NR	NA
Alkalinity as HCO3	(mg/L)		8	8	328	236	290.25	NR	NA
Conductivity	(umhos/cm)		8	8	1415	539	879.125	NR	NA
Dissolved Solids	(mg/L)		8	8	1122	315	579.75	500	5
pH	(pH)		8	8	7.42 L	7	7.215	6.5/8.5	0
Total Suspended Solids	(mg/L)		8	4	21	4	13.375	NR	NA
Turbidity	(NTU)		8	8	65.8	1.85	20.4375	1	8
Gross Alpha	(pCi/L)		8	8	3.9	-2.2	1.135	15 f	0
Gross Beta	(pCi/L)		8	8	47	9	24.5	50 a	0
1,2-Dichloroethene (Total)	(ug/L)		8	5	3 J	1 J	2.2	NR b	NA
2-Butanone	(ug/L)		8	3	7 BJ	3 J	5.333333	NR	NA
Acetone	(ug/L)		8	6	8 BJ	3 BJ	5	NR	NA
Carbon tetrachloride	(ug/L)		8	3	2 J	1 J	1.666667	5	0
Chloroform	(ug/L)		8	4	2 J	1 J	1.25	100 i	0
cis-1,2-Dichloroethene	(ug/L)		8	5	3 J	1 J	2.2	70	0
Iodomethane	(ug/L)		8	2	2 BJ	2 BJ	2	NR	NA
Methylene chloride	(ug/L)		8	1	2 J	2 J	2	5	0
Toluene	(ug/L)		8	2	5	5	5	1000	0
Trichloroethene	(ug/L)		8	8	73	7	40	5	8
Xylenes	(ug/L)		8	2	2 J	1 J	1.5	10000	0
Xylenes	(ug/L)		8	2	2 J	1 J	1.5	10000	0

Table 2. 43. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=BC AREA NAME=Exit Pathway Monitoring Location W

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		12	12	2020	9.3	528.0583	250	4
Fluoride	(mg/L)		12	10	1.73	0.14	0.884	2	0
Nitrate Nitrogen	(mg/L)		12	8	3.57	0.072	1.01375	10	0
Sulfate	(mg/L)		12	12	8970	6.54	1238.252	250	4
Aluminum, ICAP	(mg/L)		12	7	0.24	0.026	0.116286	0.2	2
Aluminum, ICAP	(mg/L)	FILTERED	12	6	0.23	0.025	0.087	0.2	1
Antimony, ICAP	(mg/L)		12	1	0.1	0.1	0.1	0.006	1
Arsenic, PMS	(mg/L)		12	5	0.055	0.008	0.0286	NR	NA
Arsenic, PMS	(mg/L)	FILTERED	12	5	0.063	0.0067	0.02954	NR	NA
Barium, ICAP	(mg/L)		12	12	0.08	0.0035	0.038675	2	0
Barium, ICAP	(mg/L)	FILTERED	12	12	0.069	0.0034	0.03675	2	0
Boron, ICAP	(mg/L)		12	11	1.2	0.023	0.313182	NR	NA
Boron, ICAP	(mg/L)	FILTERED	12	12	1.3	0.0058	0.295983	NR	NA
Calcium, ICAP	(mg/L)		12	12	600	51	212.25	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	12	12	590	54	211.4167	NR	NA
Chromium, ICAP	(mg/L)		12	2	1.4	0.069	0.7345	0.1	1
Cobalt, ICAP	(mg/L)		12	1	0.012	0.012	0.012	NR	NA
Copper, ICAP	(mg/L)		12	3	0.07	0.0053	0.0291	1	0
Copper, ICAP	(mg/L)	FILTERED	12	1	0.0041	0.0041	0.0041	1	0
Iron, ICAP	(mg/L)		12	12	23	0.21	6.935833	0.3	11
Iron, ICAP	(mg/L)	FILTERED	12	12	14	0.0054	3.15545	0.3	7
Lead, PMS	(mg/L)		12	2	0.0012	0.00073	0.000965	NR	NA
Lead, PMS	(mg/L)	FILTERED	12	1	0.00075	0.00075	0.00075	NR	NA
Lithium, ICAP	(mg/L)		12	10	0.7	0.0082	0.17264	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	12	10	0.7	0.0076	0.17098	NR	NA
Magnesium, ICAP	(mg/L)		12	12	200	12	77.75	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	12	12	210	12	78.5	NR	NA
Manganese, ICAP	(mg/L)		12	12	0.34	0.014	0.09875	0.05	4
Manganese, ICAP	(mg/L)	FILTERED	12	12	0.33	0.0054	0.0847	0.05	3
Nickel, ICAP	(mg/L)		12	3	0.4	0.028	0.182667	0.1 d	2
Nickel, ICAP	(mg/L)	FILTERED	12	2	0.11	0.068	0.089	0.1 d	1
Potassium, ICAP	(mg/L)		12	12	23	1.1	6.533333	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	12	12	25	1	6.616667	NR	NA
Silver, ICAP	(mg/L)		12	3	0.017	0.0069	0.0103	0.1	0
Silver, ICAP	(mg/L)	FILTERED	12	2	0.0084	0.0077	0.00805	0.1	0

Table 2.43 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Sodium, ICAP	(mg/L)		12	12	1200	3.3	235.2333	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	12	12	1200	3.3	235.3667	NR	NA
Strontium, ICAP	(mg/L)		12	12	12	0.086	3.846833	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	12	12	13	0.078	3.929333	NR	NA
Thallium, PMS	(mg/L)		12	2	0.0065	0.0014	0.00395	NR	NA
Thallium, PMS	(mg/L)	FILTERED	12	2	0.00094	0.00086	0.0009	NR	NA
Uranium, PMS	(mg/L)		12	6	0.0052	0.00055	0.002282	NR	NA
Uranium, PMS	(mg/L)	FILTERED	12	5	0.0032	0.00055	0.001712	NR	NA
Vanadium, ICAP	(mg/L)		12	1	0.0063	0.0063	0.0063	NR	NA
Zinc, ICAP	(mg/L)		12	10	0.088	0.0024	0.02089	5	0
Zinc, ICAP	(mg/L)	FILTERED	12	10	0.091	0.0023	0.02143	5	0
Conductivity, field measurement	(umhos/cm)		12	NA	7150	371	2131.667	NR	NA
Dissolved Oxygen, field measurement	(ppm)		12	NA	6	0.8	2.791667	NR	NA
pH, field measurement	(pH)		12	NA	8.1	6.7	7.441667	6.5/8.5	0
REDOX, field measurement	(mV)		12	NA	237	-145	0.75	NR	NA
Static Water Level	(ft - toc)		12	NA	-25.25	-67.7	-42.3242	NR	NA
Temperature, field measurement	(Deg C)		12	NA	17.5	12.7	14.525	NR	NA
Alkalinity as HCO3	(mg/L)		12	12	268	160	204.6667	NR	NA
Conductivity	(umhos/cm)		12	12	8390	457	2440.917	NR	NA
Dissolved Solids	(mg/L)		12	12	6110	260	1840.583	500	4
pH	(pH)		12	12	7.67 L	6.92 L	7.310833	6.5/8.5	0
Total Suspended Solids	(mg/L)		12	9	345	2	49.95556	NR	NA
Turbidity	(NTU)		12	12	175	2.76	49.28833	1	12
Iodine-129	(pCi/L)		12	12	24	-9.7 X	3.415	NR	NA
Radium - Total Alpha	(pCi/L)		12	12	8.6	-0.05	1.935833	5 g	1
Uranium-234	(pCi/L)		12	12	0.87	-0.08	0.37075	20	0
Uranium-235	(pCi/L)		12	12	0.11	-0.029	0.036167	24	0
Neptunium-237	(pCi/L)		12	12	0.1	-0.076	0.0135	1.2	0
Plutonium-238	(pCi/L)		12	12	0.28	-0.19	0.066	1.6	0
Uranium-238	(pCi/L)		12	12	1.3	-0.1	0.359083	24	0

Table 2.43 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Plutonium-239	(pCi/L)		12	12	0.24	-0.024	0.06275	1.2	0
Americium-241	(pCi/L)		12	12	0.3	-0.12	0.072	1.2	0
Strontium-89/90	(pCi/L)		12	12	2.8	-3.5	0.0275	8	0
Technetium-99	(pCi/L)		12	12	8.5	-11	-2.08333	4000	0
Gross Alpha	(pCi/L)		12	12	15	-100	-7.09167	15 f	0
Gross Beta	(pCi/L)		12	12	63	-52	-2.71167	50 a	1
Tritium	(pCi/L)		12	12	780	-200	99	20000	0
2-Butanone	(ug/L)		12	6	11 B	7 BJ	8.833333	NR	NA
Acetone	(ug/L)		12	5	10 B	1 J	4.6	NR	NA

Table 2. 44. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=BC AREA NAME=Exit Pathway Spring/Surface Water

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		20	20	103	4.45	28.368	250	0
Fluoride	(mg/L)		20	20	1.37	0.11	0.3135	2	0
Nitrate Nitrogen	(mg/L)		20	19	382	2.09	38.41947	10	12
Sulfate	(mg/L)		20	20	258	4.24	35.938	250	1
Aluminum, ICAP	(mg/L)		20	20	2	0.059	0.46185	0.2	11
Aluminum, ICAP	(mg/L)	FILTERED	20	18	0.14	0.022	0.056278	0.2	0
Barium, ICAP	(mg/L)		20	20	1.2	0.038	0.15405	2	0
Barium, ICAP	(mg/L)	FILTERED	20	20	1.2	0.033	0.15005	2	0
Boron, ICAP	(mg/L)		20	20	0.11	0.019	0.0496	NR	NA
Boron, ICAP	(mg/L)	FILTERED	20	20	0.12	0.018	0.0491	NR	NA
Cadmium, ICAP	(mg/L)		20	1	0.043	0.043	0.043	0.005	1
Cadmium, ICAP	(mg/L)	FILTERED	20	1	0.034	0.034	0.034	0.005	1
Calcium, ICAP	(mg/L)		20	20	520	28	100.9	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	20	20	490	28	98.55	NR	NA
Chromium, ICAP	(mg/L)	FILTERED	20	2	0.011	0.01	0.0105	0.1	0
Cobalt, ICAP	(mg/L)		20	1	0.013	0.013	0.013	NR	NA
Cobalt, ICAP	(mg/L)	FILTERED	20	1	0.012	0.012	0.012	NR	NA
Copper, ICAP	(mg/L)		20	1	0.0092	0.0092	0.0092	1	0
Copper, ICAP	(mg/L)	FILTERED	20	1	0.015	0.015	0.015	1	0
Iron, ICAP	(mg/L)		20	20	2	0.033	0.4014	0.3	9
Iron, ICAP	(mg/L)	FILTERED	20	18	0.14	0.006	0.0403	0.3	0
Lead, PMS	(mg/L)		20	4	0.0041	0.00083	0.002008	NR	NA
Lead, PMS	(mg/L)	FILTERED	20	2	0.0007	0.0007	0.0007	NR	NA
Lithium, ICAP	(mg/L)		20	19	0.024	0.0042	0.010321	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	20	19	0.024	0.0042	0.009489	NR	NA
Magnesium, ICAP	(mg/L)		20	20	62	5.8	15.33	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	20	20	59	5.5	15.025	NR	NA
Manganese, ICAP	(mg/L)		20	20	9.2	0.0036	0.561255	0.05	9
Manganese, ICAP	(mg/L)	FILTERED	20	20	8.3	0.0043	0.491845	0.05	5
Nickel, ICAP	(mg/L)		20	3	0.16	0.011	0.061333	0.1 d	1
Nickel, ICAP	(mg/L)	FILTERED	20	3	0.15	0.016	0.060667	0.1 d	1
Potassium, ICAP	(mg/L)		20	20	8.4	0.94	2.517	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	20	20	8.1	0.8	2.385	NR	NA
Silver, ICAP	(mg/L)		20	1	0.026	0.026	0.026	0.1	0

Table 2.44 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Silver, ICAP	(mg/L)	FILTERED	20	1	0.05	0.05	0.05	0.1	0
Sodium, ICAP	(mg/L)		20	20	78	3.1	14.35	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	20	20	75	3.2	14.14	NR	NA
Strontium, ICAP	(mg/L)		20	20	1.3	0.052	0.29065	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	20	20	1.2	0.053	0.28275	NR	NA
Uranium, PMS	(mg/L)		20	20	0.32	0.004	0.06705	NR	NA
Uranium, PMS	(mg/L)	FILTERED	20	20	0.35	0.004	0.06845	NR	NA
Zinc, ICAP	(mg/L)		20	19	0.043	0.0025	0.007826	5	0
Zinc, ICAP	(mg/L)	FILTERED	20	18	0.059	0.0025	0.016417	5	0
Conductivity, field measurement	(umhos/cm)		20	NA	3820	198	663.7	NR	NA
Dissolved Oxygen, field measurement	(ppm)		20	NA	11.7	3	8.09	NR	NA
pH, field measurement	(pH)		20	NA	8	6.5	7.365	6.5/8.5	0
REDOX, field measurement	(mV)		20	NA	244	26	184.45	NR	NA
Temperature, field measurement	(Deg C)		20	NA	24.4	10.3	15.515	NR	NA
Alkalinity as HCO3	(mg/L)		20	20	336	84	174.3	NR	NA
Conductivity	(umhos/cm)		20	20	3400	237	705.5	NR	NA
Dissolved Solids	(mg/L)		20	20	2858	133	509	500	5
pH	(pH)		20	20	8.21 L	6.82 L	7.537	6.5/8.5	0
Total Suspended Solids	(mg/L)		20	16	37	1	8.60625	NR	NA
Turbidity	(NTU)		20	20	22.4	1.31	9.3035	1	20
Iodine-129	(pCi/L)		1	1	-1	-1	-1	NR	NA
Radium - Total Alpha	(pCi/L)		1	1	-0.04	-0.04	-0.04	5 g	0
Thorium-228	(pCi/L)		1	1	-0.076	-0.076	-0.076	16	0
Thorium-230	(pCi/L)		1	1	0.068	0.068	0.068	12	0
Thorium-231+234	(pCi/L)		1	1	32	32	32	400	0
Thorium-232	(pCi/L)		1	1	0.036	0.036	0.036	2	0
Uranium-234	(pCi/L)		1	1	17	17	17	20	0
Uranium-235	(wt %)		1	1	0.39	0.39	0.39	NR	NA
Uranium-235	(pCi/L)		1	1	1.3	1.3	1.3	24	0
Neptunium-237	(pCi/L)		1	1	0.42	0.42	0.42	1.2	0

Table 2.44 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Plutonium-238	(pCi/L)		1	1	-0.002	-0.002	-0.002	1.6	0
Uranium-238	(pCi/L)		1	1	32	32	32	24	1
Plutonium-239	(pCi/L)		1	1	-0.02	-0.02	-0.02	1.2	0
Americium-241	(pCi/L)		1	1	0.064	0.064	0.064	1.2	0
Strontium-89/90	(pCi/L)		1	1	1.9	1.9	1.9	8	0
Technetium-99	(pCi/L)		1	1	450	450	450	4000	0
Gross Alpha	(pCi/L)		20	20	100	-2	25.21	15 f	13
Gross Beta	(pCi/L)		20	20	920	2.4	87.495	50 a	4
Tritium	(pCi/L)		1	1	110	110	110	20000	0
Uranium, Total	(mg/L)		1	1	0.11	0.11	0.11	NR	NA
1,2-Dichloroethene field measurement	(ug/L)		20	4	5	1 J	3.5	NR b	NA
2-Butanone	(ug/L)		20	7	9 BJ	3 BJ	5.714286	NR	NA
Acetone	(ug/L)		20	4	5 BJ	1 BJ	3.5	NR	NA
cis-1,2-Dichloroethene	(ug/L)		20	4	5	1 J	3.5	70	0
Ethanol	(ug/L)		20	1	6 J	6 J	6	NR	NA
Tetrachloroethene	(ug/L)		20	3	19	1 J	7.333333	5	1
Trichloroethene	(ug/L)		20	4	10	1 J	4.5	5	1

Table 2. 45. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=BC AREA NAME=Oil Landfarm WMA

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		8	8	38.7	0.92	11.5375	250	0
Fluoride	(mg/L)		8	4	0.48	0.17	0.315	2	0
Nitrate Nitrogen	(mg/L)		8	7	782	0.03	242.7471	10	6
Sulfate	(mg/L)		8	8	17.5	4.37	8.915875	250	0
Aluminum, ICAP	(mg/L)		8	6	18	0.22	3.528333	0.2	6
Aluminum, ICAP	(mg/L)	FILTERED	8	4	0.24	0.056	0.117	0.2	1
Barium, ICAP	(mg/L)		8	8	2.4	0.059	0.851125	2	1
Barium, ICAP	(mg/L)	FILTERED	8	8	2.3	0.055	0.8365	2	1
Beryllium, ICAP	(mg/L)		8	1	0.0011	0.0011	0.0011	0.004	0
Boron, ICAP	(mg/L)		8	8	0.3	0.0046	0.14445	NR	NA
Boron, ICAP	(mg/L)	FILTERED	8	7	0.3	0.0095	0.156071	NR	NA
Calcium, ICAP	(mg/L)		8	8	930	2.2	272.65	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	8	8	890	1.9	261.7625	NR	NA
Chromium, ICAP	(mg/L)		8	2	0.027	0.011	0.019	0.1	0
Cobalt, ICAP	(mg/L)		8	1	0.0078	0.0078	0.0078	NR	NA
Copper, ICAP	(mg/L)		8	2	0.015	0.0056	0.0103	1	0
Copper, ICAP	(mg/L)	FILTERED	8	1	0.02	0.02	0.02	1	0
Iron, ICAP	(mg/L)		8	7	9.1	0.034	1.679143	0.3	4
Iron, ICAP	(mg/L)	FILTERED	8	7	0.076	0.0052	0.0212	0.3	0
Lead, PMS	(mg/L)		8	4	0.0065	0.00055	0.00219	NR	NA
Lead, PMS	(mg/L)	FILTERED	8	1	0.0011	0.0011	0.0011	NR	NA
Lithium, ICAP	(mg/L)		8	8	0.07	0.014	0.039	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	8	8	0.069	0.014	0.038625	NR	NA
Magnesium, ICAP	(mg/L)		8	8	72	0.83	21.80375	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	8	8	69	0.7	20.98875	NR	NA
Manganese, ICAP	(mg/L)		8	6	0.14	0.0019	0.0343	0.05	1
Manganese, ICAP	(mg/L)	FILTERED	8	3	0.0075	0.0023	0.004333	0.05	0
Nickel, ICAP	(mg/L)		8	1	0.018	0.018	0.018	0.1 d	0
Potassium, ICAP	(mg/L)		8	8	8.9	1.4	3.425	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	8	8	5.7	1.2	3.1	NR	NA
Sodium, ICAP	(mg/L)		8	8	120	7.3	63.2375	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	8	8	120	7.4	63.3625	NR	NA
Strontium, ICAP	(mg/L)		8	8	3	0.084	1.12425	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	8	8	2.9	0.08	1.143375	NR	NA

Table 2.45 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Uranium, PMS	(mg/L)		8	4	0.0025	0.0012	0.001575	NR	NA
Uranium, PMS	(mg/L)	FILTERED	8	4	0.0015	0.0012	0.001325	NR	NA
Vanadium, ICAP	(mg/L)		8	1	0.011	0.011	0.011	NR	NA
Zinc, ICAP	(mg/L)		8	6	0.13	0.0027	0.03335	5	0
Zinc, ICAP	(mg/L)	FILTERED	8	6	0.13	0.0027	0.0282	5	0
Conductivity, field measurement	(umhos/cm)		8	NA	4310	39	958.5	NR	NA
Dissolved Oxygen, field measurement	(ppm)		8	NA	8.1	1.8	4.825	NR	NA
pH, field measurement	(pH)		8	NA	9.2	6.6	7.5875	6.5/8.5	2
REDOX, field measurement	(mV)		8	NA	258	82	177.5	NR	NA
Static Water Level	(ft - toc)		8	NA	-4	-15.22	-9.0225	NR	NA
Temperature, field measurement	(Deg C)		8	NA	18.6	11.2	15.7	NR	NA
Alkalinity as CO3	(mg/L)		8	2	40	16	28	NR	NA
Alkalinity as HCO3	(mg/L)		8	8	288	162	204.5	NR	NA
Conductivity	(umhos/cm)		8	8	5800	383	1850.625	NR	NA
Dissolved Solids	(mg/L)		8	8	4827	240	1526.5	500	5
pH	(pH)		8	8	9.14 L	6.67 L	7.8	6.5/8.5	3
Total Suspended Solids	(mg/L)		8	5	580	2	168.88	NR	NA
Turbidity	(NTU)		8	8	324	0.509	57.88363	1	7
Iodine-129	(pCi/L)		2	2	9.9	-3	3.45	NR	NA
Radium - Total Alpha	(pCi/L)		2	2	0.42	-0.03	0.195	5 g	0
Uranium-234	(pCi/L)		2	2	0.28	0.053	0.1665	20	0
Uranium-235	(pCi/L)		2	2	0.051	-0.075	-0.012	24	0
Neptunium-237	(pCi/L)		2	2	-0.011	-0.071	-0.041	1.2	0
Plutonium-238	(pCi/L)		2	2	0.059	0.007	0.033	1.6	0
Uranium-238	(pCi/L)		2	2	0.17	0.041	0.1055	24	0
Plutonium-239	(pCi/L)		2	2	0.031	-0.043	-0.006	1.2	0
Americium-241	(pCi/L)		2	2	0.21	0.14	0.175	1.2	0
Strontium-89/90	(pCi/L)		2	2	2.6	-0.3	1.15	8	0
Technetium-99	(pCi/L)		2	2	0	-3	-1.5	4000	0
Gross Alpha	(pCi/L)		8	8	18	-2.6	2.3625	15 f	1

Table 2.45 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Gross Beta	(pCi/L)		8	8	550	-2.3	132.5125	50 a	2
Tritium	(pCi/L)		2	2	140	-60	40	20000	0
2-Butanone	(ug/L)		8	2	6 BJ	5 BJ	5.5	NR	NA
Acetone	(ug/L)		8	5	6 BJ	2 BJ	3.8	NR	NA
Benzene	(ug/L)		8	1	2 J	2 J	2	5	0
Chlorobenzene	(ug/L)		8	1	1 J	1 J	1	100	0
Chloroform	(ug/L)		8	3	2 J	2 J	2	100 i	0
Toluene	(ug/L)		8	1	2 J	2 J	2	1000	0

Table 2. 46. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=BC AREA NAME=Rust Spoil Area

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		2	2	1.98	1.93	1.955	250	0
Fluoride	(mg/L)		2	1	0.11	0.11	0.11	2	0
Nitrate Nitrogen	(mg/L)		2	2	0.45	0.33	0.39	10	0
Sulfate	(mg/L)		2	2	3.74	3.14	3.44	250	0
Aluminum, ICAP	(mg/L)		2	2	11	0.088	5.544	0.2	1
Aluminum, ICAP	(mg/L)	FILTERED	2	2	0.064	0.029	0.0465	0.2	0
Barium, ICAP	(mg/L)		2	2	0.046	0.02	0.033	2	0
Barium, ICAP	(mg/L)	FILTERED	2	2	0.02	0.019	0.0195	2	0
Beryllium, ICAP	(mg/L)		2	1	0.00091	0.00091	0.00091	0.004	0
Boron, ICAP	(mg/L)		2	2	0.0066	0.0056	0.0061	NR	NA
Boron, ICAP	(mg/L)	FILTERED	2	1	0.0048	0.0048	0.0048	NR	NA
Calcium, ICAP	(mg/L)		2	2	110	81	95.5	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	91	79	85	NR	NA
Chromium, ICAP	(mg/L)		2	1	0.087	0.087	0.087	0.1	0
Cobalt, ICAP	(mg/L)		2	1	0.013	0.013	0.013	NR	NA
Copper, ICAP	(mg/L)		2	1	0.096	0.096	0.096	1	0
Iron, ICAP	(mg/L)		2	2	17	0.15	8.575	0.3	1
Iron, ICAP	(mg/L)	FILTERED	2	2	0.032	0.0057	0.01885	0.3	0
Lead, PMS	(mg/L)		2	2	0.13	0.00096	0.06548	NR	NA
Lead, PMS	(mg/L)	FILTERED	2	1	0.00061	0.00061	0.00061	NR	NA
Lithium, ICAP	(mg/L)		2	1	0.016	0.016	0.016	NR	NA
Magnesium, ICAP	(mg/L)		2	2	7.6	6.1	6.85	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	2	6.1	5.9	6	NR	NA
Manganese, ICAP	(mg/L)		2	2	0.51	0.0058	0.2579	0.05	1
Manganese, ICAP	(mg/L)	FILTERED	2	2	0.0049	0.0021	0.0035	0.05	0
Nickel, ICAP	(mg/L)		2	1	0.065	0.065	0.065	0.1 d	0
Potassium, ICAP	(mg/L)		2	2	3.2	1.7	2.45	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	2	2	1.7	1.6	1.65	NR	NA
Sodium, ICAP	(mg/L)		2	2	2.5	2.3	2.4	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	2.4	2.3	2.35	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.092	0.076	0.084	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	0.08	0.075	0.0775	NR	NA
Uranium, PMS	(mg/L)		2	1	0.0012	0.0012	0.0012	NR	NA

Table 2.46 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Uranium, PMS	(mg/L)	FILTERED	2	1	0.00086	0.00086	0.00086	NR	NA
Vanadium, ICAP	(mg/L)		2	1	0.024	0.024	0.024	NR	NA
Zinc, ICAP	(mg/L)		2	2	0.15	0.0066	0.0783	5	0
Zinc, ICAP	(mg/L)	FILTERED	2	2	0.019	0.0042	0.0116	5	0
Conductivity, field measurement	(umhos/cm)		2	NA	425	268	346.5	NR	NA
Dissolved Oxygen, field measurement	(ppm)		2	NA	6.4	3.9	5.15	NR	NA
pH, field measurement	(pH)		2	NA	7.2	7	7.1	6.5/8.5	0
REDOX, field measurement	(mV)		2	NA	224	168	196	NR	NA
Static Water Level	(ft - toc)		2	NA	-20.58	-39.7	-30.14	NR	NA
Temperature, field measurement	(Deg C)		2	NA	15	14.7	14.85	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	232	222	227	NR	NA
Conductivity	(umhos/cm)		2	2	453	424	438.5	NR	NA
Dissolved Solids	(mg/L)		2	2	266	245	255.5	500	0
pH	(pH)		2	2	7.53 L	7.43	7.48	6.5/8.5	0
Total Suspended Solids	(mg/L)		2	1	39	39	39	NR	NA
Turbidity	(NTU)		2	2	6.05	4	5.025	1	2
Gross Alpha	(pCi/L)		2	2	5	1.4	3.2	15 f	0
Gross Beta	(pCi/L)		2	2	14	6	10	50 a	0
2-Butanone	(ug/L)		2	1	6 BJ	6 BJ	6	NR	NA
Acetone	(ug/L)		2	2	18 B	7 BJ	12.5	NR	NA
Carbon tetrachloride	(ug/L)		2	2	1 J	1 J	1	5	0
Chloroform	(ug/L)		2	1	1 J	1 J	1	100 i	0
Trichloroethene	(ug/L)		2	2	12	10	11	5	2

Table 2. 47. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=BC AREA NAME=S-3 Site

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		2	2	264	174	219	250	1
Fluoride	(mg/L)		2	2	5.3	4.27	4.785	2	2
Nitrate Nitrogen	(mg/L)		2	2	125	110	117.5	10	2
Sulfate	(mg/L)		2	2	73.4	33	53.2	250	0
Aluminum, ICAP	(mg/L)		2	2	11	11	11	0.2	2
Aluminum, ICAP	(mg/L)	FILTERED	2	2	10	9.2	9.6	0.2	2
Barium, ICAP	(mg/L)		2	2	0.42	0.4	0.41	2	0
Barium, ICAP	(mg/L)	FILTERED	2	2	0.41	0.4	0.405	2	0
Beryllium, ICAP	(mg/L)		2	2	0.0082	0.0081	0.00815	0.004	2
Beryllium, ICAP	(mg/L)	FILTERED	2	2	0.008	0.0079	0.00795	0.004	2
Boron, ICAP	(mg/L)		2	2	0.043	0.031	0.037	NR	NA
Boron, ICAP	(mg/L)	FILTERED	2	2	0.047	0.041	0.044	NR	NA
Cadmium, ICAP	(mg/L)		2	2	0.042	0.039	0.0405	0.005	2
Cadmium, ICAP	(mg/L)	FILTERED	2	2	0.041	0.039	0.04	0.005	2
Calcium, ICAP	(mg/L)		2	2	140	100	120	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	140	110	125	NR	NA
Cobalt, ICAP	(mg/L)		2	2	0.17	0.15	0.16	NR	NA
Cobalt, ICAP	(mg/L)	FILTERED	2	2	0.17	0.14	0.155	NR	NA
Copper, ICAP	(mg/L)		2	2	0.023	0.018	0.0205	1	0
Copper, ICAP	(mg/L)	FILTERED	2	2	0.021	0.016	0.0185	1	0
Iron, ICAP	(mg/L)		2	2	0.34	0.15	0.245	0.3	1
Iron, ICAP	(mg/L)	FILTERED	2	1	0.031	0.031	0.031	0.3	0
Lead, PMS	(mg/L)		2	2	0.003	0.0028	0.0029	NR	NA
Lead, PMS	(mg/L)	FILTERED	2	2	0.0031	0.0023	0.0027	NR	NA
Lithium, ICAP	(mg/L)		2	2	0.031	0.027	0.029	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	2	2	0.03	0.027	0.0285	NR	NA
Magnesium, ICAP	(mg/L)		2	2	23	20	21.5	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	2	24	21	22.5	NR	NA
Manganese, ICAP	(mg/L)		2	2	7.9	7.4	7.65	0.05	2
Manganese, ICAP	(mg/L)	FILTERED	2	2	7.9	7.4	7.65	0.05	2
Nickel, ICAP	(mg/L)		2	2	0.44	0.4	0.42	0.1 d	2
Nickel, ICAP	(mg/L)	FILTERED	2	2	0.44	0.39	0.415	0.1 d	2
Potassium, ICAP	(mg/L)		2	2	13	11	12	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	2	2	12	11	11.5	NR	NA

Table 2.47 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Sodium, ICAP	(mg/L)		2	2	82	81	81.5	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	83	80	81.5	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.33	0.26	0.295	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	0.35	0.27	0.31	NR	NA
Thallium, PMS	(mg/L)		2	1	0.00094	0.00094	0.00094	NR	NA
Thallium, PMS	(mg/L)	FILTERED	2	1	0.0012	0.0012	0.0012	NR	NA
Uranium, PMS	(mg/L)		2	2	1.3	0.78	1.04	NR	NA
Uranium, PMS	(mg/L)	FILTERED	2	2	1.3	0.77	1.035	NR	NA
Zinc, ICAP	(mg/L)		2	2	0.14	0.13	0.135	5	0
Zinc, ICAP	(mg/L)	FILTERED	2	2	0.14	0.12	0.13	5	0
Conductivity, field measurement	(umhos/cm)		2	NA	1504	1380	1442	NR	NA
Dissolved Oxygen, field measurement	(ppm)		2	NA	4.2	1.8	3	NR	NA
pH, field measurement	(pH)		2	NA	4.7	4.5	4.6	6.5/8.5	2
REDOX, field measurement	(mV)		2	NA	302	288	295	NR	NA
Static Water Level	(ft - toc)		2	NA	-5	-6.95	-5.975	NR	NA
Temperature, field measurement	(Deg C)		2	NA	21	14.5	17.75	NR	NA
Alkalinity as HCO3	(mg/L)		2	1	16	16	16	NR	NA
Conductivity	(umhos/cm)		2	2	1547	1517	1532	NR	NA
Dissolved Solids	(mg/L)		2	2	1297	1100 h	1198.5	500	2
pH	(pH)		2	2	4.76 L	4.18	4.47	6.5/8.5	2
Total Suspended Solids	(mg/L)		2	2	12	3.6 X	7.8	NR	NA
Turbidity	(NTU)		2	2	11	10.1	10.55	1	2
Iodine-129	(pCi/L)		2	2	5.1	3	4.05	NR	NA
Radium - Total Alpha	(pCi/L)		2	2	5.4	0.94	3.17	5 g	1
Uranium-234	(pCi/L)		2	2	190	19	104.5	20	1
Uranium-235	(pCi/L)		2	2	8.8	1.2	5	24	0
Neptunium-237	(pCi/L)		2	2	20	19	19.5	1.2	2
Plutonium-238	(pCi/L)		2	2	0.11	0.008	0.059	1.6	0
Uranium-238	(pCi/L)		2	2	410	46	228	24	2
Plutonium-239	(pCi/L)		2	2	0	0	0	1.2	0

Table 2.47 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Americium-241	(pCi/L)		2	2	0.25	0.12	0.185	1.2	0
Strontium-89/90	(pCi/L)		2	2	3.6	1.4	2.5	8	0
Technetium-99	(pCi/L)		2	2	920	760	840	4000	0
Gross Alpha	(pCi/L)		2	2	360	340	350	15 f	2
Gross Beta	(pCi/L)		2	2	790	680	735	50 a	2
Tritium	(pCi/L)		2	2	170	80	125	20000	0
2-Butanone	(ug/L)		2	1	2 J	2 J	2	NR	NA
Acetone	(ug/L)		2	1	4 BJ	4 BJ	4	NR	NA
Chloroform	(ug/L)		2	1	1 J	1 J	1	100 i	0
Tetrachloroethene	(ug/L)		2	2	24	23	23.5	5	2

Table 2. 48. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=BC AREA NAME=Spoil Area I

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		2	2	14.5	2.57	8.535	250	0
Nitrate Nitrogen	(mg/L)		2	2	11.4	2.24	6.82	10	1
Sulfate	(mg/L)		2	2	39.7	5.59	22.645	250	0
Aluminum, ICAP	(mg/L)		2	1	0.049	0.049	0.049	0.2	0
Aluminum, ICAP	(mg/L)	FILTERED	2	1	0.044	0.044	0.044	0.2	0
Barium, ICAP	(mg/L)		2	2	0.052	0.035	0.0435	2	0
Barium, ICAP	(mg/L)	FILTERED	2	2	0.05	0.036	0.043	2	0
Boron, ICAP	(mg/L)		2	2	0.01	0.008	0.009	NR	NA
Boron, ICAP	(mg/L)	FILTERED	2	1	0.01	0.01	0.01	NR	NA
Calcium, ICAP	(mg/L)		2	2	120	86	103	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	120	86	103	NR	NA
Iron, ICAP	(mg/L)		2	1	0.011	0.011	0.011	0.3	0
Iron, ICAP	(mg/L)	FILTERED	2	1	0.0067	0.0067	0.0067	0.3	0
Magnesium, ICAP	(mg/L)		2	2	16	12	14	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	2	16	11	13.5	NR	NA
Manganese, ICAP	(mg/L)		2	1	0.0016	0.0016	0.0016	0.05	0
Manganese, ICAP	(mg/L)	FILTERED	2	2	0.0025	0.0018	0.00215	0.05	0
Potassium, ICAP	(mg/L)		2	2	3.6	1.9	2.75	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	2	2	3.5	1.8	2.65	NR	NA
Sodium, ICAP	(mg/L)		2	2	7.9	1.5	4.7	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	7.7	1.6	4.65	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.2	0.1	0.15	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	0.19	0.1	0.145	NR	NA
Uranium, PMS	(mg/L)		2	1	0.0019	0.0019	0.0019	NR	NA
Uranium, PMS	(mg/L)	FILTERED	2	1	0.002	0.002	0.002	NR	NA
Zinc, ICAP	(mg/L)		2	2	0.023	0.0032	0.0131	5	0
Zinc, ICAP	(mg/L)	FILTERED	2	2	0.021	0.0048	0.0129	5	0
Conductivity, field measurement	(umhos/cm)		2	NA	521	369	445	NR	NA
Dissolved Oxygen, field measurement	(ppm)		2	NA	6.5	3.2	4.85	NR	NA
pH, field measurement	(pH)		2	NA	6.9	6.3	6.6	6.5/8.5	1
REDOX, field measurement	(mV)		2	NA	237	165	201	NR	NA
Static Water Level	(ft - toc)		2	NA	-44.64	-61.58	-53.11	NR	NA

