APPENDIX D – LANDFILL GAS LABORATORY CHEMISTRY

Table 3-8. Analytical Results for Landfill Gas Sampled from Module D

		Northeast Anaerobic Cell					West-Side Anaerobic Cell		Aerobic Cell
GAS ANALYSIS PARAMETERS	**DATE:**	**3/8/2002**	**5/29/2002**	**8/29/2002**	**12/5/2002**	**3/18/2003**	**5/29/2002**	**3/18/2003**	**3/18/2003**
Method CFR60 EPA 25C Mod:	**Units**								
Methane	ppm	280,000	280,000	460,000	400,000	390,000	230,000	180,000	100,000
Total Non-Methane Hydocarbons as Methane	ppm	10,000	9,500	6,200	3,000	1,600	5,100	2,200	7,700
Method CFR60A EPA 15/16:									
Dimethyl Sulfide	ppm	18	12	11	4.5	2.7	5.2	5	10
Hydrogen Sulfide	ppm	ND	ND	1.8	220	160	ND	66	ND
Carbonyl Sulfide	ppm	ND	ND	ND	0.47	0.43	ND	0.91	ND
Methyl Mercaptan	ppm	ND	ND	0.38	0.87	0.44	ND	1.3	1
Ethyl Mercaptan	ppm	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	ppm	0.64	0.54	ND	ND	ND	ND	0.89	ND
Dimethyl Disulfide	ppm	0.52	ND	ND	ND	ND	ND	ND	0.84
Method CFR60 EPA 3C:									
Carbon Dioxide	%	41	41	43	37	40	68	19	24
Carbon Monoxide	%	ND	ND	ND	ND	ND	ND	ND	ND
Methane	%	28	28	46	40	39	23	18	10
Nitrogen	%	26	27	6.9	20	15	11	49	62
Oxygen	%	0.83	0.21	0.26	1.9	1.5	ND	11	1.9
Method EPA-2 TO -15:									
Dichlorodifluormethane	ppb	7,900	6,400	1,400	1,300	1,200	17,000	3,800	1,400
Chloromethane	ppb	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ppb	ND	400	320	110	85	1,100	340	ND
Vinyl Chloride	ppb	ND	950	3,600	4,000	1,200	1,200	170	ND
Bromomethane	ppb	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ppb	1,100	820	550	360	170	780	320	ND
Trichlorofluoromethane	ppb	620	430	280	130	92	7,900	370	ND
1,1-Dichlorethene	ppb	ND	ND	ND	ND	ND	ND	440	580
Carbon Disulfide	ppb	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	ppb	ND	ND	ND	ND	ND	960	ND	ND

Acetone	ppb	54,000	28,000	22,000	10,000	4,300	13,000	16,000	50,000
Methylene Chloride	ppb	14,000	8,200	3,900	1,200	300	4,800	3,500	1,700
trans-1,2-Dichloroethene	ppb	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ppb	1,600	1,000	850	340	130	880	440	ND
Vinyl Acetate	ppb	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ppb	ND	240	670	760	520	ND	290	ND
2-Butanone (MEK)	ppb	38,000	28,000	29,000	9,500	3,800	6,000	23,000	28,000
Chloroform	ppb	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ppb	ND	ND	ND	ND	42	680	ND	ND
Carbon Tetrachloride	ppb	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ppb	1,700	1,800	1,500	960	380	490	980	1,300
1,2-Dichloroethane	ppb	ND	ND	ND	ND	ND	120	ND	220
Trichloroethene	ppb	1,700	1,300	1,200	620	260	220	860	620
1,2-Dichloropropane	ppb	ND	ND	ND	ND	ND	ND	ND	ND
Bromoodichloromethane	ppb	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ppb	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone (MIBK)	ppb	10,000	9,700	8,100	2,500	760	5,400	4,500	14,000
Toluene	ppb	31,000	26,000	25,000	19,000	8,400	3,400	21,000	20,000
trans-1,3-Dichloropropene	ppb	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ppb	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ppb	2,300	2,200	1,600	1,000	480	350	1,100	1,500
2-Hexanone	ppb	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ppb	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane (EDB)	ppb	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ppb	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ppb	2,800	3,200	3,000	3,100	1,800	170	5,100	2,300
Total Xylenes	ppb	9,400	11,000	9,700	9,700	5,200	480	14,000	6,500
Styrene	ppb	700	930	950	980	350	ND	890	310
Bromoform	ppb	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ppb	ND	ND	ND	ND	ND	ND	ND	ND
Benzyl Chloride	ppb	ND	ND	ND	ND	ND	ND	ND	ND
4-Ethyltoluene	ppb	ND	930	710	980	470	ND	590	500

1,3,5-Trimethylbenzene	ppb	ND	290	260	390	170	ND	230	ND
1,2,4-Trimethylbenzene	ppb	ND	760	640	840	380	ND	370	370
1,3-Dichlorobenzene	ppb	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ppb	ND	270	190	280	66	ND	ND	ND
1,2-Dichlorobenzene	ppb	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ppb	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	ppb	ND	ND	ND	ND	ND	ND	ND	ND

Footnotes:

ND=Not Detected

APPENDIX E – LEACHATE LABORATORY CHEMISTRY

Table 3-9. Field Chemistry and Analytical Results for Leachate Sampled from the Northeast Anaerobic Cell

