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APPENDIX B

SHEPLEY'S HILL LANDFILL OPERABLE UNIT (AOCS 4, 5, AND 18)

GROUNDWATER A. .LYTICAL RESULTS
NOVEMBER 14-20, 1996 SAMPLING EVENT
SHEPLEY'S HILL LANDFILL
DEVENS, MASSACHUSETTS

Well No.	SHL-10	SHL-11GW	SHL-19/GW	SHL-20/GW	SHL-22/GW	SHL-4	SHM-4(DUP)	SHM-5/GW	SHL-9/GW	SHM-5B	SHM-5C	SHM-93-10C	SHM-93-22/GW	SHM-96-22B
PARAMETERS	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
VOLATILES (8260)														
1,1-Dichloroethane										2 J				
1,2-Dichloroethene (total)										3 J	2 J			5 J
Benzene										2J	1 J			3 J
Chlorobenzene											2 J			
Dichlorobenzenes (total)				6 J		1 J	1 J			2J	1 J			2 J
TICs (total)		8 NJ		20 NJ	7 NJ		9 NJ		54 NJ	10 NJ				16 NJ
TICs (total)								6 J						
SEMIVOLATILES (8270)														
Dichlorbenzenes (total)		2J		5 J	1J					1 J				2J
TICs (total)	14 J		5J					2 J						
METALS (TOTAL)														
Arsenic	3.4 B													
Barium		132 B		93.8 B	20.7	45 B	47.2 B		13.8 B	39 B	84.4 B		72 B	61.9 B
Chromium													5.2 B	
Copper	5.9 B						6.9 B	10.1 B	9.3 B			9.5 B		
Cyanide (total)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead										2.6 B	2.7 B			
Manganese	3.9 B													
Zinc	4.5 B	8.5 B	3.3 B	5.3 B		2.9 B	9.7 B	15.5 B	9.6 B					
GENERAL CHEMISTRY														
Alkalinity														
BOD-5 day	ND		ND	ND		ND	ND	ND		ND	ND	ND	ND	
Chemical Oxygen Demand			ND			ND							ND	
Nitrate-Nitrite (total)		ND		ND	ND			ND		ND	ND		ND	ND
Total Dissolved Solids														
Total Suspended Solids	ND					ND	ND	ND				ND		
Sulfate, IC		ND	ND		ND			ND						

Notes:
NJ - Estimated non-target concentration (TIC's)
ND - Not Detected
J - Estimated value below the quantitation limit
B - Detected in Associated Method Blank

GROUNDWATER ANALYTICAL RESULTS - MAY 27-30, 1997 SAMPLING EVENT
SHEPLEY'S HILL LANDFILL
DEVENS, MASSACHUSETTS

	Well No.	SHL-3	SHL-4	SHL-5	SHM-96-5B	SHM-96-5C	SHL-9	SHL-10	SHM-93-10C	SHL-11	SHL-19	SHL-20	SHL-20 (D)	SHL-22	SHM-96-22B	SHM-93-22C	BLANK
PARAMETERS	CLEANUP	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
	LEVEL																
	µg/l																
VOLATILES (8260)																	
Benzene	5	<5	2 J	<5	1 J	1 J	2 J	<5	<5	2 J	2 J	2 J	2 J	<5	2 J	<5	<5
2-Butanone	NL	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	10	11	<10	<10	<10	<10
1,1-Dichloroethane	NL	<5	<5	<5	2 J	<5	<5	<5	1 J	4 J	<5	1 J	1 J	2 J	2 J	<5	<5
1,2-Dichloroethene (total)	NL	<5	<5	<5	3 J	2 J	<5	<5	2 J	4J	<5	3 J	3 J	3 J	3 J	<5	<5
1,2-Dichloroethane	5	<5	<5	<5	<5	<5	<5	<5	2 J	<5	<5	<5	<5	<5	<5	<5	<5
Tetrachloroethene	5	<5	0.8 J	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	0.8 J	<5	<5	<5
1,1,2-Trichloroethane	5	<5	<5	<5	<5	2 J	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Toluene	1000	<5	<5	<5	<5	<5	<5	<5	5	<5	<5	<5	<5	<5	<5	<5	<5
SEMIVOLATILES (8270)																	
1,4-Dichlorobenzene	5	<10	<10	<10	1 J	<10	<10	<10	<10	2 J	<10	3 J	3 J	1 J	<10	<10	<10
METALS (TOTAL)																	
Arsenic	50	<10 J	**73.6 J**	<10 J	**13300 J**	43.2 J	16.1 J	<10 J	<10 J	**252 NJ**	<10 J	<10 J	<10 J	<10 J	**318 J**	40.4 J	<10 J
Chromium	100	68.2	52.3	<10	<10	<10	20.4	<13.8	<10	<10	<10	<10	<10	<10	<10	<10	<10
Iron	9100	2480	8630	3020	**129000**	**70200**	5430	223	118	**85000**	**22800**	**16100**	**45900**	574	**60100**	1180	193
Lead	15	<3	3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	4.7
Manganese	1715	65.1	448	598	**9940**	**4800**	401	15.2	24.3	**2230**	**1960**	**7060**	**6980**	702	**5400**	698	15.1
Zinc	2000	34.6	21.2	25.5	24.8	27.8	<20	22.5	<20	<20	<20	38.3	<20	<38	26	<20	67.6
GENERAL CHEMISTRY																	
Alkalinity	NL	8.4	49.2	48.8	381	321	68.4	18	198	290	43.2	423	420	475	403	276	NC
Biochemical Oxygen Dema	NL	<2	3	3	7	5	4	4	<2	14	<2	7	6	4	9	2	NC
Chloride	NL	<3	3.8	<3	72.3	42.1	49.7	<3	30.7	68.3	4.4	63.9	64.3	71	78.4	44.3	NC
Chemical Oxygen Demand	NL	33.3	<10	33.3	33.3	38.2	23.5	228	112	38.2	<10	30.8	28.4	18.6	38.2	<10	NC
Hardness	NL	10.5	37.6	39.3	319	241	53.1	19.1	215	136	40	336	334	422	319	289	NC
Nitrate-Nitrite (Total)	10000	0.13 J	0.2 J	<0.1	<0.1	<0.1	<0.1	0.29	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NC
Sulfate	NL	<10	<10	10.9	10.6	15.4	<10	<10	20.3	12.8	13.6	11.1	12.4	<10	12.6	30.4	NC
Total Dissolved Solids	NL	14	79	83	521	409	94	31	330	448	70	577	579	608	612	426	NC
Total Suspended Solids	NL	8	122	<5	74	85	7	7	<5	30	51	25	26	<5	85	63	NC

Notes:

Boldface text indicates compounds detected above the established cleanup level.

Underlined text indicates compounds quatitation limit is above the established cleanup level.

