

Environmental Protection Agency

Pt. 98, Subpt. HH, Table HH-1

this chapter that receives construction and demolition waste and does not receive hazardous waste (defined in §261.3 of this chapter) or industrial solid waste (defined in §258.2 of this chapter) or municipal solid waste (as defined in §98.6) other than residential lead-based paint waste. A C&D waste landfill typically receives any one or more of the following types of solid wastes: Roadwork material, excavated material, demolition waste, construction/renovation waste, and site clearance waste.

*Destruction device* means a flare, thermal oxidizer, boiler, turbine, internal combustion engine, or any other combustion unit used to destroy or oxidize methane contained in landfill gas.

*Industrial waste landfill* means any landfill other than a municipal solid waste landfill, a RCRA Subtitle C hazardous waste landfill, or a TSCA hazardous waste landfill, in which indus-

trial solid waste, such a RCRA Subtitle D wastes (nonhazardous industrial solid waste, defined in §257.2 of this chapter), commercial solid wastes, or conditionally exempt small quantity generator wastes, is placed. An industrial waste landfill includes all disposal areas at the facility.

*Solid waste* has the meaning established by the Administrator pursuant to the Solid Waste Disposal Act (42 U.S.C.A. 6901 *et seq.*).

*Working capacity* means the maximum volume or mass of waste that is actually placed in the landfill from an individual or representative type of container (such as a tank, truck, or roll-off bin) used to convey wastes to the landfill, taking into account that the container may not be able to be 100 percent filled and/or 100 percent emptied for each load.

[75 FR 66473, Oct. 28, 2010]

TABLE HH-1 TO SUBPART HH OF PART 98—EMISSIONS FACTORS, OXIDATION FACTORS AND METHODS

Factor	Default value	Units
<b>DOC and k values—Bulk waste option</b>		
DOC (bulk waste) .....	0.20 .....	Weight fraction, wet basis.
k (precipitation plus recirculated leachate <sup>a</sup> <20 inches/year) .....	0.02 .....	yr <sup>-1</sup>
k (precipitation plus recirculated leachate <sup>a</sup> 20–40 inches/year) .....	0.038 .....	yr <sup>-1</sup>
k (precipitation plus recirculated leachate <sup>a</sup> >40 inches/year) .....	0.057 .....	yr <sup>-1</sup>
<b>DOC and k values—Modified bulk MSW option</b>		
DOC (bulk MSW, excluding inerts and C&D waste) .....	0.31 .....	Weight fraction, wet basis.
DOC (inerts, e.g., glass, plastics, metal, concrete) .....	0.00 .....	Weight fraction, wet basis.
DOC (C&D waste) .....	0.08 .....	Weight fraction, wet basis.
k (bulk MSW, excluding inerts and C&D waste) .....	0.02 to 0.057 <sup>b</sup> .....	yr <sup>-1</sup>
k (inerts, e.g., glass, plastics, metal, concrete) .....	0.00 .....	yr <sup>-1</sup>
k (C&D waste) .....	0.02 to 0.04 <sup>b</sup> .....	yr <sup>-1</sup>
<b>DOC and k values—Waste composition option</b>		
DOC (food waste) .....	0.15 .....	Weight fraction, wet basis.
DOC (garden) .....	0.2 .....	Weight fraction, wet basis.
DOC (paper) .....	0.4 .....	Weight fraction, wet basis.
DOC (wood and straw) .....	0.43 .....	Weight fraction, wet basis.
DOC (textiles) .....	0.24 .....	Weight fraction, wet basis.
DOC (diapers) .....	0.24 .....	Weight fraction, wet basis.
DOC (sewage sludge) .....	0.05 .....	Weight fraction, wet basis.
DOC (inerts, e.g., glass, plastics, metal, cement) .....	0.00 .....	Weight fraction, wet basis.
k (food waste) .....	0.06 to 0.185 <sup>c</sup> .....	yr <sup>-1</sup>
k (garden) .....	0.05 to 0.10 <sup>c</sup> .....	yr <sup>-1</sup>
k (paper) .....	0.04 to 0.06 <sup>c</sup> .....	yr <sup>-1</sup>
k (wood and straw) .....	0.02 to 0.03 <sup>c</sup> .....	yr <sup>-1</sup>
k (textiles) .....	0.04 to 0.06 <sup>c</sup> .....	yr <sup>-1</sup>
k (diapers) .....	0.05 to 0.10 <sup>c</sup> .....	yr <sup>-1</sup>
k (sewage sludge) .....	0.06 to 0.185 <sup>c</sup> .....	yr <sup>-1</sup>
k (inerts e.g., glass, plastics, metal, concrete) .....	0.00 .....	yr <sup>-1</sup>
<b>Other parameters—All MSW landfills</b>		
MCF .....	1.	
DOC <sub>F</sub> .....	0.5.	