Table 2.48 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Temperature, field measurement	(Deg C)		2	NA	17.2	14.7	15.95	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	262	242	252	NR	NA
Conductivity	(umhos/cm)		2	2	652	515	583.5	NR	NA
Dissolved Solids	(mg/L)		2	2	403	292	347.5	500	0
pH	(pH)		2	2	7.35	6.99 L	7.17	6.5/8.5	0
Turbidity	(NTU)		2	2	0.166	0.146	0.156	1	0
Gross Alpha	(pCi/L)		2	2	2.3	1.1	1.7	15 f	0
Gross Beta	(pCi/L)		2	2	25	4.4	14.7	50 a	0
1,2-Dichloroethene (Total)	(ug/L)		2	2	5	4 J	4.5	NR b	NA
2-Butanone	(ug/L)		2	1	3 J	3 J	3	NR	NA
Acetone	(ug/L)		2	1	47	47	47	NR	NA
Chloroform	(ug/L)		2	1	1 J	1 J	1	100 i	0
cis-1,2-Dichloroethene	(ug/L)		2	2	5	4 J	4.5	70	0
Tetrachloroethene	(ug/L)		2	2	19	14	16.5	5	2
Trichloroethene	(ug/L)		2	2	7	6	6.5	5	2

Table 2. 49. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=CR AREA NAME=C. Ridge Borrow Area Waste Pile

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		2	2	0.93	0.88	0.905	250	0
Nitrate Nitrogen	(mg/L)		2	2	0.398	0.34	0.369	10	0
Sulfate	(mg/L)		2	2	2.52	2.09	2.305	250	0
Aluminum, ICAP	(mg/L)		2	2	0.24	0.069	0.1545	0.2	1
Aluminum, ICAP	(mg/L)	FILTERED	2	2	0.049	0.022	0.0355	0.2	0
Barium, ICAP	(mg/L)		2	2	0.021	0.019	0.02	2	0
Barium, ICAP	(mg/L)	FILTERED	2	2	0.021	0.019	0.02	2	0
Boron, ICAP	(mg/L)		2	2	0.0095	0.0089	0.0092	NR	NA
Boron, ICAP	(mg/L)	FILTERED	2	2	0.011	0.011	0.011	NR	NA
Calcium, ICAP	(mg/L)		2	2	35	32	33.5	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	33	30	31.5	NR	NA
Copper, ICAP	(mg/L)		2	1	0.0083	0.0083	0.0083	1	0
Copper, ICAP	(mg/L)	FILTERED	2	1	0.016	0.016	0.016	1	0
Iron, ICAP	(mg/L)		2	2	0.55	0.11	0.33	0.3	1
Iron, ICAP	(mg/L)	FILTERED	2	1	0.025	0.025	0.025	0.3	0
Lead, PMS	(mg/L)		2	2	0.0023	0.002	0.00215	NR	NA
Lead, PMS	(mg/L)	FILTERED	2	2	0.0016	0.00057	0.001085	NR	NA
Magnesium, ICAP	(mg/L)		2	2	23	20	21.5	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	2	22	21	21.5	NR	NA
Manganese, ICAP	(mg/L)		2	2	0.017	0.0047	0.01085	0.05	0
Manganese, ICAP	(mg/L)	FILTERED	2	2	0.0016	0.0013	0.00145	0.05	0
Nickel, ICAP	(mg/L)	FILTERED	2	1	0.015	0.015	0.015	0.1 d	0
Potassium, ICAP	(mg/L)		2	1	0.61	0.61	0.61	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	2	2	0.94	0.61	0.775	NR	NA
Sodium, ICAP	(mg/L)		2	2	0.66	0.47	0.565	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	0.65	0.55	0.6	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.02	0.018	0.019	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	0.019	0.018	0.0185	NR	NA
Zinc, ICAP	(mg/L)		2	2	0.04	0.0029	0.02145	5	0
Zinc, ICAP	(mg/L)	FILTERED	2	2	0.046	0.0036	0.0248	5	0
Conductivity, field measurement	(umhos/cm)		2	NA	283	263	273	NR	NA

Table 2.49 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Dissolved Oxygen, field measurement	(ppm)		2	NA	9	7.3	8.15	NR	NA
pH, field measurement	(pH)		2	NA	7.8	6.5	7.15	6.5/8.5	0
REDOX, field measurement	(mV)		2	NA	214	186	200	NR	NA
Static Water Level	(ft - toc)		2	NA	-125.96	-126.86	-126.41	NR	NA
Temperature, field measurement	(Deg C)		2	NA	16.3	8.6	12.45	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	182	170	176	NR	NA
Conductivity	(umhos/cm)		2	2	330	304	317	NR	NA
Dissolved Solids	(mg/L)		2	2	174 X	171	172.5	500	0
pH	(pH)		2	2	8.08	7.88 L	7.98	6.5/8.5	0
Total Suspended Solids	(mg/L)		2	2	14	3	8.5	NR	NA
Turbidity	(NTU)		2	2	17	3.32	10.16	1	2
Gross Alpha	(pCi/L)		2	2	1.6	0.43	1.015	15 f	0
Gross Beta	(pCi/L)		2	2	4	-1.9	1.05	50 a	0
2-Butanone	(ug/L)		2	1	7 BJ	7 BJ	7	NR	NA
Acetone	(ug/L)		2	1	12 B	12 B	12	NR	NA
Chloroform	(ug/L)		2	1	1 J	1 J	1	100 i	0

Table 2. 50. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=CR AREA NAME=C. Ridge Security Pits

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		4	4	1.73	0.694	1.181	250	0
Nitrate Nitrogen	(mg/L)		4	4	1.3	0.04	0.653	10	0
Sulfate	(mg/L)		4	4	2.89	2.22	2.505	250	0
Aluminum, ICAP	(mg/L)		4	3	0.077	0.037	0.053667	0.2	0
Aluminum, ICAP	(mg/L)	FILTERED	4	2	0.11	0.044	0.077	0.2	0
Barium, ICAP	(mg/L)		4	4	0.019	0.012	0.01525	2	0
Barium, ICAP	(mg/L)	FILTERED	4	4	0.019	0.012	0.0155	2	0
Boron, ICAP	(mg/L)		4	4	0.013	0.0073	0.010825	NR	NA
Boron, ICAP	(mg/L)	FILTERED	4	3	0.018	0.0093	0.013767	NR	NA
Calcium, ICAP	(mg/L)		4	4	42	37	39.25	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	4	4	41	36	39.75	NR	NA
Copper, ICAP	(mg/L)	FILTERED	4	1	0.0069	0.0069	0.0069	1	0
Iron, ICAP	(mg/L)		4	4	0.14	0.012	0.04675	0.3	0
Iron, ICAP	(mg/L)	FILTERED	4	3	0.09	0.0099	0.0373	0.3	0
Lead, PMS	(mg/L)		4	3	0.0032	0.0015	0.0022	NR	NA
Lead, PMS	(mg/L)	FILTERED	4	3	0.0021	0.00052	0.001407	NR	NA
Magnesium, ICAP	(mg/L)		4	4	25	22	23.75	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	4	4	26	22	24.25	NR	NA
Manganese, ICAP	(mg/L)		4	2	0.087	0.019	0.053	0.05	1
Manganese, ICAP	(mg/L)	FILTERED	4	3	0.071	0.0015	0.029833	0.05	1
Potassium, ICAP	(mg/L)		4	4	1.7	0.81	1.1775	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	4	4	1.6	0.79	1.0825	NR	NA
Sodium, ICAP	(mg/L)		4	4	0.75	0.43	0.6075	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	4	4	0.75	0.43	0.5825	NR	NA
Strontium, ICAP	(mg/L)		4	4	0.026	0.013	0.0185	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	4	4	0.024	0.014	0.018	NR	NA
Thallium, PMS	(mg/L)		4	1	0.00087	0.00087	0.00087	NR	NA
Thallium, PMS	(mg/L)	FILTERED	4	1	0.00068	0.00068	0.00068	NR	NA
Uranium, PMS	(mg/L)		4	2	0.00078	0.00072	0.00075	NR	NA
Uranium, PMS	(mg/L)	FILTERED	4	1	0.00058	0.00058	0.00058	NR	NA
Zinc, ICAP	(mg/L)		4	3	0.021	0.0049	0.011967	5	0
Zinc, ICAP	(mg/L)	FILTERED	4	4	0.029	0.0021	0.01235	5	0

Table 2.50 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Conductivity, field measurement	(umhos/cm)		4	NA	342	314	328.25	NR	NA
Dissolved Oxygen, field measurement	(ppm)		4	NA	7.5	3.8	6.1	NR	NA
pH, field measurement	(pH)		4	NA	7.8	6.5	7.2	6.5/8.5	0
REDOX, field measurement	(mV)		4	NA	225	128	179.5	NR	NA
Static Water Level	(ft - toc)		4	NA	-123.95	-163.76	-143.265	NR	NA
Temperature, field measurement	(Deg C)		4	NA	16.4	11.2	13.875	NR	NA
Alkalinity as HCO3	(mg/L)		4	4	206	200	202.5	NR	NA
Conductivity	(umhos/cm)		4	4	385	371	378.5	NR	NA
Dissolved Solids	(mg/L)		4	4	484	186	272	500	0
pH	(pH)		4	4	7.91 L	7.48	7.6875	6.5/8.5	0
Total Suspended Solids	(mg/L)		4	1	5.6	5.6	5.6	NR	NA
Turbidity	(NTU)		4	4	4.79	0.211	1.62375	1	2
Gross Alpha	(pCi/L)		4	4	2.7	0.07	1.18	15 f	0
Gross Beta	(pCi/L)		4	4	4.7	0.6	2.875	50 a	0
1,2-Dichloroethene (Total)	(ug/L)		4	2	10	9	9.5	NR b	NA
2-Butanone	(ug/L)		4	2	10 BJ	8 BJ	9	NR	NA
Acetone	(ug/L)		4	2	10 BJ	5 BJ	7.5	NR	NA
cis-1,2-Dichloroethene	(ug/L)		4	2	10	9	9.5	70	0
Tetrachloroethene	(ug/L)		4	2	13	12	12.5	5	2
Trichloroethene	(ug/L)		4	2	1 J	1 J	1	5	0
Trichlorofluoromethane	(ug/L)		4	2	5 J	5 J	5	NR	NA

Table 2. 51. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=CR AREA NAME=C. Ridge Sediment Disposal Basin

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		32	32	3.2	0.6	1.265469	250	0
Nitrate Nitrogen	(mg/L)		32	32	0.48	0.16	0.26675	10	0
Sulfate	(mg/L)		32	32	11.6	1.47	6.342188	250	0
Aluminum, ICAP	(mg/L)		32	22	10	0.031	1.548136	0.2	8
Aluminum, ICAP	(mg/L)	FILTERED	32	18	0.2	0.023	0.059222	0.2	0
Arsenic, PMS	(mg/L)		32	1	0.012	0.012	0.012	NR	NA
Barium, ICAP	(mg/L)		32	32	0.11	0.0029	0.027075	2	0
Barium, ICAP	(mg/L)	FILTERED	32	32	0.046	0.0029	0.021259	2	0
Beryllium, ICAP	(mg/L)		32	6	0.0012	0.00037	0.000775	0.004	0
Boron, ICAP	(mg/L)		32	29	0.066	0.0041	0.021631	NR	NA
Boron, ICAP	(mg/L)	FILTERED	32	28	0.24	0.0043	0.022436	NR	NA
Calcium, ICAP	(mg/L)		32	32	210	11	43.90625	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	32	32	71	10	37.5625	NR	NA
Cobalt, ICAP	(mg/L)		32	1	0.0073	0.0073	0.0073	NR	NA
Copper, ICAP	(mg/L)		32	4	0.029	0.0045	0.011575	1	0
Copper, ICAP	(mg/L)	FILTERED	32	2	0.019	0.0045	0.01175	1	0
Iron, ICAP	(mg/L)		32	31	12	0.0055	0.652945	0.3	7
Iron, ICAP	(mg/L)	FILTERED	32	29	0.34	0.0053	0.029876	0.3	1
Lead, PMS	(mg/L)		32	23	0.044	0.0009	0.004263	NR	NA
Lead, PMS	(mg/L)	FILTERED	32	16	0.0046	0.00053	0.001461	NR	NA
Lithium, ICAP	(mg/L)		32	12	0.036	0.0042	0.019917	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	32	10	0.039	0.0041	0.02192	NR	NA
Magnesium, ICAP	(mg/L)		32	32	120	12	28.03125	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	32	32	44	11	24.96875	NR	NA
Manganese, ICAP	(mg/L)		32	22	0.28	0.0015	0.018345	0.05	1
Manganese, ICAP	(mg/L)	FILTERED	32	16	0.015	0.001	0.002781	0.05	0
Molybdenum, ICAP	(mg/L)	FILTERED	32	1	0.011	0.011	0.011	NR	NA
Nickel, ICAP	(mg/L)		32	1	0.027	0.027	0.027	0.1 d	0
Potassium, ICAP	(mg/L)		32	32	38	1.2	11.14375	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	32	32	39	1.3	11.38125	NR	NA
Sodium, ICAP	(mg/L)		32	32	19	0.5	4.513125	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	32	32	17	0.47	4.49875	NR	NA
Strontium, ICAP	(mg/L)		32	32	0.23	0.0047	0.046175	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	32	32	0.13	0.0045	0.0358	NR	NA

Table 2.51 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Thallium, PMS	(mg/L)		32	1	0.00066	0.00066	0.00066	NR	NA
Uranium, PMS	(mg/L)		32	22	0.0067	0.00054	0.00212	NR	NA
Uranium, PMS	(mg/L)	FILTERED	32	16	0.0029	0.0011	0.001675	NR	NA
Vanadium, ICAP	(mg/L)		32	1	0.025	0.025	0.025	NR	NA
Zinc, ICAP	(mg/L)		32	25	0.18	0.0021	0.014824	5	0
Zinc, ICAP	(mg/L)	FILTERED	32	21	0.02	0.002	0.008133	5	0
Conductivity, field measurement	(umhos/cm)		32	NA	700	229	382.375	NR	NA
Dissolved Oxygen, field measurement	(ppm)		32	NA	9.8	2.5	6.381563	NR	NA
pH, field measurement	(pH)		32	NA	10.7	6.9	8.24375	6.5/8.5	8
REDOX, field measurement	(mV)		32	NA	294	102	206.7188	NR	NA
Static Water Level	(ft - toc)		32	NA	-116.74	-157.86	-137.864	NR	NA
Temperature, field measurement	(Deg C)		32	NA	15.6	11.1	13.79375	NR	NA
Alkalinity as CO3	(mg/L)		32	7	96	16	51.42857	NR	NA
Alkalinity as HCO3	(mg/L)		32	32	366	58	197.125	NR	NA
Conductivity	(umhos/cm)		32	32	676	216	392.1563	NR	NA
Dissolved Solids	(mg/L)		32	32	526	118	229.9063	500	1
pH	(pH)		32	32	10.13 L	7.2 L	8.15125	6.5/8.5	8
Total Suspended Solids	(mg/L)		32	23	391	1	37.3913	NR	NA
Turbidity	(NTU)		32	32	146	0.183	20.91413	1	23

Table 2. 52. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=CR AREA NAME=Const./Debris Landfill VI

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		7	7	13.6	0.7	4.511429	250	0
Nitrate Nitrogen	(mg/L)		7	7	0.87	0.06	0.359286	10	0
Sulfate	(mg/L)		7	7	10.6	1.56	5.485714	250	0
Aluminum, ICAP	(mg/L)		7	4	0.31	0.025	0.11225	0.2	1
Aluminum, ICAP	(mg/L)	FILTERED	7	4	0.043	0.027	0.03325	0.2	0
Barium, ICAP	(mg/L)		7	7	0.018	0.0077	0.010314	2	0
Barium, ICAP	(mg/L)	FILTERED	7	7	0.017	0.0077	0.0104	2	0
Boron, ICAP	(mg/L)		7	7	0.02	0.011	0.014714	NR	NA
Boron, ICAP	(mg/L)	FILTERED	7	7	0.029	0.01	0.017571	NR	NA
Calcium, ICAP	(mg/L)		7	7	48	27	38.57143	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	7	7	49	27	39	NR	NA
Copper, ICAP	(mg/L)		7	1	0.0041	0.0041	0.0041	1	0
Iron, ICAP	(mg/L)		7	7	0.34	0.0052	0.093029	0.3	1
Iron, ICAP	(mg/L)	FILTERED	7	7	0.044	0.0063	0.014829	0.3	0
Lead, PMS	(mg/L)		7	2	0.00082	0.00051	0.000665	NR	NA
Magnesium, ICAP	(mg/L)		7	7	28	12	22.42857	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	7	7	29	13	22.85714	NR	NA
Manganese, ICAP	(mg/L)		7	4	0.11	0.0017	0.029525	0.05	1
Manganese, ICAP	(mg/L)	FILTERED	7	2	0.11	0.0029	0.05645	0.05	1
Potassium, ICAP	(mg/L)		7	7	2.3	0.76	1.305714	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	7	7	2.2	0.67	1.31	NR	NA
Sodium, ICAP	(mg/L)		7	7	4.9	0.57	1.988571	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	7	7	4.8	0.56	1.997143	NR	NA
Strontium, ICAP	(mg/L)		7	7	0.033	0.016	0.022857	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	7	7	0.032	0.016	0.022857	NR	NA
Thallium, PMS	(mg/L)	FILTERED	7	1	0.0005	0.0005	0.0005	NR	NA
Uranium, PMS	(mg/L)		7	3	0.00076	0.00051	0.000623	NR	NA
Uranium, PMS	(mg/L)	FILTERED	7	3	0.00069	0.00052	0.000603	NR	NA
Zinc, ICAP	(mg/L)		7	7	0.03	0.0025	0.012829	5	0
Zinc, ICAP	(mg/L)	FILTERED	7	7	0.022	0.0034	0.009286	5	0
Conductivity, field measurement	(umhos/cm)		7	NA	455	191	329.8571	NR	NA
Dissolved Oxygen, field measurement	(ppm)		7	NA	7.6	3.5	5.814286	NR	NA

Table 2.52 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
pH, field measurement	(pH)		7	NA	7.8	6.9	7.514286	6.5/8.5	0
REDOX, field measurement	(mV)		7	NA	237	152	192.4286	NR	NA
Static Water Level	(ft - toc)		7	NA	-34.76	-69.34	-57.7	NR	NA
Temperature, field measurement	(Deg C)		7	NA	15.7	13.6	14.38571	NR	NA
Alkalinity as HCO3	(mg/L)		7	7	240	114	192	NR	NA
Conductivity	(umhos/cm)		7	7	468	238	367.5714	NR	NA
Dissolved Solids	(mg/L)		7	7	257	125	194.4286	500	0
pH	(pH)		7	7	7.88 L	6.9	7.551429	6.5/8.5	0
Total Suspended Solids	(mg/L)		7	1	6	6	6	NR	NA
Turbidity	(NTU)		7	7	13.9	0.241	3.609143	1	5
Gross Alpha	(pCi/L)		7	7	3.9	-0.6	1.785714	15 f	0
Gross Beta	(pCi/L)		7	7	7.9	-1.2	2.914286	50 a	0
Acetone	(ug/L)		7	3	20	1 BJ	8.666667	NR	NA

Table 2. 53. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=CR AREA NAME=Const./Debris Landfill VII

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		8	8	1.75	0.743	1.151625	250	0
Nitrate Nitrogen	(mg/L)		8	8	0.721	0.13	0.3965	10	0
Sulfate	(mg/L)		8	8	2.7	0.9	1.80875	250	0
Aluminum, ICAP	(mg/L)		8	8	0.19	0.024	0.081	0.2	0
Aluminum, ICAP	(mg/L)	FILTERED	8	6	0.077	0.024	0.041833	0.2	0
Barium, ICAP	(mg/L)		8	8	0.23	0.0091	0.063388	2	0
Barium, ICAP	(mg/L)	FILTERED	8	8	0.23	0.0089	0.0628	2	0
Boron, ICAP	(mg/L)		8	7	0.014	0.005	0.008929	NR	NA
Boron, ICAP	(mg/L)	FILTERED	8	7	0.015	0.0045	0.0082	NR	NA
Calcium, ICAP	(mg/L)		8	8	41	26	33	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	8	8	41	26	32.75	NR	NA
Copper, ICAP	(mg/L)		8	3	0.0096	0.0042	0.006	1	0
Copper, ICAP	(mg/L)	FILTERED	8	1	0.011	0.011	0.011	1	0
Iron, ICAP	(mg/L)		8	8	0.24	0.0089	0.058988	0.3	0
Iron, ICAP	(mg/L)	FILTERED	8	7	0.072	0.0068	0.033057	0.3	0
Lead, PMS	(mg/L)		8	5	0.001	0.00058	0.00078	NR	NA
Lead, PMS	(mg/L)	FILTERED	8	3	0.0025	0.00069	0.001313	NR	NA
Magnesium, ICAP	(mg/L)		8	8	24	13	16.625	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	8	8	24	12	16.5	NR	NA
Manganese, ICAP	(mg/L)		8	2	0.0067	0.0066	0.00665	0.05	0
Molybdenum, ICAP	(mg/L)		8	1	0.011	0.011	0.011	NR	NA
Potassium, ICAP	(mg/L)		8	7	2.2	0.96	1.537143	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	8	8	2	0.64	1.38	NR	NA
Sodium, ICAP	(mg/L)		8	8	0.68	0.46	0.5575	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	8	8	0.76	0.4	0.54	NR	NA
Strontium, ICAP	(mg/L)		8	8	0.025	0.016	0.01925	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	8	8	0.025	0.016	0.019125	NR	NA
Zinc, ICAP	(mg/L)		8	8	0.046	0.0039	0.017125	5	0
Zinc, ICAP	(mg/L)	FILTERED	8	8	0.023	0.0028	0.011863	5	0
Conductivity, field measurement	(umhos/cm)		8	NA	331	205	249	NR	NA
Dissolved Oxygen, field measurement	(ppm)		8	NA	8.4	5	6.8125	NR	NA

Table 2.53 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
pH, field measurement	(pH)		8	NA	7.9	3.9	6.55	6.5/8.5	2
REDOX, field measurement	(mV)		8	NA	237	107	177.125	NR	NA
Static Water Level	(ft - toc)		8	NA	-1	-71.2	-29.1038	NR	NA
Temperature, field measurement	(Deg C)		8	NA	17.3	12.8	14.8125	NR	NA
Alkalinity as HCO3	(mg/L)		8	8	192	132	156	NR	NA
Conductivity	(umhos/cm)		8	8	357	251	290.875	NR	NA
Dissolved Solids	(mg/L)		8	8	209	144	169.125	500	0
pH	(pH)		8	8	7.72 L	7.26	7.49125	6.5/8.5	0
Total Suspended Solids	(mg/L)		8	2	6	1	3.5	NR	NA
Turbidity	(NTU)		8	8	12.2	0.182	2.933875	1	3
Gross Alpha	(pCi/L)		8	8	3.9	-1.5	0.49625	15 f	0
Gross Beta	(pCi/L)		8	8	10	-15	-0.46375	50 a	0
2-Butanone	(ug/L)		8	3	3 BJ	2 BJ	2.666667	NR	NA
Acetone	(ug/L)		8	4	8 BJ	2 BJ	4.25	NR	NA

Table 2. 54. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=CR AREA NAME=Exit Pathway Spring/Surface Water

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		2	2	7.74	3.61	5.675	250	0
Nitrate Nitrogen	(mg/L)		2	2	1.75	1.1	1.425	10	0
Sulfate	(mg/L)		2	2	9.46	1.59	5.525	250	0
Aluminum, ICAP	(mg/L)		2	2	0.54	0.21	0.375	0.2	2
Aluminum, ICAP	(mg/L)	FILTERED	2	2	0.39	0.033	0.2115	0.2	1
Barium, ICAP	(mg/L)		2	2	0.031	0.022	0.0265	2	0
Barium, ICAP	(mg/L)	FILTERED	2	2	0.03	0.021	0.0255	2	0
Beryllium, ICAP	(mg/L)		2	1	0.00032	0.00032	0.00032	0.004	0
Boron, ICAP	(mg/L)		2	2	0.016	0.011	0.0135	NR	NA
Boron, ICAP	(mg/L)	FILTERED	2	2	0.015	0.015	0.015	NR	NA
Cadmium, ICAP	(mg/L)	FILTERED	2	1	0.0037	0.0037	0.0037	0.005	0
Calcium, ICAP	(mg/L)		2	2	53	45	49	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	51	44	47.5	NR	NA
Chromium, ICAP	(mg/L)	FILTERED	2	1	0.015	0.015	0.015	0.1	0
Copper, ICAP	(mg/L)		2	1	0.0041	0.0041	0.0041	1	0
Copper, ICAP	(mg/L)	FILTERED	2	1	0.0066	0.0066	0.0066	1	0
Iron, ICAP	(mg/L)		2	2	0.6	0.13	0.365	0.3	1
Iron, ICAP	(mg/L)	FILTERED	2	2	0.37	0.021	0.1955	0.3	1
Lead, PMS	(mg/L)		2	1	0.0006	0.0006	0.0006	NR	NA
Lead, PMS	(mg/L)	FILTERED	2	2	0.13	0.00055	0.065275	NR	NA
Magnesium, ICAP	(mg/L)		2	2	11	4.8	7.9	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	2	10	4.8	7.4	NR	NA
Manganese, ICAP	(mg/L)		2	2	0.012	0.0079	0.00995	0.05	0
Manganese, ICAP	(mg/L)	FILTERED	2	2	0.012	0.0082	0.0101	0.05	0
Potassium, ICAP	(mg/L)		2	2	1.2	0.89	1.045	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	2	2	1.4	0.83	1.115	NR	NA
Sodium, ICAP	(mg/L)		2	2	2.8	2.2	2.5	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	3.1	2.1	2.6	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.071	0.054	0.0625	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	0.069	0.055	0.062	NR	NA
Uranium, PMS	(mg/L)		2	1	0.00099	0.00099	0.00099	NR	NA
Uranium, PMS	(mg/L)	FILTERED	2	1	0.001	0.001	0.001	NR	NA
Zinc, ICAP	(mg/L)		2	1	0.011	0.011	0.011	5	0

Table 2.54 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Zinc, ICAP	(mg/L)	FILTERED	2	2	0.019	0.0046	0.0118	5	0
Conductivity, field measurement	(umhos/cm)		2	NA	664	300	482	NR	NA
Dissolved Oxygen, field measurement	(ppm)		2	NA	7.7	7	7.35	NR	NA
pH, field measurement	(pH)		2	NA	6.9	6.7	6.8	6.5/8.5	0
REDOX, field measurement	(mV)		2	NA	224	65	144.5	NR	NA
Temperature, field measurement	(Deg C)		2	NA	15.9	11.8	13.85	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	174	136	155	NR	NA
Conductivity	(umhos/cm)		2	2	340	297	318.5	NR	NA
Dissolved Solids	(mg/L)		2	2	206	194	200	500	0
pH	(pH)		2	2	7.5 L	7.2	7.35	6.5/8.5	0
Total Suspended Solids	(mg/L)		2	2	10	1	5.5	NR	NA
Turbidity	(NTU)		2	2	21.9	3.55	12.725	1	2
Gross Alpha	(pCi/L)		2	2	4.1	1.4	2.75	15 f	0
Gross Beta	(pCi/L)		2	2	3.9	-3.4	0.25	50 a	0
2-Butanone	(ug/L)		2	1	10 BJ	10 BJ	10	NR	NA
Acetone	(ug/L)		2	1	5 BJ	5 BJ	5	NR	NA

Table 2. 55. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=CR AREA NAME=Industrial Landfill II

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		7	7	14.6	1.59	6.371429	250	0
Fluoride	(mg/L)		6	2	1.81	1.62	1.715	2	0
Nitrate Nitrogen	(mg/L)		7	7	0.55	0.059	0.291429	10	0
Sulfate	(mg/L)		7	7	11.4	2.42	6.787143	250	0
Aluminum, ICAP	(mg/L)		7	4	0.053	0.025	0.04175	0.2	0
Aluminum, ICAP	(mg/L)	FILTERED	7	1	0.035	0.035	0.035	0.2	0
Barium, ICAP	(mg/L)		7	7	0.27	0.0099	0.130414	2	0
Barium, ICAP	(mg/L)	FILTERED	7	7	0.29	0.0094	0.132629	2	0
Boron, ICAP	(mg/L)		7	6	0.017	0.011	0.014167	NR	NA
Boron, ICAP	(mg/L)	FILTERED	7	6	0.018	0.0083	0.013217	NR	NA
Calcium, ICAP	(mg/L)		7	7	37	10	29.14286	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	7	7	36	10	28.85714	NR	NA
Chromium, ICAP	(mg/L)		7	1	0.014	0.014	0.014	0.1	0
Chromium, ICAP	(mg/L)	FILTERED	7	2	0.015	0.011	0.013	0.1	0
Copper, ICAP	(mg/L)		7	2	0.006	0.0046	0.0053	1	0
Iron, ICAP	(mg/L)		7	7	0.26	0.0086	0.066229	0.3	0
Iron, ICAP	(mg/L)	FILTERED	7	7	0.042	0.0053	0.016171	0.3	0
Lead, PMS	(mg/L)		6	1	0.00094	0.00094	0.00094	NR	NA
Lead, PMS	(mg/L)	FILTERED	6	1	0.0005	0.0005	0.0005	NR	NA
Lithium, ICAP	(mg/L)		7	2	0.018	0.014	0.016	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	7	1	0.019	0.019	0.019	NR	NA
Magnesium, ICAP	(mg/L)		7	7	28	18	21.85714	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	7	7	29	18	21.85714	NR	NA
Manganese, ICAP	(mg/L)		7	4	0.006	0.0013	0.00255	0.05	0
Manganese, ICAP	(mg/L)	FILTERED	7	5	0.0045	0.0012	0.00206	0.05	0
Nickel, ICAP	(mg/L)		7	3	0.17	0.1	0.146667	0.1 d	2
Nickel, ICAP	(mg/L)	FILTERED	7	3	0.16	0.13	0.15	0.1 d	3
Potassium, ICAP	(mg/L)		7	7	9.1	0.79	3.055714	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	7	7	9.5	0.79	3.055714	NR	NA
Sodium, ICAP	(mg/L)		7	7	14	0.48	4.161429	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	7	7	15	0.45	4.391429	NR	NA
Strontium, ICAP	(mg/L)		7	7	0.7	0.018	0.198857	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	7	7	0.71	0.018	0.201571	NR	NA
Thallium, PMS	(mg/L)		6	1	0.0005	0.0005	0.0005	NR	NA

Table 2.55 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Uranium, PMS	(mg/L)		6	3	0.0041	0.00051	0.00277	NR	NA
Uranium, PMS	(mg/L)	FILTERED	6	3	0.0041	0.00054	0.002747	NR	NA
Zinc, ICAP	(mg/L)		7	6	0.015	0.0028	0.006767	5	0
Zinc, ICAP	(mg/L)	FILTERED	7	7	0.02	0.0033	0.007643	5	0
Conductivity, field measurement	(umhos/cm)		7	NA	780	223	402.5714	NR	NA
Dissolved Oxygen, field measurement	(ppm)		7	NA	11	1	6.622857	NR	NA
pH, field measurement	(pH)		7	NA	9.6	7.3	8.385714	6.5/8.5	2
REDOX, field measurement	(mV)		7	NA	251	139	189.4286	NR	NA
Static Water Level	(ft - toc)		7	NA	-29	-106.82	-76.8014	NR	NA
Temperature, field measurement	(Deg C)		7	NA	16.1	12	14.47143	NR	NA
Alkalinity as CO3	(mg/L)		6	1	40	40	40	NR	NA
Alkalinity as HCO3	(mg/L)		6	6	178	102	151.6667	NR	NA
Conductivity	(umhos/cm)		6	6	343	243	313.8333	NR	NA
Dissolved Solids	(mg/L)		6	6	193	139	170	500	0
pH	(pH)		6	6	9.29 L	7.91	8.353333	6.5/8.5	2
Total Suspended Solids	(mg/L)		7	2	4	1	2.5	NR	NA
Turbidity	(NTU)		7	7	4.73	0.468	2.301143	1	6
Gross Alpha	(pCi/L)		6	6	3.5	-0.1	2.116667	15 f	0
Gross Beta	(pCi/L)		6	6	11	-0.3	5.883333	50 a	0
2-Butanone	(ug/L)		6	2	3 BJ	3 BJ	3	NR	NA
Acetone	(ug/L)		6	4	76 B	5 J	28.5	NR	NA

Table 2. 56. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=CR AREA NAME=Industrial Landfill IV

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		10	10	2.26	1.18	1.716	250	0
Nitrate Nitrogen	(mg/L)		10	10	0.669	0.2	0.3993	10	0
Sulfate	(mg/L)		10	10	7.84	0.53	2.6	250	0
Aluminum, ICAP	(mg/L)		11	11	26	0.021	2.82	0.2	6
Aluminum, ICAP	(mg/L)	FILTERED	11	5	0.068	0.03	0.0472	0.2	0
Arsenic, PMS	(mg/L)		10	1	0.0084	0.0084	0.0084	NR	NA
Barium, ICAP	(mg/L)		11	11	0.075	0.0075	0.019973	2	0
Barium, ICAP	(mg/L)	FILTERED	11	11	0.028	0.0063	0.0138	2	0
Beryllium, ICAP	(mg/L)		11	3	0.014	0.00047	0.005	0.004	1
Boron, ICAP	(mg/L)		11	10	0.15	0.0041	0.03824	NR	NA
Boron, ICAP	(mg/L)	FILTERED	11	9	0.15	0.0074	0.041967	NR	NA
Calcium, ICAP	(mg/L)		11	11	77	27	37.90909	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	11	11	48	26	33	NR	NA
Chromium, ICAP	(mg/L)		11	2	0.022	0.013	0.0175	0.1	0
Cobalt, ICAP	(mg/L)		11	1	0.01	0.01	0.01	NR	NA
Copper, ICAP	(mg/L)		11	3	0.032	0.0086	0.0166	1	0
Iron, ICAP	(mg/L)		11	10	15	0.0085	1.79965	0.3	5
Iron, ICAP	(mg/L)	FILTERED	11	6	0.016	0.0083	0.013217	0.3	0
Lead, PMS	(mg/L)		11	8	0.075	0.00054	0.010859	NR	NA
Lead, PMS	(mg/L)	FILTERED	11	1	0.0013	0.0013	0.0013	NR	NA
Lithium, ICAP	(mg/L)		11	1	0.037	0.037	0.037	NR	NA
Magnesium, ICAP	(mg/L)		11	11	47	17	23.45455	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	11	11	30	16	20.27273	NR	NA
Manganese, ICAP	(mg/L)		11	9	0.69	0.0011	0.0866	0.05	1
Manganese, ICAP	(mg/L)	FILTERED	11	2	0.0025	0.0021	0.0023	0.05	0
Mercury, CVAA	(mg/L)		10	1	0.00034	0.00034	0.00034	0.002	0
Nickel, ICAP	(mg/L)		11	3	0.053	0.014	0.032	0.1 d	0
Nickel, ICAP	(mg/L)	FILTERED	11	2	0.016	0.015	0.0155	0.1 d	0
Potassium, ICAP	(mg/L)		11	10	3.8	0.64	1.617	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	11	9	4	0.71	1.53	NR	NA
Sodium, ICAP	(mg/L)		11	11	4.9	0.46	1.584545	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	11	11	5.6	0.48	1.663636	NR	NA
Strontium, ICAP	(mg/L)		11	11	0.031	0.0099	0.015173	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	11	11	0.019	0.0097	0.013427	NR	NA
Thallium, PMS	(mg/L)		10	1	0.0006	0.0006	0.0006	NR	NA

