

Environmental Excise Taxes, 1988

By Susan J. Mahler *

Environmental excise tax liabilities of \$841.9 million before adjustments were reported by 642 businesses during 1988, the second year of the Superfund Amendments and Reauthorization Act of 1986, or SARA. After statutory adjustments and credits, the tax was \$827.3 million. This represents an increase of \$67.2 million (9 percent) over the previous year. This brought the total environmental excise tax reported since SARA's inception through 1988, to almost \$1.6 billion. From the beginning of the "Superfund" in April 1981 through the end of 1988, a total of \$2.8 billion in environmental excise taxes was reported to the Internal Revenue Service.

Under SARA, Congress planned to amass \$8.5 billion for the Superfund during the 5-year period beginning January 1, 1987.

Approximately \$6.7 billion was to be raised through taxes, including \$4.1 billion from the environmental excise taxes on petroleum, petrochemicals, and inorganic chemicals [1]. To meet this goal, \$2.5 billion must be accumulated in the Fund over the remaining 3-year period, 1989-1991. For the first 2 years under SARA, 39 percent of the planned \$4.1 billion was reported.

BACKGROUND

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) was originally enacted in December 1980. It established the Hazardous Substance Trust Fund, or Superfund, to fund the cleaning up of chemical spills and abandoned hazardous waste disposal sites. Congress intended to accumulate \$1.4 billion through the imposition of environmental excise taxes on crude oil used in or exported from the United States, imported crude oil and petroleum products, petrochemicals and inorganic chemicals [2]. Monies in the Superfund were available for expenditures incurred under CERCLA, which included but were not limited to the following: 1) costs of responding to the presence of hazardous substances, including clean-up and removal of such substances; 2) payment of claims for injury to, or

destruction or loss of, natural resources belonging to or controlled by the Federal or State Governments; and 3) certain costs related to response efforts.

Upon CERCLA's expiration on September 30, 1985, \$1.2 billion of the intended \$1.4 billion in environmental excise taxes had been reported for the period from April 1981 through September 1985 [3]. It became clear to Congress that the tax liabilities reported under CERCLA were insufficient to meet program needs. In response, Congress extended and amended CERCLA by enacting the Superfund Amendments and Reauthorization Act of 1986 (SARA) and reestablished the Superfund, effective January 1, 1987, through December 31, 1991 [4].

TAXES REPORTED FOR 1988

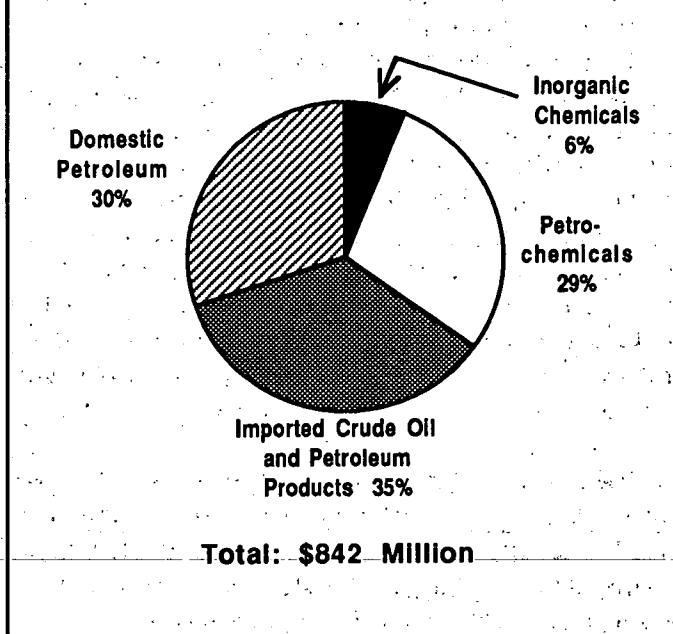
For 1988, the percentage of environmental tax attributable to the various substances remained basically the same as it was for 1987. Petroleum (both imported and domestic) accounted for two-thirds of total environmental excise taxes, while petrochemicals accounted for 29 percent. Inorganic chemicals accounted for the remaining 6 percent (Figure A).

Average taxes on domestic petroleum, imported crude oil and petroleum products, and petrochemicals were nearly equal for 1988. Fifty-seven percent of the businesses reporting environmental excise taxes, reported liabilities on petroleum. The average tax under SARA for 1988 was \$1.3 million per taxpayer (Figure B).

