



Summary Report

Landfill Name or Identifier: LET Rédemption

Date: d mars yyyy

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	2008	
Landfill Closure Year (with 80-year limit)	2033	
Actual Closure Year (without limit)	2033	
Have Model Calculate Closure Year?	No	
Waste Design Capacity	595 000	<i>megagrams</i>

MODEL PARAMETERS

Methane Generation Rate, k	0,045	<i>year⁻¹</i>
Potential Methane Generation Capacity, L ₀	150	<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:	Dimethyl sulfide (methyl sulfide) - VOC
Gas / Pollutant #2:	Ethyl mercaptan (ethanethiol) - VOC
Gas / Pollutant #3:	Hydrogen sulfide
Gas / Pollutant #4:	Methyl mercaptan - VOC

WASTE ACCEPTANCE RATES

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	(short tons/year)	(Mg)	(short tons)
2008	23 800	26 180	0	0
2009	23 800	26 180	23 800	26 180
2010	23 800	26 180	47 600	52 360
2011	23 800	26 180	71 400	78 540
2012	23 800	26 180	95 200	104 720
2013	23 800	26 180	119 000	130 900
2014	23 800	26 180	142 800	157 080
2015	23 800	26 180	166 600	183 260
2016	23 800	26 180	190 400	209 440
2017	23 800	26 180	214 200	235 620
2018	23 800	26 180	238 000	261 800
2019	23 800	26 180	261 800	287 980
2020	23 800	26 180	285 600	314 160
2021	23 800	26 180	309 400	340 340
2022	23 800	26 180	333 200	366 520
2023	23 800	26 180	357 000	392 700
2024	23 800	26 180	380 800	418 880
2025	23 800	26 180	404 600	445 060
2026	23 800	26 180	428 400	471 240
2027	23 800	26 180	452 200	497 420
2028	23 800	26 180	476 000	523 600
2029	23 800	26 180	499 800	549 780
2030	23 800	26 180	523 600	575 960
2031	23 800	26 180	547 400	602 140
2032	23 800	26 180	571 200	628 320
2033	0	0	595 000	654 500
2034	0	0	595 000	654 500
2035	0	0	595 000	654 500
2036	0	0	595 000	654 500
2037	0	0	595 000	654 500
2038	0	0	595 000	654 500
2039	0	0	595 000	654 500
2040	0	0	595 000	654 500
2041	0	0	595 000	654 500
2042	0	0	595 000	654 500
2043	0	0	595 000	654 500
2044	0	0	595 000	654 500
2045	0	0	595 000	654 500
2046	0	0	595 000	654 500
2047	0	0	595 000	654 500

WASTE ACCEPTANCE RATES (Continued)

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	(short tons/year)	(Mg)	(short tons)
2048	0	0	595 000	654 500
2049	0	0	595 000	654 500
2050	0	0	595 000	654 500
2051	0	0	595 000	654 500
2052	0	0	595 000	654 500
2053	0	0	595 000	654 500
2054	0	0	595 000	654 500
2055	0	0	595 000	654 500
2056	0	0	595 000	654 500
2057	0	0	595 000	654 500
2058	0	0	595 000	654 500
2059	0	0	595 000	654 500
2060	0	0	595 000	654 500
2061	0	0	595 000	654 500
2062	0	0	595 000	654 500
2063	0	0	595 000	654 500
2064	0	0	595 000	654 500
2065	0	0	595 000	654 500
2066	0	0	595 000	654 500
2067	0	0	595 000	654 500
2068	0	0	595 000	654 500
2069	0	0	595 000	654 500
2070	0	0	595 000	654 500
2071	0	0	595 000	654 500
2072	0	0	595 000	654 500
2073	0	0	595 000	654 500
2074	0	0	595 000	654 500
2075	0	0	595 000	654 500
2076	0	0	595 000	654 500
2077	0	0	595 000	654 500
2078	0	0	595 000	654 500
2079	0	0	595 000	654 500
2080	0	0	595 000	654 500
2081	0	0	595 000	654 500
2082	0	0	595 000	654 500
2083	0	0	595 000	654 500
2084	0	0	595 000	654 500
2085	0	0	595 000	654 500
2086	0	0	595 000	654 500
2087	0	0	595 000	654 500

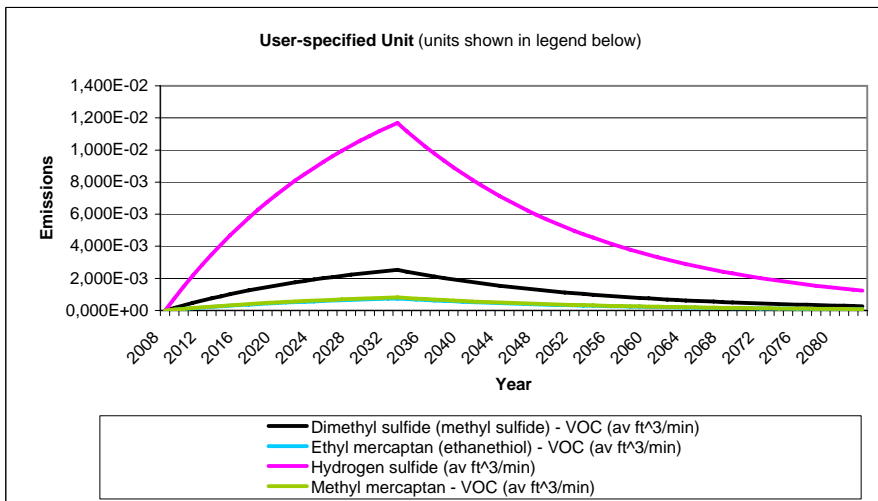
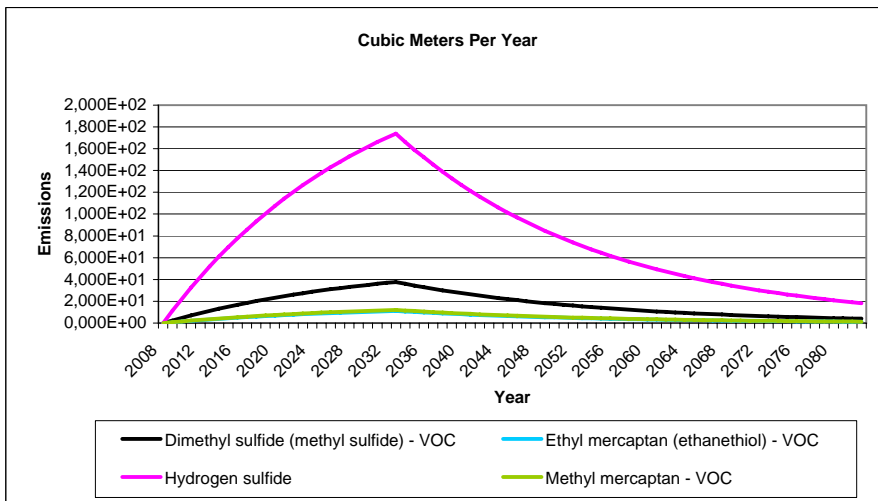
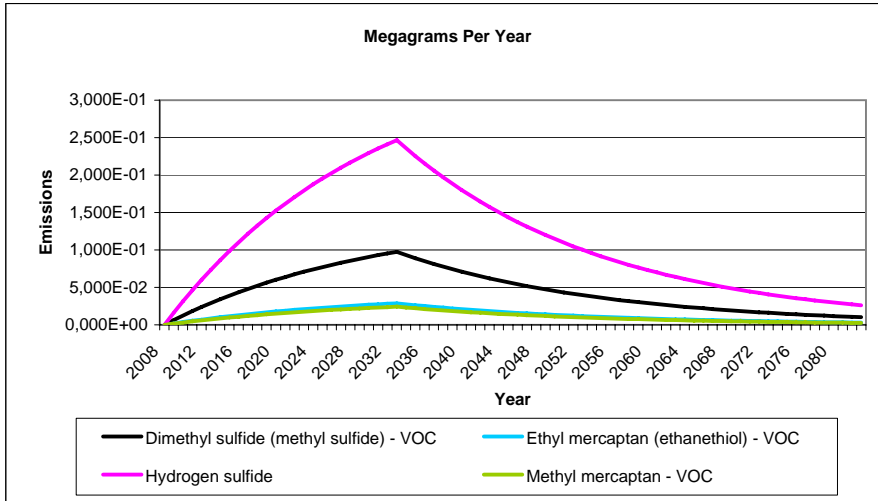
Pollutant Parameters