PARAMETER	Date:	2/14/2002	3/27/2002	5/14/2002	6/20/2002	7/23/2002	8/13/2002	9/26/2002	10/17/2002	2/26/2003
Field Parameters:	**Units**									
pH		7.13	7.55	7.40	7.60	7.44	7.48	7.47	7.35	8.16
Electrical Conductivity	µS	6583	6173	6095	4054	11510	15860	12440	10230	9351
Oxidation Reduction Potential	mV	-119	-12	80	94	-7	43	-35	-25	160
Temperature	C	19.9	21.5	25.9	26.5	30.5	30.5	28.4	26.0	23.5
Dissolved Oxygen	mg/L	0.65	2.13	1.4	2.04	0.33	1.31	3.66	2.96	6
Total Dissolved Solids	ppm	5244	4860	4059	3062	9740	14050	10770	8640	7850
General Chemistry:										
Bicarbonate Alkalinity	mg/L	1740	1550	1760	1110	3740	5150	3960	4010	2680
Carbonate Alkalinity	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Total Alkalinity as CO_3	mg/L	1740	1550	1760	1110	3740	5150	3960	4010	2680
BOD	mg O/L	20	34	19	10	200	490	1400	3000	44
Chemical Oxygen Demand	mg O/L	633	488	791	196	1620	2820	2830	1810	120
Chloride	mg/L	1070	1100	1030	617	1950	2830	1870	1380	1470
Hydroxide	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ammonia as N	mg/L	30	24.4	26.3	13.5	131	264	255	289	132
Nitrate-Nitrite as N	mg/L	<0.03	0.43	<1.5	<0.015	0.061	0.22 (tr)	1.4	<0.009	17.3
Total Kjeldahl Nitrogen	mg/L	53.1	71	40	21.8	201	354	326	358	222
Sulfate	mg/L	322	210	94.3(tr)	256	5.3	8.2(tr)	155	7	315
Total Dissolved Solids @ 180 C	mg/L	4440	3960	3700	2500	7800	9860	8000	6680	5720
Total (Non-Volatile) Organic Carbon	mg/L	202	147	123	68.8	544	713	943	588	325
Total Phosphorus	mg/L	1.9	1.3	1.1	1.6	1.9	2.7	3.7	3.4	1.8
Total Sulfide	mg/L	1.3	0.18	1.3	0.74	1.2	2.5	1.1	1.4	0.034 (tr)
Metals:										
Dissolved Aluminum	mg/L	0.14 (tr)	<0.043	0.10(tr)	<0.043	0.097(tr)	0.11(tr)	0.058(tr)	0.096 (tr)	0.063 (tr)
Dissolved Antimony	mg/L	0.0022	0.0015(tr)	0.0012(tr)	0.0008(tr)	0.012	<0.031	0.0089	0.0072	0.0072
Dissolved Arsenic	mg/L	0.029	0.026	0.028	0.037	0.054	0.062	0.058	0.062	0.043
Dissolved Barium	mg/L	0.84	0.56	0.92	0.39	1.6	1.6	2.5	1.7	0.88
Dissolved Beryllium	mg/L	<0.000078	<0.000078	<0.00078	<0.000078	<0.000078	<0.00009	<0.000078	<0.000078	<0.000078
Dissolved Boron	mg/L	7.9	7.1	7.4	NA	12.8	20.1	15.7	11.6	11.1

Dissolved Cadmium	mg/L	<0.000074	<0.000074	<0.000074	<0.000074	<0.000074	<0.0031	<0.000074	<0.000074	0.00018 (tr)
Dissolvd Calcium	mg/L	183	137	158	NA	175	92	174	221	114
Dissolved Chromium	mg/L	0.036	0.024	0.025	0.0099	0.086	0.075	0.074	0.073	0.071
Dissolved Cobalt	mg/L	0.007	0.0058	0.0049	0.0034	0.011	0.014(tr)	0.018	0.016	0.037
Dissolved Copper	mg/L	0.0054	0.004	0.002	0.0024	0.0052*	0.0043 (tr)	0.0044*	0.0044	0.03*
Dissolved Iron	mg/L	1.1	0.44	0.39	0.19	2.9*	1.8	3.9	4	2.5
Dissolved Lead	mg/L	0.00046(tr)	0.00016(tr)	0.00020(tr)	<0.000066	0.001	0.0016	0.0011	0.00078 (tr)	0.0014
Dissolved Magnesium	mg/L	323	248	262	NA	535	655	480	437	359
Dissolved Manganese	mg/L	4.1	3.2	4.5	2.9	2	0.33	3	0.94	0.68
Dissolved Mercury	mg/L	<0.000049	<0.000049	<0.000049	<0.000049	<0.000049	0.000081(tr)*	<0.000049	<0.000049	<0.000064
Dissolved Molybdenum	mg/L	0.012(tr)	<0.0046	<0.0046	0.0048(tr)	0.0048 (tr)	<0.0046	<0.0046	<0.0046	0.013 (tr)
Dissolved Nickel	mg/L	0.13	0.14	0.13	0.08	0.26	0.3	0.23	0.2	0.38
Dissolved Potassium	mg/L	152	124	133	NA	215	336	319	348	371
Dissolved Phosphorus	mg/L	1.9	0.96	1.9	NA	1.6	2	3.6	2.6	1.8
Dissolved Selenium	mg/L	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	0.0077	<0.0017	0.002
Dissolved Silver	mg/L	0.000083 (tr)	0.000031(tr)	<0.00003	<0.00003	0.0002(tr)	<0.0032	0.0001(tr)	0.000061 (tr)	0.000084 (tr)
Dissolved Sodium	mg/L	875	774	759	NA	1370	2340	1820	1330	1440*
Dissolved Thallium	mg/L	<0.00034	<0.00034	<0.00034	<0.00034	<0.00034	<0.0034	<0.00034	<0.00034	<0.00034
Dissolved Tin	mg/L	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	0.0062 (tr)
Dissolved Vanadium	mg/L	0.059	0.03(tr)	0.031(tr)	0.013(tr)	0.21	0.1	0.071	0.054	0.061
Dissolved Zinc	mg/L	0.032	0.034	0.035	0.015	0.13(tr)	0.13	0.17	0.13	0.15
Volatile Organic Compounds:										
Acetone	µg/L	16	10	6.4	6.9	170*	1500 (tr)	2300	650	49
Acrylonitrile	µg/L	<10	<10	<10	<10	<50	<100	<1000	<200	<20
Benzene	µg/L	<0.13	0.28 (tr)*	0.22(tr)	<0.13	<0.65	<1.3	<13	<2.6	0.36 (tr)
Bromobenzene	µg/L	<0.18	<0.18	<0.18	<0.18	<0.90	NA	<18	<3.6	<0.36
Bromochloromethane	µg/L	<0.31	<0.31	<0.31	<0.31	<1.6	<3.1	<31	<6.2	<0.62
Bromodichloromethane	µg/L	<0.14	<0.14	<0.14	<0.14	<0.70	<1.4	<14	<2.8	<0.28
Bromoform	µg/L	<0.10	<0.10	<0.10	<0.10	<0.50	<1.0	<10	<2.0	<0.20
Bromomethane (Methly bromide)	µg/L	<0.08	<0.08	0.68(tr)	<0.08	6.2*	<0.80	37(tr)*	<1.6	0.96 (tr)
2-Butanone (MEK)	µg/L	<1.0	<1.0	<1.0	1.1(tr)	240	2200	4300	1400	3.8 (tr)
n-Butylbenzene	µg/L	<0.12	<0.12	<0.12	<0.12	<0.60	NA	<12	<2.4	<0.24
sec-Butylbenzene	µg/L	<0.12	<0.12	<0.12	<0.12	<0.60	NA	<12	<2.4	<0.24

