1. Plot the values below by hand using a stacked area graph (example below)

Global CO2 Emissions from Fossil-Fuel Burning

YEAR	SOLID	LIQUID	GAS	CEMENT PRODUCTION	GAS FLARING	TOTAL
1760	3	0	0	0	0	3
1770	3	0	0	0	0	3
1780	4	0	0	0	0	4
1790	5	0	0	0	0	5
1800	8	0	0	0	0	8
1810	10	0	0	0	0	10
1820	14	0	0	0	0	14
1830	24	0	0	0	0	24
1840	33	0	0	0	0	33
1850	54	0	0	0	0	54
1860	91	0	0	0	0	91
1870	146	1	0	0	0	147
1880	233	3	0	0	0	236
1890	345	8	3	0	0	356
1900	515	16	3	0	0	534
1910	778	34	7	0	0	819
1920	843	78	11	0	0	932
1930	862	152	28	10	0	1052
1940	1017	229	42	11	0	1299
1950	1070	423	97	18	23	1631
1960	1410	849	227	43	39	2568
1970	1556	1839	493	78	87	4053
1980	1935	2422	737	120	86	5300
1990	2359	2492	1026	157	40	6074
2000	2327	2845	1289	226	46	6733
2010	3812	3107	1696	446	67	9128

****

*** Global CO2 Emissions from Fossil-Fuel Burning, ***

*** Cement Manufacture, and Gas Flaring: 1751-2014 ***

***

*** March 3, 2017 ***

***

*** Source: Tom Boden ***

*** Bob Andres ***

*** Carbon Dioxide Information Analysis Center ***

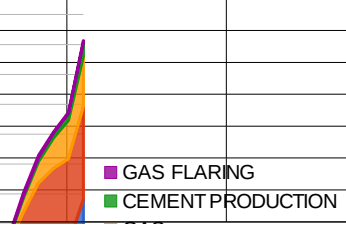
2. Using the EPA website below, determine how many COAL BURNING POWER PLANTS are equivalent to the Total Carbon Emissions and record this in the chart.

YEAR	PLANT EQUIVALENTS
1760	
1770	
1780	
1790	
1800	
1810	
1820	
1830	
1840	
1850	
1860	
1870	
1880	
1890	
1900	
1910	
1920	
1930	
1940	
1950	
1960	
1970	
1980	
1990	
2000	
2010	

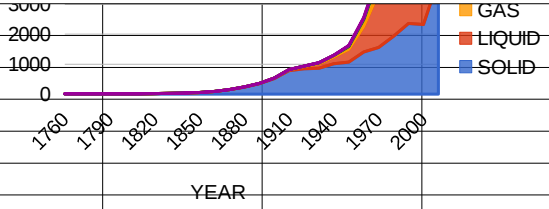
Determined from https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator

3. Graph this data electronically

EXAMPLE



*** Oak Ridge National Laboratory ***
*** Oak Ridge, Tennessee 37831-6290 ***
*** USA ***
*** ***
*** Gregg Marland ***
*** Research Institute for Environment, Energy ***
*** and Economics ***
*** Appalachian State University ***
*** Boone, North Carolina 28608-2131 ***
*** USA ***
****



All emission estimates are expressed in **million metric tons of carbon**. To convert these estimates to units of carbon dioxide (CO2), simply multiply these estimates by 3.667.

Per capita emission estimates are expressed in metric tons of carbon.

Population estimates were not available to permit calculations of global per capita estimates before 1950. Please note that annual sums were tallied before each element (e.g., Gas) was rounded and reported here so totals may differ slightly from the sum of the elements due to rounding.

http://cdiac.ess-dive.lbl.gov/ftp/ndp030/global.1751_2014.ems

Adapted by D. Amidon 2018

http://cdiac.ess-dive.lbl.gov/ftp/trends/co2/lawdome.combined.dat

75 Year Smoothed, year A.D.	ppm	**Rounded/ 25 year set** ppm
1010	279.5	
1015	279.6	
1020	279.7	
1025	279.8	280
1030	279.9	
1035	280.0	
1040	280.2	
1045	280.3	
1050	280.5	281
1055	280.7	
1060	280.9	
1065	281.1	
1070	281.3	
1075	281.5	282
1080	281.7	
1085	281.9	
1090	282.1	
1095	282.3	
1100	282.5	283
1105	282.7	
1110	282.9	
1115	283.0	
1120	283.2	
1125	283.3	283
1130	283.5	
1135	283.6	
1140	283.7	
1145	283.8	
1150	283.9	284
1155	284.0	
1160	284.0	
1165	284.1	
1170	284.1	
1175	284.1	284
1180	284.0	
1185	284.0	

1190	283.9	
1195	283.8	
1200	283.6	284
1205	283.4	
1210	283.2	
1215	283.0	
1220	282.8	
1225	282.5	283
1230	282.3	
1235	282.2	
1240	282.0	
1245	281.9	
1250	281.9	282
1255	281.9	
1260	282.0	
1265	282.1	
1270	282.2	
1275	282.3	282
1280	282.5	
1285	282.6	
1290	282.8	
1295	282.9	
1300	283.0	283
1305	283.1	
1310	283.2	
1315	283.3	
1320	283.3	
1325	283.2	283
1330	283.1	
1335	282.9	
1340	282.7	
1345	282.4	
1350	282.1	282
1355	281.8	
1360	281.5	
1365	281.2	
1370	281.0	
1375	280.7	281
1380	280.5	
1385	280.4	
1390	280.3	

1395	280.3	
1400	280.3	280
1405	280.4	
1410	280.5	
1415	280.6	
1420	280.7	
1425	280.8	281
1430	280.9	
1435	280.9	
1440	280.9	
1445	280.9	
1450	280.8	281
1455	280.7	
1460	280.6	
1465	280.6	
1470	280.6	
1475	280.8	281
1480	281.0	
1485	281.3	
1490	281.6	
1495	281.9	
1500	282.2	282
1505	282.5	
1510	282.7	
1515	282.9	
1520	283.1	
1525	283.2	283
1530	283.2	
1535	283.2	
1540	283.1	
1545	283.0	
1550	282.8	283
1555	282.6	
1560	282.2	
1565	281.8	
1570	281.2	
1575	280.5	281
1580	279.7	
1585	278.8	
1590	278.0	
1595	277.1	

1600	276.4	276
1605	275.8	
1610	275.5	
1615	275.3	
1620	275.3	
1625	275.4	275
1630	275.6	
1635	275.9	
1640	276.1	
1645	276.3	
1650	276.4	276
1655	276.5	
1660	276.5	
1665	276.5	
1670	276.4	
1675	276.4	276
1680	276.4	
1685	276.4	
1690	276.5	
1695	276.6	
1700	276.7	277
1705	276.8	
1710	276.9	
1715	277.0	
1720	277.0	
1725	277.0	277
1730	277.0	
1735	276.9	
1740	276.9	
1745	276.9	
1750	277.0	277
1755	277.2	
1760	277.6	
1765	278.0	
1770	278.6	
1775	279.3	279
1780	280.1	
1785	280.8	
1790	281.6	
1795	282.3	
1800	282.9	283

1805	283.4	
1810	283.8	
1815	284.0	
1820	284.2	
1825	284.3	284
1830	284.4	
1835	284.5	
1840	284.6	
1845	284.8	
1850	285.2	285
1855	285.7	
1860	286.3	
1865	287.2	
1870	288.2	
1875	289.4	289
1880	290.8	
1885	292.3	
1890	293.7	
1895	295.2	
1900	296.7	297
1905	298.2	
1910	299.9	
1915	301.5	
1920	303.2	
1925	304.9	305
1930	306.5	
1935	308.0	
1940	309.3	
1945	310.5	
1950	312.0	312
1955	314.1	
1960	316.9	
1965	320.5	
1970	324.7	
1975	329.4	329

Atmospheric CO2 concentrations (ppm) derived from in situ air meas
at Mauna Loa, Observatory, Hawaii: Latitude 19.5°N Longitude 155.6

Source: R. F. Keeling, S. J. Walker, S. C. Piper and A. F. Bollenbacher
Scripps CO2 Program (http://scrippsco2.ucsd.edu) http://scrippsc
Scripps Institution of Oceanography (SIO)
University of California
La Jolla, California USA 92093-0244

Yr	Mn	CO2 [ppm]
1958	JAN	No Data
1958	FEB	No Data
1958	MAR	315.7
1958	APR	317.5
1958	MAY	317.5
1958	JUN	No Data
1958	JUL	315.9
1958	AUG	314.9
1958	SEP	313.2
1958	OCT	No Data
1958	NOV	313.3
1958	DEC	314.7
1959	JAN	315.6
1959	FEB	316.5
1959	MAR	316.7
1959	APR	317.7
1959	MAY	318.3
1959	JUN	318.2
1959	JUL	316.5
1959	AUG	314.8
1959	SEP	313.8
1959	OCT	313.3
1959	NOV	314.8
1959	DEC	315.6
1960	JAN	316.4
1960	FEB	317.0
1960	MAR	317.6

1960	APR	319.0
1960	MAY	320.0
1960	JUN	319.6
1960	JUL	318.2
1960	AUG	315.9
1960	SEP	314.2
1960	OCT	313.8
1960	NOV	315.0
1960	DEC	316.2
1961	JAN	316.9
1961	FEB	317.7
1961	MAR	318.5
1961	APR	319.5
1961	MAY	320.6
1961	JUN	319.8
1961	JUL	318.6
1961	AUG	316.8
1961	SEP	315.0
1961	OCT	315.3
1961	NOV	316.1
1961	DEC	317.0
1962	JAN	317.9
1962	FEB	318.6
1962	MAR	319.7
1962	APR	320.6
1962	MAY	321.0
1962	JUN	320.6
1962	JUL	319.6
1962	AUG	317.4
1962	SEP	316.3
1962	OCT	315.4
1962	NOV	316.7
1962	DEC	317.7
1963	JAN	318.7
1963	FEB	319.1
1963	MAR	319.9
1963	APR	321.4
1963	MAY	322.3
1963	JUN	321.5
1963	JUL	319.7
1963	AUG	317.8

1963	SEP	316.2
1963	OCT	316.0
1963	NOV	317.1
1963	DEC	318.4
1964	JAN	319.6
1964	FEB	No Data
1964	MAR	No Data
1964	APR	No Data
1964	MAY	322.3
1964	JUN	321.9
1964	JUL	320.4
1964	AUG	318.7
1964	SEP	316.7
1964	OCT	316.9
1964	NOV	317.7
1964	DEC	318.7
1965	JAN	319.4
1965	FEB	320.4
1965	MAR	320.9
1965	APR	322.1
1965	MAY	322.2
1965	JUN	321.9
1965	JUL	321.2
1965	AUG	318.9
1965	SEP	317.8
1965	OCT	317.3
1965	NOV	318.9
1965	DEC	319.4
1966	JAN	320.6
1966	FEB	321.6
1966	MAR	322.4
1966	APR	323.7
1966	MAY	324.1
1966	JUN	323.8
1966	JUL	322.4
1966	AUG	320.4
1966	SEP	318.6
1966	OCT	318.1
1966	NOV	319.8
1966	DEC	321.0
1967	JAN	322.3

1967	FEB	322.5
1967	MAR	323.0
1967	APR	324.4
1967	MAY	325.0
1967	JUN	324.1
1967	JUL	322.5
1967	AUG	320.9
1967	SEP	319.3
1967	OCT	319.4
1967	NOV	320.7
1967	DEC	322.0
1968	JAN	322.6
1968	FEB	323.2
1968	MAR	323.9
1968	APR	325.0
1968	MAY	325.6
1968	JUN	325.4
1968	JUL	324.1
1968	AUG	322.1
1968	SEP	320.3
1968	OCT	320.3
1968	NOV	321.3
1968	DEC	322.9
1969	JAN	324.0
1969	FEB	324.4
1969	MAR	325.6
1969	APR	326.7
1969	MAY	327.4
1969	JUN	326.7
1969	JUL	325.9
1969	AUG	323.7
1969	SEP	322.4
1969	OCT	321.8
1969	NOV	322.9
1969	DEC	324.1
1970	JAN	325.1
1970	FEB	326.0
1970	MAR	326.9
1970	APR	328.1
1970	MAY	328.1
1970	JUN	327.7

1970	JUL	326.3
1970	AUG	324.7
1970	SEP	323.1
1970	OCT	323.1
1970	NOV	324.0
1970	DEC	325.1
1971	JAN	326.2
1971	FEB	326.7
1971	MAR	327.2
1971	APR	327.8
1971	MAY	328.9
1971	JUN	328.6
1971	JUL	327.4
1971	AUG	325.4
1971	SEP	323.4
1971	OCT	323.6
1971	NOV	324.8
1971	DEC	326.0
1972	JAN	326.8
1972	FEB	327.6
1972	MAR	327.8
1972	APR	329.7
1972	MAY	330.1
1972	JUN	329.1
1972	JUL	328.0
1972	AUG	326.3
1972	SEP	324.8
1972	OCT	325.2
1972	NOV	326.5
1972	DEC	327.6
1973	JAN	328.6
1973	FEB	329.6
1973	MAR	330.3
1973	APR	331.5
1973	MAY	332.5
1973	JUN	332.1
1973	JUL	330.9
1973	AUG	329.3
1973	SEP	327.5
1973	OCT	327.2
1973	NOV	328.2

1973	DEC	328.6
1974	JAN	329.4
1974	FEB	330.7
1974	MAR	331.5
1974	APR	332.7
1974	MAY	333.1
1974	JUN	332.3
1974	JUL	331.2
1974	AUG	329.4
1974	SEP	327.4
1974	OCT	327.4
1974	NOV	328.5
1974	DEC	329.6
1975	JAN	330.4
1975	FEB	331.4
1975	MAR	332.0
1975	APR	333.3
1975	MAY	334.0
1975	JUN	333.6
1975	JUL	331.9
1975	AUG	330.1
1975	SEP	328.6
1975	OCT	328.3
1975	NOV	329.5
1975	DEC	330.8
1976	JAN	331.8
1976	FEB	332.6
1976	MAR	333.5
1976	APR	334.6
1976	MAY	334.9
1976	JUN	334.3
1976	JUL	333.1
1976	AUG	330.9
1976	SEP	329.3
1976	OCT	328.9
1976	NOV	330.3
1976	DEC	331.7
1977	JAN	332.9
1977	FEB	333.4
1977	MAR	334.7
1977	APR	336.1