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		

Pollutant Parameters (Continued)

Gas / Pollutant Default Parameters:				User-specified Pollutant Parameters:	
	Compound	Concentration (ppmv)	Molecular Weight	Concentration (ppmv)	Molecular Weight
Pollutants	Ethyl mercaptan (ethanethiol) - VOC	2,3	62,13		
	Ethylbenzene - HAP/VOC	4,6	106,16		
	Ethylene dibromide - HAP/VOC	1,0E-03	187,88		
	Fluorotrichloromethane - VOC	0,76	137,38		
	Hexane - HAP/VOC	6,6	86,18		
	Hydrogen sulfide	36	34,08		
	Mercury (total) - HAP	2,9E-04	200,61		
	Methyl ethyl ketone - HAP/VOC	7,1	72,11		
	Methyl isobutyl ketone - HAP/VOC	1,9	100,16		
	Methyl mercaptan - VOC	2,5	48,11		
	Pentane - VOC	3,3	72,15		
	Perchloroethylene (tetrachloroethylene) - HAP	3,7	165,83		
	Propane - VOC	11	44,09		
	t-1,2-Dichloroethene - VOC	2,8	96,94		
	Toluene - No or Unknown Co-disposal - HAP/VOC	39	92,13		
	Toluene - Co-disposal - HAP/VOC	170	92,13		
	Trichloroethylene (trichloroethene) - HAP/VOC	2,8	131,40		
	Vinyl chloride - HAP/VOC	7,3	62,50		
	Xylenes - HAP/VOC	12	106,16		

Graphs



Results

Year	Dimethyl sulfide (methyl sulfide) - VOC			Ethyl mercaptan (ethanethiol) - VOC		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2008	0	0	0	0	0	0
2009	6,347E-03	2,456E+00	1,650E-04	1,872E-03	7,242E-01	4,866E-05
2010	1,241E-02	4,804E+00	3,228E-04	3,661E-03	1,417E+00	9,518E-05
2011	1,822E-02	7,049E+00	4,736E-04	5,371E-03	2,079E+00	1,397E-04
2012	2,376E-02	9,195E+00	6,178E-04	7,006E-03	2,711E+00	1,822E-04
2013	2,906E-02	1,125E+01	7,556E-04	8,570E-03	3,316E+00	2,228E-04
2014	3,413E-02	1,321E+01	8,874E-04	1,006E-02	3,895E+00	2,617E-04
2015	3,898E-02	1,508E+01	1,013E-03	1,149E-02	4,447E+00	2,988E-04
2016	4,361E-02	1,687E+01	1,134E-03	1,286E-02	4,976E+00	3,343E-04
2017	4,804E-02	1,859E+01	1,249E-03	1,416E-02	5,481E+00	3,683E-04
2018	5,227E-02	2,023E+01	1,359E-03	1,541E-02	5,964E+00	4,007E-04
2019	5,632E-02	2,179E+01	1,464E-03	1,661E-02	6,426E+00	4,318E-04
2020	6,018E-02	2,329E+01	1,565E-03	1,775E-02	6,868E+00	4,614E-04
2021	6,388E-02	2,472E+01	1,661E-03	1,884E-02	7,290E+00	4,898E-04
2022	6,742E-02	2,609E+01	1,753E-03	1,988E-02	7,693E+00	5,169E-04
2023	7,080E-02	2,740E+01	1,841E-03	2,088E-02	8,079E+00	5,428E-04
2024	7,403E-02	2,865E+01	1,925E-03	2,183E-02	8,448E+00	5,676E-04
2025	7,712E-02	2,984E+01	2,005E-03	2,274E-02	8,800E+00	5,913E-04
2026	8,007E-02	3,099E+01	2,082E-03	2,361E-02	9,137E+00	6,139E-04
2027	8,290E-02	3,208E+01	2,155E-03	2,444E-02	9,459E+00	6,356E-04
2028	8,560E-02	3,312E+01	2,226E-03	2,524E-02	9,767E+00	6,563E-04
2029	8,818E-02	3,412E+01	2,293E-03	2,600E-02	1,006E+01	6,760E-04
2030	9,064E-02	3,508E+01	2,357E-03	2,673E-02	1,034E+01	6,950E-04
2031	9,300E-02	3,599E+01	2,418E-03	2,742E-02	1,061E+01	7,130E-04
2032	9,526E-02	3,686E+01	2,477E-03	2,809E-02	1,087E+01	7,303E-04
2033	9,741E-02	3,770E+01	2,533E-03	2,872E-02	1,112E+01	7,469E-04
2034	9,313E-02	3,604E+01	2,421E-03	2,746E-02	1,063E+01	7,140E-04
2035	8,903E-02	3,445E+01	2,315E-03	2,625E-02	1,016E+01	6,826E-04
2036	8,511E-02	3,294E+01	2,213E-03	2,510E-02	9,712E+00	6,525E-04
2037	8,137E-02	3,149E+01	2,116E-03	2,399E-02	9,284E+00	6,238E-04
2038	7,779E-02	3,010E+01	2,022E-03	2,294E-02	8,876E+00	5,964E-04
2039	7,436E-02	2,878E+01	1,933E-03	2,193E-02	8,485E+00	5,701E-04
2040	7,109E-02	2,751E+01	1,848E-03	2,096E-02	8,112E+00	5,450E-04
2041	6,796E-02	2,630E+01	1,767E-03	2,004E-02	7,755E+00	5,211E-04
2042	6,497E-02	2,514E+01	1,689E-03	1,916E-02	7,414E+00	4,981E-04
2043	6,211E-02	2,404E+01	1,615E-03	1,832E-02	7,088E+00	4,762E-04
2044	5,938E-02	2,298E+01	1,544E-03	1,751E-02	6,776E+00	4,553E-04
2045	5,677E-02	2,197E+01	1,476E-03	1,674E-02	6,478E+00	4,352E-04
2046	5,427E-02	2,100E+01	1,411E-03	1,600E-02	6,193E+00	4,161E-04
2047	5,188E-02	2,008E+01	1,349E-03	1,530E-02	5,920E+00	3,978E-04
2048	4,960E-02	1,919E+01	1,290E-03	1,463E-02	5,660E+00	3,803E-04
2049	4,742E-02	1,835E+01	1,233E-03	1,398E-02	5,411E+00	3,635E-04
2050	4,533E-02	1,754E+01	1,179E-03	1,337E-02	5,172E+00	3,475E-04
2051	4,333E-02	1,677E+01	1,127E-03	1,278E-02	4,945E+00	3,322E-04
2052	4,143E-02	1,603E+01	1,077E-03	1,222E-02	4,727E+00	3,176E-04
2053	3,961E-02	1,533E+01	1,030E-03	1,168E-02	4,519E+00	3,036E-04
2054	3,786E-02	1,465E+01	9,844E-04	1,116E-02	4,320E+00	2,903E-04
2055	3,620E-02	1,401E+01	9,411E-04	1,067E-02	4,130E+00	2,775E-04
2056	3,460E-02	1,339E+01	8,997E-04	1,020E-02	3,949E+00	2,653E-04
2057	3,308E-02	1,280E+01	8,601E-04	9,755E-03	3,775E+00	2,536E-04

Results (Continued)