Table 2.56 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Uranium, PMS	(mg/L)		10	1	0.0014	0.0014	0.0014	NR	NA
Vanadium, ICAP	(mg/L)		11	1	0.064	0.064	0.064	NR	NA
Zinc, ICAP	(mg/L)		11	11	0.59	0.003	0.073236	5	0
Zinc, ICAP	(mg/L)	FILTERED	11	10	0.021	0.0044	0.01023	5	0
Conductivity, field measurement	(umhos/cm)		11	NA	634	228	305.7273	NR	NA
Dissolved Oxygen, field measurement	(ppm)		11	NA	9.8	6	7.845455	NR	NA
pH, field measurement	(pH)		11	NA	8	6.8	7.418182	6.5/8.5	0
REDOX, field measurement	(mV)		11	NA	220	147	187.4545	NR	NA
Static Water Level	(ft - toc)		11	NA	-80.54	-120.95	-98.11	NR	NA
Temperature, field measurement	(Deg C)		11	NA	18	12	14.68182	NR	NA
Alkalinity as HCO3	(mg/L)		10	10	238	136	168.8	NR	NA
Conductivity	(umhos/cm)		10	10	432	250	314	NR	NA
Dissolved Solids	(mg/L)		10	10	261	128	177.6	500	0
pH	(pH)		10	10	8.27	7.17 L	7.849	6.5/8.5	0
Total Suspended Solids	(mg/L)		11	7	590	4	102.0429	NR	NA
Turbidity	(NTU)		11	11	1394	2.24	142.8491	1	11
Iodine-129	(pCi/L)		2	2	1	-14	-6.5	NR	NA
Radium - Total Alpha	(pCi/L)		2	2	0.61	0.5	0.555	5 g	0
Uranium-234	(pCi/L)		2	2	0.35	0.093	0.2215	20	0
Uranium-235	(pCi/L)		2	2	0	-0.04	-0.02	24	0
Neptunium-237	(pCi/L)		2	2	0	-0.056	-0.028	1.2	0
Plutonium-238	(pCi/L)		2	2	0.026	0	0.013	1.6	0
Uranium-238	(pCi/L)		2	2	0.29	0.058	0.174	24	0
Plutonium-239	(pCi/L)		2	2	-0.028	-0.28	-0.154	1.2	0
Americium-241	(pCi/L)		2	2	0.11	-0.01	0.05	1.2	0
Strontium-89/90	(pCi/L)		2	2	3.5	3	3.25	8	0
Technetium-99	(pCi/L)		2	2	9	0.5	4.75	4000	0
Gross Alpha	(pCi/L)		11	11	17	-0.56	2.570909	15 f	1
Gross Beta	(pCi/L)		11	11	35	-1.9	5.415455	50 a	0
Tritium	(pCi/L)		2	2	80	26	53	20000	0

Table 2.56 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
1,1,1-Trichloroethane	(ug/L)		10	2	15	12	13.5	200	0
1,1-Dichloroethane	(ug/L)		10	2	3 J	2 J	2.5	NR	NA
1,1-Dichloroethene	(ug/L)		10	2	2 J	1 J	1.5	7	0
2-Butanone	(ug/L)		10	5	9 BJ	2 BJ	6.4	NR	NA
Acetone	(ug/L)		10	5	36 B	2 BJ	11.8	NR	NA

Table 2. 57. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=CR AREA NAME=Industrial Landfill V

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		12	12	6.33	0.93	1.875833	250	0
Nitrate Nitrogen	(mg/L)		12	12	1.48	0.06	0.536833	10	0
Sulfate	(mg/L)		12	12	8.72	0.99	3.061667	250	0
Aluminum, ICAP	(mg/L)		12	11	5.2	0.038	0.802636	0.2	5
Aluminum, ICAP	(mg/L)	FILTERED	12	10	5.6	0.024	0.6136	0.2	1
Barium, ICAP	(mg/L)		12	12	0.074	0.0014	0.019142	2	0
Barium, ICAP	(mg/L)	FILTERED	12	12	0.074	0.0022	0.0188	2	0
Boron, ICAP	(mg/L)		12	12	0.047	0.0066	0.0185	NR	NA
Boron, ICAP	(mg/L)	FILTERED	12	10	0.04	0.0096	0.02266	NR	NA
Calcium, ICAP	(mg/L)		12	12	38	21	29.08333	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	12	12	37	21	27.91667	NR	NA
Copper, ICAP	(mg/L)		12	5	0.01	0.004	0.006	1	0
Copper, ICAP	(mg/L)	FILTERED	12	4	0.011	0.0048	0.00815	1	0
Iron, ICAP	(mg/L)		12	12	3	0.016	0.559083	0.3	3
Iron, ICAP	(mg/L)	FILTERED	12	8	3.1	0.0067	0.435463	0.3	1
Lead, PMS	(mg/L)		12	7	0.0042	0.0012	0.002514	NR	NA
Lead, PMS	(mg/L)	FILTERED	12	7	0.0027	0.0005	0.001643	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	12	1	0.0046	0.0046	0.0046	NR	NA
Magnesium, ICAP	(mg/L)		12	12	22	8.4	16.48333	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	12	12	22	8.5	16.175	NR	NA
Manganese, ICAP	(mg/L)		12	6	0.036	0.0033	0.0174	0.05	0
Manganese, ICAP	(mg/L)	FILTERED	12	2	0.026	0.0083	0.01715	0.05	0
Potassium, ICAP	(mg/L)		12	12	4	0.64	1.794167	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	12	12	3.7	0.74	1.7125	NR	NA
Sodium, ICAP	(mg/L)		12	12	1.9	0.45	0.890833	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	12	12	1.8	0.47	0.900833	NR	NA
Strontium, ICAP	(mg/L)		12	12	0.058	0.015	0.02475	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	12	12	0.06	0.015	0.02425	NR	NA
Thallium, PMS	(mg/L)		12	1	0.00087	0.00087	0.00087	NR	NA
Thallium, PMS	(mg/L)	FILTERED	12	1	0.00099	0.00099	0.00099	NR	NA
Vanadium, ICAP	(mg/L)		12	1	0.0071	0.0071	0.0071	NR	NA
Vanadium, ICAP	(mg/L)	FILTERED	12	1	0.0075	0.0075	0.0075	NR	NA
Zinc, ICAP	(mg/L)		12	12	0.039	0.0021	0.0121	5	0
Zinc, ICAP	(mg/L)	FILTERED	12	12	0.04	0.0032	0.012167	5	0

Table 2.57 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Conductivity, field measurement	(umhos/cm)		12	NA	302	166	238.3333	NR	NA
Dissolved Oxygen, field measurement	(ppm)		12	NA	9.4	4.7	7.791667	NR	NA
pH, field measurement	(pH)		12	NA	8.6	6.5	7.591667	6.5/8.5	1
REDOX, field measurement	(mV)		12	NA	219	139	175.6667	NR	NA
Static Water Level	(ft - toc)		10	NA	-7.32	-116.51	-70.462	NR	NA
Temperature, field measurement	(Deg C)		12	NA	16.2	11	13.95	NR	NA
Alkalinity as HCO3	(mg/L)		12	12	178	76	139.1667	NR	NA
Conductivity	(umhos/cm)		12	12	326	186.3	262.3583	NR	NA
Dissolved Solids	(mg/L)		12	12	199	116	153.0833	500	0
pH	(pH)		12	12	8.8	6.47	7.575	6.5/8.5	2
Total Suspended Solids	(mg/L)		12	7	13.2	1.2	3.557143	NR	NA
Turbidity	(NTU)		12	12	452	0.302	49.83708	1	10
Gross Alpha	(pCi/L)		12	12	2.8	-0.8	0.464	15 f	0
Gross Beta	(pCi/L)		12	12	10	-9.5	2.175	50 a	0
1,1,1-Trichloroethane	(ug/L)		12	1	1 J	1 J	1	200	0
2-Butanone	(ug/L)		12	1	2 BJ	2 BJ	2	NR	NA
Acetone	(ug/L)		12	7	82	2 BJ	17.85714	NR	NA

Table 2. 58. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=CR AREA NAME=Kerr Hollow Quarry

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		40	40	13.7	1.12	4.92575	250	0
Fluoride	(mg/L)		40	27	3.22	0.1	1.821481	2	16
Nitrate Nitrogen	(mg/L)		40	31	3.03	0.028	0.867613	10	0
Sulfate	(mg/L)		40	40	52.4	3.54	20.16925	250	0
Aluminum, ICAP	(mg/L)		61	41	0.56	0.02	0.075805	0.2	4
Aluminum, ICAP	(mg/L)	FILTERED	60	26	0.053	0.021	0.029769	0.2	0
Barium, PMS	(mg/L)		1	1	0.049	0.049	0.049	NR	NA
Barium, ICAP	(mg/L)		60	60	0.52	0.027	0.143767	2	0
Barium, ICAP	(mg/L)	FILTERED	60	60	0.51	0.027	0.140533	2	0
Boron, ICAP	(mg/L)		61	60	0.95	0.0075	0.236172	NR	NA
Boron, ICAP	(mg/L)	FILTERED	60	59	0.97	0.0091	0.244475	NR	NA
Calcium, ICAP	(mg/L)		61	61	51	24	40.31148	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	60	60	49	29	40.11667	NR	NA
Chromium, ICAP	(mg/L)		60	2	0.014	0.011	0.0125	0.1	0
Cobalt, ICAP	(mg/L)		60	1	0.0056	0.0056	0.0056	NR	NA
Copper, ICAP	(mg/L)		60	14	0.077	0.0044	0.015457	1	0
Copper, ICAP	(mg/L)	FILTERED	60	4	0.0091	0.0041	0.005625	1	0
Iron, ICAP	(mg/L)		61	54	32	0.0053	1.977481	0.3	24
Iron, ICAP	(mg/L)	FILTERED	60	47	1.7	0.0061	0.20224	0.3	8
Lead, PMS	(mg/L)		61	22	0.019	0.00057	0.0025	NR	NA
Lead, PMS	(mg/L)	FILTERED	60	7	0.0051	0.00051	0.001424	NR	NA
Lithium, ICAP	(mg/L)		60	48	0.32	0.018	0.105958	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	60	48	0.32	0.019	0.108375	NR	NA
Magnesium, ICAP	(mg/L)		61	61	39	12	25.21311	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	60	60	37	15	25.45	NR	NA
Manganese, PMS	(mg/L)		1	1	0.0033	0.0033	0.0033	NR	NA
Manganese, ICAP	(mg/L)		60	39	0.22	0.0011	0.036251	0.05	7
Manganese, ICAP	(mg/L)	FILTERED	60	41	0.082	0.0011	0.026059	0.05	6
Molybdenum, ICAP	(mg/L)		60	9	0.015	0.01	0.012	NR	NA
Molybdenum, ICAP	(mg/L)	FILTERED	60	7	0.014	0.01	0.012	NR	NA
Nickel, ICAP	(mg/L)		60	3	0.015	0.011	0.013	0.1 d	0
Potassium, ICAP	(mg/L)		61	61	19	0.91	7.026557	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	60	60	19	0.87	7.247167	NR	NA
Sodium, ICAP	(mg/L)		61	61	27	0.64	6.331311	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	60	60	27	0.68	6.5985	NR	NA

Table 2.58 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Strontium, PMS	(mg/L)		1	1	0.024	0.024	0.024	NR	NA
Strontium, ICAP	(mg/L)		60	60	8.5	0.034	2.109567	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	60	60	8.5	0.034	2.15275	NR	NA
Uranium, PMS	(mg/L)		61	48	0.024	0.00093	0.007251	NR	NA
Uranium, PMS	(mg/L)	FILTERED	60	48	0.025	0.00081	0.007131	NR	NA
Zinc, ICAP	(mg/L)		61	51	0.037	0.002	0.007239	5	0
Zinc, ICAP	(mg/L)	FILTERED	60	53	0.037	0.0021	0.005532	5	0
Conductivity, field measurement	(umhos/cm)		61	NA	1770	266	422.7705	NR	NA
Dissolved Oxygen, field measurement	(ppm)		61	NA	10.1	0.9	4.100328	NR	NA
pH, field measurement	(pH)		61	NA	8.5	7.1	7.70082	6.5/8.5	0
REDOX, field measurement	(mV)		61	NA	355	-119	163.2787	NR	NA
Static Water Level	(ft - toc)		60	NA	-3.51	-203.26	-81.5457	NR	NA
Temperature, field measurement	(Deg C)		61	NA	23.7	10.5	14.94098	NR	NA
Alkalinity as HCO3	(mg/L)		40	40	248	152	206	NR	NA
Conductivity	(umhos/cm)		40	40	553	308	429.275	NR	NA
Dissolved Solids	(mg/L)		40	40	327	134	241.05	500	0
pH	(pH)		40	40	7.98 L	7.27 L	7.70325	6.5/8.5	0
Total Suspended Solids	(mg/L)		61	34	134	1	13.54412	NR	NA
Turbidity	(NTU)		60	60	133	0.092	13.77748	1	41
Radium - Total Alpha	(pCi/L)		1	1	0.42	0.42	0.42	5 g	0
Radium-228	(pCi/L)		1	1	-40	-40	-40	5 g	0
Thorium-228	(pCi/L)		1	1	0.21	0.21	0.21	16	0
Thorium-230	(pCi/L)		1	1	0.36	0.36	0.36	12	0
Thorium-231+234	(pCi/L)		1	1	0.34	0.34	0.34	400	0
Thorium-232	(pCi/L)		1	1	0.025	0.025	0.025	2	0
Uranium-234	(pCi/L)		1	1	0.56	0.56	0.56	20	0
Uranium-235	(pCi/L)		1	1	0	0	0	24	0
Neptunium-237	(pCi/L)		1	1	-0.021	-0.021	-0.021	1.2	0
Uranium-238	(pCi/L)		1	1	0.34	0.34	0.34	24	0
Americium-241	(pCi/L)		1	1	-0.038	-0.038	-0.038	1.2	0

Table 2.58 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Strontium-89/90	(pCi/L)		1	1	-0.07	-0.07	-0.07	8	0
Technetium-99	(pCi/L)		1	1	-11	-11	-11	4000	0
Gross Alpha	(pCi/L)		41	41	16	-0.3	5.261951	15 f	2
Gross Beta	(pCi/L)		41	41	44	-5.3	7.601951	50 a	0
Tritium	(pCi/L)		1	1	100	100	100	20000	0
1,1-Dichloroethene	(ug/L)		40	1	2 J	2 J	2	7	0
1,2-Dichloroethane	(ug/L)		40	1	1 J	1 J	1	5	0
2-Butanone	(ug/L)		40	27	15 B	1 J	9.666667	NR	NA
2-Hexanone	(ug/L)		40	1	1 J	1 J	1	NR	NA
Acetone	(ug/L)		40	33	160 B	1 BJ	17.15152	NR	NA
Bromomethane	(ug/L)		40	1	4 J	4 J	4	NR	NA
Carbon tetrachloride	(ug/L)		40	4	2 J	1 J	1.75	5	0
Chloroform	(ug/L)		40	12	3 J	1 J	1.583333	100 i	0
Chloromethane	(ug/L)		40	1	8 J	8 J	8	NR	NA
Ethylbenzene	(ug/L)		40	1	2 J	2 J	2	700	0
Iodomethane	(ug/L)		40	1	1 J	1 J	1	NR	NA
Methylene chloride	(ug/L)		40	22	3 BJ	1 BJ	1.409091	5	0
Tetrachloroethene	(ug/L)		40	7	2 J	1 J	1.142857	5	0
Trichloroethene	(ug/L)		40	1	2 J	2 J	2	5	0
Trichlorofluoromethane	(ug/L)		40	1	2 J	2 J	2	NR	NA
Xylenes	(ug/L)		40	1	1 J	1 J	1	10000	0
Xylenes	(ug/L)		40	1	1 J	1 J	1	10000	0

Table 2. 59. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=CR AREA NAME=United Nuclear Corporation Site

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		6	6	28.1	1.28	14.355	250	0
Nitrate Nitrogen	(mg/L)		6	6	1.32	0.285	0.850333	10	0
Sulfate	(mg/L)		6	6	5	1.08	3.388333	250	0
Aluminum, ICAP	(mg/L)		6	5	0.43	0.026	0.1316	0.2	1
Aluminum, ICAP	(mg/L)	FILTERED	6	1	0.025	0.025	0.025	0.2	0
Barium, ICAP	(mg/L)		6	6	0.029	0.0075	0.0177	2	0
Barium, ICAP	(mg/L)	FILTERED	6	6	0.028	0.0072	0.016117	2	0
Calcium, ICAP	(mg/L)		6	6	57	30	43.66667	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	6	6	56	29	42.66667	NR	NA
Chromium, ICAP	(mg/L)		6	2	0.42	0.033	0.2265	0.1	1
Iron, ICAP	(mg/L)		6	6	2	0.015	0.658167	0.3	2
Iron, ICAP	(mg/L)	FILTERED	6	3	0.023	0.0057	0.012867	0.3	0
Lead, PMS	(mg/L)		6	6	0.0056	0.00068	0.00186	NR	NA
Lead, PMS	(mg/L)	FILTERED	6	5	0.0015	0.00077	0.0011	NR	NA
Magnesium, ICAP	(mg/L)		6	6	33	17	25.5	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	6	6	33	16	24.83333	NR	NA
Manganese, ICAP	(mg/L)		6	5	0.093	0.0014	0.02978	0.05	1
Manganese, ICAP	(mg/L)	FILTERED	6	5	0.0056	0.0011	0.00298	0.05	0
Nickel, ICAP	(mg/L)		6	2	0.19	0.055	0.1225	0.1 d	1
Nickel, ICAP	(mg/L)	FILTERED	6	2	0.14	0.045	0.0925	0.1 d	1
Potassium, ICAP	(mg/L)		6	2	0.66	0.63	0.645	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	6	1	0.96	0.96	0.96	NR	NA
Sodium, ICAP	(mg/L)		6	6	12	0.47	5.936667	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	6	6	12	0.46	5.941667	NR	NA
Strontium, ICAP	(mg/L)		6	6	0.025	0.01	0.016833	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	6	6	0.025	0.0098	0.016467	NR	NA
Thallium, PMS	(mg/L)		6	1	0.00062	0.00062	0.00062	NR	NA
Uranium, PMS	(mg/L)		6	1	0.00093	0.00093	0.00093	NR	NA
Uranium, PMS	(mg/L)	FILTERED	6	1	0.00084	0.00084	0.00084	NR	NA
Zinc, ICAP	(mg/L)		6	4	0.0077	0.0027	0.00475	5	0
Zinc, ICAP	(mg/L)	FILTERED	6	5	0.0052	0.002	0.00328	5	0
Conductivity, field measurement	(umhos/cm)		6	NA	525	267	384.5	NR	NA

Table 2.59 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Dissolved Oxygen, field measurement	(ppm)		6	NA	6.3	1.4	4.3	NR	NA
pH, field measurement	(pH)		6	NA	8.3	7.5	7.85	6.5/8.5	0
REDOX, field measurement	(mV)		6	NA	189	92	153.5	NR	NA
Static Water Level	(ft - toc)		6	NA	-48.67	-94.54	-67.8467	NR	NA
Temperature, field measurement	(Deg C)		6	NA	16.5	14.3	15.4	NR	NA
Alkalinity as HCO3	(mg/L)		6	6	278	146	208.6667	NR	NA
Conductivity	(umhos/cm)		6	6	577	280	425.6667	NR	NA
Dissolved Solids	(mg/L)		6	6	312	156	235	500	0
pH	(pH)		6	6	7.9 L	7.35 L	7.621667	6.5/8.5	0
Total Suspended Solids	(mg/L)		6	3	34	2	13.33333	NR	NA
Turbidity	(NTU)		6	6	83.1	0.98	18.85333	1	5
Strontium-89/90	(pCi/L)		6	6	3.8	-1.6	0.433333	8	0
Gross Alpha	(pCi/L)		6	6	4.1	0	1.066667	15 f	0
Gross Beta	(pCi/L)		6	6	11	-2.1	3.7	50 a	0

Table 2. 60. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=EF AREA NAME=Beta-4 Security Pits

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		2	2	19.1	14.7	16.9	250	0
Fluoride	(mg/L)		2	2	0.32	0.2	0.26	2	0
Sulfate	(mg/L)		2	2	2.85	1.78	2.315	250	0
Aluminum, ICAP	(mg/L)		2	1	0.036	0.036	0.036	0.2	0
Aluminum, ICAP	(mg/L)	FILTERED	2	1	0.022	0.022	0.022	0.2	0
Arsenic, PMS	(mg/L)		2	1	0.011	0.011	0.011	NR	NA
Arsenic, PMS	(mg/L)	FILTERED	2	1	0.01	0.01	0.01	NR	NA
Barium, ICAP	(mg/L)		2	2	0.26	0.17	0.215	2	0
Barium, ICAP	(mg/L)	FILTERED	2	2	0.25	0.17	0.21	2	0
Boron, ICAP	(mg/L)		2	2	0.019	0.015	0.017	NR	NA
Boron, ICAP	(mg/L)	FILTERED	2	2	0.018	0.015	0.0165	NR	NA
Calcium, ICAP	(mg/L)		2	2	150	120	135	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	150	120	135	NR	NA
Cobalt, ICAP	(mg/L)		2	1	0.0095	0.0095	0.0095	NR	NA
Cobalt, ICAP	(mg/L)	FILTERED	2	1	0.0081	0.0081	0.0081	NR	NA
Iron, ICAP	(mg/L)		2	2	11	3	7	0.3	2
Iron, ICAP	(mg/L)	FILTERED	2	2	10	2.9	6.45	0.3	2
Lead, PMS	(mg/L)		2	1	0.00091	0.00091	0.00091	NR	NA
Lead, PMS	(mg/L)	FILTERED	2	1	0.001	0.001	0.001	NR	NA
Lithium, ICAP	(mg/L)		2	2	0.012	0.0069	0.00945	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	2	2	0.01	0.0073	0.00865	NR	NA
Magnesium, ICAP	(mg/L)		2	2	22	14	18	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	2	22	15	18.5	NR	NA
Manganese, ICAP	(mg/L)		2	2	2.7	2.5	2.6	0.05	2
Manganese, ICAP	(mg/L)	FILTERED	2	2	2.7	2.6	2.65	0.05	2
Potassium, ICAP	(mg/L)		2	2	1.3	1	1.15	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	2	2	1.4	0.92	1.16	NR	NA
Sodium, ICAP	(mg/L)		2	2	7.5	7	7.25	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	7.6	7	7.3	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.34	0.23	0.285	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	0.34	0.24	0.29	NR	NA
Thallium, PMS	(mg/L)		2	1	0.00052	0.00052	0.00052	NR	NA
Zinc, ICAP	(mg/L)		2	2	0.0091	0.0028	0.00595	5	0
Zinc, ICAP	(mg/L)	FILTERED	2	1	0.008	0.008	0.008	5	0

Table 2.60 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Conductivity, field measurement	(umhos/cm)		2	NA	686	623	654.5	NR	NA
Dissolved Oxygen, field measurement	(ppm)		2	NA	3.8	2.1	2.95	NR	NA
pH, field measurement	(pH)		2	NA	6.9	6.6	6.75	6.5/8.5	0
REDOX, field measurement	(mV)		2	NA	43	-86	-21.5	NR	NA
Static Water Level	(ft - toc)		2	NA	-5.05	-5.32	-5.185	NR	NA
Temperature, field measurement	(Deg C)		2	NA	19.7	15.9	17.8	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	450	352	401	NR	NA
Conductivity	(umhos/cm)		2	2	825	709	767	NR	NA
Dissolved Solids	(mg/L)		2	2	463	396	429.5	500	0
pH	(pH)		2	2	6.92 L	6.76	6.84	6.5/8.5	0
Total Suspended Solids	(mg/L)		2	2	12	5	8.5	NR	NA
Turbidity	(NTU)		2	2	129	9.6	69.3	1	2
Gross Alpha	(pCi/L)		2	2	0.9	0	0.45	15 f	0
Gross Beta	(pCi/L)		2	2	3.9	3.8	3.85	50 a	0
1,1-Dichloroethane	(ug/L)		2	2	2 J	1 J	1.5	NR	NA
1,2-Dichloroethene (Total)	(ug/L)		2	2	17	12	14.5	NR b	NA
2-Butanone	(ug/L)		2	1	1 BJ	1 BJ	1	NR	NA
Acetone	(ug/L)		2	2	12	2 BJ	7	NR	NA
cis-1,2-Dichloroethene	(ug/L)		2	2	17	12	14.5	70	0
Tetrachloroethene	(ug/L)		2	2	3 J	2 J	2.5	5	0
Trichloroethene	(ug/L)		2	2	3 J	3 J	3	5	0

Table 2. 61. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=EF AREA NAME=Exit Pathway Monitoring Location E

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		4	4	23.3	5.14	14.24	250	0
Fluoride	(mg/L)		4	2	0.27	0.25	0.26	2	0
Nitrate Nitrogen	(mg/L)		4	3	2.14	0.06	1.196667	10	0
Sulfate	(mg/L)		4	4	30.3	12.8	20.05	250	0
Barium, ICAP	(mg/L)		4	4	0.06	0.03	0.04675	2	0
Barium, ICAP	(mg/L)	FILTERED	4	4	0.061	0.029	0.04675	2	0
Boron, ICAP	(mg/L)		4	4	0.34	0.12	0.205	NR	NA
Boron, ICAP	(mg/L)	FILTERED	4	4	0.33	0.12	0.2025	NR	NA
Cadmium, ICAP	(mg/L)		4	1	0.021	0.021	0.021	0.005	1
Cadmium, ICAP	(mg/L)	FILTERED	4	1	0.021	0.021	0.021	0.005	1
Calcium, ICAP	(mg/L)		4	4	110	15	60.75	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	4	4	120	15	63	NR	NA
Cobalt, ICAP	(mg/L)		4	1	0.0066	0.0066	0.0066	NR	NA
Cobalt, ICAP	(mg/L)	FILTERED	4	1	0.0075	0.0075	0.0075	NR	NA
Copper, ICAP	(mg/L)		4	1	0.019	0.019	0.019	1	0
Copper, ICAP	(mg/L)	FILTERED	4	1	0.0081	0.0081	0.0081	1	0
Iron, ICAP	(mg/L)		4	4	3.2	0.049	1.20475	0.3	2
Iron, ICAP	(mg/L)	FILTERED	4	4	2.7	0.0097	1.037425	0.3	2
Lead, PMS	(mg/L)		4	2	0.00068	0.00056	0.00062	NR	NA
Lead, PMS	(mg/L)	FILTERED	4	2	0.0037	0.0008	0.00225	NR	NA
Magnesium, ICAP	(mg/L)		4	4	9.7	4.5	7.075	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	4	4	9.8	4.7	7.125	NR	NA
Manganese, ICAP	(mg/L)		4	4	3.4	0.0083	1.727075	0.05	3
Manganese, ICAP	(mg/L)	FILTERED	4	4	3.4	0.0084	1.7271	0.05	3
Nickel, ICAP	(mg/L)		4	1	0.01	0.01	0.01	0.1 d	0
Nickel, ICAP	(mg/L)	FILTERED	4	1	0.011	0.011	0.011	0.1 d	0
Potassium, ICAP	(mg/L)		4	4	4.3	0.83	2.3825	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	4	4	4.3	0.74	2.335	NR	NA
Sodium, ICAP	(mg/L)		4	4	24	5.2	12.35	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	4	4	22	5.1	11.875	NR	NA
Strontium, ICAP	(mg/L)		4	4	0.22	0.036	0.12225	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	4	4	0.22	0.037	0.12225	NR	NA
Uranium, PMS	(mg/L)		4	1	0.00058	0.00058	0.00058	NR	NA
Zinc, ICAP	(mg/L)		4	2	0.0046	0.0032	0.0039	5	0

Table 2.61 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Zinc, ICAP	(mg/L)	FILTERED	4	2	0.0062	0.0042	0.0052	5	0
Conductivity, field measurement	(umhos/cm)		4	NA	648	151	413	NR	NA
Dissolved Oxygen, field measurement	(ppm)		4	NA	6.1	1.7	3.4875	NR	NA
pH, field measurement	(pH)		4	NA	6.8	5.4	6.275	6.5/8.5	2
REDOX, field measurement	(mV)		4	NA	235	-35	93	NR	NA
Static Water Level	(ft - toc)		4	NA	-12.65	-14.71	-13.765	NR	NA
Temperature, field measurement	(Deg C)		4	NA	16.7	16	16.475	NR	NA
Alkalinity as HCO3	(mg/L)		4	4	346	44	178.5	NR	NA
Conductivity	(umhos/cm)		4	4	712	164.4	425.825	NR	NA
Dissolved Solids	(mg/L)		4	4	395	83	236.25	500	0
pH	(pH)		4	4	7.01 L	5.86 L	6.4	6.5/8.5	2
Total Suspended Solids	(mg/L)		4	2	8	3	5.5	NR	NA
Turbidity	(NTU)		4	4	2.89	1.03	2.1225	1	4
Gross Alpha	(pCi/L)		4	4	4.5	0.3	2.24	15 f	0
Gross Beta	(pCi/L)		4	4	5.7	-0.3	3.4	50 a	0
1,2-Dichloroethene (Total)	(ug/L)		4	3	30	6	21.66667	NR b	NA
2-Butanone	(ug/L)		4	3	8 BJ	1 BJ	4.666667	NR	NA
Acetone	(ug/L)		4	4	99 B	4 BJ	30.25	NR	NA
cis-1,2-Dichloroethene	(ug/L)		4	3	30	6	21.66667	70	0
Ethylbenzene	(ug/L)		4	1	1 J	1 J	1	700	0
Methylene chloride	(ug/L)		4	1	1 BJ	1 BJ	1	5	0
Tetrachloroethene	(ug/L)		4	2	3 J	1 J	2	5	0
Trichloroethene	(ug/L)		4	2	8	4 J	6	5	1
Vinyl chloride	(ug/L)		4	2	5 J	2 J	3.5	2	1

Table 2. 62. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=EF AREA NAME=Exit Pathway Monitoring Location I

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		4	4	51.9	22.6	38.05	250	0
Fluoride	(mg/L)		4	2	0.23	0.2	0.215	2	0
Nitrate Nitrogen	(mg/L)		4	4	1.14	0.221	0.67275	10	0
Sulfate	(mg/L)		4	4	38.1	33.3	36.1	250	0
Aluminum, ICAP	(mg/L)		4	3	0.058	0.04	0.046	0.2	0
Barium, ICAP	(mg/L)		4	4	0.093	0.054	0.07275	2	0
Barium, ICAP	(mg/L)	FILTERED	4	4	0.091	0.056	0.075	2	0
Boron, ICAP	(mg/L)		4	4	0.14	0.042	0.0915	NR	NA
Boron, ICAP	(mg/L)	FILTERED	4	4	0.14	0.041	0.0925	NR	NA
Calcium, ICAP	(mg/L)		4	4	77	66	72	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	4	4	77	67	72	NR	NA
Iron, ICAP	(mg/L)		4	4	0.13	0.046	0.0775	0.3	0
Iron, ICAP	(mg/L)	FILTERED	4	3	0.013	0.006	0.008567	0.3	0
Lead, PMS	(mg/L)		4	2	0.0016	0.00058	0.00109	NR	NA
Lead, PMS	(mg/L)	FILTERED	4	1	0.00056	0.00056	0.00056	NR	NA
Lithium, ICAP	(mg/L)		4	2	0.0098	0.0089	0.00935	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	4	2	0.0096	0.0083	0.00895	NR	NA
Magnesium, ICAP	(mg/L)		4	4	35	15	24.75	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	4	4	35	15	25	NR	NA
Manganese, ICAP	(mg/L)		4	4	0.53	0.0096	0.25015	0.05	2
Manganese, ICAP	(mg/L)	FILTERED	4	4	0.47	0.009	0.2275	0.05	2
Potassium, ICAP	(mg/L)		4	4	3	2.6	2.8	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	4	4	3.1	2.5	2.875	NR	NA
Sodium, ICAP	(mg/L)		4	4	18	4.9	10.45	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	4	4	17	4.8	10.45	NR	NA
Strontium, ICAP	(mg/L)		4	4	0.51	0.17	0.3275	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	4	4	0.51	0.17	0.3275	NR	NA
Thallium, PMS	(mg/L)		4	1	0.00076	0.00076	0.00076	NR	NA
Thallium, PMS	(mg/L)	FILTERED	4	1	0.00078	0.00078	0.00078	NR	NA
Uranium, PMS	(mg/L)		4	4	0.24	0.0068	0.12105	NR	NA
Uranium, PMS	(mg/L)	FILTERED	4	4	0.23	0.0065	0.116025	NR	NA
Zinc, ICAP	(mg/L)		4	4	0.0039	0.0024	0.003025	5	0
Zinc, ICAP	(mg/L)	FILTERED	4	3	0.003	0.0024	0.0027	5	0

Table 2.62 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Conductivity, field measurement	(umhos/cm)		4	NA	780	481	576.5	NR	NA
Dissolved Oxygen, field measurement	(ppm)		4	NA	2.2	0.9	1.625	NR	NA
pH, field measurement	(pH)		4	NA	7.7	6.8	7.125	6.5/8.5	0
REDOX, field measurement	(mV)		4	NA	206	68	143.75	NR	NA
Static Water Level	(ft - toc)		4	NA	-10.62	-13.04	-11.3775	NR	NA
Temperature, field measurement	(Deg C)		4	NA	19.5	15	17.075	NR	NA
Alkalinity as HCO3	(mg/L)		4	4	250	222	238.5	NR	NA
Conductivity	(umhos/cm)		4	4	619	557	593.5	NR	NA
Dissolved Solids	(mg/L)		4	4	445	345 f	408.25	500	0
pH	(pH)		4	4	7.54 L	7.12 L	7.3375	6.5/8.5	0
Total Suspended Solids	(mg/L)		4	2	4	3	3.5	NR	NA
Turbidity	(NTU)		4	4	2.81	0.554	1.6635	1	3
Technetium-99	(pCi/L)		4	4	4	-5	-0.5	4000	0
Gross Alpha	(pCi/L)		4	4	170	5.5	76	15 f	2
Gross Beta	(pCi/L)		4	4	80	-0.8	37.675	50 a	2
1,2-Dichloroethene (Total)	(ug/L)		4	2	5	3 J	4	NR b	NA
2-Butanone	(ug/L)		4	1	5 BJ	5 BJ	5	NR	NA
Acetone	(ug/L)		4	4	26 BJ	3 BJ	11.75	NR	NA
Carbon tetrachloride	(ug/L)		4	4	810	67	286.75	5	4
Chloroform	(ug/L)		4	4	210	11	75.75	100 i	1
cis-1,2-Dichloroethene	(ug/L)		4	2	5	3 J	4	70	0
Methylene chloride	(ug/L)		4	1	1 J	1 J	1	5	0
Tetrachloroethene	(ug/L)		4	3	7	3 J	5	5	1
Trichloroethene	(ug/L)		4	3	16 J	1 J	6.333333	5	1