1977	MAY	336.8
1977	JUN	336.3
1977	JUL	334.9
1977	AUG	332.8
1977	SEP	331.6
1977	OCT	331.2
1977	NOV	332.4
1977	DEC	333.9
1978	JAN	335.0
1978	FEB	335.4
1978	MAR	336.6
1978	APR	337.8
1978	MAY	338.0
1978	JUN	337.9
1978	JUL	336.5
1978	AUG	334.7
1978	SEP	332.8
1978	OCT	332.5
1978	NOV	333.9
1978	DEC	335.0
1979	JAN	336.2
1979	FEB	336.8
1979	MAR	338.0
1979	APR	338.9
1979	MAY	339.5
1979	JUN	339.3
1979	JUL	337.7
1979	AUG	336.1
1979	SEP	333.9
1979	OCT	333.9
1979	NOV	335.3
1979	DEC	336.7
1980	JAN	338.0
1980	FEB	338.4
1980	MAR	340.1
1980	APR	340.8
1980	MAY	341.5
1980	JUN	341.2
1980	JUL	339.6
1980	AUG	337.6
1980	SEP	335.9

1980	OCT	336.0
1980	NOV	337.1
1980	DEC	338.2
1981	JAN	339.2
1981	FEB	340.5
1981	MAR	341.4
1981	APR	342.5
1981	MAY	342.9
1981	JUN	342.3
1981	JUL	340.5
1981	AUG	338.4
1981	SEP	336.7
1981	OCT	336.9
1981	NOV	338.4
1981	DEC	339.6
1982	JAN	340.8
1982	FEB	341.6
1982	MAR	342.7
1982	APR	343.6
1982	MAY	344.1
1982	JUN	343.4
1982	JUL	342.1
1982	AUG	339.8
1982	SEP	338.0
1982	OCT	337.9
1982	NOV	339.3
1982	DEC	340.5
1983	JAN	341.4
1983	FEB	342.5
1983	MAR	343.1
1983	APR	344.9
1983	MAY	345.8
1983	JUN	345.3
1983	JUL	344.0
1983	AUG	342.4
1983	SEP	339.9
1983	OCT	340.0
1983	NOV	341.2
1983	DEC	343.0
1984	JAN	343.7
1984	FEB	344.5

1984	MAR	345.3
1984	APR	347.1
1984	MAY	347.4
1984	JUN	346.8
1984	JUL	345.4
1984	AUG	343.3
1984	SEP	341.1
1984	OCT	341.4
1984	NOV	343.0
1984	DEC	344.2
1985	JAN	345.0
1985	FEB	346.0
1985	MAR	347.4
1985	APR	348.4
1985	MAY	348.9
1985	JUN	348.3
1985	JUL	346.6
1985	AUG	344.7
1985	SEP	343.1
1985	OCT	342.8
1985	NOV	344.2
1985	DEC	345.6
1986	JAN	346.3
1986	FEB	347.0
1986	MAR	347.9
1986	APR	349.6
1986	MAY	350.2
1986	JUN	349.6
1986	JUL	347.9
1986	AUG	345.9
1986	SEP	344.9
1986	OCT	344.2
1986	NOV	345.7
1986	DEC	346.9
1987	JAN	348.0
1987	FEB	348.5
1987	MAR	349.4
1987	APR	351.0
1987	MAY	351.9
1987	JUN	351.3
1987	JUL	349.5

1987	AUG	348.1
1987	SEP	346.4
1987	OCT	346.4
1987	NOV	347.8
1987	DEC	349.0
1988	JAN	350.4
1988	FEB	351.7
1988	MAR	352.2
1988	APR	353.6
1988	MAY	354.2
1988	JUN	353.8
1988	JUL	352.4
1988	AUG	350.4
1988	SEP	348.7
1988	OCT	348.9
1988	NOV	350.1
1988	DEC	351.3
1989	JAN	352.8
1989	FEB	353.1
1989	MAR	353.7
1989	APR	355.4
1989	MAY	355.7
1989	JUN	355.1
1989	JUL	353.9
1989	AUG	351.7
1989	SEP	349.8
1989	OCT	350.0
1989	NOV	351.3
1989	DEC	352.5
1990	JAN	353.7
1990	FEB	354.7
1990	MAR	355.4
1990	APR	356.2
1990	MAY	357.2
1990	JUN	356.2
1990	JUL	354.8
1990	AUG	352.9
1990	SEP	351.0
1990	OCT	351.2
1990	NOV	352.8
1990	DEC	354.2

1991	JAN	354.7
1991	FEB	355.8
1991	MAR	357.2
1991	APR	358.6
1991	MAY	359.3
1991	JUN	358.2
1991	JUL	356.2
1991	AUG	354.0
1991	SEP	352.2
1991	OCT	352.2
1991	NOV	353.8
1991	DEC	355.0
1992	JAN	356.0
1992	FEB	356.7
1992	MAR	357.8
1992	APR	359.2
1992	MAY	359.7
1992	JUN	359.3
1992	JUL	357.0
1992	AUG	355.0
1992	SEP	353.0
1992	OCT	353.3
1992	NOV	354.2
1992	DEC	355.4
1993	JAN	356.7
1993	FEB	357.2
1993	MAR	358.4
1993	APR	359.5
1993	MAY	360.3
1993	JUN	359.6
1993	JUL	357.6
1993	AUG	355.5
1993	SEP	353.7
1993	OCT	354.0
1993	NOV	355.3
1993	DEC	356.8
1994	JAN	358.4
1994	FEB	358.9
1994	MAR	360.0
1994	APR	361.3
1994	MAY	361.7

1994	JUN	360.9
1994	JUL	359.6
1994	AUG	357.5
1994	SEP	355.8
1994	OCT	356.0
1994	NOV	357.6
1994	DEC	359.0
1995	JAN	360.0
1995	FEB	361.0
1995	MAR	361.6
1995	APR	363.5
1995	MAY	363.8
1995	JUN	363.3
1995	JUL	361.9
1995	AUG	359.5
1995	SEP	358.1
1995	OCT	357.8
1995	NOV	359.6
1995	DEC	360.7
1996	JAN	362.1
1996	FEB	363.2
1996	MAR	364.0
1996	APR	364.7
1996	MAY	365.4
1996	JUN	365.0
1996	JUL	363.7
1996	AUG	361.5
1996	SEP	359.5
1996	OCT	359.6
1996	NOV	360.8
1996	DEC	362.3
1997	JAN	363.2
1997	FEB	364.0
1997	MAR	364.6
1997	APR	366.4
1997	MAY	366.8
1997	JUN	365.6
1997	JUL	364.5
1997	AUG	362.5
1997	SEP	360.2
1997	OCT	360.8

1997	NOV	362.4
1997	DEC	364.3
1998	JAN	365.3
1998	FEB	366.2
1998	MAR	367.3
1998	APR	368.6
1998	MAY	369.3
1998	JUN	368.9
1998	JUL	367.6
1998	AUG	365.8
1998	SEP	363.9
1998	OCT	364.2
1998	NOV	365.5
1998	DEC	367.0
1999	JAN	368.2
1999	FEB	368.9
1999	MAR	369.6
1999	APR	371.1
1999	MAY	371.0
1999	JUN	370.4
1999	JUL	369.3
1999	AUG	366.9
1999	SEP	364.6
1999	OCT	365.1
1999	NOV	366.7
1999	DEC	368.0
2000	JAN	369.1
2000	FEB	369.5
2000	MAR	370.5
2000	APR	371.7
2000	MAY	371.8
2000	JUN	371.7
2000	JUL	370.1
2000	AUG	368.1
2000	SEP	366.6
2000	OCT	366.7
2000	NOV	368.3
2000	DEC	369.5
2001	JAN	370.3
2001	FEB	371.5
2001	MAR	372.1

2001	APR	372.9
2001	MAY	374.0
2001	JUN	373.3
2001	JUL	371.6
2001	AUG	369.6
2001	SEP	368.0
2001	OCT	368.1
2001	NOV	369.7
2001	DEC	371.2
2002	JAN	372.4
2002	FEB	373.1
2002	MAR	373.5
2002	APR	374.9
2002	MAY	375.6
2002	JUN	375.4
2002	JUL	374.0
2002	AUG	371.5
2002	SEP	370.7
2002	OCT	370.3
2002	NOV	372.1
2002	DEC	373.8
2003	JAN	374.7
2003	FEB	375.6
2003	MAR	376.1
2003	APR	377.7
2003	MAY	378.4
2003	JUN	378.1
2003	JUL	376.6
2003	AUG	374.5
2003	SEP	373.0
2003	OCT	373.0
2003	NOV	374.4
2003	DEC	375.7
2004	JAN	376.8
2004	FEB	377.4
2004	MAR	378.4
2004	APR	380.5
2004	MAY	380.6
2004	JUN	379.6
2004	JUL	377.8
2004	AUG	375.8

2004	SEP	374.1
2004	OCT	374.2
2004	NOV	375.8
2004	DEC	377.4
2005	JAN	378.3
2005	FEB	379.6
2005	MAR	380.1
2005	APR	382.1
2005	MAY	382.2
2005	JUN	382.1
2005	JUL	380.7
2005	AUG	378.7
2005	SEP	376.4
2005	OCT	376.8
2005	NOV	378.3
2005	DEC	380.0
2006	JAN	381.4
2006	FEB	382.0
2006	MAR	382.6
2006	APR	384.4
2006	MAY	384.9
2006	JUN	384.0
2006	JUL	382.3
2006	AUG	380.5
2006	SEP	378.8
2006	OCT	379.1
2006	NOV	380.1
2006	DEC	381.7
2007	JAN	382.6
2007	FEB	383.7
2007	MAR	384.3
2007	APR	386.2
2007	MAY	386.4
2007	JUN	385.9
2007	JUL	384.4
2007	AUG	381.8
2007	SEP	380.9
2007	OCT	380.9
2007	NOV	382.4
2007	DEC	383.6
2008	JAN	385.1

2008	FEB	385.8
2008	MAR	385.8
2008	APR	386.8
2008	MAY	388.5
2008	JUN	388.1
2008	JUL	386.3
2008	AUG	384.1
2008	SEP	383.1
2008	OCT	382.8
2008	NOV	384.0
2008	DEC	385.1
2009	JAN	386.7
2009	FEB	387.1
2009	MAR	388.5
2009	APR	389.6
2009	MAY	390.2
2009	JUN	389.6
2009	JUL	388.1
2009	AUG	386.1
2009	SEP	384.7
2009	OCT	384.3
2009	NOV	386.1
2009	DEC	387.5
2010	JAN	388.6
2010	FEB	390.1
2010	MAR	391.0
2010	APR	392.4
2010	MAY	393.2
2010	JUN	392.2
2010	JUL	390.3
2010	AUG	388.5
2010	SEP	386.8
2010	OCT	387.2
2010	NOV	388.7
2010	DEC	389.8
2011	JAN	391.3
2011	FEB	391.9
2011	MAR	392.5
2011	APR	393.4
2011	MAY	394.3
2011	JUN	393.7

2011	JUL	392.6
2011	AUG	390.2
2011	SEP	389.0
2011	OCT	388.9
2011	NOV	390.2
2011	DEC	391.8
2012	JAN	393.1
2012	FEB	393.4
2012	MAR	394.4
2012	APR	396.4
2012	MAY	396.9
2012	JUN	395.9
2012	JUL	394.5
2012	AUG	392.5
2012	SEP	391.1
2012	OCT	391.0
2012	NOV	393.0
2012	DEC	394.3
2013	JAN	395.6
2013	FEB	396.9
2013	MAR	397.3
2013	APR	398.4
2013	MAY	400.0
2013	JUN	398.9
2013	JUL	397.4
2013	AUG	395.4
2013	SEP	393.4
2013	OCT	393.7
2013	NOV	395.2
2013	DEC	396.8
2014	JAN	397.9
2014	FEB	398.1
2014	MAR	399.5
2014	APR	401.3
2014	MAY	401.9
2014	JUN	401.3
2014	JUL	399.1
2014	AUG	397.2
2014	SEP	395.4
2014	OCT	395.7
2014	NOV	397.2

2014	DEC	398.8
2015	JAN	399.9
2015	FEB	400.3
2015	MAR	401.5
2015	APR	403.5
2015	MAY	404.1
2015	JUN	402.9
2015	JUL	401.6
2015	AUG	399.0
2015	SEP	397.5
2015	OCT	398.3
2015	NOV	400.2
2015	DEC	401.9
2016	JAN	402.7
2016	FEB	404.2
2016	MAR	404.9
2016	APR	407.6
2016	MAY	407.7
2016	JUN	407.0
2016	JUL	404.5
2016	AUG	402.2
2016	SEP	401.0
2016	OCT	401.5
2016	NOV	403.6
2016	DEC	404.6
2017	JAN	406.1
2017	FEB	406.6
2017	MAR	407.1
2017	APR	409.0
2017	MAY	409.9
2017	JUN	409.1
2017	JUL	407.2
2017	AUG	405.2
2017	SEP	403.3
2017	OCT	403.6
2017	NOV	405.2
2017	DEC	406.8
2018	JAN	408.1
2018	FEB	408.3
2018	MAR	409.3
2018	APR	410.3

2018	MAY	411.3
2018	JUN	410.9
2018	JUL	408.9
2018	AUG	407.1
2018	SEP	405.6
2018	OCT	406.0
2018	NOV	408.1
2018	DEC	409.2
2019	JAN	410.9
2019	FEB	411.7
2019	MAR	412.0
2019	APR	413.5
2019	MAY	414.8
2019	JUN	No Data
2019	JUL	No Data
2019	AUG	No Data
2019	SEP	No Data
2019	OCT	No Data
2019	NOV	No Data
2019	DEC	No Data

Status of data and correspondence:

These data are subject to revision based on recalibration of standard gases. Questior about the data should be directed to Dr. Ralph Keeling (rkeeling@ucsd.edu), Stephen (sjwalker@ucsd.edu) and Stephen Piper (scpiper@ucsd.edu), Scripps CO2 Program.

