
ANNEXE I – Fichiers de sortie Modèle LANDGEM



Summary Report

Landfill Name or Identifier: Site existant - LET de Magog

Date: 22 septembre, 2005

Description/Comments:

About LandGEM:

First-Order Decomposition Rate Equation:

$$Q_{CH_4} = \sum_{i=1}^n \sum_{j=0.1}^1 kL_o \left(\frac{M_i}{10} \right) e^{-kt_{ij}}$$

Where,

Q_{CH_4} = annual methane generation in the year of the calculation ($m^3/year$)

i = 1-year time increment

n = (year of the calculation) - (initial year of waste acceptance)

j = 0.1-year time increment

k = methane generation rate ($year^{-1}$)

L_o = potential methane generation capacity (m^3/Mg)

M_i = mass of waste accepted in the i^{th} year (Mg)

t_{ij} = age of the j^{th} section of waste mass M_i accepted in the i^{th} year (*decimal years*, e.g., 3.2 years)

LandGEM is based on a first-order decomposition rate equation for quantifying emissions from the decomposition of landfilled waste in municipal solid waste (MSW) landfills. The software provides a relatively simple approach to estimating landfill gas emissions. Model defaults are based on empirical data from U.S. landfills. Field test data can also be used in place of model defaults when available. Further guidance on EPA test methods, Clean Air Act (CAA) regulations, and other guidance regarding landfill gas emissions and control technology requirements can be found at <http://www.epa.gov/ttnatw01/landfill/landfigp.html>.

LandGEM is considered a screening tool — the better the input data, the better the estimates. Often, there are limitations with the available data regarding waste quantity and composition, variation in design and operating practices over time, and changes occurring over time that impact the emissions potential. Changes to landfill operation, such as operating under wet conditions through leachate recirculation or other liquid additions, will result in generating more gas at a faster rate. Defaults for estimating emissions for this type of operation are being developed to include in LandGEM along with defaults for conventional landfills (no leachate or liquid additions) for developing emission inventories and determining CAA applicability. Refer to the Web site identified above for future updates.

Input Review

LANDFILL CHARACTERISTICS

Landfill Open Year	1970	
Landfill Closure Year (with 80-year limit)	2007	
Actual Closure Year (without limit)	2007	
Have Model Calculate Closure Year?	No	
Waste Design Capacity	2 288 708	megagrams

MODEL PARAMETERS

Methane Generation Rate, k	0.040	year ⁻¹
Potential Methane Generation Capacity, L ₀	135	m ³ /Mg
NMOC Concentration	600	ppmv as hexane
Methane Content	50	% by volume

GASES / POLLUTANTS SELECTED

Gas / Pollutant #1:	Total landfill gas
Gas / Pollutant #2:	Methane
Gas / Pollutant #3:	Carbon dioxide
Gas / Pollutant #4:	NMOC

WASTE ACCEPTANCE RATES

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	(short tons/year)	(Mg)	(short tons)
1970	19 391	21 330	0	0
1971	19 391	21 330	19 391	21 330
1972	19 391	21 330	38 782	42 660
1973	19 391	21 330	58 173	63 990
1974	19 391	21 330	77 564	85 320
1975	19 391	21 330	96 955	106 651
1976	19 391	21 330	116 346	127 981
1977	19 392	21 331	135 737	149 311
1978	19 392	21 331	155 129	170 642
1979	19 392	21 331	174 521	191 973
1980	19 392	21 331	193 913	213 304
1981	19 392	21 331	213 305	234 636
1982	19 392	21 331	232 697	255 967
1983	19 392	21 331	252 089	277 298
1984	19 392	21 331	271 481	298 629
1985	19 392	21 331	290 873	319 960
1986	32 524	35 776	310 265	341 292
1987	35 127	38 640	342 789	377 068
1988	39 747	43 722	377 916	415 708
1989	41 685	45 854	417 663	459 429
1990	56 549	62 204	459 348	505 283
1991	63 534	69 887	515 897	567 487
1992	89 290	98 219	579 431	637 374
1993	128 929	141 822	668 721	735 593
1994	206 007	226 608	797 650	877 415
1995	214 241	235 665	1 003 657	1 104 023
1996	231 052	254 157	1 217 898	1 339 688
1997	163 392	179 731	1 448 950	1 593 845
1998	154 029	169 432	1 612 342	1 773 576
1999	142 981	157 279	1 766 371	1 943 008
2000	146 965	161 662	1 909 352	2 100 287
2001	144 936	159 430	2 056 317	2 261 948
2002	53 732	59 105	2 201 253	2 421 378
2003	24 710	27 181	2 254 984	2 480 483
2004	6 013	6 615	2 279 694	2 507 664
2005	1 500	1 650	2 285 708	2 514 278
2006	1 000	1 100	2 287 208	2 515 928
2007	500	550	2 288 208	2 517 028
2008	0	0	2 288 708	2 517 578
2009	0	0	2 288 708	2 517 578

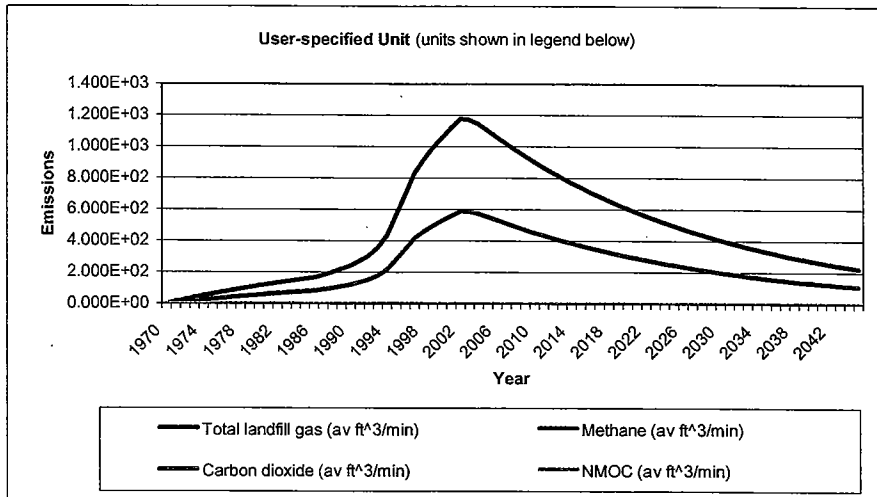
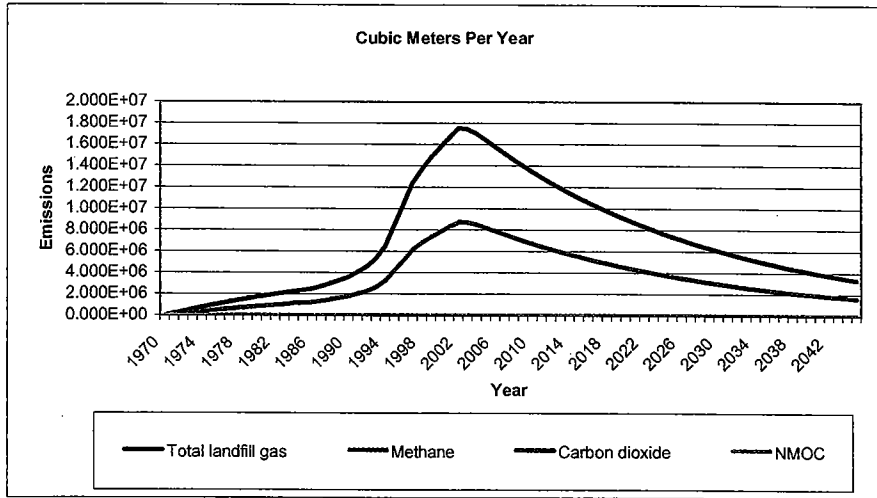
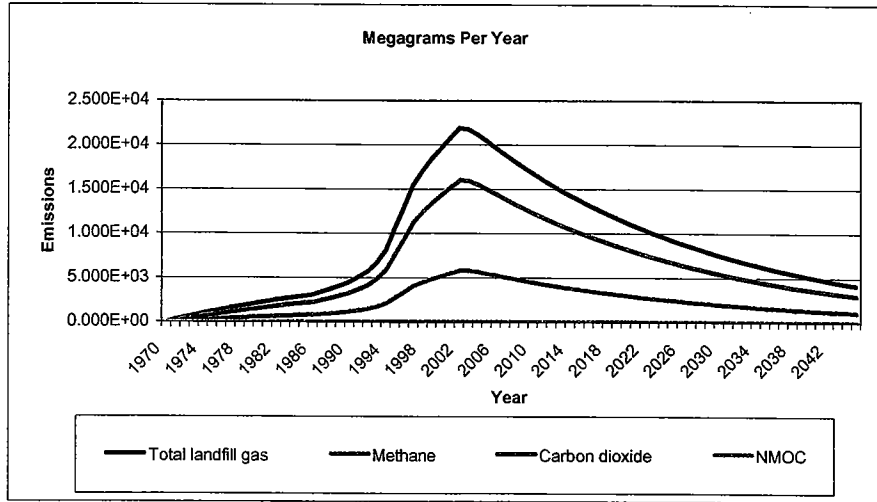
WASTE ACCEPTANCE RATES (Continued)

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	(short tons/year)	(Mg)	(short tons)
2010	0	0	2 288 708	2 517 578
2011	0	0	2 288 708	2 517 578
2012	0	0	2 288 708	2 517 578
2013	0	0	2 288 708	2 517 578
2014	0	0	2 288 708	2 517 578
2015	0	0	2 288 708	2 517 578
2016	0	0	2 288 708	2 517 578
2017	0	0	2 288 708	2 517 578
2018	0	0	2 288 708	2 517 578
2019	0	0	2 288 708	2 517 578
2020	0	0	2 288 708	2 517 578
2021	0	0	2 288 708	2 517 578
2022	0	0	2 288 708	2 517 578
2023	0	0	2 288 708	2 517 578
2024	0	0	2 288 708	2 517 578
2025	0	0	2 288 708	2 517 578
2026	0	0	2 288 708	2 517 578
2027	0	0	2 288 708	2 517 578
2028	0	0	2 288 708	2 517 578
2029	0	0	2 288 708	2 517 578
2030	0	0	2 288 708	2 517 578
2031	0	0	2 288 708	2 517 578
2032	0	0	2 288 708	2 517 578
2033	0	0	2 288 708	2 517 578
2034	0	0	2 288 708	2 517 578
2035	0	0	2 288 708	2 517 578
2036	0	0	2 288 708	2 517 578
2037	0	0	2 288 708	2 517 578
2038	0	0	2 288 708	2 517 578
2039	0	0	2 288 708	2 517 578
2040	0	0	2 288 708	2 517 578
2041	0	0	2 288 708	2 517 578
2042	0	0	2 288 708	2 517 578
2043	0	0	2 288 708	2 517 578
2044	0	0	2 288 708	2 517 578
2045	0	0	2 288 708	2 517 578
2046	0	0	2 288 708	2 517 578
2047	0	0	2 288 708	2 517 578
2048	0	0	2 288 708	2 517 578
2049	0	0	2 288 708	2 517 578