Table 2.63. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=EF AREA NAME=Exit Pathway Monitoring Location J

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		6	6	17.6	4.62	9.073333	250	0
Fluoride	(mg/L)		6	3	0.29	0.25	0.266667	2	0
Nitrate Nitrogen	(mg/L)		6	3	0.38	0.142	0.296	10	0
Sulfate	(mg/L)		6	6	24.9	9.46	15.275	250	0
Aluminum, ICAP	(mg/L)		6	6	0.26	0.022	0.081333	0.2	1
Aluminum, ICAP	(mg/L)	FILTERED	6	4	0.036	0.02	0.0245	0.2	0
Barium, ICAP	(mg/L)		6	6	0.8	0.025	0.318833	2	0
Barium, ICAP	(mg/L)	FILTERED	6	6	0.79	0.025	0.318167	2	0
Boron, ICAP	(mg/L)		6	6	0.1	0.011	0.043667	NR	NA
Boron, ICAP	(mg/L)	FILTERED	6	6	0.1	0.012	0.042333	NR	NA
Calcium, ICAP	(mg/L)		6	6	120	39	67	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	6	6	120	39	66.16667	NR	NA
Copper, ICAP	(mg/L)		6	1	0.0043	0.0043	0.0043	1	0
Iron, ICAP	(mg/L)		6	6	12	0.24	3.978333	0.3	4
Iron, ICAP	(mg/L)	FILTERED	6	6	1.9	0.012	0.513833	0.3	2
Lead, PMS	(mg/L)		6	4	0.0042	0.00083	0.002008	NR	NA
Lead, PMS	(mg/L)	FILTERED	6	3	0.0093	0.00071	0.00358	NR	NA
Lithium, ICAP	(mg/L)		6	5	0.011	0.0048	0.00768	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	6	5	0.011	0.004	0.00686	NR	NA
Magnesium, ICAP	(mg/L)		6	6	18	8.9	13.98333	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	6	6	18	9.1	14.01667	NR	NA
Manganese, ICAP	(mg/L)		6	6	0.28	0.047	0.1115	0.05	4
Manganese, ICAP	(mg/L)	FILTERED	6	6	0.28	0.02	0.096667	0.05	2
Potassium, ICAP	(mg/L)		6	6	5.6	1.2	3.033333	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	6	6	5.4	1.3	3.016667	NR	NA
Sodium, ICAP	(mg/L)		6	6	6.4	3.5	4.466667	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	6	6	6.4	3.5	4.483333	NR	NA
Strontium, ICAP	(mg/L)		6	6	0.85	0.1	0.358333	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	6	6	0.84	0.1	0.353333	NR	NA
Thallium, PMS	(mg/L)	FILTERED	6	1	0.00066	0.00066	0.00066	NR	NA
Uranium, PMS	(mg/L)		6	2	0.00088	0.0008	0.00084	NR	NA
Uranium, PMS	(mg/L)	FILTERED	6	2	0.00087	0.00066	0.000765	NR	NA
Zinc, ICAP	(mg/L)		6	5	0.022	0.0022	0.00916	5	0

Table 2.63 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Zinc, ICAP	(mg/L)	FILTERED	6	6	0.011	0.002	0.004383	5	0
Conductivity, field measurement	(umhos/cm)		6	NA	561	260	379.8333	NR	NA
Dissolved Oxygen, field measurement	(ppm)		6	NA	5.7	0.33	2.245	NR	NA
pH, field measurement	(pH)		6	NA	7.89	7.04	7.538333	6.5/8.5	0
REDOX, field measurement	(mV)		6	NA	218	-145	67.66667	NR	NA
Static Water Level	(ft - toc)		6	NA	-12.62	-58.22	-35.5583	NR	NA
Temperature, field measurement	(Deg C)		6	NA	23.4	12.6	15.43333	NR	NA
Alkalinity as HCO3	(mg/L)		6	6	316	158	217.3333	NR	NA
Conductivity	(umhos/cm)		6	6	654	279	444.3333	NR	NA
Dissolved Solids	(mg/L)		6	6	362	203	271.8333	500	0
pH	(pH)		6	6	7.88 L	7.11 L	7.556667	6.5/8.5	0
Total Suspended Solids	(mg/L)		6	5	25	1.2	9.48	NR	NA
Turbidity	(NTU)		6	6	64.5	4.77	25	1	6
Technetium-99	(pCi/L)		2	2	1	0	0.5	4000	0
Gross Alpha	(pCi/L)		6	6	2.9	0.1	1.883333	15 f	0
Gross Beta	(pCi/L)		6	6	3.6	-0.4	2.013333	50 a	0
2-Butanone	(ug/L)		6	1	11 B	11 B	11	NR	NA
Acetone	(ug/L)		6	4	100 B	2 BJ	28.5	NR	NA
Carbon tetrachloride	(ug/L)		6	2	31	26	28.5	5	2
Chloroform	(ug/L)		6	4	3 J	2 J	2.25	100 i	0
Tetrachloroethene	(ug/L)		6	1	1 J	1 J	1	5	0

Table 2. 64. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=EF AREA NAME=Exit Pathway Scarboro Road/Pine Rid

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		6	6	5.65	1.03	2.568333	250	0
Fluoride	(mg/L)		6	6	0.32	0.1	0.206667	2	0
Sulfate	(mg/L)		6	6	111	0.36	58.12	250	0
Aluminum, ICAP	(mg/L)		6	4	0.036	0.027	0.02975	0.2	0
Aluminum, ICAP	(mg/L)	FILTERED	6	1	0.02	0.02	0.02	0.2	0
Barium, ICAP	(mg/L)		6	6	0.5	0.041	0.175667	2	0
Barium, ICAP	(mg/L)	FILTERED	6	6	0.49	0.041	0.171333	2	0
Boron, ICAP	(mg/L)		6	6	0.22	0.016	0.118833	NR	NA
Boron, ICAP	(mg/L)	FILTERED	6	6	0.23	0.017	0.118833	NR	NA
Calcium, ICAP	(mg/L)		6	6	80	48	62.33333	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	6	6	81	47	62.16667	NR	NA
Iron, ICAP	(mg/L)		6	6	22	0.21	7.21	0.3	4
Iron, ICAP	(mg/L)	FILTERED	6	6	21	0.21	6.91	0.3	4
Lead, PMS	(mg/L)		6	3	0.0019	0.00062	0.001133	NR	NA
Lead, PMS	(mg/L)	FILTERED	6	4	0.0009	0.00057	0.000748	NR	NA
Lithium, ICAP	(mg/L)		6	4	0.032	0.03	0.03125	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	6	4	0.034	0.031	0.032	NR	NA
Magnesium, ICAP	(mg/L)		6	6	38	12	25.66667	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	6	6	38	12	25.83333	NR	NA
Manganese, ICAP	(mg/L)		6	6	1.8	0.0093	0.559317	0.05	2
Manganese, ICAP	(mg/L)	FILTERED	6	6	1.8	0.01	0.543333	0.05	2
Potassium, ICAP	(mg/L)		6	6	6	2.7	3.833333	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	6	6	6.3	2.8	3.983333	NR	NA
Sodium, ICAP	(mg/L)		6	6	16	3.9	9.983333	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	6	6	16	3.8	9.966667	NR	NA
Strontium, ICAP	(mg/L)		6	6	1.5	0.11	0.718333	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	6	6	1.6	0.11	0.735	NR	NA
Zinc, ICAP	(mg/L)		6	4	1.4	0.0042	0.6548	5	0
Zinc, ICAP	(mg/L)	FILTERED	6	6	1.3	0.0036	0.424417	5	0
Conductivity, field measurement	(umhos/cm)		6	NA	579	319	475.5	NR	NA
Dissolved Oxygen, field measurement	(ppm)		6	NA	3.97	0.52	1.515	NR	NA
pH, field measurement	(pH)		6	NA	7.6	6.8	7.306667	6.5/8.5	0

Table 2.64 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
REDOX, field measurement	(mV)		6	NA	178	-84	38.66667	NR	NA
Static Water Level	(ft - toc)		4	NA	0	-12.68	-6.2225	NR	NA
Temperature, field measurement	(Deg C)		6	NA	15.4	13.2	14.43333	NR	NA
Alkalinity as HCO3	(mg/L)		6	6	274	204	240.6667	NR	NA
Conductivity	(umhos/cm)		6	6	650	415	554	NR	NA
Dissolved Solids	(mg/L)		6	6	430	205	330.5	500	0
pH	(pH)		6	6	7.58 L	6.75 L	7.26	6.5/8.5	0
Total Suspended Solids	(mg/L)		6	3	27	1	14.66667	NR	NA
Turbidity	(NTU)		6	6	231	2.38	53.29833	1	6
Gross Alpha	(pCi/L)		6	6	2	-1.6	0.54	15 f	0
Gross Beta	(pCi/L)		6	6	12	1.6	4.733333	50 a	0
2-Butanone	(ug/L)		6	1	4 J	4 J	4	NR	NA
Acetone	(ug/L)		6	2	2 BJ	1 BJ	1.5	NR	NA

Table 2. 65. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=EF AREA NAME=Exit Pathway Spring/Surface Water

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		2	2	21.4	9.26	15.33	250	0
Fluoride	(mg/L)		2	2	0.36	0.2	0.28	2	0
Nitrate Nitrogen	(mg/L)		2	2	2.21	1.45	1.83	10	0
Sulfate	(mg/L)		2	2	23.9	16.2	20.05	250	0
Aluminum, ICAP	(mg/L)		2	2	0.11	0.097	0.1035	0.2	0
Aluminum, ICAP	(mg/L)	FILTERED	2	1	0.031	0.031	0.031	0.2	0
Barium, ICAP	(mg/L)		2	2	0.082	0.036	0.059	2	0
Barium, ICAP	(mg/L)	FILTERED	2	2	0.076	0.036	0.056	2	0
Boron, ICAP	(mg/L)		2	2	0.022	0.018	0.02	NR	NA
Boron, ICAP	(mg/L)	FILTERED	2	2	0.019	0.017	0.018	NR	NA
Calcium, ICAP	(mg/L)		2	2	39	35	37	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	40	35	37.5	NR	NA
Iron, ICAP	(mg/L)		2	2	0.47	0.087	0.2785	0.3	1
Iron, ICAP	(mg/L)	FILTERED	2	2	0.069	0.0094	0.0392	0.3	0
Lead, PMS	(mg/L)		2	1	0.0046	0.0046	0.0046	NR	NA
Lead, PMS	(mg/L)	FILTERED	2	1	0.0017	0.0017	0.0017	NR	NA
Lithium, ICAP	(mg/L)		2	1	0.011	0.011	0.011	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	2	1	0.01	0.01	0.01	NR	NA
Magnesium, ICAP	(mg/L)		2	2	9.8	7.6	8.7	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	2	9.9	7.1	8.5	NR	NA
Manganese, ICAP	(mg/L)		2	2	0.13	0.033	0.0815	0.05	1
Manganese, ICAP	(mg/L)	FILTERED	2	2	0.11	0.013	0.0615	0.05	1
Potassium, ICAP	(mg/L)		2	2	2.5	1.7	2.1	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	2	2	2.2	1.5	1.85	NR	NA
Sodium, ICAP	(mg/L)		2	2	8.1	7	7.55	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	8.1	7.2	7.65	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.21	0.093	0.1515	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	0.1	0.094	0.097	NR	NA
Thallium, PMS	(mg/L)		2	1	0.00066	0.00066	0.00066	NR	NA
Uranium, PMS	(mg/L)		2	2	0.0062	0.0057	0.00595	NR	NA
Uranium, PMS	(mg/L)	FILTERED	2	2	0.0061	0.0059	0.006	NR	NA
Zinc, ICAP	(mg/L)		2	2	0.026	0.0027	0.01435	5	0
Zinc, ICAP	(mg/L)	FILTERED	2	1	0.021	0.021	0.021	5	0

Table 2.65 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Conductivity, field measurement	(umhos/cm)		2	NA	343	314	328.5	NR	NA
Dissolved Oxygen, field measurement	(ppm)		2	NA	9.8	7.8	8.8	NR	NA
pH, field measurement	(pH)		2	NA	7.9	7.6	7.75	6.5/8.5	0
REDOX, field measurement	(mV)		2	NA	221	62	141.5	NR	NA
Temperature, field measurement	(Deg C)		2	NA	14.1	13.9	14	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	114	94	104	NR	NA
Conductivity	(umhos/cm)		2	2	308	262	285	NR	NA
Dissolved Solids	(mg/L)		2	2	178	150	164	500	0
pH	(pH)		2	2	7.92 L	7.73 L	7.825	6.5/8.5	0
Total Suspended Solids	(mg/L)		2	2	6	1	3.5	NR	NA
Turbidity	(NTU)		2	2	15	1.98	8.49	1	2
Gross Alpha	(pCi/L)		2	2	0.81	0.8	0.805	15 f	0
Gross Beta	(pCi/L)		2	2	4.5	3.4	3.95	50 a	0
2-Butanone	(ug/L)		2	1	9 BJ	9 BJ	9	NR	NA
Acetone	(ug/L)		2	1	9 BJ	9 BJ	9	NR	NA
Chloroform	(ug/L)		2	2	3 J	1 J	2	100 i	0
Methylene chloride	(ug/L)		2	1	1 BJ	1 BJ	1	5	0
Tetrachloroethene	(ug/L)		2	1	1 J	1 J	1	5	0

Table 2. 66. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=EF AREA NAME=Fire Training Facility

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		2	2	2.08	1.85	1.965	250	0
Fluoride	(mg/L)		2	2	0.12	0.11	0.115	2	0
Nitrate Nitrogen	(mg/L)		2	2	1.44	1.28	1.36	10	0
Sulfate	(mg/L)		2	2	4.89	4.55	4.72	250	0
Aluminum, ICAP	(mg/L)		2	2	0.23	0.06	0.145	0.2	1
Aluminum, ICAP	(mg/L)	FILTERED	2	2	0.082	0.041	0.0615	0.2	0
Barium, ICAP	(mg/L)		2	2	0.036	0.028	0.032	2	0
Barium, ICAP	(mg/L)	FILTERED	2	2	0.027	0.023	0.025	2	0
Boron, ICAP	(mg/L)		2	2	0.023	0.017	0.02	NR	NA
Boron, ICAP	(mg/L)	FILTERED	2	2	0.024	0.019	0.0215	NR	NA
Calcium, ICAP	(mg/L)		2	2	62	18	40	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	49	12	30.5	NR	NA
Iron, ICAP	(mg/L)		2	1	0.0084	0.0084	0.0084	0.3	0
Iron, ICAP	(mg/L)	FILTERED	2	2	0.019	0.0067	0.01285	0.3	0
Lead, PMS	(mg/L)		2	1	0.0027	0.0027	0.0027	NR	NA
Lead, PMS	(mg/L)	FILTERED	2	1	0.0048	0.0048	0.0048	NR	NA
Lithium, ICAP	(mg/L)		2	2	0.018	0.011	0.0145	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	2	2	0.017	0.0099	0.01345	NR	NA
Magnesium, ICAP	(mg/L)		2	2	3	0.43	1.715	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	2	2.3	0.71	1.505	NR	NA
Manganese, ICAP	(mg/L)	FILTERED	2	1	0.0015	0.0015	0.0015	0.05	0
Potassium, ICAP	(mg/L)		2	2	11	10	10.5	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	2	2	12	10	11	NR	NA
Sodium, ICAP	(mg/L)		2	2	2.2	2	2.1	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	2.3	2	2.15	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.37	0.22	0.295	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	0.28	0.2	0.24	NR	NA
Zinc, ICAP	(mg/L)	FILTERED	2	1	0.0033	0.0033	0.0033	5	0
Conductivity, field measurement	(umhos/cm)		2	NA	295	295	295	NR	NA
Dissolved Oxygen, field measurement	(ppm)		2	NA	6.54	2.7	4.62	NR	NA
pH, field measurement	(pH)		2	NA	11.5	10.6	11.05	6.5/8.5	2

Table 2.66 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
REDOX, field measurement	(mV)		2	NA	95	41	68	NR	NA
Static Water Level	(ft - toc)		2	NA	-20.68	-27.31	-23.995	NR	NA
Temperature, field measurement	(Deg C)		2	NA	17.2	14	15.6	NR	NA
Alkalinity as CO3	(mg/L)		2	2	28	24	26	NR	NA
Conductivity	(umhos/cm)		2	2	207	191.4	199.2	NR	NA
Dissolved Solids	(mg/L)		2	2	94	87	90.5	500	0
pH	(pH)		2	2	11.21 L	10.8 L	11.005	6.5/8.5	2
Total Suspended Solids	(mg/L)		2	1	27	27	27	NR	NA
Turbidity	(NTU)		2	2	17.2	0.667	8.9335	1	1
Gross Alpha	(pCi/L)		2	2	2.6	1.8	2.2	15 f	0
Gross Beta	(pCi/L)		2	2	8.3	6.3	7.3	50 a	0
1,1,1-Trichloroethane	(ug/L)		2	1	2 J	2 J	2	200	0
1,2-Dichloroethene (Total)	(ug/L)		2	2	94	74	84	NR b	NA
2-Butanone	(ug/L)		2	1	9 BJ	9 BJ	9	NR	NA
Acetone	(ug/L)		2	2	28 B	7 BJ	17.5	NR	NA
Chloroform	(ug/L)		2	1	1 J	1 J	1	100 i	0
cis-1,2-Dichloroethene	(ug/L)		2	2	94	74	84	70	2
Tetrachloroethene	(ug/L)		2	2	110	93	101.5	5	2
Toluene	(ug/L)		2	1	1 J	1 J	1	1000	0
Trichloroethene	(ug/L)		2	2	32	29	30.5	5	2
Xylenes	(ug/L)		2	1	2 J	2 J	2	10000	0
Xylenes	(ug/L)		2	1	2 J	2 J	2	10000	0

Table 2. 67. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=EF AREA NAME=GW Monitoring Plan Grid Location D2

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		4	4	47.162	5.91	20.746	250	0
Fluoride	(mg/L)		4	1	0.12	0.12	0.12	2	0
Nitrate Nitrogen	(mg/L)		4	2	4.937	2.78	3.8585	10	0
Sulfate	(mg/L)		4	4	25.3	11.16	17.491	250	0
Aluminum, ICAP	(mg/L)		4	2	0.066	0.04	0.053	0.2	0
Aluminum, ICAP	(mg/L)	FILTERED	4	3	0.034	0.02	0.025	0.2	0
Barium, ICAP	(mg/L)		4	4	0.26	0.092	0.178	2	0
Barium, ICAP	(mg/L)	FILTERED	4	4	0.27	0.089	0.17725	2	0
Boron, ICAP	(mg/L)		4	3	0.021	0.012	0.016667	NR	NA
Boron, ICAP	(mg/L)	FILTERED	4	3	0.021	0.012	0.016667	NR	NA
Calcium, ICAP	(mg/L)		4	4	67	43	55.5	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	4	4	67	42	55	NR	NA
Copper, ICAP	(mg/L)		4	1	0.0047	0.0047	0.0047	1	0
Copper, ICAP	(mg/L)	FILTERED	4	1	0.0072	0.0072	0.0072	1	0
Iron, ICAP	(mg/L)		4	4	0.28	0.058	0.16275	0.3	0
Iron, ICAP	(mg/L)	FILTERED	4	4	0.12	0.016	0.0545	0.3	0
Lead, PMS	(mg/L)		4	3	0.022	0.0006	0.00783	NR	NA
Lead, PMS	(mg/L)	FILTERED	4	3	0.0011	0.00063	0.000803	NR	NA
Lithium, ICAP	(mg/L)		4	4	0.014	0.0092	0.01135	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	4	4	0.014	0.0088	0.011675	NR	NA
Magnesium, ICAP	(mg/L)		4	4	14	4.2	9.225	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	4	4	14	4.2	9.225	NR	NA
Manganese, ICAP	(mg/L)		4	4	0.034	0.014	0.022	0.05	0
Manganese, ICAP	(mg/L)	FILTERED	4	4	0.02	0.0082	0.01655	0.05	0
Nickel, ICAP	(mg/L)		4	2	0.048	0.021	0.0345	0.1 d	0
Nickel, ICAP	(mg/L)	FILTERED	4	2	0.044	0.02	0.032	0.1 d	0
Potassium, ICAP	(mg/L)		4	4	2	0.87	1.4925	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	4	4	2	0.82	1.43	NR	NA
Sodium, ICAP	(mg/L)		4	4	9.6	7.2	8.1	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	4	4	9.6	7.2	8.125	NR	NA
Strontium, ICAP	(mg/L)		4	4	0.42	0.082	0.24325	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	4	4	0.42	0.081	0.24275	NR	NA
Zinc, ICAP	(mg/L)		4	2	0.013	0.0036	0.0083	5	0
Zinc, ICAP	(mg/L)	FILTERED	4	4	0.012	0.0029	0.0058	5	0

Table 2.67 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Conductivity, field measurement	(umhos/cm)		4	NA	425	251	340.75	NR	NA
Dissolved Oxygen, field measurement	(ppm)		4	NA	4.6	1.75	3.0825	NR	NA
pH, field measurement	(pH)		4	NA	7.9	6.21	6.955	6.5/8.5	2
REDOX, field measurement	(mV)		4	NA	199	-53	63.25	NR	NA
Static Water Level	(ft - toc)		4	NA	-21.72	-25.12	-23.6775	NR	NA
Temperature, field measurement	(Deg C)		4	NA	20.8	15.1	18.875	NR	NA
Alkalinity as HCO3	(mg/L)		4	4	228	70	152.5	NR	NA
Conductivity	(umhos/cm)		4	4	488	309	406.5	NR	NA
Dissolved Solids	(mg/L)		4	4	265	200	237.25	500	0
pH	(pH)		4	4	7.48 L	6.3 L	6.8775	6.5/8.5	2
Total Suspended Solids	(mg/L)		4	1	1	1	1	NR	NA
Turbidity	(NTU)		4	4	3.21	0.718	1.632	1	3
Gross Alpha	(pCi/L)		4	4	2.2	-4	-1.125	15 f	0
Gross Beta	(pCi/L)		4	4	6	-2.3	2.175	50 a	0
2-Butanone	(ug/L)		4	2	2 BJ	2 BJ	2	NR	NA
Acetone	(ug/L)		4	3	26	1 BJ	10	NR	NA
Benzene	(ug/L)		4	1	2 J	2 J	2	5	0
Bromochloromethane	(ug/L)		4	1	2 J	2 J	2	NR	NA
Methylene chloride	(ug/L)		4	1	4 J	4 J	4	5	0
Tetrachloroethene	(ug/L)		4	4	2100 D	8	706.75	5	4
Toluene	(ug/L)		4	1	3 J	3 J	3	1000	0
Trichloroethene	(ug/L)		4	1	7	7	7	5	1

Table 2. 68. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=EF AREA NAME=GW Monitoring Plan Grid Location E3

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		6	6	21.1	9.53	16.519	250	0
Fluoride	(mg/L)		6	2	0.15	0.1	0.125	2	0
Nitrate Nitrogen	(mg/L)		6	6	1.315	0.05	0.483833	10	0
Sulfate	(mg/L)		6	6	24.622	8.786	16.413	250	0
Aluminum, ICAP	(mg/L)		6	3	0.2	0.043	0.127667	0.2	0
Barium, ICAP	(mg/L)		6	6	0.69	0.095	0.3625	2	0
Barium, ICAP	(mg/L)	FILTERED	6	6	0.66	0.095	0.335833	2	0
Boron, ICAP	(mg/L)		6	6	0.49	0.037	0.211833	NR	NA
Boron, ICAP	(mg/L)	FILTERED	6	6	0.51	0.037	0.204333	NR	NA
Calcium, ICAP	(mg/L)		6	6	85	12	59.16667	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	6	6	84	12	57.5	NR	NA
Chromium, ICAP	(mg/L)		6	2	0.44	0.059	0.2495	0.1	1
Copper, ICAP	(mg/L)		6	1	0.027	0.027	0.027	1	0
Iron, ICAP	(mg/L)		6	6	5.7	0.028	1.283	0.3	4
Iron, ICAP	(mg/L)	FILTERED	6	6	0.14	0.007	0.048833	0.3	0
Lead, PMS	(mg/L)		6	3	0.00076	0.0006	0.000687	NR	NA
Lead, PMS	(mg/L)	FILTERED	6	3	0.0054	0.00069	0.002663	NR	NA
Lithium, ICAP	(mg/L)		6	4	0.061	0.018	0.0395	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	6	4	0.062	0.018	0.0395	NR	NA
Magnesium, ICAP	(mg/L)		6	6	15	4.1	8.133333	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	6	6	15	4.2	7.35	NR	NA
Manganese, ICAP	(mg/L)		6	6	0.061	0.0054	0.026917	0.05	1
Manganese, ICAP	(mg/L)	FILTERED	6	6	0.04	0.0038	0.013333	0.05	0
Nickel, ICAP	(mg/L)		6	3	0.24	0.013	0.099333	0.1 d	1
Nickel, ICAP	(mg/L)	FILTERED	6	2	0.16	0.043	0.1015	0.1 d	1
Potassium, ICAP	(mg/L)		6	6	5.7	1.3	3.783333	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	6	6	5.7	1.3	3.483333	NR	NA
Sodium, ICAP	(mg/L)		6	6	76	9.7	34.11667	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	6	6	78	6.4	33.9	NR	NA
Strontium, ICAP	(mg/L)		6	6	1.1	0.15	0.635	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	6	6	1.1	0.15	0.553333	NR	NA
Uranium, PMS	(mg/L)		6	4	0.002	0.0012	0.0015	NR	NA
Uranium, PMS	(mg/L)	FILTERED	6	4	0.0018	0.0012	0.0014	NR	NA
Zinc, ICAP	(mg/L)		6	4	0.0055	0.0036	0.004325	5	0

Table 2.68 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Zinc, ICAP	(mg/L)	FILTERED	6	5	0.0049	0.0025	0.00336	5	0
Conductivity, field measurement	(umhos/cm)		6	NA	487	358	408.8333	NR	NA
Dissolved Oxygen, field measurement	(ppm)		6	NA	5.5	1.59	3.436667	NR	NA
pH, field measurement	(pH)		6	NA	8.59	7.4	7.815	6.5/8.5	1
REDOX, field measurement	(mV)		6	NA	209	18	115	NR	NA
Static Water Level	(ft - toc)		6	NA	-8.5	-10.48	-9.47667	NR	NA
Temperature, field measurement	(Deg C)		6	NA	19	16.7	17.56667	NR	NA
Alkalinity as HCO3	(mg/L)		6	6	254	200	220	NR	NA
Conductivity	(umhos/cm)		6	6	556	417	492.3333	NR	NA
Dissolved Solids	(mg/L)		6	6	363	251	306	500	0
pH	(pH)		6	6	8.33 L	7.24 L	7.568333	6.5/8.5	0
Total Suspended Solids	(mg/L)		6	3	7	2	3.666667	NR	NA
Turbidity	(NTU)		6	6	25.2	2.09	8.38	1	6
Gross Alpha	(pCi/L)		6	6	56	-0.4	17.08667	15 f	2
Gross Beta	(pCi/L)		6	6	18	0.16	6.51	50 a	0
1,1,1-Trichloroethane	(ug/L)		6	5	20	1 J	5.6	200	0
1,1-Dichloroethane	(ug/L)		6	4	150	13	72	NR	NA
1,1-Dichloroethene	(ug/L)		6	4	44	2 J	20.75	7	2
1,2-Dichloroethene (Total)	(ug/L)		6	4	32	5	19.5	NR b	NA
2-Butanone	(ug/L)		6	3	12 B	4 BJ	8.666667	NR	NA
Acetone	(ug/L)		6	6	63 B	1 BJ	18.83333	NR	NA
Benzene	(ug/L)		6	1	2 J	2 J	2	5	0
Carbon tetrachloride	(ug/L)		6	2	4 J	2 J	3	5	0
Chlorobenzene	(ug/L)		6	1	4 J	4 J	4	100	0
Chloroethane	(ug/L)		6	2	5 J	2 J	3.5	NR	NA
Chloroform	(ug/L)		6	1	2 J	2 J	2	100 i	0
cis-1,2-Dichloroethene	(ug/L)		6	4	20	5	13.5	70	0
Methylene chloride	(ug/L)		6	2	1 BJ	1 BJ	1	5	0
Tetrachloroethene	(ug/L)		6	6	200	4 J	79	5	5
Toluene	(ug/L)		6	1	4 J	4 J	4	1000	0

Table 2.68 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
trans-1,2-Dichloroethene	(ug/L)		6	3	12	5	8	100	0
Trichloroethene	(ug/L)		6	5	63	2 J	28	5	4
Vinyl chloride	(ug/L)		6	2	3 J	3 J	3	2	2

Table 2. 69. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=EF AREA NAME=GW Monitoring Plan Grid Location F3

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		4	4	12.4	6.39	8.96	250	0
Fluoride	(mg/L)		4	4	1.68	0.11	0.7875	2	0
Nitrate Nitrogen	(mg/L)		4	4	1.256	0.4	0.80775	10	0
Sulfate	(mg/L)		4	4	36.8	19.8	25.925	250	0
Aluminum, ICAP	(mg/L)		4	4	2.9	0.037	1.12425	0.2	2
Aluminum, ICAP	(mg/L)	FILTERED	4	3	0.059	0.033	0.048	0.2	0
Barium, ICAP	(mg/L)		4	4	0.33	0.11	0.2225	2	0
Barium, ICAP	(mg/L)	FILTERED	4	4	0.33	0.1	0.215	2	0
Boron, ICAP	(mg/L)		4	4	1.4	0.053	0.6545	NR	NA
Boron, ICAP	(mg/L)	FILTERED	4	4	1.3	0.053	0.62925	NR	NA
Calcium, ICAP	(mg/L)		4	4	66	5.9	36.225	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	4	4	62	5.9	34.35	NR	NA
Chromium, ICAP	(mg/L)		4	1	0.011	0.011	0.011	0.1	0
Copper, ICAP	(mg/L)		4	2	0.0078	0.0063	0.00705	1	0
Copper, ICAP	(mg/L)	FILTERED	4	1	0.0042	0.0042	0.0042	1	0
Iron, ICAP	(mg/L)		4	4	1.9	0.028	0.79225	0.3	2
Iron, ICAP	(mg/L)	FILTERED	4	4	0.074	0.005	0.034	0.3	0
Lead, PMS	(mg/L)		4	2	0.0016	0.0014	0.0015	NR	NA
Lead, PMS	(mg/L)	FILTERED	4	2	0.00073	0.0006	0.000665	NR	NA
Lithium, ICAP	(mg/L)		4	4	0.083	0.011	0.04475	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	4	4	0.082	0.011	0.0445	NR	NA
Magnesium, ICAP	(mg/L)		4	4	9.8	3	6.4	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	4	4	9.9	2.6	6.325	NR	NA
Manganese, ICAP	(mg/L)		4	4	0.14	0.0014	0.0477	0.05	1
Manganese, ICAP	(mg/L)	FILTERED	4	2	0.014	0.002	0.008	0.05	0
Nickel, ICAP	(mg/L)		4	1	0.011	0.011	0.011	0.1 d	0
Potassium, ICAP	(mg/L)		4	4	6	3.3	4.5	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	4	4	5.5	2.7	3.975	NR	NA
Sodium, ICAP	(mg/L)		4	4	120	5.8	62.975	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	4	4	120	5.8	62.95	NR	NA
Strontium, ICAP	(mg/L)		4	4	0.51	0.3	0.4	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	4	4	0.51	0.29	0.4	NR	NA
Uranium, PMS	(mg/L)		4	3	0.0016	0.0005	0.001017	NR	NA
Uranium, PMS	(mg/L)	FILTERED	4	2	0.0018	0.00083	0.001315	NR	NA

Table 2.69 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Vanadium, ICAP	(mg/L)		4	1	0.0052	0.0052	0.0052	NR	NA
Zinc, ICAP	(mg/L)		4	3	0.0055	0.0024	0.003933	5	0
Zinc, ICAP	(mg/L)	FILTERED	4	3	0.012	0.0032	0.006233	5	0
Conductivity, field measurement	(umhos/cm)		4	NA	525	335	420.75	NR	NA
Dissolved Oxygen, field measurement	(ppm)		4	NA	3.16	2	2.45	NR	NA
pH, field measurement	(pH)		4	NA	9.18	7.5	8.2625	6.5/8.5	2
REDOX, field measurement	(mV)		4	NA	206	96	149.5	NR	NA
Static Water Level	(ft - toc)		4	NA	-0.9	-4	-2.39	NR	NA
Temperature, field measurement	(Deg C)		4	NA	19	9.9	15.275	NR	NA
Alkalinity as CO3	(mg/L)		4	1	36	36	36	NR	NA
Alkalinity as HCO3	(mg/L)		4	4	270	184	215.5	NR	NA
Conductivity	(umhos/cm)		4	4	619	400	501	NR	NA
Dissolved Solids	(mg/L)		4	4	416	236	317.5	500	0
pH	(pH)		4	4	8.99 L	7.48 L	8.17	6.5/8.5	1
Total Suspended Solids	(mg/L)		4	2	37	18	27.5	NR	NA
Turbidity	(NTU)		4	4	86.9	1.13	32.84	1	4
Gross Alpha	(pCi/L)		4	4	1.5	-0.1	0.65	15 f	0
Gross Beta	(pCi/L)		4	4	7.1	1.2	2.975	50 a	0
2-Butanone	(ug/L)		4	3	11 B	1 BJ	7.333333	NR	NA
Acetone	(ug/L)		4	4	160 B	2 BJ	43.25	NR	NA
Chloroform	(ug/L)		4	2	2 J	2 J	2	100 i	0
Tetrachloroethene	(ug/L)		4	1	3 BJ	3 BJ	3	5	0
Trichloroethene	(ug/L)		4	2	3 J	1 J	2	5	0
Xylenes	(ug/L)		4	1	1 J	1 J	1	10000	0
Xylenes	(ug/L)		4	1	1 J	1 J	1	10000	0

Table 2. 70. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=EF AREA NAME=GW Monitoring Plan Grid Location G3

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		4	4	27.4	4.58	14.62	250	0
Fluoride	(mg/L)		4	2	0.21	0.2	0.205	2	0
Nitrate Nitrogen	(mg/L)		4	4	0.828	0.04	0.46675	10	0
Sulfate	(mg/L)		4	4	32.2	18.8	24.55	250	0
Aluminum, ICAP	(mg/L)		4	2	0.29	0.023	0.1565	0.2	1
Aluminum, ICAP	(mg/L)	FILTERED	4	1	0.021	0.021	0.021	0.2	0
Barium, ICAP	(mg/L)		4	4	0.43	0.057	0.244	2	0
Barium, ICAP	(mg/L)	FILTERED	4	4	0.43	0.058	0.2415	2	0
Boron, ICAP	(mg/L)		4	4	0.043	0.026	0.03325	NR	NA
Boron, ICAP	(mg/L)	FILTERED	4	4	0.047	0.025	0.0335	NR	NA
Calcium, ICAP	(mg/L)		4	4	79	57	68.25	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	4	4	77	59	67.75	NR	NA
Copper, ICAP	(mg/L)	FILTERED	4	1	0.004	0.004	0.004	1	0
Iron, ICAP	(mg/L)		4	4	0.28	0.0069	0.126225	0.3	0
Iron, ICAP	(mg/L)	FILTERED	4	4	0.14	0.0078	0.04945	0.3	0
Lead, PMS	(mg/L)		4	3	0.00064	0.00055	0.000597	NR	NA
Lead, PMS	(mg/L)	FILTERED	4	2	0.00065	0.0005	0.000575	NR	NA
Lithium, ICAP	(mg/L)		4	2	0.017	0.016	0.0165	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	4	2	0.017	0.017	0.017	NR	NA
Magnesium, ICAP	(mg/L)		4	4	10	4.4	7.45	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	4	4	10	4.5	7.375	NR	NA
Manganese, ICAP	(mg/L)		4	3	0.014	0.012	0.012667	0.05	0
Manganese, ICAP	(mg/L)	FILTERED	4	3	0.014	0.0011	0.009033	0.05	0
Potassium, ICAP	(mg/L)		4	4	2.8	2.1	2.6	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	4	4	3.2	2	2.75	NR	NA
Sodium, ICAP	(mg/L)		4	4	6.7	4.4	5.5	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	4	4	6.6	4.7	5.7	NR	NA
Strontium, ICAP	(mg/L)		4	4	0.44	0.08	0.26075	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	4	4	0.44	0.084	0.25825	NR	NA
Uranium, PMS	(mg/L)		4	2	0.0018	0.001	0.0014	NR	NA
Uranium, PMS	(mg/L)	FILTERED	4	2	0.0014	0.0011	0.00125	NR	NA
Zinc, ICAP	(mg/L)		4	2	0.0057	0.0025	0.0041	5	0
Zinc, ICAP	(mg/L)	FILTERED	4	3	0.0027	0.0022	0.002367	5	0