Baseline data in this file through last updated

Please cite as:

C. D. Keeling, S. C. Piper, R. B. Bacastow, M. Wahlen, T. P. Whorf, M. Heimann, and H. A. Meijer, Exchanges of atmospheric CO2 and 13CO2 with the terrestrial biosphere oceans from 1978 to 2000. I. Global aspects, SIO Reference Series, No. 01-06, Scripp Institution of Oceanography, San Diego, 88 pages, 2001.

If it is necessary to cite a peer-reviewed article, please cite as:

C. D. Keeling, S. C. Piper, R. B. Bacastow, M. Wahlen, T. P. Whorf, M. Heimann, and H. A. Meijer, Atmospheric CO2 and 13CO2 exchange with the terrestrial biosphere an oceans from 1978 to 2000: observations and carbon cycle implications, pages 83-11 in A History o Animals and Ecosysten editors Ehleringer J.R.

The data file below contains 10 columns. Columns 1-4 give the dates in several redu formats. Column 5 below gives monthly Mauna Loa CO2 concentrations in micro-mol mole (ppm), reported on the 2008A SIO manometric mole fraction scale. This is the standard version of the data most often sought. The monthly values have been adju to 24:00 hours on the 15th of each month. Column 6 gives the same data after a sea adjustment to remove the quasi-regular seasonal cycle. The adjustment involves subtracting from the data a 4-harmonic fit with a linear gain factor. Column 7 is a smoothed version of the data generated from a stiff cubic spline function plus 4-harm functions with linear gain. Column 8 is the same smoothed version with the seasona cycle removed. Column 9 is identical to Column 5 except that the missing values fro Column 5 have been filled with values from Column 7. Column 10 is identical to Colu except missing values have been filled with values from Column 8. Missing values ar denoted by -99.99

CO2 concentrations are measured on the '08A' calibration scale

urements
°W Elevation 3397m

o2.ucsd.edu/data/atmospheric_co2/primary_mlo_co2_record

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*** Global CO2 Emissions from Fossil-Fuel Burning, ***
*** Cement Manufacture, and Gas Flaring: 1751-2014 ***
***
*** March 3, 2017 ***
***
*** Source: Tom Boden ***
*** Bob Andres ***
*** Carbon Dioxide Information Analysis Center ***
*** Oak Ridge National Laboratory ***
*** Oak Ridge, Tennessee 37831-6290 ***
*** USA ***
***
*** Gregg Marland ***
*** Research Institute for Environment, Energy ***
*** and Economics ***
*** Appalachian State University ***
*** Boone, North Carolina 28608-2131 ***
*** USA ***
****

All emission estimates are expressed in million metric tons of carbon. To convert these estimates to units of carbon dioxide (CO2), simply multiply these estimates by 3.667.

Per capita emission estimates are expressed in metric tons of carbon. Population estimates were not available to permit calculations of global per capita estimates before 1950. Please note that annual sums were tallied before each element (e.g., Gas) was rounded and reported here so totals may differ slightly from the sum of the elements due to rounding.

Year	Total	Gas	Liquids	Solids	Cement Production	Gas Flaring	Per Capita
1751	3	0	0	3	0	0	
1752	3	0	0	3	0	0	
1753	3	0	0	3	0	0	
1754	3	0	0	3	0	0	
1755	3	0	0	3	0	0	
1756	3	0	0	3	0	0	
1757	3	0	0	3	0	0	
1758	3	0	0	3	0	0	
1759	3	0	0	3	0	0	
1760	3	0	0	3	0	0	

YEAR TOTAL GAS

1761	3	0	0	3	0	0	1760	3	0
1762	3	0	0	3	0	0	1770	3	0
1763	3	0	0	3	0	0	1780	4	0
1764	3	0	0	3	0	0			
1765	3	0	0	3	0	0			
1766	3	0	0	3	0	0			
1767	3	0	0	3	0	0			
1768	3	0	0	3	0	0			
1769	3	0	0	3	0	0			
1770	3	0	0	3	0	0			
1771	4	0	0	4	0	0			
1772	4	0	0	4	0	0			
1773	4	0	0	4	0	0			
1774	4	0	0	4	0	0			
1775	4	0	0	4	0	0			
1776	4	0	0	4	0	0			
1777	4	0	0	4	0	0			
1778	4	0	0	4	0	0			
1779	4	0	0	4	0	0			
1780	4	0	0	4	0	0			
1781	5	0	0	5	0	0			
1782	5	0	0	5	0	0			
1783	5	0	0	5	0	0			
1784	5	0	0	5	0	0			
1785	5	0	0	5	0	0			
1786	5	0	0	5	0	0			
1787	5	0	0	5	0	0			
1788	5	0	0	5	0	0			
1789	5	0	0	5	0	0			
1790	5	0	0	5	0	0			
1791	6	0	0	6	0	0			
1792	6	0	0	6	0	0			
1793	6	0	0	6	0	0			
1794	6	0	0	6	0	0			
1795	6	0	0	6	0	0			
1796	6	0	0	6	0	0			
1797	7	0	0	7	0	0			
1798	7	0	0	7	0	0			
1799	7	0	0	7	0	0			
1800	8	0	0	8	0	0			
1801	8	0	0	8	0	0			

1802	10	0	0	10	0	0
1803	9	0	0	9	0	0
1804	9	0	0	9	0	0
1805	9	0	0	9	0	0
1806	10	0	0	10	0	0
1807	10	0	0	10	0	0
1808	10	0	0	10	0	0
1809	10	0	0	10	0	0
1810	10	0	0	10	0	0
1811	11	0	0	11	0	0
1812	11	0	0	11	0	0
1813	11	0	0	11	0	0
1814	11	0	0	11	0	0
1815	12	0	0	12	0	0
1816	13	0	0	13	0	0
1817	14	0	0	14	0	0
1818	14	0	0	14	0	0
1819	14	0	0	14	0	0
1820	14	0	0	14	0	0
1821	14	0	0	14	0	0
1822	15	0	0	15	0	0
1823	16	0	0	16	0	0
1824	16	0	0	16	0	0
1825	17	0	0	17	0	0
1826	17	0	0	17	0	0
1827	18	0	0	18	0	0
1828	18	0	0	18	0	0
1829	18	0	0	18	0	0
1830	24	0	0	24	0	0
1831	23	0	0	23	0	0
1832	23	0	0	23	0	0
1833	24	0	0	24	0	0
1834	24	0	0	24	0	0
1835	25	0	0	25	0	0
1836	29	0	0	29	0	0
1837	29	0	0	29	0	0
1838	30	0	0	30	0	0
1839	31	0	0	31	0	0
1840	33	0	0	33	0	0
1841	34	0	0	34	0	0
1842	36	0	0	36	0	0

1843	37	0	0	37	0	0
1844	39	0	0	39	0	0
1845	43	0	0	43	0	0
1846	43	0	0	43	0	0
1847	46	0	0	46	0	0
1848	47	0	0	47	0	0
1849	50	0	0	50	0	0
1850	54	0	0	54	0	0
1851	54	0	0	54	0	0
1852	57	0	0	57	0	0
1853	59	0	0	59	0	0
1854	69	0	0	69	0	0
1855	71	0	0	71	0	0
1856	76	0	0	76	0	0
1857	77	0	0	77	0	0
1858	78	0	0	78	0	0
1859	83	0	0	83	0	0
1860	91	0	0	91	0	0
1861	95	0	0	95	0	0
1862	97	0	0	96	0	0
1863	104	0	0	103	0	0
1864	112	0	0	112	0	0
1865	119	0	0	119	0	0
1866	122	0	0	122	0	0
1867	130	0	0	130	0	0
1868	135	0	0	134	0	0
1869	142	0	0	142	0	0
1870	147	0	1	146	0	0
1871	156	0	1	156	0	0
1872	173	0	1	173	0	0
1873	184	0	1	183	0	0
1874	174	0	1	173	0	0
1875	188	0	1	187	0	0
1876	191	0	1	190	0	0
1877	194	0	2	192	0	0
1878	196	0	2	194	0	0
1879	210	0	3	207	0	0
1880	236	0	3	233	0	0
1881	243	0	4	239	0	0
1882	256	0	4	252	0	0
1883	272	0	3	269	0	0

1884	275	0	4	271	0	0
1885	277	1	4	273	0	0
1886	281	2	5	275	0	0
1887	295	3	5	287	0	0
1888	327	5	5	317	0	0
1889	327	3	6	318	0	0
1890	356	3	8	345	0	0
1891	372	2	9	360	0	0
1892	374	2	9	363	0	0
1893	370	2	10	358	0	0
1894	383	2	9	372	0	0
1895	406	2	11	393	0	0
1896	419	2	12	405	0	0
1897	440	2	13	425	0	0
1898	465	2	13	449	0	0
1899	507	3	14	491	0	0
1900	534	3	16	515	0	0
1901	552	4	18	531	0	0
1902	566	4	19	543	0	0
1903	617	4	20	593	0	0
1904	624	4	23	597	0	0
1905	663	5	23	636	0	0
1906	707	5	23	680	0	0
1907	784	5	28	750	0	0
1908	750	5	30	714	0	0
1909	785	6	32	747	0	0
1910	819	7	34	778	0	0
1911	836	7	36	792	0	0
1912	879	8	37	834	0	0
1913	943	8	41	895	0	0
1914	850	8	42	800	0	0
1915	838	9	45	784	0	0
1916	901	10	48	842	0	0
1917	955	11	54	891	0	0
1918	936	10	53	873	0	0
1919	806	10	61	735	0	0
1920	932	11	78	843	0	0
1921	803	10	84	709	0	0
1922	845	11	94	740	0	0
1923	970	14	111	845	0	0
1924	963	16	110	836	0	0

1925	975	17	116	842	0	0	
1926	983	19	119	846	0	0	
1927	1062	21	136	905	0	0	
1928	1065	23	143	890	10	0	
1929	1145	28	160	947	10	0	
1930	1053	28	152	862	10	0	
1931	940	25	147	759	8	0	
1932	847	24	141	675	7	0	
1933	893	25	154	708	7	0	
1934	973	28	162	775	8	0	
1935	1027	30	176	811	9	0	
1936	1130	34	192	893	11	0	
1937	1209	38	219	941	11	0	
1938	1142	37	214	880	12	0	
1939	1192	38	222	918	13	0	
1940	1299	42	229	1017	11	0	
1941	1334	42	236	1043	12	0	
1942	1342	45	222	1063	11	0	
1943	1391	50	239	1092	10	0	
1944	1383	54	275	1047	7	0	
1945	1160	59	275	820	7	0	
1946	1238	61	292	875	10	0	
1947	1392	67	322	992	12	0	
1948	1469	76	364	1015	14	0	
1949	1419	81	362	960	16	0	
1950	1630	97	423	1070	18	23	0.65
1951	1767	115	479	1129	20	24	0.69
1952	1795	124	504	1119	22	26	0.69
1953	1841	131	533	1125	24	27	0.69
1954	1865	138	557	1116	27	27	0.69
1955	2042	150	625	1208	30	31	0.74
1956	2177	161	679	1273	32	32	0.78
1957	2270	178	714	1309	34	35	0.79
1958	2330	192	731	1336	36	35	0.80
1959	2454	206	789	1382	40	36	0.83
1960	2569	227	849	1410	43	39	0.85
1961	2580	240	904	1349	45	42	0.84
1962	2686	263	980	1351	49	44	0.86
1963	2833	286	1052	1396	51	47	0.89
1964	2995	316	1137	1435	57	51	0.92
1965	3130	337	1219	1460	59	55	0.94

1966	3288	364	1323	1478	63	60	0.97
1967	3393	392	1423	1448	65	66	0.98
1968	3566	424	1551	1448	70	73	1.01
1969	3780	467	1673	1486	74	80	1.05
1970	4053	493	1839	1556	78	87	1.10
1971	4208	530	1947	1559	84	88	1.12
1972	4376	560	2057	1576	89	95	1.14
1973	4614	588	2241	1581	95	110	1.18
1974	4623	597	2245	1579	96	107	1.16
1975	4596	604	2132	1673	95	92	1.13
1976	4864	630	2314	1710	103	108	1.18
1977	5016	650	2398	1756	108	104	1.19
1978	5074	680	2392	1780	116	106	1.18
1979	5357	721	2544	1875	119	98	1.23
1980	5301	737	2422	1935	120	86	1.19
1981	5138	755	2289	1908	121	65	1.14
1982	5094	738	2196	1976	121	64	1.11
1983	5075	739	2176	1977	125	58	1.08
1984	5258	807	2199	2074	128	51	1.10
1985	5417	835	2186	2216	131	49	1.12
1986	5583	830	2293	2277	137	46	1.13
1987	5725	892	2306	2339	143	44	1.14
1988	5936	935	2412	2387	152	50	1.16
1989	6066	982	2459	2428	156	41	1.16
1990	6074	1026	2492	2359	157	40	1.14
1991	6142	1051	2601	2284	161	45	1.14
1992	6078	1085	2499	2290	167	36	1.11
1993	6070	1117	2515	2225	176	37	1.09
1994	6174	1133	2539	2278	186	39	1.09
1995	6305	1151	2560	2359	197	39	1.10
1996	6448	1198	2626	2382	203	40	1.11
1997	6556	1197	2701	2409	209	40	1.11
1998	6576	1224	2763	2343	209	36	1.10
1999	6561	1258	2741	2310	217	35	1.08
2000	6733	1289	2845	2327	226	46	1.10
2001	6893	1316	2848	2445	237	47	1.11
2002	6994	1342	2832	2518	252	49	1.11
2003	7376	1397	2958	2695	276	48	1.16
2004	7743	1443	3043	2906	298	54	1.20
2005	8042	1485	3068	3108	320	60	2020 0
2006	8336	1534	3091	3293	356	62	1.26

2007	8503	1562	3071	3422	382	66	1.27
2008	8776	1630	3103	3587	388	69	1.30
2009	8697	1584	3042	3590	415	66	1.27
2010	9128	1696	3107	3812	446	67	1.32
2011	9503	1756	3134	4055	494	64	1.36
2012	9673	1783	3200	4106	519	65	1.36
2013	9773	1806	3220	4126	554	68	1.36

568 68 1.36

LIQUID	SOLID	PRODUCTION	GAS FLARING

0	3	0	0
0	3	0	0
0	4	0	0

Atmospheric CO2 concentrations (ppm) derived from in situ air measurements
at Mauna Loa, Observatory, Hawaii: Latitude 19.5°N Longitude 155.6°W Elevation 33

Source: R. F. Keeling, S. J. Walker, S. C. Piper and A. F. Bollenbacher
Scripps CO2 Program (http://scrippsco2.ucsd.edu)
Scripps Institution of Oceanography (SIO)
University of California
La Jolla, California USA 92093-0244

Status of data and correspondence:

These data are subject to revision based on recalibration of standard gases. Questior
about the data should be directed to Dr. Ralph Keeling (rkeeling@ucsd.edu), Stephen
(sjwalker@ucsd.edu) and Stephen Piper (scpiper@ucsd.edu), Scripps CO2 Program.