Total environmental excise taxes generated for 1988 for the Superfund amounted to \$841.9 million. The amount of total environmental excise taxes distributed by the types of substances that were taxed and by the quarter in which the tax was incurred is shown in Figure C. The substance with the highest tax reported was imported crude oil and petroleum products, which amounted to \$297.5 million for 1988, followed by domestic petroleum tax, which amounted to \$250.1 million.

Environmental Taxes, 1988

Figure A
Sources of Environmental Excise Taxes,
Quarters Ending March 31, 1988 -
December 31, 1988



The top five companies in 1988, each reporting more than \$35 million in environmental excise tax, reported more than \$248 million in tax before adjustments. This was almost 30 percent of the total environmental excise tax for 1988. The top 14 companies, those that reported over \$14 million in environmental excise tax, were responsible for more than half the total environmental excise tax.

PETROLEUM

SARA imposed an excise tax of \$.082 per barrel on crude oil received at U.S. refineries or exported from the United States. Petroleum products imported into the United States for consumption or warehousing were taxed at a rate of \$.117 per barrel (Table 1). For 1988, approximately 57 percent of the total businesses with environmental excise taxes reported a tax on petroleum (imported, domestic, or both). The 369 companies with a petroleum tax reported a total environmental excise tax of \$547.6 million, compared to the 382 for 1987 that reported a total environmental excise tax of \$527.4 million (Table 2). Thus, for 1988, the number of companies reporting petroleum tax liabilities fell by 3.4 percent while the amount of environmental excise tax due to petroleum increased by 3.8 percent.

Figure B.—Number of Businesses and Environmental Excise Taxes, Before Adjustments and Credits, Quarters Ended March 1988 through December 1988

[Money amounts are in thousands of dollars]

Type of substance	Number of businesses reporting environmental excise taxes	Tax before adjustments	
		Total tax ²	Average tax
	(1)	(2)	(3)
Total environmental taxes.....	642	\$841,946	\$1,311
Taxes on:			
Total petroleum.....	369	547,644	1,484
Domestic petroleum.....	150	250,122	1,667
Imported crude oil and petroleum products.....	219	297,522	1,359
Petrochemicals.....	145	241,294	1,664
Inorganic chemicals.....	287	53,009	185

¹ Number of businesses do not add to total because businesses could report a tax on more than one type of substance.

² Detail may not add to total due to rounding.

Figure C.—Environmental Excise Taxes Before Adjustments by Quarter, Quarters ended March 1988 through December 1988

[Money amounts are in millions of dollars]

Quarter ended	Total	Domestic petroleum	Imported crude oil and petroleum products	Petrochemicals	Inorganic chemicals
	(1)	(2)	(3)	(4)	(5)
All quarters.....	\$841.9	\$250.1	\$297.5	\$241.3	\$53.0
March.....	209.2	65.4	70.5	60.4	12.9
June.....	209.6	62.1	75.4	58.8	13.2
September.....	215.0	64.8	76.9	60.0	13.3
December.....	208.2	57.8	74.7	62.1	13.6

NOTE: Detail may not add to the total due to rounding.

PETROCHEMICALS

For 1988, taxed petrochemicals were reported by nearly one-fourth of the companies reporting an environmental excise tax and accounted for 29 percent of the total tax reported. These percentages are not much different from those of 1987, when petrochemicals were reported by one-fourth of the companies and accounted for 28 percent of the tax. For nine of the 11 petrochemicals taxed, the tax rate was \$4.87 per ton. Xylene was taxed at a rate of \$10.13 per ton, and methane at a rate of \$3.44 per ton.

Of the 11 petrochemicals, ethylene once again dominated the statistics. Ethylene is a major byproduct of petroleum refining and natural gas extraction and is used in plastics, fibers, and rubber products. Thirty companies reported a tax on ethylene, totaling over \$93 million. Toluene was the most frequently reported petrochemical. While 55 companies reported taxes for toluene, they accounted for only \$10 million in tax. At the other end, naphthalene was the least frequently reported petrochemical. Only five companies reported a tax on naphthalene which totaled \$133 thousand.