Year	Dimethyl sulfide (methyl sulfide) - VOC			Ethyl mercaptan (ethanethiol) - VOC		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2058	3,163E-02	1,224E+01	8,223E-04	9,325E-03	3,609E+00	2,425E-04
2059	3,023E-02	1,170E+01	7,861E-04	8,915E-03	3,450E+00	2,318E-04
2060	2,890E-02	1,118E+01	7,515E-04	8,523E-03	3,298E+00	2,216E-04
2061	2,763E-02	1,069E+01	7,184E-04	8,148E-03	3,153E+00	2,118E-04
2062	2,642E-02	1,022E+01	6,868E-04	7,789E-03	3,014E+00	2,025E-04
2063	2,525E-02	9,772E+00	6,566E-04	7,446E-03	2,882E+00	1,936E-04
2064	2,414E-02	9,342E+00	6,277E-04	7,119E-03	2,755E+00	1,851E-04
2065	2,308E-02	8,931E+00	6,001E-04	6,806E-03	2,634E+00	1,769E-04
2066	2,206E-02	8,538E+00	5,737E-04	6,506E-03	2,518E+00	1,692E-04
2067	2,109E-02	8,163E+00	5,484E-04	6,220E-03	2,407E+00	1,617E-04
2068	2,017E-02	7,803E+00	5,243E-04	5,946E-03	2,301E+00	1,546E-04
2069	1,928E-02	7,460E+00	5,012E-04	5,685E-03	2,200E+00	1,478E-04
2070	1,843E-02	7,132E+00	4,792E-04	5,434E-03	2,103E+00	1,413E-04
2071	1,762E-02	6,818E+00	4,581E-04	5,195E-03	2,010E+00	1,351E-04
2072	1,684E-02	6,518E+00	4,379E-04	4,967E-03	1,922E+00	1,291E-04
2073	1,610E-02	6,231E+00	4,187E-04	4,748E-03	1,837E+00	1,235E-04
2074	1,539E-02	5,957E+00	4,002E-04	4,539E-03	1,757E+00	1,180E-04
2075	1,472E-02	5,695E+00	3,826E-04	4,339E-03	1,679E+00	1,128E-04
2076	1,407E-02	5,444E+00	3,658E-04	4,148E-03	1,605E+00	1,079E-04
2077	1,345E-02	5,205E+00	3,497E-04	3,966E-03	1,535E+00	1,031E-04
2078	1,286E-02	4,976E+00	3,343E-04	3,791E-03	1,467E+00	9,858E-05
2079	1,229E-02	4,757E+00	3,196E-04	3,625E-03	1,403E+00	9,424E-05
2080	1,175E-02	4,547E+00	3,055E-04	3,465E-03	1,341E+00	9,010E-05
2081	1,123E-02	4,347E+00	2,921E-04	3,313E-03	1,282E+00	8,613E-05
2082	1,074E-02	4,156E+00	2,792E-04	3,167E-03	1,225E+00	8,234E-05
2083	1,027E-02	3,973E+00	2,670E-04	3,028E-03	1,172E+00	7,872E-05
2084	9,815E-03	3,798E+00	2,552E-04	2,894E-03	1,120E+00	7,525E-05
2085	9,384E-03	3,631E+00	2,440E-04	2,767E-03	1,071E+00	7,194E-05
2086	8,971E-03	3,471E+00	2,332E-04	2,645E-03	1,024E+00	6,878E-05
2087	8,576E-03	3,319E+00	2,230E-04	2,529E-03	9,786E-01	6,575E-05
2088	8,199E-03	3,173E+00	2,132E-04	2,418E-03	9,355E-01	6,286E-05
2089	7,838E-03	3,033E+00	2,038E-04	2,311E-03	8,944E-01	6,009E-05
2090	7,493E-03	2,900E+00	1,948E-04	2,209E-03	8,550E-01	5,745E-05
2091	7,163E-03	2,772E+00	1,862E-04	2,112E-03	8,174E-01	5,492E-05
2092	6,848E-03	2,650E+00	1,781E-04	2,019E-03	7,814E-01	5,250E-05
2093	6,547E-03	2,533E+00	1,702E-04	1,930E-03	7,470E-01	5,019E-05
2094	6,259E-03	2,422E+00	1,627E-04	1,845E-03	7,142E-01	4,798E-05
2095	5,983E-03	2,315E+00	1,556E-04	1,764E-03	6,827E-01	4,587E-05
2096	5,720E-03	2,213E+00	1,487E-04	1,687E-03	6,527E-01	4,385E-05
2097	5,468E-03	2,116E+00	1,422E-04	1,612E-03	6,240E-01	4,192E-05
2098	5,228E-03	2,023E+00	1,359E-04	1,541E-03	5,965E-01	4,008E-05
2099	4,998E-03	1,934E+00	1,299E-04	1,474E-03	5,703E-01	3,832E-05
2100	4,778E-03	1,849E+00	1,242E-04	1,409E-03	5,452E-01	3,663E-05
2101	4,567E-03	1,767E+00	1,188E-04	1,347E-03	5,212E-01	3,502E-05
2102	4,366E-03	1,690E+00	1,135E-04	1,288E-03	4,982E-01	3,348E-05
2103	4,174E-03	1,615E+00	1,085E-04	1,231E-03	4,763E-01	3,200E-05
2104	3,991E-03	1,544E+00	1,038E-04	1,177E-03	4,554E-01	3,060E-05
2105	3,815E-03	1,476E+00	9,919E-05	1,125E-03	4,353E-01	2,925E-05
2106	3,647E-03	1,411E+00	9,483E-05	1,075E-03	4,162E-01	2,796E-05
2107	3,487E-03	1,349E+00	9,066E-05	1,028E-03	3,979E-01	2,673E-05
2108	3,333E-03	1,290E+00	8,667E-05	9,829E-04	3,804E-01	2,556E-05

Results (Continued)

Year	Dimethyl sulfide (methyl sulfide) - VOC			Ethyl mercaptan (ethanethiol) - VOC		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2109	3,187E-03	1,233E+00	8,285E-05	9,396E-04	3,636E-01	2,443E-05
2110	3,046E-03	1,179E+00	7,921E-05	8,983E-04	3,476E-01	2,336E-05
2111	2,912E-03	1,127E+00	7,572E-05	8,588E-04	3,323E-01	2,233E-05
2112	2,784E-03	1,077E+00	7,239E-05	8,210E-04	3,177E-01	2,135E-05
2113	2,662E-03	1,030E+00	6,921E-05	7,849E-04	3,037E-01	2,041E-05
2114	2,545E-03	9,847E-01	6,616E-05	7,503E-04	2,904E-01	1,951E-05
2115	2,433E-03	9,413E-01	6,325E-05	7,173E-04	2,776E-01	1,865E-05
2116	2,326E-03	8,999E-01	6,047E-05	6,857E-04	2,654E-01	1,783E-05
2117	2,223E-03	8,603E-01	5,781E-05	6,556E-04	2,537E-01	1,705E-05
2118	2,125E-03	8,225E-01	5,526E-05	6,267E-04	2,425E-01	1,630E-05
2119	2,032E-03	7,863E-01	5,283E-05	5,991E-04	2,319E-01	1,558E-05
2120	1,942E-03	7,517E-01	5,051E-05	5,728E-04	2,216E-01	1,489E-05
2121	1,857E-03	7,186E-01	4,828E-05	5,476E-04	2,119E-01	1,424E-05
2122	1,775E-03	6,870E-01	4,616E-05	5,235E-04	2,026E-01	1,361E-05
2123	1,697E-03	6,568E-01	4,413E-05	5,004E-04	1,937E-01	1,301E-05
2124	1,622E-03	6,279E-01	4,219E-05	4,784E-04	1,851E-01	1,244E-05
2125	1,551E-03	6,002E-01	4,033E-05	4,574E-04	1,770E-01	1,189E-05
2126	1,483E-03	5,738E-01	3,855E-05	4,372E-04	1,692E-01	1,137E-05
2127	1,418E-03	5,486E-01	3,686E-05	4,180E-04	1,618E-01	1,087E-05
2128	1,355E-03	5,244E-01	3,524E-05	3,996E-04	1,546E-01	1,039E-05
2129	1,296E-03	5,014E-01	3,369E-05	3,820E-04	1,478E-01	9,933E-06
2130	1,239E-03	4,793E-01	3,220E-05	3,652E-04	1,413E-01	9,496E-06
2131	1,184E-03	4,582E-01	3,079E-05	3,491E-04	1,351E-01	9,078E-06
2132	1,132E-03	4,380E-01	2,943E-05	3,338E-04	1,292E-01	8,679E-06
2133	1,082E-03	4,188E-01	2,814E-05	3,191E-04	1,235E-01	8,297E-06
2134	1,035E-03	4,003E-01	2,690E-05	3,051E-04	1,180E-01	7,932E-06
2135	9,890E-04	3,827E-01	2,572E-05	2,916E-04	1,129E-01	7,583E-06
2136	9,455E-04	3,659E-01	2,458E-05	2,788E-04	1,079E-01	7,249E-06
2137	9,039E-04	3,498E-01	2,350E-05	2,665E-04	1,031E-01	6,930E-06
2138	8,641E-04	3,344E-01	2,247E-05	2,548E-04	9,860E-02	6,625E-06
2139	8,261E-04	3,197E-01	2,148E-05	2,436E-04	9,426E-02	6,334E-06
2140	7,897E-04	3,056E-01	2,053E-05	2,329E-04	9,012E-02	6,055E-06
2141	7,550E-04	2,922E-01	1,963E-05	2,226E-04	8,615E-02	5,788E-06
2142	7,218E-04	2,793E-01	1,877E-05	2,128E-04	8,236E-02	5,534E-06
2143	6,900E-04	2,670E-01	1,794E-05	2,035E-04	7,874E-02	5,290E-06
2144	6,597E-04	2,553E-01	1,715E-05	1,945E-04	7,527E-02	5,057E-06
2145	6,306E-04	2,440E-01	1,640E-05	1,860E-04	7,196E-02	4,835E-06
2146	6,029E-04	2,333E-01	1,568E-05	1,778E-04	6,879E-02	4,622E-06
2147	5,763E-04	2,230E-01	1,499E-05	1,699E-04	6,577E-02	4,419E-06
2148	5,510E-04	2,132E-01	1,433E-05	1,625E-04	6,287E-02	4,224E-06