Table 2.70 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Conductivity, field measurement	(umhos/cm)		4	NA	485	313	388.25	NR	NA
Dissolved Oxygen, field measurement	(ppm)		4	NA	4.6	1	3.12	NR	NA
pH, field measurement	(pH)		4	NA	7.4	6.85	7.15	6.5/8.5	0
REDOX, field measurement	(mV)		4	NA	220	14	131	NR	NA
Static Water Level	(ft - toc)		4	NA	-10.74	-13.83	-12.34	NR	NA
Temperature, field measurement	(Deg C)		4	NA	19.7	16.3	18.25	NR	NA
Alkalinity as HCO3	(mg/L)		4	4	210	142	177.5	NR	NA
Conductivity	(umhos/cm)		4	4	488	337	412.5	NR	NA
Dissolved Solids	(mg/L)		4	4	314	191	261.5	500	0
pH	(pH)		4	4	7.71 L	7.26 L	7.4225	6.5/8.5	0
Total Suspended Solids	(mg/L)		4	1	1	1	1	NR	NA
Turbidity	(NTU)		4	4	4.3	0.394	1.809	1	2
Gross Alpha	(pCi/L)		4	4	3.3	-0.4	1.175	15 f	0
Gross Beta	(pCi/L)		4	4	6.5	-1.2	3.125	50 a	0
1,1-Dichloroethene	(ug/L)		4	1	1 J	1 J	1	7	0
1,2-Dichloroethene (Total)	(ug/L)		4	1	2 J	2 J	2	NR b	NA
2-Butanone	(ug/L)		4	2	10 BJ	8 BJ	9	NR	NA
Acetone	(ug/L)		4	4	8 BJ	1 BJ	4.25	NR	NA
Carbon tetrachloride	(ug/L)		4	4	11	3 J	5.75	5	1
Chloroform	(ug/L)		4	4	4 J	1 J	2.5	100 i	0
cis-1,2-Dichloroethene	(ug/L)		4	1	2 J	2 J	2	70	0
Methylene chloride	(ug/L)		4	1	1 BJ	1 BJ	1	5	0
Tetrachloroethene	(ug/L)		4	2	5 B	2 J	3.5	5	0
Trichloroethene	(ug/L)		4	1	1 J	1 J	1	5	0

Table 2. 71. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=EF AREA NAME=GW Monitoring Plan Grid Location H3

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		4	4	54.4	39.36	46.965	250	0
Nitrate Nitrogen	(mg/L)		4	4	1.61	0.7	1.029	10	0
Sulfate	(mg/L)		4	4	48.3	28.3	38.475	250	0
Aluminum, ICAP	(mg/L)		4	2	0.6	0.025	0.3125	0.2	1
Barium, ICAP	(mg/L)		4	4	0.19	0.09	0.1385	2	0
Barium, ICAP	(mg/L)	FILTERED	4	4	0.19	0.078	0.134	2	0
Boron, ICAP	(mg/L)		4	4	0.022	0.014	0.01875	NR	NA
Boron, ICAP	(mg/L)	FILTERED	4	4	0.026	0.012	0.01775	NR	NA
Calcium, ICAP	(mg/L)		4	4	100	88	94.25	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	4	4	100	88	93.75	NR	NA
Chromium, ICAP	(mg/L)		4	2	3.8	0.043	1.9215	0.1	1
Cobalt, ICAP	(mg/L)		4	1	0.016	0.016	0.016	NR	NA
Copper, ICAP	(mg/L)		4	2	0.03	0.0045	0.01725	1	0
Copper, ICAP	(mg/L)	FILTERED	4	1	0.0058	0.0058	0.0058	1	0
Iron, ICAP	(mg/L)		4	4	20	0.008	5.173	0.3	2
Iron, ICAP	(mg/L)	FILTERED	4	4	0.048	0.005	0.01955	0.3	0
Lead, PMS	(mg/L)		4	2	0.0013	0.00075	0.001025	NR	NA
Lead, PMS	(mg/L)	FILTERED	4	1	0.0007	0.0007	0.0007	NR	NA
Lithium, ICAP	(mg/L)		4	3	0.0097	0.0047	0.007567	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	4	2	0.0098	0.0083	0.00905	NR	NA
Magnesium, ICAP	(mg/L)		4	4	7.3	5.3	6.5	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	4	4	7.2	5.2	6.375	NR	NA
Manganese, ICAP	(mg/L)		4	3	0.12	0.0014	0.0518	0.05	1
Manganese, ICAP	(mg/L)	FILTERED	4	2	0.033	0.022	0.0275	0.05	0
Molybdenum, ICAP	(mg/L)		4	1	0.061	0.061	0.061	NR	NA
Nickel, ICAP	(mg/L)		4	2	0.92	0.62	0.77	0.1 d	2
Nickel, ICAP	(mg/L)	FILTERED	4	2	0.56	0.41	0.485	0.1 d	2
Potassium, ICAP	(mg/L)		4	4	3.1	2.3	2.775	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	4	4	2.9	2.3	2.7	NR	NA
Sodium, ICAP	(mg/L)		4	4	14	4.5	9	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	4	4	14	4.4	8.975	NR	NA
Strontium, ICAP	(mg/L)		4	4	0.24	0.17	0.21	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	4	4	0.23	0.17	0.205	NR	NA
Vanadium, ICAP	(mg/L)		4	1	0.01	0.01	0.01	NR	NA

Table 2.71 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Zinc, ICAP	(mg/L)		4	3	0.024	0.0038	0.0112	5	0
Zinc, ICAP	(mg/L)	FILTERED	4	3	0.011	0.0021	0.006733	5	0
Conductivity, field measurement	(umhos/cm)		4	NA	543	461	502.25	NR	NA
Dissolved Oxygen, field measurement	(ppm)		4	NA	4.5	1.29	2.6125	NR	NA
pH, field measurement	(pH)		4	NA	7.6	7.34	7.4325	6.5/8.5	0
REDOX, field measurement	(mV)		4	NA	210	31	147.5	NR	NA
Static Water Level	(ft - toc)		4	NA	-13.28	-16.12	-14.98	NR	NA
Temperature, field measurement	(Deg C)		4	NA	18.9	15.7	17.675	NR	NA
Alkalinity as HCO3	(mg/L)		4	4	200	180	189	NR	NA
Conductivity	(umhos/cm)		4	4	610	524	572.75	NR	NA
Dissolved Solids	(mg/L)		4	4	382	311	346	500	0
pH	(pH)		4	4	7.48 L	7.21 L	7.3525	6.5/8.5	0
Total Suspended Solids	(mg/L)		4	2	4	1	2.5	NR	NA
Turbidity	(NTU)		4	4	15	0.425	5.738	1	2
Gross Alpha	(pCi/L)		4	4	1.5	-0.76	0.76	15 f	0
Gross Beta	(pCi/L)		4	4	5.4	-0.6	3.1	50 a	0
2-Butanone	(ug/L)		4	3	8 BJ	4 J	6	NR	NA
Acetone	(ug/L)		4	4	13 B	1 BJ	5.25	NR	NA
Chloroform	(ug/L)		4	1	1 J	1 J	1	100 i	0
Chloromethane	(ug/L)		4	1	1 J	1 J	1	NR	NA
Tetrachloroethene	(ug/L)		4	2	2 J	1 J	1.5	5	0
Trichloroethene	(ug/L)		4	4	5	3 J	3.75	5	0

Table 2. 72. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=EF AREA NAME=GW Monitoring Plan Grid Location K1

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		6	6	34.4	5.76	19.79167	250	0
Fluoride	(mg/L)		6	3	0.12	0.1	0.11	2	0
Nitrate Nitrogen	(mg/L)		6	2	1.26	0.79	1.025	10	0
Sulfate	(mg/L)		6	6	29.8	16.4	23	250	0
Aluminum, ICAP	(mg/L)		6	3	0.049	0.023	0.033	0.2	0
Aluminum, ICAP	(mg/L)	FILTERED	6	1	0.023	0.023	0.023	0.2	0
Barium, ICAP	(mg/L)		6	6	0.22	0.14	0.175	2	0
Barium, ICAP	(mg/L)	FILTERED	6	6	0.21	0.13	0.17	2	0
Boron, ICAP	(mg/L)		6	6	0.058	0.0095	0.03675	NR	NA
Boron, ICAP	(mg/L)	FILTERED	6	6	0.057	0.0094	0.035733	NR	NA
Calcium, ICAP	(mg/L)		6	6	75	19	48.83333	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	6	6	72	18	47.66667	NR	NA
Chromium, ICAP	(mg/L)		6	2	0.14	0.13	0.135	0.1	2
Chromium, ICAP	(mg/L)	FILTERED	6	1	0.016	0.016	0.016	0.1	0
Copper, ICAP	(mg/L)		6	1	0.0054	0.0054	0.0054	1	0
Copper, ICAP	(mg/L)	FILTERED	6	1	0.0051	0.0051	0.0051	1	0
Iron, ICAP	(mg/L)		6	6	0.99	0.045	0.460833	0.3	3
Iron, ICAP	(mg/L)	FILTERED	6	6	0.26	0.0086	0.101267	0.3	0
Lead, PMS	(mg/L)		6	4	0.0012	0.0005	0.00075	NR	NA
Lead, PMS	(mg/L)	FILTERED	6	2	0.00061	0.0005	0.000555	NR	NA
Lithium, ICAP	(mg/L)		6	4	0.028	0.023	0.02575	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	6	4	0.029	0.022	0.02525	NR	NA
Magnesium, ICAP	(mg/L)		6	6	13	7.3	9.783333	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	6	6	12	7.3	9.583333	NR	NA
Manganese, ICAP	(mg/L)		6	6	1.1	0.03	0.347667	0.05	4
Manganese, ICAP	(mg/L)	FILTERED	6	6	1.1	0.03	0.345833	0.05	4
Nickel, ICAP	(mg/L)		6	3	0.65	0.066	0.352	0.1 d	2
Nickel, ICAP	(mg/L)	FILTERED	6	3	0.64	0.058	0.346	0.1 d	2
Potassium, ICAP	(mg/L)		6	6	3.5	1.6	2.716667	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	6	6	3.4	1.6	2.583333	NR	NA
Sodium, ICAP	(mg/L)		6	6	32	9.7	20.45	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	6	6	31	9.4	19.9	NR	NA
Strontium, ICAP	(mg/L)		6	6	1.2	0.086	0.662167	NR	NA

Table 2.72 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Strontium, ICAP	(mg/L)	FILTERED	6	6	1.2	0.085	0.651833	NR	NA
Zinc, ICAP	(mg/L)		6	5	0.008	0.0021	0.0049	5	0
Zinc, ICAP	(mg/L)	FILTERED	6	6	0.01	0.0026	0.0059	5	0
Conductivity, field measurement	(umhos/cm)		6	NA	471	203	360.6667	NR	NA
Dissolved Oxygen, field measurement	(ppm)		6	NA	5.49	0.66	2.486667	NR	NA
pH, field measurement	(pH)		6	NA	8.11	5.88	6.863333	6.5/8.5	2
REDOX, field measurement	(mV)		6	NA	252	-171	69	NR	NA
Static Water Level	(ft - toc)		6	NA	-4.81	-7.05	-6.10667	NR	NA
Temperature, field measurement	(Deg C)		6	NA	17.1	9.7	13.21667	NR	NA
Alkalinity as HCO3	(mg/L)		6	6	224	44	160.3333	NR	NA
Conductivity	(umhos/cm)		6	6	535	225	412	NR	NA
Dissolved Solids	(mg/L)		6	6	313	134	247.6667	500	0
pH	(pH)		6	6	7.87 L	6.05 L	6.993333	6.5/8.5	2
Total Suspended Solids	(mg/L)		6	2	2	1	1.5	NR	NA
Turbidity	(NTU)		6	6	10	1.39	5.035	1	6
Gross Alpha	(pCi/L)		6	6	4.2	-0.7	2.05	15 f	0
Gross Beta	(pCi/L)		6	6	8.1	-7.6	0.683333	50 a	0
2-Butanone	(ug/L)		6	1	3 J	3 J	3	NR	NA
Acetone	(ug/L)		6	4	21	3 J	10	NR	NA

Table 2. 73. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=EF AREA NAME=GW Monitoring Plan Grid Location K2

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		6	6	25.3	1.26	13.40167	250	0
Fluoride	(mg/L)		6	4	0.21	0.1	0.1625	2	0
Nitrate Nitrogen	(mg/L)		6	2	0.17	0.071	0.1205	10	0
Sulfate	(mg/L)		6	6	44.3	15.1	32.03333	250	0
Aluminum, ICAP	(mg/L)		6	3	0.053	0.024	0.034333	0.2	0
Aluminum, ICAP	(mg/L)	FILTERED	6	1	0.021	0.021	0.021	0.2	0
Barium, ICAP	(mg/L)		6	6	0.14	0.11	0.125	2	0
Barium, ICAP	(mg/L)	FILTERED	6	6	0.13	0.11	0.121667	2	0
Boron, ICAP	(mg/L)		6	6	0.1	0.0088	0.03575	NR	NA
Boron, ICAP	(mg/L)	FILTERED	6	6	0.1	0.0088	0.035317	NR	NA
Calcium, ICAP	(mg/L)		6	6	100	33	72.83333	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	6	6	100	34	72.83333	NR	NA
Copper, ICAP	(mg/L)		6	1	0.0048	0.0048	0.0048	1	0
Iron, ICAP	(mg/L)		6	6	0.26	0.021	0.083167	0.3	0
Iron, ICAP	(mg/L)	FILTERED	6	5	0.049	0.027	0.0406	0.3	0
Lead, PMS	(mg/L)		6	1	0.0007	0.0007	0.0007	NR	NA
Lead, PMS	(mg/L)	FILTERED	6	2	0.0018	0.0006	0.0012	NR	NA
Lithium, ICAP	(mg/L)		6	4	0.023	0.0068	0.013525	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	6	4	0.023	0.0079	0.0142	NR	NA
Magnesium, ICAP	(mg/L)		6	6	9.9	6.6	8.2	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	6	6	9.9	6.7	8.233333	NR	NA
Manganese, ICAP	(mg/L)		6	6	0.76	0.0035	0.185483	0.05	2
Manganese, ICAP	(mg/L)	FILTERED	6	6	0.61	0.0015	0.115133	0.05	2
Potassium, ICAP	(mg/L)		6	6	1.9	0.79	1.398333	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	6	6	2	1.1	1.483333	NR	NA
Sodium, ICAP	(mg/L)		6	6	48	7.6	19.65	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	6	6	49	7.6	19.61667	NR	NA
Strontium, ICAP	(mg/L)		6	6	0.52	0.17	0.305	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	6	6	0.51	0.17	0.305	NR	NA
Uranium, PMS	(mg/L)		6	2	0.0018	0.0017	0.00175	NR	NA
Uranium, PMS	(mg/L)	FILTERED	6	2	0.0018	0.0015	0.00165	NR	NA
Zinc, ICAP	(mg/L)		6	3	0.0097	0.0022	0.006467	5	0
Zinc, ICAP	(mg/L)	FILTERED	6	4	0.0079	0.0025	0.00475	5	0

Table 2.73 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Conductivity, field measurement	(umhos/cm)		6	NA	546	331	417.1667	NR	NA
Dissolved Oxygen, field measurement	(ppm)		6	NA	3.6	0.64	1.856667	NR	NA
pH, field measurement	(pH)		6	NA	7.8	7	7.45	6.5/8.5	0
REDOX, field measurement	(mV)		6	NA	176	4	89.16667	NR	NA
Static Water Level	(ft - toc)		6	NA	-4	-7.35	-5.72667	NR	NA
Temperature, field measurement	(Deg C)		6	NA	15.3	9.9	13.33333	NR	NA
Alkalinity as HCO3	(mg/L)		6	6	262	190	220.6667	NR	NA
Conductivity	(umhos/cm)		6	6	640	402	510	NR	NA
Dissolved Solids	(mg/L)		6	6	383	242	305.3333	500	0
pH	(pH)		6	6	7.74 L	7.11 L	7.348333	6.5/8.5	0
Total Suspended Solids	(mg/L)		6	2	1	1	1	NR	NA
Turbidity	(NTU)		6	6	3.47	0.4	1.658833	1	4
Gross Alpha	(pCi/L)		6	6	2.2	-0.83	0.636667	15 f	0
Gross Beta	(pCi/L)		6	6	3.4	-12	-2.33667	50 a	0
Acetone	(ug/L)		6	3	3 J	2 J	2.666667	NR	NA
Chloroform	(ug/L)		6	1	1 J	1 J	1	100 i	0

Table 2. 74. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=EF AREA NAME=GW Monitoring Plan Grid Location K3

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		2	2	4.4	3.83	4.115	250	0
Fluoride	(mg/L)		2	2	0.18	0.15	0.165	2	0
Nitrate Nitrogen	(mg/L)		2	2	0.54	0.108	0.324	10	0
Sulfate	(mg/L)		2	2	22.9	15.5	19.2	250	0
Aluminum, ICAP	(mg/L)		2	2	2.3	1.6	1.95	0.2	2
Aluminum, ICAP	(mg/L)	FILTERED	2	2	0.028	0.022	0.025	0.2	0
Barium, ICAP	(mg/L)		2	2	0.25	0.19	0.22	2	0
Barium, ICAP	(mg/L)	FILTERED	2	2	0.22	0.17	0.195	2	0
Boron, ICAP	(mg/L)		2	2	0.018	0.013	0.0155	NR	NA
Boron, ICAP	(mg/L)	FILTERED	2	2	0.015	0.01	0.0125	NR	NA
Calcium, ICAP	(mg/L)		2	2	73	64	68.5	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	68	64	66	NR	NA
Copper, ICAP	(mg/L)		2	1	0.0054	0.0054	0.0054	1	0
Iron, ICAP	(mg/L)		2	2	0.9	0.85	0.875	0.3	2
Iron, ICAP	(mg/L)	FILTERED	2	2	0.044	0.041	0.0425	0.3	0
Lead, PMS	(mg/L)		2	2	0.0009	0.0005	0.0007	NR	NA
Lithium, ICAP	(mg/L)		2	2	0.014	0.0073	0.01065	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	2	2	0.011	0.0052	0.0081	NR	NA
Magnesium, ICAP	(mg/L)		2	2	8	7.6	7.8	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	2	7.3	7.2	7.25	NR	NA
Manganese, ICAP	(mg/L)		2	2	0.044	0.036	0.04	0.05	0
Manganese, ICAP	(mg/L)	FILTERED	2	2	0.0063	0.004	0.00515	0.05	0
Potassium, ICAP	(mg/L)		2	2	3.2	2.7	2.95	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	2	2	3	2.3	2.65	NR	NA
Sodium, ICAP	(mg/L)		2	2	20	15	17.5	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	19	16	17.5	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.2	0.17	0.185	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	0.19	0.16	0.175	NR	NA
Uranium, PMS	(mg/L)		2	2	0.0023	0.0014	0.00185	NR	NA
Uranium, PMS	(mg/L)	FILTERED	2	2	0.0021	0.0012	0.00165	NR	NA
Zinc, ICAP	(mg/L)		2	2	0.022	0.0088	0.0154	5	0
Zinc, ICAP	(mg/L)	FILTERED	2	1	0.003	0.003	0.003	5	0
Conductivity, field measurement	(umhos/cm)		2	NA	393	363	378	NR	NA

Table 2.74 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Dissolved Oxygen, field measurement	(ppm)		2	NA	3.9	1.11	2.505	NR	NA
pH, field measurement	(pH)		2	NA	8.3	7.19	7.745	6.5/8.5	0
REDOX, field measurement	(mV)		2	NA	163	76	119.5	NR	NA
Static Water Level	(ft - toc)		2	NA	-7	-7.79	-7.395	NR	NA
Temperature, field measurement	(Deg C)		2	NA	13.6	12.5	13.05	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	228	208	218	NR	NA
Conductivity	(umhos/cm)		2	2	470	431	450.5	NR	NA
Dissolved Solids	(mg/L)		2	2	300	297	298.5	500	0
pH	(pH)		2	2	7.96 L	7.37 L	7.665	6.5/8.5	0
Total Suspended Solids	(mg/L)		2	2	78.4	21	49.7	NR	NA
Turbidity	(NTU)		2	2	47.5	37.7	42.6	1	2
Gross Alpha	(pCi/L)		2	2	4.2	2.4	3.3	15 f	0
Gross Beta	(pCi/L)		2	2	5.6	-1.7	1.95	50 a	0
1,2-Dichloroethene (Total)	(ug/L)		2	1	2 J	2 J	2	NR b	NA
Acetone	(ug/L)		2	1	4 BJ	4 BJ	4	NR	NA
cis-1,2-Dichloroethene	(ug/L)		2	1	2 J	2 J	2	70	0
Tetrachloroethene	(ug/L)		2	1	6	6	6	5	1

Table 2. 75. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=EF AREA NAME=Grid J Primary

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		2	2	66	47.9	56.95	250	0
Fluoride	(mg/L)		2	2	0.29	0.16	0.225	2	0
Sulfate	(mg/L)		2	2	2.68	2.34	2.51	250	0
Aluminum, ICAP	(mg/L)		2	2	1.1	0.024	0.562	0.2	1
Aluminum, ICAP	(mg/L)	FILTERED	2	1	0.066	0.066	0.066	0.2	0
Barium, ICAP	(mg/L)		2	2	0.098	0.047	0.0725	2	0
Barium, ICAP	(mg/L)	FILTERED	2	2	0.093	0.045	0.069	2	0
Boron, ICAP	(mg/L)		2	2	0.034	0.02	0.027	NR	NA
Boron, ICAP	(mg/L)	FILTERED	2	2	0.028	0.018	0.023	NR	NA
Calcium, ICAP	(mg/L)		2	2	120	100	110	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	120	100	110	NR	NA
Iron, ICAP	(mg/L)		2	2	24	15	19.5	0.3	2
Iron, ICAP	(mg/L)	FILTERED	2	2	21	14	17.5	0.3	2
Lead, PMS	(mg/L)		2	1	0.01	0.01	0.01	NR	NA
Lead, PMS	(mg/L)	FILTERED	2	1	0.00074	0.00074	0.00074	NR	NA
Magnesium, ICAP	(mg/L)		2	2	14	13	13.5	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	2	14	13	13.5	NR	NA
Manganese, ICAP	(mg/L)		2	2	1.1	0.81	0.955	0.05	2
Manganese, ICAP	(mg/L)	FILTERED	2	2	1.1	0.77	0.935	0.05	2
Potassium, ICAP	(mg/L)		2	2	1.6	1.2	1.4	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	2	2	1.1	1.1	1.1	NR	NA
Sodium, ICAP	(mg/L)		2	2	14	10	12	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	14	9.7	11.85	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.27	0.2	0.235	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	0.26	0.19	0.225	NR	NA
Thallium, PMS	(mg/L)		2	1	0.00072	0.00072	0.00072	NR	NA
Zinc, ICAP	(mg/L)		2	1	0.0086	0.0086	0.0086	5	0
Zinc, ICAP	(mg/L)	FILTERED	2	1	0.0083	0.0083	0.0083	5	0
Conductivity, field measurement	(umhos/cm)		2	NA	744	645	694.5	NR	NA
Dissolved Oxygen, field measurement	(ppm)		2	NA	3.24	2	2.62	NR	NA
pH, field measurement	(pH)		2	NA	7	6.6	6.8	6.5/8.5	0

Table 2.75 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
REDOX, field measurement	(mV)		2	NA	-60	-79	-69.5	NR	NA
Static Water Level	(ft - toc)		2	NA	-10.12	-10.66	-10.39	NR	NA
Temperature, field measurement	(Deg C)		2	NA	19.8	15.3	17.55	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	324	272	298	NR	NA
Conductivity	(umhos/cm)		2	2	711	699	705	NR	NA
Dissolved Solids	(mg/L)		2	2	408	363	385.5	500	0
pH	(pH)		2	2	6.89 L	6.76	6.825	6.5/8.5	0
Total Suspended Solids	(mg/L)		2	2	40	39	39.5	NR	NA
Turbidity	(NTU)		2	2	238	180	209	1	2
Gross Alpha	(pCi/L)		2	2	0.82	-1.1	-0.14	15 f	0
Gross Beta	(pCi/L)		2	2	2.8	-0.25	1.275	50 a	0
1,1-Dichloroethane	(ug/L)		2	1	2 J	2 J	2	NR	NA
1,1-Dichloroethene	(ug/L)		2	1	4 J	4 J	4	7	0
1,2-Dichloroethene (Total)	(ug/L)		2	1	173	173	173	NR b	NA
2-Butanone	(ug/L)		2	1	3 BJ	3 BJ	3	NR	NA
Acetone	(ug/L)		2	2	8 BJ	3 BJ	5.5	NR	NA
cis-1,2-Dichloroethene	(ug/L)		2	1	170	170	170	70	1
Tetrachloroethene	(ug/L)		2	1	35	35	35	5	1
trans-1,2-Dichloroethene	(ug/L)		2	1	3 J	3 J	3	100	0
Trichloroethene	(ug/L)		2	1	8	8	8	5	1
Vinyl chloride	(ug/L)		2	2	24	2 J	13	2	1

Table 2. 76. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=EF AREA NAME=New Hope Pond

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		10	10	90.3	10.6	39.57	250	0
Fluoride	(mg/L)		10	7	0.23	0.11	0.162857	2	0
Nitrate Nitrogen	(mg/L)		10	6	1.5	0.68	1.000833	10	0
Sulfate	(mg/L)		10	10	55.9	7.14	22.564	250	0
Aluminum, ICAP	(mg/L)		10	9	0.78	0.025	0.209333	0.2	3
Aluminum, ICAP	(mg/L)	FILTERED	10	7	0.073	0.023	0.038714	0.2	0
Barium, ICAP	(mg/L)		10	10	0.6	0.023	0.2101	2	0
Barium, ICAP	(mg/L)	FILTERED	10	10	0.58	0.022	0.2061	2	0
Boron, ICAP	(mg/L)		10	10	0.13	0.015	0.0497	NR	NA
Boron, ICAP	(mg/L)	FILTERED	10	10	0.12	0.018	0.0476	NR	NA
Cadmium, ICAP	(mg/L)		10	1	0.0032	0.0032	0.0032	0.005	0
Calcium, ICAP	(mg/L)		10	10	160	30	76.7	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	10	10	160	29	77.1	NR	NA
Chromium, ICAP	(mg/L)		10	3	0.26	0.011	0.106333	0.1	1
Cobalt, ICAP	(mg/L)		10	1	0.0064	0.0064	0.0064	NR	NA
Cobalt, ICAP	(mg/L)	FILTERED	10	1	0.01	0.01	0.01	NR	NA
Copper, ICAP	(mg/L)		10	1	0.008	0.008	0.008	1	0
Iron, ICAP	(mg/L)		10	10	3.3	0.029	0.6497	0.3	6
Iron, ICAP	(mg/L)	FILTERED	10	10	0.84	0.0064	0.21038	0.3	3
Lead, PMS	(mg/L)		10	4	0.0036	0.00063	0.001613	NR	NA
Lead, PMS	(mg/L)	FILTERED	10	4	0.00078	0.00063	0.000715	NR	NA
Lithium, ICAP	(mg/L)		10	8	0.017	0.0051	0.0094	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	10	8	0.017	0.0044	0.008838	NR	NA
Magnesium, ICAP	(mg/L)		10	10	26	10	15.9	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	10	10	26	10	15.8	NR	NA
Manganese, ICAP	(mg/L)		10	10	0.27	0.0012	0.07895	0.05	5
Manganese, ICAP	(mg/L)	FILTERED	10	9	0.22	0.0054	0.079333	0.05	4
Nickel, ICAP	(mg/L)		10	2	0.25	0.13	0.19	0.1 d	2
Nickel, ICAP	(mg/L)	FILTERED	10	2	0.39	0.09	0.24	0.1 d	1
Potassium, ICAP	(mg/L)		10	10	3	0.96	2.406	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	10	10	3.2	0.8	2.338	NR	NA
Sodium, ICAP	(mg/L)		10	10	70	4.1	21.91	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	10	10	69	5	21.72	NR	NA
Strontium, ICAP	(mg/L)		10	10	0.57	0.033	0.3264	NR	NA

Table 2.76 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Strontium, ICAP	(mg/L)	FILTERED	10	10	0.56	0.033	0.3248	NR	NA
Uranium, PMS	(mg/L)		10	7	0.0017	0.00057	0.001324	NR	NA
Uranium, PMS	(mg/L)	FILTERED	10	6	0.0017	0.00082	0.00137	NR	NA
Zinc, ICAP	(mg/L)		10	8	0.0078	0.0032	0.005688	5	0
Zinc, ICAP	(mg/L)	FILTERED	10	9	0.011	0.0026	0.005922	5	0
Conductivity, field measurement	(umhos/cm)		10	NA	760	371	512.2	NR	NA
Dissolved Oxygen, field measurement	(ppm)		10	NA	7.3	0.94	3.54	NR	NA
pH, field measurement	(pH)		10	NA	8	6.5	7.31	6.5/8.5	0
REDOX, field measurement	(mV)		10	NA	424	-55	157.1	NR	NA
Static Water Level	(ft - toc)		10	NA	-7.65	-20.23	-12.81	NR	NA
Temperature, field measurement	(Deg C)		10	NA	18.1	13.4	15.82	NR	NA
Alkalinity as HCO3	(mg/L)		10	10	354	138	226.4	NR	NA
Conductivity	(umhos/cm)		10	10	906	383	580.3	NR	NA
Dissolved Solids	(mg/L)		10	10	583	215	336.7	500	2
pH	(pH)		10	10	8.04 L	6.8 L	7.383	6.5/8.5	0
Total Suspended Solids	(mg/L)		10	5	7	1	4.8	NR	NA
Turbidity	(NTU)		10	10	29.9	0.54	8.1234	1	8
Gross Alpha	(pCi/L)		10	10	2.6	-0.1	1.17	15 f	0
Gross Beta	(pCi/L)		10	10	6.3	-2.8	2.244	50 a	0
1,1-Dichloroethene	(ug/L)		10	2	3 J	3 J	3	7	0
1,2-Dichloroethene (Total)	(ug/L)		10	6	132	3 J	43	NR b	NA
2-Butanone	(ug/L)		10	5	5 BJ	1 J	3.6	NR	NA
Acetone	(ug/L)		10	6	53 B	2 BJ	11.33333	NR	NA
Carbon tetrachloride	(ug/L)		10	4	610 D	2 J	315.5	5	3
Chloroform	(ug/L)		10	5	29	2 J	13.4	100 i	0
cis-1,2-Dichloroethene	(ug/L)		10	6	130	3 J	42.5	70	2
Tetrachloroethene	(ug/L)		10	5	350 D	7	149	5	5
trans-1,2-Dichloroethene	(ug/L)		10	2	2 J	1 J	1.5	100	0
Trichloroethene	(ug/L)		10	5	180	2 J	59.6	5	4
Trichlorofluoromethane	(ug/L)		10	1	1 J	1 J	1	NR	NA
Vinyl chloride	(ug/L)		10	1	4 J	4 J	4	2	1

Table 2. 77. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=EF AREA NAME=S-2 Site

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		2	2	10.5	5.88	8.19	250	0
Fluoride	(mg/L)		2	2	1.58	1.44	1.51	2	0
Nitrate Nitrogen	(mg/L)		2	2	80.2	40.9	60.55	10	2
Sulfate	(mg/L)		2	2	25.8	15.4	20.6	250	0
Aluminum, ICAP	(mg/L)		2	2	5.6	0.22	2.91	0.2	2
Aluminum, ICAP	(mg/L)	FILTERED	2	2	0.08	0.02	0.05	0.2	0
Barium, ICAP	(mg/L)		2	2	0.13	0.065	0.0975	2	0
Barium, ICAP	(mg/L)	FILTERED	2	2	0.11	0.063	0.0865	2	0
Beryllium, ICAP	(mg/L)		2	2	0.0011	0.0004	0.00075	0.004	0
Beryllium, ICAP	(mg/L)	FILTERED	2	2	0.00057	0.0003	0.000435	0.004	0
Boron, ICAP	(mg/L)		2	2	0.033	0.012	0.0225	NR	NA
Boron, ICAP	(mg/L)	FILTERED	2	2	0.028	0.011	0.0195	NR	NA
Cadmium, ICAP	(mg/L)		2	2	0.17	0.066	0.118	0.005	2
Cadmium, ICAP	(mg/L)	FILTERED	2	2	0.16	0.064	0.112	0.005	2
Calcium, ICAP	(mg/L)		2	2	120	86	103	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	120	84	102	NR	NA
Chromium, ICAP	(mg/L)		2	1	0.015	0.015	0.015	0.1	0
Cobalt, ICAP	(mg/L)		2	2	0.036	0.0079	0.02195	NR	NA
Cobalt, ICAP	(mg/L)	FILTERED	2	2	0.029	0.0083	0.01865	NR	NA
Copper, ICAP	(mg/L)		2	2	0.57	0.18	0.375	1	0
Copper, ICAP	(mg/L)	FILTERED	2	2	0.42	0.15	0.285	1	0
Iron, ICAP	(mg/L)		2	2	4.4	0.097	2.2485	0.3	1
Iron, ICAP	(mg/L)	FILTERED	2	2	0.019	0.015	0.017	0.3	0
Lead, PMS	(mg/L)		2	2	0.016	0.0021	0.00905	NR	NA
Lead, PMS	(mg/L)	FILTERED	2	1	0.00059	0.00059	0.00059	NR	NA
Lithium, ICAP	(mg/L)		2	1	0.0099	0.0099	0.0099	NR	NA
Magnesium, ICAP	(mg/L)		2	2	19	15	17	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	2	19	14	16.5	NR	NA
Manganese, ICAP	(mg/L)		2	2	5.3	1.6	3.45	0.05	2
Manganese, ICAP	(mg/L)	FILTERED	2	2	4.7	1.6	3.15	0.05	2
Nickel, ICAP	(mg/L)		2	2	0.057	0.011	0.034	0.1 d	0
Nickel, ICAP	(mg/L)	FILTERED	2	2	0.049	0.013	0.031	0.1 d	0