tert-Butylbenzene	µg/L	<0.14	<0.14	<0.14	<0.14	<0.70	NA	<14	<2.8	<0.28
Carbon Disulfide	µg/L	<1.0	<1.0	1.1(tr)	<1.0	<5.0	<10	<100	<20	<2.0
Carbon Tetrachloride	µg/L	<0.15	<0.15	<0.15	<0.15	<0.75	<1.5	<15	<3.0	<0.30
Chlorobenzene	µg/L	<0.12	<0.12	<0.12	<0.12	<0.60	<1.2	<12	<2.4	0.67 (tr)
Chloroethane	µg/L	<0.34	<0.34	<0.34	<0.34	<1.7	<3.4	<34	<6.8	<0.68
Chloroform	µg/L	<0.12	<0.12	<0.12	<0.12	<0.60	<1.2	<12	7.5 (tr)	<0.24
Chloromethane (Methyl chloride)	µg/L	<0.25	<0.25	<0.25	<0.25	<1.2	<2.5	<25	<5.0	1.6 (tr)
2-Chlorotoluene	µg/L	<0.26	<0.26	<0.26	<0.26	<1.3	NA	<26	<5.2	<0.52
4-Chlorotoluene	µg/L	<0.10	<0.10	<0.10	<0.10	<0.50	NA	<10	<2.0	<0.20
Dibromochloromethane	µg/L	<0.40	<0.40	<0.40	<0.40	<2.0	<4.0	<40	<8.0	<0.80
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	<0.22	<0.95	<0.95	<0.95	<4.8	<9.5	<95	<19	<1.9
1,2-Dibromoethane (EDB)	µg/L	<0.22	<0.21	<0.22	<0.22	<1.1	<2.2	<22	<4.4	<0.44
Dibromomethane (Methly bromide)	µg/L	<0.21	<0.21	<0.21	<0.21	<1.0	<2.1	<21	<4.2	<0.42
1,2-Dichlorobenzene	µg/L	<0.14	<0.14	<0.14	<0.14	<0.70	<1.4	<14	<2.8	<0.28
1,3-Dichlorobenzene	µg/L	<0.11	<0.11	<0.11	<0.11	<0.55	NA	<11	<2.2	<0.22
1,4-Dichlorobenzene	µg/L	<0.13	<0.13	<0.13	<0.13	<0.65	<1.3	<13	<2.6	<0.26
trans-1,4-Dichloro-2-butene	µg/L	<1.0	<1.0	<1.0	<1.0	<5.0	<10	<100	<20	<2.0
Dichlorodifluoromethane (Freon 12)	µg/L	<0.16	0.17(tr)	0.24(tr)	<0.16	<0.80	NA	<16	<3.2	<0.32
1,1-Dichloroethane (1,1-DCA)	µg/L	0.77(tr)	0.50(tr)	0.77(tr)	0.54(tr)	<0.50	<1.0	<10	<2.0	0.36 (tr)
1,2-Dichloroethane (1,2-DCA)	µg/L	<0.22	<0.22	<0.22	<0.22	<1.1	<2.2	<22	<4.4	<0.44
1,1-Dichloroethene (1,1-DCE)	µg/L	<0.36	<0.36	<0.36	<0.36	<1.8	<3.6	<36	<7.2	<0.72
cis-1,2-Dichloroethene (cis-1,2-DCE)	µg/L	0.58(tr)	1.2	1.8	1.5	2.3(tr)	1.8(tr)	<10	<2.0	<0.20
trans-1,2-Dichloroethene (trans-1,2-DCE)	µg/L	<0.11	<0.11	<0.11	<0.11	<0.55	<1.1	<11	<2.2	<0.22
1,2-Dichloropropane	µg/L	<0.15	<0.15	<0.15	<0.15	<0.75	<1.5	<15	<3.0	<0.30
1,3-Dichloropropane	µg/L	<0.20	<0.20	<0.20	<0.20	<1.0	NA	<20	<4.0	<0.40
2,2 Dichloropropane	µg/L	<0.13	<0.13	<0.13	<0.13	<0.65	NA	<13	<2.6	<0.26
1,1-Dichloropropene	µg/L	<0.14	<0.14	<0.14	<0.14	<0.70	NA	<14	<2.8	<0.28
cis-1,3-Dichloropropene	µg/L	<0.22	<0.22	<0.22	<0.22	<1.1	<2.2	<22	<4.4	<0.44
trans-1,3-Dichloropropene	µg/L	<0.30	<0.30	<0.30	<0.30	<1.5	<3.0	<30	<6.0	<0.60
Ethylbenzene	µg/L	<0.27	<0.27	<0.27	<0.27	<1.4	<2.7	<27	<5.4	<0.54
Hexachlorobutadiene	µg/L	<0.22	<0.22	<0.22	<0.22	<1.1	NA	<22	<4.4	<0.44
2-Hexanone (Methyl butyl ketone)	µg/L	<1.0	<1.0	<1.0	<1.0	<5.0	26	<100	<20	<2.0
Iodomethane (Methyl iodide)	µg/L	<1.0	<1.0	<1.0	<1.0	<5.0	<10	<100	<20	<2.0