Pollutant Parameters

Gas / Pollutant Default Parameters:				User-specified Pollutant Parameters:	
	Compound	Concentration (ppmv)	Molecular Weight	Concentration (ppmv)	Molecular Weight
Gases	Total landfill gas		0.00		
	Methane		16.04		
	Carbon dioxide		44.01		
	NMOC	4 000	86.18		
Pollutants	1,1,1-Trichloroethane (methyl chloroform) - HAP	0.48	133.41		
	1,1,2,2- Tetrachloroethane - HAP/VOC	1.1	167.85		
	1,1-Dichloroethane (ethylidene dichloride) - HAP/VOC	2.4	98.97		
	1,1-Dichloroethene (vinylidene chloride) - HAP/VOC	0.20	96.94		
	1,2-Dichloroethane (ethylene dichloride) - HAP/VOC	0.41	98.96		
	1,2-Dichloropropane (propylene dichloride) - HAP/VOC	0.18	112.99		
	2-Propanol (isopropyl alcohol) - VOC	50	60.11		
	Acetone	7.0	58.08		
	Acrylonitrile - HAP/VOC	6.3	53.06		
	Benzene - No or Unknown Co-disposal - HAP/VOC	1.9	78.11		
	Benzene - Co-disposal - HAP/VOC	11	78.11		
	Bromodichloromethane - VOC	3.1	163.83		
	Butane - VOC	5.0	58.12		
	Carbon disulfide - HAP/VOC	0.58	76.13		
	Carbon monoxide	140	28.01		
	Carbon tetrachloride - HAP/VOC	4.0E-03	153.84		
	Carbonyl sulfide - HAP/VOC	0.49	60.07		
	Chlorobenzene - HAP/VOC	0.25	112.56		
	Chlorodifluoromethane	1.3	86.47		
	Chloroethane (ethyl chloride) - HAP/VOC	1.3	64.52		
	Chloroform - HAP/VOC	0.03	119.39		
	Chloromethane - VOC	1.2	50.49		
	Dichlorobenzene - (HAP for para isomer/VOC)	0.21	147		
	Dichlorodifluoromethane	16	120.91		
	Dichlorofluoromethane - VOC	2.6	102.92		
	Dichloromethane (methylene chloride) - HAP	14	84.94		
	Dimethyl sulfide (methyl sulfide) - VOC	7.8	62.13		
	Ethane	890	30.07		
	Ethanol - VOC	27	46.08		

Graphs



Results

Year	Total landfill gas			Methane		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
1970	0	0	0	0	0	0
1971	2.569E+02	2.057E+05	1.382E+01	6.862E+01	1.029E+05	6.910E+00
1972	5.037E+02	4.033E+05	2.710E+01	1.345E+02	2.017E+05	1.355E+01
1973	7.408E+02	5.932E+05	3.986E+01	1.979E+02	2.966E+05	1.993E+01
1974	9.687E+02	7.757E+05	5.212E+01	2.587E+02	3.878E+05	2.606E+01
1975	1.188E+03	9.509E+05	6.389E+01	3.172E+02	4.755E+05	3.195E+01
1976	1.398E+03	1.119E+06	7.521E+01	3.734E+02	5.597E+05	3.760E+01
1977	1.600E+03	1.281E+06	8.608E+01	4.274E+02	6.406E+05	4.304E+01
1978	1.794E+03	1.437E+06	9.653E+01	4.792E+02	7.183E+05	4.826E+01
1979	1.981E+03	1.586E+06	1.066E+02	5.291E+02	7.930E+05	5.328E+01
1980	2.160E+03	1.730E+06	1.162E+02	5.769E+02	8.648E+05	5.810E+01
1981	2.332E+03	1.867E+06	1.255E+02	6.229E+02	9.337E+05	6.274E+01
1982	2.498E+03	2.000E+06	1.344E+02	6.671E+02	1.000E+06	6.719E+01
1983	2.657E+03	2.127E+06	1.429E+02	7.096E+02	1.064E+06	7.146E+01
1984	2.809E+03	2.250E+06	1.511E+02	7.504E+02	1.125E+06	7.557E+01
1985	2.956E+03	2.367E+06	1.590E+02	7.896E+02	1.184E+06	7.952E+01
1986	3.097E+03	2.480E+06	1.666E+02	8.272E+02	1.240E+06	8.331E+01
1987	3.406E+03	2.728E+06	1.833E+02	9.099E+02	1.364E+06	9.164E+01
1988	3.738E+03	2.993E+06	2.011E+02	9.985E+02	1.497E+06	1.006E+02
1989	4.118E+03	3.298E+06	2.216E+02	1.100E+03	1.649E+06	1.108E+02
1990	4.509E+03	3.611E+06	2.426E+02	1.204E+03	1.805E+06	1.213E+02
1991	5.081E+03	4.069E+06	2.734E+02	1.357E+03	2.034E+06	1.367E+02
1992	5.724E+03	4.583E+06	3.079E+02	1.529E+03	2.292E+06	1.540E+02
1993	6.682E+03	5.351E+06	3.595E+02	1.785E+03	2.675E+06	1.798E+02
1994	8.128E+03	6.509E+06	4.373E+02	2.171E+03	3.254E+06	2.187E+02
1995	1.054E+04	8.439E+06	5.670E+02	2.815E+03	4.219E+06	2.835E+02
1996	1.296E+04	1.038E+07	6.975E+02	3.463E+03	5.190E+06	3.487E+02
1997	1.552E+04	1.242E+07	8.348E+02	4.144E+03	6.212E+06	4.174E+02
1998	1.707E+04	1.367E+07	9.185E+02	4.560E+03	6.835E+06	4.593E+02
1999	1.844E+04	1.477E+07	9.923E+02	4.926E+03	7.384E+06	4.961E+02
2000	1.961E+04	1.571E+07	1.055E+03	5.239E+03	7.853E+06	5.276E+02
2001	2.079E+04	1.665E+07	1.119E+03	5.554E+03	8.325E+06	5.593E+02
2002	2.190E+04	1.753E+07	1.178E+03	5.849E+03	8.767E+06	5.891E+02
2003	2.175E+04	1.742E+07	1.170E+03	5.810E+03	8.708E+06	5.851E+02
2004	2.122E+04	1.700E+07	1.142E+03	5.669E+03	8.498E+06	5.710E+02
2005	2.047E+04	1.639E+07	1.101E+03	5.468E+03	8.197E+06	5.507E+02
2006	1.969E+04	1.577E+07	1.059E+03	5.259E+03	7.883E+06	5.297E+02
2007	1.893E+04	1.516E+07	1.019E+03	5.057E+03	7.579E+06	5.093E+02
2008	1.819E+04	1.457E+07	9.789E+02	4.860E+03	7.285E+06	4.895E+02
2009	1.748E+04	1.400E+07	9.405E+02	4.669E+03	6.999E+06	4.703E+02
2010	1.680E+04	1.345E+07	9.037E+02	4.486E+03	6.725E+06	4.518E+02
2011	1.614E+04	1.292E+07	8.682E+02	4.310E+03	6.461E+06	4.341E+02
2012	1.550E+04	1.242E+07	8.342E+02	4.141E+03	6.208E+06	4.171E+02
2013	1.490E+04	1.193E+07	8.015E+02	3.979E+03	5.964E+06	4.007E+02
2014	1.431E+04	1.146E+07	7.701E+02	3.823E+03	5.730E+06	3.850E+02
2015	1.375E+04	1.101E+07	7.399E+02	3.673E+03	5.506E+06	3.699E+02
2016	1.321E+04	1.058E+07	7.108E+02	3.529E+03	5.290E+06	3.554E+02
2017	1.269E+04	1.016E+07	6.830E+02	3.391E+03	5.082E+06	3.415E+02
2018	1.220E+04	9.766E+06	6.562E+02	3.258E+03	4.883E+06	3.281E+02
2019	1.172E+04	9.383E+06	6.305E+02	3.130E+03	4.692E+06	3.152E+02

Results (Continued)

Year	Total landfill gas			Methane		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2020	1.126E+04	9.015E+06	6.057E+02	3.007E+03	4.508E+06	3.029E+02
2021	1.082E+04	8.662E+06	5.820E+02	2.889E+03	4.331E+06	2.910E+02
2022	1.039E+04	8.322E+06	5.592E+02	2.776E+03	4.161E+06	2.796E+02
2023	9.986E+03	7.996E+06	5.372E+02	2.667E+03	3.998E+06	2.686E+02
2024	9.594E+03	7.682E+06	5.162E+02	2.563E+03	3.841E+06	2.581E+02
2025	9.218E+03	7.381E+06	4.959E+02	2.462E+03	3.691E+06	2.480E+02
2026	8.856E+03	7.092E+06	4.765E+02	2.366E+03	3.546E+06	2.382E+02
2027	8.509E+03	6.814E+06	4.578E+02	2.273E+03	3.407E+06	2.289E+02
2028	8.175E+03	6.547E+06	4.399E+02	2.184E+03	3.273E+06	2.199E+02
2029	7.855E+03	6.290E+06	4.226E+02	2.098E+03	3.145E+06	2.113E+02
2030	7.547E+03	6.043E+06	4.060E+02	2.016E+03	3.022E+06	2.030E+02
2031	7.251E+03	5.806E+06	3.901E+02	1.937E+03	2.903E+06	1.951E+02
2032	6.967E+03	5.579E+06	3.748E+02	1.861E+03	2.789E+06	1.874E+02
2033	6.693E+03	5.360E+06	3.601E+02	1.788E+03	2.680E+06	1.801E+02
2034	6.431E+03	5.150E+06	3.460E+02	1.718E+03	2.575E+06	1.730E+02
2035	6.179E+03	4.948E+06	3.324E+02	1.650E+03	2.474E+06	1.662E+02
2036	5.937E+03	4.754E+06	3.194E+02	1.586E+03	2.377E+06	1.597E+02
2037	5.704E+03	4.567E+06	3.069E+02	1.524E+03	2.284E+06	1.534E+02
2038	5.480E+03	4.388E+06	2.948E+02	1.464E+03	2.194E+06	1.474E+02
2039	5.265E+03	4.216E+06	2.833E+02	1.406E+03	2.108E+06	1.416E+02
2040	5.059E+03	4.051E+06	2.722E+02	1.351E+03	2.025E+06	1.361E+02
2041	4.860E+03	3.892E+06	2.615E+02	1.298E+03	1.946E+06	1.308E+02
2042	4.670E+03	3.739E+06	2.513E+02	1.247E+03	1.870E+06	1.256E+02
2043	4.487E+03	3.593E+06	2.414E+02	1.198E+03	1.796E+06	1.207E+02
2044	4.311E+03	3.452E+06	2.319E+02	1.151E+03	1.726E+06	1.160E+02
2045	4.142E+03	3.317E+06	2.228E+02	1.106E+03	1.658E+06	1.114E+02
2046	3.979E+03	3.187E+06	2.141E+02	1.063E+03	1.593E+06	1.071E+02
2047	3.823E+03	3.062E+06	2.057E+02	1.021E+03	1.531E+06	1.029E+02
2048	3.673E+03	2.942E+06	1.976E+02	9.812E+02	1.471E+06	9.882E+01
2049	3.529E+03	2.826E+06	1.899E+02	9.427E+02	1.413E+06	9.495E+01
2050	3.391E+03	2.715E+06	1.824E+02	9.058E+02	1.358E+06	9.122E+01
2051	3.258E+03	2.609E+06	1.753E+02	8.703E+02	1.304E+06	8.765E+01
2052	3.130E+03	2.507E+06	1.684E+02	8.361E+02	1.253E+06	8.421E+01
2053	3.008E+03	2.408E+06	1.618E+02	8.034E+02	1.204E+06	8.091E+01
2054	2.890E+03	2.314E+06	1.555E+02	7.719E+02	1.157E+06	7.774E+01
2055	2.776E+03	2.223E+06	1.494E+02	7.416E+02	1.112E+06	7.469E+01
2056	2.667E+03	2.136E+06	1.435E+02	7.125E+02	1.068E+06	7.176E+01
2057	2.563E+03	2.052E+06	1.379E+02	6.846E+02	1.026E+06	6.894E+01
2058	2.462E+03	1.972E+06	1.325E+02	6.577E+02	9.859E+05	6.624E+01
2059	2.366E+03	1.894E+06	1.273E+02	6.319E+02	9.472E+05	6.364E+01
2060	2.273E+03	1.820E+06	1.223E+02	6.072E+02	9.101E+05	6.115E+01
2061	2.184E+03	1.749E+06	1.175E+02	5.834E+02	8.744E+05	5.875E+01
2062	2.098E+03	1.680E+06	1.129E+02	5.605E+02	8.401E+05	5.645E+01
2063	2.016E+03	1.614E+06	1.085E+02	5.385E+02	8.072E+05	5.423E+01
2064	1.937E+03	1.551E+06	1.042E+02	5.174E+02	7.755E+05	5.211E+01
2065	1.861E+03	1.490E+06	1.001E+02	4.971E+02	7.451E+05	5.006E+01
2066	1.788E+03	1.432E+06	9.620E+01	4.776E+02	7.159E+05	4.810E+01
2067	1.718E+03	1.376E+06	9.243E+01	4.589E+02	6.878E+05	4.622E+01
2068	1.651E+03	1.322E+06	8.881E+01	4.409E+02	6.609E+05	4.440E+01
2069	1.586E+03	1.270E+06	8.532E+01	4.236E+02	6.349E+05	4.266E+01
2070	1.524E+03	1.220E+06	8.198E+01	4.070E+02	6.101E+05	4.099E+01