Results (Continued)

Year	Hydrogen sulfide			Methyl mercaptan - VOC		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2008	0	0	0	0	0	0
2009	1,607E-02	1,134E+01	7,617E-04	1,575E-03	7,872E-01	5,289E-05
2010	3,143E-02	2,217E+01	1,490E-03	3,081E-03	1,540E+00	1,035E-04
2011	4,612E-02	3,253E+01	2,186E-03	4,521E-03	2,259E+00	1,518E-04
2012	6,015E-02	4,244E+01	2,851E-03	5,897E-03	2,947E+00	1,980E-04
2013	7,358E-02	5,191E+01	3,488E-03	7,213E-03	3,605E+00	2,422E-04
2014	8,641E-02	6,096E+01	4,096E-03	8,471E-03	4,233E+00	2,844E-04
2015	9,867E-02	6,961E+01	4,677E-03	9,673E-03	4,834E+00	3,248E-04
2016	1,104E-01	7,788E+01	5,233E-03	1,082E-02	5,409E+00	3,634E-04
2017	1,216E-01	8,579E+01	5,764E-03	1,192E-02	5,958E+00	4,003E-04
2018	1,323E-01	9,335E+01	6,272E-03	1,297E-02	6,483E+00	4,356E-04
2019	1,426E-01	1,006E+02	6,758E-03	1,398E-02	6,985E+00	4,693E-04
2020	1,524E-01	1,075E+02	7,222E-03	1,494E-02	7,465E+00	5,016E-04
2021	1,617E-01	1,141E+02	7,666E-03	1,586E-02	7,923E+00	5,324E-04
2022	1,707E-01	1,204E+02	8,091E-03	1,673E-02	8,362E+00	5,618E-04
2023	1,792E-01	1,265E+02	8,496E-03	1,757E-02	8,781E+00	5,900E-04
2024	1,874E-01	1,322E+02	8,884E-03	1,837E-02	9,182E+00	6,169E-04
2025	1,952E-01	1,377E+02	9,255E-03	1,914E-02	9,565E+00	6,427E-04
2026	2,027E-01	1,430E+02	9,609E-03	1,987E-02	9,932E+00	6,673E-04
2027	2,099E-01	1,481E+02	9,948E-03	2,057E-02	1,028E+01	6,908E-04
2028	2,167E-01	1,529E+02	1,027E-02	2,124E-02	1,062E+01	7,133E-04
2029	2,232E-01	1,575E+02	1,058E-02	2,188E-02	1,094E+01	7,348E-04
2030	2,295E-01	1,619E+02	1,088E-02	2,250E-02	1,124E+01	7,554E-04
2031	2,355E-01	1,661E+02	1,116E-02	2,308E-02	1,154E+01	7,750E-04
2032	2,412E-01	1,701E+02	1,143E-02	2,364E-02	1,181E+01	7,938E-04
2033	2,466E-01	1,740E+02	1,169E-02	2,418E-02	1,208E+01	8,118E-04
2034	2,358E-01	1,663E+02	1,118E-02	2,311E-02	1,155E+01	7,761E-04
2035	2,254E-01	1,590E+02	1,068E-02	2,210E-02	1,104E+01	7,419E-04
2036	2,155E-01	1,520E+02	1,021E-02	2,112E-02	1,056E+01	7,093E-04
2037	2,060E-01	1,453E+02	9,764E-03	2,019E-02	1,009E+01	6,781E-04
2038	1,969E-01	1,389E+02	9,335E-03	1,931E-02	9,648E+00	6,482E-04
2039	1,883E-01	1,328E+02	8,924E-03	1,846E-02	9,223E+00	6,197E-04
2040	1,800E-01	1,270E+02	8,531E-03	1,764E-02	8,817E+00	5,924E-04
2041	1,721E-01	1,214E+02	8,156E-03	1,687E-02	8,429E+00	5,664E-04
2042	1,645E-01	1,160E+02	7,797E-03	1,613E-02	8,058E+00	5,414E-04
2043	1,572E-01	1,109E+02	7,454E-03	1,542E-02	7,704E+00	5,176E-04
2044	1,503E-01	1,061E+02	7,126E-03	1,474E-02	7,365E+00	4,948E-04
2045	1,437E-01	1,014E+02	6,812E-03	1,409E-02	7,041E+00	4,731E-04
2046	1,374E-01	9,693E+01	6,512E-03	1,347E-02	6,731E+00	4,523E-04
2047	1,313E-01	9,266E+01	6,226E-03	1,288E-02	6,435E+00	4,324E-04
2048	1,256E-01	8,858E+01	5,952E-03	1,231E-02	6,152E+00	4,133E-04
2049	1,200E-01	8,469E+01	5,690E-03	1,177E-02	5,881E+00	3,951E-04
2050	1,148E-01	8,096E+01	5,440E-03	1,125E-02	5,622E+00	3,778E-04
2051	1,097E-01	7,740E+01	5,200E-03	1,076E-02	5,375E+00	3,611E-04
2052	1,049E-01	7,399E+01	4,971E-03	1,028E-02	5,138E+00	3,452E-04
2053	1,003E-01	7,074E+01	4,753E-03	9,829E-03	4,912E+00	3,301E-04
2054	9,585E-02	6,762E+01	4,544E-03	9,397E-03	4,696E+00	3,155E-04
2055	9,164E-02	6,465E+01	4,344E-03	8,983E-03	4,489E+00	3,016E-04
2056	8,760E-02	6,180E+01	4,153E-03	8,588E-03	4,292E+00	2,884E-04
2057	8,375E-02	5,908E+01	3,970E-03	8,210E-03	4,103E+00	2,757E-04

Results (Continued)