Baseline data in this file through last updated

Please cite as:

C. D. Keeling, S. C. Piper, R. B. Bacastow, M. Wahlen, T. P. Whorf, M. Heimann, and
H. A. Meijer, Exchanges of atmospheric CO2 and 13CO2 with the terrestrial biosphere
oceans from 1978 to 2000. I. Global aspects, SIO Reference Series, No. 01-06, Scripp
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H. A. Meijer, Atmospheric CO2 and 13CO2 exchange with the terrestrial biosphere an
oceans from 1978 to 2000: observations and carbon cycle implications, pages 83-11
in A History o Animals and Ecosysten editors Ehleringer J.R.

The data file below contains 10 columns. Columns 1-4 give the dates in several redu
formats. Column 5 below gives monthly Mauna Loa CO2 concentrations in micro-mol
mole (ppm), reported on the 2008A SIO manometric mole fraction scale. This is the
standard version of the data most often sought. The monthly values have been adju
to 24:00 hours on the 15th of each month. Column 6 gives the same data after a sea

adjustment to remove the quasi-regular seasonal cycle. The adjustment involves subtracting from the data a 4-harmonic fit with a linear gain factor. Column 7 is a smoothed version of the data generated from a stiff cubic spline function plus 4-harm functions with linear gain. Column 8 is the same smoothed version with the seasona cycle removed. Column 9 is identical to Column 5 except that the missing values fro Column 5 have been filled with values from Column 7. Column 10 is identical to Colu except missing values have been filled with values from Column 8. Missing values ar denoted by -99.99

CO2 concentrations are measured on the '08A' calibration scale

Yr	Mn	Date	Date	CO2	seasonally adjusted
		Excel		[ppm]	[ppm]
1958	1	21200	1958.0411	-99.99	-99.99
1958	2	21231	1958.126	-99.99	-99.99
1958	3	21259	1958.2027	315.7	314.43
1958	4	21290	1958.2877	317.45	315.16
1958	5	21320	1958.3699	317.51	314.71
1958	6	21351	1958.4548	-99.99	-99.99
1958	7	21381	1958.537	315.86	315.18
1958	8	21412	1958.6219	314.93	316.18
1958	9	21443	1958.7068	313.2	316.08
1958	10	21473	1958.789	-99.99	-99.99
1958	11	21504	1958.874	313.33	315.2
1958	12	21534	1958.9562	314.67	315.43
1959	1	21565	1959.0411	315.58	315.55
1959	2	21596	1959.126	316.48	315.86
1959	3	21624	1959.2027	316.65	315.38
1959	4	21655	1959.2877	317.72	315.41
1959	5	21685	1959.3699	318.29	315.49
1959	6	21716	1959.4548	318.15	316.03
1959	7	21746	1959.537	316.54	315.86
1959	8	21777	1959.6219	314.8	316.06
1959	9	21808	1959.7068	313.84	316.73
1959	10	21838	1959.789	313.33	316.33
1959	11	21869	1959.874	314.81	316.68
1959	12	21899	1959.9562	315.58	316.35
1960	1	21930	1960.041	316.43	316.4
1960	2	21961	1960.1257	316.98	316.36
1960	3	21990	1960.2049	317.58	316.28

1960	4	22021	1960.2896	319.03	316.7
1960	5	22051	1960.3716	320.04	317.22
1960	6	22082	1960.4563	319.59	317.47
1960	7	22112	1960.5383	318.18	317.52
1960	8	22143	1960.623	315.9	317.19
1960	9	22174	1960.7077	314.17	317.08
1960	10	22204	1960.7896	313.83	316.83
1960	11	22235	1960.8743	315	316.88
1960	12	22265	1960.9563	316.19	316.96
1961	1	22296	1961.0411	316.89	316.86
1961	2	22327	1961.126	317.7	317.08
1961	3	22355	1961.2027	318.54	317.26
1961	4	22386	1961.2877	319.48	317.16
1961	5	22416	1961.3699	320.58	317.76
1961	6	22447	1961.4548	319.77	317.63
1961	7	22477	1961.537	318.57	317.88
1961	8	22508	1961.6219	316.79	318.06
1961	9	22539	1961.7068	314.99	317.9
1961	10	22569	1961.789	315.31	318.32
1961	11	22600	1961.874	316.1	317.99
1961	12	22630	1961.9562	317.01	317.79
1962	1	22661	1962.0411	317.94	317.91
1962	2	22692	1962.126	318.55	317.92
1962	3	22720	1962.2027	319.68	318.39
1962	4	22751	1962.2877	320.57	318.24
1962	5	22781	1962.3699	321.02	318.18
1962	6	22812	1962.4548	320.62	318.47
1962	7	22842	1962.537	319.61	318.92
1962	8	22873	1962.6219	317.4	318.68
1962	9	22904	1962.7068	316.25	319.17
1962	10	22934	1962.789	315.42	318.45
1962	11	22965	1962.874	316.69	318.58
1962	12	22995	1962.9562	317.7	318.47
1963	1	23026	1963.0411	318.74	318.7
1963	2	23057	1963.126	319.07	318.44
1963	3	23085	1963.2027	319.86	318.57
1963	4	23116	1963.2877	321.38	319.05
1963	5	23146	1963.3699	322.25	319.4
1963	6	23177	1963.4548	321.48	319.32
1963	7	23207	1963.537	319.74	319.05
1963	8	23238	1963.6219	317.77	319.05

1963	9	23269	1963.7068	316.21	319.14
1963	10	23299	1963.789	315.99	319.02
1963	11	23330	1963.874	317.07	318.97
1963	12	23360	1963.9562	318.35	319.13
1964	1	23391	1964.041	319.57	319.54
1964	2	23422	1964.1257	-99.99	-99.99
1964	3	23451	1964.2049	-99.99	-99.99
1964	4	23482	1964.2896	-99.99	-99.99
1964	5	23512	1964.3716	322.26	319.4
1964	6	23543	1964.4563	321.89	319.75
1964	7	23573	1964.5383	320.44	319.77
1964	8	23604	1964.623	318.69	320
1964	9	23635	1964.7077	316.7	319.66
1964	10	23665	1964.7896	316.87	319.91
1964	11	23696	1964.8743	317.68	319.58
1964	12	23726	1964.9563	318.71	319.49
1965	1	23757	1965.0411	319.44	319.4
1965	2	23788	1965.126	320.44	319.81
1965	3	23816	1965.2027	320.89	319.59
1965	4	23847	1965.2877	322.14	319.78
1965	5	23877	1965.3699	322.17	319.3
1965	6	23908	1965.4548	321.87	319.7
1965	7	23938	1965.537	321.21	320.51
1965	8	23969	1965.6219	318.87	320.15
1965	9	24000	1965.7068	317.81	320.77
1965	10	24030	1965.789	317.3	320.36
1965	11	24061	1965.874	318.87	320.78
1965	12	24091	1965.9562	319.42	320.2
1966	1	24122	1966.0411	320.62	320.59
1966	2	24153	1966.126	321.6	320.96
1966	3	24181	1966.2027	322.39	321.08
1966	4	24212	1966.2877	323.7	321.34
1966	5	24242	1966.3699	324.08	321.2
1966	6	24273	1966.4548	323.75	321.57
1966	7	24303	1966.537	322.38	321.68
1966	8	24334	1966.6219	320.36	321.65
1966	9	24365	1966.7068	318.64	321.6
1966	10	24395	1966.789	318.1	321.17
1966	11	24426	1966.874	319.78	321.7
1966	12	24456	1966.9562	321.03	321.81
1967	1	24487	1967.0411	322.33	322.29

1967	2	24518	1967.126	322.5	321.86
1967	3	24546	1967.2027	323.04	321.73
1967	4	24577	1967.2877	324.42	322.04
1967	5	24607	1967.3699	325	322.12
1967	6	24638	1967.4548	324.09	321.91
1967	7	24668	1967.537	322.54	321.84
1967	8	24699	1967.6219	320.92	322.21
1967	9	24730	1967.7068	319.25	322.23
1967	10	24760	1967.789	319.39	322.47
1967	11	24791	1967.874	320.73	322.65
1967	12	24821	1967.9562	321.96	322.75
1968	1	24852	1968.041	322.57	322.54
1968	2	24883	1968.1257	323.15	322.51
1968	3	24912	1968.2049	323.89	322.55
1968	4	24943	1968.2896	325.02	322.62
1968	5	24973	1968.3716	325.57	322.68
1968	6	25004	1968.4563	325.36	323.19
1968	7	25034	1968.5383	324.14	323.46
1968	8	25065	1968.623	322.11	323.43
1968	9	25096	1968.7077	320.33	323.32
1968	10	25126	1968.7896	320.25	323.33
1968	11	25157	1968.8743	321.32	323.25
1968	12	25187	1968.9563	322.89	323.69
1969	1	25218	1969.0411	324	323.97
1969	2	25249	1969.126	324.42	323.77
1969	3	25277	1969.2027	325.63	324.31
1969	4	25308	1969.2877	326.66	324.27
1969	5	25338	1969.3699	327.38	324.48
1969	6	25369	1969.4548	326.71	324.51
1969	7	25399	1969.537	325.88	325.17
1969	8	25430	1969.6219	323.66	324.97
1969	9	25461	1969.7068	322.38	325.37
1969	10	25491	1969.789	321.78	324.88
1969	11	25522	1969.874	322.86	324.79
1969	12	25552	1969.9562	324.12	324.91
1970	1	25583	1970.0411	325.06	325.03
1970	2	25614	1970.126	325.98	325.34
1970	3	25642	1970.2027	326.93	325.61
1970	4	25673	1970.2877	328.13	325.74
1970	5	25703	1970.3699	328.08	325.16
1970	6	25734	1970.4548	327.67	325.46

1970	7	25764	1970.537	326.34	325.63
1970	8	25795	1970.6219	324.69	325.99
1970	9	25826	1970.7068	323.1	326.1
1970	10	25856	1970.789	323.06	326.18
1970	11	25887	1970.874	324.01	325.95
1970	12	25917	1970.9562	325.13	325.93
1971	1	25948	1971.0411	326.17	326.14
1971	2	25979	1971.126	326.68	326.03
1971	3	26007	1971.2027	327.17	325.85
1971	4	26038	1971.2877	327.79	325.38
1971	5	26068	1971.3699	328.93	326
1971	6	26099	1971.4548	328.57	326.36
1971	7	26129	1971.537	327.36	326.65
1971	8	26160	1971.6219	325.43	326.74
1971	9	26191	1971.7068	323.36	326.37
1971	10	26221	1971.789	323.56	326.69
1971	11	26252	1971.874	324.8	326.75
1971	12	26282	1971.9562	326.01	326.82
1972	1	26313	1972.041	326.77	326.73
1972	2	26344	1972.1257	327.63	326.98
1972	3	26373	1972.2049	327.75	326.39
1972	4	26404	1972.2896	329.72	327.29
1972	5	26434	1972.3716	330.07	327.14
1972	6	26465	1972.4563	329.09	326.88
1972	7	26495	1972.5383	328.04	327.36
1972	8	26526	1972.623	326.32	327.67
1972	9	26557	1972.7077	324.84	327.87
1972	10	26587	1972.7896	325.2	328.33
1972	11	26618	1972.8743	326.5	328.45
1972	12	26648	1972.9563	327.55	328.36
1973	1	26679	1973.0411	328.55	328.51
1973	2	26710	1973.126	329.56	328.91
1973	3	26738	1973.2027	330.3	328.96
1973	4	26769	1973.2877	331.5	329.08
1973	5	26799	1973.3699	332.48	329.54
1973	6	26830	1973.4548	332.07	329.84
1973	7	26860	1973.537	330.87	330.15
1973	8	26891	1973.6219	329.31	330.63
1973	9	26922	1973.7068	327.51	330.55
1973	10	26952	1973.789	327.18	330.32
1973	11	26983	1973.874	328.16	330.13

1973	12	27013	1973.9562	328.64	329.45
1974	1	27044	1974.0411	329.35	329.32
1974	2	27075	1974.126	330.71	330.05
1974	3	27103	1974.2027	331.48	330.14
1974	4	27134	1974.2877	332.65	330.22
1974	5	27164	1974.3699	333.09	330.13
1974	6	27195	1974.4548	332.25	330.01
1974	7	27225	1974.537	331.18	330.46
1974	8	27256	1974.6219	329.39	330.72
1974	9	27287	1974.7068	327.43	330.48
1974	10	27317	1974.789	327.37	330.52
1974	11	27348	1974.874	328.46	330.43
1974	12	27378	1974.9562	329.57	330.38
1975	1	27409	1975.0411	330.4	330.36
1975	2	27440	1975.126	331.4	330.75
1975	3	27468	1975.2027	332.04	330.69
1975	4	27499	1975.2877	333.31	330.87
1975	5	27529	1975.3699	333.97	331
1975	6	27560	1975.4548	333.6	331.36
1975	7	27590	1975.537	331.9	331.18
1975	8	27621	1975.6219	330.06	331.39
1975	9	27652	1975.7068	328.56	331.61
1975	10	27682	1975.789	328.34	331.5
1975	11	27713	1975.874	329.49	331.47
1975	12	27743	1975.9562	330.76	331.58
1976	1	27774	1976.041	331.75	331.71
1976	2	27805	1976.1257	332.56	331.91
1976	3	27834	1976.2049	333.5	332.12
1976	4	27865	1976.2896	334.58	332.12
1976	5	27895	1976.3716	334.88	331.9
1976	6	27926	1976.4563	334.33	332.1
1976	7	27956	1976.5383	333.05	332.36
1976	8	27987	1976.623	330.94	332.3
1976	9	28018	1976.7077	329.3	332.38
1976	10	28048	1976.7896	328.94	332.11
1976	11	28079	1976.8743	330.31	332.29
1976	12	28109	1976.9563	331.68	332.5
1977	1	28140	1977.0411	332.93	332.89
1977	2	28171	1977.126	333.42	332.76
1977	3	28199	1977.2027	334.7	333.35
1977	4	28230	1977.2877	336.07	333.62