Results (Continued)

Year	Total landfill gas			Methane		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2071	1.464E+03	1.172E+06	7.876E+01	3.910E+02	5.861E+05	3.938E+01
2072	1.407E+03	1.126E+06	7.568E+01	3.757E+02	5.631E+05	3.784E+01
2073	1.351E+03	1.082E+06	7.271E+01	3.610E+02	5.411E+05	3.635E+01
2074	1.298E+03	1.040E+06	6.986E+01	3.468E+02	5.199E+05	3.493E+01
2075	1.247E+03	9.989E+05	6.712E+01	3.332E+02	4.995E+05	3.356E+01
2076	1.199E+03	9.598E+05	6.449E+01	3.202E+02	4.799E+05	3.224E+01
2077	1.152E+03	9.221E+05	6.196E+01	3.076E+02	4.611E+05	3.098E+01
2078	1.106E+03	8.860E+05	5.953E+01	2.955E+02	4.430E+05	2.976E+01
2079	1.063E+03	8.512E+05	5.719E+01	2.840E+02	4.256E+05	2.860E+01
2080	1.021E+03	8.179E+05	5.495E+01	2.728E+02	4.089E+05	2.748E+01
2081	9.813E+02	7.858E+05	5.280E+01	2.621E+02	3.929E+05	2.640E+01
2082	9.428E+02	7.550E+05	5.073E+01	2.518E+02	3.775E+05	2.536E+01
2083	9.059E+02	7.254E+05	4.874E+01	2.420E+02	3.627E+05	2.437E+01
2084	8.703E+02	6.969E+05	4.683E+01	2.325E+02	3.485E+05	2.341E+01
2085	8.362E+02	6.696E+05	4.499E+01	2.234E+02	3.348E+05	2.250E+01
2086	8.034E+02	6.433E+05	4.323E+01	2.146E+02	3.217E+05	2.161E+01
2087	7.719E+02	6.181E+05	4.153E+01	2.062E+02	3.091E+05	2.077E+01
2088	7.417E+02	5.939E+05	3.990E+01	1.981E+02	2.969E+05	1.995E+01
2089	7.126E+02	5.706E+05	3.834E+01	1.903E+02	2.853E+05	1.917E+01
2090	6.846E+02	5.482E+05	3.684E+01	1.829E+02	2.741E+05	1.842E+01
2091	6.578E+02	5.267E+05	3.539E+01	1.757E+02	2.634E+05	1.770E+01
2092	6.320E+02	5.061E+05	3.400E+01	1.688E+02	2.530E+05	1.700E+01
2093	6.072E+02	4.862E+05	3.267E+01	1.622E+02	2.431E+05	1.633E+01
2094	5.834E+02	4.672E+05	3.139E+01	1.558E+02	2.336E+05	1.569E+01
2095	5.605E+02	4.488E+05	3.016E+01	1.497E+02	2.244E+05	1.508E+01
2096	5.386E+02	4.313E+05	2.898E+01	1.439E+02	2.156E+05	1.449E+01
2097	5.174E+02	4.143E+05	2.784E+01	1.382E+02	2.072E+05	1.392E+01
2098	4.971E+02	3.981E+05	2.675E+01	1.328E+02	1.990E+05	1.337E+01
2099	4.777E+02	3.825E+05	2.570E+01	1.276E+02	1.912E+05	1.285E+01
2100	4.589E+02	3.675E+05	2.469E+01	1.226E+02	1.837E+05	1.235E+01
2101	4.409E+02	3.531E+05	2.372E+01	1.178E+02	1.765E+05	1.186E+01
2102	4.236E+02	3.392E+05	2.279E+01	1.132E+02	1.696E+05	1.140E+01
2103	4.070E+02	3.259E+05	2.190E+01	1.087E+02	1.630E+05	1.095E+01
2104	3.911E+02	3.132E+05	2.104E+01	1.045E+02	1.566E+05	1.052E+01
2105	3.757E+02	3.009E+05	2.022E+01	1.004E+02	1.504E+05	1.011E+01
2106	3.610E+02	2.891E+05	1.942E+01	9.643E+01	1.445E+05	9.711E+00
2107	3.468E+02	2.777E+05	1.866E+01	9.265E+01	1.389E+05	9.331E+00
2108	3.332E+02	2.669E+05	1.793E+01	8.901E+01	1.334E+05	8.965E+00
2109	3.202E+02	2.564E+05	1.723E+01	8.552E+01	1.282E+05	8.613E+00
2110	3.076E+02	2.463E+05	1.655E+01	8.217E+01	1.232E+05	8.276E+00

Results (Continued)

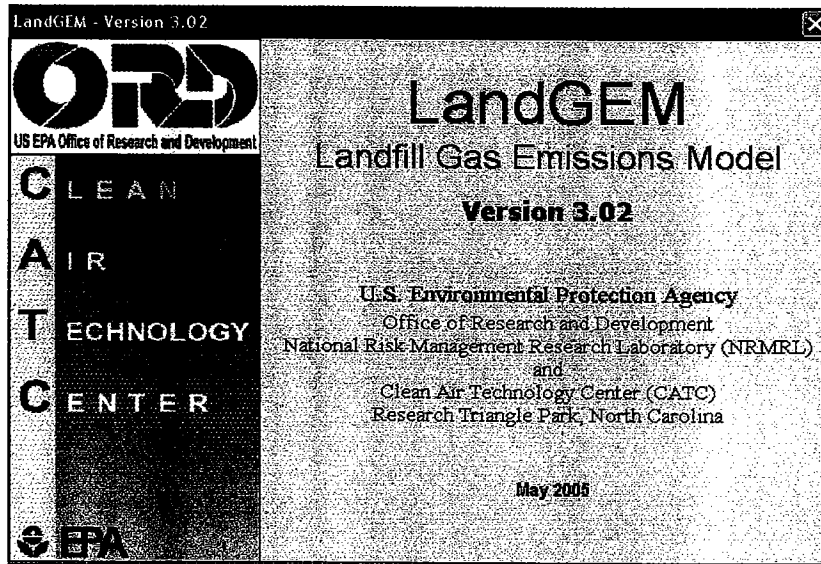
Year	Carbon dioxide			NMOC		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
1970	0	0	0	0	0	0
1971	1.883E+02	1.029E+05	6.910E+00	4.424E-01	1.234E+02	8.293E-03
1972	3.692E+02	2.017E+05	1.355E+01	8.674E-01	2.420E+02	1.626E-02
1973	5.429E+02	2.966E+05	1.993E+01	1.276E+00	3.559E+02	2.392E-02
1974	7.099E+02	3.878E+05	2.606E+01	1.668E+00	4.654E+02	3.127E-02
1975	8.704E+02	4.755E+05	3.195E+01	2.045E+00	5.706E+02	3.834E-02
1976	1.024E+03	5.597E+05	3.760E+01	2.407E+00	6.716E+02	4.513E-02
1977	1.173E+03	6.406E+05	4.304E+01	2.755E+00	7.687E+02	5.165E-02
1978	1.315E+03	7.183E+05	4.826E+01	3.090E+00	8.620E+02	5.792E-02
1979	1.452E+03	7.930E+05	5.328E+01	3.411E+00	9.516E+02	6.394E-02
1980	1.583E+03	8.648E+05	5.810E+01	3.720E+00	1.038E+03	6.972E-02
1981	1.709E+03	9.337E+05	6.274E+01	4.016E+00	1.120E+03	7.528E-02
1982	1.830E+03	1.000E+06	6.719E+01	4.301E+00	1.200E+03	8.063E-02
1983	1.947E+03	1.064E+06	7.146E+01	4.575E+00	1.276E+03	8.576E-02
1984	2.059E+03	1.125E+06	7.557E+01	4.838E+00	1.350E+03	9.069E-02
1985	2.166E+03	1.184E+06	7.952E+01	5.091E+00	1.420E+03	9.542E-02
1986	2.270E+03	1.240E+06	8.331E+01	5.334E+00	1.488E+03	9.998E-02
1987	2.497E+03	1.364E+06	9.164E+01	5.866E+00	1.637E+03	1.100E-01
1988	2.740E+03	1.497E+06	1.006E+02	6.438E+00	1.796E+03	1.207E-01
1989	3.018E+03	1.649E+06	1.108E+02	7.092E+00	1.979E+03	1.329E-01
1990	3.305E+03	1.805E+06	1.213E+02	7.765E+00	2.166E+03	1.456E-01
1991	3.724E+03	2.034E+06	1.367E+02	8.751E+00	2.441E+03	1.640E-01
1992	4.195E+03	2.292E+06	1.540E+02	9.857E+00	2.750E+03	1.848E-01
1993	4.897E+03	2.675E+06	1.798E+02	1.151E+01	3.210E+03	2.157E-01
1994	5.957E+03	3.254E+06	2.187E+02	1.400E+01	3.905E+03	2.624E-01
1995	7.724E+03	4.219E+06	2.835E+02	1.815E+01	5.063E+03	3.402E-01
1996	9.501E+03	5.190E+06	3.487E+02	2.233E+01	6.228E+03	4.185E-01
1997	1.137E+04	6.212E+06	4.174E+02	2.672E+01	7.455E+03	5.009E-01
1998	1.251E+04	6.835E+06	4.593E+02	2.940E+01	8.202E+03	5.511E-01
1999	1.352E+04	7.384E+06	4.961E+02	3.176E+01	8.861E+03	5.954E-01
2000	1.438E+04	7.853E+06	5.276E+02	3.378E+01	9.424E+03	6.332E-01
2001	1.524E+04	8.325E+06	5.593E+02	3.581E+01	9.990E+03	6.712E-01
2002	1.605E+04	8.767E+06	5.891E+02	3.771E+01	1.052E+04	7.069E-01
2003	1.594E+04	8.708E+06	5.851E+02	3.746E+01	1.045E+04	7.021E-01
2004	1.556E+04	8.498E+06	5.710E+02	3.655E+01	1.020E+04	6.852E-01
2005	1.500E+04	8.197E+06	5.507E+02	3.526E+01	9.836E+03	6.609E-01
2006	1.443E+04	7.883E+06	5.297E+02	3.391E+01	9.460E+03	6.356E-01
2007	1.387E+04	7.579E+06	5.093E+02	3.260E+01	9.095E+03	6.111E-01
2008	1.333E+04	7.285E+06	4.895E+02	3.133E+01	8.742E+03	5.874E-01
2009	1.281E+04	6.999E+06	4.703E+02	3.011E+01	8.399E+03	5.643E-01
2010	1.231E+04	6.725E+06	4.518E+02	2.893E+01	8.070E+03	5.422E-01
2011	1.183E+04	6.461E+06	4.341E+02	2.779E+01	7.753E+03	5.209E-01
2012	1.136E+04	6.208E+06	4.171E+02	2.670E+01	7.449E+03	5.005E-01
2013	1.092E+04	5.964E+06	4.007E+02	2.565E+01	7.157E+03	4.809E-01
2014	1.049E+04	5.730E+06	3.850E+02	2.465E+01	6.876E+03	4.620E-01
2015	1.008E+04	5.506E+06	3.699E+02	2.368E+01	6.607E+03	4.439E-01
2016	9.683E+03	5.290E+06	3.554E+02	2.275E+01	6.348E+03	4.265E-01
2017	9.303E+03	5.082E+06	3.415E+02	2.186E+01	6.099E+03	4.098E-01
2018	8.939E+03	4.883E+06	3.281E+02	2.100E+01	5.860E+03	3.937E-01
2019	8.588E+03	4.692E+06	3.152E+02	2.018E+01	5.630E+03	3.783E-01