Year	Hydrogen sulfide			Methyl mercaptan - VOC		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2058	8,006E-02	5,648E+01	3,795E-03	7,849E-03	3,922E+00	2,636E-04
2059	7,654E-02	5,400E+01	3,628E-03	7,504E-03	3,750E+00	2,520E-04
2060	7,317E-02	5,162E+01	3,468E-03	7,173E-03	3,585E+00	2,409E-04
2061	6,995E-02	4,935E+01	3,316E-03	6,858E-03	3,427E+00	2,303E-04
2062	6,688E-02	4,718E+01	3,170E-03	6,556E-03	3,276E+00	2,201E-04
2063	6,393E-02	4,510E+01	3,030E-03	6,268E-03	3,132E+00	2,104E-04
2064	6,112E-02	4,312E+01	2,897E-03	5,992E-03	2,994E+00	2,012E-04
2065	5,843E-02	4,122E+01	2,770E-03	5,728E-03	2,863E+00	1,923E-04
2066	5,586E-02	3,941E+01	2,648E-03	5,476E-03	2,737E+00	1,839E-04
2067	5,340E-02	3,767E+01	2,531E-03	5,235E-03	2,616E+00	1,758E-04
2068	5,105E-02	3,602E+01	2,420E-03	5,005E-03	2,501E+00	1,680E-04
2069	4,881E-02	3,443E+01	2,313E-03	4,785E-03	2,391E+00	1,607E-04
2070	4,666E-02	3,292E+01	2,212E-03	4,574E-03	2,286E+00	1,536E-04
2071	4,460E-02	3,147E+01	2,114E-03	4,373E-03	2,185E+00	1,468E-04
2072	4,264E-02	3,008E+01	2,021E-03	4,180E-03	2,089E+00	1,404E-04
2073	4,077E-02	2,876E+01	1,932E-03	3,996E-03	1,997E+00	1,342E-04
2074	3,897E-02	2,749E+01	1,847E-03	3,821E-03	1,909E+00	1,283E-04
2075	3,726E-02	2,628E+01	1,766E-03	3,652E-03	1,825E+00	1,226E-04
2076	3,562E-02	2,513E+01	1,688E-03	3,492E-03	1,745E+00	1,172E-04
2077	3,405E-02	2,402E+01	1,614E-03	3,338E-03	1,668E+00	1,121E-04
2078	3,255E-02	2,296E+01	1,543E-03	3,191E-03	1,595E+00	1,072E-04
2079	3,112E-02	2,195E+01	1,475E-03	3,051E-03	1,525E+00	1,024E-04
2080	2,975E-02	2,099E+01	1,410E-03	2,917E-03	1,458E+00	9,793E-05
2081	2,844E-02	2,006E+01	1,348E-03	2,788E-03	1,393E+00	9,362E-05
2082	2,719E-02	1,918E+01	1,289E-03	2,665E-03	1,332E+00	8,950E-05
2083	2,599E-02	1,834E+01	1,232E-03	2,548E-03	1,273E+00	8,556E-05
2084	2,485E-02	1,753E+01	1,178E-03	2,436E-03	1,217E+00	8,180E-05
2085	2,376E-02	1,676E+01	1,126E-03	2,329E-03	1,164E+00	7,820E-05
2086	2,271E-02	1,602E+01	1,077E-03	2,226E-03	1,113E+00	7,476E-05
2087	2,171E-02	1,532E+01	1,029E-03	2,128E-03	1,064E+00	7,147E-05
2088	2,076E-02	1,464E+01	9,839E-04	2,035E-03	1,017E+00	6,832E-05
2089	1,984E-02	1,400E+01	9,406E-04	1,945E-03	9,721E-01	6,532E-05
2090	1,897E-02	1,338E+01	8,992E-04	1,860E-03	9,293E-01	6,244E-05
2091	1,813E-02	1,279E+01	8,596E-04	1,778E-03	8,885E-01	5,969E-05
2092	1,734E-02	1,223E+01	8,218E-04	1,700E-03	8,494E-01	5,707E-05
2093	1,657E-02	1,169E+01	7,856E-04	1,625E-03	8,120E-01	5,456E-05
2094	1,584E-02	1,118E+01	7,511E-04	1,553E-03	7,763E-01	5,216E-05
2095	1,515E-02	1,069E+01	7,180E-04	1,485E-03	7,421E-01	4,986E-05
2096	1,448E-02	1,022E+01	6,864E-04	1,420E-03	7,094E-01	4,767E-05
2097	1,384E-02	9,766E+00	6,562E-04	1,357E-03	6,782E-01	4,557E-05
2098	1,323E-02	9,337E+00	6,273E-04	1,297E-03	6,484E-01	4,356E-05
2099	1,265E-02	8,926E+00	5,997E-04	1,240E-03	6,199E-01	4,165E-05
2100	1,210E-02	8,533E+00	5,733E-04	1,186E-03	5,926E-01	3,982E-05
2101	1,156E-02	8,158E+00	5,481E-04	1,134E-03	5,665E-01	3,806E-05
2102	1,105E-02	7,799E+00	5,240E-04	1,084E-03	5,416E-01	3,639E-05
2103	1,057E-02	7,456E+00	5,009E-04	1,036E-03	5,177E-01	3,479E-05
2104	1,010E-02	7,127E+00	4,789E-04	9,904E-04	4,950E-01	3,326E-05
2105	9,658E-03	6,814E+00	4,578E-04	9,469E-04	4,732E-01	3,179E-05
2106	9,233E-03	6,514E+00	4,377E-04	9,052E-04	4,524E-01	3,039E-05
2107	8,827E-03	6,227E+00	4,184E-04	8,654E-04	4,325E-01	2,906E-05
2108	8,439E-03	5,953E+00	4,000E-04	8,273E-04	4,134E-01	2,778E-05

Results (Continued)

Year	Hydrogen sulfide			Methyl mercaptan - VOC		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2109	8,067E-03	5,691E+00	3,824E-04	7,909E-04	3,952E-01	2,656E-05
2110	7,712E-03	5,441E+00	3,656E-04	7,561E-04	3,778E-01	2,539E-05
2111	7,373E-03	5,202E+00	3,495E-04	7,228E-04	3,612E-01	2,427E-05
2112	7,049E-03	4,973E+00	3,341E-04	6,910E-04	3,453E-01	2,320E-05
2113	6,738E-03	4,754E+00	3,194E-04	6,606E-04	3,301E-01	2,218E-05
2114	6,442E-03	4,545E+00	3,054E-04	6,315E-04	3,156E-01	2,121E-05
2115	6,159E-03	4,345E+00	2,919E-04	6,037E-04	3,017E-01	2,027E-05
2116	5,888E-03	4,154E+00	2,791E-04	5,772E-04	2,884E-01	1,938E-05
2117	5,628E-03	3,971E+00	2,668E-04	5,518E-04	2,757E-01	1,853E-05
2118	5,381E-03	3,796E+00	2,551E-04	5,275E-04	2,636E-01	1,771E-05
2119	5,144E-03	3,629E+00	2,438E-04	5,043E-04	2,520E-01	1,693E-05
2120	4,918E-03	3,469E+00	2,331E-04	4,821E-04	2,409E-01	1,619E-05
2121	4,701E-03	3,317E+00	2,228E-04	4,609E-04	2,303E-01	1,548E-05
2122	4,494E-03	3,171E+00	2,130E-04	4,406E-04	2,202E-01	1,479E-05
2123	4,297E-03	3,031E+00	2,037E-04	4,212E-04	2,105E-01	1,414E-05
2124	4,108E-03	2,898E+00	1,947E-04	4,027E-04	2,012E-01	1,352E-05
2125	3,927E-03	2,770E+00	1,861E-04	3,850E-04	1,924E-01	1,293E-05
2126	3,754E-03	2,648E+00	1,779E-04	3,680E-04	1,839E-01	1,236E-05
2127	3,589E-03	2,532E+00	1,701E-04	3,518E-04	1,758E-01	1,181E-05
2128	3,431E-03	2,420E+00	1,626E-04	3,363E-04	1,681E-01	1,129E-05
2129	3,280E-03	2,314E+00	1,555E-04	3,215E-04	1,607E-01	1,080E-05
2130	3,136E-03	2,212E+00	1,486E-04	3,074E-04	1,536E-01	1,032E-05
2131	2,998E-03	2,115E+00	1,421E-04	2,939E-04	1,469E-01	9,868E-06
2132	2,866E-03	2,022E+00	1,358E-04	2,809E-04	1,404E-01	9,433E-06
2133	2,740E-03	1,933E+00	1,299E-04	2,686E-04	1,342E-01	9,018E-06
2134	2,619E-03	1,848E+00	1,241E-04	2,568E-04	1,283E-01	8,621E-06
2135	2,504E-03	1,766E+00	1,187E-04	2,455E-04	1,227E-01	8,242E-06
2136	2,394E-03	1,689E+00	1,135E-04	2,347E-04	1,173E-01	7,879E-06
2137	2,288E-03	1,614E+00	1,085E-04	2,243E-04	1,121E-01	7,533E-06
2138	2,188E-03	1,543E+00	1,037E-04	2,145E-04	1,072E-01	7,201E-06
2139	2,091E-03	1,475E+00	9,913E-05	2,050E-04	1,025E-01	6,884E-06
2140	1,999E-03	1,411E+00	9,477E-05	1,960E-04	9,795E-02	6,581E-06
2141	1,911E-03	1,348E+00	9,060E-05	1,874E-04	9,364E-02	6,292E-06
2142	1,827E-03	1,289E+00	8,662E-05	1,791E-04	8,952E-02	6,015E-06
2143	1,747E-03	1,232E+00	8,280E-05	1,713E-04	8,558E-02	5,750E-06
2144	1,670E-03	1,178E+00	7,916E-05	1,637E-04	8,182E-02	5,497E-06
2145	1,597E-03	1,126E+00	7,568E-05	1,565E-04	7,822E-02	5,255E-06
2146	1,526E-03	1,077E+00	7,235E-05	1,496E-04	7,477E-02	5,024E-06
2147	1,459E-03	1,029E+00	6,916E-05	1,430E-04	7,148E-02	4,803E-06
2148	1,395E-03	9,841E-01	6,612E-05	1,367E-04	6,834E-02	4,592E-06



Summary Report

Landfill Name or Identifier: LET Rédemption

Date: d mars yyyy

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	2008	
Landfill Closure Year (with 80-year limit)	2033	
Actual Closure Year (without limit)	2033	
Have Model Calculate Closure Year?	No	
Waste Design Capacity	595 000	<i>megagrams</i>