1977	5	28260	1977.3699	336.75	333.76
1977	6	28291	1977.4548	336.27	334.01
1977	7	28321	1977.537	334.92	334.19
1977	8	28352	1977.6219	332.75	334.09
1977	9	28383	1977.7068	331.59	334.67
1977	10	28413	1977.789	331.16	334.35
1977	11	28444	1977.874	332.4	334.4
1977	12	28474	1977.9562	333.85	334.67
1978	1	28505	1978.0411	334.97	334.93
1978	2	28536	1978.126	335.39	334.72
1978	3	28564	1978.2027	336.64	335.28
1978	4	28595	1978.2877	337.76	335.3
1978	5	28625	1978.3699	338.01	335.02
1978	6	28656	1978.4548	337.89	335.63
1978	7	28686	1978.537	336.54	335.81
1978	8	28717	1978.6219	334.68	336.03
1978	9	28748	1978.7068	332.76	335.85
1978	10	28778	1978.789	332.54	335.74
1978	11	28809	1978.874	333.92	335.92
1978	12	28839	1978.9562	334.95	335.77
1979	1	28870	1979.0411	336.23	336.19
1979	2	28901	1979.126	336.76	336.09
1979	3	28929	1979.2027	337.96	336.6
1979	4	28960	1979.2877	338.88	336.41
1979	5	28990	1979.3699	339.47	336.47
1979	6	29021	1979.4548	339.29	337.01
1979	7	29051	1979.537	337.73	337
1979	8	29082	1979.6219	336.09	337.44
1979	9	29113	1979.7068	333.91	337.01
1979	10	29143	1979.789	333.86	337.07
1979	11	29174	1979.874	335.29	337.3
1979	12	29204	1979.9562	336.73	337.55
1980	1	29235	1980.041	338.01	337.98
1980	2	29266	1980.1257	338.36	337.69
1980	3	29295	1980.2049	340.07	338.68
1980	4	29326	1980.2896	340.76	338.26
1980	5	29356	1980.3716	341.47	338.45
1980	6	29387	1980.4563	341.17	338.91
1980	7	29417	1980.5383	339.56	338.85
1980	8	29448	1980.623	337.6	338.98
1980	9	29479	1980.7077	335.88	339

1980	10	29509	1980.7896	336.02	339.23
1980	11	29540	1980.8743	337.1	339.11
1980	12	29570	1980.9563	338.21	339.04
1981	1	29601	1981.0411	339.24	339.2
1981	2	29632	1981.126	340.48	339.81
1981	3	29660	1981.2027	341.38	340.01
1981	4	29691	1981.2877	342.5	340.02
1981	5	29721	1981.3699	342.91	339.89
1981	6	29752	1981.4548	342.25	339.96
1981	7	29782	1981.537	340.49	339.75
1981	8	29813	1981.6219	338.43	339.79
1981	9	29844	1981.7068	336.69	339.81
1981	10	29874	1981.789	336.86	340.08
1981	11	29905	1981.874	338.36	340.38
1981	12	29935	1981.9562	339.61	340.44
1982	1	29966	1982.0411	340.75	340.71
1982	2	29997	1982.126	341.61	340.94
1982	3	30025	1982.2027	342.7	341.32
1982	4	30056	1982.2877	343.57	341.07
1982	5	30086	1982.3699	344.14	341.11
1982	6	30117	1982.4548	343.35	341.05
1982	7	30147	1982.537	342.06	341.32
1982	8	30178	1982.6219	339.81	341.17
1982	9	30209	1982.7068	337.98	341.1
1982	10	30239	1982.789	337.86	341.1
1982	11	30270	1982.874	339.26	341.29
1982	12	30300	1982.9562	340.49	341.32
1983	1	30331	1983.0411	341.38	341.34
1983	2	30362	1983.126	342.52	341.85
1983	3	30390	1983.2027	343.1	341.71
1983	4	30421	1983.2877	344.94	342.44
1983	5	30451	1983.3699	345.76	342.71
1983	6	30482	1983.4548	345.32	343.01
1983	7	30512	1983.537	343.98	343.24
1983	8	30543	1983.6219	342.38	343.75
1983	9	30574	1983.7068	339.86	343
1983	10	30604	1983.789	339.99	343.24
1983	11	30635	1983.874	341.15	343.19
1983	12	30665	1983.9562	342.99	343.83
1984	1	30696	1984.041	343.7	343.66
1984	2	30727	1984.1257	344.5	343.83

1984	3	30756	1984.2049	345.28	343.87
1984	4	30787	1984.2896	347.05	344.52
1984	5	30817	1984.3716	347.43	344.38
1984	6	30848	1984.4563	346.8	344.51
1984	7	30878	1984.5383	345.39	344.68
1984	8	30909	1984.623	343.28	344.68
1984	9	30940	1984.7077	341.07	344.23
1984	10	30970	1984.7896	341.35	344.6
1984	11	31001	1984.8743	342.98	345.01
1984	12	31031	1984.9563	344.22	345.06
1985	1	31062	1985.0411	344.97	344.93
1985	2	31093	1985.126	345.99	345.31
1985	3	31121	1985.2027	347.42	346.03
1985	4	31152	1985.2877	348.35	345.83
1985	5	31182	1985.3699	348.93	345.86
1985	6	31213	1985.4548	348.25	345.93
1985	7	31243	1985.537	346.56	345.81
1985	8	31274	1985.6219	344.67	346.05
1985	9	31305	1985.7068	343.09	346.24
1985	10	31335	1985.789	342.8	346.07
1985	11	31366	1985.874	344.24	346.28
1985	12	31396	1985.9562	345.56	346.39
1986	1	31427	1986.0411	346.3	346.26
1986	2	31458	1986.126	346.95	346.27
1986	3	31486	1986.2027	347.85	346.46
1986	4	31517	1986.2877	349.55	347.03
1986	5	31547	1986.3699	350.21	347.14
1986	6	31578	1986.4548	349.55	347.22
1986	7	31608	1986.537	347.94	347.19
1986	8	31639	1986.6219	345.9	347.28
1986	9	31670	1986.7068	344.85	348.02
1986	10	31700	1986.789	344.17	347.45
1986	11	31731	1986.874	345.66	347.71
1986	12	31761	1986.9562	346.9	347.74
1987	1	31792	1987.0411	348.02	347.98
1987	2	31823	1987.126	348.48	347.79
1987	3	31851	1987.2027	349.42	348.02
1987	4	31882	1987.2877	350.98	348.45
1987	5	31912	1987.3699	351.85	348.76
1987	6	31943	1987.4548	351.26	348.92
1987	7	31973	1987.537	349.51	348.76

1987	8	32004	1987.6219	348.1	349.48
1987	9	32035	1987.7068	346.44	349.62
1987	10	32065	1987.789	346.36	349.65
1987	11	32096	1987.874	347.81	349.87
1987	12	32126	1987.9562	348.96	349.81
1988	1	32157	1988.041	350.43	350.39
1988	2	32188	1988.1257	351.73	351.05
1988	3	32217	1988.2049	352.22	350.79
1988	4	32248	1988.2896	353.59	351.02
1988	5	32278	1988.3716	354.22	351.13
1988	6	32309	1988.4563	353.79	351.47
1988	7	32339	1988.5383	352.38	351.66
1988	8	32370	1988.623	350.43	351.85
1988	9	32401	1988.7077	348.73	351.92
1988	10	32431	1988.7896	348.88	352.18
1988	11	32462	1988.8743	350.07	352.13
1988	12	32492	1988.9563	351.34	352.19
1989	1	32523	1989.0411	352.76	352.72
1989	2	32554	1989.126	353.07	352.38
1989	3	32582	1989.2027	353.68	352.27
1989	4	32613	1989.2877	355.42	352.87
1989	5	32643	1989.3699	355.67	352.57
1989	6	32674	1989.4548	355.12	352.77
1989	7	32704	1989.537	353.9	353.14
1989	8	32735	1989.6219	351.67	353.06
1989	9	32766	1989.7068	349.8	353
1989	10	32796	1989.789	349.99	353.3
1989	11	32827	1989.874	351.3	353.37
1989	12	32857	1989.9562	352.52	353.38
1990	1	32888	1990.0411	353.66	353.62
1990	2	32919	1990.126	354.7	354.01
1990	3	32947	1990.2027	355.38	353.97
1990	4	32978	1990.2877	356.2	353.64
1990	5	33008	1990.3699	357.16	354.05
1990	6	33039	1990.4548	356.23	353.87
1990	7	33069	1990.537	354.81	354.06
1990	8	33100	1990.6219	352.91	354.31
1990	9	33131	1990.7068	350.96	354.17
1990	10	33161	1990.789	351.18	354.5
1990	11	33192	1990.874	352.83	354.91
1990	12	33222	1990.9562	354.21	355.06

1991	1	33253	1991.0411	354.72	354.69
1991	2	33284	1991.126	355.75	355.05
1991	3	33312	1991.2027	357.16	355.74
1991	4	33343	1991.2877	358.6	356.03
1991	5	33373	1991.3699	359.34	356.21
1991	6	33404	1991.4548	358.24	355.87
1991	7	33434	1991.537	356.17	355.41
1991	8	33465	1991.6219	354.02	355.42
1991	9	33496	1991.7068	352.15	355.37
1991	10	33526	1991.789	352.21	355.55
1991	11	33557	1991.874	353.75	355.83
1991	12	33587	1991.9562	354.99	355.85
1992	1	33618	1992.041	355.99	355.95
1992	2	33649	1992.1257	356.72	356.03
1992	3	33678	1992.2049	357.81	356.36
1992	4	33709	1992.2896	359.15	356.55
1992	5	33739	1992.3716	359.66	356.53
1992	6	33770	1992.4563	359.25	356.9
1992	7	33800	1992.5383	357.02	356.29
1992	8	33831	1992.623	355	356.44
1992	9	33862	1992.7077	353.01	356.25
1992	10	33892	1992.7896	353.31	356.64
1992	11	33923	1992.8743	354.16	356.25
1992	12	33953	1992.9563	355.4	356.26
1993	1	33984	1993.0411	356.7	356.67
1993	2	34015	1993.126	357.17	356.47
1993	3	34043	1993.2027	358.38	356.95
1993	4	34074	1993.2877	359.46	356.88
1993	5	34104	1993.3699	360.28	357.14
1993	6	34135	1993.4548	359.6	357.21
1993	7	34165	1993.537	357.57	356.8
1993	8	34196	1993.6219	355.52	356.93
1993	9	34227	1993.7068	353.69	356.93
1993	10	34257	1993.789	353.99	357.34
1993	11	34288	1993.874	355.34	357.43
1993	12	34318	1993.9562	356.8	357.66
1994	1	34349	1994.0411	358.37	358.33
1994	2	34380	1994.126	358.91	358.21
1994	3	34408	1994.2027	359.97	358.54
1994	4	34439	1994.2877	361.26	358.67
1994	5	34469	1994.3699	361.69	358.53

1994	6	34500	1994.4548	360.94	358.56
1994	7	34530	1994.537	359.55	358.78
1994	8	34561	1994.6219	357.48	358.89
1994	9	34592	1994.7068	355.84	359.09
1994	10	34622	1994.789	356	359.36
1994	11	34653	1994.874	357.58	359.69
1994	12	34683	1994.9562	359.04	359.9
1995	1	34714	1995.0411	359.97	359.93
1995	2	34745	1995.126	361	360.3
1995	3	34773	1995.2027	361.63	360.2
1995	4	34804	1995.2877	363.45	360.85
1995	5	34834	1995.3699	363.8	360.63
1995	6	34865	1995.4548	363.26	360.87
1995	7	34895	1995.537	361.89	361.12
1995	8	34926	1995.6219	359.45	360.88
1995	9	34957	1995.7068	358.05	361.31
1995	10	34987	1995.789	357.75	361.13
1995	11	35018	1995.874	359.56	361.68
1995	12	35048	1995.9562	360.7	361.57
1996	1	35079	1996.041	362.05	362.01
1996	2	35110	1996.1257	363.24	362.54
1996	3	35139	1996.2049	364.02	362.55
1996	4	35170	1996.2896	364.71	362.08
1996	5	35200	1996.3716	365.42	362.24
1996	6	35231	1996.4563	364.97	362.59
1996	7	35261	1996.5383	363.65	362.91
1996	8	35292	1996.623	361.48	362.93
1996	9	35323	1996.7077	359.45	362.73
1996	10	35353	1996.7896	359.61	362.99
1996	11	35384	1996.8743	360.76	362.87
1996	12	35414	1996.9563	362.33	363.2
1997	1	35445	1997.0411	363.18	363.14
1997	2	35476	1997.126	363.99	363.29
1997	3	35504	1997.2027	364.56	363.12
1997	4	35535	1997.2877	366.36	363.74
1997	5	35565	1997.3699	366.8	363.62
1997	6	35596	1997.4548	365.63	363.22
1997	7	35626	1997.537	364.47	363.69
1997	8	35657	1997.6219	362.5	363.93
1997	9	35688	1997.7068	360.19	363.47
1997	10	35718	1997.789	360.78	364.17

