

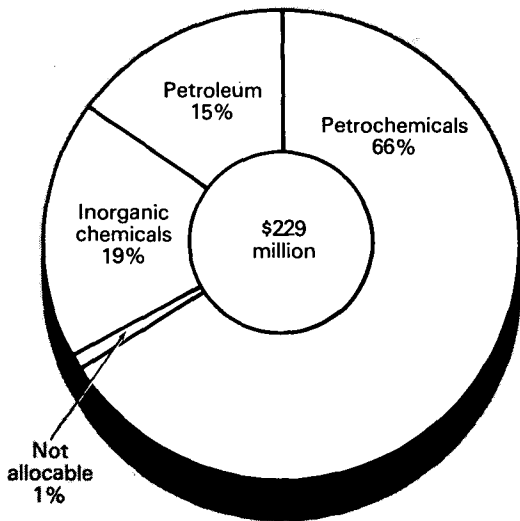
Superfund for Environmental Taxes

By Janet Barnhardt*

After the first full year of the "Superfund," environmental excise taxes reported for this fund have amounted to \$229.2 million before adjustments. Of this amount, \$33.5 million are from taxes on petroleum, and \$195.7 million are from taxes on certain chemicals deemed to be hazardous. The "Superfund" was established under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) for the purpose of cleaning up chemical spills and hazardous waste disposal sites that have been abandoned.

The excise taxes are levied on products falling into three general categories--petroleum, petrochemicals, and inorganic chemicals. The largest share of taxes reported to date--66 percent--has been from petrochemicals, while the smallest is from petroleum.

**Sources of Environmental Taxes,
Quarters Ending June 30, 1981, through
March 30, 1982**



Although contributing the largest share to the "Superfund," petrochemicals have been reported by the least number of filers, resulting in the largest average tax per business of the three groups.

**Environmental Taxes
Quarters Ending June 30, 1981, through March 30, 1982**

Environmental Tax	Number of Businesses	Environmental Tax	Average per Business
Petroleum	293	\$ 33,533,000	\$114,000
Chemicals:			
Petrochemicals	171	150,920,000	883,000
Inorganics	301	43,378,000	144,000
Not allocable	31	1,393,000	45,000

TAX ON PETROLEUM

The requirements for filing and reporting a tax on petroleum apply to the following:

- 1) operators of U.S. refineries receiving crude oil;
- 2) importers of petroleum products for consumption, use, or warehousing; or
- 3) users or exporters of crude oil on which the environmental tax has not been paid.

Since the tax is imposed only once on a product, if it has already been paid it can not be imposed again on another business that would otherwise be liable. For example, if crude oil is taxed at one refinery and is then shipped to another refinery for its use, then the second refinery would not be liable for taxes.

Taxes on 4.2 billion barrels of petroleum have been reported by 293 businesses and have amounted to \$33.5 million. Of this, \$19.8 million were reported for 1981 and \$13.7 million for the first two quarters of 1982.

TAX ON THE SALE AND USE OF CERTAIN CHEMICALS

The requirements for filing and reporting this tax apply to any importer, manufacturer, or producer that sells or uses any of the 42 taxable chemicals listed in Table 1. There are some exceptions to what is taxed, so that the following are nontaxable:

- 1) ammonia, if used directly as a fertilizer;

*Prepared under the direction of Noreen Hoffmeier, Acting Chief, Returns Analysis Section, Individual Statistics Branch.

- 2) methane or butane used as a fuel (however, the business using the chemical for a taxable purpose is liable);
- 3) nitric acid, sulfuric acid, ammonia, or methane used in the production of ammonia that is used for fertilizer;
- 4) sulfuric acid produced solely as a byproduct of and on the same site as air pollution control equipment; or
- 5) any substance derived from coal.

Of the \$195.7 million in tax liability reported for chemicals, \$1.4 million was for chemicals that were not identified. This was due primarily to the filer reporting only the total of all chemicals and not indicating the specific types that were taxable.

Petrochemicals

Taxes reported for the petrochemicals have amounted to \$150.9 million to date (representing 31.7 million tons taxed), of which \$86.8 million were for 1981 and \$64.1 million for 1982. The 11 petrochemicals that were taxed were those which have been derived or isolated from either petroleum or natural gas. The taxes were reported by 171 businesses, resulting in an overall average of \$13.7 million reported per chemical.