INORGANIC CHEMICALS

Taxes reported for the 31 inorganic chemicals that are subject to tax under SARA amounted to \$53 million. Inorganic chemicals are those chemicals that do not have a carbon base. The tax rates on these chemicals vary from \$0.22 to \$4.45 per ton, depending on the chemical. Although more than 45 percent (or 287) of the businesses with an environmental tax reported a tax on inorganic chemicals, the total amount of tax incurred was a relatively small fraction of total environmental excise taxes for both 1987 and 1988. The average tax for 1988 was \$185,000 per business.

The largest amounts of tax were reported for chlorine (\$30.9 million) and ammonia (\$10.4 million). These inorganic chemicals are widely used in synthetic fibers, plastics, and explosives. The largest average tax per filer was \$702,000 for chlorine. Phosphorous was next with a \$181,000 average. Ammonia was the most frequently reported inorganic chemical for 1988, with 74 businesses reporting. In contrast, for 1987, sulfuric acid was the most frequently reported inorganic chemical, with 77 businesses accounting for \$1.5 million, or 3 percent of the tax reported that year for all inorganic chemicals. Ammonia ranked second, with 73 businesses accounting for \$9.5 million.

ADJUSTMENTS

A business could adjust, i.e., reduce, its total tax by the amount computed on a chemical that was previously taxed and later used to manufacture or produce another substance subject to the environmental excise tax. The taxpayer could reduce current tax by: (1) claiming a credit for taxes previously paid, or (2) paying the total but filing a claim for a refund of those taxes, or (3) applying the previously paid amount toward the next quarter's tax if no tax was due currently. A credit or refund was also allowed to the user for a tax previously paid on a chemical such as nitric acid, sulfuric acid, or ammonia, which was used to produce fertilizer; methane used to produce ammonia; or a chemical used to produce animal feed. Each of these was considered to be a nontaxable use. Credits or refunds could also be claimed for taxes paid on crude oil removed from a pipeline and later returned to the same pipeline.

Total adjustments reported for 1988 were \$14.7 million and tax liability after adjustments was \$827.3 million. For 1987, total adjustments had amounted to \$40.8 million. The larger amount of adjustment in 1987 can be attributed in part to credits claimed by taxpayers for taxes previously paid on xylene. SARA retroactively repealed the tax on xylene for the quarters ending before October 1, 1985.

SUMMARY

Through the calendar year which ended December 1988, \$841.9 million in tax liability was reported for environmental excise taxes by 642 businesses. Sixty-five percent of the tax reported was from petroleum. The top five companies in 1988 accounted for nearly 30 percent of the total tax.

Since the inception of SARA, a total of \$1.6 billion in environmental excise taxes has been reported to the Internal Revenue Service. In order to reach Congress' goal of \$4.1 billion, \$2.5 billion dollars remains to be accumulated in the Fund over the next 3 years.

DATA SOURCES AND LIMITATIONS

The Quarterly Excise Tax Return, Form 720, is the form on which environmental excise taxes are reported. Form 6627, Environmental Taxes, is the supporting schedule on which the tax liability for petroleum and chemicals is computed. These unaudited returns are the source of data used for the statistics in this study.

For tax years beginning after 1986 and before 1992, in addition to the excise taxes previously discussed, a cor-

poration is liable for an income tax surcharge equal to 0.12 percent of the excess over \$2 million dollars of modified alternative minimum taxable income for the year. This tax is reported on the corporation income tax return in the Form 1120 series, and is not included in these statistics.

Excise tax returns are due to be filed with the Internal Revenue Service (IRS) within 1 month after the end of the quarter in which the business is liable for environmental tax. Data in this article reflect information reported on unaudited returns filed for tax quarters ending March 31, 1988, through December 31, 1988.

IRS also releases environmental tax statistics in a report on excise taxes [5]. These figures are taken from the Form 720, rather than the Form 6627 and show tax liability, after adjustments, for returns recorded in the computerized IRS Business Master File (BMF) as part of routine processing for tax administration. The data, however, are not classified by type of chemical.

Because returns are due 1 month after the end of the calendar quarter in which the tax liability was incurred, the tax for a given quarter reflected in the statistics from Form 720 is the amount reported on returns processed that quarter, regardless of when the liability was incurred. Conversely, for this article, taxes for a given quarter represent the amounts reported on the return for the quarter the liability was incurred, regardless of when the return was processed. These statistics also include amounts paid with returns filed after the original due date because of routine filing extensions and other reasons. For this study, the tax for these returns was included in the quarter in which the tax liability was incurred. In summary, the data from Form 720 cover whatever tax was recorded during a quarter, regardless of when it was incurred. Consequently, the two data series are not directly comparable.