Table 2.77 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Potassium, ICAP	(mg/L)		2	2	4.8	2.5	3.65	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	2	2	3	2.2	2.6	NR	NA
Sodium, ICAP	(mg/L)		2	2	19	10	14.5	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	18	9.9	13.95	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.24	0.15	0.195	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	0.23	0.15	0.19	NR	NA
Thallium, PMS	(mg/L)		2	2	0.0034	0.0014	0.0024	NR	NA
Thallium, PMS	(mg/L)	FILTERED	2	2	0.0031	0.0015	0.0023	NR	NA
Uranium, PMS	(mg/L)		2	2	0.0088	0.0036	0.0062	NR	NA
Uranium, PMS	(mg/L)	FILTERED	2	2	0.0066	0.0036	0.0051	NR	NA
Vanadium, ICAP	(mg/L)		2	1	0.0078	0.0078	0.0078	NR	NA
Zinc, ICAP	(mg/L)		2	2	0.099	0.023	0.061	5	0
Zinc, ICAP	(mg/L)	FILTERED	2	2	0.072	0.022	0.047	5	0
Conductivity, field measurement	(umhos/cm)		2	NA	1006	622	814	NR	NA
Dissolved Oxygen, field measurement	(ppm)		2	NA	1.99	1	1.495	NR	NA
pH, field measurement	(pH)		2	NA	6.8	6.5	6.65	6.5/8.5	0
REDOX, field measurement	(mV)		2	NA	278	254	266	NR	NA
Static Water Level	(ft - toc)		2	NA	-12.6	-21.25	-16.925	NR	NA
Temperature, field measurement	(Deg C)		2	NA	15.9	15.6	15.75	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	178	174	176	NR	NA
Conductivity	(umhos/cm)		2	2	1103	699	901	NR	NA
Dissolved Solids	(mg/L)		2	2	739	432	585.5	500	1
pH	(pH)		2	2	6.68 L	6.4 L	6.54	6.5/8.5	1
Total Suspended Solids	(mg/L)		2	2	55	8	31.5	NR	NA
Turbidity	(NTU)		2	2	64.1	11.9	38	1	2
Gross Alpha	(pCi/L)		2	2	13	8	10.5	15 f	0
Gross Beta	(pCi/L)		2	2	14	5.4	9.7	50 a	0
1,2-Dichloroethene (Total)	(ug/L)		2	2	8	2 J	5	NR b	NA
2-Butanone	(ug/L)		2	1	6 BJ	6 BJ	6	NR	NA
Acetone	(ug/L)		2	2	25 B	1 BJ	13	NR	NA

Table 2.77 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Carbon tetrachloride	(ug/L)		2	2	18	2 J	10	5	1
Chloroform	(ug/L)		2	2	13	9	11	100 i	0
cis-1,2-Dichloroethene	(ug/L)		2	2	8	2 J	5	70	0
Methylene chloride	(ug/L)		2	1	1 BJ	1 BJ	1	5	0
Tetrachloroethene	(ug/L)		2	2	600 D	130	365	5	2
Trichloroethene	(ug/L)		2	2	240 D	50	145	5	2

Table 2. 78. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=EF AREA NAME=S-3 Site

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		2	2	120	103	111.5	250	0
Nitrate Nitrogen	(mg/L)		2	2	19700	10500	15100	10	2
Aluminum, ICAP	(mg/L)		2	1	0.98	0.98	0.98	0.2	1
Aluminum, ICAP	(mg/L)	FILTERED	2	1	0.73	0.73	0.73	0.2	1
Arsenic, PMS	(mg/L)		2	1	0.015	0.015	0.015	NR	NA
Arsenic, PMS	(mg/L)	FILTERED	2	2	0.02	0.015	0.0175	NR	NA
Barium, ICAP	(mg/L)		2	2	100	92	96	2	2
Barium, ICAP	(mg/L)	FILTERED	2	2	100	96	98	2	2
Boron, ICAP	(mg/L)		2	2	0.34	0.22	0.28	NR	NA
Boron, ICAP	(mg/L)	FILTERED	2	2	0.34	0.26	0.3	NR	NA
Calcium, ICAP	(mg/L)		2	2	12000	11000	11500	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	12000	11000	11500	NR	NA
Cobalt, ICAP	(mg/L)		2	1	0.16	0.16	0.16	NR	NA
Cobalt, ICAP	(mg/L)	FILTERED	2	1	0.14	0.14	0.14	NR	NA
Iron, ICAP	(mg/L)		2	1	0.61	0.61	0.61	0.3	1
Iron, ICAP	(mg/L)	FILTERED	2	1	0.14	0.14	0.14	0.3	0
Lead, PMS	(mg/L)		2	2	0.0018	0.0017	0.00175	NR	NA
Lead, PMS	(mg/L)	FILTERED	2	2	0.0014	0.001	0.0012	NR	NA
Lithium, ICAP	(mg/L)		2	2	0.4	0.34	0.37	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	2	2	0.39	0.35	0.37	NR	NA
Magnesium, ICAP	(mg/L)		2	2	1100	950	1025	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	2	1100	980	1040	NR	NA
Manganese, ICAP	(mg/L)		2	2	110	97	103.5	0.05	2
Manganese, ICAP	(mg/L)	FILTERED	2	2	110	100	105	0.05	2
Nickel, ICAP	(mg/L)		2	1	0.26	0.26	0.26	0.1 d	1
Nickel, ICAP	(mg/L)	FILTERED	2	1	0.35	0.35	0.35	0.1 d	1
Potassium, ICAP	(mg/L)		2	1	24	24	24	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	2	1	25	25	25	NR	NA
Sodium, ICAP	(mg/L)		2	2	460	430	445	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	450	450	450	NR	NA
Strontium, ICAP	(mg/L)		2	2	39	34	36.5	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	38	35	36.5	NR	NA

Table 2.78 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Thallium, PMS	(mg/L)		2	1	0.0017	0.0017	0.0017	NR	NA
Thallium, PMS	(mg/L)	FILTERED	2	1	0.0014	0.0014	0.0014	NR	NA
Uranium, PMS	(mg/L)		2	2	0.015	0.015	0.015	NR	NA
Uranium, PMS	(mg/L)	FILTERED	2	2	0.016	0.015	0.0155	NR	NA
Zinc, ICAP	(mg/L)		2	1	0.071	0.071	0.071	5	0
Conductivity, field measurement	(umhos/cm)		2	NA	43400	4650	24025	NR	NA
Dissolved Oxygen, field measurement	(ppm)		2	NA	5.4	1.3	3.35	NR	NA
pH, field measurement	(pH)		2	NA	5.8	5.4	5.6	6.5/8.5	2
REDOX, field measurement	(mV)		2	NA	272	240	256	NR	NA
Static Water Level	(ft - toc)		2	NA	-7.69	-7.72	-7.705	NR	NA
Temperature, field measurement	(Deg C)		2	NA	19.9	18.1	19	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	622	620	621	NR	NA
Conductivity	(umhos/cm)		2	2	52400	51700	52050	NR	NA
Dissolved Solids	(mg/L)		2	2	60199	56982 f	58590.5	500	2
pH	(pH)		2	2	5.63	5.59 L	5.61	6.5/8.5	2
Total Suspended Solids	(mg/L)		2	2	13	9	11	NR	NA
Turbidity	(NTU)		2	2	2.24	0.42	1.33	1	1
Technetium-99	(pCi/L)		2	2	18000	14000	16000	4000	2
Gross Alpha	(pCi/L)		2	2	79	70	74.5	15 f	2
Gross Beta	(pCi/L)		2	2	13000	8000	10500	50 a	2
Acetone	(ug/L)		2	2	18 B	16 B	17	NR	NA
Bromoform	(ug/L)		2	2	2 J	2 J	2	100 i	0
Bromomethane	(ug/L)		2	1	1 J	1 J	1	NR	NA
Chloroform	(ug/L)		2	2	29	22	25.5	100 i	0
Iodomethane	(ug/L)		2	1	3 J	3 J	3	NR	NA
Methylene chloride	(ug/L)		2	2	48	38	43	5	2
Trichloroethene	(ug/L)		2	2	2 J	2 J	2	5	0

Table 2. 79. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=EF AREA NAME=Tank 2331-U, near Building 9201-1

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		2	2	5.42	4.43	4.925	250	0
Fluoride	(mg/L)		2	2	0.63	0.6	0.615	2	0
Sulfate	(mg/L)		2	2	32.2	25.8	29	250	0
Aluminum, ICAP	(mg/L)		2	2	0.1	0.03	0.065	0.2	0
Aluminum, ICAP	(mg/L)	FILTERED	2	1	0.029	0.029	0.029	0.2	0
Barium, ICAP	(mg/L)		2	2	0.11	0.078	0.094	2	0
Barium, ICAP	(mg/L)	FILTERED	2	2	0.081	0.076	0.0785	2	0
Boron, ICAP	(mg/L)		2	2	0.11	0.073	0.0915	NR	NA
Boron, ICAP	(mg/L)	FILTERED	2	2	0.083	0.079	0.081	NR	NA
Calcium, ICAP	(mg/L)		2	2	89	64	76.5	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	2	2	66	64	65	NR	NA
Iron, ICAP	(mg/L)		2	2	0.17	0.024	0.097	0.3	0
Iron, ICAP	(mg/L)	FILTERED	2	2	0.037	0.0091	0.02305	0.3	0
Lead, PMS	(mg/L)		2	1	0.0012	0.0012	0.0012	NR	NA
Magnesium, ICAP	(mg/L)		2	2	18	14	16	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	2	2	14	13	13.5	NR	NA
Manganese, ICAP	(mg/L)		2	2	0.39	0.25	0.32	0.05	2
Manganese, ICAP	(mg/L)	FILTERED	2	2	0.26	0.24	0.25	0.05	2
Potassium, ICAP	(mg/L)		2	2	7.5	5.5	6.5	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	2	2	5.8	5.5	5.65	NR	NA
Sodium, ICAP	(mg/L)		2	2	4.7	3.9	4.3	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	2	2	4.1	3.3	3.7	NR	NA
Strontium, ICAP	(mg/L)		2	2	0.49	0.38	0.435	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	2	2	0.39	0.36	0.375	NR	NA
Uranium, PMS	(mg/L)		2	2	0.012	0.0042	0.0081	NR	NA
Uranium, PMS	(mg/L)	FILTERED	2	2	0.014	0.0043	0.00915	NR	NA
Zinc, ICAP	(mg/L)		2	2	0.0039	0.0036	0.00375	5	0
Zinc, ICAP	(mg/L)	FILTERED	2	2	0.0046	0.0023	0.00345	5	0
Conductivity, field measurement	(umhos/cm)		2	NA	533	365	449	NR	NA
Dissolved Oxygen, field measurement	(ppm)		2	NA	1.8	1.5	1.65	NR	NA
pH, field measurement	(pH)		2	NA	7.8	7.4	7.6	6.5/8.5	0

Table 2.79 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
REDOX, field measurement	(mV)		2	NA	-214	-305	-259.5	NR	NA
Static Water Level	(ft - toc)		2	NA	-7.61	-8.38	-7.995	NR	NA
Temperature, field measurement	(Deg C)		2	NA	23.2	15.7	19.45	NR	NA
Alkalinity as HCO3	(mg/L)		2	2	272	202	237	NR	NA
Conductivity	(umhos/cm)		2	2	612	443	527.5	NR	NA
Dissolved Solids	(mg/L)		2	2	365	290	327.5	500	0
pH	(pH)		2	2	7.87	7.56 L	7.715	6.5/8.5	0
Turbidity	(NTU)		2	2	131	41	86	1	2
Technetium-99	(pCi/L)		2	2	2	-1	0.5	4000	0
Gross Alpha	(pCi/L)		2	2	7.6	4.4	6	15 f	0
Gross Beta	(pCi/L)		2	2	9.9	3	6.45	50 a	0
Acetone	(ug/L)		2	1	150 B	150 B	150	NR	NA
Benzene	(ug/L)		2	2	180	120	150	5	2
Chloroethane	(ug/L)		2	1	4 J	4 J	4	NR	NA
Ethylbenzene	(ug/L)		2	2	140	130	135	700	0
Toluene	(ug/L)		2	2	36	13	24.5	1000	0
Xylenes	(ug/L)		2	2	120	52 B	86	10000	0
Xylenes	(ug/L)		2	2	120	52 B	86	10000	0

Table 2. 80. CONSTITUENTS DETECTED IN GROUNDWATER AT THE Y-12 PLANT SITE 1997

REGIME=EF AREA NAME=Westbay

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chloride	(mg/L)		19	19	167.349	1.83	26.80784	250	0
Fluoride	(mg/L)		19	16	1.31	0.13	0.51375	2	0
Nitrate Nitrogen	(mg/L)		19	13	3.67	0.17	1.724154	10	0
Sulfate	(mg/L)		19	17	92	4.89	26.19612	250	0
Aluminum, ICAP	(mg/L)		19	17	6.2	0.05	0.636706	0.2	4
Aluminum, ICAP	(mg/L)	FILTERED	19	11	0.046	0.02	0.029091	0.2	0
Arsenic, PMS	(mg/L)		19	3	0.0097	0.006	0.007633	NR	NA
Arsenic, PMS	(mg/L)	FILTERED	19	3	0.021	0.0063	0.011333	NR	NA
Barium, ICAP	(mg/L)		19	19	0.33	0.033	0.108053	2	0
Barium, ICAP	(mg/L)	FILTERED	19	19	0.48	0.036	0.120474	2	0
Beryllium, ICAP	(mg/L)		19	1	0.00059	0.00059	0.00059	0.004	0
Boron, ICAP	(mg/L)		19	17	0.71	0.0068	0.153559	NR	NA
Boron, ICAP	(mg/L)	FILTERED	19	17	0.75	0.0062	0.161976	NR	NA
Calcium, ICAP	(mg/L)		19	19	560	22	76.68421	NR	NA
Calcium, ICAP	(mg/L)	FILTERED	19	19	220	6.9	55.83684	NR	NA
Chromium, ICAP	(mg/L)		19	6	0.017	0.01	0.013833	0.1	0
Cobalt, ICAP	(mg/L)		19	1	0.012	0.012	0.012	NR	NA
Copper, ICAP	(mg/L)		19	6	0.036	0.0045	0.010383	1	0
Copper, ICAP	(mg/L)	FILTERED	19	1	0.017	0.017	0.017	1	0
Iron, ICAP	(mg/L)		19	19	43	0.15	2.998421	0.3	13
Iron, ICAP	(mg/L)	FILTERED	19	19	17	0.012	1.080947	0.3	3
Lead, PMS	(mg/L)		19	17	0.047	0.0008	0.006085	NR	NA
Lead, PMS	(mg/L)	FILTERED	19	15	0.009	0.0007	0.003147	NR	NA
Lithium, ICAP	(mg/L)		19	18	0.14	0.0052	0.02825	NR	NA
Lithium, ICAP	(mg/L)	FILTERED	19	16	0.18	0.0047	0.034313	NR	NA
Magnesium, ICAP	(mg/L)		19	19	78	11	23.42105	NR	NA
Magnesium, ICAP	(mg/L)	FILTERED	19	19	62	0.76	22.07158	NR	NA
Manganese, ICAP	(mg/L)		19	19	0.43	0.0032	0.051816	0.05	3
Manganese, ICAP	(mg/L)	FILTERED	19	19	0.13	0.001	0.026716	0.05	4
Nickel, ICAP	(mg/L)		19	11	0.053	0.01	0.020727	0.1 d	0
Nickel, ICAP	(mg/L)	FILTERED	19	2	0.23	0.014	0.122	0.1 d	1
Potassium, ICAP	(mg/L)		19	19	7	0.85	2.971053	NR	NA
Potassium, ICAP	(mg/L)	FILTERED	19	19	5.9	0.64	2.817895	NR	NA
Sodium, ICAP	(mg/L)		19	19	200	1	31.15263	NR	NA
Sodium, ICAP	(mg/L)	FILTERED	19	19	340	0.81	41.26368	NR	NA

Table 2.80 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Strontium, ICAP	(mg/L)		19	19	5	0.068	1.542158	NR	NA
Strontium, ICAP	(mg/L)	FILTERED	19	19	7.7	0.072	1.657895	NR	NA
Uranium, PMS	(mg/L)		19	3	0.00087	0.00052	0.000693	NR	NA
Uranium, PMS	(mg/L)	FILTERED	19	3	0.00074	0.00051	0.000593	NR	NA
Vanadium, ICAP	(mg/L)		19	1	0.0083	0.0083	0.0083	NR	NA
Zinc, ICAP	(mg/L)		19	19	0.98	0.022	0.164579	5	0
Zinc, ICAP	(mg/L)	FILTERED	19	19	0.31	0.0026	0.044695	5	0
Conductivity, field measurement	(umhos/cm)		19	NA	1100	50	489.2632	NR	NA
Dissolved Oxygen, field measurement	(ppm)		19	NA	13	2.05	5.797895	NR	NA
pH, field measurement	(pH)		19	NA	8.6	6.72	7.443158	6.5/8.5	1
REDOX, field measurement	(mV)		19	NA	198	-159	18.73684	NR	NA
Temperature, field measurement	(Deg C)		19	NA	20.5	12.4	16.21053	NR	NA
Alkalinity as HCO3	(mg/L)		19	19	544	30	222.8421	NR	NA
Conductivity	(umhos/cm)		19	19	1119	43.7	522.6158	NR	NA
Dissolved Solids	(mg/L)		19	19	940	35	314.8421	500	3
pH	(pH)		19	19	8.77	7.06 L	7.796316	6.5/8.5	1
Total Suspended Solids	(mg/L)		19	18	500	1	37.13333	NR	NA
Turbidity	(NTU)		19	19	1103	2.05	74.49158	1	19
Gross Alpha	(pCi/L)		19	19	4.2	-1.2	1.010526	15 f	0
Gross Beta	(pCi/L)		19	19	18	-1.4	4.178947	50 a	0
1,1,1-Trichloroethane	(ug/L)		19	7	7	1 J	3.857143	200	0
1,1-Dichloroethane	(ug/L)		19	4	2 J	1 J	1.5	NR	NA
1,1-Dichloroethene	(ug/L)		19	6	4 J	1 J	2.333333	7	0
1,2-Dichloroethene (Total)	(ug/L)		19	9	10	2 J	5	NR b	NA
2-Butanone	(ug/L)		19	11	21 B	2 BJ	9.272727	NR	NA
Acetone	(ug/L)		19	18	58 B	1 J	9	NR	NA
Acrylonitrile	(ug/L)		19	5	49	2 J	20.6	NR	NA
Benzene	(ug/L)		19	2	2 J	1 J	1.5	5	0
Carbon disulfide	(ug/L)		19	1	1 BJ	1 BJ	1	NR	NA
Carbon tetrachloride	(ug/L)		19	11	1200 D	1 J	409.6364	5	10

Table 2.80 (continued)

Variable	Units	Filtered Status	No. Samples	No. Detected	Maximum Detected	Minimum Detected	Average	Reference Value	No. of Meas. > Reference
Chlorobenzene	(ug/L)		19	1	4 J	4 J	4	100	0
Chloroform	(ug/L)		19	12	67	2 J	31	100 i	0
Chloromethane	(ug/L)		19	1	2 J	2 J	2	NR	NA
cis-1,2-Dichloroethene	(ug/L)		19	9	10	2 J	5	70	0
Ethylbenzene	(ug/L)		19	2	3 J	1 J	2	700	0
Methylene chloride	(ug/L)		19	2	5	1 J	3	5	0
Styrene	(ug/L)		19	4	3 J	1 J	2	100	0
Tetrachloroethene	(ug/L)		19	9	72	7	37	5	9
Toluene	(ug/L)		19	3	9	1 J	4.333333	1000	0
Trichloroethene	(ug/L)		19	10	11	1 J	4.9	5	4
Trichlorofluoromethane	(ug/L)		19	7	15	1 J	7.571429	NR	NA
Xylenes	(ug/L)		19	2	2 J	1 J	1.5	10000	0

Table 2.81. 1997 HYDROGEOLOGIC REGIME AND AREA SUMMARY

REGIME	SITE	WELL	SAMPLE NUMBER(S)
BC	Background	GW-040	A970220034 A970220035 A972450125 A972450127
		GW-042	A970330018 A970330019 A972450126 A972450128
		GW-043	A970230034 A970230035 A972250047 A972250050
		GW-044	A970230031 A970230032 A972230133 A972230136
		GW-079	A970230041 A970230042 A972300183 A972300185
		GW-080	A970210036 A970210038 A972260239 A972260242
		GW-084	A970280002 A970280003 A972250048 A972250051
		GW-115	A970220039 A970220040 A972230134 A972230137
		GW-162	A970240013 A970240014 A972310048 A972310049 A972310050 A972310051
		GW-372	A970280006 A970280007 A970280009 A970280010 A972260241 A972260244
		GW-373	A970280011 A970280012 A972320147 A972320149
		GW-613	A970220042 A970220043 A972230132 A972230135
		GW-614	A970280000 A970280001 A972260276 A972260277 A972260280 A972260281
		GW-642	A970210039 A970210040 A972260240 A972260243
	Bear Creek Burial Grounds WMA	GW-053	A970380003 A970380005 A972470002 A972470005
		GW-069	A970220037 A970220038 A972300182 A972300184
		GW-287	A970380001 A970380002 A972470001 A972470004
		GW-627	A970410020 A970410027 A970410028 A970410029 A972530001 A972530002 A972530004 A972530005
		GW-653	A970380004 A970380006 A972470003 A972470006
	Exit Pathway Monitoring Location A	GW-056	A970440012 A970450000 A972310059 A972310061
		GW-683	A970490006 A970490008 A972340003 A972340004
		GW-684	A970500001 A970500002 A972340005 A972340006
		GW-685	A970430038 A970430039 A972320166 A972320167 A972320168 A972320169
	Exit Pathway Monitoring Location B	GW-621	A970490002 A970490005 A972340001 A972340002
		GW-695	A970490007 A970490009 A972310060 A972310062
		GW-703	A970510004 A970510006 A972400060 A972400061
		GW-704	A970510005 A970510007 A972410001 A972410002
		GW-706	A970520041 A970520047 A972460111 A972460113
	Exit Pathway Monitoring Location C	GW-724	A970590008 A970590009 A970590010 A970590011 A972480137 A972480139
		GW-725	A970590138 A970590139 A972480141 A972480143
		GW-738	A970570001 A970570002 A972480017 A972480018 A972480020 A972480021
		GW-740	A970560001 A970560003 A972480016 A972480019

Table 2.81 (continued)

REGIME	SITE	WELL	SAMPLE NUMBER(S)
	Exit Pathway Monitoring Location W	GW-710	A970340013 A970340014 A972400111 A972400113
		GW-711	A970330020 A970330021 A972390006 A972390008
		GW-712	A970340009 A970340010 A972380037 A972380038 A972380039 A972380040
		GW-713	A970340018 A970340019 A970340020 A970340021 A972400031 A972400035
		GW-714	A970350002 A970350003 A972400032 A972400036
		GW-715	A970350005 A970350006 A972400033 A972400037
	Exit Pathway Spring/Surface Water	BCK-00.63	A970360059 A970360060 A972400114 A972400116
		BCK-04.55	A970360053 A970360054 A972400115 A972400117
		BCK-07.75	A970360050 A970360051 A972410040 A972410045
		BCK-09.40	A970360057 A970360058 A972410042 A972410047
		BCK-10.60	A970360055 A970360056 A972410098 A972410100
		BCK-11.97	A970360061 A970360062 A972410099 A972410101 A972550022
		NT-01	A970350016 A970350023 A972860068 A972860070
		SS-1	A970350014 A970350021 A972860069 A972860071
		SS-4	A970350015 A970350022 A972410043 A972410044 A972410048 A972410049
		SS-5	A970350017 A970350024 A972410041 A972410046
	Oil Landfarm WMA	GW-085	A970640060 A970640061 A970640063 A970640064 A972600046 A972600049
		GW-363	A970290047 A970290048 A970290049 A970290050 A972260278 A972260282
		GW-537	A970640008 A970640009 A972600047 A972600048 A972600050 A972600051
		GW-829	A970640001 A970640002 A972590079 A972590082
	Rust Spoil Area	GW-311	A970640003 A970640004 A972620128 A972620129
	S-3 Site	GW-276	A970280045 A970280046 A972250049 A972250052
	Spoil Area I	GW-315	A970640062 A970640065 A972590078 A972590081
CR	C. Ridge Borrow Area Waste Pile	GW-301	A970070049 A970070050 A972050176 A972050178
	C. Ridge Security Pits	GW-609	A970140034 A970140035 A972050177 A972050179
		GW-831	A970070003 A970070004 A972050008 A972050009
	C. Ridge Sediment Disposal Basin	GW-156	A971120005 A971120010 A971120050 A971120052 A971130086 A971130088 A971140230 A971140233 A972930098 A972930100 A972950222 A972950224 A973000166 A973000167 A973010119 A973010120 A973010121 A973010122
		GW-159	A971120004 A971120009 A971120049 A971120051 A971130085 A971130087 A971140229 A971140232 A972930102 A972930105 A972950003 A972950005 A972950213 A972950215 A972970003 A972970005

Table 2.81 (continued)

REGIME	SITE	WELL	SAMPLE NUMBER(S)
		GW-731	A971120001 A971120002 A971120006 A971120007 A971120042 A971120043 A971120045 A971120046 A971130062 A971130063 A971130065 A971130066 A971140211 A971140212 A971140215 A971140216 A972930103 A972930104 A972930106 A972930107 A972950002 A972950004 A972950214 A972950216 A972970002 A972970004
		GW-732	A971120003 A971120008 A971120041 A971120044 A971130064 A971130067 A971140213 A971140217 A972930099 A972930101 A972950000 A972950001 A972950221 A972950223 A972970000 A972970001
	Const./Debris Landfill VI	GW-542	A970920002 A970920006
		GW-543	A970920003 A970920004 A970920007 A970920008 A972880096 A972880097
		GW-544	A970920105 A970920106 A972900006 A972900007
		GW-827	A970920001 A970920005 A972890047 A972890048 A972890049 A972890050
	Const./Debris Landfill VII	GW-560	A970150033 A970150034 A971950056 A971950059
		GW-562	A970150029 A970150031 A971950057 A971950058 A971950060 A971950061
		GW-564	A970160020 A970160021 A970160023 A970160024 A971960081 A971960084
		GW-798	A970160025 A970160026 A971960082 A971960085
	Exit Pathway Spring/Surface Water	SCR2.2SP	A970160007 A970160008 A972120267 A972120268
	Industrial Landfill II	GW-539	A970930003 A970930006 A972890154 A972890156 A973380150 A973380152
		GW-709	A970930004 A970930007 A972890149 A972890151
		GW-757	A970930018 A970930019 A970930020 A970930021 A972890150 A972890152
	Industrial Landfill IV	GW-141	A970080002 A970080003 A970080005 A970080006 A970590012 A970590013 A972040099 A972040100 A972040101 A972040102
		GW-217	A970070000 A970070001 A971980103 A971980104
		GW-305	A970090007 A970090008 A972030064 A972030065
		GW-521	A970080000 A970080001 A972030004 A972030005
		GW-522	A970090009 A970090010 A972030002 A972030003
	Industrial Landfill V	GW-557	A970090002 A970090003 A970090005 A970090006 A971910007 A971910010
		GW-796	A970090030 A970090031 A971920001 A971920014
		GW-797	A970090032 A970090033 A971910009 A971910012
		GW-799	A970090000 A970090001 A971910008 A971910011
		GW-801	A970150021 A970150022 A971920011 A971920012 A971920015 A971920016
		SCR4.3SP	A970150024 A970150025 A971950062 A971950063

Table 2.81 (continued)

REGIME	SITE	WELL	SAMPLE NUMBER(S)
	Kerr Hollow Quarry	GW-142	A971190065 A971190066 A971190069 A971190070 A971210038 A971210042 A971210085 A971210087 A972160124 A972160125 A972170213 A972170214 A972180128 A972180129 A972190190 A972190192 A973150002 A973150003 A973150004 A973150005 A973150151 A973150152 A973160233 A973160234 A973180082 A973180083
		GW-143	A971190012 A971190014 A971190064 A971190068 A971210007 A971210010 A971210068 A971210071 A972170006 A972170011 A972170204 A972170206 A972180136 A972180141 A972190178 A972190181 A973140187 A973140189 A973160001 A973160004 A973170005 A973170007 A973170171 A973170173
		GW-144	A971190016 A971190017 A971190019 A971190020 A971190076 A971190077 A971190079 A971190080 A971210035 A971210036 A971210039 A971210040 A971210077 A971210078 A971210081 A971210082 A972170007 A972170008 A972170012 A972170013 A972170218 A972170219 A972170221 A972170222 A972180137 A972180138 A972180142 A972180143 A972190184 A972190185 A972190188 A972190189 A973150007 A973150009 A973150180 A973150182 A973170001 A973170003 A973170167 A973170169
		GW-145	A971190018 A971190021 A971190078 A971190081 A971210037 A971210041 A971210079 A971210083 A972170009 A972170014 A972170217 A972170220 A972180139 A972180144 A972190183 A972190187 A973150008 A973150010 A973150181 A973150183 A973170002 A973170004 A973170168 A973170170
		GW-231	A971190011 A971190013 A971190063 A971190067 A971210006 A971210009 A971210067 A971210070 A972170005 A972170010 A972170205 A972170207 A972180140 A972180145 A972190179 A972190182 A973140186 A973140188 A973160002 A973160003 A973160005 A973160006 A973170006 A973170008 A973170172 A973170174
		OUTFALL301	A971210008
	United Nuclear Corporation Site	1090	A971060086 A971060087 A971060092 A971060093
		GW-203	A971050006 A971050008
		GW-205	A971050007 A971050009
		GW-221	A971060001 A971060004
		GW-302	A971060003 A971060006
		GW-339	A971060002 A971060005
EF	Beta-4 Security Pits	GW-192	A970980004 A970980005 A973030098 A973030099
	Exit Pathway Monitoring Location E	GW-617	A971280005 A971280007 A973100001 A973100004
		GW-618	A971270012 A971270013 A971270017 A971270018 A973080133 A973080134
	Exit Pathway Monitoring Location I	GW-605	A970780005 A970780006 A970780007 A970780008 A972240002 A972240004
		GW-606	A970650035 A970650036 A972120262 A972120263 A972120264 A972120265

Table 2.81 (continued)

REGIME	SITE	WELL	SAMPLE NUMBER(S)
GW Monitoring	Exit Pathway Monitoring Location J	GW-733	A970650001 A970650006 A972110090 A972110091
		GW-735	A971050048 A971050049 A973380002 A973380003 A973380005 A973380006
		GW-750	A971050001 A971050002 A973380001 A973380004
		GW-207	A970980041 A970980042 A973360080 A973360083
		GW-208	A971010002 A971010003 A973360081 A973360084
		GW-816	A971060096 A971060098 A973380162 A973380164
	Exit Pathway Spring/Surface Water	LRSPW	A971120048 A971130082 A971130083 A973350200 A973350202
	Fire Training Facility	GW-620	A971270014 A971270019 A973350199 A973350201
		GW-791	A970990005 A970990007 A973240272 A973240274
		GW-792	A970990006 A970990008 A973240271 A973240273
		GW-781	A971350053 A971350055 A973230132 A973230134
		GW-782	A971340081 A971340083 A973280134 A973280135
		GW-783	A971350052 A971350054 A973290110 A973290111
		GW-788	A971340003 A971340006 A973220104 A973220106
		GW-789	A971340080 A971340082 A973220105 A973220107
		GW-769	A971340001 A971340002 A971340004 A971340005 A973210451 A973210453
		GW-770	A971320048 A971320051 A973210450 A973210452
		GW-775	A971320046 A971320049 A973230131 A973230133
		GW-776	A971320047 A971330031 A971330032 A973360082 A973360085
		GW-744	A971060097 A971060099 A973420263 A973420265
		GW-745	A971070040 A971070048 A973430139 A973430141
		GW-746	A971070041 A971070049 A973430140 A973430142
		GW-747	A971070042 A971070043 A971070050 A971070051 A973430144 A973430145
		GW-748	A971080003 A971080005 A973440098 A973440100
		GW-749	A971070044 A971070052 A973440099 A973440101
		GW-817	A971080004 A971080006 A973380161 A973380163
	Grid J Primary	GW-763	A971400095 A971400097 A973370003 A973370006
	New Hope Pond	GW-148	A971400096 A971400098 A973370145 A973370147
		GW-153	A971410090 A971410091 A971410093 A971410094 A973370146 A973370148
		GW-220	A971420017 A971420020 A973420262 A973420264
		GW-380	A971410092 A971410095 A973370001 A973370002 A973370004 A973370005
		GW-383	A971420018 A971420021 A973380151 A973380153

Table 2.81 (continued)

REGIME	SITE	WELL	SAMPLE NUMBER(S)
	S-2 Site	GW-251	A971280006 A971280008 A973100002 A973100005
	S-3 Site	GW-108	A970640012 A970640013 A972240003 A972240005
	Tank 2331-U, near Building 9201-1	GW-193	A970650002 A970650007 A972250080 A972250081
	Westbay	GW-722-06	A972100001 A972100002 A973290099 A973290101
		GW-722-10	A972110005 A972110007 A973290098 A973290102
		GW-722-14	A972110006 A972110008 A973290103 A973290106
		GW-722-17	A972120069 A972120071 A973290104 A973290107
		GW-722-20	A972120068 A972120070 A973370086 A973370087
		GW-722-22	A972120258 A972120259 A973370053 A973370088
		GW-722-26	A972170165 A972170171 A973370054 A973370089
		GW-722-30	A972170164 A972170170 A973380122 A973380132
		GW-722-32	A972170168 A972170174 A973380126 A973380133
		GW-722-33	A972170166 A972170167 A972170172 A972170173

1997 Groundwater Footnote Definitions

(Bear Creek Regime, Chestnut Ridge Regime, East Fork Regime)

a - Regulatory guide for assessing compliance without further analysis.
b - See *cis*-Dichloroethene and *trans*-Dichloroethene.
d - EPA has deleted the MCL for nickel from the *Code of Federal Regulations*. The state of Tennessee retains a nickel MCL of 100 g/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).