J - Estimated value below the quantitation limit

NL - Not Listed

NA - not analyzed

NJ - Estimated non-target concentration (TIC's)

NC - Not Collected

(D) = Duplicate

GROUNDWATER ANALYTICAL RESULTS - OCTOBER 20-24, 1997 SAMPLING EVENT
SHEPLEY'S HILL LANDFILL
DEVENS, MASSACHUSETTS

	Well No.	SHL-3	SHL-4	SHL-5	SHM-96-5B	SHM-96-5C	SHM-96-5C (D)	SHL-9	SHL-10	SHM-93-10C	SHL-11	SHL-19	SHL-20	SHL-22	SHM-96-22B	SHM-93-22C	BLANK
PARAMETERS	CLEANUP	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
	LEVEL																
	µg/l																
VOLATILES (8260)																	
Benzene	5	<5	2 J	<5	<5	1 J	1 J	<5	<5	<5	2 J	<5	0.6 J	<5	2 J	<5	<5
Chlorobenzene	100	<5	0.9 J	<5	<5	3 J	3 J	<5	<5	<5	<5	<5	<5	<5	< 5	<5	<5
1,4-Dichlorobenzene	5	<5	<5	<5	<5	<5	0.8 J	<5	<5	<5	<5	<5	4 J	<5	1 J	<5	<5
1,1-Dichloroethane	NL	<5	1 J	<5	2J	<5	<5	<5	<5	<5	2 J	<5	<5	2 J	<5	<5	<5
1,2-Dichloroethene (total)	NL	<5	1 J	<5	2 J	3 J	2 J	<5	<5	2 J	3 J	2 J	2 J	2 J	3 J	2 J	<5
1,2-Dichloroethane	5	<5	<5	<5	<5	<5	<5	<5	<5	2 J	<5	0.7 J	<5	<5	<5	<5	<5
Toluene	1000	<5	2 J	0.4 J	<5	<5	0.3 J	0.3 J	<5	<5	<5	<5	<5	0.4 J	<5	0.4 J	<5
Vinyl Chloride	2	<10	<10	<10	<10	1 J	0.9 J	0.9 J	<10	<10	<10	0.6 J	<10	<10	<10	<10	<10
SEMIVOLATILES (8270)																	
1,3-Dichlorbenzene	600	<10	<10	<10	<10	<10	0.03 J	<10	<10	<10	0.2 J	<10	<10	<10	<10	<10	<10
1,4-Dichlorobenzene	5	<10	2 J	<10	1 J	0.9 J	0.9 J	<10	<10	<10	2 J	<10	3 J	<10	1 J	1 J	<10
1,2-Dichlorobenzene	600	<10	0.1 J	<10	0.1 J	0.4 J	0.5 J	<10	<10	<10	0.3 J	<10	<10	<10	<10	<10	<10
METALS (TOTAL)																	
Arsenic	50	<10	180	<10	2040	43.1	37.1	25.2	209	10.5	[illegible]	[illegible]	422	34.8	652	<10	<10
Barium	2000	<200	210	<200	200	<200	<200	<200	<15	<200	<200	<200	200	<200	<200	<200	<200
Chromium	100	16.3	110	<10	<10	<10	<10	<10	24.8	<10	<10	<10	<10	<10	<10	<10	<10
Iron	9100	407	19000	<4920	18200	53600	55400	7330	209	418	95800	44000	17100	1520	58200	1310	<100
Lead	15	<3	6	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Manganese	1715	<15	874	344	9770	6360	5970	417	<15	62.9	3040	4560	8100	832	5780	1120	<15
Zinc	2000	20.7 J	29 J	<20	<20	<42.9	<20	1790	<20	24.5 J	<20	30.5 J	30.2 J	42.2 J	31.6 J	41.4 J	<20
DISSOLVED ARSENIC																	
	50	NA	NA	NA	1960	37.3	NA	NA	NA	NA	NA	NA	NA	NA	324	NA	NA
GENERAL CHEMISTRY																	
Alkalinity	NL	33.5	229	60	389	374	373	68.5	30.5	196	325	144	445	298	376	477	<2
Biochemical Oxygen Dema	NL	10	8	6	4	3	4	12	5	7	14	<2	6	<2	3	12	<2
Chloride	NL	<3	37.6	<3	65.6	51	49.7	<3	<3	28.4	58.5	6.5	71.2	47.1	68.7	73	<3
Chemical Oxygen Demand	NL	<10	19.1	28.4	30.7	28.4	23.7	23.7	<10	<10	42.2	14.5	30.7	<10	26	12.2	<10
Cyanide (total)	NL	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hardness	NL	38.4	193	56.7	287	289	276	64.1	35.3	242	185	99.1	388	346	314	451	1.49
Nitrate-Nitrite (total)	10	0.24	0.32	<0.1	<0.1	<0.1	<0.1	<0.1	0.33	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sulfate	NL	<10	<10	10.2	<10	<10	<10	11.5	<10	17.1	<10	16.3	<10	29.2	<10	<10	<10
Total Dissolved Solids	NL	62	324	96	516	446	458	119	63	313	454	184	630	648	478	614	<10
Total Suspended Solids	NL	17	43	<10	54	61	84	<10	10	32	68	24	23	<10	107	<10	<10

Notes:
Boldface text indicates compounds detected above the established cleanup level.
Underlined text indicates compounds quatitation limit is above the established cleanup l

J - Estimated value below the quantitation limit
NL - Not Listed
NA - not analyzed

NJ - Estimated non-target concentration (TIC's)
NC - Not Collected
(D) = Duplicate

Groundwater Analytical Results - May 11 - 13, 1998 Sampling Event
Shepley's Hill Landfill
Devens, Massachusetts
(SHEET 1 of 1)

PARAMETERS	Well No. / CLEANUP LEVEL (1) ug/L	SHL-3 ug/L	SHL-4 ug/L	SHL-5 ug/L	SHM-96-5B ug/L	SHM-96-5B DUP ug/L	SHM-96-5C ug/L	SHL-9 ug/L	SHL-10 ug/L	SHM-93-10C ug/L	SHL-11 ug/L	SHL-19 ug/L	SHL-20 ug/L	SHL-22 ug/L	SHM-96-22B ug/L	SHM-96-22C ug/L
VOLATILES (8260)																
Xylenes	10,000 (2)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone	3,000 (4)	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	9.8 J	<10.0	15	<10.0	<10.0	<10.0	<10.0	<10.0	11
2-Butanone	-	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
4-Methyl-2-Pentanone	-	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Benzene	5 (2)	<5.0	<5.0	<5.0	1.5 J	1.4 J	1.3 J	<5.0	<5.0	<5.0	2.0 J	<5.0	<5.0	<5.0	1.2 J	<5.0
Methyl-t-Butyl Ether	70 (4)	<5.0	<5.0	<5.0	1.8 J	1.9 J	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	2.0 J	1.7 J	<5.0
1,1-Dichloroethane	70 (4)	<5.0	<5.0	<5.0	2.7 J	2.6 J	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1.6 J	<5.0
1,2-Dichloroethene (total)	70 (2)	<5.0	<5.0	<5.0	3 J	3.1 J	2.2 J	<5.0	<5.0	1.6 J	3.1 J	<5.0	2.3 J	2.4 J	2.2 J	<5.0
1,2-Dichloroethane	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,3-Dichlorobenzene	600 (2)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,4-Dichlorobenzene	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	2.1 J	<5.0	4.7 J	<5.0	<5.0	<5.0
1,2-Dichlorobenzene	600	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
TAL METALS (6010)																
Arsenic	50	<5.0	37.4	<5.0	**4,300**	**4,330**	49.5	15	<5.0	7.5	**340**	**177.5**	**238**	10.6	**305**	31.6
Barium	2,000 (2)	<7.6	23	7.6	63.5	64.2	57	12.5	<7.6	<7.6	123	9	105	14.5	86.1	86.8
Cadmium	5 (2)	1	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Chromium	100	4.8	<2.0	<2.0	3.3	3.7	2.9	<2.0	<2.0	<2.0	2.2	<2.0	3.8	3.7	<2.0	2.8
Copper	1,300 (3)	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	<3.4	4.2	<3.4
Iron	9,100	177	3,230	1,390	**39,700**	**40,000**	**73,700**	4,110	<70.8	<70.8	**80,800**	**9,840**	**19,600**	1,190	**86,300**	728
Lead	15	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6
Manganese	1,715	5.2	418	377	**10,100**	**10,300**	**4,500**	393	1.9	39.2	**3,250**	1,350	**6,190**	1,240	**3,070**	667
Mercury (7470A)	2 (2)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	100	3.6	<3.5	<3.5	18.3	19	5.4	<3.5	<3.5	<3.5	4.8	<3.5	16.1	5.6	6.5	<3.5
Selenium	50 (2)	<3.1	<3.1	<3.1	5.1	4.6	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	5.3	<3.1	<3.1	<3.1
Silver	40 (4)	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6	<2.6
Zinc	2,000 (4)	14	27.8	20.1	39.9	34.4	134	26.6	9.4	36.7	30.3	12.5	23.8	79.2	35.5	22.7
Aluminum	6,870	193	43.7	285	49.2	45.1	51.5	161	38.3	34.9	66.1	53.5	32.5	<27.7	51.8	35.3
Sodium	20,000	1,620	8,040	2,480	**45,700**	**46,300**	**31,300**	2,200	1,600	9,030	**44,100**	2,380	**54,100**	**251,000**	**74,700**	**23,700**
GENERAL CHEMISTRY																
Alkalinity	-	7,000	56,000	34,000	358,000	358,000	334,000	49,000	16,000	198,000	306,000	32,000	398,000	436,000	396,000	248,000
Biochemical Oxygen Demand	-	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<4,000	3,900	<2,000	<2,000	5,200	<2,000	<2,000	<2,000	<2,000
Chloride	-	600	1,600	800	64,300	61,800	39,300	1,200	900	28,300	48,600	800	62,700	67,200	55,000	38,600
Chemical Oxygen Demand	-	<5,000	6,000	27,000	29,000	30,000	31,000	19,000	6,000	<5,000	38,000	<5,000	34,000	16,000	30,000	13,000
Cyanide (Total)	200 (2)	<5.0	<5.0	<5.2	<5.0	<5.1	<5.0	<5.0	<5.0	<5.1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Hardness	-	10,000	50,000	33,000	365,000	355,000	235,000	50,000	18,000	242,000	195,000	35,000	400,000	455,000	255,000	305,000
Nitrate-Nitrite (Total)	10,000 (2)	300	800	<100	<100	<100	<100	<100	300	<100	200	200	<100	<100	<100	<100
Sulfate	500,000 (2)	3,500	4,100	1,300	3,000	3,100	7,500	2,400	3,700	21,500	900	6,100	5,400	3,000	1,000	24,800
Total Dissolved Solids	-	34,000 JB	72,000 JB	151,000	516,000	515,000	429,000	106,000 JB	44,000 JB	304,000	418,000	60,000 JB	565,000	639,000	556,000	420,000
Total Suspended Solids	-	4,300	3,900	2,700	76,600	74,800	111,000	26,700	1,700	900 JB	56,600	16,000	28,100	3,500	120,000	3,400