Isopropylbenzene	µg/L	<0.12	<0.12	<0.12	<0.12	<0.60	NA	<12	<2.4	0.43 (tr)
p-Isopropyltoluene	µg/L	<0.13	<0.13	0.13(tr)	<0.13	<0.65	NA	<13	<2.6	<0.26
Methyl-tert-butyl ether (MTBE)	µg/L	14	10	16	6.3	44	76	150(tr)	110	8.7
4-Methyl-2-pentanone (MIBK)	µg/L	2	<1.0	<1.0	<1.0	100	520	1000	700	<2.0
Methylene Chloride	µg/L	1.5	<0.35	0.46(tr)	<0.35	<1.8	<3.5	<35	<7.0	<0.70
Naphthalene	µg/L	<0.15	0.45(tr)*	<0.15	<0.15	<0.75	NA	<15	<3.0	<0.30
n-Propylbenzene	µg/L	<0.15	<0.15	<0.15	<0.15	<0.75	NA	<15	<3.0	<0.30
Styrene	µg/L	<0.15	<0.15	<0.15	<0.15	<0.75	<30	<15	<3.0	<0.30
1,1,1,2-Tetrachloroethane	µg/L	<0.10	<0.10	<0.10	<0.10	<0.50	<20	<10	<2.0	<0.20
1,1,2,2-Tetrachloroethane	µg/L	<0.37	<0.37	<0.37	<0.37	<1.8	<74	<37	<7.4	<0.74
Tetrachloroethene (PCE)	µg/L	<0.38	0.84(tr)	<0.38	<0.38	<1.9	<76	<38	<7.6	<0.76
Toluene	µg/L	1.3*	0.98(tr)	2.9	0.44(tr)	8.3	<50	<25	24	<0.50
1,2,3-Trichlorobenzene	µg/L	<0.14	<0.14	<0.14	<0.14	<0.70	NA	<14	<2.8	<0.28
1,2,4-Trichlorobenzene	µg/L	<0.23	<0.23	<0.23	<0.23	<1.2	NA	<23	<4.6	<0.46
1,1,1-Trichloroethane (1,1,1-TCA)	µg/L	<0.41	<0.41	<0.41	<0.41	<2.0	<82	<41	<8.2	<0.82
1,1,2-Trichloroethane (1,1,2-TCA)	µg/L	<0.31	<0.31	<0.31	<0.31	<1.6	<62	<31	<6.2	<0.62
Trichloroethene (TCE)	µg/L	0.33(tr)	0.77(tr)	<0.31	0.46(tr)	<1.6	<62	<31	<6.2	<0.62
Trichlorofluoromethane (Freon 11)	µg/L	<0.23	<0.23	<0.23	<0.23	<1.2	<46	<23	<4.6	<0.46
1,2,3-Trichloropropane	µg/L	<0.30	<0.30	<0.30	<0.30	<1.5	<60	<30	<6.0	<0.60
1,2,4-Trimethylbenzene	µg/L	<0.12	<0.12	<0.12	<0.12	<0.60	NA	<12	<2.4	<0.24
1,3,5-Trimethylbenzene	µg/L	<0.14	0.27(tr)	<0.14	<0.14	<0.70	NA	<14	<2.8	<0.28
Vinyl Acetate	µg/L	<1.0	<1.0	<1.0	<1.0	<5.0	<200	<100	<20	<2.0
Vinyl Chloride	µg/L	<0.12	<0.12	0.30(tr)	<0.12	<0.60	<24	<12	<2.4	<0.24
Total Xylenes	µg/L	<0.10	0.13 (tr)	0.30(tr)	<0.10	<0.50	<20	<10	2.5 (tr)	<0.20

Footnotes:

NA=Not Analyzed

MDL=Method Detection Limit

PQL=Practical Quantification Limit

<=Less than the MDL

tr=trace: the amount detected was above the MDL but below the PQL

* = this parameter was alo detected in the method blank

Table 4-7. Analytical Results for Leachate Sampled from the West-Side Anaerobic Cell