MODEL PARAMETERS

Methane Generation Rate, k	0,045	<i>year⁻¹</i>
Potential Methane Generation Capacity, L ₀	150	<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:	
Gas / Pollutant #4:	

WASTE ACCEPTANCE RATES

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	(short tons/year)	(Mg)	(short tons)
2008	23 800	26 180	0	0
2009	23 800	26 180	23 800	26 180
2010	23 800	26 180	47 600	52 360
2011	23 800	26 180	71 400	78 540
2012	23 800	26 180	95 200	104 720
2013	23 800	26 180	119 000	130 900
2014	23 800	26 180	142 800	157 080
2015	23 800	26 180	166 600	183 260
2016	23 800	26 180	190 400	209 440
2017	23 800	26 180	214 200	235 620
2018	23 800	26 180	238 000	261 800
2019	23 800	26 180	261 800	287 980
2020	23 800	26 180	285 600	314 160
2021	23 800	26 180	309 400	340 340
2022	23 800	26 180	333 200	366 520
2023	23 800	26 180	357 000	392 700
2024	23 800	26 180	380 800	418 880
2025	23 800	26 180	404 600	445 060
2026	23 800	26 180	428 400	471 240
2027	23 800	26 180	452 200	497 420
2028	23 800	26 180	476 000	523 600
2029	23 800	26 180	499 800	549 780
2030	23 800	26 180	523 600	575 960
2031	23 800	26 180	547 400	602 140
2032	23 800	26 180	571 200	628 320
2033	0	0	595 000	654 500
2034	0	0	595 000	654 500
2035	0	0	595 000	654 500
2036	0	0	595 000	654 500
2037	0	0	595 000	654 500
2038	0	0	595 000	654 500
2039	0	0	595 000	654 500
2040	0	0	595 000	654 500
2041	0	0	595 000	654 500
2042	0	0	595 000	654 500
2043	0	0	595 000	654 500
2044	0	0	595 000	654 500
2045	0	0	595 000	654 500
2046	0	0	595 000	654 500
2047	0	0	595 000	654 500

WASTE ACCEPTANCE RATES (Continued)

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	(short tons/year)	(Mg)	(short tons)
2048	0	0	595 000	654 500
2049	0	0	595 000	654 500
2050	0	0	595 000	654 500
2051	0	0	595 000	654 500
2052	0	0	595 000	654 500
2053	0	0	595 000	654 500
2054	0	0	595 000	654 500
2055	0	0	595 000	654 500
2056	0	0	595 000	654 500
2057	0	0	595 000	654 500
2058	0	0	595 000	654 500
2059	0	0	595 000	654 500
2060	0	0	595 000	654 500
2061	0	0	595 000	654 500
2062	0	0	595 000	654 500
2063	0	0	595 000	654 500
2064	0	0	595 000	654 500
2065	0	0	595 000	654 500
2066	0	0	595 000	654 500
2067	0	0	595 000	654 500
2068	0	0	595 000	654 500
2069	0	0	595 000	654 500
2070	0	0	595 000	654 500
2071	0	0	595 000	654 500
2072	0	0	595 000	654 500
2073	0	0	595 000	654 500
2074	0	0	595 000	654 500
2075	0	0	595 000	654 500
2076	0	0	595 000	654 500
2077	0	0	595 000	654 500
2078	0	0	595 000	654 500
2079	0	0	595 000	654 500
2080	0	0	595 000	654 500
2081	0	0	595 000	654 500
2082	0	0	595 000	654 500
2083	0	0	595 000	654 500
2084	0	0	595 000	654 500
2085	0	0	595 000	654 500
2086	0	0	595 000	654 500
2087	0	0	595 000	654 500

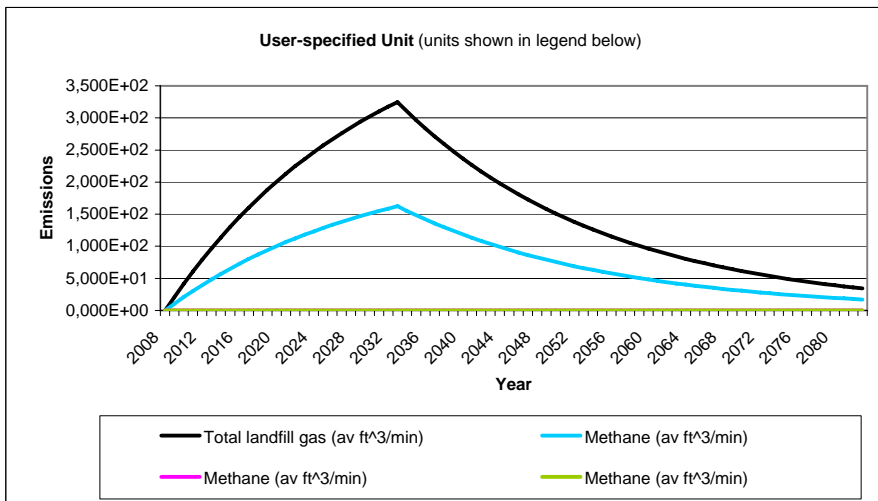
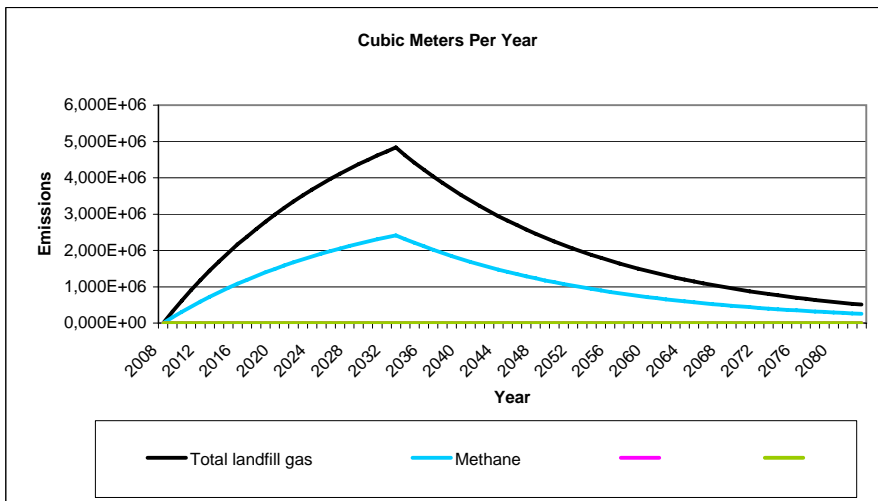
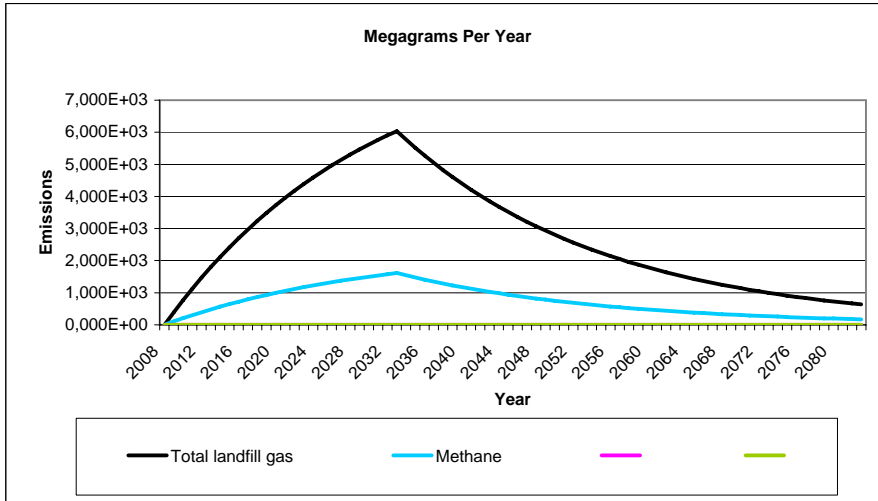
Pollutant Parameters

<i>Gas / Pollutant Default Parameters:</i>				<i>User-specified Pollutant Parameters:</i>	
	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		
	1,1,1,2-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		

Pollutant Parameters (Continued)