Since no statistical sampling was involved, the data presented here are not subject to sampling error but may be subject to nonsampling error. For example, although efforts were made to secure all returns, because of time and resource constraints, information from returns for prior quarters for the same businesses were used as the basis for estimating data for returns unavailable for this study.

NOTES AND REFERENCES

- [1] Approximately \$2.5 billion dollars was to be raised by a corporate environmental income tax and \$0.1 billion dollars from a tax on imported chemical substances.
- [2] U.S. Senate, Report of the Committee on Finance on 5.51, Report 99-73, May 23, 1985.
- [3] For prior years, see Barnhardt, Janet, "Superfund for Environmental Taxes," *Statistics of Income Bulletin*, Fall 1982, Volume 2, Number 2; Beal, Rashida, "Superfund for Environmental Taxes, 1981 and 1982," *Statistics of Income Bulletin*, Fall 1983, Volume 3, Number 2; "Environmental Taxes 1981-83," *Statistics of Income Bulletin*, Spring 1985, Volume 4, Number 4; "Environmental Taxes, 1981-84," *Statistics of Income Bulletin*, Spring 1986, Volume 5, Number 4; "Superfund for Environmental Taxes, 1981-1985," *Statistics of Income Bulletin*, Spring 1987, Volume 6, Number 4; Kozielec, John, "Superfund for Environmental Taxes, 1987," *Statistics of Income Bulletin*, Fall 1989, Volume 9, Number 2.
- [4] The Omnibus Budget Reconciliation Act of 1990 extended the Superfund taxes and trust fund through December 31, 1995.
- [5] U.S. Department of the Treasury, Internal Revenue Service, *Internal Revenue Report of Excise Taxes*, issued quarterly.

Environmental Taxes, 1988

Table 1.—Environmental Excise Taxes, by Type of Substance, Aggregate for the Quarters Ended March 1988 to December 1988

[Money amounts are in thousands of dollars]

Type of substance	Number of businesses reporting environmental excise taxes ¹	Number of barrels or tons (thousands)	Tax rate per barrel or ton (dollars)	Average tax per business (dollars)
	(1)	(2)	(3)	(4)
Total petroleum.....	369	5,593,189	N/A	\$1,484,129
Domestic Petroleum.....	150	3,050,264	.082	1,667,478
Imported crude oil and petroleum products.....	219	2,542,924	.117	1,358,548
Petrochemicals, total.....	145	46,419	N/A	1,664,096
Acetylene.....	26	154	4.87	28,935
Benzene.....	40	6,781	4.87	825,564
Butane.....	15	421	4.87	136,555
Butylene.....	9	672	4.87	363,521
Butadiene*.....	26	1,922	4.87	360,052
Ethylene.....	30	19,211	4.87	3,118,539
Methane.....	26	2,336	3.44	309,053
Naphthalene.....	5	27	4.87	26,563
Propylene.....	47	9,239	4.87	957,295
Toluene.....	55	2,125	4.87	188,139
Xylene.....	45	3,531	10.13	794,951
Inorganic chemicals, total.....	287	35,150	N/A	184,699
Ammonia.....	74	3,953	2.64	141,028
Antimony.....	11	9	4.45	3,753
Antimony trioxide.....	17	24	3.75	5,336
Arsenic.....	4	1	4.45	163
Arsenic trioxide.....	8	27	3.41	11,616
Barium sulfide.....	(*)	(*)	2.30	(*)
Bromine.....	8	215	4.45	119,758
Cadmium.....	13	2	4.45	654
Chlorine.....	44	11,434	2.70	701,640
Chromium.....	6	7	4.45	5,536
Chromite.....	7	259	1.52	56,192
Potassium dichromate.....	5	1	1.69	90
Sodium dichromate.....	8	7	1.87	1,736
Cobalt.....	9	5	4.45	2,603
Cupric sulfate.....	16	31	1.87	3,674
Cupric oxide.....	9	12	3.59	4,843
Cuprous oxide.....	6	5	3.97	3,572
Hydrochloric acid.....	44	1,029	0.29	6,784
Hydrogen fluoride.....	11	346	4.23	132,957
Lead oxide.....	28	414	4.14	61,241
Mercury.....	5	1	4.45	88
Nickel.....	11	79	4.45	31,939
Phosphorus.....	8	326	4.45	181,201
Stannous chloride.....	(*)	(*)	2.85	(*)
Stannic chloride.....	5	12	2.12	4,983
Zinc chloride.....	13	13	2.22	2,281
Zinc sulfate.....	19	26	1.90	2,640
Potassium hydroxide.....	22	338	0.22	3,384
Sodium hydroxide.....	63	9,295	0.28	41,311
Sulfuric acid.....	65	5,500	0.26	22,000
Nitric acid.....	24	1,779	0.24	17,791

