

SD-TR-82-37



HAZARDOUS WASTE INVENTORY FOR HOST

VAFB AND ITS TENANTS
FINAL REPORT

SCS ENGINEERS
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APRIL 1982

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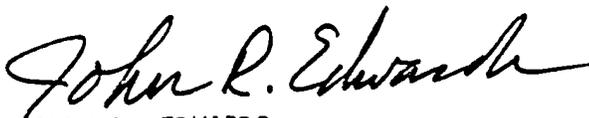
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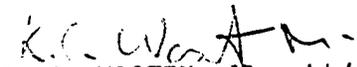
This report was prepared by SCS Consulting Engineers, Inc., Long Beach, California 90807. This hazardous waste inventory for host base and tenant programs at Vandenberg Air Force Base (VAFB) was initiated by the U.S. Air Force to meet the requirements of the Resource Conservation and Recovery Act (RCRA) of 1976, as amended in 40 CFR 261 and 264, May 19, 1980, and the California Administrative Code, Title 22, Division 4. The report will be used by the System Program Officer (SPO) and VAFB to assure that hazardous waste disposal decisions are made in compliance with federal, state, and local statutes, and to assure that cost-effective options can be evaluated for base-wide use by host base and tenant organizations. The tenants included in this report are Space Transportation System (STS), other Space Division (SD) operations, NASA, and BMO.

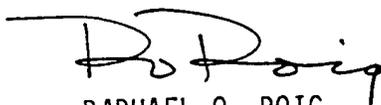
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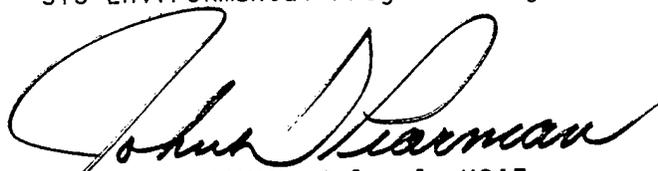
This report has been reviewed by the Office of Public Affairs (PA), and is releasable to the National Technical Information Service (NTIS). At the NTIS, it will be available to the general public, including foreign nations.

This report has been reviewed and is approved for publication.


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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This study inventories the types and quantities of wastes expected to be generated by host base operations at Vandenberg Air Force Base (VAFB), and presents a combined inventory for the VAFB host base and its tenants. The host base inventory lists waste types; chemical constituents; baseline mass and volume generation rates per month, per year, and totals for the period 1981 through 1990; contingency mass and volume generation rates per contingency event; U.S. EPA and California hazardous waste numbers and hazardous properties; and California compatibility classes.		

The highest quantities of waste generated by the host base in 1981 were produced by 4392 TRNSS/LGTM (78,200 kg; 172,400 lb), followed by 1369 AVS/DOC (77,800 kg; 171,400 lb), and Lockheed (20,100 kg; 44,300 lb). The lowest quantities of wastes in 1981 were generated by Federal Electric (4,500 kg; 10,000 lb), Fuels Lab & Det 41 (2,300 kg; 5,100 lb), 394 ICBMTMS (1,900 kg; 4,200 lb), Boeing (1,300 kg; 2,900 lb), and USAF Hospital (1,100 kg; 2,500 lb).

In 1990, the highest quantities of wastes are expected to be generated by 1369 AVS/DOC (155,500 kg; 342,800 lb), and 4392 TRNSS/LGTM (78,200 kg; 172,400 lb), followed by Lockheed (20,100 kg; 44,200 lb), Federal Electric (9,300 kg; 20,500 lb), and Fuels Lab & Det 41 (5,800 kg; 12,800 lb). The smallest quantities in 1990 are expected to be generated by 394 ICBMTMS (1,900 kg; 4,200 lb), Boeing (1,300 kg; 2,900 lb), and USAF Hospital (1,100 kg; 2,500 lb).