Notes:

Shaded areas with bold numbers indicate cleanup level exceedance. - **>25**

J = Estimated value

B = Analyte is also present in equipment blank sample

(1) Cleanup values as developed in the ROD (unless otherwised noted)

(2) No cleanup values were developed so the Maximum Contamination Level (MCLs) were used

(3) No cleanup values were developed so the MMCLs were used

(4) No cleanup values were developed so the MCP GW-1 standard was used

Groundwater Analytical Results - November 2 - 4, 1998 Sampling Event
Shepley's Hill Landfill
Devens, Massachusetts
(SHEET 1 of 1)

PARAMETERS	Well No. CLEANUP LEVEL (1) ug/L	SHL-3 ug/L	SHL-4 ug/L	SHL-5 ug/L	SHM-96-5B ug/L	SHM-96-5B DUP ug/L	SHM-96-5C ug/L	SHL-9 ug/L	SHL-10 ug/L	SHM-93-10C ug/L	SHL-11 ug/L	SHL-19 ug/L	SHL-20 ug/L	SHL-22 ug/L	SHM-96-22B ug/L	SHM-93-22C ug/L
VOLATILES (8260)																
Xylenes	10,000 (2)	<5.0	<5.0	<5.0	<5.0	<5.0	4.4 J	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone	3,000 (4)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2-Butanone	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	5 (2)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methyl-t-Butyl Ether	70 (4)	<5.0	<5.0	<5.0	<5.0	1.9 J	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1-Dichloroethane	70 (4)	<5.0	<5.0	<5.0	2.6 J	2.6 J	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dichloroethene (total)	70 (2)	<5.0	<5.0	<5.0	3.2 J	3.0 J	2.7 J	<5.0	<5.0	<5.0	3.8 J	<5.0	2.8 J	<5.0	3.0 J	<5.0
1,2-Dichloroethane	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,3-Dichlorobenzene	600 (2)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,4-Dichlorobenzene	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dichlorobenzene	600	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
METALS (6010)																
Arsenic	50	<5.4	**89.1**	11.5	**1,080**	**1,100**	46.8	27.2	<5.4	10.2	**376**	**14**	**210**	<5.4	**405**	**51.1**
Barium	2,000 (2)	<6.6	176	9.3	53.5	53.8	56.6	11.9	<6.6	8.9	111	26.3	100	11.2	97.3	68.7
Cadmium	5 (2)	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium	100	9.7	<0.9	1.0 B	3.7 B	3.9 B	2.0 B	1.0 B	1.0 B	3.5 B	<0.9	1.1 B	1.0 B	<0.9	<0.9	1.8 B
Copper	1,300 (3)	1.6 B	<1.4	<1.4	2.4 B	2.2 B	3.9 B	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	4.7 B	<1.4
Iron	9,100	206	**10,400**	3,690	**27,600**	**27,900**	**57,500**	6,470	<46.1	621	**63,400**	**30,200**	**13,600**	478	**72,800**	1,140
Lead	15	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Manganese	1,715	5.8 B	552	598	**13,300**	**13,400**	**6,590**	368	<0.6	43.7 B	**2,760**	**4,070**	**9,080**	722	**4,530**	648
Mercury (7470A)	2 (2)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	100	7.5	8.3	<2.1	12.4	11.3	<2.1	<2.1	<2.1	3.9	<2.1	9.5	14.2	5.7	3.2	<2.1
Selenium	50 (2)	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6	<4.6
Silver	40 (4)	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2
Zinc	2,000 (4)	26	23.9	27.5	41.3	40.4	63.2	17.6 B	31.9	20.5 B	39.5	28.9	41.0	45.3	11.1 B	77.6
Aluminum	6,870	127	21.7	261	108	126	<21.1	65	37.2	520	<21.1	<21.1	<21.1	<21.1	33.5	<21.1
Sodium	20,000	1,560	**22,500**	4,100	**45,400**	**45,700**	**36,600**	1,170	913	7,760	**41,400**	3,090	**47,100**	**47,400**	**46,000**	**22,100**
GENERAL CHEMISTRY																
Alkalinity	-	32,000	176,000	56,000	384,000	384,000	340,000	70,000	25,000	198,000	610,000	102,000	418,000	450,000	350,000	280,000
Biochemical Oxygen Demand	-	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000
Chloride	-	500	33,900	1,400	65,000	64,300	50,000	1,400	1,000	29,300	47,100	3,300	58,800	70,400	66,600	43,800
Chemical Oxygen Demand	-	<5,000	9,000	24,000	26,000	28,000	31,000	27,000	<5,000	<5,000	29,000	<5,000	21,000	14,000	35,000	7,000
Cyanide (Total)	200 (2)	<5.1	<5.0	<5.3	<5.0	<5.0	<5.0	<5.3	<5.0	<5.0	<5.0	<5.1	<5.0	<5.1	<5.3	<5.0
Hardness	-	33,000	150,000	60,000	370,000	360,000	290,000	65,000	27,000	236,000	192,000	72,000	410,000	452,000	290,000	315,000
Nitrate as Nitrogen	10,000 (2)	400	700	<300	<300	<300	<300	<300	400	<300	<300	<300	<300	<300	<300	<300
Sulfate	500,000 (2)	5,100	8,500	5,700	3,600	3,700	2,500	900	3,900	21,100	<300	14,000	6,300	3,300	900	25,000
Total Dissolved Solids	-	50,000 JB	258,000	86,000 JB	521,000	519,000	455,000	87,000 JB	35,000 JB	299,000	416,000	150,000	585,000	561,000	491,000	380,000
Total Suspended Solids	-	9,600	8,600	4,400	50,800	50,600	33,300	700 JB	600 JB	8,200	76,400	16,900	19,100	1,500 JB	99,000	4,700

Notes:

Shaded areas with bold numbers indicate cleanup level exceedance. - 25

J = Estimated value

B = Analyte is also present in equipment blank sample

(1) Cleanup values as developed in the ROD (unless otherwised noted)

(2) No cleanup values were developed so the Maximum Contamination Level (MCLs) were used

(3) No cleanup values were developed so the MMCLs were used

(4) No cleanup values were developed so the MCP GW-1 standard was used

Groundwater Analytical Results - May 10 - 11, 1999 Sampling Event
Shepley's Hill Landfill
Devens, Massachusetts
(SHEET 1 of 1)

PARAMETERS	Well No. / CLEANUP LEVEL (1) ug/L	SHL-3	SHL-4	SHL-5	SHM-96-5B	SHM-96-5B DUP	SHM-96-5C	SHL-9	SHL-10	SHM-93-10C	SHL-11	SHL-19	SHL-20	SHL-22	SHM-96-22B	SHM-93-22C
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
VOLATILES (8260)																
Xylenes	10,000 (2)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone	3,000 (4)	<5.0	<5.0	<5.0	4.0 J	4.0 J	3.0 J	15	<5.0	3.2 J	<5.0	<5.0	3.0 J	<5.0	3.5 J	3.3 J
2-Butanone	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	2.7 J	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	5 (2)	<5.0	<5.0	<5.0	0.97 J	0.94 J	1.2 J	<5.0	<5.0	<5.0	2.1 J	<5.0	<5.0	<5.0	1.7 J	<5.0
Methyl-t-Butyl Ether	70 (4)	<5.0	<5.0	<5.0	1.6 J	1.7 J	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	2.0 J	1.6 J	1.2 J
1,1-Dichloroethane	70 (4)	<5.0	<5.0	<5.0	2.6 J	2.6 J	<5.0	<5.0	<5.0	0.97 J	<5.0	<5.0	<5.0	2.2 J	3.2 J	1.7 J
1,2-Dichloroethene (total)	70 (2)	<5.0	<5.0	<5.0	2.7 J	2.7 J	3.2 J	14	<5.0	1.3 J	2.6 J	1.5 J	2.0 J	2.5 J	3.3 J	1.3 J
1,2-Dichloroethane	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1.1 J	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,3-Dichlorobenzene	600 (2)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,4-Dichlorobenzene	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	2.4 J	<5.0	4.4 J	<5.0	<5.0	<5.0
1,2-Dichlorobenzene	600	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
METALS (6010)																
Arsenic	50	2.7 B	**78.2**	5.0 B	**3,490**	**3,460**	**57.0**	**71.3**	2.7 B	10.8 B	**431**	**156**	**216**	12.2 B	**707**	42.8
Barium	2,000 (2)	<6.5	88.3	6.6	56.3	55.7	63.9	14.5	<6.5	7.4	116	33	111	12.8	108	76.6
Cadmium	5 (2)	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium	100	3.0 B	1.0 B	1.7 B	3.6 B	3.0 B	1.8 B	1.7 B	1.1 B	0.96 B	1.5 B	0.76 B	2.2 B	1.2 B	<0.7	2.0 B
Copper	1,300 (3)	2.8 B	2.2 B	1.7 B	3.9 B	2.1 B	2.0 B	3.6 B	1.4 B	<1.0	2.7 B	1.2 B	1.7 B	1.2 B	5.8 B	1.5 B
Iron	9,100	15.7	**16,600**	2,590	**30,900**	**30,600**	**60,900**	**13,900**	<14.9	30.7	**84,800**	**31,100**	**12,500**	558	**86,200**	606
Lead	15	0.99 B	<0.9	1.1 B	<0.9	<0.9	<0.9	2.3 B	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9
Manganese	1,715	<1.4	1,100	415	**13,400**	**13,000**	**6,760**	547	<1.4	33.4	**2,770**	**3,690**	**8,470**	862	1,030	610
Mercury (7470A)	2 (2)	0.19 B	0.16 B	0.2 B	0.17 B	<0.14	0.2 B	0.15 B	0.13 B	0.12 B	0.17 B	0.16 B	0.15 B	0.24 B	0.13 B	0.21 B
Nickel	100	2.2	8.2	2.3	16.2	15.4	10.9	1.8	<1.4	1.9	2.6	10.7	14.7	7.5	5.7	<1.4
Selenium	50 (2)	4.3 BJ	<2.7 J	3.3 BJ	<2.7 J	3.1 BJ	<2.7 J	<2.7 J	<2.7 J	<2.7 J	<2.7 J	<2.7 J	3.9 BJ	4.1 BJ	3.3 BJ	<2.7 J
Silver	40 (4)	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9	<0.9
Zinc	2,000 (4)	11.3 B	18 B	25.8 B	5.5 B	9.8 B	55.9 B	32.3 B	13.6 B	35.7 B	29.4 B	27.7 B	32.6 B	47.4 B	10.3 B	48.1 B
Aluminum	6,870	<10.4	29.4	272	<10.4	<10.4	<10.4	142	<10.4	<10.4	<10.4	<10.4	<10.4	<10.4	<10.4	<10.4
Sodium	20,000	647 B	12,100	3,070	**43,500**	**42,800**	**37,100**	1,380	1,080 B	7,840	**39,300**	3,190	**47,300**	**48,200**	**44,000**	**22,500**
GENERAL CHEMISTRY																
Alkalinity	-	14,000	154,000	34,000	380,000	376,000	396,000	65,000	14,000	192,000	332,000	132,000	418,000	450,000	316,000	266,000
Biochemical Oxygen Demand	-	<2,000	<2,000	2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000
Chloride	-	900	18,900	2,300	62,400	61,000	61,000	4,200	1,000	34,900	52,000	4,800	64,100	66,900	58,900	34,000
Chemical Oxygen Demand	-	<5,000	10,000	32,000	31,000	31,000	42,000	95,000	<5,000	<5,000	35,000	7,000	21,000	17,000	44,000	9,000
Cyanide (Total)	200 (2)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Hardness	-	18,000	132,000	31,000	365,000	364,000	320,000	66,000	18,000	238,000	202,000	97,000	405,000	446,000	245,000	289,000
Nitrate as Nitrogen	10,000 (2)	400	600	300	<200	<200	200	<200	600	<200	<200	<200	<200	<200	<200	<200
Sulfate	500,000 (2)	3,100	6,700	2,600	4,300	4,300	2,000	4,100	3,600	23,400	800 B	18,300	7,700	3,900	4,100	20,700
Total Dissolved Solids	-	33,000 B	205,000	68,000 B	511,000	528,000	518,000	90,000 B	32,000 B	299,000	404,000	173,000	562,000	569,000	463,000	381,000
Total Suspended Solids	-	8,100	10,200	168,000	46,800	54,900	43,200	32,700	500	800	55,300	15,700	10,200	2,200	59,300	2,700

Notes:

Shaded areas with bold numbers indicate cleanup level exceedance. - 25

J = Estimated value

B = Analyte is within 5 times of the amount detected in the equipment blank sample

(1) Cleanup values as developed in the ROD (unless otherwised noted)

(2) No cleanup values were developed so the Maximum Contamination Level (MCLs) were used

(3) No cleanup values were developed so the MMCLs were used

(4) No cleanup values were developed so the MCP GW-1 standard was used

Hardne s for wells SHM-96-5B, SHM-96-5B DUP, and SHL-20 have been revised from what was previously repor e Spring 1999 Analytical Report due to Quality Assurance Report

Groundwater Analytical Results - November 1 - 2, 1999 Sampling Event
Shepley's Hill Landfill
Devens, Massachusetts
(SHEET 1 of 1)