*This figure is not shown to avoid disclosure of information for specific businesses. However, the data are included in the appropriate totals.

N/A - Not applicable.

¹ Number of businesses do not add to total because businesses could report a tax on more than one type of substance.

NOTE: Detail may not add to total because of rounding.

Environmental Taxes, 1988

Table 2.—Environmental Excise Taxes Before Adjustments, by Type of Substance, Quarters Ended March 1988 to December 1988

[Money amounts are in thousands of dollars]

Type of substance	Quarter ended				
	Total	March 1988	June 1988	September 1988	December 1988
	(1)	(2)	(3)	(4)	(5)
Total	\$841,946	\$209,179	\$209,556	\$214,979	\$208,232
Petroleum, total	547,644	135,933	137,500	141,687	132,522
Domestic petroleum.....	250,122	65,426	62,087	64,825	57,783
Imported crude oil and petroleum products.....	297,522	70,507	75,413	76,862	74,739
Petrochemicals, total	241,294	60,364	58,807	59,976	62,147
Acetylene.....	752	188	185	180	199
Benzene.....	33,023	8,427	7,679	8,023	8,894
Butane.....	2,048	437	606	525	480
Butylene.....	3,272	921	787	755	809
Butadiene.....	9,361	2,107	2,725	2,227	2,303
Ethylene.....	93,556	23,719	22,670	23,312	23,854
Methane.....	8,035	1,866	1,887	1,971	2,311
Naphthalene.....	133	20	26	64	22
Propylene.....	44,993	11,415	10,691	11,272	11,615
Toluene.....	10,348	2,800	2,672	2,320	2,555
Xylene.....	35,773	8,462	8,880	9,326	9,105
Inorganic chemicals, total	53,009	12,883	13,248	13,315	13,562
Ammonia.....	10,436	2,367	2,586	2,613	2,868
Antimony.....	41	13	10	8	10
Antimony trioxide.....	91	25	24	22	19
Arsenic.....	1	(¹)	(¹)	(¹)	(¹)
Arsenic trioxide.....	93	21	26	27	19
Barium sulfide.....	1	(¹)	(¹)	(¹)	(¹)
Bromine.....	958	335	231	230	163
Cadmium.....	8	3	1	1	3
Chlorine.....	30,872	7,487	7,653	7,808	7,925
Chromium.....	33	11	8	7	7
Chromite.....	393	112	99	70	113
Potassium dichromate.....	1	(¹)	(¹)	(¹)	(¹)
Sodium dichromate.....	14	1	1	3	8
Cobalt.....	23	6	5	5	8
Cupric sulphate.....	59	15	17	15	11
Cupric oxide.....	44	12	10	10	11
Cuprous oxide.....	21	6	7	5	4
Hydrochloric acid.....	299	61	115	58	64
Hydrogen fluoride.....	1,463	358	368	395	341
Lead oxide.....	1,715	375	417	389	534
Mercury.....	1	(¹)	(¹)	(¹)	(¹)
Nickel.....	351	114	102	95	40
Phosphorus.....	1,450	385	386	364	315
Stannous chloride.....	1	(¹)	(¹)	(¹)	(¹)
Stannic chloride.....	25	6	6	7	6
Zinc chloride.....	30	10	9	8	3
Zinc sulfate.....	50	15	12	12	12
Potassium hydroxide.....	74	18	20	19	18
Sodium hydroxide.....	2,603	656	631	654	661
Sulfuric acid.....	1,430	365	396	379	290
Nitric acid.....	427	106	104	110	106

¹ Less than \$500, however, the data are included in the totals.

NOTE: Detail may not add to total because of rounding.