In 1981, 1369 AVS/DOC, 4392 TRNSS/LGTM, and Lockheed were the major sources of liquid wastes (44.1, 39.7, and 10.9 percent, respectively). Projections for 1990 indicate that 59.7 percent of the total baseline liquid wastes will be generated by 1369 AVS/DOC, 26.9 percent by 4392 TRNSS/LGTM, and 7.4 percent by Lockheed. The major host base generator of solid waste in 1981 was 4392 TRNSS/LGTM facility with 73.6 percent, followed by Federal Electric and Lockheed (13.0 and 7.8 percent respectively). In 1990, 4392 TRNSS/LGTM is expected to generate 64.7 percent of the total baseline solid hazardous wastes, followed by Federal Electric (23.5 percent), and Lockheed (6.9 percent).

A breakdown of wastes into hazardous and acutely hazardous categories shows that 6.3, 10.8, and 4.1 percent by weight of the wastes generated by Fuels Lab & Det 41, Boeing, and 1369 AVS/DOC, respectively, exhibit acutely hazardous properties; the remaining facilities do not generate wastes in this category.

The combined inventory for the VAFB host base and its tenants projects total waste quantities for 1981 through 1990 to be 204.5 million liters (54.0 million gallons) for liquids, and 384,000 kg (863,800 lb) for solids. Space Division's Space Transportation System (SD-STs) is expected to generate 177.6 million liters (46.9 million gallons) of liquids and 167,300 kg (376,300 lb) of solids over the 10-year period, while Titan, Atlas, and Component Cleaning Facility (SD-TAC) operations will produce 23.6 million liters (6.2 million gallons) of liquids and 2,700 kg (6,100 lb) of solids. Waste generated by the host base from 1981 through 1990 is anticipated to total 2.5 million liters (0.7 million gallons) of liquids and 201,100 kg (452,300 lb) of solids. Liquids from BMO and NASA total 0.7 million liters (0.2 million gallons) and 0.03 million liters (0.01 million gallons), respectively, while solids from BMO comprise 12,900 kg (29,100 lb). No solid hazardous wastes are anticipated from NASA.

Acutely hazardous waste generation from the VAFB host base and its tenants comprises between 0.2 and 0.4 percent of all liquid wastes annually; no acutely hazardous solid wastes are anticipated. Prior to 1985, the host base is the largest generator of acutely hazardous liquids, with percentages between 81 and 100 percent. In 1985, the host base contribution decreases to 25 percent, whereas SD-STs produces 71 percent. From 1986 through 1990, SD-STs generates 89 to 97 percent of all acutely hazardous waste, while the host base produces 3 to 10 percent.

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SECTION 1

EXECUTIVE SUMMARY

1. INTRODUCTION

Vandenberg Air Force Base (VAFB) host and tenant organizations routinely generate hazardous wastes in the course of their normal operations. The objective of this report is to provide a detailed liquid and solid hazardous waste inventory for (1) host base facilities, and (2) host base programs combined with the following tenant operations:

- Space Division - Space Transportation System (SD-STS).
- Space Division - Titan, Atlas, and Component Cleaning Facility (SD-TAC).
- Ballistic Missiles Organization - M-X Test Facilities (BMO).
- National Aeronautics and Space Administration (NASA).

The VAFB host base facilities/organizations inventoried for this report include the following:

- Group I:
 - Fuels Lab (Det 41 AFLC/SFQLE) and Det 41, AFLC/MA - Buildings 7422, 11248, and 9320
 - Lockheed - Building 8310
 - Federal Electric Corporation (ITT) - Building 9320
 - Boeing - Building 6523
 - Martin Marietta Corporation - Building 8401
 - 4392 TRNSS/LGTM - Buildings 10726A, 10726B, 10721, 10710, 10700, and 7501
 - 394 ICBMTMS - Building 6601 and Launch Facility
 - Bionetics Corporation - Building 8430
 - 1369 AVS/DOC - Building 8314
 - USAF Hospital - Building 13850.
- Group II:
 - RCA Corporation, Astro Electronics - Building 1768
 - Stearns-Roger - Building 1792
 - AVCO - Building 1555
 - Martin Marietta Aerospace
 - 394 Corrosion Control Facility - Building 1930
 - Agena Tank Farm - Building 1180
 - Civil Engineering Squadron.

Group I organizations/facilities represent those that were specified under the Scope of Work for this project. However, while conducting the inventory for Group I facilities, it became apparent that there are some additional facilities which generate substantial quantities of hazardous waste.