1997 Groundwater Qualifier Definitions

(Bear Creek Regime, Chestnut Ridge Regime, East Fork Regime)

B - Analyte found in blank as well as sample
D - Compounds identified in an analysis at a secondary dilution factor
f - Possible contamination
h - Procedure performed past regulatory holding time
J - Indicates an estimated value (VOA)
k - Sample concentration is greater than 4 times the spike level for this sample batch
L - Sample received by ACD with expired holding time
p - Sample known to be unpreserved
X - Sample received by ACD with expired holding time

Table 3.1. Major sources of radiological airborne emissions at ORNL,1997 (in curies)[a]

Isotope	Stack			
	2026	3020	3039	7911
^{3}H			2.3E+001	6.9E+001
^{7}Be	5.9E-007	2.2E-007	2.6E-005	3.8E-007
^{41}Ar				1.0E+004
^{141}Ce				1.3E-006
^{144}Ce				3.2E-007
^{60}Co			1.8E-005	
^{203}Hg			5.3E-004	
^{85}Kr				1.1E+002
^{85m}Kr				1.5E+000
^{87}Kr				5.6E+001
^{88}Kr				5.9E+001
^{89}Kr				6.0E+000
Total Sr	1.0E-006	1.9E-006	1.4E-005	1.2E-005
^{129}I				2.3E-005
^{130}I				1.8E-006
^{131}I			1.6E-004	5.5E-002
^{132}I				1.4E-001
^{132m}I				5.1E-001
^{133}I	3.2E-007		2.2E-003	2.3E-001
^{134}I				4.0E-002
^{135}I			8.7E-003	9.4E-001
^{192}Ir			6.4E-004	
^{105}Ru				5.0E-002
^{133}Xe			3.5E-006	6.8E-003
^{135}Xe		4.7E-007	3.1E-004	1.0E+002
^{135m}Xe				6.1E+001
^{137}Xe				1.2E+002
^{138}Xe				3.4E+002
^{137}Cs	5.7E-006	2.8E-006	1.2E-004	2.9E-006
^{138}Cs				1.7E+003
^{139}Ba				6.7E-003
^{140}Ba				5.6E-005
^{191}Os			2.2E-001	3.2E-006
^{212}Pb	1.5E-001	4.9E-001	9.0E-001	2.6E-001
^{228}Th	1.8E-007	1.3E-007	1.2E-009	6.4E-009
^{230}Th		1.2E-009		2.7E-009
^{232}Th	1.0E-009			8.8E-010
^{234}U	3.6E-007	2.4E-007	2.2E-007	5.6E-008
^{235}U	2.6E-008	3.2E-008	8.3E-008	1.7E-008
^{238}U	1.9E-008	3.8E-008	7.6E-008	1.9E-008
^{238}Pu	8.6E-008	2.0E-008	3.1E-009	
^{239}Pu	2.9E-007	3.2E-007	2.3E-007	1.7E-009
^{241}Am	3.2E-008	6.3E-008	7.4E-008	1.4E-005
^{244}Cm	2.9E-007		8.6E-008	1.6E-008
^{152}Eu			1.2E-006	
^{154}Eu			5.8E-007	
^{140}La				1.6E-004

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

Table 3.2. NPDES Permit Number TN 0002941, 1997 ORNL ambient and facility discharge points[a]

Parameter	N detect/ N total	Concentration			Standard error[d]
		Max[b]	Min[b]	Av[c]	
Sewage Treatment Plant (X01)					
Anions (mg/L)					
Ammonia, as N	16/143	1.3	<0.20	~0.25	0.014
Field Measurements					
Chlorine, total residual (mg/L)	3/147	0.40	<0.050	~0.054	0.0027
Dissolved oxygen (mg/L)	144/144	11	6.8	8.6	0.082
Flow (mgd)	231/231	0.43	0.11	0.22	0.0035
pH (SU)	144/144	7.9	6.7	7.3	0.022
Metals (mg/L)					
Cadmium, total	2/11	0.00016	<0.00010	~0.00011	0.0000058
Cyanide, total	0/11	<0.010	<0.0050	~0.0073	0.00079
Mercury, total	1/22	0.00028	<0.00020	~0.00020	0.0000036
Silver, total	6/11	0.00048	<0.00010	~0.00018	0.000039
Others (mg/L)					
Carbonaceous biological oxygen demand	8/143	35	<5.0	~5.3	0.22
Oil and grease	1/144	12	<5.3	~5.6	0.049
Physical					
Fecal coliform (col/100 mL)[e]	128/144	1,700	0	~7.9	1.2
Total suspended solids (mg/L)	38/143	25	<1.0	~1.7	0.23
Radionuclides (pCi/L)					
Gross alpha	0/11	1.9	-1.2	0.27	0.31
Gross beta	11/11	600*	200*	380*	42
Toxicity (%)					
96 hour LC50 for Ceriodaphnia	3/3	>100	>100	~100	0
96 hour LC50 for Fathead Minnow	3/3	>100	>100	~100	0
No-observed effect concentration, Ceriodaphnia	3/3	100	33	58	21
No-observed effect concentration, Fathead Minnow	3/3	100	100	100	0
Coal Yard Runoff Treatment Facility (X02)					
Anions (mg/L)					
Sulfate, as SO_4	11/11	2,300	770	1,600	130
Field Measurements					
Flow (mgd)	231/231	0.19	0	0.030	0.0023
pH (SU)	48/48	8.9	6.8	7.5	0.052
Metals (mg/L)					
Antimony, total	22/22	0.0019	0.00017	0.00052	0.000086
Arsenic, total	21/22	0.0044	<0.0010	~0.0029	0.00021
Cadmium, total	14/22	0.00070	<0.00010	~0.00021	0.000033
Chromium, total	22/22	0.0034	0.00093	0.0020	0.00014
Copper, total	22/22	0.015	0.0023	0.0064	0.00057
Iron, total	22/22	0.67	0.20	0.44	0.029
Lead, total	14/22	0.0017	<0.00010	~0.00037	0.00011
Mercury, total	0/11	<0.00020	<0.00020	~0.00020	0
Selenium, total	20/22	0.015	<0.0020	~0.0070	0.00069
Silver, total	3/22	0.00027	<0.00010	~0.00011	0.0000093
Zinc, total	22/22	0.058	0.012	0.027	0.0025

Table 3.2 (continued)

Parameter	N detect/ N total	Concentration			Standard error[d]
		Max[b]	Min[b]	Av[c]	
Others (mg/L)					
Oil and grease	0/48	<6.0	<5.4	~5.6	0.016
Physical					
Total suspended solids (mg/L)	34/48	13	<1.0	~3.1	0.43
Radionuclides (pCi/L)					
Gross alpha	0/11	7.9	-30	-6.5	3.5
Gross beta	11/11	170*	35*	110*	13
Toxicity (%)					
96 hour LC50 for Ceriodaphnia	4/4	>100	100	~100	0
96 hour LC50 for Fathead Minnow	4/4	>100	>100	~100	0
No-observed effect concentration, Ceriodaphnia	2/2	4.2	3.4	3.8	0.42
No-observed effect concentration, Fathead Minnow	2/2	100	100	100	0
Nonradiological Wastewater Treatment Facility (X12)					
Anions (mg/L)					
Sulfate, as SO_4	4/4	170	84	130	18
Field Measurements					
Flow (mgd)	231/231	0.81	0.14	0.50	0.0064
Temperature (°C)	144/144	27	14	21	0.29
pH (SU)	144/144	8.1	6.8	7.5	0.020
Metals (mg/L)					
Arsenic, total	21/48	0.0042	<0.0010	~0.0015	0.00011
Cadmium, total	22/48	0.00070	<0.00010	~0.00016	0.000017
Chromium, total	42/48	0.0063	<0.00050	~0.0017	0.00015
Copper, total	47/48	0.014	<0.0010	~0.0057	0.00033
Cyanide, total	0/4	<0.010	<0.0050	~0.0075	0.0014
Iron, total	1/42	<0.25	<0.0050	~0.24	0.0078
Lead, total	47/48	0.0076	<0.00010	~0.0016	0.00020
Mercury, total	2/48	0.00034	<0.00020	~0.00020	0.0000029
Nickel, total	28/48	0.0030	<0.0010	~0.0014	0.000079
Selenium, total	10/48	0.0076	<0.0020	~0.0025	0.00018
Silver, total	26/48	0.00090	<0.00010	~0.00017	0.000021
Zinc, total	48/48	0.070	0.021	0.046	0.0015
Others (mg/L)					
Oil and grease	0/48	<7.6	<5.4	~5.6	0.046
Total toxic organics	0/11	<0.010	U0.010	~0.010	0
Physical					
Total suspended solids (mg/L)	0/4	<1.0	<1.0	~1.0	0
Radionuclides (pCi/L)					
Gross alpha	11/11	24*	6.6*	17*	1.7
Gross beta	11/11	1,600*	210*	760*	120
Toxicity (%)					
96 hour LC50 for Ceriodaphnia	4/4	>100	>100	~100	0
96 hour LC50 for Fathead Minnow	4/4	>100	>100	~100	0
No-observed effect concentration, Ceriodaphnia	4/4	100	80	85	5.0
No-observed effect concentration, Fathead Minnow	4/4	100	100	100	0

Table 3.2 (continued)

Parameter	N detect/ N total	Concentration			Standard error[d]
		Max[b]	Min[b]	Av[c]	
	Melton Branch 1 (X13)				
Field Measurements					
Flow (mgd)	143/143	17	0.19	1.6	0.21
	White Oak Creek (X14)				
Field Measurements					
Flow (mgd)	143/143	46	2.5	6.4	0.59
	White Oak Dam (X15)				
Field Measurements					
Flow (mgd)	143/143	64	2.7	9.1	0.92

[a]NPDES permit became effective on February 3, 1997; therefore, this table includes data for February-December 1997 to reflect the new permit.
[b]Prefix "<" indicates the value for a parameter was not quantifiable at the analytical detection limit, and ">" indicates that the actual value was above the given value.
[c]A tilde (~) indicates that estimated values and/or detection limits were used in the calculation.
[d]Standard error of the mean.
[e]The geometric mean is computed rather than the average.

Table 3.3. NPDES Permit Number TN 0002941, 1997 ORNL outfall monitoring

Parameter	N detect/ N total	Concentration			Standard error[c]
		Max[a]	Min[a]	Av[b]	
Category 1 outfalls					
Field Measurements					
Flow (mgd)	13/13	0.022	0.00014	0.0087	0.0025
pH (SU)	13/13	8.5	7.8	8.1	0.069
Category 2 outfalls					
Field Measurements					
Flow (mgd)	15/15	0.043	0.00014	0.0057	0.0030
pH (SU)	15/15	8.4	7.2	8.1	0.081
Category 3 outfalls					
Field Measurements					
Flow (mgd)	63/63	0.065	0.00036	0.014	0.0018
pH (SU)	63/63	8.6	7.5	8.0	0.033
Category 4 outfalls					
Field Measurements					
Flow (mgd)	298/298	0.33	0.000040	0.070	0.0042
Temperature (°C)	298/298	37	6.1	20	0.35
pH (SU)	296/296	9.1	6.4	7.7	0.022
Cooling Tower Blowdown outfalls					
Field Measurements					
Flow (mgd)	2/2	0.086	0.058	0.072	0.014
Temperature (°C)	2/2	31	26	28	2.6
Total residual oxidant (mg/L)	0/2	<0.050	<0.050	~0.050	0
pH (SU)	2/2	8.8	8.8	8.8	0
Physical					
Total suspended solids (mg/L)	2/2	54	37	45	8.7
Cooling Tower Blowdown/Cooling Water outfalls					
Field Measurements					
Flow (mgd)	51/51	0.23	0.0065	0.079	0.010
Total residual oxidant (mg/L)	7/53	0.22	<0.050	~0.057	0.0039
pH (SU)	44/44	8.6	6.8	7.8	0.068
Groundwater/Pumpwater outfalls					
Field Measurements					
Flow (mgd)	8/8	0.0060	0.00070	0.0027	0.00060
pH (SU)	8/8	8.2	7.0	7.6	0.14

Table 3.3 (continued)

Parameter	N detect/ N total	Concentration Max[a]	Min[a]	Av[b]	Standard error[c]
		Steam Condensate outfalls			
Field Measurements					
Flow (mgd)	17/17	0.0086	0.000027	0.0017	0.00068
Temperature (°C)	17/17	68	11	40	4.7
pH (SU)	17/17	8.8	7.0	7.6	0.11

[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 3.4. ORNL 1997 Instream Chlorine monitoring

Parameter	N detect/ N total	Concentration			Standard error[c]
		Max[a]	Min[a]	Av[b]	
First Creek					
X16					
Temperature (°C)	22/22	24	7.5	16	1.1
Total residual oxidant (mg/L)	1/22	0.050	<0.050	~0.050	0
pH (SU)	22/22	8.3	7.0	7.7	0.076
X17					
Temperature (°C)	22/22	21	8.6	14	0.79
Total residual oxidant (mg/L)	0/22	<0.050	<0.050	~0.050	0
pH (SU)	22/22	8.1	7.0	7.5	0.063
Fifth Creek					
X18					
Temperature (°C)	22/22	21	10	16	0.66
Total residual oxidant (mg/L)	0/22	<0.050	<0.050	~0.050	0
pH (SU)	22/22	8.3	7.3	7.9	0.064
X19					
Temperature (°C)	22/22	20	11	16	0.59
Total residual oxidant (mg/L)	0/22	<0.050	<0.050	~0.050	0
pH (SU)	22/22	8.3	7.1	7.8	0.065
X20					
Temperature (°C)	22/22	20	9.7	15	0.59
Total residual oxidant (mg/L)	0/22	<0.050	<0.050	~0.050	0
pH (SU)	22/22	8.3	7.1	7.8	0.068
White Oak Creek					
X21					
Temperature (°C)	22/22	24	11	17	0.95
Total residual oxidant (mg/L)	0/22	<0.050	<0.050	~0.050	0
pH (SU)	22/22	8.4	7.4	7.9	0.063
X22					
Temperature (°C)	22/22	25	9.2	18	1.0
Total residual oxidant (mg/L)	0/22	<0.050	<0.050	~0.050	0
pH (SU)	22/22	8.3	7.3	7.8	0.057
X23					
Temperature (°C)	22/22	25	8.9	17	1.2
Total residual oxidant (mg/L)	0/22	<0.050	<0.050	~0.050	0
pH (SU)	22/22	8.5	7.4	7.9	0.066

Table 3.4 (continued)

Parameter	N detect/ N total	Concentration			Standard error[c]
		Max[a]	Min[a]	Av[b]	
X24					
Temperature (°C)	22/22	26	8.9	17	1.2
Total residual oxidant (mg/L)	0/22	<0.050	<0.050	~0.050	0
pH (SU)	22/22	8.5	7.4	7.9	0.074
X25					
Temperature (°C)	22/22	26	8.7	17	1.2
Total residual oxidant (mg/L)	0/22	<0.050	<0.050	~0.050	0
pH (SU)	22/22	8.4	7.4	7.9	0.061
X26					
Temperature (°C)	22/22	23	9.1	17	1.0
Total residual oxidant (mg/L)	0/22	<0.050	<0.050	~0.050	0
pH (SU)	22/22	8.1	7.1	7.6	0.044

[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 3.5. 1997 radionuclide concentrations at ORNL NPDES locations

Radionuclide	N det/ N total	Concentration (pCi/L) Max[a]	Min[a]	Av[b]	Standard error[c]	DCG[d]	Percent of DCG[e]
Sewage Treatment Plant (X01)							
Co-60	3/12	16	-10	5.8*	2.2	5,000	0.12
Cs-137	3/12	28*	-14	5.4*	2.9	3,000	0.18
Gross alpha	0/11	1.9	-1.2	0.27	0.31	f	f
Gross beta	12/12	600*	200*	400*	42	f	f
Total rad Sr	12/12	250*	96*	180*	17	1,000	18
Coal Yard Runoff Treatment Facility (X02)							
Gross alpha	0/11	7.9	-30	-6.5	3.5	f	f
Gross beta	11/11	170*	35*	110*	13	f	f
Nonradiological Wastewater Treatment Facility (X12)							
Co-60	6/12	29*	-3.8	12*	3.3	5,000	0.24
Cs-137	11/12	860*	-3.0	380*	62	3,000	13
Gross alpha	12/12	170*	6.6*	30*	13	f	f
Gross beta	12/12	1,600*	210*	790*	110	f	f
H-3	12/12	220,000*	71,000*	120,000*	13,000	2,000,000	5.9
Total rad Sr	12/12	730*	20*	240*	61	1,000	24
Melton Branch 1 (X13)							
Co-60	2/12	25*	-9.0	4.8	3.1	5,000	f
Cs-137	1/12	45*	-15	4.3	4.4	3,000	f
H-3	12/12	680,000*	300,000*	470,000*	41,000	2,000,000	23
Total rad Sr	12/12	230*	160*	190*	7.0	1,000	19
White Oak Creek (X14)							
Co-60	1/12	19*	-8.0	3.1	2.8	5,000	f
Cs-137	10/12	45*	7.0	22*	3.5	3,000	0.75
H-3	12/12	35,000*	12,000*	24,000*	2,300	2,000,000	1.2
Total rad Sr	12/12	150*	44*	81*	8.1	1,000	8.1
White Oak Dam (X15)							
Co-60	33/52	11*	-7.3	2.7*	0.35	5,000	0.054
Cs-137	51/52	57*	4.2*	17*	1.3	3,000	0.56
Gross alpha	51/52	23*	-3.1	8.1*	0.56	f	f
Gross beta	52/52	330*	150*	240*	6.2	f	f
H-3	12/12	150,000*	48,000*	99,000*	9,900	2,000,000	4.9
Total rad Sr	12/12	180*	78*	110*	7.8	1,000	11

[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.

[f]Not applicable.

Table 3.6. NPDES Permit Number TN 0002941, 1997 ORNL Chlorine Control Strategy monitoring

Parameter	N detect/ N total	Concentration			Standard error[c]
		Max[a]	Min[a]	Av[b]	
Category 1 outfalls					
Field Measurements					
Flow (GPM)	49/49	60	0.10	7.1	1.5
Total residual oxidant (mg/L)	4/49	0.65	<0.050	~0.083	0.017
Category 2 outfalls					
Field Measurements					
Flow (GPM)	52/52	250	0.10	12	5.2
Total residual oxidant (mg/L)	7/52	2.4	<0.050	~0.19	0.058
Category 3 outfalls					
Field Measurements					
Flow (GPM)	64/64	45	0.25	9.5	1.3
Total residual oxidant (mg/L)	16/65	0.68	<0.050	~0.12	0.019
Category 4 outfalls					
Field Measurements					
Flow (GPM)	248/248	150	0.10	54	3.1
Total residual oxidant (mg/L)	52/248	0.90	<0.050	~0.097	0.0082
Groundwater/Pumpwater outfalls					
Field Measurements					
Flow (GPM)	8/8	4.0	0.50	1.9	0.40
Total residual oxidant (mg/L)	0/8	<0.050	<0.050	~0.050	0
Steam Condensate outfalls					
Field Measurements					
Flow (GPM)	17/17	6.0	0.019	1.2	0.47
Total residual oxidant (mg/L)	4/17	0.55	<0.050	~0.13	0.039

[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 3.7. 1997 analyses for ORNL Off-site monitoring at the Gallaher and Kingston Water Treatment Plants

Radionuclide	N det/ N total	Concentration (pCi/L) Max[a]	Min[a]	Av[b]	Standard error[c]	DWS[d]	Percent of DWS[e]
			Gallaher				
Co-60	0/4	7.9	-1.0	2.4	1.9	200	f
Cs-137	0/4	1.3	-7.8	-1.6	2.1	120	f
Gross alpha	0/4	0.36	-16	-3.9	4.0	15	f
Gross beta	2/4	3.4*	-2.0	1.5	1.2	50	f
H-3	1/4	390	-90	210	110	20,000	f
Pu-238	0/4	0.060	0.020	0.045*	0.0087	1.6	2.8
Pu-239/240	0/4	0.030	-0.090	-0.023	0.026	1.2	f
Total rad Sr	0/4	2.2	-0.90	0.74	0.64	8	f
Total uranium	2/4	0.35*	0.050	0.21*	0.064	20	1.1
			Kingston				
Co-60	1/4	6.2	0.90	2.6	1.2	200	f
Cs-137	1/4	5.3	0.50	2.4	1.1	120	f
Gross alpha	1/4	2.4*	-1.8	0.23	0.86	15	f
Gross beta	0/4	2.4	-5.7	-0.90	1.7	50	f
H-3	2/4	600*	-150	230	150	20,000	f
Pu-238	2/4	0.21*	-0.060	0.090	0.068	1.6	f
Pu-239/240	0/4	0.020	-0.020	-0.0030	0.010	1.2	f
Total rad Sr	0/4	1.2	-20	-4.6	5.1	8	f
Total uranium	1/4	0.28*	0.060	0.18*	0.046	20	0.88

[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]Drinking Water Standards (from 40 CFR Parts 141 and 143, and the Tennessee General Water Quality Criteria for Domestic Water Supply). For radionuclides that do not have a drinking water standard, 4% of DCG for ingestion of water (from DOE Order 5400.5) is used.

[e]Average concentration as a percentage of the drinking water standards, calculated when a reference exists and the parameter is a contaminant. For radionuclides, percentage of DWS is calculated only when a reference exists and the average concentration is significantly greater than zero.

[f]Not applicable.

Table 3.8. 1997 analyses for ORNL background surface waters[a]

Parameter	# detect/ # total	Concentration Max[b]	Min[b]	Av[c]	Standard error[d]	Ref. Value[e]	Percent of Ref. Value[f]
Melton Hill Dam							
Anions (mg/L)							
Sulfate, as SO_4	11/11	19	16	17	0.33	g	g
Field Measurements							
Conductivity (mS/cm)	11/11	0.25	0.17	0.21	0.0086	g	g
Dissolved oxygen (mg/L)	11/11	13	5.8	8.6	0.61	g	g
Temperature (°C)	11/11	21	8.6	16	1.3	g	g
Turbidity (NTU)	11/11	68	3.0	15	5.4	g	g
pH (STD U)	11/11	8.1	7.5	7.8	0.060	g	g
Metals[h] (mg/L)							
Antimony, total	6/10	0.00070	<0.00010	~0.00019	0.000059	0.006	3.1
Arsenic, total	2/10	0.0020	<0.0010	~0.0011	0.00010	0.05	2.2
Cadmium, total	0/10	<0.00010	<0.00010	~0.00010	0	0.005	g
Chromium, total	8/10	0.0031	<0.00050	~0.0013	0.00026	0.1	1.3
Copper, total	8/10	0.0024	<0.0010	~0.0016	0.00015	g	g
Iron, total	0/10	<0.25	<0.25	~0.25	0	g	g
Lead, total	8/10	0.0010	<0.00010	~0.00044	0.000095	0.005	8.7
Nickel, total	7/10	0.0023	<0.0010	~0.0014	0.00013	0.1	1.4
Selenium, total	0/10	<0.0020	<0.0020	~0.0020	0	0.05	g
Silver, total	3/10	0.0046	<0.00010	~0.00055	0.00045	g	g
Zinc, total	10/10	0.011	0.0039	0.0067	0.00066	g	g
Others (mg/L)							
Oil and grease	0/11	<5.7	<5.5	~5.6	0.019	g	g
Physical (mg/L)							
Total suspended solids	7/11	19	<1.0	~3.5	1.7	g	g
White Oak Creek Headwaters							
Anions (mg/L)							
Sulfate, as SO_4	11/11	4.1	1.8	2.8	0.22	g	g
Field Measurements							
Conductivity (mS/cm)	11/11	0.23	0.087	0.15	0.015	g	g
Dissolved oxygen (mg/L)	11/11	13	7.2	9.8	0.46	g	g
Temperature (°C)	11/11	17	8.2	13	0.85	g	g
Turbidity (NTU)	11/11	90	3.0	15	7.6	g	g
pH (STD U)	11/11	8.2	7.0	7.8	0.11	g	g
Metals[h] (mg/L)							
Antimony, total	2/10	0.00040	<0.00010	~0.00013	0.000030	g	g
Arsenic, total	1/10	0.0024	<0.0010	~0.0011	0.00014	g	g
Cadmium, total	0/10	<0.00010	<0.00010	~0.00010	0	0.0039	g
Chromium, total	8/10	0.0036	<0.00050	~0.0016	0.00029	0.016	10
Copper, total	2/10	0.0014	<0.0010	~0.0011	0.000053	0.0177	6.1
Iron, total	7/10	0.94	<0.25	~0.48	0.079	g	g
Lead, total	10/10	0.0024	0.00014	0.0011	0.00025	0.0817	1.4
Nickel, total	7/10	0.0018	<0.0010	~0.0013	0.00010	1.418	0.089
Selenium, total	0/10	<0.0020	<0.0020	~0.0020	0	0.02	g
Silver, total	0/10	<0.00010	<0.00010	~0.00010	0	0.0041	g
Zinc, total	10/10	0.029	0.0060	0.013	0.0023	0.117	11
Others (mg/L)							
Oil and grease	0/11	<5.7	<5.5	~5.6	0.023	g	g

Table 3.8 (continued)

Parameter	# detect/ # total	Concentration			Standard error[d]	Ref. Value[e]	Percent of Ref. Value[f]
		Max[b]	Min[b]	Av[c]			
Physical (mg/L)							
Total suspended solids	11/11	100	15	38	7.4	g	g

[a]NPDES permit became effective on February 3, 1997; therefore, this table includes data for February-December 1997 to reflect the new permit.
[b]Prefix "<" indicates the value of a parameter (excluding organics) 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 Domestic Water Supply is used as a reference value for Melton Hill Dam; Tennessee General Water Quality Criteria for Fish and Aquatic Life is used as a reference value for White Oak Creek headwaters.
[f]Average concentration as a percentage of the reference value, calculated when a reference exists, the parameter is a contaminant, and the parameter is detected.
[g]Not applicable.
[h]Metals analyses began in March 1997.

Table 3.9. 1997 radionuclide concentrations in surface waters around ORNL

Radionuclide	N det/ N total	Concentration (pCi/L) Max[a]	Min[a]	Av[b]	Standard error[c]	DCG[d]	Percent of DCG[e]
			Melton Hill Dam				
Co-60	3/12	24*	-9.2	4.7	3.1	5,000	f
Cs-137	3/12	30*	-13	6.8*	3.7	3,000	0.23
Gross alpha	4/12	3.5*	-0.98	1.1*	0.40	f	f
Gross beta	4/12	8.5*	-1.8	2.1*	0.79	f	f
			White Oak Creek Headwaters				
Co-60	2/12	18*	-17	3.8	2.8	5,000	f
Cs-137	3/12	18*	-19	2.2	3.2	3,000	f
Gross alpha	4/12	2.8*	-2.1	0.72*	0.35	f	f
Gross beta	6/12	6.3*	-6.5	2.1*	1.0	f	f
			7500 Road Bridge				
Co-60	1/12	18*	-14	2.5	3.4	5,000	f
Cs-137	5/12	30*	-2.0	13*	3.0	3,000	0.42
H-3	12/12	33,000*	6,200*	13,000*	2,100	2,000,000	0.64
Total rad Sr	12/12	76*	26*	45*	4.1	1,000	4.5
			First Creek				
Co-60	3/12	17*	-10	5.1*	2.5	5,000	0.10
Cs-137	2/12	32*	-9.0	4.4	3.1	3,000	f
Total rad Sr	12/12	640*	13*	210*	69	1,000	21
			Fifth Creek				
Co-60	3/12	22*	-4.7	8.6*	2.7	5,000	0.17
Cs-137	1/12	25*	-11	3.7	3.1	3,000	f
Total rad Sr	12/12	18*	9.6*	14*	0.85	1,000	1.4
			Melton Branch 2				
Co-60	0/1	-11	-11	-11	f	5,000	f
Cs-137	0/1	8.1	8.1	8.1	f	3,000	f
H-3	1/1	4,100*	4,100*	4,100	f	2,000,000	f
Total rad Sr	0/1	1.4	1.4	1.4	f	1,000	f
			Northwest Tributary				
Co-60	4/12	25*	-10	3.2	2.6	5,000	f
Cs-137	2/12	21*	-11	4.3	2.6	3,000	f
Total rad Sr	12/12	54*	5.9*	35*	4.9	1,000	3.5

Table 3.9 (continued)

Radionuclide	N det/ N total	Concentration (pCi/L) Max[a]	Min[a]	Av[b]	Standard error[c]	DCG[d]	Percent of DCG[e]
			Raccoon Creek				
Co-60	1/12	11*	-27	0.74	3.1	5,000	f
Cs-137	1/12	19	-31	-2.0	3.8	3,000	f
Total rad Sr	10/12	45*	0.40	13*	4.2	1,000	1.3

[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.
[f]Not applicable.

Table 3.10. Constituents in Waste Area Grouping (WAG) 1 groundwater at ORNL, May 7-16, 1997

Parameter	N det/ N total	Max	Min	Av	Reference value	Number of values exceeding reference [ref][a]
			Downgradient Wells			
Field measurements, unfiltered						
Conductivity (mS/cm)	4/4	1.1	0.67	0.92	b	[b]
Dissolved oxygen (mg/L)	4/4	13	11	12	b	[b]
Redox (mV)	4/4	350	37	220	b	[b]
Temperature (°C)	4/4	17	15	16	30.5	0[1]
Turbidity (JTU)	4/4	5.0	1.0	2.0	1	1[2]
pH (SU)	4/4	7.7	5.8	6.6	(6.0, 9.0)	1[1]
Radionuclides, unfiltered (pCi/L)[c]						
Gross alpha	1/4	3.7*	0.86	2.5*	15	0[2]
H-3	3/4	20,000*	-450	6,400	20,000	0[2]

[a]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.
[b]Not applicable.
[c]Individual and average radionuclide concentrations significantly greater than zero are identified by an *.

Table 3.11. Constituents in Waste Area Grouping (WAG) 2 groundwater at ORNL, February 27-April 25, 1997

Parameter	N det/ N total	Max[a]	Min[a]	Av[b]	Reference value	Number of values exceeding reference [ref][c]
			Downgradient Wells			
Field measurements, unfiltered						
Conductivity (mS/cm)	8/8	0.94	0.25	0.63	d	[d]
Dissolved oxygen (mg/L)	8/8	230	8.4	38	d	[d]
Redox (mV)	8/8	460	140	310	d	[d]
Temperature (°C)	8/8	17	14	15	30.5	0[1]
Turbidity (JTU)	8/8	66	2.0	18	1	8[2]
pH (SU)	8/8	8.1	5.6	6.7	(6.0, 9.0)	1[1]
Metals, unfiltered (mg/L)						
Aluminum, total	1/4	0.10	<0.020	~0.040	(0.05, 0.20)	3[3]
Antimony, total	1/4	0.00018	<0.00010	~0.00012	0.006	0[1]
Arsenic, total	2/4	0.0059	<0.0010	~0.0024	0.05	0[1]
Barium, total	4/4	0.99	0.15	0.37	2	0[1]
Boron, total	4/4	0.037	0.010	0.023	d	[d]
Calcium, total	4/4	150	46	92	d	[d]
Chromium, total	2/4	1.8	<0.010	~0.47	0.1	1[1]
Cobalt, total	1/4	0.0058	<0.0050	~0.0052	d	[d]
Iron, total	4/4	18	1.2	7.0	0.3	4[3]
Lead, total	4/4	0.0090	0.00085	0.0033	0.005	1[1]
Magnesium, total	4/4	20	3.9	13	d	[d]
Manganese, total	4/4	0.28	0.016	0.14	0.05	3[3]
Nickel, total	2/4	0.061	<0.010	~0.031	0.1	0[1]
Potassium, total	4/4	3.5	0.76	1.9	d	[d]
Selenium, total	2/4	0.0046	<0.0020	~0.0029	0.05	0[1]
Silicon, total	4/4	9.5	3.2	6.8	d	[d]
Sodium, total	4/4	17	9.5	12	d	[d]
Thallium, total	4/4	0.00059	0.00017	0.00037	0.002	0[1]
Zinc, total	3/4	0.0069	<0.0020	~0.0043	5	0[3]
Radionuclides, unfiltered (pCi/L)[e]						
Gross alpha	4/8	15*	0.10	3.7*	15	0[2]
Gross beta	5/8	530*	-0.10	70	50	1[2]
H-3	5/8	88,000*	30	25,000*	20,000	3[2]
Total rad Sr	1/8	170*	-1.8	21	8	1[2]
Volatile organics, unfiltered (μg/L)						
2-Butanone	2/4	U10	J5.0	~7.8	d	[d]
Acetone	1/4	U10	JB5.0	~8.8	d	[d]
			Upgradient Wells			
Field measurements, unfiltered						
Conductivity (mS/cm)	12/12	0.79	0.28	0.56	d	[d]
Dissolved oxygen (mg/L)	12/12	12	9.6	11	d	[d]
Redox (mV)	12/12	430	260	360	d	[d]
Temperature (°C)	12/12	15	11	13	30.5	0[1]
Turbidity (JTU)	12/12	73	0	7.1	1	4[2]
pH (SU)	12/12	8.3	6.4	7.1	(6.0, 9.0)	0[1]

Table 3.11 (continued)

Parameter	N det/ N total	Max[a]	Min[a]	Av[b]	Reference value	Number of values exceeding reference [ref][c]
Radionuclides, unfiltered (pCi/L)[e]						
Co-60	4/12	3.2*	-0.80	1.2*	200	0[4]
Cs-137	1/12	4.0	-1.1	0.81*	120	0[4]
Gross alpha	2/12	6.3*	-1.4	0.99*	15	0[2]
Gross beta	7/12	35*	-0.30	6.9*	50	0[2]
H-3	5/12	350,000*	-540	32,000	20,000	2[2]
Total rad Sr	4/12	5.9*	-0.90	1.6*	8	0[2]

[a]Prefix "<" indicates the value for a parameter (excluding organics) was not quantifiable at the analytical detection limit; "J" indicates the value was estimated at or below the analytical detection limit by the laboratory; "JB" indicates the value was estimated at or below the analytical detection limit and was found in the laboratory blank; and "U" indicates the value for an organic parameter was undetected at the analytical detection limit.

[b]A tilde (~) indicates that estimated and/or undetected values were used in the calculation.

[c]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.

[d]Not applicable.

[e]Individual and average radionuclide concentrations significantly greater than zero are identified by an *.

Table 3.12. Constituents in Waste Area Groupings (WAGs) 8 and 9 groundwater at ORNL, January 29-February 18, 1997

Parameter	N det/ N total	Max	Min	Av	Reference value	Number of values exceeding reference [ref][a]
Downgradient Wells						
Field measurements, unfiltered						
Conductivity (mS/cm)	9/9	0.97	0.24	0.53	b	[b]
Dissolved oxygen (mg/L)	9/9	11	4.6	9.0	b	[b]
Redox (mV)	9/9	590	170	380	b	[b]
Temperature (°C)	9/9	16	13	15	30.5	0[1]
Turbidity (JTU)	9/9	40	0	8.4	1	6[2]
pH (SU)	9/9	9.8	5.6	7.2	(6.0, 9.0)	2[1]
Radionuclides, unfiltered (pCi/L)[c]						
Co-60	1/9	2.1*	-1.9	0.37	200	0[4]
Gross alpha	2/9	2.3*	-1.0	0.78*	15	0[2]
Gross beta	7/9	2,000*	-0.54	400	50	3[2]
H-3	3/9	59,000*	-110	6,900	20,000	1[2]
Total rad Sr	3/9	810*	-0.49	180	8	3[2]
Upgradient Wells						
Field measurements, unfiltered						
Conductivity (mS/cm)	2/2	0.38	0.35	0.37	b	[b]
Dissolved oxygen (mg/L)	2/2	11	10	11	b	[b]
Redox (mV)	2/2	280	100	190	b	[b]
Temperature (°C)	2/2	14	14	14	30.5	0[1]
Turbidity (JTU)	2/2	12	0	6.0	1	1[2]
pH (SU)	2/2	6.6	5.8	6.2	(6.0, 9.0)	1[1]
Radionuclides, unfiltered (pCi/L)[c]						
Gross beta	2/2	5.7*	5.4*	5.5*	50	0[2]
H-3	1/2	810*	590	700*	20,000	0[2]

[a]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.
[b]Not applicable.
[c]Individual and average radionuclide concentrations significantly greater than zero are identified by an *.