<i>Gas / Pollutant Default Parameters:</i>				<i>User-specified Pollutant Parameters:</i>	
	Compound	Concentration (ppmv)	Molecular Weight	Concentration (ppmv)	Molecular Weight
Pollutants	Ethyl mercaptan (ethanethiol) - VOC	2,3	62,13		
	Ethylbenzene - HAP/VOC	4,6	106,16		
	Ethylene dibromide - HAP/VOC	1,0E-03	187,88		
	Fluorotrichloromethane - VOC	0,76	137,38		
	Hexane - HAP/VOC	6,6	86,18		
	Hydrogen sulfide	36	34,08		
	Mercury (total) - HAP	2,9E-04	200,61		
	Methyl ethyl ketone - HAP/VOC	7,1	72,11		
	Methyl isobutyl ketone - HAP/VOC	1,9	100,16		
	Methyl mercaptan - VOC	2,5	48,11		
	Pentane - VOC	3,3	72,15		
	Perchloroethylene (tetrachloroethylene) - HAP	3,7	165,83		
	Propane - VOC	11	44,09		
	t-1,2-Dichloroethene - VOC	2,8	96,94		
	Toluene - No or Unknown Co-disposal - HAP/VOC	39	92,13		
	Toluene - Co-disposal - HAP/VOC	170	92,13		
	Trichloroethylene (trichloroethene) - HAP/VOC	2,8	131,40		
	Vinyl chloride - HAP/VOC	7,3	62,50		
	Xylenes - HAP/VOC	12	106,16		

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)
2008	0	0	0	0	0	0
2009	3,932E+02	3,149E+05	2,116E+01	1,050E+02	1,574E+05	1,058E+01
2010	7,692E+02	6,159E+05	4,138E+01	2,055E+02	3,080E+05	2,069E+01
2011	1,129E+03	9,037E+05	6,072E+01	3,015E+02	4,518E+05	3,036E+01
2012	1,472E+03	1,179E+06	7,920E+01	3,932E+02	5,894E+05	3,960E+01
2013	1,801E+03	1,442E+06	9,688E+01	4,810E+02	7,209E+05	4,844E+01
2014	2,115E+03	1,693E+06	1,138E+02	5,648E+02	8,466E+05	5,689E+01
2015	2,415E+03	1,934E+06	1,299E+02	6,450E+02	9,668E+05	6,496E+01
2016	2,702E+03	2,163E+06	1,454E+02	7,217E+02	1,082E+06	7,268E+01
2017	2,976E+03	2,383E+06	1,601E+02	7,950E+02	1,192E+06	8,006E+01
2018	3,238E+03	2,593E+06	1,742E+02	8,650E+02	1,297E+06	8,712E+01
2019	3,489E+03	2,794E+06	1,877E+02	9,320E+02	1,397E+06	9,386E+01
2020	3,729E+03	2,986E+06	2,006E+02	9,960E+02	1,493E+06	1,003E+02
2021	3,958E+03	3,169E+06	2,130E+02	1,057E+03	1,585E+06	1,065E+02
2022	4,177E+03	3,345E+06	2,247E+02	1,116E+03	1,672E+06	1,124E+02
2023	4,387E+03	3,513E+06	2,360E+02	1,172E+03	1,756E+06	1,180E+02
2024	4,587E+03	3,673E+06	2,468E+02	1,225E+03	1,836E+06	1,234E+02
2025	4,778E+03	3,826E+06	2,571E+02	1,276E+03	1,913E+06	1,285E+02
2026	4,961E+03	3,973E+06	2,669E+02	1,325E+03	1,986E+06	1,335E+02
2027	5,136E+03	4,113E+06	2,763E+02	1,372E+03	2,056E+06	1,382E+02
2028	5,303E+03	4,247E+06	2,853E+02	1,417E+03	2,123E+06	1,427E+02
2029	5,463E+03	4,375E+06	2,939E+02	1,459E+03	2,187E+06	1,470E+02
2030	5,616E+03	4,497E+06	3,022E+02	1,500E+03	2,249E+06	1,511E+02
2031	5,762E+03	4,614E+06	3,100E+02	1,539E+03	2,307E+06	1,550E+02
2032	5,902E+03	4,726E+06	3,175E+02	1,576E+03	2,363E+06	1,588E+02
2033	6,035E+03	4,833E+06	3,247E+02	1,612E+03	2,416E+06	1,624E+02
2034	5,770E+03	4,620E+06	3,104E+02	1,541E+03	2,310E+06	1,552E+02
2035	5,516E+03	4,417E+06	2,968E+02	1,473E+03	2,208E+06	1,484E+02
2036	5,273E+03	4,223E+06	2,837E+02	1,409E+03	2,111E+06	1,419E+02
2037	5,041E+03	4,037E+06	2,712E+02	1,347E+03	2,018E+06	1,356E+02
2038	4,819E+03	3,859E+06	2,593E+02	1,287E+03	1,930E+06	1,296E+02
2039	4,607E+03	3,689E+06	2,479E+02	1,231E+03	1,845E+06	1,239E+02
2040	4,405E+03	3,527E+06	2,370E+02	1,177E+03	1,763E+06	1,185E+02
2041	4,211E+03	3,372E+06	2,265E+02	1,125E+03	1,686E+06	1,133E+02
2042	4,025E+03	3,223E+06	2,166E+02	1,075E+03	1,612E+06	1,083E+02
2043	3,848E+03	3,082E+06	2,070E+02	1,028E+03	1,541E+06	1,035E+02
2044	3,679E+03	2,946E+06	1,979E+02	9,827E+02	1,473E+06	9,897E+01
2045	3,517E+03	2,816E+06	1,892E+02	9,395E+02	1,408E+06	9,461E+01
2046	3,362E+03	2,692E+06	1,809E+02	8,981E+02	1,346E+06	9,045E+01
2047	3,214E+03	2,574E+06	1,729E+02	8,586E+02	1,287E+06	8,647E+01
2048	3,073E+03	2,461E+06	1,653E+02	8,208E+02	1,230E+06	8,267E+01
2049	2,938E+03	2,352E+06	1,581E+02	7,847E+02	1,176E+06	7,903E+01
2050	2,808E+03	2,249E+06	1,511E+02	7,502E+02	1,124E+06	7,555E+01
2051	2,685E+03	2,150E+06	1,445E+02	7,172E+02	1,075E+06	7,223E+01
2052	2,567E+03	2,055E+06	1,381E+02	6,856E+02	1,028E+06	6,905E+01
2053	2,454E+03	1,965E+06	1,320E+02	6,554E+02	9,824E+05	6,601E+01
2054	2,346E+03	1,878E+06	1,262E+02	6,266E+02	9,392E+05	6,311E+01
2055	2,243E+03	1,796E+06	1,207E+02	5,990E+02	8,979E+05	6,033E+01
2056	2,144E+03	1,717E+06	1,153E+02	5,727E+02	8,584E+05	5,767E+01
2057	2,050E+03	1,641E+06	1,103E+02	5,475E+02	8,206E+05	5,514E+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)
2058	1,959E+03	1,569E+06	1,054E+02	5,234E+02	7,845E+05	5,271E+01
2059	1,873E+03	1,500E+06	1,008E+02	5,003E+02	7,500E+05	5,039E+01
2060	1,791E+03	1,434E+06	9,635E+01	4,783E+02	7,170E+05	4,817E+01
2061	1,712E+03	1,371E+06	9,211E+01	4,573E+02	6,854E+05	4,605E+01
2062	1,637E+03	1,311E+06	8,805E+01	4,372E+02	6,553E+05	4,403E+01
2063	1,565E+03	1,253E+06	8,418E+01	4,179E+02	6,264E+05	4,209E+01
2064	1,496E+03	1,198E+06	8,048E+01	3,995E+02	5,989E+05	4,024E+01
2065	1,430E+03	1,145E+06	7,693E+01	3,820E+02	5,725E+05	3,847E+01
2066	1,367E+03	1,095E+06	7,355E+01	3,651E+02	5,473E+05	3,677E+01
2067	1,307E+03	1,046E+06	7,031E+01	3,491E+02	5,232E+05	3,516E+01
2068	1,249E+03	1,000E+06	6,722E+01	3,337E+02	5,002E+05	3,361E+01
2069	1,194E+03	9,564E+05	6,426E+01	3,190E+02	4,782E+05	3,213E+01
2070	1,142E+03	9,143E+05	6,143E+01	3,050E+02	4,572E+05	3,072E+01
2071	1,092E+03	8,741E+05	5,873E+01	2,916E+02	4,370E+05	2,937E+01
2072	1,044E+03	8,356E+05	5,615E+01	2,787E+02	4,178E+05	2,807E+01
2073	9,976E+02	7,989E+05	5,368E+01	2,665E+02	3,994E+05	2,684E+01
2074	9,537E+02	7,637E+05	5,131E+01	2,548E+02	3,819E+05	2,566E+01
2075	9,118E+02	7,301E+05	4,906E+01	2,435E+02	3,651E+05	2,453E+01
2076	8,717E+02	6,980E+05	4,690E+01	2,328E+02	3,490E+05	2,345E+01
2077	8,333E+02	6,673E+05	4,483E+01	2,226E+02	3,336E+05	2,242E+01
2078	7,966E+02	6,379E+05	4,286E+01	2,128E+02	3,190E+05	2,143E+01
2079	7,616E+02	6,098E+05	4,097E+01	2,034E+02	3,049E+05	2,049E+01
2080	7,281E+02	5,830E+05	3,917E+01	1,945E+02	2,915E+05	1,959E+01
2081	6,960E+02	5,573E+05	3,745E+01	1,859E+02	2,787E+05	1,872E+01
2082	6,654E+02	5,328E+05	3,580E+01	1,777E+02	2,664E+05	1,790E+01
2083	6,361E+02	5,094E+05	3,423E+01	1,699E+02	2,547E+05	1,711E+01
2084	6,081E+02	4,870E+05	3,272E+01	1,624E+02	2,435E+05	1,636E+01
2085	5,814E+02	4,655E+05	3,128E+01	1,553E+02	2,328E+05	1,564E+01
2086	5,558E+02	4,451E+05	2,990E+01	1,485E+02	2,225E+05	1,495E+01
2087	5,313E+02	4,255E+05	2,859E+01	1,419E+02	2,127E+05	1,429E+01
2088	5,080E+02	4,067E+05	2,733E+01	1,357E+02	2,034E+05	1,366E+01
2089	4,856E+02	3,888E+05	2,613E+01	1,297E+02	1,944E+05	1,306E+01
2090	4,642E+02	3,717E+05	2,498E+01	1,240E+02	1,859E+05	1,249E+01
2091	4,438E+02	3,554E+05	2,388E+01	1,185E+02	1,777E+05	1,194E+01
2092	4,243E+02	3,397E+05	2,283E+01	1,133E+02	1,699E+05	1,141E+01
2093	4,056E+02	3,248E+05	2,182E+01	1,083E+02	1,624E+05	1,091E+01
2094	3,878E+02	3,105E+05	2,086E+01	1,036E+02	1,553E+05	1,043E+01
2095	3,707E+02	2,968E+05	1,994E+01	9,902E+01	1,484E+05	9,972E+00
2096	3,544E+02	2,838E+05	1,907E+01	9,466E+01	1,419E+05	9,533E+00
2097	3,388E+02	2,713E+05	1,823E+01	9,050E+01	1,356E+05	9,114E+00
2098	3,239E+02	2,594E+05	1,743E+01	8,651E+01	1,297E+05	8,713E+00
2099	3,096E+02	2,479E+05	1,666E+01	8,271E+01	1,240E+05	8,330E+00
2100	2,960E+02	2,370E+05	1,593E+01	7,907E+01	1,185E+05	7,963E+00
2101	2,830E+02	2,266E+05	1,523E+01	7,559E+01	1,133E+05	7,613E+00
2102	2,705E+02	2,166E+05	1,456E+01	7,226E+01	1,083E+05	7,278E+00
2103	2,586E+02	2,071E+05	1,391E+01	6,908E+01	1,035E+05	6,957E+00
2104	2,472E+02	1,980E+05	1,330E+01	6,604E+01	9,899E+04	6,651E+00
2105	2,364E+02	1,893E+05	1,272E+01	6,314E+01	9,464E+04	6,359E+00
2106	2,260E+02	1,809E+05	1,216E+01	6,036E+01	9,047E+04	6,079E+00
2107	2,160E+02	1,730E+05	1,162E+01	5,770E+01	8,649E+04	5,811E+00
2108	2,065E+02	1,654E+05	1,111E+01	5,516E+01	8,269E+04	5,556E+00