PARAMETERS	Well No. / CLEANUP LEVEL (1) ug/L	SHL-3 ug/L	SHL-4 ug/L	SHL-5 ug/L	SHM-96-5B ug/L	SHM-96-5B DUP ug/L	SHM-96-5C ug/L	SHL-9 ug/L	SHL-10 ug/L	SHM-93-10C ug/L	SHL-11 ug/L	SHL-19 ug/L	SHL-20 ug/L	SHL-22 ug/L	SHM-96-22B ug/L	SHM-93-22C ug/L
VOLATILES (8260)																
Xylenes	10,000 (2)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone	3,000 (4)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2-Butanone	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-Pentanone	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	5 (2)	<5.0	<5.0	<5.0	0.94 J	0.98 J	0.96 J	<5.0	<5.0	<5.0	2.1 J	<5.0	0.9 J	<5.0	1.7 J	<5.0
Methyl-t-Butyl Ether	70 (4)	<5.0	<5.0	<5.0	1.5 J	1.5 J	2.1 J	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1.9 J	1.4 J	1.2 J
1,1-Dichloroethane	70 (4)	<5.0	<5.0	<5.0	2.6 J	2.6 J	1.7 J	<5.0	<5.0	0.93 J	<5.0	<5.0	<5.0	2.5 J	2.6 J	1.8 J
1,2-Dichloroethene (total)	70 (2)	<5.0	<5.0	<5.0	3.0 J	3.0 J	2.5 J	<5.0	<5.0	1.0 J	1.8 J	<5.0	1.9 J	2.7 J	3.0 J	1.3 J
1,2-Dichloroethane	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1.1 J	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,3-Dichlorobenzene	600 (2)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,4-Dichlorobenzene	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1.9 J	<5.0	3.7 J	<5.0	<5.0	<5.0
1,2-Dichlorobenzene	600	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
METALS (6010)																
Arsenic	50	<1.9	**61.3**	6.5	**2,700**	**2,700**	44.8	28.5	<1.9	8.7	**492**	**176**	**215**	7.3	**1,440**	33.2
Barium	2,000 (2)	<5.6	94.5	11.0	51.6	51.9	51.8	16.2	<5.6	6.8	121	22.2	116	10.8	123	75.1
Cadmium	5 (2)	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium	100	<0.9	<0.9	<0.9	4.7	4.5	<0.9	<0.9	1.6	<0.9	<0.9	<0.9	3.2	<0.9	1.0	<0.9
Copper	1,300 (3)	<1.7	<1.7	<1.7	1.8 B	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	2.8 B	<1.7
Iron	9,100	37.3	5,630	2,200	**26,900**	**27,000**	**42,100**	**87,600**	229	25.5	**75,700**	**25,600**	**14,000**	400	**89,500**	479
Lead	15	<1.0	<1.0	1.6 B	<1.0	<1.0	<1.0	<1.0	1.5 B	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Manganese	1,715	1.6 B	651	627	**13,900**	**13,300**	**4,800**	578	1.8 B	34.2	**2,420**	**2,960**	**8,790**	684	**3,090**	528
Mercury (7470A)	2 (2)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	100	<1.7	4.0	2.0	13.5	13.9	2.0	<1.7	<1.7	<1.7	<1.7	5.4	13.7	7.4	7.2	<1.7
Selenium	50 (2)	<2.4	<2.4	<2.4	<2.4	<2.4	<2.4	<2.4	<2.4	<2.4	<2.4	<2.4	<2.4	<2.4	<2.4	<2.4
Silver	40 (4)	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9	<1.9
Zinc	2,000 (4)	2.7 B	5.5 B	6.5 B	7.8 JB	5.8 JB	4.9 B	3.2 B	2.8 B	2.2 B	3.2 B	5.9 B	5.6 B	20.1	9.1 B	7.7 B
Aluminum	6,870	<14.3	<14.3	267	<14.3	<14.3	<14.3	54.1	25.7	<14.3	<14.3	<14.3	<14.3	<14.3	<14.3	<14.3
Sodium	20,000	648	**22,100**	3,240	**44,800**	**45,000**	**38,100**	1,380	623	8,020	**34,000**	3,340	**48,200**	**50,900**	**50,100**	**24,700**
GENERAL CHEMISTRY																
Alkalinity	-	8,000	166,000	39,000	336,000	344,000	272,000	64,000	12,000	188,000	300,000	84,000	406,000	420,000	348,000	240,000
Biochemical Oxygen Demand	-	<2,000	<2,000	2,000 B	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	2,000 B
Chloride	-	1,100	14,800	1,900	55,500	56,600	52,600	7,200	1,500	30,000	39,300	2,900	56,000	64,800	61,300	42,000
Chemical Oxygen Demand	-	14,000	29,000	12,000	20,000 J	28,000 J	42,000	24,000	12,000	26,000	33,000	8,000	36,000	14,000	34,000	18,000
Cyanide (Total)	200 (2)	<5.0	<5.0	<10.0	<10.0	<10.0	<10.0	<10.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	<10.0	<10.0
Hardness	-	12,000	132,000	50,000	355,000	355,000	245,000	72,000	14,000	222,000	185,000	60,000	380,000	430,000	310,000	270,000
Nitrate as Nitrogen	10,000 (2)	500	200	<200	<200	<200	<200	<200	900	<200	<200	<200	200	<200	<200	<200
Sulfate	500,000 (2)	3,900	7,700	10,000	4,600	4,600	700	7,300	3,200	19,600	1,400	12,500	5,900	4,100	2,600	14,600
Total Dissolved Solids	-	35,000 B	214,000	878,000	542,000	513,000	416,000	119,000	35,000 B	300,000	363,000	118,000	544,000	587,000	604,000	380,000
Total Suspended Solids	-	2,100 B	6,800	7,000	44,600	48,100	52,800	900 B	3,400	1,200 B	62,000	22,000	15,300	1,600 B	117,000	3,100

Notes:

Shaded areas with bold numbers indicate cleanup level exceedance. - **25**

J = Estimated value

B = Analyte is within 5 times of the amount detected in the equipment blank sample

(1) Cleanup values as developed in the ROD (unless otherwised noted)

(2) No cleanup values were developed so the Maximum Contamination Level (MCLs) were used

(3) No cleanup values were developed so the MMCLs were used

(4) No cleanup values were developed so the MCP GW-1 standard was used

TABLE 9
SYNOPSIS OF FEDERAL AND STATE ARARS FOR ALTERNATIVE SHL-2: LIMITED ACTION

RECORD OF DECISION
SHEPLEY'S HILL LANDFILL OPERABLE UNIT
FORT DEVENS, MA

AUTHORITY	LOCATION CHARACTERISTIC	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	ACTION TO BE TAKEN TO ATTAIN REQUIREMENT
Federal Regulatory Authority	Floodplains	Floodplain Management Executive Order No. 11988, [40 CFR Part 6, App. A]	Applicable	Requires federal agencies to evaluate the potential adverse effects associated with direct and indirect development of a floodplain. Alternatives that involve modification/construction within a floodplain may not be selected unless a determination is made that no practicable alternative exists. If no practicable alternative exists, potential harm must be minimized and action taken to restore and preserve the natural and beneficial values of the floodplain.	To the extent that any activity associated with this alternative takes place in the floodplain, the activity will be altered to comply with the law.
	Wetlands	Protection of Wetlands Executive Order No. 11990	Applicable	Under this Order, federal agencies are required to minimize the destruction, loss, or degradation of wetlands, and preserve and enhance natural and beneficial values of wetlands. If remediation is required within wetland areas, and no practical alternative exists, potential harm must be minimized and action taken to restore natural and beneficial values.	To the extent that any activity associated with this alternative takes place in wetlands, the activity will be altered to comply with the law.