In view of the need to account for all hazardous waste generated by the host VAFB, these additional facilities (listed under Group II) were also inventoried (see Appendix C). Their hazardous wastes were subsequently incorporated with those generated by the Group I facilities into the combined inventory of the host VAFB and its tenants.

The inventory of the types and quantities of waste expected to be generated by the Group I host base operations is compiled for the years 1981 through 1990. This inventory provides information for:

- Types of wastes generated.
- Chemical constituents in each waste stream.
- Mass and/or volume of waste generated during scheduled ground operations (per month, per year, and totals for the period 1981 through 1990).
- Mass and/or volume of waste generated under contingency conditions (per contingency event).
- EPA and California hazardous waste numbers for each waste.
- EPA and California hazardous properties for each waste.
- California compatibility class for each waste.

The discussion of the host base inventory (Group I) focuses primarily on the years 1981 and 1990.

The hazardous waste inventory for combined host base and tenant organizations at VAFB is also compiled for the time span of 1981 through 1990. It incorporates changes in waste generation anticipated from the start of the M-X test program and the STS launches at VAFB. Information is provided for:

- Baseline volumes of liquid waste and weights of solid waste generated monthly and annually.
- Contributions of the host base and each tenant to liquid and solid waste generation.
- Total liquids and solids for each EPA hazardous waste number.

- Major categories of liquid and solid waste generated.
- Quantities of hazardous and acutely hazardous waste.
- Contributions of the host base and each tenant to acutely hazardous waste generation.

This inventory is analyzed for each year during the period 1981 to 1990.

2. FEDERAL AND STATE REGULATIONS FOR HAZARDOUS WASTE GENERATORS

The U.S. Environmental Protection Agency (EPA) has developed a nationwide program to regulate hazardous wastes from generation to final disposal, through directives in the Resource Conservation and Recovery Act (RCRA) of 1976 (PL 94-580). These regulations are not industry-specific; all industries, including Department of Defense (DOD) facilities, which generate, store, transport, treat, or dispose of hazardous wastes, are affected by RCRA, and must comply with the same set of rules. VAFB is considered a generator of hazardous waste, and, depending on its final waste management plan, may also be considered as a storage, treatment, and/or disposal facility.

Section 3006 of RCRA (40 CFR Part 123) provides for individual states to operate their own hazardous waste programs (HWP) in lieu of the federal program. Phase I interim authorization allows the state to administer an HWP corresponding to the portions of the federal program contained in 40 CFR Parts 261, 262, and 263, and the preliminary (interim status) standards of 40 CFR Part 265. Phase II interim authorization will allow the state to administer the permit program of 40 CFR Parts 122, 124, and 264. Final authorization will transfer all hazardous waste management responsibilities to the state. To receive interim authorization, a state program must be substantially equivalent to the federal program, at least as far as the minimum standards are concerned. The state can adapt or enforce more stringent or extensive requirements than those of RCRA, although these are not considered part of the federally approved program.

The State of California Department of Health Services (CDHS) and the State Water Resources Control Board (WRCB) have applied for Phase I interim authorization to administer a state HWP. EPA reviewed the application for Phase I interim authorization, and determined that the state program is substantially equivalent to the Phase I federal program as defined in 40 CFR Part 123. In accordance with Section 3006(c) of RCRA, California was granted interim authorization to operate an HWP in lieu of Phase I of the federal HWP (FR date 6/4/81). The practical effect of this decision is that generators, transporters, and owners and operators of hazardous waste management facilities in California will be subject to the State of California HWP in lieu of the federal HWP, and will not again be subject to Phase I of the federal program unless (1) the state fails to obtain final authorization

within 24 months after the effective date of the last component of Phase II, or (2) authorization is withdrawn for cause by EPA.