Of the 11 petrochemicals, there were two that dominated the tax statistics-- ethylene and propylene. These two chemicals also dominated the petrochemical industry as major byproducts of petroleum refining and natural gas extraction and are used in plastics, fibers, and rubber products. Taxes for ethylene accounted for \$56.5 million with 11.6 million tons taxed, and propylene amounted to \$29.2 million with 6.0 million tons taxed. These same two chemicals had the highest average tax per business, with ethylene averaging \$1,713,000 and propylene, \$649,000.

The chemicals that were reported by the most businesses were toluene and xylene, followed by benzene and propylene. At the other end, naphthalene and butylene were the least frequently reported.

Inorganics

Taxes reported for the 31 inorganic chemicals amounted to \$43.4 million. Inorganic chemicals are chemicals which do not have a carbon base, that is, their origins are something other than plant or animal materials. For 1981, \$24.2 million in taxes were reported, while to date for 1982, about \$19.2 million has been reported.

The largest amount of taxes was reported for chlorine (\$23.5 million) and ammonia (\$8.1 million). These chemicals are widely used in synthetic fibers, plastics and explosives. The largest average tax per filer was \$561,000 for chlorine and \$182,000 for phosphorus. In addition, the most frequently reported chemicals were sulfuric acid, ammonia, and hydrochloric acid; while barium sulfide and potassium dichromate were the least frequently reported.

BRIEF HISTORY OF THE SUPERFUND LEGISLATION

Hazardous chemical waste problems have evolved from the production of such everyday products as plastics, paints, dyes, glazes, adhesives, fertilizers, detergents, cosmetics, flame retardant textiles, man-made textiles, pesticides, and toiletries. Toxic chemicals are also used in the production of metals, petroleum products, glass, and mirrors. In addition to the increase in the variety of uses of toxic chemicals, the chemical industry has shown enormous growth, producing nearly 11 times more than in 1947.

The effect of improper waste disposal can result in catastrophic situations including "contamination of groundwater (the source of half the nation's drinking water), habitat destruction, adverse human health effects, soil contamination, fish kills, livestock loss, municipal treatment plant outages, and crop damage." [1]

To deal with the problems of hazardous wastes, the Administration recommended the establishment of a "Superfund" in June 1979. The legislation was enacted in December 1980.

The five stated objectives of CERCLA were:

• "To assure that those responsible for any actual or potential threat to public health, welfare or the environment caused by releases of hazardous substances, pollutants or contaminants bear the costs of their actions;

• To establish a trust fund to finance response action where a liable party does not clean up, cannot be found, or cannot pay the cost of cleanup of the site or spill;

• To base the Fund primarily on contributions from those who have been generically associated with such problems in the past and who today derive profits from products and services associated with such substances;

• To establish a mechanism to achieve longer term remedial cleanup which involves States as true partners with the Federal government;

• To provide adequate Federal response authority to help clean up hazardous chemical disasters" [2].

The provisions of the Act called for the creation of a \$1.6 billion Hazardous Substance Response Fund, commonly referred to as the "Superfund." Of this amount, \$1.38 billion would be collected in the form of excise taxes, with the remainder coming from Federal appropriations. These taxes were to be collected over a five-year period effective April 1, 1981.

Data Sources and Limitations

The Quarterly Excise Tax Return, Form 720, is the form on which environmental taxes are reported. Form 6627, Environmental Taxes, is the supporting schedule where the tax liability for petroleum and chemicals is computed. These returns are the basic source of data for this study. Data in this article reflect information reported on those returns filed and processed by July 8, 1982, for the four tax quarters ending June 30, 1981, through March 31, 1982.

Any adjustments, credits, or refunds, to environmental taxes either on the Form 720 or Form 843, Claim, are not reflected in the data. A taxpayer could take an adjustment or credit if a taxed chemical were later used to manufacture or produce any other substance subject to the tax. If a tax were paid on a chemical subsequently used to produce fertilizer, a credit or adjustment could also be claimed. Only those taxes reported on the Form 6627 are included; no adjustments, credits, or refunds from either the Form 720 or Form 843 are included in the data.