(continued)

TABLE 9
SYNOPSIS OF FEDERAL AND STATE ARARS FOR ALTERNATIVE SHL-2: LIMITED ACTION

RECORD OF DECISION
SHEPLEY'S HILL LANDFILL OPERABLE UNIT
FORT DEVENS, MA

AUTHORITY	LOCATION CHARACTERISTIC	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	ACTION TO BE TAKEN TO ATTAIN REQUIREMENT
	Surface Waters Endangered Species	Fish and Wildlife Coordination Act [16 USC 661 et seq.; 40 CFR Part 302]	Applicable	Actions which affect species/habitat require consultation with U.S. Department of the Interior, U.S. Fish and Wildlife Service, and National Marine Fisheries Service, and/or state agencies, as appropriate, to ensure that proposed actions do not jeopardize the continued existence of the species or adversely modify or destroy critical habitat. The effects of water-related projects on fish and wildlife resources must be considered. Action must be taken to prevent, mitigate, or compensate for project-related damages or losses to fish and wildlife resources. Consultation with the responsible agency is also strongly recommended for on-site actions. Under 40 CFR Part 300.38, these requirements apply to all response activities under the NCP.	No off-site remedial actions performed for this alternative. On-site actions would be minimal and would include agency consultation prior to implementation.
	Endangered Species	Endangered Species Act [16 USC 1531 et seq.; 50 CFR Part 402]	Applicable	This act requires action to avoid jeopardizing the continued existence of listed endangered or threatened species or modification of their habitat.	To minimize impact, landfill cover maintenance would be performed after nesting areas of the Grasshopper Sparrow have been identified.

(continued)

TABLE 9
SYNOPSIS OF FEDERAL AND STATE ARARS FOR ALTERNATIVE SHL-2: LIMITED ACTION

RECORD OF DECISION
SHEPLEY'S HILL LANDFILL OPERABLE UNIT
FORT DEVENS, MA

AUTHORITY	LOCATION CHARACTERISTIC	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	ACTION TO BE TAKEN TO ATTAIN REQUIREMENT
State Regulatory Authority	Floodplains Wetlands	Massachusetts Wetland Protection Act and Regulations [MGL c. 131 s. 40; 310 CMR 10.00]	Applicable	Wetlands and land subject to flooding are protected under this Act and these regulations. Activities that will remove, dredge, fill, or alter protected areas (defined as areas within the 100-year floodplain) are subject to regulation and must file a Notice of Intent with the municipal conservation commission and obtain a Final Order of Conditions before proceeding with the activity. A Determination of Applicability or Notice of Intent must be filed for activities such as excavation within a 100 foot buffer zone. The regulations specifically prohibit loss of over 5,000 square feet of bordering vegetated wetland. Loss may be permitted with replication of any lost area within two growing seasons.	If remedial activities alter more than 5,000 square feet of protected area, the affected area will be restored within two growing seasons.
	Endangered Species	Massachusetts Endangered Species Act and implementing regulations [MGL c. 131A, s. 1 et seq.; 321 CMR 8.00]	Applicable	Actions must be conducted in a manner which minimizes the impact to Massachusetts listed endangered species and species listed by the Massachusetts Natural Heritage Program.	To minimize impacts, landfill cover maintenance would be performed after nesting areas of the Grasshopper Sparrow have been identified.

(continued)

TABLE 9
SYNOPSIS OF FEDERAL AND STATE ARARS FOR ALTERNATIVE SHL-2: LIMITED ACTION

RECORD OF DECISION
SHEPLEY'S HILL LANDFILL OPERABLE UNIT
FORT DEVENS, MA

AUTHORITY	LOCATION CHARACTERISTIC	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	ACTION TO BE TAKEN TO ATTAIN REQUIREMENT
	Area of Critical Environmental Concern	Areas of Critical Environmental Concern [301 CMR 12.00]	Relevant and Appropriate	An Area of Critical Environmental Concern is of regional, state, or national importance or contains significant ecological systems with critical inter-relationships among a number-of-components. An eligible area must contain features from four or more of the following groups: (1) fishery habitats; (2) coastal feature; (3) estuarine wetland; (4) inland wetland; (5) inland surface water; (6) water supply area (i.e., aquifer recharge area); (7) natural hazard area (i.e., floodplain); (8) agricultural area; (9) historical/archeological resources; (10) habitat resource (i.e., for endangered wildlife; or (11) special use areas.	Activities must be controlled to minimize impacts to nesting areas of the Grasshopper Sparrow.

(continued)

TABLE 9
SYNOPSIS OF FEDERAL AND STATE ARARS FOR ALTERNATIVE SHL-2: LIMITED ACTION

RECORD OF DECISION
SHEPLEY'S HILL LANDFILL OPERABLE UNIT
FORT DEVENS, MA

AUTHORITY	CHEMICAL MEDIUM	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	ACTION TO BE TAKEN TO ATTAIN REQUIREMENT
Federal Regulatory Authority	Groundwater	Safe Drinking Water Act, National Primary Drinking Water Standards, MCLs [40 CFR Parts 141.11 - 141.16 and 141.50-191.51]	Relevant and Appropriate	The National Primary Drinking Water Regulation establishes MCLs and non-zero Maximum Contaminant Level Goals for several common organic and inorganic contaminants. These MCLs specify the maximum permissible concentrations of contaminants in public drinking water supplies. MCLs are federally enforceable standards based in part on the availability and cost of treatment techniques.	MCLs will be used to evaluate the performance of this alternative. If MCLs are exceeded, the remedy will be re-evaluated.
State Regulatory Authority	Surface water	Massachusetts Surface Water Quality Standards [314 CMR 4.00]	Applicable	Massachusetts Surface Water Quality Standards designate the most sensitive uses for which surface waters of the Commonwealth are to be enhanced, maintained and protected and designate minimum water quality criteria for sustaining the designated uses. Surface waters at Fort Devens are classified as Class B. Surface waters assigned to this class are designated as habitat for fish, other aquatic life and wildlife, and for primary and secondary contact recreation.	Discharges associated with remedial actions will be controlled/monitored to ensure that surface waters meet standards.

(continued)

TABLE 9
SYNOPSIS OF FEDERAL AND STATE ARARS FOR ALTERNATIVE SHL-2: LIMITED ACTION

RECORD OF DECISION
SHEPLEY'S HILL LANDFILL OPERABLE UNIT
FORT DEVENS, MA

AUTHORITY	CHEMICAL MEDIUM	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	ACTION TO BE TAKEN TO ATTAIN REQUIREMENT
	Groundwater	Massachusetts Groundwater Quality Standards [314 CMR 6.00]	Applicable	Massachusetts Groundwater Quality Standards designate and assign uses for which groundwaters of the Commonwealth shall be maintained and protected and set forth water quality criteria necessary to maintain the designated uses. Groundwater at Fort Devens is classified as Class I. Groundwaters assigned to this class are fresh groundwaters designated as a source of potable water supply.	MCLs will be used to evaluate the performance of this alternative. If MCLs are exceeded, the remedy will be re-evaluated.
	Groundwater	Massachusetts Drinking Water Standards and Guidelines [310 CMR 22.00]	Relevant and Appropriate	The Massachusetts Drinking Water Standards and Guidelines list MMCLs which apply to water delivered to any user of a public water supply system as defined in 310 CMR 22.00. Private residential wells are not subject to the requirements of 310 CMR 22.00; however, the standards are often used to evaluate private residential contamination especially in CERCLA activities.	MMCLs will be used to evaluate the performance of this alternative. If MMCLs are exceeded, the remedy will be re-evaluated.

(continued)

TABLE 9
SYNOPSIS OF FEDERAL AND STATE ARARS FOR ALTERNATIVE SHL-2: LIMITED ACTION

RECORD OF DECISION
SHEPLEY'S HILL LANDFILL OPERABLE UNIT
FORT DEVENS, MA

AUTHORITY	CHEMICAL MEDIUM	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	ACTION TO BE TAKEN TO ATTAIN REQUIREMENT
	Air	Massachusetts Ambient Air Quality Standards [310 CMR 6.00]	Relevant and Appropriate	Regulations specify primary and secondary ambient air quality standards to protect public health and welfare for certain pollutants	Ambient Air Quality Standards will be used to evaluate the performance of this alternative. If standards are exceeded, the remedy will be re-evaluated.
	Air	Massachusetts Air Pollution Control Regulations [310 CMR 7.00]	Relevant and Appropriate	Regulations pertain to the prevention of emissions in excess of Massachusetts or national ambient air quality standards or in excess of emission limitations in those regulations.	Ambient Air Quality Standards will be used to evaluate the performance of this alternative. If standards are exceeded, the remedy will be re-evaluated.