1997	11	35749	1997.874	362.43	364.56
1997	12	35779	1997.9562	364.28	365.15
1998	1	35810	1998.0411	365.33	365.29
1998	2	35841	1998.126	366.15	365.44
1998	3	35869	1998.2027	367.31	365.86
1998	4	35900	1998.2877	368.61	365.99
1998	5	35930	1998.3699	369.3	366.11
1998	6	35961	1998.4548	368.88	366.46
1998	7	35991	1998.537	367.64	366.86
1998	8	36022	1998.6219	365.78	367.21
1998	9	36053	1998.7068	363.9	367.19
1998	10	36083	1998.789	364.23	367.64
1998	11	36114	1998.874	365.46	367.59
1998	12	36144	1998.9562	366.97	367.84
1999	1	36175	1999.0411	368.15	368.11
1999	2	36206	1999.126	368.87	368.16
1999	3	36234	1999.2027	369.59	368.13
1999	4	36265	1999.2877	371.14	368.51
1999	5	36295	1999.3699	371	367.8
1999	6	36326	1999.4548	370.35	367.93
1999	7	36356	1999.537	369.27	368.49
1999	8	36387	1999.6219	366.93	368.37
1999	9	36418	1999.7068	364.64	367.94
1999	10	36448	1999.789	365.13	368.55
1999	11	36479	1999.874	366.68	368.81
1999	12	36509	1999.9562	368	368.88
2000	1	36540	2000.041	369.14	369.1
2000	2	36571	2000.1257	369.46	368.75
2000	3	36600	2000.2049	370.51	369.03
2000	4	36631	2000.2896	371.66	368.99
2000	5	36661	2000.3716	371.83	368.62
2000	6	36692	2000.4563	371.69	369.28
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2000	8	36753	2000.623	368.12	369.59
2000	9	36784	2000.7077	366.62	369.94
2000	10	36814	2000.7896	366.73	370.15
2000	11	36845	2000.8743	368.29	370.43
2000	12	36875	2000.9563	369.53	370.4
2001	1	36906	2001.0411	370.28	370.24
2001	2	36937	2001.126	371.5	370.78
2001	3	36965	2001.2027	372.12	370.66

2001	4	36996	2001.2877	372.86	370.21
2001	5	37026	2001.3699	374.02	370.8
2001	6	37057	2001.4548	373.31	370.87
2001	7	37087	2001.537	371.62	370.83
2001	8	37118	2001.6219	369.55	371
2001	9	37149	2001.7068	367.96	371.28
2001	10	37179	2001.789	368.09	371.53
2001	11	37210	2001.874	369.68	371.83
2001	12	37240	2001.9562	371.24	372.12
2002	1	37271	2002.0411	372.44	372.39
2002	2	37302	2002.126	373.08	372.37
2002	3	37330	2002.2027	373.52	372.05
2002	4	37361	2002.2877	374.85	372.2
2002	5	37391	2002.3699	375.55	372.32
2002	6	37422	2002.4548	375.4	372.95
2002	7	37452	2002.537	374.02	373.23
2002	8	37483	2002.6219	371.48	372.94
2002	9	37514	2002.7068	370.7	374.03
2002	10	37544	2002.789	370.25	373.7
2002	11	37575	2002.874	372.08	374.24
2002	12	37605	2002.9562	373.78	374.67
2003	1	37636	2003.0411	374.68	374.64
2003	2	37667	2003.126	375.62	374.9
2003	3	37695	2003.2027	376.11	374.64
2003	4	37726	2003.2877	377.65	374.98
2003	5	37756	2003.3699	378.35	375.11
2003	6	37787	2003.4548	378.13	375.67
2003	7	37817	2003.537	376.61	375.81
2003	8	37848	2003.6219	374.48	375.94
2003	9	37879	2003.7068	372.98	376.32
2003	10	37909	2003.789	373	376.46
2003	11	37940	2003.874	374.35	376.51
2003	12	37970	2003.9562	375.69	376.58
2004	1	38001	2004.041	376.79	376.75
2004	2	38032	2004.1257	377.37	376.65
2004	3	38061	2004.2049	378.39	376.89
2004	4	38092	2004.2896	380.5	377.8
2004	5	38122	2004.3716	380.62	377.36
2004	6	38153	2004.4563	379.55	377.11
2004	7	38183	2004.5383	377.76	377
2004	8	38214	2004.623	375.83	377.32

2004	9	38245	2004.7077	374.05	377.41
2004	10	38275	2004.7896	374.22	377.69
2004	11	38306	2004.8743	375.84	378.01
2004	12	38336	2004.9563	377.44	378.33
2005	1	38367	2005.0411	378.34	378.3
2005	2	38398	2005.126	379.61	378.89
2005	3	38426	2005.2027	380.08	378.6
2005	4	38457	2005.2877	382.05	379.37
2005	5	38487	2005.3699	382.24	378.98
2005	6	38518	2005.4548	382.08	379.61
2005	7	38548	2005.537	380.66	379.87
2005	8	38579	2005.6219	378.67	380.13
2005	9	38610	2005.7068	376.42	379.78
2005	10	38640	2005.789	376.8	380.28
2005	11	38671	2005.874	378.31	380.48
2005	12	38701	2005.9562	379.96	380.85
2006	1	38732	2006.0411	381.37	381.32
2006	2	38763	2006.126	382.02	381.29
2006	3	38791	2006.2027	382.56	381.08
2006	4	38822	2006.2877	384.36	381.67
2006	5	38852	2006.3699	384.92	381.65
2006	6	38883	2006.4548	384.03	381.55
2006	7	38913	2006.537	382.28	381.48
2006	8	38944	2006.6219	380.48	381.95
2006	9	38975	2006.7068	378.81	382.18
2006	10	39005	2006.789	379.06	382.55
2006	11	39036	2006.874	380.14	382.32
2006	12	39066	2006.9562	381.66	382.56
2007	1	39097	2007.0411	382.58	382.54
2007	2	39128	2007.126	383.71	382.99
2007	3	39156	2007.2027	384.34	382.85
2007	4	39187	2007.2877	386.23	383.53
2007	5	39217	2007.3699	386.41	383.13
2007	6	39248	2007.4548	385.87	383.39
2007	7	39278	2007.537	384.44	383.65
2007	8	39309	2007.6219	381.84	383.32
2007	9	39340	2007.7068	380.86	384.24
2007	10	39370	2007.789	380.86	384.36
2007	11	39401	2007.874	382.36	384.55
2007	12	39431	2007.9562	383.61	384.51
2008	1	39462	2008.041	385.07	385.03

2008	2	39493	2008.1257	385.84	385.12
2008	3	39522	2008.2049	385.83	384.31
2008	4	39553	2008.2896	386.77	384.04
2008	5	39583	2008.3716	388.51	385.22
2008	6	39614	2008.4563	388.05	385.58
2008	7	39644	2008.5383	386.25	385.48
2008	8	39675	2008.623	384.08	385.59
2008	9	39706	2008.7077	383.09	386.49
2008	10	39736	2008.7896	382.78	386.28
2008	11	39767	2008.8743	384.01	386.2
2008	12	39797	2008.9563	385.11	386.01
2009	1	39828	2009.0411	386.65	386.61
2009	2	39859	2009.126	387.12	386.39
2009	3	39887	2009.2027	388.52	387.02
2009	4	39918	2009.2877	389.57	386.85
2009	5	39948	2009.3699	390.17	386.86
2009	6	39979	2009.4548	389.62	387.12
2009	7	40009	2009.537	388.07	387.26
2009	8	40040	2009.6219	386.08	387.57
2009	9	40071	2009.7068	384.65	388.05
2009	10	40101	2009.789	384.33	387.85
2009	11	40132	2009.874	386.05	388.25
2009	12	40162	2009.9562	387.49	388.39
2010	1	40193	2010.0411	388.55	388.51
2010	2	40224	2010.126	390.07	389.34
2010	3	40252	2010.2027	391.01	389.51
2010	4	40283	2010.2877	392.38	389.66
2010	5	40313	2010.3699	393.22	389.91
2010	6	40344	2010.4548	392.24	389.73
2010	7	40374	2010.537	390.33	389.52
2010	8	40405	2010.6219	388.52	390.01
2010	9	40436	2010.7068	386.84	390.25
2010	10	40466	2010.789	387.16	390.7
2010	11	40497	2010.874	388.67	390.88
2010	12	40527	2010.9562	389.81	390.71
2011	1	40558	2011.0411	391.3	391.26
2011	2	40589	2011.126	391.92	391.19
2011	3	40617	2011.2027	392.45	390.94
2011	4	40648	2011.2877	393.37	390.64
2011	5	40678	2011.3699	394.28	390.96
2011	6	40709	2011.4548	393.69	391.18

2011	7	40739	2011.537	392.59	391.79
2011	8	40770	2011.6219	390.21	391.7
2011	9	40801	2011.7068	389	392.42
2011	10	40831	2011.789	388.93	392.48
2011	11	40862	2011.874	390.24	392.46
2011	12	40892	2011.9562	391.8	392.71
2012	1	40923	2012.041	393.07	393.03
2012	2	40954	2012.1257	393.35	392.62
2012	3	40983	2012.2049	394.36	392.82
2012	4	41014	2012.2896	396.43	393.66
2012	5	41044	2012.3716	396.87	393.54
2012	6	41075	2012.4563	395.88	393.38
2012	7	41105	2012.5383	394.52	393.74
2012	8	41136	2012.623	392.54	394.06
2012	9	41167	2012.7077	391.13	394.57
2012	10	41197	2012.7896	391.01	394.56
2012	11	41228	2012.8743	392.95	395.17
2012	12	41258	2012.9563	394.33	395.25
2013	1	41289	2013.0411	395.61	395.56
2013	2	41320	2013.126	396.85	396.11
2013	3	41348	2013.2027	397.26	395.74
2013	4	41379	2013.2877	398.35	395.6
2013	5	41409	2013.3699	399.98	396.64
2013	6	41440	2013.4548	398.87	396.34
2013	7	41470	2013.537	397.37	396.56
2013	8	41501	2013.6219	395.41	396.91
2013	9	41532	2013.7068	393.39	396.84
2013	10	41562	2013.789	393.7	397.26
2013	11	41593	2013.874	395.19	397.43
2013	12	41623	2013.9562	396.82	397.74
2014	1	41654	2014.0411	397.93	397.88
2014	2	41685	2014.126	398.1	397.36
2014	3	41713	2014.2027	399.47	397.95
2014	4	41744	2014.2877	401.33	398.57
2014	5	41774	2014.3699	401.88	398.53
2014	6	41805	2014.4548	401.31	398.77
2014	7	41835	2014.537	399.07	398.25
2014	8	41866	2014.6219	397.21	398.71
2014	9	41897	2014.7068	395.4	398.85
2014	10	41927	2014.789	395.65	399.23
2014	11	41958	2014.874	397.23	399.46

2014	12	41988	2014.9562	398.79	399.71
2015	1	42019	2015.0411	399.85	399.81
2015	2	42050	2015.126	400.31	399.56
2015	3	42078	2015.2027	401.51	399.99
2015	4	42109	2015.2877	403.45	400.69
2015	5	42139	2015.3699	404.1	400.74
2015	6	42170	2015.4548	402.88	400.33
2015	7	42200	2015.537	401.61	400.79
2015	8	42231	2015.6219	399	400.51
2015	9	42262	2015.7068	397.5	400.96
2015	10	42292	2015.789	398.28	401.87
2015	11	42323	2015.874	400.24	402.48
2015	12	42353	2015.9562	401.89	402.81
2016	1	42384	2016.041	402.65	402.61
2016	2	42415	2016.1257	404.16	403.41
2016	3	42444	2016.2049	404.85	403.29
2016	4	42475	2016.2896	407.57	404.77
2016	5	42505	2016.3716	407.66	404.29
2016	6	42536	2016.4563	407	404.48
2016	7	42566	2016.5383	404.5	403.71
2016	8	42597	2016.623	402.24	403.78
2016	9	42628	2016.7077	401.01	404.5
2016	10	42658	2016.7896	401.5	405.09
2016	11	42689	2016.8743	403.64	405.88
2016	12	42719	2016.9563	404.55	405.48
2017	1	42750	2017.0411	406.07	406.03
2017	2	42781	2017.126	406.64	405.89
2017	3	42809	2017.2027	407.06	405.52
2017	4	42840	2017.2877	408.95	406.17
2017	5	42870	2017.3699	409.91	406.53
2017	6	42901	2017.4548	409.12	406.56
2017	7	42931	2017.537	407.2	406.38
2017	8	42962	2017.6219	405.24	406.76
2017	9	42993	2017.7068	403.27	406.75
2017	10	43023	2017.789	403.64	407.25
2017	11	43054	2017.874	405.17	407.43
2017	12	43084	2017.9562	406.75	407.68
2018	1	43115	2018.0411	408.05	408.01
2018	2	43146	2018.126	408.34	407.59
2018	3	43174	2018.2027	409.25	407.72
2018	4	43205	2018.2877	410.3	407.51

2018	5	43235	2018.3699	411.3	407.91
2018	6	43266	2018.4548	410.88	408.31
2018	7	43296	2018.537	408.9	408.07
2018	8	43327	2018.6219	407.1	408.62
2018	9	43358	2018.7068	405.59	409.08
2018	10	43388	2018.789	405.99	409.61
2018	11	43419	2018.874	408.12	410.38
2018	12	43449	2018.9562	409.23	410.16
2019	1	43480	2019.0411	410.92	410.88
2019	2	43511	2019.126	411.66	410.9
2019	3	43539	2019.2027	412	410.45
2019	4	43570	2019.2877	413.51	410.72
2019	5	43600	2019.3699	414.83	411.43
2019	6	43631	2019.4548	-99.99	-99.99
2019	7	43661	2019.537	-99.99	-99.99
2019	8	43692	2019.6219	-99.99	-99.99
2019	9	43723	2019.7068	-99.99	-99.99
2019	10	43753	2019.789	-99.99	-99.99
2019	11	43784	2019.874	-99.99	-99.99
2019	12	43814	2019.9562	-99.99	-99.99

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fit [ppm]	seasonally adjusted fit [ppm]	CO2 filled [ppm]	seasonally adjusted filled [ppm]
-99.99	-99.99	-99.99	-99.99
-99.99	-99.99	-99.99	-99.99
316.19	314.9	315.7	314.43
317.3	314.98	317.45	315.16
317.86	315.06	317.51	314.71
317.24	315.14	317.24	315.14
315.87	315.22	315.86	315.18
314	315.29	314.93	316.18
312.45	315.35	313.2	316.08
312.43	315.41	312.43	315.41
313.61	315.46	313.33	315.2
314.76	315.51	314.67	315.43
315.62	315.57	315.58	315.55
316.27	315.63	316.48	315.86
316.98	315.69	316.65	315.38
318.09	315.77	317.72	315.41
318.65	315.85	318.29	315.49
318.04	315.94	318.15	316.03
316.68	316.03	316.54	315.86
314.83	316.12	314.8	316.06
313.31	316.22	313.84	316.73
313.32	316.31	313.33	316.33
314.54	316.39	314.81	316.68
315.72	316.48	315.58	316.35
316.6	316.56	316.43	316.4
317.27	316.64	316.98	316.36
318.03	316.72	317.58	316.28

