

**Table A2. Nitrogen Oxides Uncontrolled Emission Factors
(Units and Factors)**

Fuel, Code, Source, and Emission Units			Combustion System Type/Firing Configuration							
Fuel And EIA Fuel Code	Source and Tables (As appropriate)	Emissions Units (Lbs = pounds, MMCF = million cubic feet, MG = thousand gallons)	Factors for Wet-Bottom Boilers are in Brackets; All Other Boiler Factors are for Dry-Bottom							
			Cyclone Boiler	Fluidized Bed Boiler	Opposed Firing Boiler	Spreader Stoker Boiler	Tangential Boiler	All Other Boiler Types	Combustion Turbine	Internal Combustion Engine
Agricultural Byproducts (AB)	Source: 1	Lbs per ton	1.20	1.20	1.20	1.20	1.20	1.20	NA	NA
Blast Furnace Gas (BFG)	Sources: 1 (including footnote 7 within source); EIA estimates	Lbs per MMCF	15.40	15.40	15.40	15.40	15.40	15.40	30.40	256.55
Bituminous Coal (BIT)	Source: 2, Table 1.1-3	Lbs per ton	33.00	5.00	12 [31]	11.00	10.0 [14.0]	12.0 [31.0]	NA	NA
Black Liquor (BLQ)	Source: 1	Lbs per ton **	1.50	1.50	1.50	1.50	1.50	1.50	NA	NA
Distillate Fuel Oil (DFO)	Source: 2, Tables 3.4-1 & 1.3-1	Lbs per MG	24.00	24.00	24.00	24.00	24.00	24.00	122.0	443.8
Jet Fuel (JF)	Source: 2, Tables 3.1-2a, 3.4-1 & 1.3-1	Lbs per MG	24.00	24.00	24.00	24.00	24.00	24.00	118.0	432.0
Kerosene (KER)	Source: 2, Tables 3.1-2a, 3.4-1 & 1.3-1	Lbs per MG	24.00	24.00	24.00	24.00	24.00	24.00	118.0	432.0
Landfill Gas (LFG)	Sources: 1 (including footnote 7 within source); EIA estimates	Lbs per MMCF	72.44	72.44	72.44	72.44	72.44	72.44	144.0	1215.22
Lignite Coal (LIG)	Source: 2, Table 1.7-1	Lbs per ton	15.00	3.60	6.3	5.80	7.10	6.3	NA	NA
Municipal Solid Waste (MSW)	Source: 1	Lbs per ton	5.0	5.0	5.0	5.0	5.0	5.0	NA	NA
Natural Gas (NG)	Source: 2, Tables 1.4-1, 3.1-1, and 3.4-1	Lbs per MMCF	280.00	280.00	280.00	280.00	170.00	280.00	328.00	2768.00
Other Biomass Gas (OBG)	Sources: 1 (including footnote 7 within source); EIA estimates	Lbs per MMCF	112.83	112.83	112.83	112.83	112.83	112.83	313.60	2646.48
Other Biomass Liquids (OBL)	Source: 1 (including footnote 3 within source)	Lbs per MG	19.0	19.0	19.0	19.0	19.0	19.0	NA	NA
Other Biomass Solids (OBS)	Source: 1 (including footnote 11 within source)	Lbs per ton	2.0	2.0	2.0	2.0	2.0	2.0	NA	NA
Other Gases (OG)	Sources: 1 (including footnote 7 within source); EIA estimates	Lbs per MMCF	152.82	152.82	152.82	152.82	152.82	152.82	263.82	2226.41
Other (OTH)	Assumed to have emissions similar to natural gas.	Lbs per MMCF	280.00	280.00	280.00	280.00	170.00	280.00	328.00	2768.00
Petroleum Coke (PC)	Source: 1 (including footnote 8 within source)	Lbs per ton	21.00	5.00	21.00	21.00	21.00	21.00	NA	NA
Propane Gas (PG)	Sources: 3; EIA estimates	Lbs per MMCF	215.00	215.00	215.00	215.00	215.00	215.00	330.75	2791.22
Residual Fuel Oil (RFO)	Source: 2, Table 1.3-1	Lbs per MG	47.00	47.00	47.00	47.00	32.00	47.00	NA	NA
Synthetic Coal (SC)	Assumed to have emissions similar to Bituminous Coal.	Lbs per ton	33.00	5.00	12 [31]	11.00	10.0 [14.0]	12.0 [31.0]	NA	NA
Sludge Waste (SLW)	Source: 1 (including footnote 11 within source)	Lbs per ton **	5.00	5.00	5.00	5.00	5.00	5.00	NA	NA
Subbituminous Coal (SUB)	Source: 2, Table 1.1-3	Lbs per ton	17.00	5.00	7.4 [24]	8.80	7.2	7.4 [24.0]	NA	NA
Tire-Derived Fuel (TDF)	Source: 1 (including footnote 13 within source)	Lbs per ton	33.00	5.00	12 [31]	11.00	10.0 [14.0]	12.0 [31.0]	NA	NA
Waste Coal (WC)	Source: 1 (including footnote 20 within source)	Lbs per ton	15.00	3.60	6.30	5.80	7.10	6.30	NA	NA
Wood Waste Liquids (WDL)	Source: 1 (including footnote 16 within source)	Lbs per MG	5.43	5.43	5.43	5.43	5.43	5.43	NA	NA
Wood Waste Solids (WDS)	Source: 1	Lbs per ton	2.51	2.00	2.51	1.50	2.51	2.51	NA	NA
Waste Oil (WO)	Source: 2, Table 1.11-2	Lbs per MG	19.00	19.00	19.00	19.00	19.00	19.00	NA	NA

Note: ** Although Sludge Waste and Black Liquor consist substantially of liquids, these fuels are measured and reported to EIA in tons.

Sources:

1. Eastern Research Group, Inc. and E.H. Pechan & Associates, Inc., *Documentation for the 2002 Electric Generating Unit National Emissions Inventory*, Table 6, September 2004. Prepared for the U.S. Environmental Protection Agency, Emission Factor and Inventory Group (D205-01); Emissions, Monitoring and Analysis Division, Research Triangle Park;
2. U.S. Environmental Protection Agency, *AP 42, Fifth Edition (Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources)*; available at: <http://www.epa.gov/ttn/chieff/ap42/>; and
3. U.S. Environmental Protection Agency, *Factor Information Retrieval (FIRE) Database, Version 6.25*; available at: <http://www.epa.gov/ttn/chieff/software/fire/index.html>