Factor	Default value	Units
F .....	0.5.	
OX .....	0.1.	
DE .....	0.99.	

<sup>a</sup>Recirculated leachate (in inches/year) is the total volume of leachate recirculated from company records or engineering estimates divided by the area of the portion of the landfill containing waste with appropriate unit conversions. Alternatively, landfills that use leachate recirculation can elect to use the k value of 0.057 rather than calculating the recirculated leachate rate.

<sup>b</sup>Use the lesser value when precipitation plus recirculated leachate is less than 20 inches/year. Use the greater value when precipitation plus recirculated leachate is greater than 40 inches/year. Use the average of the range of values when precipitation plus recirculated leachate is 20 to 40 inches/year (inclusive). Alternatively, landfills that use leachate recirculation can elect to use the greater value rather than calculating the recirculated leachate rate.

<sup>c</sup>Use the lesser value when the potential evapotranspiration rate exceeds the mean annual precipitation rate plus recirculated leachate. Use the greater value when the potential evapotranspiration rate does not exceed the mean annual precipitation rate plus recirculated leachate. Alternatively, landfills that use leachate recirculation can elect to use the greater value rather than assessing the potential evapotranspiration rate or recirculated leachate rate.

[75 FR 66473, Oct. 28, 2010]

TABLE HH-2 TO SUBPART HH OF PART 98—U.S. PER CAPITA WASTE DISPOSAL RATES

Year	Waste per capita ton/cap/yr	% to SWDS
1950 .....	0.63	100
1951 .....	0.63	100
1952 .....	0.63	100
1953 .....	0.63	100
1954 .....	0.63	100
1955 .....	0.63	100
1956 .....	0.63	100
1957 .....	0.63	100
1958 .....	0.63	100
1959 .....	0.63	100
1960 .....	0.63	100
1961 .....	0.64	100
1962 .....	0.64	100
1963 .....	0.65	100
1964 .....	0.65	100
1965 .....	0.66	100
1966 .....	0.66	100
1967 .....	0.67	100
1968 .....	0.68	100
1969 .....	0.68	100
1970 .....	0.69	100
1971 .....	0.69	100
1972 .....	0.70	100
1973 .....	0.71	100
1974 .....	0.71	100
1975 .....	0.72	100
1976 .....	0.73	100
1977 .....	0.73	100
1978 .....	0.74	100
1979 .....	0.75	100
1980 .....	0.75	100

Year	Waste per capita ton/cap/yr	% to SWDS
1981 .....	0.76	100
1982 .....	0.77	100
1983 .....	0.77	100
1984 .....	0.78	100
1985 .....	0.79	100
1986 .....	0.79	100
1987 .....	0.80	100
1988 .....	0.80	100
1989 .....	0.85	84
1990 .....	0.84	77
1991 .....	0.78	76
1992 .....	0.76	72
1993 .....	0.78	71
1994 .....	0.77	67
1995 .....	0.72	63
1996 .....	0.71	62
1997 .....	0.72	61
1998 .....	0.78	61
1999 .....	0.78	60
2000 .....	0.84	61
2001 .....	0.95	63
2002 .....	1.06	66
2003 .....	1.06	65
2004 .....	1.06	64
2005 .....	1.06	64
2006 .....	1.06	64

EDITORIAL NOTE: At 75 FR 66474, October 28, 2010, Table HH-2 to subpart HH was amended; however, the amendment could not be incorporated as instructed.

TABLE HH-3 TO SUBPART HH OF PART 98—LANDFILL GAS COLLECTION EFFICIENCIES

Description	Landfill Gas Collection Efficiency
A1: Area with no waste in-place .....	Not applicable; do not use this area in the calculation.
A2: Area without active gas collection, regardless of cover type .....	CE2: 0%.
A3: Area with daily soil cover and active gas collection .....	CE3: 60%.
A4: Area with an intermediate soil cover, or a final soil cover not meeting the criteria for A5 below, and active gas collection.	CE4: 75%.
A5: Area with a final soil cover of 3 feet or thicker of clay and/or geomembrane cover system and active gas collection.	CE5: 95%.
Area weighted average collection efficiency for landfills .....	$CE_{ave1} = (A2 \cdot CE2 + A3 \cdot CE3 + A4 \cdot CE4 + A5 \cdot CE5) / (A2 + A3 + A4 + A5)$ .