Results (Continued)

Year	Carbon dioxide			NMOC		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2020	8.251E+03	4.508E+06	3.029E+02	1.939E+01	5.409E+03	3.634E-01
2021	7.928E+03	4.331E+06	2.910E+02	1.863E+01	5.197E+03	3.492E-01
2022	7.617E+03	4.161E+06	2.796E+02	1.790E+01	4.993E+03	3.355E-01
2023	7.318E+03	3.998E+06	2.686E+02	1.720E+01	4.798E+03	3.223E-01
2024	7.031E+03	3.841E+06	2.581E+02	1.652E+01	4.609E+03	3.097E-01
2025	6.756E+03	3.691E+06	2.480E+02	1.587E+01	4.429E+03	2.976E-01
2026	6.491E+03	3.546E+06	2.382E+02	1.525E+01	4.255E+03	2.859E-01
2027	6.236E+03	3.407E+06	2.289E+02	1.465E+01	4.088E+03	2.747E-01
2028	5.992E+03	3.273E+06	2.199E+02	1.408E+01	3.928E+03	2.639E-01
2029	5.757E+03	3.145E+06	2.113E+02	1.353E+01	3.774E+03	2.536E-01
2030	5.531E+03	3.022E+06	2.030E+02	1.300E+01	3.626E+03	2.436E-01
2031	5.314E+03	2.903E+06	1.951E+02	1.249E+01	3.484E+03	2.341E-01
2032	5.106E+03	2.789E+06	1.874E+02	1.200E+01	3.347E+03	2.249E-01
2033	4.906E+03	2.680E+06	1.801E+02	1.153E+01	3.216E+03	2.161E-01
2034	4.713E+03	2.575E+06	1.730E+02	1.108E+01	3.090E+03	2.076E-01
2035	4.528E+03	2.474E+06	1.662E+02	1.064E+01	2.969E+03	1.995E-01
2036	4.351E+03	2.377E+06	1.597E+02	1.022E+01	2.852E+03	1.916E-01
2037	4.180E+03	2.284E+06	1.534E+02	9.823E+00	2.740E+03	1.841E-01
2038	4.016E+03	2.194E+06	1.474E+02	9.438E+00	2.633E+03	1.769E-01
2039	3.859E+03	2.108E+06	1.416E+02	9.068E+00	2.530E+03	1.700E-01
2040	3.708E+03	2.025E+06	1.361E+02	8.712E+00	2.431E+03	1.633E-01
2041	3.562E+03	1.946E+06	1.308E+02	8.371E+00	2.335E+03	1.569E-01
2042	3.423E+03	1.870E+06	1.256E+02	8.042E+00	2.244E+03	1.508E-01
2043	3.288E+03	1.796E+06	1.207E+02	7.727E+00	2.156E+03	1.448E-01
2044	3.159E+03	1.726E+06	1.160E+02	7.424E+00	2.071E+03	1.392E-01
2045	3.035E+03	1.658E+06	1.114E+02	7.133E+00	1.990E+03	1.337E-01
2046	2.916E+03	1.593E+06	1.071E+02	6.853E+00	1.912E+03	1.285E-01
2047	2.802E+03	1.531E+06	1.029E+02	6.584E+00	1.837E+03	1.234E-01
2048	2.692E+03	1.471E+06	9.882E+01	6.326E+00	1.765E+03	1.186E-01
2049	2.587E+03	1.413E+06	9.495E+01	6.078E+00	1.696E+03	1.139E-01
2050	2.485E+03	1.358E+06	9.122E+01	5.840E+00	1.629E+03	1.095E-01
2051	2.388E+03	1.304E+06	8.765E+01	5.611E+00	1.565E+03	1.052E-01
2052	2.294E+03	1.253E+06	8.421E+01	5.391E+00	1.504E+03	1.011E-01
2053	2.204E+03	1.204E+06	8.091E+01	5.180E+00	1.445E+03	9.709E-02
2054	2.118E+03	1.157E+06	7.774E+01	4.976E+00	1.388E+03	9.328E-02
2055	2.035E+03	1.112E+06	7.469E+01	4.781E+00	1.334E+03	8.962E-02
2056	1.955E+03	1.068E+06	7.176E+01	4.594E+00	1.282E+03	8.611E-02
2057	1.878E+03	1.026E+06	6.894E+01	4.414E+00	1.231E+03	8.273E-02
2058	1.805E+03	9.859E+05	6.624E+01	4.241E+00	1.183E+03	7.949E-02
2059	1.734E+03	9.472E+05	6.364E+01	4.074E+00	1.137E+03	7.637E-02
2060	1.666E+03	9.101E+05	6.115E+01	3.915E+00	1.092E+03	7.338E-02
2061	1.601E+03	8.744E+05	5.875E+01	3.761E+00	1.049E+03	7.050E-02
2062	1.538E+03	8.401E+05	5.645E+01	3.614E+00	1.008E+03	6.774E-02
2063	1.478E+03	8.072E+05	5.423E+01	3.472E+00	9.686E+02	6.508E-02
2064	1.420E+03	7.755E+05	5.211E+01	3.336E+00	9.306E+02	6.253E-02
2065	1.364E+03	7.451E+05	5.006E+01	3.205E+00	8.941E+02	6.008E-02
2066	1.310E+03	7.159E+05	4.810E+01	3.079E+00	8.591E+02	5.772E-02
2067	1.259E+03	6.878E+05	4.622E+01	2.959E+00	8.254E+02	5.546E-02
2068	1.210E+03	6.609E+05	4.440E+01	2.843E+00	7.930E+02	5.328E-02
2069	1.162E+03	6.349E+05	4.266E+01	2.731E+00	7.619E+02	5.119E-02
2070	1.117E+03	6.101E+05	4.099E+01	2.624E+00	7.321E+02	4.919E-02

Results (Continued)

Year	Carbon dioxide			NMOC		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2071	1.073E+03	5.861E+05	3.938E+01	2.521E+00	7.034E+02	4.726E-02
2072	1.031E+03	5.631E+05	3.784E+01	2.422E+00	6.758E+02	4.541E-02
2073	9.904E+02	5.411E+05	3.635E+01	2.327E+00	6.493E+02	4.362E-02
2074	9.516E+02	5.199E+05	3.493E+01	2.236E+00	6.238E+02	4.191E-02
2075	9.143E+02	4.995E+05	3.356E+01	2.148E+00	5.994E+02	4.027E-02
2076	8.784E+02	4.799E+05	3.224E+01	2.064E+00	5.759E+02	3.869E-02
2077	8.440E+02	4.611E+05	3.098E+01	1.983E+00	5.533E+02	3.717E-02
2078	8.109E+02	4.430E+05	2.976E+01	1.905E+00	5.316E+02	3.572E-02
2079	7.791E+02	4.256E+05	2.860E+01	1.831E+00	5.107E+02	3.432E-02
2080	7.485E+02	4.089E+05	2.748E+01	1.759E+00	4.907E+02	3.297E-02
2081	7.192E+02	3.929E+05	2.640E+01	1.690E+00	4.715E+02	3.168E-02
2082	6.910E+02	3.775E+05	2.536E+01	1.624E+00	4.530E+02	3.044E-02
2083	6.639E+02	3.627E+05	2.437E+01	1.560E+00	4.352E+02	2.924E-02
2084	6.379E+02	3.485E+05	2.341E+01	1.499E+00	4.182E+02	2.810E-02
2085	6.129E+02	3.348E+05	2.250E+01	1.440E+00	4.018E+02	2.699E-02
2086	5.888E+02	3.217E+05	2.161E+01	1.384E+00	3.860E+02	2.594E-02
2087	5.657E+02	3.091E+05	2.077E+01	1.329E+00	3.709E+02	2.492E-02
2088	5.436E+02	2.969E+05	1.995E+01	1.277E+00	3.563E+02	2.394E-02
2089	5.222E+02	2.853E+05	1.917E+01	1.227E+00	3.424E+02	2.300E-02
2090	5.018E+02	2.741E+05	1.842E+01	1.179E+00	3.289E+02	2.210E-02
2091	4.821E+02	2.634E+05	1.770E+01	1.133E+00	3.160E+02	2.123E-02
2092	4.632E+02	2.530E+05	1.700E+01	1.088E+00	3.036E+02	2.040E-02
2093	4.450E+02	2.431E+05	1.633E+01	1.046E+00	2.917E+02	1.960E-02
2094	4.276E+02	2.336E+05	1.569E+01	1.005E+00	2.803E+02	1.883E-02
2095	4.108E+02	2.244E+05	1.508E+01	9.653E-01	2.693E+02	1.809E-02
2096	3.947E+02	2.156E+05	1.449E+01	9.275E-01	2.588E+02	1.739E-02
2097	3.792E+02	2.072E+05	1.392E+01	8.911E-01	2.486E+02	1.670E-02
2098	3.644E+02	1.990E+05	1.337E+01	8.562E-01	2.389E+02	1.605E-02
2099	3.501E+02	1.912E+05	1.285E+01	8.226E-01	2.295E+02	1.542E-02
2100	3.363E+02	1.837E+05	1.235E+01	7.903E-01	2.205E+02	1.481E-02
2101	3.232E+02	1.765E+05	1.186E+01	7.594E-01	2.118E+02	1.423E-02
2102	3.105E+02	1.696E+05	1.140E+01	7.296E-01	2.035E+02	1.368E-02
2103	2.983E+02	1.630E+05	1.095E+01	7.010E-01	1.956E+02	1.314E-02
2104	2.866E+02	1.566E+05	1.052E+01	6.735E-01	1.879E+02	1.262E-02
2105	2.754E+02	1.504E+05	1.011E+01	6.471E-01	1.805E+02	1.213E-02
2106	2.646E+02	1.445E+05	9.711E+00	6.217E-01	1.734E+02	1.165E-02
2107	2.542E+02	1.389E+05	9.331E+00	5.973E-01	1.666E+02	1.120E-02
2108	2.442E+02	1.334E+05	8.965E+00	5.739E-01	1.601E+02	1.076E-02
2109	2.347E+02	1.282E+05	8.613E+00	5.514E-01	1.538E+02	1.034E-02
2110	2.255E+02	1.232E+05	8.276E+00	5.298E-01	1.478E+02	9.931E-03