PARAMETER	DATE:	2/14/2002	3/27/2002	5/14/2002	6/20/2002	7/23/2002	8/13/2002	2/26/2003
Field Parameters:	**Units**							
pH		6.74	6.76	6.8	6.72	6.85	6.71	6.87
Electrical Conductivity	µS	3530	3868	3851	3944	3899	3810	2320
Oxidation Reduction Potential	mV	-62	-59	-46	-19	-38	-36	-56
Temperature	C	24.9	25.9	26.2	25.2	25.7	26.9	22.1
Dissolved Oxygen	mg/L	3.15	1.09	1.54	1.31	3.62	2.6	3.18
Total Dissolved Solids	ppm	2617	2886	2871	2960	2965	2908	1703
General Chemistry:								
Bicarbonate Alkalinity	mg/L	1700	1790	1780	1730	1710	1680	1000
Carbonate Alkalinity	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Total Alkalinity as CO_3	mg/L	1700	1790	1780	1730	1710	1680	1000
BOD	mg O/L	28	18	12	12	7.9	12	16
Chemical Oxygen Demand	mg O/L	350	317	300	274	270	262	98.1
Chloride	mg/L	187	323	333	358	341	366	196
Hydroxide	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Ammonia as N	mg/L	20.3	20	23.5	21.2	23.8	25	9.5
Nitrate-Nitrite as N	mg/L	0.016(tr)	<0.015	<1.5	<0.03	<0.015	<0.015	0.022 (tr)
Total Kjeldahl Nitrogen	mg/L	32.6	68.9	31.1	31.5	31.4	31	13.8
Sulfate	mg/L	1.7(tr)	1.5(tr)	<10	0.80(tr)	2.2	0.75(tr)	<0.70
Total Dissolved Solids @ 180 C	mg/L	2220	2380	2320	2410	2310	2280	1320
Total (Non-Volatile) Organic Carbon	mg/L	112	95.7	85.2	86.5	82.7	78.1	28.3
Total Phosphorus	mg/L	0.13	1.6*	1.1	0.6	0.057	0.049(tr)	<0.12
Total Sulfide	mg/L	0.033(tr)	0.015(tr)	<0.014	<0.014	0.023 (tr)	<0.014	<0.0093
Metals:								
Dissolved Aluminum	mg/L	0.13(tr)	<0.043	0.053(tr)*	<0.043	<0.043	<0.043	<0.043
Dissolved Antimony	mg/L	0.0013(tr)	0.00091(tr)	0.00065(tr)	0.0006 (tr)	0.0008(tr)	<0.031	0.00090 (tr)
Dissolved Arsenic	mg/L	0.27	0.02	0.018	0.019	0.017	0.01	0.012
Dissolved Barium	mg/L	1.8	1.8	0.45	1.8	1.6	1.4	1.1
Dissolved Beryllium	mg/L	<0.000078	<0.000078	<0.000078	<0.000078	<0.000078	<0.00009	<0.000078

Dissolved Boron	mg/L	3.2	3.5	18.9	NA	3.7	3.2	<0.000078
Dissolved Cadmium	mg/L	<0.000074	<0.000074	<0.000074	<0.000074	<0.000074	<0.0031	<0.000074
Dissolvd Calcium	mg/L	241	234	58.2	NA	231	193	108
Dissolved Chromium	mg/L	0.0088	0.0069	0.0064	0.0059	0.0054	0.0035(tr)	0.0019 (tr)
Dissolved Cobalt	mg/L	0.0038	0.0043	0.003	0.0025	0.0025	<0.0074	0.0015
Dissolved Copper	mg/L	0.0018(tr)	0.0022	0.0011(tr)*	0.002	0.0023	0.0035(tr)	0.002*
Dissolved Iron	mg/L	0.4	1.2	0.035(tr)*	1.9	0.59	0.11	0.15
Dissolved Lead	mg/L	0.00024 (tr)	0.000066(tr)	0.000078(tr)*	<0.000066	<0.000066	<0.000066	<0.000066
Dissolved Magnesium	mg/L	198	211	343	NA	217	185	123
Dissolved Manganese	mg/L	24.6	22.9	0.0062(tr)	21.4	19.3	15.9	10.9
Dissolved Mercury	mg/L	<0.000049	<0.000049	<0.000049	<0.000049	<0.000049	0.000078(tr)*	<0.000064
Dissolved Molybdenum	mg/L	<0.0046	<0.0046	0.044	<0.0046	<0.0046	<0.0046	<0.0046
Dissolved Nickel	mg/L	0.042	0.053	0.052	0.047	0.046	0.041	0.018
Dissolved Potassium	mg/L	55.2	48.3	58.6	NA	37.8	32.5	23.7
Dissolved Phosphorus	mg/L	0.28(tr)	0.14(tr)	1	NA	<0.12	<0.12	<0.12
Dissolved Selenium	mg/L	<0.0017	<0.0017	<0.0017	<0.0017	0.002	<0.0017	<0.0017
Dissolved Silver	mg/L	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.0032	<0.000030
Dissolved Sodium	mg/L	260	281	1500*	NA	268	234	226
Dissolved Thallium	mg/L	<0.00034	<0.00034	<0.00034	<0.00034	<0.00034	<0.00034	<0.00034
Dissolved Tin	mg/L	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.0014
Dissolved Vanadium	mg/L	0.0056(tr)	0.0038(tr)	0.017(tr)	<0.0032	<0.0032	<0.0032	<0.0032
Dissolved Zinc	mg/L	0.068	0.07	0.039	0.037	0.05	0.006(tr)	0.042
Volatile Organic Compounds:								
Acetone	µg/L	<50	28	22	22	14(tr)*	33 (tr)	13 (tr)
Acrylonitrile	µg/L	<500	<100	<100	<100	<50	<100	<50
Benzene	µg/L	<6.5	3.3(tr)*	2.3(tr)	<1.3	3.5(tr)	3.6(tr)	2.6 (tr)
Bromobenzene	µg/L	<9.0	<1.8	<1.8	<1.8	<0.90	NA	<0.90
Bromochloromethane	µg/L	<16	<3.1	<3.1	<3.1	<1.6	<3.1	<1.6
Bromodichloromethane	µg/L	<7.0	<1.4	<1.4	<1.4	<0.70	<1.4	<0.70
Bromoform	µg/L	<5.0	<1.0	<1.0	<1.0	<0.50	<1.0	<0.50
Bromomethane (Methly bromide)	µg/L	<4.0	<0.80	<0.80	<0.80	4.6(tr)*	<0.80	<0.40
2-Butanone (MEK)	µg/L	<50	<10	<10	<10	<5.0	<10	<5.0
n-Butylbenzene	µg/L	<6.0	<1.2	<1.2	<1.2	<0.60	NA	<0.60