319.15	316.8	319.03	316.7
319.68	316.87	320.04	317.22
319.02	316.93	319.59	317.47
317.61	316.98	318.18	317.52
315.69	317.01	315.9	317.19
314.12	317.05	314.17	317.08
314.09	317.07	313.83	316.83
315.26	317.11	315	316.88
316.39	317.15	316.19	316.96
317.25	317.2	316.89	316.86
317.9	317.26	317.7	317.08
318.63	317.33	318.54	317.26
319.75	317.41	319.48	317.16
320.32	317.5	320.58	317.76
319.71	317.59	319.77	317.63
318.34	317.68	318.57	317.88
316.46	317.77	316.79	318.06
314.92	317.85	314.99	317.9
314.92	317.92	315.31	318.32
316.13	317.99	316.1	317.99
317.3	318.06	317.01	317.79
318.17	318.13	317.94	317.91
318.83	318.2	318.55	317.92
319.56	318.26	319.68	318.39
320.67	318.32	320.57	318.24
321.22	318.39	321.02	318.18
320.58	318.45	320.62	318.47
319.17	318.51	319.61	318.92
317.25	318.56	317.4	318.68
315.66	318.6	316.25	319.17
315.63	318.64	315.42	318.45
316.81	318.68	316.69	318.58
317.96	318.72	317.7	318.47
318.81	318.76	318.74	318.7
319.45	318.81	319.07	318.44
320.16	318.86	319.86	318.57
321.26	318.91	321.38	319.05
321.81	318.96	322.25	319.4
321.15	319.01	321.48	319.32
319.72	319.06	319.74	319.05
317.79	319.1	317.77	319.05

316.19	319.14	316.21	319.14
316.16	319.18	315.99	319.02
317.35	319.23	317.07	318.97
318.51	319.27	318.35	319.13
319.36	319.32	319.57	319.54
320.01	319.37	320.01	319.37
320.74	319.41	320.74	319.41
321.84	319.45	321.84	319.45
322.34	319.49	322.26	319.4
321.65	319.53	321.89	319.75
320.2	319.56	320.44	319.77
318.24	319.58	318.69	320
316.64	319.6	316.7	319.66
316.59	319.62	316.87	319.91
317.76	319.64	317.68	319.58
318.89	319.66	318.71	319.49
319.73	319.68	319.44	319.4
320.37	319.72	320.44	319.81
321.08	319.77	320.89	319.59
322.2	319.83	322.14	319.78
322.77	319.91	322.17	319.3
322.15	320	321.87	319.7
320.77	320.1	321.21	320.51
318.89	320.21	318.87	320.15
317.35	320.32	317.81	320.77
317.39	320.43	317.3	320.36
318.66	320.55	318.87	320.78
319.9	320.67	319.42	320.2
320.83	320.79	320.62	320.59
321.55	320.91	321.6	320.96
322.33	321.01	322.39	321.08
323.5	321.12	323.7	321.34
324.1	321.23	324.08	321.2
323.48	321.32	323.75	321.57
322.08	321.41	322.38	321.68
320.16	321.48	320.36	321.65
318.58	321.56	318.64	321.6
318.56	321.62	318.1	321.17
319.79	321.68	319.78	321.7
320.97	321.74	321.03	321.81
321.85	321.8	322.33	322.29

322.51	321.86	322.5	321.86
323.23	321.91	323.04	321.73
324.35	321.96	324.42	322.04
324.9	322.02	325	322.12
324.24	322.07	324.09	321.91
322.81	322.14	322.54	321.84
320.87	322.2	320.92	322.21
319.29	322.27	319.25	322.23
319.28	322.35	319.39	322.47
320.52	322.42	320.73	322.65
321.72	322.49	321.96	322.75
322.62	322.57	322.57	322.54
323.3	322.65	323.15	322.51
324.09	322.73	323.89	322.55
325.24	322.83	325.02	322.62
325.82	322.92	325.57	322.68
325.18	323.03	325.36	323.19
323.79	323.14	324.14	323.46
321.89	323.25	322.11	323.43
320.36	323.37	320.33	323.32
320.42	323.49	320.25	323.33
321.71	323.62	321.32	323.25
322.97	323.75	322.89	323.69
323.93	323.89	324	323.97
324.69	324.03	324.42	323.77
325.5	324.16	325.63	324.31
326.71	324.31	326.66	324.27
327.34	324.44	327.38	324.48
326.75	324.57	326.71	324.51
325.37	324.69	325.88	325.17
323.47	324.8	323.66	324.97
321.89	324.9	322.38	325.37
321.9	324.99	321.78	324.88
323.16	325.08	322.86	324.79
324.38	325.16	324.12	324.91
325.29	325.24	325.06	325.03
325.98	325.32	325.98	325.34
326.74	325.4	326.93	325.61
327.89	325.48	328.13	325.74
328.47	325.55	328.08	325.16
327.82	325.63	327.67	325.46

326.38	325.7	326.34	325.63
324.43	325.77	324.69	325.99
322.81	325.83	323.1	326.1
322.79	325.89	323.06	326.18
324.01	325.93	324.01	325.95
325.19	325.97	325.13	325.93
326.06	326.01	326.17	326.14
326.71	326.05	326.68	326.03
327.43	326.09	327.17	325.85
328.56	326.14	327.79	325.38
329.12	326.19	328.93	326
328.46	326.26	328.57	326.36
327.01	326.33	327.36	326.65
325.06	326.4	325.43	326.74
323.44	326.47	323.36	326.37
323.44	326.55	323.56	326.69
324.69	326.62	324.8	326.75
325.91	326.7	326.01	326.82
326.83	326.78	326.77	326.73
327.54	326.88	327.63	326.98
328.35	326.98	327.75	326.39
329.55	327.1	329.72	327.29
330.16	327.23	330.07	327.14
329.56	327.38	329.09	326.88
328.2	327.54	328.04	327.36
326.34	327.72	326.32	327.67
324.86	327.91	324.84	327.87
324.99	328.1	325.2	328.33
326.38	328.31	326.5	328.45
327.72	328.51	327.55	328.36
328.76	328.72	328.55	328.51
329.59	328.92	329.56	328.91
330.46	329.11	330.3	328.96
331.74	329.3	331.5	329.08
332.42	329.48	332.48	329.54
331.85	329.64	332.07	329.84
330.46	329.77	330.87	330.15
328.52	329.88	329.31	330.63
326.91	329.96	327.51	330.55
326.88	330.01	327.18	330.32
328.1	330.05	328.16	330.13

329.28	330.07	328.64	329.45
330.14	330.09	329.35	329.32
330.78	330.12	330.71	330.05
331.5	330.14	331.48	330.14
332.62	330.18	332.65	330.22
333.17	330.22	333.09	330.13
332.48	330.26	332.25	330.01
331	330.31	331.18	330.46
329	330.36	329.39	330.72
327.35	330.41	327.43	330.48
327.32	330.46	327.37	330.52
328.57	330.52	328.46	330.43
329.79	330.58	329.57	330.38
330.7	330.66	330.4	330.36
331.4	330.74	331.4	330.75
332.18	330.82	332.04	330.69
333.36	330.91	333.31	330.87
333.97	331.01	333.97	331
333.33	331.1	333.6	331.36
331.89	331.2	331.9	331.18
329.93	331.3	330.06	331.39
328.32	331.39	328.56	331.61
328.32	331.47	328.34	331.5
329.6	331.56	329.49	331.47
330.84	331.64	330.76	331.58
331.77	331.72	331.75	331.71
332.47	331.8	332.56	331.91
333.26	331.87	333.5	332.12
334.43	331.95	334.58	332.12
335	332.03	334.88	331.9
334.32	332.11	334.33	332.1
332.86	332.19	333.05	332.36
330.89	332.29	330.94	332.3
329.3	332.39	329.3	332.38
329.35	332.5	328.94	332.11
330.67	332.63	330.31	332.29
331.98	332.77	331.68	332.5
332.98	332.93	332.93	332.89
333.78	333.11	333.42	332.76
334.64	333.27	334.7	333.35
335.93	333.46	336.07	333.62

336.62	333.64	336.75	333.76
336.06	333.82	336.27	334.01
334.68	333.99	334.92	334.19
332.78	334.15	332.75	334.09
331.22	334.31	331.59	334.67
331.28	334.46	331.16	334.35
332.63	334.6	332.4	334.4
333.94	334.74	333.85	334.67
334.92	334.88	334.97	334.93
335.69	335.01	335.39	334.72
336.5	335.13	336.64	335.28
337.73	335.26	337.76	335.3
338.37	335.37	338.01	335.02
337.74	335.49	337.89	335.63
336.29	335.6	336.54	335.81
334.32	335.7	334.68	336.03
332.7	335.8	332.76	335.85
332.71	335.89	332.54	335.74
334.01	335.99	333.92	335.92
335.28	336.08	334.95	335.77
336.24	336.19	336.23	336.19
336.98	336.31	336.76	336.09
337.79	336.41	337.96	336.6
339.03	336.54	338.88	336.41
339.67	336.67	339.47	336.47
339.06	336.8	339.29	337.01
337.64	336.94	337.73	337
335.69	337.08	336.09	337.44
334.11	337.22	333.91	337.01
334.17	337.37	333.86	337.07
335.54	337.52	335.29	337.3
336.88	337.68	336.73	337.55
337.9	337.85	338.01	337.98
338.69	338.02	338.36	337.69
339.58	338.17	340.07	338.68
340.85	338.33	340.76	338.26
341.5	338.48	341.47	338.45
340.87	338.63	341.17	338.91
339.44	338.77	339.56	338.85
337.48	338.9	337.6	338.98
335.89	339.02	335.88	339

335.93	339.13	336.02	339.23
337.25	339.24	337.1	339.11
338.53	339.34	338.21	339.04
339.49	339.45	339.24	339.2
340.23	339.55	340.48	339.81
341.02	339.63	341.38	340.01
342.23	339.73	342.5	340.02
342.83	339.81	342.91	339.89
342.16	339.89	342.25	339.96
340.68	339.98	340.49	339.75
338.67	340.07	338.43	339.79
337.03	340.16	336.69	339.81
337.05	340.26	336.86	340.08
338.38	340.37	338.36	340.38
339.67	340.48	339.61	340.44
340.64	340.59	340.75	340.71
341.38	340.7	341.61	340.94
342.18	340.79	342.7	341.32
343.39	340.88	343.57	341.07
343.99	340.96	344.14	341.11
343.32	341.04	343.35	341.05
341.82	341.12	342.06	341.32
339.8	341.2	339.81	341.17
338.14	341.28	337.98	341.1
338.15	341.38	337.86	341.1
339.49	341.49	339.26	341.29
340.81	341.62	340.49	341.32
341.83	341.78	341.38	341.34
342.63	341.95	342.52	341.85
343.51	342.11	343.1	341.71
344.83	342.31	344.94	342.44
345.54	342.5	345.76	342.71
344.97	342.69	345.32	343.01
343.57	342.86	343.98	343.24
341.63	343.03	342.38	343.75
340.04	343.19	339.86	343
340.1	343.34	339.99	343.24
341.48	343.48	341.15	343.19
342.8	343.62	342.99	343.83
343.81	343.76	343.7	343.66
344.58	343.89	344.5	343.83

345.44	344.01	345.28	343.87
346.69	344.14	347.05	344.52
347.32	344.26	347.43	344.38
346.66	344.39	346.8	344.51
345.19	344.5	345.39	344.68
343.19	344.62	343.28	344.68
341.57	344.74	341.07	344.23
341.62	344.86	341.35	344.6
342.98	344.99	342.98	345.01
344.3	345.12	344.22	345.06
345.3	345.25	344.97	344.93
346.08	345.39	345.99	345.31
346.91	345.5	347.42	346.03
348.16	345.62	348.35	345.83
348.79	345.73	348.93	345.86
348.13	345.83	348.25	345.93
346.64	345.93	346.56	345.81
344.61	346.02	344.67	346.05
342.93	346.1	343.09	346.24
342.93	346.19	342.8	346.07
344.26	346.28	344.24	346.28
345.55	346.37	345.56	346.39
346.52	346.47	346.3	346.26
347.27	346.58	346.95	346.27
348.1	346.69	347.85	346.46
349.35	346.81	349.55	347.03
350.01	346.93	350.21	347.14
349.37	347.06	349.55	347.22
347.9	347.18	347.94	347.19
345.9	347.31	345.9	347.28
344.26	347.44	344.85	348.02
344.3	347.56	344.17	347.45
345.67	347.7	345.66	347.71
347	347.83	346.9	347.74
348.02	347.98	348.02	347.98
348.83	348.13	348.48	347.79
349.7	348.29	349.42	348.02
351.02	348.47	350.98	348.45
351.74	348.66	351.85	348.76
351.17	348.86	351.26	348.92
349.78	349.06	349.51	348.76

347.86	349.28	348.1	349.48
346.31	349.5	346.44	349.62
346.44	349.72	346.36	349.65
347.91	349.94	347.81	349.87
349.33	350.16	348.96	349.81
350.44	350.39	350.43	350.39
351.31	350.61	351.73	351.05
352.26	350.81	352.22	350.79
353.6	351.02	353.59	351.02
354.3	351.21	354.22	351.13
353.7	351.4	353.79	351.47
352.27	351.57	352.38	351.66
350.29	351.74	350.43	351.85
348.68	351.89	348.73	351.92
348.74	352.03	348.88	352.18
350.12	352.16	350.07	352.13
351.45	352.28	351.34	352.19
352.44	352.39	352.76	352.72
353.2	352.5	353.07	352.38
354.02	352.59	353.68	352.27
355.26	352.69	355.42	352.87
355.89	352.79	355.67	352.57
355.22	352.89	355.12	352.77
353.71	352.99	353.9	353.14
351.65	353.08	351.67	353.06
349.96	353.18	349.8	353
349.98	353.28	349.99	353.3
351.33	353.38	351.3	353.37
352.64	353.48	352.52	353.38
353.63	353.58	353.66	353.62
354.38	353.68	354.7	354.01
355.2	353.77	355.38	353.97
356.45	353.88	356.2	353.64
357.09	353.98	357.16	354.05
356.43	354.09	356.23	353.87
354.94	354.21	354.81	354.06
352.91	354.35	352.91	354.31
351.26	354.49	350.96	354.17
351.32	354.63	351.18	354.5
352.72	354.78	352.83	354.91
354.09	354.93	354.21	355.06