Summary Report

Landfill Name or Identifier: Secteur d'agrandissement - LET de Magog

Date: 22 septembre, 2005

Description/Comments:

About LandGEM:

First-Order Decomposition Rate Equation:

$$Q_{CH_4} = \sum_{i=1}^n \sum_{j=0.1}^1 kL_o \left(\frac{M_i}{10} \right) e^{-kt_{ij}}$$

Where,

Q_{CH_4} = annual methane generation in the year of the calculation ($m^3/year$)

i = 1-year time increment

n = (year of the calculation) - (initial year of waste acceptance)

j = 0.1-year time increment

k = methane generation rate ($year^{-1}$)

L_o = potential methane generation capacity (m^3/Mg)

M_i = mass of waste accepted in the i^{th} year (Mg)

t_{ij} = age of the j^{th} section of waste mass M_i accepted in the i^{th} year (*decimal years*, e.g., 3.2 years)

LandGEM is based on a first-order decomposition rate equation for quantifying emissions from the decomposition of landfilled waste in municipal solid waste (MSW) landfills. The software provides a relatively simple approach to estimating landfill gas emissions. Model defaults are based on empirical data from U.S. landfills. Field test data can also be used in place of model defaults when available. Further guidance on EPA test methods, Clean Air Act (CAA) regulations, and other guidance regarding landfill gas emissions and control technology requirements can be found at <http://www.epa.gov/ttnatw01/landfill/landflpg.html>.

LandGEM is considered a screening tool — the better the input data, the better the estimates. Often, there are limitations with the available data regarding waste quantity and composition, variation in design and operating practices over time, and changes occurring over time that impact the emissions potential. Changes to landfill operation, such as operating under wet conditions through leachate recirculation or other liquid additions, will result in generating more gas at a faster rate. Defaults for estimating emissions for this type of operation are being developed to include in LandGEM along with defaults for conventional landfills (no leachate or liquid additions) for developing emission inventories and determining CAA applicability. Refer to the Web site identified above for future updates.

Input Review

LANDFILL CHARACTERISTICS

Landfill Open Year	2007	
Landfill Closure Year (with 80-year limit)	2032	
Actual Closure Year (without limit)	2032	
Have Model Calculate Closure Year?	No	
Waste Design Capacity	1 500 000	<i>megagrams</i>

MODEL PARAMETERS

Methane Generation Rate, k	0.045	<i>year⁻¹</i>
Potential Methane Generation Capacity, L ₀	135	<i>m³/Mg</i>
NMOC Concentration	600	<i>ppmv as hexane</i>
Methane Content	50	<i>% by volume</i>

GASES / POLLUTANTS SELECTED

Gas / Pollutant #1:	Total landfill gas
Gas / Pollutant #2:	Methane
Gas / Pollutant #3:	Carbon dioxide
Gas / Pollutant #4:	NMOC

WASTE ACCEPTANCE RATES

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	(short tons/year)	(Mg)	(short tons)
2007	59 500	65 450	0	0
2008	60 000	66 000	59 500	65 450
2009	60 000	66 000	119 500	131 450
2010	60 000	66 000	179 500	197 450
2011	60 000	66 000	239 500	263 450
2012	60 000	66 000	299 500	329 450
2013	60 000	66 000	359 500	395 450
2014	60 000	66 000	419 500	461 450
2015	60 000	66 000	479 500	527 450
2016	60 000	66 000	539 500	593 450
2017	60 000	66 000	599 500	659 450
2018	60 000	66 000	659 500	725 450
2019	60 000	66 000	719 500	791 450
2020	60 000	66 000	779 500	857 450
2021	60 000	66 000	839 500	923 450
2022	60 000	66 000	899 500	989 450
2023	60 000	66 000	959 500	1 055 450
2024	60 000	66 000	1 019 500	1 121 450
2025	60 000	66 000	1 079 500	1 187 450
2026	60 000	66 000	1 139 500	1 253 450
2027	60 000	66 000	1 199 500	1 319 450
2028	60 000	66 000	1 259 500	1 385 450
2029	60 000	66 000	1 319 500	1 451 450
2030	60 000	66 000	1 379 500	1 517 450
2031	60 000	66 000	1 439 500	1 583 450
2032	500	550	1 499 500	1 649 450
2033	0	0	1 500 000	1 650 000
2034	0	0	1 500 000	1 650 000
2035	0	0	1 500 000	1 650 000
2036	0	0	1 500 000	1 650 000
2037	0	0	1 500 000	1 650 000
2038	0	0	1 500 000	1 650 000
2039	0	0	1 500 000	1 650 000
2040	0	0	1 500 000	1 650 000
2041	0	0	1 500 000	1 650 000
2042	0	0	1 500 000	1 650 000
2043	0	0	1 500 000	1 650 000
2044	0	0	1 500 000	1 650 000
2045	0	0	1 500 000	1 650 000
2046	0	0	1 500 000	1 650 000

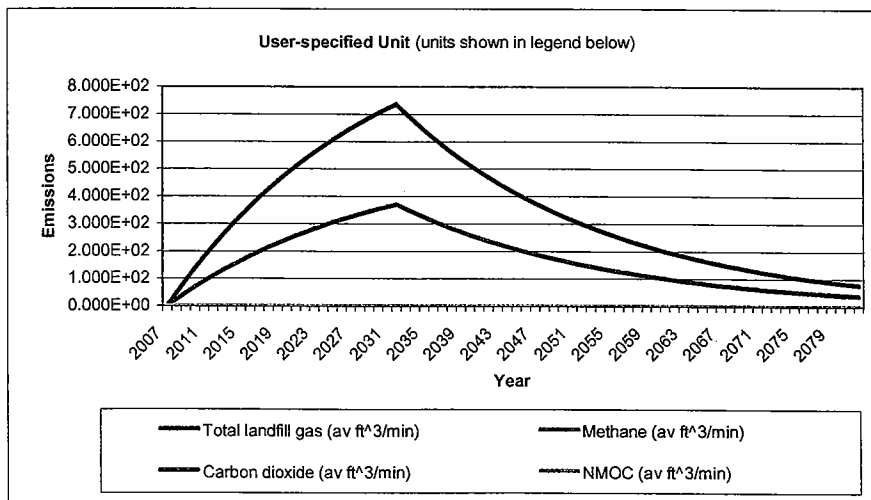
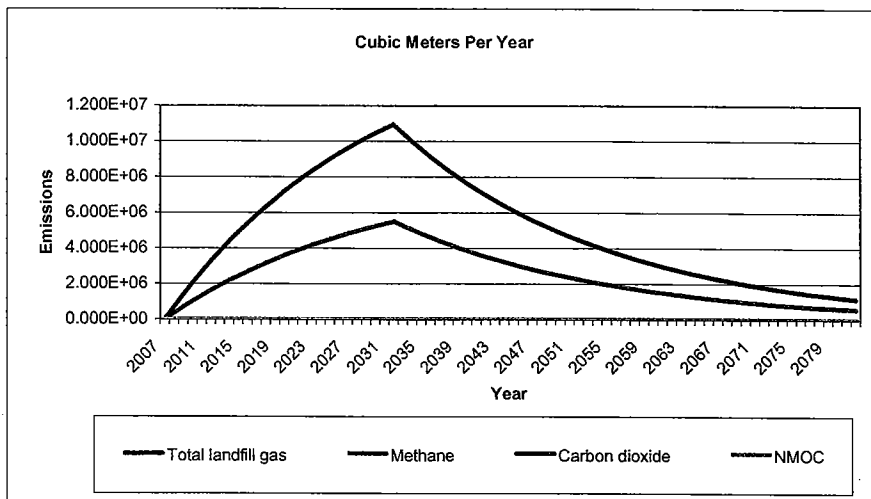
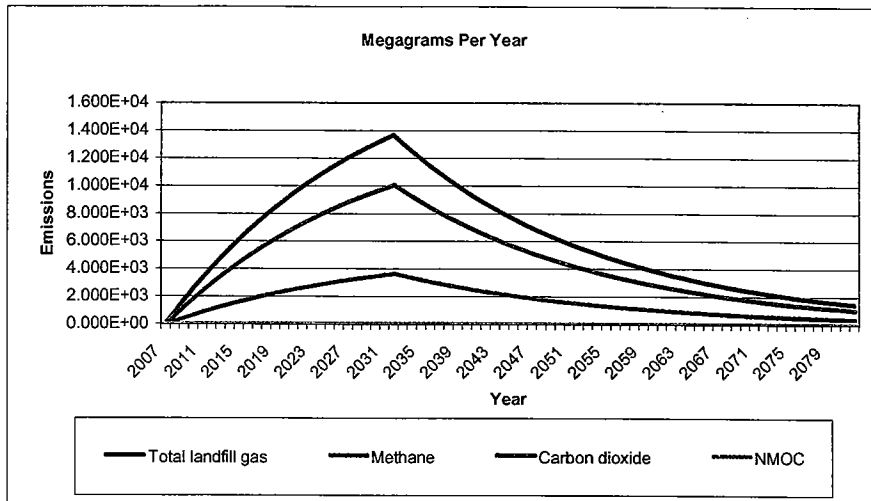
WASTE ACCEPTANCE RATES (Continued)

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	(short tons/year)	(Mg)	(short tons)
2047	0	0	1 500 000	1 650 000
2048	0	0	1 500 000	1 650 000
2049	0	0	1 500 000	1 650 000
2050	0	0	1 500 000	1 650 000
2051	0	0	1 500 000	1 650 000
2052	0	0	1 500 000	1 650 000
2053	0	0	1 500 000	1 650 000
2054	0	0	1 500 000	1 650 000
2055	0	0	1 500 000	1 650 000
2056	0	0	1 500 000	1 650 000
2057	0	0	1 500 000	1 650 000
2058	0	0	1 500 000	1 650 000
2059	0	0	1 500 000	1 650 000
2060	0	0	1 500 000	1 650 000
2061	0	0	1 500 000	1 650 000
2062	0	0	1 500 000	1 650 000
2063	0	0	1 500 000	1 650 000
2064	0	0	1 500 000	1 650 000
2065	0	0	1 500 000	1 650 000
2066	0	0	1 500 000	1 650 000
2067	0	0	1 500 000	1 650 000
2068	0	0	1 500 000	1 650 000
2069	0	0	1 500 000	1 650 000
2070	0	0	1 500 000	1 650 000
2071	0	0	1 500 000	1 650 000
2072	0	0	1 500 000	1 650 000
2073	0	0	1 500 000	1 650 000
2074	0	0	1 500 000	1 650 000
2075	0	0	1 500 000	1 650 000
2076	0	0	1 500 000	1 650 000
2077	0	0	1 500 000	1 650 000
2078	0	0	1 500 000	1 650 000
2079	0	0	1 500 000	1 650 000
2080	0	0	1 500 000	1 650 000
2081	0	0	1 500 000	1 650 000
2082	0	0	1 500 000	1 650 000
2083	0	0	1 500 000	1 650 000
2084	0	0	1 500 000	1 650 000
2085	0	0	1 500 000	1 650 000
2086	0	0	1 500 000	1 650 000