sec-Butylbenzene	µg/L	<6.0	<1.2	<1.2	<1.2	<0.60	NA	<0.60
tert-Butylbenzene	µg/L	<7.0	<1.4	<1.4	<1.4	<0.70	NA	<0.70
Carbon Disulfide	µg/L	<50	<10	<10	<10	<5.0	<10	<5.0
Carbon Tetrachloride	µg/L	<7.5	<1.5	<1.5	<1.5	<0.75	<1.5	<0.75
Chlorobenzene	µg/L	<6.0	<1.2	<1.2	<1.2	<0.60	<1.2	<0.60
Chloroethane	µg/L	<17	<3.4	<3.4	<3.4	<1.7	<3.4	3.1 (tr)
Chloroform	µg/L	<6.0	<1.2	<1.2	<1.2	<0.60	<1.2	<0.60
Chloromethane (Methyl chloride)	µg/L	<12	<2.5	<2.5	<2.5	<1.2	<2.5	<1.2
2-Chlorotoluene	µg/L	<13	<2.6	<2.6	<2.6	<1.3	NA	<1.3
4-Chlorotoluene	µg/L	<5.0	<1.0	<1.0	<1.0	<0.50	NA	<0.50
Dibromochloromethane	µg/L	<20	<4.0	<4.0	<4.0	<2.0	<4.0	<2.0
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	<48	<9.5	<9.5	<9.5	<4.8	<9.5	<4.8
1,2-Dibromoethane (EDB)	µg/L	<11	<2.2	<2.2	<2.2	<1.1	<2.2	<1.1
Dibromomethane (Methly bromide)	µg/L	<10	<2.1	<2.1	<2.1	<1.0	<2.1	<1.0
1,2-Dichlorobenzene	µg/L	<7.0	<1.4	<1.4	<1.4	<0.70	<1.4	<0.70
1,3-Dichlorobenzene	µg/L	<5.5	<1.1	<1.1	<1.1	<0.55	NA	<0.55
1,4-Dichlorobenzene	µg/L	<6.5	<1.3	<1.3	<1.3	<0.65	<1.3	<0.65
trans-1,4-Dichloro-2-butene	µg/L	<50	<10	<10	<10	<5.0	<10	<5.0
Dichlorodifluoromethane (Freon 12)	µg/L	<8.0	2.4(tr)	4.2(tr)	<1.6	16	NA	<0.80
1,1-Dichloroethane (1,1-DCA)	µg/L	<5.0	4.6(tr)	7.4(tr)	9.5(tr)	12	13	1.5 (tr)
1,2-Dichloroethane (1,2-DCA)	µg/L	<11	2.5(tr)	3.5(tr)	4.0 (tr)	4.8(tr)	5.8(tr)	4.0 (tr)
1,1-Dichloroethene (1,1-DCE)	ug/L	<18	<3.6	<3.6	<3.6	<1.8	<3.6	<1.8
cis-1,2-Dichloroethene (cis-1,2-DCE)	µg/L	<5.0	2.3(tr)	1.9(tr)	<1.0	3.3(tr)	3.5(tr)	3.7 (tr)
trans-1,2-Dichloroethene (trans-1,2-DCE)	µg/L	<5.5	<1.1	<1.1	<1.1	<0.55	<1.1	<0.55
1,2-Dichloropropane	µg/L	<7.5	<1.5	<1.5	<1.5	<0.75	<1.5	<0.75
1,3-Dichloropropane	µg/L	<10	<2.0	<2.0	<2.0	<1.0	NA	<1.0
2,2 Dichloropropane	µg/L	<6.5	<1.3	<1.3	<1.3	<0.65	NA	<0.65
1,1-Dichloropropene	µg/L	<7.0	<1.4	<1.4	<1.4	<0.70	NA	<0.70
cis-1,3-Dichloropropene	µg/L	<11	<2.2	<2.2	<2.2	<1.1	<2.2	<1.1
trans-1,3-Dichloropropene	µg/L	<15	<3.0	<3.0	<3.0	<1.5	<3.0	<1.5
Ethylbenzene	µg/L	<14	<2.7	<2.7	<2.7	<1.4	<2.7	1.4 (tr)
Hexachlorobutadiene	µg/L	<11	<2.2	<2.2	<2.2	<1.1	NA	<1.1
2-Hexanone (Methyl butyl ketone)	µg/L	<50	<10	<10	<10	<5.0	<10	<5.0