In order to comply with both ^{to whom} EPA and California regulations, a California generator will have the following duties and obligations:

- Identifying all hazardous wastes generated by the base and its tenants.
- Notifying ^{why} EPA of hazardous activities within 90 days from the time that waste-generating activities commence.
- Obtaining an EPA generator's identification number.
- Preparing a Hazardous Waste Manifest (in California, the California Hazardous Waste Manifest must be used).
- Properly containerizing and labeling waste and placarding transport vehicles.
- Reporting to CDHS:
 - Monthly (copies of manifest from the previous month)
 - Annually (submittal of completed EPA Annual Report Forms 8700-13 and 8700-13a).

Other requirements for generators include obtaining special permits for each shipment of extremely or acutely hazardous waste, and a permit if waste is to be stored by the generator for more than 60 days.

It should be noted that the regulations on identification and listing of hazardous waste (40 CFR 261) have recently been amended. The interim final rule (FR 56582, November 17, 1981) revises the regulations to exempt certain mixtures of hazardous and nonhazardous wastes from the presumption of hazardousness as presently defined in the regulations. For instance, a mixture of a nonhazardous solid waste and a listed hazardous waste will no longer be considered hazardous if the mixture does not exhibit any of the defined characteristics of hazardous wastes. Furthermore, mixtures of wastewater and certain solvents or toxic chemicals may be excluded based on the average weekly concentration. It is the responsibility of the generator to justify any exclusion based on the mixture principles through laboratory testing or other means.

A recent (June 1981) DOD publication, Consolidated Hazardous Material/Hazardous Waste Disposal Guidance, outlines the responsible agencies for hazardous waste management on the base. Briefly, this guidance states that:

- The Defense Logistics Agency (DLA) has been designated as the responsible agency within DOD for disposal of those hazardous materials regulated under RCRA.

- DLA has delegated operational responsibilities for this mission to the Defense Property Disposal Service (DPDS).
- The Defense Property Disposal Organization (DPDO) will take accountability for all of these wastes, and if proper facilities are available, will take physical custody.
- All wastes must be identified by National Stock Number (NSN), List Stock Number (LSN), or Federal Stock Class (FSC), and amount and type of contaminant.
- Wastes must be turned in to the DPDO in nonleaking, safe-to-handle containers (Department of Transportation-specified containers for predetermined hazardous wastes), properly labeled.
- The base commander is responsible to insure compliance with all RCRA or California requirements for the base; the individual facility operational managers are accountable for conducting their activities in accordance with the regulations.

3. SOURCES OF WASTE GENERATED BY VAFB HOST BASE PROGRAMS

Summaries of liquid and solid hazardous wastes routinely generated on a monthly and yearly basis by host base programs at VAFB during the period 1981 through 1990 are given in Tables 1 and 2, respectively. As shown in Table 2, total baseline waste generation from host base operations for this period is anticipated to be 2.4 million kg (5.2 million lb). Annual waste generation is expected to escalate from 187,300 kg (412,900 lb) in 1981 to 273,300 kg (602,500 lb) in 1990. Baseline waste generation for the years 1981 through 1990 is graphically presented in Figure 1.

TABLE 1. SUMMARY OF BASELINE MONTHLY HAZARDOUS WASTE GENERATION BY HOST BASE ACTIVITIES AT VAFB, 1981-1990

<u>Year</u>	<u>Monthly Quantities</u>	
	<u>Kilograms</u>	<u>Pounds</u>
1981	15,600	34,400
1982	15,600	34,400
1983	15,600	34,500
1984	15,700	34,500
1985	22,500	49,600
1986	22,500	49,700
1987	22,600	49,800
1988	22,600	49,900
1989	22,700	50,100
1990	22,700	50,210

TABLE 2. SUMMARY OF BASELINE YEARLY HAZARDOUS WASTE GENERATION BY HOST BASE ACTIVITIES AT VAFB, 1981-1990

Year	Annual Quantities	
	Kilograms	Pounds
1981	187,300	412,900
1982	187,500	413,400
1983	187,700	413,900
1984	188,000	414,500
1985	269,800	594,700
1986	270,300	596,000
1987	271,000	597,400
1988	271,700	599,000
1989	272,400	600,700
1990	273,300	602,500
Total	2,379,000	5,244,900