Pollutant Parameters

Gas / Pollutant Default Parameters:				User-specified Pollutant Parameters:	
	Compound	Concentration (ppmv)	Molecular Weight	Concentration (ppmv)	Molecular Weight
Gases	Total landfill gas		0.00		
	Methane		16.04		
	Carbon dioxide		44.01		
	NMOC	4 000	86.18		
Pollutants	1,1,1-Trichloroethane (methyl chloroform) - HAP	0.48	133.41		
	1,1,2,2-Tetrachloroethane - HAP/VOC	1.1	167.85		
	1,1-Dichloroethane (ethylidene dichloride) - HAP/VOC	2.4	98.97		
	1,1-Dichloroethene (vinylidene chloride) - HAP/VOC	0.20	96.94		
	1,2-Dichloroethane (ethylene dichloride) - HAP/VOC	0.41	98.96		
	1,2-Dichloropropane (propylene dichloride) - HAP/VOC	0.18	112.99		
	2-Propanol (isopropyl alcohol) - VOC	50	60.11		
	Acetone	7.0	58.08		
	Acrylonitrile - HAP/VOC	6.3	53.06		
	Benzene - No or Unknown Co-disposal - HAP/VOC	1.9	78.11		
	Benzene - Co-disposal - HAP/VOC	11	78.11		
	Bromodichloromethane - VOC	3.1	163.83		
	Butane - VOC	5.0	58.12		
	Carbon disulfide - HAP/VOC	0.58	76.13		
	Carbon monoxide	140	28.01		
	Carbon tetrachloride - HAP/VOC	4.0E-03	153.84		
	Carbonyl sulfide - HAP/VOC	0.49	60.07		
	Chlorobenzene - HAP/VOC	0.25	112.56		
	Chlorodifluoromethane	1.3	86.47		
	Chloroethane (ethyl chloride) - HAP/VOC	1.3	64.52		
	Chloroform - HAP/VOC	0.03	119.39		
	Chloromethane - VOC	1.2	50.49		
	Dichlorobenzene - (HAP for para isomer/VOC)	0.21	147		
	Dichlorodifluoromethane	16	120.91		
	Dichlorofluoromethane - VOC	2.6	102.92		
	Dichloromethane (methylene chloride) - HAP	14	84.94		
	Dimethyl sulfide (methyl sulfide) - VOC	7.8	62.13		
	Ethane	890	30.07		
	Ethanol - VOC	27	46.08		

Graphs



Results

Year	Total landfill gas			Methane		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2007	0	0	0	0	0	0
2008	8.848E+02	7.085E+05	4.760E+01	2.363E+02	3.542E+05	2.380E+01
2009	1.738E+03	1.392E+06	9.351E+01	4.643E+02	6.959E+05	4.676E+01
2010	2.554E+03	2.045E+06	1.374E+02	6.821E+02	1.022E+06	6.870E+01
2011	3.334E+03	2.669E+06	1.794E+02	8.905E+02	1.335E+06	8.968E+01
2012	4.079E+03	3.266E+06	2.195E+02	1.090E+03	1.633E+06	1.097E+02
2013	4.792E+03	3.837E+06	2.578E+02	1.280E+03	1.919E+06	1.289E+02
2014	5.473E+03	4.383E+06	2.945E+02	1.462E+03	2.191E+06	1.472E+02
2015	6.125E+03	4.904E+06	3.295E+02	1.636E+03	2.452E+06	1.648E+02
2016	6.747E+03	5.403E+06	3.630E+02	1.802E+03	2.701E+06	1.815E+02
2017	7.343E+03	5.880E+06	3.951E+02	1.961E+03	2.940E+06	1.975E+02
2018	7.912E+03	6.335E+06	4.257E+02	2.113E+03	3.168E+06	2.128E+02
2019	8.456E+03	6.771E+06	4.549E+02	2.259E+03	3.386E+06	2.275E+02
2020	8.976E+03	7.188E+06	4.829E+02	2.398E+03	3.594E+06	2.415E+02
2021	9.473E+03	7.586E+06	5.097E+02	2.530E+03	3.793E+06	2.548E+02
2022	9.949E+03	7.966E+06	5.353E+02	2.657E+03	3.983E+06	2.676E+02
2023	1.040E+04	8.330E+06	5.597E+02	2.779E+03	4.165E+06	2.799E+02
2024	1.084E+04	8.678E+06	5.831E+02	2.895E+03	4.339E+06	2.915E+02
2025	1.125E+04	9.011E+06	6.054E+02	3.006E+03	4.505E+06	3.027E+02
2026	1.165E+04	9.329E+06	6.268E+02	3.112E+03	4.664E+06	3.134E+02
2027	1.203E+04	9.633E+06	6.472E+02	3.213E+03	4.816E+06	3.236E+02
2028	1.239E+04	9.923E+06	6.667E+02	3.310E+03	4.962E+06	3.334E+02
2029	1.274E+04	1.020E+07	6.854E+02	3.403E+03	5.101E+06	3.427E+02
2030	1.307E+04	1.047E+07	7.033E+02	3.491E+03	5.233E+06	3.516E+02
2031	1.339E+04	1.072E+07	7.203E+02	3.576E+03	5.360E+06	3.602E+02
2032	1.369E+04	1.096E+07	7.366E+02	3.657E+03	5.482E+06	3.683E+02
2033	1.310E+04	1.049E+07	7.046E+02	3.498E+03	5.243E+06	3.523E+02
2034	1.252E+04	1.003E+07	6.736E+02	3.344E+03	5.013E+06	3.368E+02
2035	1.197E+04	9.584E+06	6.440E+02	3.197E+03	4.792E+06	3.220E+02
2036	1.144E+04	9.162E+06	6.156E+02	3.056E+03	4.581E+06	3.078E+02
2037	1.094E+04	8.759E+06	5.885E+02	2.922E+03	4.380E+06	2.943E+02
2038	1.046E+04	8.374E+06	5.626E+02	2.793E+03	4.187E+06	2.813E+02
2039	9.997E+03	8.005E+06	5.379E+02	2.670E+03	4.003E+06	2.689E+02
2040	9.557E+03	7.653E+06	5.142E+02	2.553E+03	3.827E+06	2.571E+02
2041	9.137E+03	7.316E+06	4.916E+02	2.441E+03	3.658E+06	2.458E+02
2042	8.735E+03	6.994E+06	4.700E+02	2.333E+03	3.497E+06	2.350E+02
2043	8.350E+03	6.687E+06	4.493E+02	2.231E+03	3.343E+06	2.246E+02
2044	7.983E+03	6.392E+06	4.295E+02	2.132E+03	3.196E+06	2.148E+02
2045	7.632E+03	6.111E+06	4.106E+02	2.039E+03	3.056E+06	2.053E+02
2046	7.296E+03	5.842E+06	3.925E+02	1.949E+03	2.921E+06	1.963E+02
2047	6.975E+03	5.585E+06	3.753E+02	1.863E+03	2.793E+06	1.876E+02
2048	6.668E+03	5.339E+06	3.588E+02	1.781E+03	2.670E+06	1.794E+02
2049	6.375E+03	5.104E+06	3.430E+02	1.703E+03	2.552E+06	1.715E+02
2050	6.094E+03	4.880E+06	3.279E+02	1.628E+03	2.440E+06	1.639E+02
2051	5.826E+03	4.665E+06	3.134E+02	1.556E+03	2.333E+06	1.567E+02
2052	5.570E+03	4.460E+06	2.997E+02	1.488E+03	2.230E+06	1.498E+02
2053	5.324E+03	4.264E+06	2.865E+02	1.422E+03	2.132E+06	1.432E+02
2054	5.090E+03	4.076E+06	2.739E+02	1.360E+03	2.038E+06	1.369E+02
2055	4.866E+03	3.897E+06	2.618E+02	1.300E+03	1.948E+06	1.309E+02
2056	4.652E+03	3.725E+06	2.503E+02	1.243E+03	1.863E+06	1.251E+02

Results (Continued)

Year	Total landfill gas			Methane		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2057	4.447E+03	3.561E+06	2.393E+02	1.188E+03	1.781E+06	1.196E+02
2058	4.252E+03	3.405E+06	2.288E+02	1.136E+03	1.702E+06	1.144E+02
2059	4.065E+03	3.255E+06	2.187E+02	1.086E+03	1.627E+06	1.093E+02
2060	3.886E+03	3.112E+06	2.091E+02	1.038E+03	1.556E+06	1.045E+02
2061	3.715E+03	2.975E+06	1.999E+02	9.923E+02	1.487E+06	9.993E+01
2062	3.551E+03	2.844E+06	1.911E+02	9.486E+02	1.422E+06	9.553E+01
2063	3.395E+03	2.719E+06	1.827E+02	9.069E+02	1.359E+06	9.133E+01
2064	3.246E+03	2.599E+06	1.746E+02	8.670E+02	1.299E+06	8.731E+01
2065	3.103E+03	2.485E+06	1.669E+02	8.288E+02	1.242E+06	8.347E+01
2066	2.966E+03	2.375E+06	1.596E+02	7.923E+02	1.188E+06	7.980E+01
2067	2.836E+03	2.271E+06	1.526E+02	7.575E+02	1.135E+06	7.629E+01
2068	2.711E+03	2.171E+06	1.459E+02	7.241E+02	1.085E+06	7.293E+01
2069	2.592E+03	2.075E+06	1.394E+02	6.923E+02	1.038E+06	6.972E+01
2070	2.478E+03	1.984E+06	1.333E+02	6.618E+02	9.920E+05	6.665E+01
2071	2.369E+03	1.897E+06	1.274E+02	6.327E+02	9.484E+05	6.372E+01
2072	2.264E+03	1.813E+06	1.218E+02	6.049E+02	9.066E+05	6.092E+01
2073	2.165E+03	1.733E+06	1.165E+02	5.782E+02	8.667E+05	5.824E+01
2074	2.070E+03	1.657E+06	1.113E+02	5.528E+02	8.286E+05	5.567E+01
2075	1.978E+03	1.584E+06	1.064E+02	5.285E+02	7.921E+05	5.322E+01
2076	1.891E+03	1.515E+06	1.018E+02	5.052E+02	7.573E+05	5.088E+01
2077	1.808E+03	1.448E+06	9.728E+01	4.830E+02	7.240E+05	4.864E+01
2078	1.729E+03	1.384E+06	9.300E+01	4.617E+02	6.921E+05	4.650E+01
2079	1.653E+03	1.323E+06	8.891E+01	4.414E+02	6.616E+05	4.446E+01
2080	1.580E+03	1.265E+06	8.500E+01	4.220E+02	6.325E+05	4.250E+01
2081	1.510E+03	1.209E+06	8.126E+01	4.034E+02	6.047E+05	4.063E+01
2082	1.444E+03	1.156E+06	7.768E+01	3.857E+02	5.781E+05	3.884E+01
2083	1.380E+03	1.105E+06	7.426E+01	3.687E+02	5.526E+05	3.713E+01
2084	1.320E+03	1.057E+06	7.100E+01	3.525E+02	5.283E+05	3.550E+01
2085	1.262E+03	1.010E+06	6.787E+01	3.370E+02	5.051E+05	3.394E+01
2086	1.206E+03	9.657E+05	6.489E+01	3.221E+02	4.829E+05	3.244E+01
2087	1.153E+03	9.232E+05	6.203E+01	3.080E+02	4.616E+05	3.102E+01
2088	1.102E+03	8.826E+05	5.930E+01	2.944E+02	4.413E+05	2.965E+01
2089	1.054E+03	8.438E+05	5.669E+01	2.815E+02	4.219E+05	2.835E+01
2090	1.007E+03	8.066E+05	5.420E+01	2.691E+02	4.033E+05	2.710E+01
2091	9.630E+02	7.711E+05	5.181E+01	2.572E+02	3.856E+05	2.591E+01
2092	9.206E+02	7.372E+05	4.953E+01	2.459E+02	3.686E+05	2.477E+01
2093	8.801E+02	7.048E+05	4.735E+01	2.351E+02	3.524E+05	2.368E+01
2094	8.414E+02	6.738E+05	4.527E+01	2.247E+02	3.369E+05	2.263E+01
2095	8.044E+02	6.441E+05	4.328E+01	2.149E+02	3.221E+05	2.164E+01
2096	7.690E+02	6.158E+05	4.137E+01	2.054E+02	3.079E+05	2.069E+01
2097	7.351E+02	5.887E+05	3.955E+01	1.964E+02	2.943E+05	1.978E+01
2098	7.028E+02	5.628E+05	3.781E+01	1.877E+02	2.814E+05	1.891E+01
2099	6.719E+02	5.380E+05	3.615E+01	1.795E+02	2.690E+05	1.807E+01
2100	6.423E+02	5.143E+05	3.456E+01	1.716E+02	2.572E+05	1.728E+01
2101	6.140E+02	4.917E+05	3.304E+01	1.640E+02	2.459E+05	1.652E+01
2102	5.870E+02	4.701E+05	3.158E+01	1.568E+02	2.350E+05	1.579E+01
2103	5.612E+02	4.494E+05	3.019E+01	1.499E+02	2.247E+05	1.510E+01
2104	5.365E+02	4.296E+05	2.887E+01	1.433E+02	2.148E+05	1.443E+01
2105	5.129E+02	4.107E+05	2.760E+01	1.370E+02	2.054E+05	1.380E+01
2106	4.903E+02	3.926E+05	2.638E+01	1.310E+02	1.963E+05	1.319E+01
2107	4.688E+02	3.754E+05	2.522E+01	1.252E+02	1.877E+05	1.261E+01