(continued)

TABLE 9
SYNOPSIS OF FEDERAL AND STATE ARARS FOR ALTERNATIVE SHL-2: LIMITED ACTION

RECORD OF DECISION
SHEPLEY'S HILL LANDFILL OPERABLE UNIT
FORT DEVENS, MA

AUTHORITY	ACTION	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	ACTION TO BE TAKEN TO ATTAIN REQUIREMENT
Federal Regulatory Authority	Solid waste landfill construction, operation, closure, and post-closure	Resource Conservation and Recovery Act (RCRA) [Subtitle D, 40 CFR 258]	Relevant and Appropriate	RCRA Subtitle D regulates the generation, transport, storage, treatment, and disposal of solid wastes. Regulations at 40 CFR 258 govern preparedness and prevention, closure, and post-closure at municipal solid waste landfills.	Performance of this alternative will be evaluated to determine compliance with the substantive requirements of federal solid waste regulations. If the substantive requirements are not met at the appropriate time, the remedy will be re-evaluated.
	Hazardous waste landfill construction, operation, closure, and post-closure	Resource Conservation and Recovery Act (RCRA) [Subtitle C, 40 CFR 260,264]	Relevant and Appropriate	RCRA Subtitle C regulates the generation, transport, storage, treatment, and disposal of hazardous wastes. Regulations at 40 CFR 264 govern preparedness and prevention, closure, and post-closure at landfills.	Performance of this alternative will be evaluated to determine compliance with the substantive requirements of federal hazardous waste regulations. If the substantive requirements are not met at the appropriate time, the remedy will be re-evaluated.
State Regulatory Authority	Solid waste landfill construction, operation, closure, and post-closure.	Massachusetts Solid Waste Management Regulations [310 CMR 19.000]	Applicable	These regulations outline the requirements for construction, operation, closure, and post-closure at solid waste management facilities in the Commonwealth of Massachusetts.	This alternative includes components to meet closure and post-closure requirements at Shepley's Hill Landfill.

(continued)

TABLE 9
SYNOPSIS OF FEDERAL AND STATE ARARS FOR ALTERNATIVE SHL-2: LIMITED ACTION

RECORD OF DECISION
SHEPLEY'S HILL LANDFILL OPERABLE UNIT
FORT DEVENS, MA

AUTHORITY	ACTION	REQUIREMENT	STATUS	REQUIREMENT SYNOPSIS	ACTION TO BE TAKEN TO ATTAIN REQUIREMENT
	Hazardous waste landfill construction, operation, closure, and post-closure	Massachusetts Hazardous Waste Regulations [310 CMR 30.00]	Relevant and Appropriate	Regulates handling, storage, treatment, disposal, and record keeping at hazardous waste facilities.	Performance of this alternative will be evaluated to determine compliance with the substantive requirements of Massachusetts hazardous waste regulations. If the substantive requirements are not met at the appropriate time, the remedy will be re-evaluated.

Landfill Gas Monitoring

To be completed in indelible ink. *Monitoring is to be performed annually*

DATE: November 15, 1996

INSPECTOR: R. Skryness TITLE: _____ ORGANIZATION: Stone & Webster

WEATHER: (Temp, rain, sun, etc.) Low 30s F, sunny BAROMETRIC PRESSURE: 1033 mb

Vent Number	VOCs (ppm)	O_2 (%)	H_2S (ppm)	LEL (%)	CO (ppm)	CO_2 (%)	CH_4 (%)	REMARKS (Visual observations, odor, etc.)
	PID	GA-90	CGI	CGI	CGI	GA-90	GA-90	
Vent - 1	0	21.4	0	0	0	0	0	animal burrow nearby
Vent - 2	0	21.5	0	0	0	0	0	animal burrow nearby
Vent - 3	0	21.3	0	0	0	0	0	
Vent - 4	0	21.3	0	2	0	0	0	animal burrow nearby
Vent - 5	0	21.4	0	0	0	0	0	
Vent - 6	0	21.4	0	0	0	0	0	
Vent - 7	0	21.4	0	0	0	0	0	animal burrows nearby
Vent - 8	0	21.2	0	2	0	0.1	0.1	
Vent - 9	0	21.2	0	1	0	0	0.1	
Vent - 10	0	21.2	0	0	0	0	0	
Vent - 11	0	21.3	0	0	0	0	0	
Vent - 12	0	21.2	0	0	0	0	0	
Vent - 13	0	21.2	0	0	0	0	0	
Vent - 14	0	21.2	0	0	0	0	0	
Vent - 15	0	20.1	0	11	0	0.6	0.4	animal burrow nearby
Vent - 16	0	21.1	0	1	0	0	0	
Vent - 17	0	21.0	0	2	0	0.2	0.1	
Vent - 18	0	21.2	0	2	0	0.1	0.2	only vent not iced over by frost

Note: See grid for well identifiers and locations.
Mark all vents with appropriate number during initial sampling. ✓

CALIBRATION INFORMATION

PID

Results: Calibrated to 100 ppm with 70 ppm isobutylene Calibrated by: J. Coyne, Stone & Webster

CGI

Results: shop calibrated Calibrated by: Heinrich Environmental

Landtec GA-90 Landfill Gas Monitor

Results: Calibrated to 3.9% O2, with 4.0% O2 (N2 balance) Calibrated by: Heinrich Environmental
Calibrated to 14.8% CH4, with 14.9% CH4
Calibrated to 15.0% CO2, with 15.0% CO2

Landfill Gas Monitoring

To be completed in indelible ink. *Monitoring is to be performed annually*

DATE: October 29, 1997

INSPECTOR: R. Skryness TITLE:_____ ORGANIZATION: Stone & Webster

WEATHER: (Temp, rain, sun, etc.) 40s F, overcast until 1300 hours, then clearing

BAROMETRIC PRESSURE: 760 mm Hg (in Boston)

Vent Number	VOCs (ppm)	O_2 (%)	H_2S (ppm)	LEL (%)	CO (ppm)	CO_2 (%)	CH_4 (%)	REMARKS (Visual observations, odor, etc.)
	PID	GA-90	CGI	CGI	CGI	GA-90	GA-90	
Vent - 1	1	17.8	0	4	5	1.7	0.2	* pressure in bags at all 18 vents
Vent - 2	0	20.1	0	0	2	0.2	0	
Vent - 3	1	14.3	0	20	1	3.8	0.9	
Vent - 4	0	12.3	0	50	3	5.3	2.4	
Vent - 5	0.2	19.2	0	0	1	0.7	0	
Vent - 6	0	17.2	0	8	1	1.7	0.4	
Vent - 7	0	20.3	0	0	1	0.1	0	
Vent - 8	0	18.7	0	4	1	1.0	0.2	
Vent - 9	0	19.7	0	6	1	0.4	0.3	
Vent - 10	0.2	19.5	0	0	1	0.2	0	
Vent - 11	0	20.1	0	0	1	0.1	0	
Vent - 12	0	20.5	0	0	1	0	0	
Vent - 13	0	17.9	0	66	1	2.0	1.6	fan not used (inaccessible by vehicle - power source)
Vent - 14	0	20.4	0	0	1	0	0	
Vent - 15	0	13.4	0	46	1	4.2	2.2	
Vent - 16	0.2	18.0	0	2	1	1.0	0	
Vent - 17	0	16.1	0	8	1	2.5	0.5	
Vent - 18	0	18.6	0	50	0	2.4	2.7	

Note: See grid for well identifiers and locations.
Mark all vents with appropriate number during initial sampling. ✓

CALIBRATION INFORMATION

Multi -RAE

PID

Results: Calibrated to 100 ppm with 100 ppm isobutylene Calibrated by: R. Skryness, Stone & Webster