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)
2109	1,974E+02	1,581E+05	1,062E+01	5,274E+01	7,905E+04	5,311E+00
2110	1,887E+02	1,511E+05	1,015E+01	5,042E+01	7,557E+04	5,077E+00
2111	1,804E+02	1,445E+05	9,708E+00	4,820E+01	7,224E+04	4,854E+00
2112	1,725E+02	1,381E+05	9,281E+00	4,608E+01	6,906E+04	4,640E+00
2113	1,649E+02	1,321E+05	8,873E+00	4,405E+01	6,603E+04	4,436E+00
2114	1,577E+02	1,262E+05	8,482E+00	4,211E+01	6,312E+04	4,241E+00
2115	1,507E+02	1,207E+05	8,109E+00	4,026E+01	6,034E+04	4,054E+00
2116	1,441E+02	1,154E+05	7,752E+00	3,849E+01	5,769E+04	3,876E+00
2117	1,377E+02	1,103E+05	7,411E+00	3,679E+01	5,515E+04	3,705E+00
2118	1,317E+02	1,054E+05	7,085E+00	3,517E+01	5,272E+04	3,542E+00
2119	1,259E+02	1,008E+05	6,773E+00	3,363E+01	5,040E+04	3,387E+00
2120	1,203E+02	9,637E+04	6,475E+00	3,215E+01	4,818E+04	3,238E+00
2121	1,151E+02	9,213E+04	6,190E+00	3,073E+01	4,606E+04	3,095E+00
2122	1,100E+02	8,808E+04	5,918E+00	2,938E+01	4,404E+04	2,959E+00
2123	1,052E+02	8,420E+04	5,657E+00	2,809E+01	4,210E+04	2,829E+00
2124	1,005E+02	8,049E+04	5,408E+00	2,685E+01	4,025E+04	2,704E+00
2125	9,610E+01	7,695E+04	5,170E+00	2,567E+01	3,848E+04	2,585E+00
2126	9,187E+01	7,357E+04	4,943E+00	2,454E+01	3,678E+04	2,471E+00
2127	8,783E+01	7,033E+04	4,725E+00	2,346E+01	3,516E+04	2,363E+00
2128	8,396E+01	6,723E+04	4,517E+00	2,243E+01	3,362E+04	2,259E+00
2129	8,027E+01	6,428E+04	4,319E+00	2,144E+01	3,214E+04	2,159E+00
2130	7,674E+01	6,145E+04	4,129E+00	2,050E+01	3,072E+04	2,064E+00
2131	7,336E+01	5,874E+04	3,947E+00	1,960E+01	2,937E+04	1,974E+00
2132	7,013E+01	5,616E+04	3,773E+00	1,873E+01	2,808E+04	1,887E+00
2133	6,705E+01	5,369E+04	3,607E+00	1,791E+01	2,684E+04	1,804E+00
2134	6,410E+01	5,133E+04	3,449E+00	1,712E+01	2,566E+04	1,724E+00
2135	6,128E+01	4,907E+04	3,297E+00	1,637E+01	2,453E+04	1,648E+00
2136	5,858E+01	4,691E+04	3,152E+00	1,565E+01	2,345E+04	1,576E+00
2137	5,600E+01	4,484E+04	3,013E+00	1,496E+01	2,242E+04	1,507E+00
2138	5,354E+01	4,287E+04	2,880E+00	1,430E+01	2,144E+04	1,440E+00
2139	5,118E+01	4,098E+04	2,754E+00	1,367E+01	2,049E+04	1,377E+00
2140	4,893E+01	3,918E+04	2,633E+00	1,307E+01	1,959E+04	1,316E+00
2141	4,678E+01	3,746E+04	2,517E+00	1,249E+01	1,873E+04	1,258E+00
2142	4,472E+01	3,581E+04	2,406E+00	1,194E+01	1,790E+04	1,203E+00
2143	4,275E+01	3,423E+04	2,300E+00	1,142E+01	1,712E+04	1,150E+00
2144	4,087E+01	3,273E+04	2,199E+00	1,092E+01	1,636E+04	1,099E+00
2145	3,907E+01	3,129E+04	2,102E+00	1,044E+01	1,564E+04	1,051E+00
2146	3,735E+01	2,991E+04	2,010E+00	9,977E+00	1,495E+04	1,005E+00
2147	3,571E+01	2,859E+04	1,921E+00	9,538E+00	1,430E+04	9,606E-01
2148	3,414E+01	2,734E+04	1,837E+00	9,118E+00	1,367E+04	9,183E-01