Results (Continued)

Year	Total landfill gas			Methane		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2108	4.481E+02	3.588E+05	2.411E+01	1.197E+02	1.794E+05	1.206E+01
2109	4.284E+02	3.430E+05	2.305E+01	1.144E+02	1.715E+05	1.152E+01
2110	4.096E+02	3.280E+05	2.204E+01	1.094E+02	1.640E+05	1.102E+01
2111	3.915E+02	3.135E+05	2.107E+01	1.046E+02	1.568E+05	1.053E+01
2112	3.743E+02	2.997E+05	2.014E+01	9.998E+01	1.499E+05	1.007E+01
2113	3.578E+02	2.865E+05	1.925E+01	9.558E+01	1.433E+05	9.626E+00
2114	3.421E+02	2.739E+05	1.841E+01	9.138E+01	1.370E+05	9.203E+00
2115	3.270E+02	2.619E+05	1.760E+01	8.736E+01	1.309E+05	8.798E+00
2116	3.126E+02	2.504E+05	1.682E+01	8.351E+01	1.252E+05	8.411E+00
2117	2.989E+02	2.393E+05	1.608E+01	7.984E+01	1.197E+05	8.041E+00
2118	2.857E+02	2.288E+05	1.537E+01	7.632E+01	1.144E+05	7.687E+00
2119	2.732E+02	2.187E+05	1.470E+01	7.297E+01	1.094E+05	7.348E+00
2120	2.611E+02	2.091E+05	1.405E+01	6.975E+01	1.046E+05	7.025E+00
2121	2.497E+02	1.999E+05	1.343E+01	6.669E+01	9.996E+04	6.716E+00
2122	2.387E+02	1.911E+05	1.284E+01	6.375E+01	9.556E+04	6.420E+00
2123	2.282E+02	1.827E+05	1.228E+01	6.095E+01	9.135E+04	6.138E+00
2124	2.181E+02	1.747E+05	1.174E+01	5.826E+01	8.733E+04	5.868E+00
2125	2.085E+02	1.670E+05	1.122E+01	5.570E+01	8.349E+04	5.610E+00
2126	1.994E+02	1.596E+05	1.073E+01	5.325E+01	7.982E+04	5.363E+00
2127	1.906E+02	1.526E+05	1.025E+01	5.091E+01	7.630E+04	5.127E+00
2128	1.822E+02	1.459E+05	9.803E+00	4.867E+01	7.295E+04	4.901E+00
2129	1.742E+02	1.395E+05	9.371E+00	4.652E+01	6.974E+04	4.686E+00
2130	1.665E+02	1.333E+05	8.959E+00	4.448E+01	6.667E+04	4.479E+00
2131	1.592E+02	1.275E+05	8.565E+00	4.252E+01	6.373E+04	4.282E+00
2132	1.522E+02	1.219E+05	8.188E+00	4.065E+01	6.093E+04	4.094E+00
2133	1.455E+02	1.165E+05	7.827E+00	3.886E+01	5.825E+04	3.914E+00
2134	1.391E+02	1.114E+05	7.483E+00	3.715E+01	5.569E+04	3.742E+00
2135	1.330E+02	1.065E+05	7.154E+00	3.552E+01	5.324E+04	3.577E+00
2136	1.271E+02	1.018E+05	6.839E+00	3.395E+01	5.089E+04	3.419E+00
2137	1.215E+02	9.731E+04	6.538E+00	3.246E+01	4.865E+04	3.269E+00
2138	1.162E+02	9.303E+04	6.250E+00	3.103E+01	4.651E+04	3.125E+00
2139	1.111E+02	8.893E+04	5.975E+00	2.967E+01	4.447E+04	2.988E+00
2140	1.062E+02	8.502E+04	5.712E+00	2.836E+01	4.251E+04	2.856E+00
2141	1.015E+02	8.128E+04	5.461E+00	2.711E+01	4.064E+04	2.731E+00
2142	9.704E+01	7.770E+04	5.221E+00	2.592E+01	3.885E+04	2.610E+00
2143	9.277E+01	7.428E+04	4.991E+00	2.478E+01	3.714E+04	2.496E+00
2144	8.868E+01	7.101E+04	4.771E+00	2.369E+01	3.551E+04	2.386E+00
2145	8.478E+01	6.789E+04	4.561E+00	2.265E+01	3.394E+04	2.281E+00
2146	8.105E+01	6.490E+04	4.361E+00	2.165E+01	3.245E+04	2.180E+00
2147	7.748E+01	6.205E+04	4.169E+00	2.070E+01	3.102E+04	2.084E+00

Results (Continued)

Year	Carbon dioxide			NMOC		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2007	0	0	0	0	0	0
2008	6.484E+02	3.542E+05	2.380E+01	1.524E+00	4.251E+02	2.856E-02
2009	1.274E+03	6.959E+05	4.676E+01	2.993E+00	8.351E+02	5.611E-02
2010	1.872E+03	1.022E+06	6.870E+01	4.398E+00	1.227E+03	8.244E-02
2011	2.443E+03	1.335E+06	8.968E+01	5.741E+00	1.602E+03	1.076E-01
2012	2.990E+03	1.633E+06	1.097E+02	7.025E+00	1.960E+03	1.317E-01
2013	3.512E+03	1.919E+06	1.289E+02	8.252E+00	2.302E+03	1.547E-01
2014	4.011E+03	2.191E+06	1.472E+02	9.426E+00	2.630E+03	1.767E-01
2015	4.489E+03	2.452E+06	1.648E+02	1.055E+01	2.943E+03	1.977E-01
2016	4.945E+03	2.701E+06	1.815E+02	1.162E+01	3.242E+03	2.178E-01
2017	5.381E+03	2.940E+06	1.975E+02	1.265E+01	3.528E+03	2.370E-01
2018	5.798E+03	3.168E+06	2.128E+02	1.363E+01	3.801E+03	2.554E-01
2019	6.197E+03	3.386E+06	2.275E+02	1.456E+01	4.063E+03	2.730E-01
2020	6.578E+03	3.594E+06	2.415E+02	1.546E+01	4.313E+03	2.898E-01
2021	6.943E+03	3.793E+06	2.548E+02	1.631E+01	4.551E+03	3.058E-01
2022	7.291E+03	3.983E+06	2.676E+02	1.713E+01	4.780E+03	3.212E-01
2023	7.624E+03	4.165E+06	2.799E+02	1.792E+01	4.998E+03	3.358E-01
2024	7.943E+03	4.339E+06	2.915E+02	1.866E+01	5.207E+03	3.499E-01
2025	8.247E+03	4.505E+06	3.027E+02	1.938E+01	5.406E+03	3.633E-01
2026	8.538E+03	4.664E+06	3.134E+02	2.006E+01	5.597E+03	3.761E-01
2027	8.816E+03	4.816E+06	3.236E+02	2.072E+01	5.780E+03	3.883E-01
2028	9.082E+03	4.962E+06	3.334E+02	2.134E+01	5.954E+03	4.000E-01
2029	9.337E+03	5.101E+06	3.427E+02	2.194E+01	6.121E+03	4.112E-01
2030	9.580E+03	5.233E+06	3.516E+02	2.251E+01	6.280E+03	4.220E-01
2031	9.812E+03	5.360E+06	3.602E+02	2.306E+01	6.432E+03	4.322E-01
2032	1.003E+04	5.482E+06	3.683E+02	2.358E+01	6.578E+03	4.420E-01
2033	9.598E+03	5.243E+06	3.523E+02	2.255E+01	6.292E+03	4.228E-01
2034	9.176E+03	5.013E+06	3.368E+02	2.156E+01	6.015E+03	4.042E-01
2035	8.772E+03	4.792E+06	3.220E+02	2.061E+01	5.751E+03	3.864E-01
2036	8.386E+03	4.581E+06	3.078E+02	1.971E+01	5.497E+03	3.694E-01
2037	8.017E+03	4.380E+06	2.943E+02	1.884E+01	5.256E+03	3.531E-01
2038	7.664E+03	4.187E+06	2.813E+02	1.801E+01	5.024E+03	3.376E-01
2039	7.327E+03	4.003E+06	2.689E+02	1.722E+01	4.803E+03	3.227E-01
2040	7.005E+03	3.827E+06	2.571E+02	1.646E+01	4.592E+03	3.085E-01
2041	6.696E+03	3.658E+06	2.458E+02	1.574E+01	4.390E+03	2.950E-01
2042	6.402E+03	3.497E+06	2.350E+02	1.504E+01	4.197E+03	2.820E-01
2043	6.120E+03	3.343E+06	2.246E+02	1.438E+01	4.012E+03	2.696E-01
2044	5.851E+03	3.196E+06	2.148E+02	1.375E+01	3.835E+03	2.577E-01
2045	5.593E+03	3.056E+06	2.053E+02	1.314E+01	3.667E+03	2.464E-01
2046	5.347E+03	2.921E+06	1.963E+02	1.256E+01	3.505E+03	2.355E-01
2047	5.112E+03	2.793E+06	1.876E+02	1.201E+01	3.351E+03	2.252E-01
2048	4.887E+03	2.670E+06	1.794E+02	1.148E+01	3.204E+03	2.153E-01
2049	4.672E+03	2.552E+06	1.715E+02	1.098E+01	3.063E+03	2.058E-01
2050	4.466E+03	2.440E+06	1.639E+02	1.050E+01	2.928E+03	1.967E-01
2051	4.270E+03	2.333E+06	1.567E+02	1.003E+01	2.799E+03	1.881E-01
2052	4.082E+03	2.230E+06	1.498E+02	9.592E+00	2.676E+03	1.798E-01
2053	3.902E+03	2.132E+06	1.432E+02	9.170E+00	2.558E+03	1.719E-01
2054	3.731E+03	2.038E+06	1.369E+02	8.766E+00	2.446E+03	1.643E-01
2055	3.566E+03	1.948E+06	1.309E+02	8.380E+00	2.338E+03	1.571E-01
2056	3.409E+03	1.863E+06	1.251E+02	8.012E+00	2.235E+03	1.502E-01