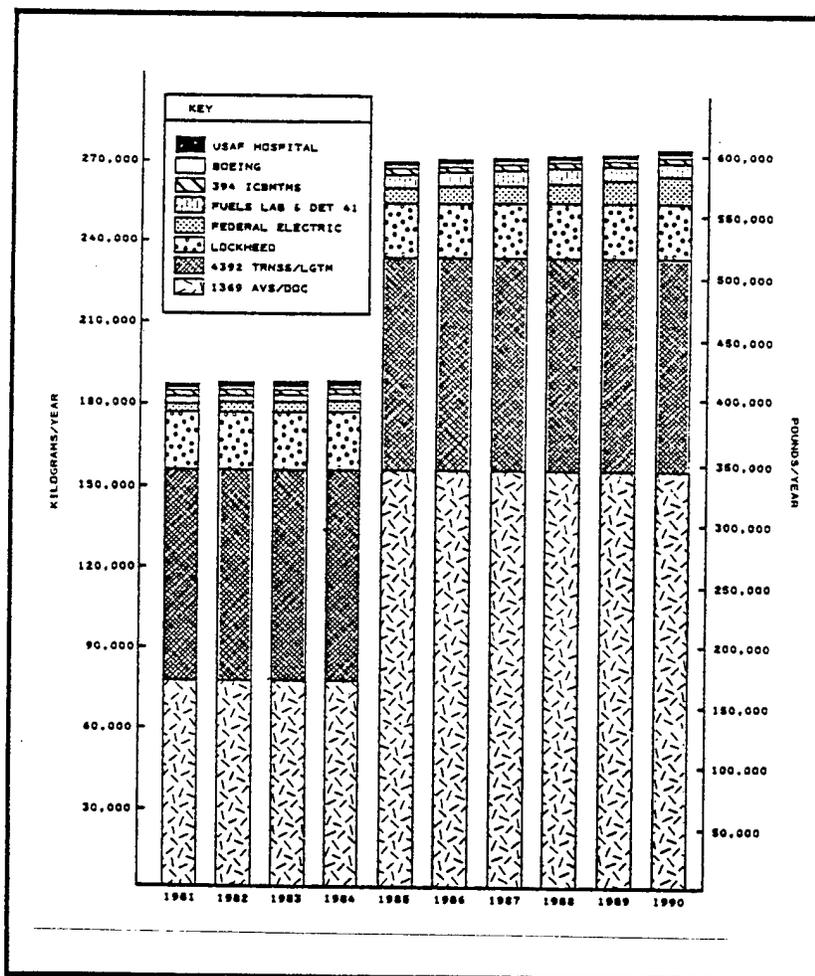


Figure 1. Baseline quantities of hazardous waste generated by VAFB host base for the years 1981 through 1990.

The anticipated percent increases in waste generation by facility are shown on Table 3. Waste generation from USAF Hospital, Boeing, 394 ICBMTMS, Lockheed, and 4392 TRNSS/LGTM is expected to remain constant during the period 1981 through 1990. Fuels Lab & Det 41 and 1369 AVS/DOC exhibit a step function in their projected waste generation, with the increase occurring at the beginning of the STS program in 1985. Federal Electric is expected to continuously generate increased amounts of hazardous waste each year during the period 1981 through 1990 (Table 3).

TABLE 3. PROJECTED INCREASES IN BASELINE HAZARDOUS WASTE GENERATION BY ORGANIZATION FOR VAFB HOST BASE FOR THE YEARS 1981-1990

Organization	Kilograms/Year - % Increase									
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Fuels Lab & Det 41	2,330.3	--	--	--	5,825.7 150%	--	--	--	--	--
Lockheed	20,071.8	--	--	--	--	--	--	--	--	--
Federal Electric	4,538.4	4,765.3 5%	5,005.9 5%	5,255.5 5%	5,777.4 10%	6,358.3 10%	6,993.7 10%	7,692.6 10%	8,462.1 10%	9,308.2 10%
Boeing	1,314.1	--	--	--	--	--	--	--	--	--
4392 TRNSS/LGTM	78,207.5	--	--	--	--	--	--	--	--	--
394 ICBMTMS	1,907.7	--	--	--	--	--	--	--	--	--
1369 AVS/DOC	77,755.7	--	--	--	155,511.3 100%	--	--	--	--	--
USAF Hospital	1,148.6	--	--	--	--	--	--	--	--	--