CGI

Results: Calibrated to 25 ppm H2S, with 25 ppm H2S Calibrated by: R. Skryness, Stone & Webster

Calibrated to 50 ppm CO, with 50 ppm CO

Landtec GA-90 Landfill Gas Monitor

Results: Calibrated to 3.9% O2, with 4.0% O2 (N2 balance) Calibrated by: Heinrich Environmental

Calibrated to 14.9% CH4, with 15.0% CH4

Calibrated to 14.9% CO2, with 15.0% CO2

Landfill Gas Monitoring

To be completed in indelible ink. *Monitoring is to be performed annually*

DATE: 26 October 1998

INSPECTOR: T.J. Marcotte, E. Iorio ORGANIZATION: U.S. Army Corps of Engineers, New England District

WEATHER: (Temp, rain, sun, etc.): 45 to 50 degrees F, Full Sun BAROMETRIC PRESSURE: 30.2 "/Hg

Vent Number	VOCs (ppm)	O_2 (%)	H_2S (ppm)	LEL (%)	CO (ppm)	CO_2 (%)	CH_4 (%)	REMARKS (Visual observations, odor, etc.)
	PID	CGI	CGI	CGI	CGI	GA-90	GA-90	
Vent - 1	0	21.0	0	0	0	0	0	animal burrow
Vent - 2	0	21.0	0	0	0	0	0	animal burrows
Vent - 3	0	21.0	0	0	0	0	0	animal burrow
Vent - 4	0	21.0	0	0	0	0	0	
Vent - 5	0	21.0	0	0	0	0	0	
Vent - 6	0	21.0	0	0	0	0	0	
Vent - 7	0	21.1	0	0	0	0	0	animal burrows
Vent - 8	0	21.0	0	0	0	0	0	animal burrows
Vent - 9	0	21.1	0	0	0	0	0	
Vent - 10	0	21.1	0	0	0	0	0	
Vent - 11	0	21.0	0	0	0	0	0	animal burrow
Vent - 12	0	21.0	0	0	0	0	0	
Vent - 13	0	21.0	0	0	0	0	0	
Vent - 14	0	21.2	0	0	0	0	0	
Vent - 15	0	21.6	0	0	0	0	0	animal burrows
Vent - 16	0	21.0	0	0	0	0	0	
Vent - 17	0	21.0	0	0	0	0	0	
Vent - 18	0	21.1	0	0	0	0	0	

Note: See grid for well identifiers and locations.
Mark all vents with appropriate number during initial sampling.

Landfill Gas Monitoring

Form to be completed in indelible ink *Monitoring is to be performed annually*

INSPECTOR: Iorio/Simmer TITLE: Geotechnical/Hydaulics Engineer DATE: 12/1/99

ORGANIZATION: CENAE-EP WEATHER: 20 – 30° F, sunny, windy

BARAMETER: 30.1 in Hg TIME: 0800 BARAMETER: 30.0 in Hg TIME: 1330

Vent No.	VOC ppm PID	O_2 % CGI/GA-90	H_2S ppm CGI	LEL % CGI	CO ppm CGI	CO_2 % GA-90	CH4 % GA-90	Remarks
V-1	0.0	10.8/2.0	3	>100	0	13.4	3.5	Burrows
V-2	0.0	13.3/2.8	0	>100	0	14	7.4	Burrows
V-3	0.0	2.3/0.9	0	>100	0	18.9	14.6	Burrows, Strong odor
V-4	0.0	4.4/1.4	0	>100	0	16.2	9.3	Strong odor
V-5	0.0	15.3/6.8	0	72	2.5	7.6	2.6	
V-6	0.0	2.5/1.4	0	>100	0	16.2	10.8	Slight Odor
V-7	0.0	5.6/3.8	0	54	0	9.1	0.8	Burrows
V-8	0.0	8.9/4.8	0	>100	1	9.6	2.2	Burrows
V-9	0.0	3.6/0.3	0	>100	1	23.2	26.6	
V-10	0.0	12.9/0.5	0	>100	2	17.7	7.0	
V-11	0.0	8.8/3.9	0	>100	0	9.7	7.3	
V-12	0.0	2.4/2.1	0	>100	0	14.5	10.5	
V-13	0.0	2.3/2.3	0	>100	0	14	18.5	
V-14	0.0	1.5/1.7	2	>100	0	22.2	34.1	
V-15	0.0	1.8/2.1	0	>100	0	22.5	23.7	Slight odor
V-16	0.0	2.0/1.8	0	>100	0	19.2	13.0	Slight odor
V-17	0.0	15.2/1.7	3	>100	0	25	26.2	Strong odor
V-18	0.0	1.7/1.7	0	>100	0	25.7	32.8	Slight odor

CALIBATION INFORMATION:

Instrument: PID, 10.6 eV lamp

Results: 0.0/248 ppm isobutylene Calibrated by: Iorio

Instrument: Industrial Scientific TMX 412 CGI

Results: 0.7% Pentane, 50% LEL, 14%/ 21% O_2 29ppm H_2S, 50 ppm CO Calibrated by: US Environmental Co

Instrument: Landtech Gem 500 GA-90

Results: 4% O2, 14% CO2, 14.5% CH4 Calibrated by: US Environmental Co

Landfill Gas Monitoring

Form to be completed in indelible ink *Monitoring is to be performed annually*

INSPECTOR: Iorio TITLE: Geotechnical Engineer DATE: 12/6/99 &12/7/99

ORGANIZATION: CENAE-EP WEATHER: 40-50° F, rain

BARAMETER: see below

Vent No.	VOC ppm PID	O_2 % CGI/GA-90	H_2S ppm CGI	LEL % CGI	CO ppm CGI	CO_2 % GA-90	CH4 % GA-90	Remarks	Date in. Hg
V-1	0.0	19.5/19.7	0	0	0	0.8	0	Burrows	12/7 29.64
V-2	0.0	8.2/7.2	0	>100	0.6	10.9	8.4	Burrows	12/7 29.63
V-3	0.0	20.9/21	0	0.1	0	0	0	Burrows	12/7 29.63
V-4	0.0	17.1/16.2	0	3	0	4.1	2.0	Burrows	12./7 29.63
V-5	0.0	21/21	0	0	0	0	0		12/7 29.63
V-6	0.0	20.8/21	0	0.5	0	0	0		12/7 29.63
V-7	0.0	21/21	0	0	0	0	0	Burrows	12/7 29.62
V-8	0.0	13.4/12.7	0	0	0	6.1	0	Burrows	12/7 29.60
V-9	0.0	20.6/20.2	0	0.5	0	0.6	0.5		12/7 29.60
V-10	0.0	20.9/20.9	0	0.1	0	0.2	0		12/7 29.60
V-11	0.0	21/21	0	0	0	0	0		12/7 29.60
V-12	0.0	20.9/20.6	0	0	0	0.6	0		12/7 29.60
V-13	0.0	14.4/14.7	0	>100	0	4.6	6.6		12/7 29.75
V-14	0.0	18.5/17.0	0	>100	0	5.2	8.0		12/6 29.75
V-15	0.0	20.8/20.2	0	0.4	0	0.7	0.6		12/6 29.65
V-16	0.0	21.0/20.9	0	0	0	0	0		12/6 29.70
V-17	0.0	21.0/20.2	0	0	0	0	0		12/6 29.65
V-18	0.0	0.2/0	0	>100	0	35.8	45.5	Slight odor	12/6 29.65

CALIBATION INFORMATION:

Instrument: PID, 10.6 eV lamp

Results: 0.0/248 ppm isobutylene Calibrated by: Iorio

Instrument: Industrial Scientific TMX 412 CGI

Results: 2.6% Methane, 50% LEL, 14%/ 21% O_2 29ppm H_2S, 50 ppm CO Calibrated by: US Environmental Co

Instrument: Landtech Gem 500 GA-90

Results: 4% O2, 14% CO2, 14.5% CH4 Calibrated by: US Environmental Co