Results (Continued)

Year	Carbon dioxide			NMOC		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2057	3.259E+03	1.781E+06	1.196E+02	7.659E+00	2.137E+03	1.436E-01
2058	3.116E+03	1.702E+06	1.144E+02	7.322E+00	2.043E+03	1.373E-01
2059	2.979E+03	1.627E+06	1.093E+02	7.000E+00	1.953E+03	1.312E-01
2060	2.848E+03	1.556E+06	1.045E+02	6.692E+00	1.867E+03	1.254E-01
2061	2.723E+03	1.487E+06	9.993E+01	6.397E+00	1.785E+03	1.199E-01
2062	2.603E+03	1.422E+06	9.553E+01	6.116E+00	1.706E+03	1.146E-01
2063	2.488E+03	1.359E+06	9.133E+01	5.847E+00	1.631E+03	1.096E-01
2064	2.379E+03	1.299E+06	8.731E+01	5.590E+00	1.559E+03	1.048E-01
2065	2.274E+03	1.242E+06	8.347E+01	5.344E+00	1.491E+03	1.002E-01
2066	2.174E+03	1.188E+06	7.980E+01	5.108E+00	1.425E+03	9.576E-02
2067	2.078E+03	1.135E+06	7.629E+01	4.884E+00	1.362E+03	9.154E-02
2068	1.987E+03	1.085E+06	7.293E+01	4.669E+00	1.303E+03	8.752E-02
2069	1.899E+03	1.038E+06	6.972E+01	4.463E+00	1.245E+03	8.366E-02
2070	1.816E+03	9.920E+05	6.665E+01	4.267E+00	1.190E+03	7.998E-02
2071	1.736E+03	9.484E+05	6.372E+01	4.079E+00	1.138E+03	7.646E-02
2072	1.660E+03	9.066E+05	6.092E+01	3.900E+00	1.088E+03	7.310E-02
2073	1.587E+03	8.667E+05	5.824E+01	3.728E+00	1.040E+03	6.988E-02
2074	1.517E+03	8.286E+05	5.567E+01	3.564E+00	9.943E+02	6.681E-02
2075	1.450E+03	7.921E+05	5.322E+01	3.407E+00	9.506E+02	6.387E-02
2076	1.386E+03	7.573E+05	5.088E+01	3.257E+00	9.087E+02	6.106E-02
2077	1.325E+03	7.240E+05	4.864E+01	3.114E+00	8.687E+02	5.837E-02
2078	1.267E+03	6.921E+05	4.650E+01	2.977E+00	8.305E+02	5.580E-02
2079	1.211E+03	6.616E+05	4.446E+01	2.846E+00	7.940E+02	5.335E-02
2080	1.158E+03	6.325E+05	4.250E+01	2.721E+00	7.590E+02	5.100E-02
2081	1.107E+03	6.047E+05	4.063E+01	2.601E+00	7.256E+02	4.876E-02
2082	1.058E+03	5.781E+05	3.884E+01	2.487E+00	6.937E+02	4.661E-02
2083	1.012E+03	5.526E+05	3.713E+01	2.377E+00	6.632E+02	4.456E-02
2084	9.671E+02	5.283E+05	3.550E+01	2.273E+00	6.340E+02	4.260E-02
2085	9.246E+02	5.051E+05	3.394E+01	2.173E+00	6.061E+02	4.072E-02
2086	8.839E+02	4.829E+05	3.244E+01	2.077E+00	5.794E+02	3.893E-02
2087	8.450E+02	4.616E+05	3.102E+01	1.986E+00	5.539E+02	3.722E-02
2088	8.078E+02	4.413E+05	2.965E+01	1.898E+00	5.296E+02	3.558E-02
2089	7.723E+02	4.219E+05	2.835E+01	1.815E+00	5.063E+02	3.402E-02
2090	7.383E+02	4.033E+05	2.710E+01	1.735E+00	4.840E+02	3.252E-02
2091	7.058E+02	3.856E+05	2.591E+01	1.658E+00	4.627E+02	3.109E-02
2092	6.747E+02	3.686E+05	2.477E+01	1.586E+00	4.423E+02	2.972E-02
2093	6.450E+02	3.524E+05	2.368E+01	1.516E+00	4.229E+02	2.841E-02
2094	6.167E+02	3.369E+05	2.263E+01	1.449E+00	4.043E+02	2.716E-02
2095	5.895E+02	3.221E+05	2.164E+01	1.385E+00	3.865E+02	2.597E-02
2096	5.636E+02	3.079E+05	2.069E+01	1.324E+00	3.695E+02	2.482E-02
2097	5.388E+02	2.943E+05	1.978E+01	1.266E+00	3.532E+02	2.373E-02
2098	5.151E+02	2.814E+05	1.891E+01	1.210E+00	3.377E+02	2.269E-02
2099	4.924E+02	2.690E+05	1.807E+01	1.157E+00	3.228E+02	2.169E-02
2100	4.707E+02	2.572E+05	1.728E+01	1.106E+00	3.086E+02	2.073E-02
2101	4.500E+02	2.459E+05	1.652E+01	1.057E+00	2.950E+02	1.982E-02
2102	4.302E+02	2.350E+05	1.579E+01	1.011E+00	2.820E+02	1.895E-02
2103	4.113E+02	2.247E+05	1.510E+01	9.665E-01	2.696E+02	1.812E-02
2104	3.932E+02	2.148E+05	1.443E+01	9.239E-01	2.578E+02	1.732E-02
2105	3.759E+02	2.054E+05	1.380E+01	8.833E-01	2.464E+02	1.656E-02
2106	3.594E+02	1.963E+05	1.319E+01	8.444E-01	2.356E+02	1.583E-02
2107	3.435E+02	1.877E+05	1.261E+01	8.073E-01	2.252E+02	1.513E-02

Results (Continued)

Year	Carbon dioxide			NMOC		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2108	3.284E+02	1.794E+05	1.206E+01	7.717E-01	2.153E+02	1.447E-02
2109	3.140E+02	1.715E+05	1.152E+01	7.378E-01	2.058E+02	1.383E-02
2110	3.002E+02	1.640E+05	1.102E+01	7.053E-01	1.968E+02	1.322E-02
2111	2.870E+02	1.568E+05	1.053E+01	6.743E-01	1.881E+02	1.264E-02
2112	2.743E+02	1.499E+05	1.007E+01	6.446E-01	1.798E+02	1.208E-02
2113	2.623E+02	1.433E+05	9.626E+00	6.163E-01	1.719E+02	1.155E-02
2114	2.507E+02	1.370E+05	9.203E+00	5.891E-01	1.644E+02	1.104E-02
2115	2.397E+02	1.309E+05	8.798E+00	5.632E-01	1.571E+02	1.056E-02
2116	2.291E+02	1.252E+05	8.411E+00	5.384E-01	1.502E+02	1.009E-02
2117	2.191E+02	1.197E+05	8.041E+00	5.147E-01	1.436E+02	9.649E-03
2118	2.094E+02	1.144E+05	7.687E+00	4.921E-01	1.373E+02	9.224E-03
2119	2.002E+02	1.094E+05	7.348E+00	4.704E-01	1.312E+02	8.818E-03
2120	1.914E+02	1.046E+05	7.025E+00	4.497E-01	1.255E+02	8.430E-03
2121	1.830E+02	9.996E+04	6.716E+00	4.299E-01	1.199E+02	8.059E-03
2122	1.749E+02	9.556E+04	6.420E+00	4.110E-01	1.147E+02	7.705E-03
2123	1.672E+02	9.135E+04	6.138E+00	3.929E-01	1.096E+02	7.366E-03
2124	1.599E+02	8.733E+04	5.868E+00	3.756E-01	1.048E+02	7.041E-03
2125	1.528E+02	8.349E+04	5.610E+00	3.591E-01	1.002E+02	6.732E-03
2126	1.461E+02	7.982E+04	5.363E+00	3.433E-01	9.578E+01	6.435E-03
2127	1.397E+02	7.630E+04	5.127E+00	3.282E-01	9.156E+01	6.152E-03
2128	1.335E+02	7.295E+04	4.901E+00	3.138E-01	8.754E+01	5.882E-03
2129	1.277E+02	6.974E+04	4.686E+00	3.000E-01	8.368E+01	5.623E-03
2130	1.220E+02	6.667E+04	4.479E+00	2.868E-01	8.000E+01	5.375E-03
2131	1.167E+02	6.373E+04	4.282E+00	2.741E-01	7.648E+01	5.139E-03
2132	1.115E+02	6.093E+04	4.094E+00	2.621E-01	7.312E+01	4.913E-03
2133	1.066E+02	5.825E+04	3.914E+00	2.505E-01	6.990E+01	4.696E-03
2134	1.019E+02	5.569E+04	3.742E+00	2.395E-01	6.682E+01	4.490E-03
2135	9.745E+01	5.324E+04	3.577E+00	2.290E-01	6.388E+01	4.292E-03
2136	9.316E+01	5.089E+04	3.419E+00	2.189E-01	6.107E+01	4.103E-03
2137	8.906E+01	4.865E+04	3.269E+00	2.093E-01	5.838E+01	3.923E-03
2138	8.514E+01	4.651E+04	3.125E+00	2.001E-01	5.582E+01	3.750E-03
2139	8.139E+01	4.447E+04	2.988E+00	1.913E-01	5.336E+01	3.585E-03
2140	7.781E+01	4.251E+04	2.856E+00	1.828E-01	5.101E+01	3.427E-03
2141	7.439E+01	4.064E+04	2.731E+00	1.748E-01	4.877E+01	3.277E-03
2142	7.112E+01	3.885E+04	2.610E+00	1.671E-01	4.662E+01	3.132E-03
2143	6.799E+01	3.714E+04	2.496E+00	1.598E-01	4.457E+01	2.995E-03
2144	6.500E+01	3.551E+04	2.386E+00	1.527E-01	4.261E+01	2.863E-03
2145	6.214E+01	3.394E+04	2.281E+00	1.460E-01	4.073E+01	2.737E-03
2146	5.940E+01	3.245E+04	2.180E+00	1.396E-01	3.894E+01	2.616E-03
2147	5.679E+01	3.102E+04	2.084E+00	1.334E-01	3.723E+01	2.501E-03