Iodomethane (Methyl iodide)	µg/L	<50	<10	<10	<10	<5.0	<10	<5.0
Isopropylbenzene	µg/L	<6.0	<1.2	<1.2	<1.2	<0.60	NA	<0.60
p-Isopropyltoluene	µg/L	<6.5	<1.3	<1.3	<1.3	<0.65	NA	<0.65
Methyl-tert-butyl ether (MTBE)	µg/L	210	190	160	160	180	170	110
4-Methyl-2-pentanone (MIBK)	µg/L	1200	19(tr)	52	<10	<5.0	26	7.1 (tr)
Methylene Chloride	µg/L	<18	<3.5	<3.5	<3.5	2.1(tr)	<3.5	<1.8
Naphthalene	µg/L	<7.5	<1.5	<1.5	<1.5	<0.75	NA	<0.75
n-Propylbenzene	µg/L	<7.5	<1.5	<1.5	<1.5	<0.75	NA	<0.75
Styrene	µg/L	<7.5	<1.5	<1.5	<1.5	<0.75	<1.5	<0.75
1,1,1,2-Tetrachloroethane	µg/L	<5.0	<1.0	<1.0	<1.0	<0.50	<1.0	<0.50
1,1,2,2-Tetrachloroethane	µg/L	<18	<3.7	<3.7	<3.7	<1.8	<3.7	<1.8
Tetrachloroethene (PCE)	µg/L	<19	<3.8	<3.8	<3.8	<1.9	NA	<1.9
Toluene	µg/L	150*	42	20	22	22	20	14
1,2,3-Trichlorobenzene	µg/L	<7.0	<1.4	<1.4	<1.4	<0.70	NA	<0.70
1,2,4-Trichlorobenzene	µg/L	<12	<2.3	<2.3	<2.3	<1.2	NA	<1.2
1,1,1-Trichloroethane (1,1,1-TCA)	µg/L	<20	<4.1	<4.1	<4.1	<2.0	<4.1	<2.0
1,1,2-Trichloroethane (1,1,2-TCA)	µg/L	<16	<3.1	<3.1	<3.1	<1.6	<3.1	<1.6
Trichloroethene (TCE)	µg/L	<16	<3.1	<3.1	<3.1	<1.6	<3.1	<1.6
Trichlorofluoromethane (Freon 11)	µg/L	<12	<2.3	2.7(tr)	<2.3	<1.2	<2.3	<1.2
1,2,3-Trichloropropane	µg/L	<15	<3.0	<3.0	<3.0	<1.5	<3.0	<1.5
1,2,4-Trimethylbenzene	µg/L	<6.0	<1.2	<1.2	<1.2	<0.60	NA	<0.60
1,3,5-Trimethylbenzene	µg/L	<7.0	<1.4	<1.4	<1.4	<0.70	NA	<0.70
Vinyl Acetate	µg/L	<50	<10	<10	<10	<5.0	<10	<5.0
Vinyl Chloride	µg/L	<6.0	<1.2	<1.2	<1.2	<0.60	<1.2	2.3 (tr)
Total Xylenes	µg/L	<5.0	4.0(tr)	3.8(tr)	<1.0	3.4(tr)	4.0(tr)	2.8 (tr)

Footnotes:

NA=Not Analyzed

MDL=Method Detection Limit

PQL=Practical Quantification Limit

<=Less than the MDL

tr=trace: the amount detected was above the MDL but below the PQL

* = this parameter was alo detected in the method blank

Table 5-7. Analytical Results for Leachate Sampled form the Aerobic Cell Manhole

PARAMETER	DATE:	2/26/2002	3/27/2002	5/14/2002
Field Parameters:	**Units**			
pH		7.75	8.17	8.48
Electrical Conductivity	µS	7026	7705	9048
Oxidation Reduction Potential	mV	195	195	127
Temperature	C	15.1	15.2	21.1
Dissolved Oxygen	mg/L	5.45	5.73	6.8
Total Dissolved Solids	ppm	5673	NA	7448
General Chemistry:				
Bicarbonate Alkalinity	mg/L	1120	935	1020
Carbonate Alkalinity	mg/L	NA	<5.0	24.8
Total Alkalinity as CO_3	mg/L	1120	935	1050
BOD	mg O/L	3.3	5	89
Chemical Oxygen Demand	mg O/L	595	563	602
Chloride	mg/L	1610	1800	2290
Hydroxide	mg/L	<5.0	<5.0	<5.0
Ammonia as N	mg/L	2.8	1.1	0.60(tr)
Nitrate-Nitrite as N	mg/L	0.16	0.22	4.8(tr)
Total Kjeldahl Nitrogen	mg/L	19.9	19.2	11.1
Sulfate	mg/L	290	478	526
Total Dissolved Solids @ 180 C	mg/L	4810	5200	5640
Total (Non-Volatile) Organic Carbon	mg/L	766	149	168
Total Phosphorus	mg/L	0.51	0.19	0.85*
Total Sulfide	mg/L	<0.014	0.015(tr)	<0.014
Metals:				
Dissolved Aluminum	mg/L	<0.043	<0.043	0.082(tr)*
Dissolved Antimony	mg/L	0.002	0.0016(tr)	0.002
Dissolved Arsenic	mg/L	0.012	0.015	0.017
Dissolved Barium	mg/L	0.43	0.54	1.9
Dissolved Beryllium	mg/L	<0.000078	<0.000078	<0.000078
Dissolved Boron	mg/L	NA	12.2	3.8
Dissolved Cadmium	mg/L	0.00013(tr)	0.00016(tr)	0.0062
Dissolvd Calcium	mg/L	NA	57	257
Dissolved Chromium	mg/L	0.01	0.0062	0.0062
Dissolved Cobalt	mg/L	0.0095	0.0073	0.004
Dissolved Copper	mg/L	0.016	0.014	0.019
Dissolved Iron	mg/L	0.32	0.084(tr)	0.34
Dissolved Lead	mg/L	0.00026(tr)	<0.000066	0.00061(tr)
Dissolved Magnesium	mg/L	273	260	220
Dissolved Manganese	mg/L	1.1	0.77	23.9
Dissolved Mercury	mg/L	<0.000049	0.000059	0.000074(tr)
Dissolved Molybdenum	mg/L	0.026(tr)	0.033(tr)	<0.0046
Dissolved Nickel	mg/L	0.14	0.11	0.11
Dissolved Potassium	mg/L	NA	66.1	47.8
Dissolved Phosphorus	mg/L	NA	0.47	<0.312
Dissolved Selenium	mg/L	<0.0085	0.0034	0.0053
Dissolved Silver	mg/L	<0.00003	<0.00003	<0.00003