Expressed as percentage by weight, the 1369 AVS/DOC has generated 41.5 percent of the total waste in 1981; 4392 TRNSS/LGTM, 41.8 percent; Lockheed, 10.7 percent; and Federal Electric, Fuels Lab & Det 41, 394 ICBMTMS, Boeing, and USAF Hospital, 2.4, 1.2, 1.0, 0.7, and 0.6 percent, respectively (Figure 2). In 1990, 1369 AVS/DOC is projected to generate 56.9 percent of the total baseline waste; 4392 TRNSS/LGTM, 28.6 percent; Lockheed, 7.3 percent; and Federal Electric, Fuels Lab & Det 41, 394 ICBMTMS, Boeing, and USAF Hospital, 3.4, 2.1, 0.7, 0.5, and 0.4 percent, respectively.

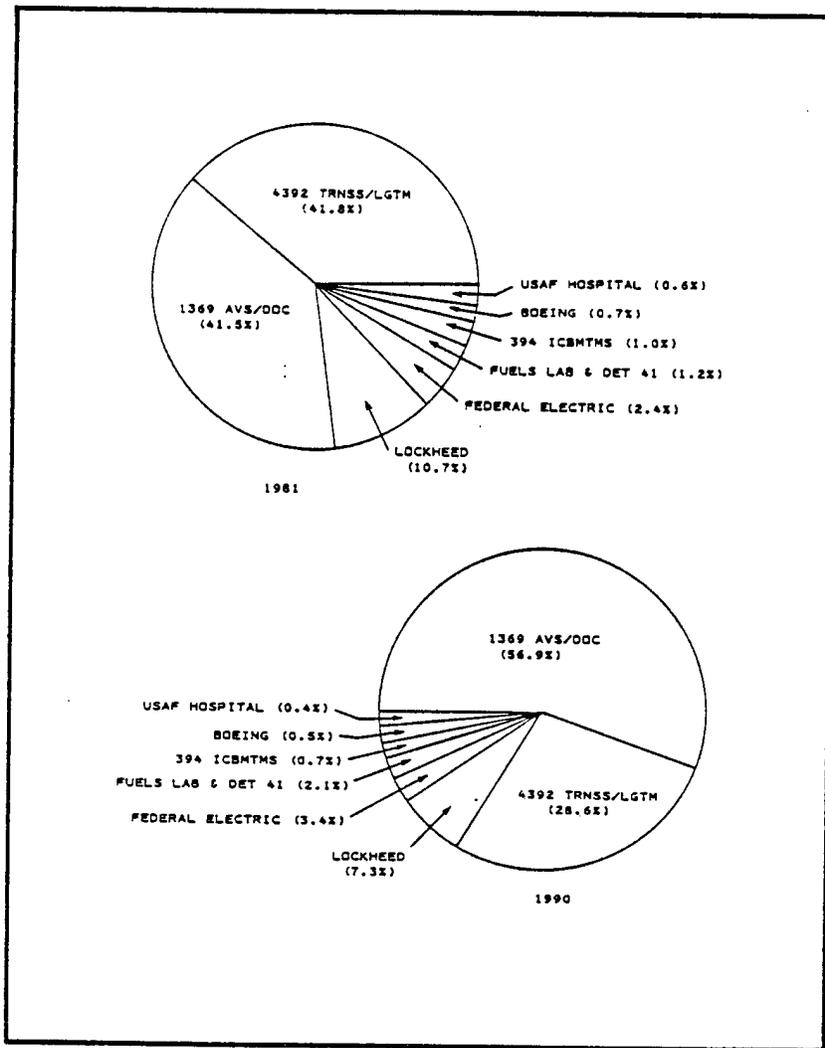


Figure 2. Percent (by weight) of baseline hazardous waste generated by VAFB host base for the years 1981 through 1990.