The Internal Revenue Service also releases environmental tax statistics in a report on excise taxes that is issued quarterly [3]. These figures, taken from the Form 720, show the liability, after adjustments, of returns recorded in the computerized Business Master File (BMF) as part of routine processing. Returns are due for filing one month after the end of the quarter in which the business is liable for environmental taxes. Therefore, the report covers what was recorded during a quarter, regardless of the specific tax period, unlike the data presented in this article. As a result, the two series of data are not directly comparable.

Since no statistical sampling was involved, the data are not subject to sampling error, but may be subject to nonsampling error. Attempts were made to secure all returns filed but returns may have been omitted if they were not forwarded for the study. In addition, the returns were passed through a series of validation tests to verify the accuracy of the return entries. In those cases where the data supplied on the return were incomplete, such as when there was a total for chemical taxes without the required subtotals, the business was contacted to obtain the information.

NOTES AND REFERENCES

- [1] David Lennett, "Handling Hazardous Waste--An Unsolved Problem," Environment, October 1980, p. 7.
- [2] Environmental Protection Agency, unpublished report.
- [3] "Internal Revenue Collections of Excise Taxes," released quarterly by the Internal Revenue Service.

Environmental Excise Taxes, 1981-1982

Table 1.--Environmental Taxes Reported by Type of Substance,
Quarters Ending June 30, 1981, Through March 31, 1982

Type of substance	Number of businesses	Tax rate per ton (dollars)	Number of tons (000's)	Environmen- tal taxes (thousand dollars)
	(1)	(2)	(3)	(4)
Petroleum.....	293	0.0079 ¹	4,244,707 ²	33,533
Petrochemicals, total.....	171 ³	N/A	31,731	150,920
Acetylene.....	33	4.87	150	733
Benzene.....	51	4.87	3,526	17,170
Butane.....	24	4.87	891	4,338
Butylene.....	19	4.87	909	4,427
Butadiene.....	24	4.87	1,312	6,388
Ethylene.....	33	4.87	11,608	56,531
Methane.....	25	3.44	2,524	8,684
Naphthalene.....	4	4.87	53	256
Propylene.....	45	4.87	6,000	29,218
Toluene.....	67	4.87	1,736	8,454
Xylene.....	56	4.87	3,023	14,723
Inorganics, total.....	301 ³	N/A	35,062	43,378
Ammonia.....	73	2.64	3,068	8,099
Antimony.....	14	4.45	2	9
Antimony trioxide.....	18	3.75	17	65
Arsenic.....	5	4.45	(⁴)	2
Arsenic trioxide.....	14	3.41	23	80
Barium sulfide.....	*	2.30	*	*
Bromine.....	6	4.45	132	589
Cadmium.....	22	4.45	2	10
Chlorine.....	42	2.70	8,722	23,548
Chromium.....	14	4.45	36	161
Chromite.....	15	1.52	343	522
Potassium dichromate.....	*	1.69	*	*
Sodium dichromate.....	6	1.87	18	34
Cobalt.....	20	4.45	5	23
Cupric sulphate.....	19	1.87	21	40
Cupric oxide.....	12	3.59	4	15
Cuprous oxide.....	4	3.97	3	14
Hydrochloric acid.....	67	0.29	1,852	537
Hydrogen fluoride.....	12	4.23	265	1,122
Lead oxide.....	31	4.14	269	1,113
Mercury.....	5	4.45	2	7
Nickel.....	18	4.45	108	480
Phosphorus.....	8	4.45	327	1,454
Stannous chloride.....	5	2.85	1	4
Stannic chloride.....	8	2.12	7	16
Zinc chloride.....	15	2.22	23	51
Zinc sulfate.....	20	1.90	30	58
Potassium hydroxide.....	18	0.22	241	53
Sodium hydroxide.....	57	0.28	9,008	2,522
Sulfuric acid.....	86	0.26	9,268	2,410
Nitric acid.....	28	0.24	1,396	335
Not allocable.....	31	N/A	N/A	1,393

N/A - Not applicable.

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

¹Rate per barrel.²Number of barrels.³Number of businesses reporting at least one of the indicated substances.⁴Less than 1,000 tons.

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