355.12	355.07	354.72	354.69
355.92	355.22	355.75	355.05
356.77	355.33	357.16	355.74
358.03	355.45	358.6	356.03
358.66	355.54	359.34	356.21
357.96	355.62	358.24	355.87
356.41	355.68	356.17	355.41
354.3	355.74	354.02	355.42
352.56	355.8	352.15	355.37
352.54	355.86	352.21	355.55
353.86	355.92	353.75	355.83
355.15	355.99	354.99	355.85
356.11	356.06	355.99	355.95
356.84	356.13	356.72	356.03
357.66	356.2	357.81	356.36
358.88	356.26	359.15	356.55
359.44	356.31	359.66	356.53
358.69	356.36	359.25	356.9
357.1	356.39	357.02	356.29
354.96	356.43	355	356.44
353.2	356.46	353.01	356.25
353.16	356.49	353.31	356.64
354.46	356.53	354.16	356.25
355.73	356.57	355.4	356.26
356.67	356.62	356.7	356.67
357.39	356.68	357.17	356.47
358.19	356.74	358.38	356.95
359.42	356.82	359.46	356.88
360.04	356.9	360.28	357.14
359.35	356.99	359.6	357.21
357.82	357.09	357.57	356.8
355.75	357.2	355.52	356.93
354.07	357.33	353.69	356.93
354.12	357.46	353.99	357.34
355.54	357.62	355.34	357.43
356.93	357.77	356.8	357.66
357.99	357.94	358.37	358.33
358.82	358.11	358.91	358.21
359.71	358.26	359.97	358.54
361.04	358.43	361.26	358.67
361.74	358.59	361.69	358.53

361.12	358.75	360.94	358.56
359.65	358.92	359.55	358.78
357.64	359.09	357.48	358.89
356	359.27	355.84	359.09
356.09	359.44	356	359.36
357.55	359.63	357.58	359.69
358.96	359.81	359.04	359.9
360.04	359.99	359.97	359.93
360.88	360.17	361	360.3
361.78	360.33	361.63	360.2
363.12	360.5	363.45	360.85
363.83	360.67	363.8	360.63
363.21	360.83	363.26	360.87
361.73	360.99	361.89	361.12
359.69	361.15	359.45	360.88
358.03	361.31	358.05	361.31
358.1	361.47	357.75	361.13
359.54	361.63	359.56	361.68
360.93	361.78	360.7	361.57
361.99	361.94	362.05	362.01
362.79	362.08	363.24	362.54
363.69	362.21	364.02	362.55
364.98	362.33	364.71	362.08
365.62	362.45	365.42	362.24
364.91	362.56	364.97	362.59
363.37	362.65	363.65	362.91
361.26	362.75	361.48	362.93
359.54	362.83	359.45	362.73
359.54	362.91	359.61	362.99
360.9	362.99	360.76	362.87
362.21	363.07	362.33	363.2
363.2	363.15	363.18	363.14
363.95	363.23	363.99	363.29
364.78	363.32	364.56	363.12
366.06	363.42	366.36	363.74
366.72	363.54	366.8	363.62
366.06	363.67	365.63	363.22
364.56	363.82	364.47	363.69
362.53	364	362.5	363.93
360.9	364.2	360.19	363.47
361.03	364.42	360.78	364.17

362.56	364.66	362.43	364.56
364.06	364.91	364.28	365.15
365.23	365.18	365.33	365.29
366.17	365.46	366.15	365.44
367.17	365.71	367.31	365.86
368.62	365.98	368.61	365.99
369.43	366.24	369.3	366.11
368.9	366.51	368.88	366.46
367.49	366.75	367.64	366.86
365.51	366.98	365.78	367.21
363.89	367.2	363.9	367.19
364	367.39	364.23	367.64
365.46	367.57	365.46	367.59
366.86	367.72	366.97	367.84
367.9	367.85	368.15	368.11
368.69	367.96	368.87	368.16
369.52	368.05	369.59	368.13
370.78	368.13	371.14	368.51
371.4	368.2	371	367.8
370.67	368.27	370.35	367.93
369.08	368.33	369.27	368.49
366.93	368.4	366.93	368.37
365.16	368.48	364.64	367.94
365.15	368.56	365.13	368.55
366.53	368.64	366.68	368.81
367.87	368.73	368	368.88
368.87	368.82	369.14	369.1
369.63	368.91	369.46	368.75
370.51	369.01	370.51	369.03
371.8	369.12	371.66	368.99
372.44	369.23	371.83	368.62
371.75	369.36	371.69	369.28
370.22	369.5	370.12	369.36
368.14	369.64	368.12	369.59
366.45	369.79	366.62	369.94
366.52	369.93	366.73	370.15
367.96	370.07	368.29	370.43
369.34	370.2	369.53	370.4
370.38	370.33	370.28	370.24
371.17	370.45	371.5	370.78
372.03	370.56	372.12	370.66

373.34	370.67	372.86	370.21
374.01	370.79	374.02	370.8
373.34	370.92	373.31	370.87
371.81	371.05	371.62	370.83
369.72	371.2	369.55	371
368.01	371.35	367.96	371.28
368.08	371.51	368.09	371.53
369.54	371.67	369.68	371.83
370.97	371.83	371.24	372.12
372.05	372	372.44	372.39
372.9	372.17	373.08	372.37
373.82	372.33	373.52	372.05
375.2	372.52	374.85	372.2
375.94	372.71	375.55	372.32
375.35	372.92	375.4	372.95
373.89	373.14	374.02	373.23
371.87	373.36	371.48	372.94
370.25	373.6	370.7	374.03
370.39	373.82	370.25	373.7
371.92	374.06	372.08	374.24
373.41	374.28	373.78	374.67
374.56	374.51	374.68	374.64
375.45	374.72	375.62	374.9
376.41	374.92	376.11	374.64
377.81	375.13	377.65	374.98
378.57	375.33	378.35	375.11
377.97	375.53	378.13	375.67
376.48	375.73	376.61	375.81
374.42	375.92	374.48	375.94
372.74	376.1	372.98	376.32
372.82	376.26	373	376.46
374.28	376.42	374.35	376.51
375.7	376.57	375.69	376.58
376.76	376.71	376.79	376.75
377.57	376.84	377.37	376.65
378.48	376.96	378.39	376.89
379.79	377.08	380.5	377.8
380.44	377.19	380.62	377.36
379.72	377.31	379.55	377.11
378.16	377.43	377.76	377
376.04	377.56	375.83	377.32

374.33	377.71	374.05	377.41
374.42	377.88	374.22	377.69
375.92	378.06	375.84	378.01
377.37	378.24	377.44	378.33
378.5	378.45	378.34	378.3
379.39	378.66	379.61	378.89
380.35	378.85	380.08	378.6
381.77	379.07	382.05	379.37
382.55	379.29	382.24	378.98
381.96	379.51	382.08	379.61
380.48	379.72	380.66	379.87
378.43	379.93	378.67	380.13
376.77	380.14	376.42	379.78
376.88	380.34	376.8	380.28
378.39	380.54	378.31	380.48
379.85	380.73	379.96	380.85
380.96	380.91	381.37	381.32
381.82	381.08	382.02	381.29
382.73	381.23	382.56	381.08
384.09	381.39	384.36	381.67
384.8	381.53	384.92	381.65
384.13	381.68	384.03	381.55
382.58	381.82	382.28	381.48
380.46	381.97	380.48	381.95
378.73	382.12	378.81	382.18
378.79	382.26	379.06	382.55
380.26	382.41	380.14	382.32
381.68	382.56	381.66	382.56
382.77	382.71	382.58	382.54
383.61	382.87	383.71	382.99
384.52	383.01	384.34	382.85
385.89	383.17	386.23	383.53
386.61	383.32	386.41	383.13
385.95	383.49	385.87	383.39
384.41	383.64	384.44	383.65
382.3	383.81	381.84	383.32
380.57	383.97	380.86	384.24
380.64	384.13	380.86	384.36
382.12	384.29	382.36	384.55
383.55	384.44	383.61	384.51
384.63	384.58	385.07	385.03

385.47	384.73	385.84	385.12
386.4	384.86	385.83	384.31
387.77	385.02	386.77	384.04
388.46	385.17	388.51	385.22
387.79	385.34	388.05	385.58
386.25	385.51	386.25	385.48
384.13	385.68	384.08	385.59
382.43	385.85	383.09	386.49
382.51	386	382.78	386.28
383.99	386.16	384.01	386.2
385.43	386.31	385.11	386.01
386.52	386.46	386.65	386.61
387.37	386.62	387.12	386.39
388.28	386.77	388.52	387.02
389.66	386.93	389.57	386.85
390.4	387.1	390.17	386.86
389.76	387.28	389.62	387.12
388.24	387.46	388.07	387.26
386.15	387.67	386.08	387.57
384.46	387.88	384.65	388.05
384.58	388.09	384.33	387.85
386.13	388.31	386.05	388.25
387.65	388.53	387.49	388.39
388.81	388.76	388.55	388.51
389.73	388.98	390.07	389.34
390.7	389.18	391.01	389.51
392.13	389.39	392.38	389.66
392.89	389.58	393.22	389.91
392.25	389.76	392.24	389.73
390.71	389.93	390.33	389.52
388.58	390.11	388.52	390.01
386.84	390.27	386.84	390.25
386.9	390.43	387.16	390.7
388.39	390.58	388.67	390.88
389.82	390.71	389.81	390.71
390.9	390.84	391.3	391.26
391.72	390.97	391.92	391.19
392.61	391.09	392.45	390.94
393.97	391.22	393.37	390.64
394.69	391.37	394.28	390.96
394.02	391.52	393.69	391.18

392.46	391.69	392.59	391.79
390.33	391.86	390.21	391.7
388.6	392.05	389	392.42
388.69	392.22	388.93	392.48
390.21	392.41	390.24	392.46
391.69	392.58	391.8	392.71
392.82	392.77	393.07	393.03
393.7	392.95	393.35	392.62
394.69	393.14	394.36	392.82
396.12	393.34	396.43	393.66
396.87	393.54	396.87	393.54
396.23	393.76	395.88	393.38
394.72	393.97	394.52	393.74
392.65	394.21	392.54	394.06
390.99	394.45	391.13	394.57
391.15	394.69	391.01	394.56
392.74	394.93	392.95	395.17
394.27	395.16	394.33	395.25
395.45	395.4	395.61	395.56
396.38	395.62	396.85	396.11
397.36	395.82	397.26	395.74
398.8	396.03	398.35	395.6
399.58	396.24	399.98	396.64
398.95	396.44	398.87	396.34
397.41	396.63	397.37	396.56
395.28	396.82	395.41	396.91
393.55	397.01	393.39	396.84
393.64	397.19	393.7	397.26
395.17	397.37	395.19	397.43
396.64	397.54	396.82	397.74
397.77	397.71	397.93	397.88
398.64	397.88	398.1	397.36
399.57	398.03	399.47	397.95
400.97	398.2	401.33	398.57
401.71	398.35	401.88	398.53
401.03	398.52	401.31	398.77
399.45	398.67	399.07	398.25
397.29	398.83	397.21	398.71
395.53	399	395.4	398.85
395.61	399.17	395.65	399.23
397.13	399.34	397.23	399.46

398.62	399.52	398.79	399.71
399.75	399.7	399.85	399.81
400.65	399.89	400.31	399.56
401.61	400.07	401.51	399.99
403.06	400.28	403.45	400.69
403.85	400.49	404.1	400.74
403.25	400.73	402.88	400.33
401.76	400.97	401.61	400.79
399.7	401.25	399	400.51
398.06	401.54	397.5	400.96
398.27	401.85	398.28	401.87
399.95	402.17	400.24	402.48
401.58	402.48	401.89	402.81
402.86	402.8	402.65	402.61
403.87	403.11	404.16	403.41
404.97	403.39	404.85	403.29
406.49	403.67	407.57	404.77
407.29	403.92	407.66	404.29
406.66	404.16	407	404.48
405.13	404.38	404.5	403.71
403.02	404.6	402.24	403.78
401.32	404.82	401.01	404.5
401.46	405.03	401.5	405.09
403.03	405.25	403.64	405.88
404.54	405.44	404.55	405.48
405.68	405.63	406.07	406.03
406.57	405.81	406.64	405.89
407.52	405.97	407.06	405.52
408.93	406.13	408.95	406.17
409.67	406.29	409.91	406.53
408.99	406.45	409.12	406.56
407.39	406.6	407.2	406.38
405.2	406.76	405.24	406.76
403.41	406.91	403.27	406.75
403.47	407.06	403.64	407.25
404.98	407.21	405.17	407.43
406.45	407.36	406.75	407.68
407.57	407.51	408.05	408.01
408.43	407.66	408.34	407.59
409.37	407.81	409.25	407.72
410.8	407.99	410.3	407.51

411.57	408.18	411.3	407.91
410.95	408.4	410.88	408.31
409.43	408.63	408.9	408.07
407.33	408.89	407.1	408.62
405.66	409.17	405.59	409.08
405.84	409.45	405.99	409.61
407.49	409.73	408.12	410.38
409.1	410.01	409.23	410.16
410.34	410.28	410.92	410.88
411.32	410.55	411.66	410.9
412.36	410.79	412	410.45
413.87	411.06	413.51	410.72
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-99.99	-99.99	-99.99	-99.99
-99.99	-99.99	-99.99	-99.99
-99.99	-99.99	-99.99	-99.99
-99.99	-99.99	-99.99	-99.99
-99.99	-99.99	-99.99	-99.99
-99.99	-99.99	-99.99	-99.99
-99.99	-99.99	-99.99	-99.99

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