Dissolved Sodium	mg/L	NA	1260	284
Dissolved Thallium	mg/L	<0.00034	<0.00034	<0.00034
Dissolved Tin	mg/L	<0.022	<0.022	<0.022
Dissolved Vanadium	mg/L	0.023(tr)	0.018(tr)	<0.0032
Dissolved Zinc	mg/L	0.027*	0.032	0.018
Volatile Organic Compounds:				
Acetone	µg/L	12	23	8.8
Acrylonitrile	µg/L	<10	<10	<10
Benzene	µg/L	0.43(tr)*	0.27(tr)*	0.17(tr)
Bromobenzene	µg/L	<0.18	<0.18	<0.18
Bromochloromethane	µg/L	<0.31	<0.31	<0.31
Bromodichloromethane	µg/L	<0.14	<0.14	<0.14
Bromoform	µg/L	<0.10	<0.10	<0.10
Bromomethane (Methly bromide)	µg/L	<0.08	<0.08	0.23(tr)
2-Butanone (MEK)	µg/L	2.5	<1.0	<0.12
n-Butylbenzene	µg/L	<0.12	<0.12	<0.12
sec-Butylbenzene	µg/L	<0.12	<0.12	<0.12
tert-Butylbenzene	µg/L	<0.14	<0.14	<0.14
Carbon Disulfide	µg/L	<1.0	<1.0	<1.0
Carbon Tetrachloride	µg/L	<0.15	<0.15	<0.15
Chlorobenzene	µg/L	2	2.8	0.23(tr)
Chloroethane	µg/L	<0.34	<0.34	<0.34
Chloroform	µg/L	<0.12	<0.12	<0.12
Chloromethane (Methyl chloride)	µg/L	<0.25	0.46(tr)	0.33(tr)
2-Chlorotoluene	µg/L	<0.26	0.31(tr)	<0.26
4-Chlorotoluene	µg/L	<0.10	<0.10	<0.10
Dibromochloromethane	µg/L	<0.40	<0.40	<0.40
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	<0.95	<0.95	<0.95
1,2-Dibromoethane (EDB)	µg/L	<0.22	<0.22	<0.22
Dibromomethane (Methly bromide)	µg/L	<0.21	<0.21	<0.21
1,2-Dichlorobenzene	µg/L	<0.14	<0.14	<0.14
1,3-Dichlorobenzene	µg/L	<0.11	<0.11	<0.11
1,4-Dichlorobenzene	µg/L	<0.13	<0.13	<0.13
trans-1,4-Dichloro-2-butene	µg/L	<1.0	<1.0	<1.0
Dichlorodifluoromethane (Freon 12)	µg/L	0.27(tr)	<0.16	<1.0
1,1-Dichloroethane (1,1-DCA)	µg/L	0.32(tr)	0.16(tr)	<0.10
1,2-Dichloroethane (1,2-DCA)	µg/L	<0.22	<0.22	<0.22
1,1-Dichloroethene (1,1-DCE)	µg/L	<0.36	<0.36	<0.36
cis-1,2-Dichloroethene (cis-1,2-DCE)	µg/L	0.38(tr)	0.20(tr)	<0.10
trans-1,2-Dichloroethene (trans-1,2-DCE)	µg/L	<0.11	<0.11	<0.11
1,2-Dichloropropane	µg/L	<0.15	<0.15	<0.15
1,3-Dichloropropane	µg/L	<0.20	<0.20	<0.20
2,2 Dichloropropane	µg/L	<0.13	<0.13	<0.13
1,1-Dichloropropene	µg/L	<0.14	<0.14	<0.14
cis-1,3-Dichloropropene	µg/L	0.38(tr)	<0.22	<0.22
trans-1,3-Dichloropropene	µg/L	<0.30	<0.30	<0.30
Ethylbenzene	µg/L	<0.27	<0.27	<0.27
Hexachlorobutadiene	µg/L	<0.22	<0.22	<0.22
2-Hexanone (Methyl butyl ketone)	µg/L	<1.0	<1.0	<1.0

Iodomethane (Methyl iodide)	µg/L	<1.0	<1.0	<1.0
Isopropylbenzene	µg/L	<0.12	<0.12	<0.12
p-Isopropyltoluene	µg/L	<0.13	<0.13	<0.13
Methyl-tert-butyl ether (MTBE)	µg/L	3	<1.0	1.3(tr)
4-Methyl-2-pentanone (MIBK)	µg/L	3.8	<1.0	3.3
Methylene Chloride	µg/L	0.35(tr)	<0.35	<0.35
Naphthalene	µg/L	<0.15	<0.15	<0.15
n-Propylbenzene	µg/L	<0.15	<0.15	<0.15
Styrene	µg/L	<0.15	<0.15	<0.15
1,1,1,2-Tetrachloroethane	µg/L	<0.10	<0.10	<0.10
1,1,2,2-Tetrachloroethane	µg/L	<0.37	<0.37	<0.37
Tetrachloroethene (PCE)	µg/L	0.67(tr)	0.60(tr)	0.88(tr)
Toluene	µg/L	0.35(tr)	0.27(tr)*	<0.25
1,2,3-Trichlorobenzene	µg/L	<0.14	<0.14	<0.14
1,2,4-Trichlorobenzene	µg/L	<0.23	<0.23	<0.23
1,1,1-Trichloroethane (1,1,1-TCA)	µg/L	<0.41	<0.41	<0.41
1,1,2-Trichloroethane (1,1,2-TCA)	µg/L	<0.31	<0.31	<0.31
Trichloroethene (TCE)	µg/L	1.6	0.83(tr)	<0.31
Trichlorofluoromethane (Freon 11)	µg/L	<0.23	<0.23	<0.23
1,2,3-Trichloropropane	µg/L	<0.30	<0.30	<0.30
1,2,4-Trimethylbenzene	µg/L	<0.12	<0.12	<0.12
1,3,5-Trimethylbenzene	µg/L	<0.14	<0.14	<0.14
Vinyl Acetate	µg/L	<1.0	<1.0	<1.0
Vinyl Chloride	µg/L	<0.12	<0.12	<0.12
Total Xylenes	µg/L	0.34(tr)	0.10(tr)	<0.10

Footnotes:
NA=Not Analyzed
MDL=Method Detection Limit
PQL=Practical Quantification Limit
<=Less than the MDL
tr=trace: the amount detected was above the MDL but below the PQL
* = this parameter was alo detected in the method blank