Table 3.13. Constituents in Waste Area Grouping (WAG) 17 groundwater at ORNL, August 6-21, 1997

Parameter	N det/ N total	Max[a]	Min[a]	Av[b]	Reference value	Number of values exceeding reference [ref][c]
Downgradient Wells						
Field measurements, unfiltered						
Conductivity (mS/cm)	4/4	0.79	0.41	0.64	d	[d]
Dissolved oxygen (mg/L)	4/4	13	10	12	d	[d]
Redox (mV)	4/4	420	180	310	d	[d]
Temperature (°C)	4/4	22	17	19	30.5	0[1]
Turbidity (JTU)	4/4	20	0	8.0	1	3[2]
pH (SU)	4/4	7.1	6.7	6.9	(6.0, 9.0)	0[1]
Radionuclides, unfiltered (pCi/L)[e]						
Co-60	1/4	2.3*	-1.1	0.98	200	0[4]
Cs-137	2/4	3.7*	-0.20	1.6	120	0[4]
Gross alpha	3/4	10*	2.2	5.1*	15	0[2]
Gross beta	1/4	4.7*	0.50	2.4*	50	0[2]
H-3	4/4	5,900*	660*	3,100*	20,000	0[2]
Volatile organics, unfiltered (μg/L)						
1,1,1-Trichloroethane	1/4	U5.0	J1.0	~4.0	200	0[1]
1,1-Dichloroethene	1/4	21	U5.0	~9.0	7	1[1]
2-Butanone	1/4	U10	JB5.0	~8.8	d	[d]
Acetone	2/4	U10	JB1.0	~5.5	d	[d]
Benzene	1/4	12	U5.0	~6.8	5	1[1]
Chloroform	1/4	U5.0	J1.0	~4.0	100	0[2]
Tetrachloroethene	1/4	24	U5.0	~9.8	5	1[1]
Trichloroethene	3/4	16,000	J1.0	~4,000	5	1[1]
Vinyl chloride	1/4	97	U10	~32	2	4[1]
cis-1,2-Dichloroethene	2/4	3,400	J4.0	~850	d	[d]
trans-1,2-Dichloroethene	1/4	22	U5.0	~9.3	d	[d]
Upgradient Wells						
Field measurements, unfiltered						
Conductivity (mS/cm)	4/4	0.71	0.45	0.64	d	[d]
Dissolved oxygen (mg/L)	4/4	14	11	11	d	[d]
Redox (mV)	4/4	370	280	330	d	[d]
Temperature (°C)	4/4	17	15	16	30.5	0[1]
Turbidity (JTU)	4/4	72	20	51	1	4[2]
pH (SU)	4/4	7.4	6.7	7.1	(6.0, 9.0)	0[1]
Radionuclides, unfiltered (pCi/L)[e]						
Co-60	2/4	3.9*	0.13	2.0*	200	0[4]
Cs-137	1/4	3.2*	-1.5	0.68	120	0[4]
Gross alpha	2/4	5.3*	0	2.8	15	0[2]
Gross beta	3/4	7.5*	1.3	4.7*	50	0[2]
H-3	4/4	6,200*	1,500*	4,200*	20,000	0[2]

Table 3.13 (continued)

Parameter	N det/ N total	Max[a]	Min[a]	Av[b]	Reference value	Number of values exceeding reference [ref][c]
Volatile organics, unfiltered (μg/L)						
Acetone	4/4	J8.0	J1.0	~3.3	d	[d]

[a]Prefix "J" indicates the value was estimated at or below the analytical detection limit by the laboratory; "JB" indicates the value was estimated at or below the analytical detection limit and was found in the laboratory blank; and "U" indicates the value for an organic parameter was undetected at the analyticaldetection limit.

[b]A tilde (~) indicates that estimated and/or undetected values were used in the calculation.

[c]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.

[d]Not applicable.

[e]Individual and average radionuclide concentrations significantly greater than zero are identified by an *.

Table 4.1. 1997 concentrations at EMP sediment locations[a]

Parameter	Concentration
Clinch River downstream from all DOE inputs (CRK 16)	
Radionuclides (pCi/g)[b]	
Cs-137	0.097*
K-40	13*
Clinch River downstream from ORNL (CRK 32)	
Radionuclides (pCi/g)[b]	
Be-7	0.95*
Co-60	0.065*
Cs-137	2.7*
K-40	11*
Clinch River (Solway Bridge) upstream from all DOE inputs (CRK 70)	
Radionuclides (pCi/g)[b]	
Be-7	130
K-40	6,800

[a]All values were included in the calculations. Only parameters that have one or more samples detected are listed in the table. The sampling and analysis plan contains a complete list of analyses preformed.

[b]Individual radionuclide concentrations significantly greater than zero are identified by an *.

Table 4.2. Radiological constituents in settleable solids sites near the ORR, 1997[a]

Location	Co-60	Cs-137	Gross alpha	Gross beta
MEK 2.1	b	b	13,000	10,000
WOC 2.6	25	540	13,000	570,000
WOD 1.0	27	460	32,000	1,000,000

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

Table 4.3. ORNL Plant Perimeter Monitoring summary statistics from 1997 sampling events

Parameter	N det/ N total	Max[a]	Min[a]	Av[b]	Reference value	Number of values exceeding reference [ref][c]
			Melton Valley Exit Pathway			
Field Measurements -- Unfiltered						
Conductivity (mS/cm)	12/12	0.88	0.030	0.39	d	[d]
Dissolved oxygen (ppm)	12/12	13	5.4	9.8	d	[d]
Temperature (°C)	12/12	21	13	16	30.5	0[2]
pH (SU)	12/12	9.3	5.1	7.2	(6.0, 9.0)	5[2]
Radionuclides (pCi/L) -- Filtered[e]						
Cs-137	1/1	17*	17*	17	120	0[1]
Gross alpha	1/1	5.3*	5.3*	5.3	15	0[3]
Gross beta	1/1	210*	210*	210	50	1[3]
H-3	1/1	34,000*	34,000*	34,000	80,000	0[1]
Total rad Sr	1/1	100*	100*	100	40	1[1]
Radionuclides (pCi/L) -- Unfiltered[e]						
Co-60	2/12	3.3*	-0.79	0.87*	200	0[1]
Cs-137	1/12	26*	-9.4	0.62	120	0[1]
Gross alpha	6/12	15*	-0.77	3.4*	15	0[3]
Gross beta	7/12	530*	-0.10	69	50	2[3]
H-3	7/12	88,000*	-300	16,000*	80,000	1[1]
Total rad Sr	3/12	170*	-1.7	23	40	2[1]
Volatile Organics (μg/L) -- Unfiltered						
2-Butanone	7/11	U 10	JB 1.0	~ 6.5	d	[d]
Acetone	6/11	B 12	JB 2.0	~ 7.1	d	[d]
Carbon tetrachloride	1/11	9.0	U 5.0	~ 5.4	5	1[2]
Chloroform	1/11	U 5.0	J 3.0	~ 4.8	100	0[3]
Ethylbenzene	1/11	U 5.0	J 2.0	~ 4.7	700	0[3]
Trichloroethene	1/11	6.0	U 5.0	~ 5.1	5	1[2]
cis-1,2-Dichloroethene	1/10	U 5.0	J 3.0	~ 4.8	d	[d]
trans-1,2-Dichloroethene	1/10	5.0	U 5.0	~ 5.0	d	[d]

[a]Prefix "J" indicates the value was estimated at or below the analytical detection limit by the laboratory; "B" indicates the compound was found in the laboratory blank; "JB" indicates the value was estimated at or below the analytical detection limit and was found in the laboratory blank; "U" indicates the value for an organic parameter was undetected at the analytical detection limit.

[b]A tilde (~) indicates that estimated and/or undetected values were used in the calculation.

[c]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.

[d]Not applicable.

[e]Individual and average radionuclide concentrations significantly greater than zero are identified by an *.

Table 4.4. 1997 tissue concentrations in Catfish[a]

Parameter	Concentration
Clinch River downstream from all DOE inputs (CRK 16)	
Metals (mg/kg wet wt)	
Copper, total	0.13
Mercury, total	0.19
Zinc, total	9.3
Pesticides (μg/kg wet wt)	
4,4'-DDD	13
4,4'-DDE	18
PCBs (μg/kg wet wt)	
Aroclor-1260	350
Radionuclides (pCi/g ash wt)[b]	
Cs-137	2.5*
Gross beta	200*
K-40	300*
Radionuclides (pCi/g wet wt)[b]	
Cs-137	0.15*
Gross beta	12*
K-40	18*
Clinch River downstream from ORNL (CRK 32)	
Metals (mg/kg wet wt)	
Copper, total	0.59
Mercury, total	0.21
Zinc, total	14
Pesticides (μg/kg wet wt)	
4,4'-DDD	82
PCBs (μg/kg wet wt)	
Aroclor-1260	1,300
Radionuclides (pCi/g ash wt)[b]	
Cs-137	2.4*
Gross beta	160*
K-40	250*
Radionuclides (pCi/g wet wt)[b]	
Cs-137	0.23*
Gross beta	15*
K-40	24*

Table 4.4 (continued)

Parameter	Concentration
Clinch River (Solway Bridge) upstream from all DOE inputs (CRK 70)	
Metals (mg/kg wet wt)	
Copper, total	0.28
Mercury, total	0.11
Zinc, total	13
PCBs (μg/kg wet wt)	
Aroclor-1260	750
Radionuclides (pCi/g ash wt)[b]	
Cs-137	0.52*
Gross beta	220*
K-40	280*
Radionuclides (pCi/g wet wt)[b]	
Cs-137	0.031*
Gross beta	13*
K-40	17*

[a]Only parameters that are detected are listed in the table. The sampling and analysis plan contains a complete list of analyses performed.

[b]Individual and average radionuclide concentrations significantly greater than zero are identified by an *.

Table 4.5. 1997 tissue Concentrations in Sunfish[a]

Parameter	N det/ N total	Max[b]	Min[b]	Av[c]	Standard error[d]
Clinch River downstream from all DOE inputs (CRK 16)					
Metals (mg/kg wet wt)					
Chromium, total	4/6	0.80	<0.17	~0.42	0.10
Copper, total	6/6	0.31	0.19	0.24	0.021
Mercury, total	6/6	0.20	0.067	0.11	0.024
Nickel, total	1/6	0.24	<0.17	~0.20	0.0099
Zinc, total	6/6	20	13	17	1.1
Pesticides (μg/kg wet wt)					
4,4'-DDD	1/6	U12	U7.2	~9.8	0.79
4,4'-DDE	1/6	U12	U7.2	~9.8	0.79
4,4'-DDT	1/6	U12	U7.2	~9.8	0.79
Aldrin	1/6	U5.8	U3.6	~4.9	0.39
Alpha-BHC	1/6	U5.8	U3.6	~4.9	0.39
Beta-BHC	1/6	U5.8	U3.6	~4.9	0.39
Chlordane	1/6	U91	U56	~77	6.2
Dieldrin	1/6	U12	U7.2	~9.8	0.79
Endosulfan I	1/6	U5.8	U3.6	~4.9	0.39
Endosulfan II	1/6	U12	U7.2	~9.8	0.79
Endosulfan sulfate	1/6	U12	U7.2	~9.8	0.79
Endrin	1/6	U12	U7.2	~9.8	0.79
Endrin aldehyde	1/6	U12	U7.2	~9.8	0.79
Endrin ketone	1/6	U12	U7.2	~9.8	0.79
Gamma-BHC (Lindane)	2/6	5.6	J2.0	~4.3	0.57
Heptachlor	1/6	U5.8	U3.6	~4.9	0.39
Heptachlor epoxide	1/6	U5.8	U3.6	~4.9	0.39
Methoxychlor	1/6	U58	U36	~49	3.9
Toxaphene	1/6	U91	U56	~77	6.2
PCBs (μg/kg wet wt)					
Aroclor-1016	1/6	U73	U45	~62	5.0
Aroclor-1221	1/6	U73	U45	~62	5.0
Aroclor-1232	1/6	U73	U45	~62	5.0
Aroclor-1242	1/6	U73	U45	~62	5.0
Aroclor-1248	1/6	U73	U45	~62	5.0
Aroclor-1254	1/6	U73	U45	~62	5.0
Aroclor-1260	5/6	U62	J9.9	~29	8.9
Radionuclides (pCi/g)[e]					
Be-7	1/3	1.9*	-0.90	0.63	0.82
Co-60	1/3	0.49*	0.070	0.22	0.14
Cs-137	3/3	1.5*	0.66*	1.2*	0.25
Gross beta	2/3	150*	140	150*	3.3
K-40	3/3	200*	190*	200*	3.3
Total rad Sr	2/3	1.9*	1.2	1.5*	0.21

Table 4.5 (continued)

Parameter	N det/ N total	Max[b]	Min[b]	Av[c]	Standard error[d]
Clinch River downstream from ORNL (CRK 32)					
Metals (mg/kg wet wt)					
Copper, total	6/6	0.78	0.20	0.35	0.088
Mercury, total	6/6	0.064	0.021	0.044	0.0060
Selenium, total	1/6	<1.0	0.90	~0.96	0.019
Zinc, total	6/6	17	12	15	0.83
PCBs (μg/kg wet wt)					
Aroclor-1260	6/6	J31	J12	~18	3.6
Radionuclides (pCi/g)[e]					
Cs-137	3/3	2.8*	2.2*	2.6*	0.20
Gross alpha	1/3	4.0*	0.21	1.5	1.3
Gross beta	3/3	180*	160*	170*	6.7
K-40	3/3	220*	200*	210*	6.7
Total rad Sr	1/3	2.6*	-0.20	1.2	0.81
Clinch River (Solway Bridge) upstream from all DOE inputs (CRK 70)					
Metals (mg/kg wet wt)					
Chromium, total	1/6	0.46	<0.17	~0.23	0.046
Copper, total	6/6	0.51	0.20	0.31	0.044
Mercury, total	5/6	0.064	<0.020	~0.040	0.0080
Zinc, total	6/6	17	8.3	13	1.2
PCBs (μg/kg wet wt)					
Aroclor-1260	5/6	U65	J13	~31	8.4
Radionuclides (pCi/g)[e]					
Co-60	1/3	0.25*	-0.060	0.11	0.091
Cs-137	3/3	0.91*	0.32*	0.61*	0.17
Gross beta	3/3	150*	120*	130*	8.8
K-40	3/3	200*	170*	180*	8.8
Total rad Sr	1/3	4.4*	0.20	1.9	1.3

[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 "<" indicates the value for a parameter (excluding organics) was not quantifiable at the analytical detection limit; "U" indicates the value for an organic parameter was undetected at the analytical detection limit; and "J" indicates the value was estimated at or below the analytical detection limit by the laboratory.

[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 *.

Table 4.6. 1997 surface water analyses at EMP surface water locations[a]

Parameter	N det/ N total	Max[b]	Min[b]	Av[c]	Standard error[d]	TWQC[e]
First Creek just upstream of Northwest Tributary (1STCK)						
Field Measurements						
Dissolved oxygen (ppm)	2/2	10	8.4	9.4	0.95	f
pH (SU)	2/2	8.2	7.7	8.0	0.25	f
Temperature (°C)	2/2	17	16	16	0.90	f
Radionuclides (pCi/L)[g]						
Co-60	1/2	3.1*	-1.9	0.60	2.5	200
Gross alpha	3/3	83*	3.0*	56	26	f
Gross beta	3/3	1,800*	38*	870	510	f
H-3	1/2	540*	-380	81	460	80,000
Total rad Sr	2/2	900*	19*	460	440	40
Total uranium	1/1	1.2*	1.2*	1.2	f	20
U-233/234	1/1	2,200*	2,200*	2,200	f	f
U-234	1/1	1.0*	1.0*	1.0	f	20
U-235	1/2	0.090*	0.014	0.052	0.038	24
U-238	2/2	1.4*	0.20*	0.80	0.60	24
Bear Creek downstream from all possible DOE inputs (BCK 0.6)						
Field Measurements						
Dissolved oxygen (ppm)	2/2	9.7	9.6	9.7	0.050	f
pH (SU)	2/2	8.3	7.5	7.9	0.40	f
Temperature (°C)	2/2	14	14	14	0.30	f
Radionuclides (pCi/L)[g]						
Co-60	1/2	2.2*	1.4	1.8	0.42	200
Gross alpha	2/2	9.2*	5.1*	7.2	2.0	f
Gross beta	2/2	8.9*	7.1*	8.0*	0.91	f
Total uranium	1/1	5.9*	5.9*	5.9	f	20
U-234	2/2	4.1*	2.7*	3.4	0.70	20
U-238	2/2	6.5*	3.0*	4.7	1.8	24
Clinch River downstream from all DOE inputs (CRK 16)						
Field Measurements						
Dissolved oxygen (ppm)	11/11	9.1	6.7	7.9	0.26	f
pH (SU)	11/11	8.4	7.5	7.9	0.095	f
Temperature (°C)	11/11	23	9.8	17	1.5	f
Metals (mg/L)						
Aluminum, total	10/11	1.8	<0.10	~0.44	0.16	f
Barium, total	2/11	<0.10	0.039	~0.090	0.0070	f
Boron, total	1/1	0.023	0.023	0.023	f	f
Calcium, total	11/11	38	23	31	1.4	f
Chromium, total	1/11	<0.010	0.0013	~0.0087	0.00091	f
Cobalt, total	1/11	<0.10	0.00029	~0.073	0.014	f
Iron, total	11/11	1.5	0.059	0.49	0.14	f
Magnesium, total	11/11	10	6.3	8.6	0.39	f
Manganese, total	11/11	0.14	0.027	0.065	0.0094	f
Potassium, total	9/11	2.0	1.4	~1.6	0.073	f
Sodium, total	11/11	4.9	2.1	3.7	0.28	f
Strontium, total	1/1	0.081	0.081	0.081	f	f
Uranium, total	1/5	<0.0010	<0.00010	~0.00048	0.00015	f
Zinc, total	4/11	0.032	<0.0095	~0.021	0.0020	f
Radionuclides (pCi/L)[g]						
Be-7	1/6	15*	-4.9	4.2	3.4	40,000
Co-60	3/11	2.1*	-3.4	0.44	0.47	200
Cs-137	2/11	2.3*	-1.5	0.057	0.33	120

Table 4.6 (continued)

Parameter	N det/ N total	Max[b]	Min[b]	Av[c]	Standard error[d]	TWQC[e]
Gross alpha	5/11	1.8*	-0.16	0.56*	0.21	f
Gross beta	6/11	4.1*	0	1.9*	0.42	f
K-40	1/4	36*	-1.0	12	8.5	280
Volatile Organics (μg/L)						
2-Butanone	1/3	U10	JB7.0	~9.0	1.0	f
Acetone	1/3	U10	JB4.0	~8.0	2.0	f
Water supply intake for the K-25 Site (CRK 23)						
Field Measurements						
Dissolved oxygen (ppm)	12/12	10	5.8	8.4	0.38	f
pH (SU)	12/12	8.2	7.8	8.0	0.042	f
Temperature (°C)	12/12	24	9.9	16	1.4	f
Metals (mg/L)						
Aluminum, total	10/12	1.6	<0.10	~0.30	0.12	f
Antimony, total	1/13	<0.051	0.00011	~0.046	0.0038	0.014
Barium, total	4/13	<0.10	0.029	~0.079	0.0092	f
Boron, total	1/1	0.024	0.024	0.024	f	f
Calcium, total	12/12	37	30	33	0.62	f
Chromium, total	1/12	<0.010	0.00089	~0.0087	0.00087	f
Cobalt, total	1/12	<0.10	0.00020	~0.068	0.014	f
Copper, total	2/13	<0.070	0.0016	~0.0095	0.0051	f
Iron, total	12/13	1.7	0.051	~0.31	0.12	f
Lead, total	1/13	<0.051	0.00036	~0.042	0.0052	f
Magnesium, total	12/12	10	8.1	9.2	0.18	f
Manganese, total	13/13	0.20	0.025	0.056	0.013	f
Potassium, total	9/12	<2.0	1.1	~1.6	0.090	f
Sodium, total	12/12	5.1	3.5	4.3	0.14	f
Strontium, total	1/1	0.085	0.085	0.085	f	f
Uranium, total	2/6	<0.0010	<0.00010	~0.00042	0.00013	f
Vanadium, total	2/11	<0.51	<0.0020	~0.32	0.076	f
Zinc, total	4/13	0.021	0.0076	~0.017	0.0014	f
Radionuclides (pCi/L)[g]						
Co-60	6/12	3.4*	-0.97	1.2*	0.41	200
Cs-137	2/12	4.1*	-0.20	1.1*	0.32	120
Gross alpha	6/12	1.8*	-0.40	0.57*	0.17	f
Gross beta	9/12	14*	-0.40	3.0*	1.1	f
H-3	4/12	1,100*	-27	270*	98	80,000
Total rad Sr	3/12	2.9*	-2.5	0.66	0.45	40
Volatile Organics (μg/L)						
2-Butanone	1/4	U10	JB8.0	~9.5	0.50	f
Acetone	1/4	U10	JB4.0	~8.5	1.5	f
Clinch River downstream from ORNL (CRK 32)						
Field Measurements						
Dissolved oxygen (ppm)	12/12	10	6.2	8.3	0.44	f
pH (SU)	12/12	8.2	7.6	7.9	0.071	f
Temperature (°C)	12/12	22	9.0	16	1.3	f
Radionuclides (pCi/L)[g]						
Be-7	1/6	16*	-1.3	4.2	2.6	40,000
Co-60	1/12	4.1*	-1.9	0.52	0.47	200
Cs-137	2/12	3.3*	-1.3	0.62	0.37	120
Gross alpha	3/12	1.2*	-1.1	0.048	0.18	f
Gross beta	11/12	11*	1.1	4.6*	0.73	f
H-3	7/12	5,400*	-1,100	870	490	80,000

Table 4.6 (continued)

Parameter	N det/ N total	Max[b]	Min[b]	Av[c]	Standard error[d]	TWQC[e]
Pb-212	1/1	7.1*	7.1*	7.1	f	120
Total rad Sr	3/12	4.9*	-2.1	0.95	0.57	40
Water supply intake for Knox County (CRK 58)						
Field Measurements						
Dissolved oxygen (ppm)	12/12	13	7.0	9.3	0.50	f
pH (SU)	12/12	8.4	7.4	7.8	0.096	f
Temperature (°C)	12/12	25	8.7	16	1.7	f
Radionuclides (pCi/L)[g]						
Be-7	1/6	14*	-9.3	3.0	3.3	40,000
Co-60	6/12	3.5*	-1.0	1.5*	0.44	200
Cs-137	1/12	2.1*	-0.50	0.59*	0.24	120
Gross alpha	4/12	0.86*	-1.4	0.16	0.17	f
Gross beta	7/12	2.6*	0.20	1.3*	0.26	f
K-40	1/5	58*	-34	9.6	18	280
Melton Hill Reservoir above City of Oak Ridge water intake (CRK 66)						
Field Measurements						
Dissolved oxygen (ppm)	12/12	11	7.4	9.2	0.40	f
pH (SU)	12/12	8.4	6.9	7.6	0.12	f
Temperature (°C)	12/12	25	8.7	16	1.7	f
Radionuclides (pCi/L)[g]						
Co-60	3/12	3.0*	-1.4	0.80*	0.38	200
Gross alpha	3/12	1.5	-0.23	0.41*	0.17	f
Gross beta	8/12	3.4*	0.80	2.2*	0.26	f
K-40	2/5	140*	-50	30	32	280
Tl-208	1/1	3.8*	3.8*	3.8	f	f
Clinch River (Solway Bridge) upstream from all DOE inputs (CRK 70)						
Field Measurements						
Dissolved oxygen (ppm)	12/12	11	6.5	8.6	0.36	f
pH (SU)	12/12	8.3	6.5	7.2	0.16	f
Temperature (°C)	12/12	24	9.1	16	1.6	f
Metals (mg/L)						
Aluminum, total	10/12	1.2	<0.10	~0.27	0.089	f
Barium, total	3/12	<0.10	0.028	~0.082	0.0092	f
Boron, total	1/1	0.021	0.021	0.021	f	f
Calcium, total	11/12	38	<0.050	~31	2.9	f
Chromium, total	1/12	<0.010	0.0011	~0.0088	0.00086	f
Cobalt, total	1/12	<0.10	0.00030	~0.068	0.014	f
Copper, total	2/13	<0.0070	<0.0040	~0.0049	0.00036	f
Iron, total	11/12	1.9	<0.050	~0.37	0.15	f
Lead, total	1/12	<0.050	0.00091	~0.046	0.0041	f
Lithium, total	1/1	0.0055	0.0055	0.0055	f	f
Magnesium, total	11/12	10	<0.020	~8.4	0.79	f
Manganese, total	11/12	0.25	<0.010	~0.067	0.017	f
Potassium, total	8/12	<2.0	<0.60	~1.5	0.12	f
Sodium, total	11/12	4.9	<0.050	~3.7	0.39	f
Strontium, total	1/1	0.088	0.088	0.088	f	f
Thallium, total	1/10	<0.20	<0.00050	~0.060	0.022	0.0017
Uranium, total	2/6	<0.0010	<0.00010	~0.00041	0.00014	f
Vanadium, total	1/11	<0.50	<0.0020	~0.32	0.075	f
Zinc, total	3/12	0.18	0.012	~0.033	0.013	f

Table 4.6 (continued)

Parameter	N det/ N total	Max[b]	Min[b]	Av[c]	Standard error[d]	TWQC[e]
Radionuclides (pCi/L)[g]						
Be-7	1/6	24*	-18	0	6.5	40,000
Co-60	3/12	2.3*	-1.1	1.0*	0.29	200
Cs-137	1/12	2.1*	-3.0	-0.0026	0.39	120
Gross alpha	3/12	1.0*	-1.5	0.17	0.20	f
Gross beta	5/12	3.1*	-0.22	1.3*	0.26	f
H-3	1/12	830*	-430	31	97	80,000
Total rad Sr	1/12	5.0	-1.3	0.76	0.47	40
Volatile Organics (μg/L)						
2-Butanone	1/4	U10	JB8.0	~9.5	0.50	f
Acetone	1/4	U10	JB4.0	~8.5	1.5	f
Toluene	1/11	U5.0	J1.0	~4.6	0.36	6,800
Xylene, total	1/4	U5.0	J1.0	~4.0	1.0	f
East Fork Polpar Creek prior to entering Poplar Creek (EFK 0.1)						
Field Measurements						
Dissolved oxygen (ppm)	2/2	11	9.1	9.9	0.75	f
pH (SU)	2/2	8.5	7.6	8.1	0.45	f
Temperature (°C)	2/2	17	13	15	1.9	f
Radionuclides (pCi/L)[g]						
Co-60	1/2	1.9*	0.65	1.3	0.63	200
Gross alpha	2/2	3.0*	2.2*	2.6*	0.39	f
Gross beta	2/2	4.1*	3.1*	3.6*	0.48	f
I-131	1/1	41*	41*	41	f	120
East Fork Poplar Creek downstream from floodplain (EFK 5.4)						
Field Measurements						
Dissolved oxygen (ppm)	2/2	9.6	9.4	9.5	0.10	f
pH (SU)	2/2	8.5	7.4	8.0	0.55	f
Temperature (°C)	2/2	17	15	16	1.0	f
Radionuclides (pCi/L)[g]						
Be-7	1/1	20*	20*	20	f	40,000
Co-60	1/2	2.1*	0.41	1.3	0.85	200
Cs-137	1/2	1.8*	1.1	1.4	0.34	120
Gross alpha	2/2	3.5*	2.4*	3.0	0.56	f
Gross beta	2/2	4.9*	3.0*	3.9	0.96	f
I-131	1/1	130*	130*	130	f	120
Total uranium	1/1	3.2*	3.2*	3.2	f	20
U-234	1/1	1.3*	1.3*	1.3	f	20
U-238	1/1	2.0*	2.0*	2.0	f	24
Fifth Creek just upstream of White Oak Creek at ORNL (FIFTHCK 0.1)						
Field Measurements						
Dissolved oxygen (ppm)	2/2	9.7	9.2	9.5	0.25	f
pH (SU)	2/2	8.1	7.8	8.0	0.15	f
Temperature (°C)	2/2	18	17	17	0.35	f
Radionuclides (pCi/L)[g]						
Gross alpha	2/2	0.92*	0.66*	0.79	0.13	f
Gross beta	2/2	36*	23*	29	6.5	f
H-3	1/2	700*	-54	320	380	80,000
Total rad Sr	2/2	22*	11*	17	5.3	40
Grassy Creek upstream of SEG and IT Corp. at CRK 23 (GCK 3.6)						
Field Measurements						

Table 4.6 (continued)

Parameter	N det/ N total	Max[b]	Min[b]	Av[c]	Standard error[d]	TWQC[e]
Dissolved oxygen (ppm)	1/1	10	10	10	f	f
pH (SU)	1/1	8.0	8.0	8.0	f	f
Temperature (°C)	1/1	14	14	14	f	f
Radionuclides (pCi/L)[g]						
Gross beta	1/1	1.2*	1.2*	1.2	f	f
Ish Creek prior to entering CRK 30.8 (ICK 0.7)						
Field Measurements						
Dissolved oxygen (ppm)	2/2	11	9.2	10	1.1	f
pH (SU)	2/2	7.7	7.4	7.6	0.15	f
Temperature (°C)	2/2	16	11	14	2.9	f
Radionuclides (pCi/L)[g]						
Co-60	1/2	4.0*	0.59	2.3	1.7	200
K-40	1/1	240*	240*	240	f	280
McCoy Branch prior to entering CRK 60.3 (MCCBK 1.8)						
Field Measurements						
Dissolved oxygen (ppm)	2/2	10	6.8	8.5	1.7	f
pH (SU)	2/2	8.0	7.1	7.6	0.45	f
Temperature (°C)	2/2	15	11	13	1.9	f
Radionuclides (pCi/L)[g]						
Gross alpha	1/2	0.67*	-0.14	0.27	0.40	f
Gross beta	1/2	1.8*	0.76	1.3	0.52	f
K-40	1/1	60*	60*	60	f	280
Melton Branch downstream from ORNL (MEK 0.2)						
Field Measurements						
Dissolved oxygen (ppm)	6/6	14	8.7	10	0.77	f
pH (SU)	6/6	8.2	7.7	7.9	0.091	f
Temperature (°C)	6/6	22	8.4	15	2.3	f
Radionuclides (pCi/L)[g]						
Be-7	1/3	15*	-13	-3.0	9.0	40,000
Co-60	3/6	2.9*	0.99	1.8*	0.31	200
Gross alpha	3/6	2.5*	-0.027	1.1*	0.46	f
Gross beta	6/6	700*	350*	490*	63	f
H-3	6/6	900,000*	320,000*	470,000*	90,000	80,000
Total rad Sr	6/6	430*	160*	250*	41	40
Mitchell Branch upstream from the K-25 Site (MIK 1.4)						
Field Measurements						
Dissolved oxygen (ppm)	4/4	9.9	7.0	8.4	0.71	f
pH (SU)	4/4	8.2	7.9	8.0	0.075	f
Temperature (°C)	4/4	21	8.6	13	2.8	f
Radionuclides (pCi/L)[g]						
Gross alpha	2/4	1.0*	-0.18	0.61	0.27	f
Gross beta	3/4	2.9*	-0.60	1.6	0.77	f
Northwest Tributary prior to entering 1st Creek at ORNL (NWTK 0.1)						
Field Measurements						
Dissolved oxygen (ppm)	2/2	10	7.7	8.9	1.2	f
pH (SU)	2/2	8.1	7.8	8.0	0.15	f
Temperature (°C)	2/2	16	15	15	0.25	f

Table 4.6 (continued)

Parameter	N det/ N total	Max[b]	Min[b]	Av[c]	Standard error[d]	TWQC[e]
Radionuclides (pCi/L)[g]						
Co-60	1/2	2.5*	0.97	1.7	0.74	200
Gross beta	2/2	240*	17*	130	110	f
H-3	1/2	810*	70	440	370	80,000
Total rad Sr	2/2	100*	7.2*	54	46	40
Raccoon Creek sampling station prior to entering CRK 31 (RCK 2.0)						
Field Measurements						
Dissolved oxygen (ppm)	2/2	10	6.1	8.1	2.0	f
pH (SU)	2/2	7.9	7.2	7.6	0.35	f
Temperature (°C)	2/2	14	14	14	0.20	f
Radionuclides (pCi/L)[g]						
Gross alpha	1/2	1.6*	0.65	1.1	0.46	f
Gross beta	2/2	66*	16*	41	25	f
H-3	1/2	500*	-81	210	290	80,000
Total rad Sr	2/2	47*	4.3*	26	21	40
Walker Branch prior to entering CRK 53.4 (WBK 0.1)						
Field Measurements						
Dissolved oxygen (ppm)	2/2	12	7.1	9.6	2.5	f
pH (SU)	2/2	7.0	6.8	6.9	0.10	f
Temperature (°C)	2/2	15	9.4	12	2.9	f
White Oak Lake at White Oak Dam (WCK 1.0)						
Field Measurements						
Dissolved oxygen (ppm)	12/12	10	5.1	7.6	0.43	f
pH (SU)	12/12	8.5	7.5	8.0	0.075	f
Temperature (°C)	12/12	29	7.2	17	2.0	f
PCBs						
Aroclor-1254	5/12	U1.0	J0.027	~0.36	0.087	f
Total aroclors	3/6	U0.50	J0.027	~0.27	0.10	f
Radionuclides (pCi/L)[g]						
Co-57	1/1	23*	23*	23	f	4,000
Co-60	7/12	6.0*	-0.30	2.3*	0.49	200
Cs-137	11/11	74*	6.5*	23*	5.8	120
Gross alpha	12/12	9.5*	2.4*	6.3*	0.67	f
Gross beta	12/12	430*	200*	280*	19	f
H-3	12/12	190,000*	47,000*	99,000*	12,000	80,000
Pb-212	1/2	19*	0.77	9.9	9.1	120
Total rad Sr	12/12	180*	97*	130*	8.3	40
Total uranium	3/3	7.6*	7.0*	7.2*	0.18	20
U-233/234	2/2	9.4*	7.4*	8.4*	1.0	f
U-234	5/5	8.0*	3.2*	5.8*	0.76	20
U-235	4/7	0.12*	0*	0.038*	0.017	24
U-238	7/7	1.8*	0.67*	1.2*	0.16	24
White Oak Creek downstream from ORNL (WCK 2.6)						
Field Measurements						
Dissolved oxygen (ppm)	6/6	10	7.1	8.8	0.52	f
pH (SU)	6/6	8.4	7.7	8.0	0.11	f
Temperature (°C)	6/6	22	10	16	2.0	f
Radionuclides (pCi/L)[g]						
Co-60	1/6	4.8*	-1.8	0.79	1.0	200
Cs-137	6/6	28*	5.4*	16*	3.4	120
Gross alpha	6/6	4.3*	2.3*	3.5*	0.36	f

Table 4.6 (continued)

Parameter	N det/ N total	Max[b]	Min[b]	Av[c]	Standard error[d]	TWQC[e]
Gross beta	6/6	270*	120*	180*	20	f
H-3	6/6	27,000*	14,000*	18,000*	2,000	80,000
K-40	1/2	63*	0.18	32	31	280
Total rad Sr	6/6	110*	55*	82*	7.7	40
Total uranium	1/1	8.1*	8.1*	8.1	f	20
U-233/234	1/1	3.6*	3.6*	3.6	f	f
U-234	1/1	6.5*	6.5*	6.5	f	20
U-238	2/2	1.5*	0.56*	1.0	0.48	24
White Oak Creek upstream from ORNL (WCK 6.8)						
Field Measurements						
Dissolved oxygen (ppm)	4/4	10	8.3	9.4	0.44	f
pH (SU)	4/4	8.2	7.0	7.6	0.35	f
Temperature (°C)	4/4	18	11	14	1.6	f
Radionuclides (pCi/L)[g]						
Be-7	1/2	20*	6.0	13	7.0	40,000
Gross alpha	2/4	0.94*	-0.96	0.068	0.43	f
Gross beta	1/4	1.6	0.48	1.1*	0.25	f
H-3	1/4	430	34	230*	84	80,000

[a]All values were included in the calculations. Only parameters that have one or more samples detected are listed in the table. The sampling and analysis plan contains a complete list of analyses performed.

[b]Prefix "<" indicates the value for a parameter (excluding organics) was not quantifiable at the analytical detection limit; "U" indicates the value for an organic parameter was undetected at the analytical detection limit; "J" indicates the value was estimated at or below the analytical detection limit by the laboratory; and "JB" indicates the value was estimated at or below the analytical detection limit and was found in the laboratory blank.

[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 32, CRK 58, CRK 66, CRK 70) 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]Not applicable.

[g]Individual and average radionuclide concentrations significantly greater than zero are identified by an *.