Investigations into the physical state of the hazardous wastes generated during normal operations indicate that the majority of wastes at Lockheed, Federal Electric, Boeing, 4392 TRNSS/LGTM, 394 ICBMTMS, and USAF Hospital (Figures 3B, C, D, E, F, and H, respectively) are in a liquid state (95.7, 68.0, 65.6, 89.5, 91.1, and 99.9 percent, respectively). Fuels Lab & Det 41 (Figure 3A) and 1369 AVS/DOC (Figure 3G) generate liquid wastes only.

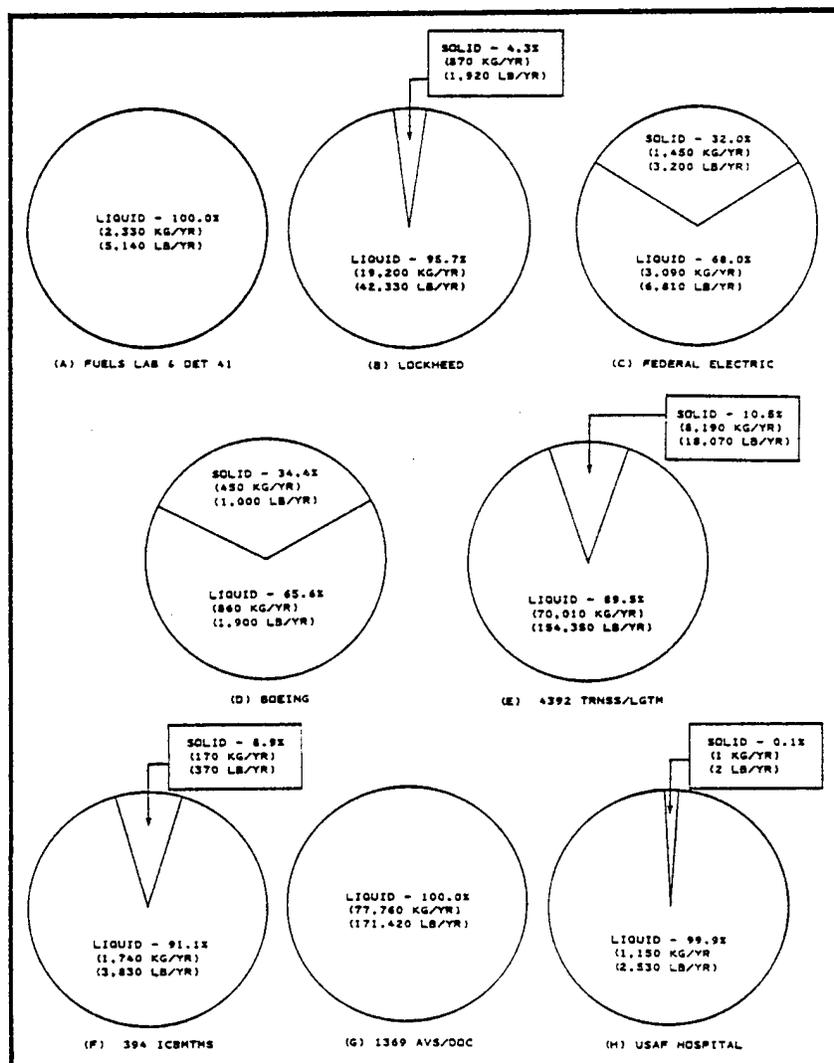


Figure 3. Physical state of hazardous waste generated by VAFB host base under baseline conditions.

In 1981, 1369 AVS/DOC, 4392 TRNSS/LGTM, and Lockheed were the major sources of liquid wastes (44.1, 39.7, and 10.9 percent, respectively), followed by Federal Electric (1.8 percent), Fuels Lab & Det 41 (1.3 percent), 394 ICBMTMS (1.0 percent), USAF Hospital (0.7 percent), and Boeing (0.5 percent) (Figure 4). Projections for 1990 indicate that 59.7 percent of the total baseline liquid wastes will be generated by 1369 AVS/DOC; 26.9 percent by 4392 TRNSS/LGTM; 7.4 percent by Lockheed; and the balance by Federal Electric, Fuels Lab & Det 41, 394 ICBMTMS, USAF Hospital, and Boeing (2.4, 2.2, 0.7, 0.4, and 0.3 percent, respectively) (Figure 4).

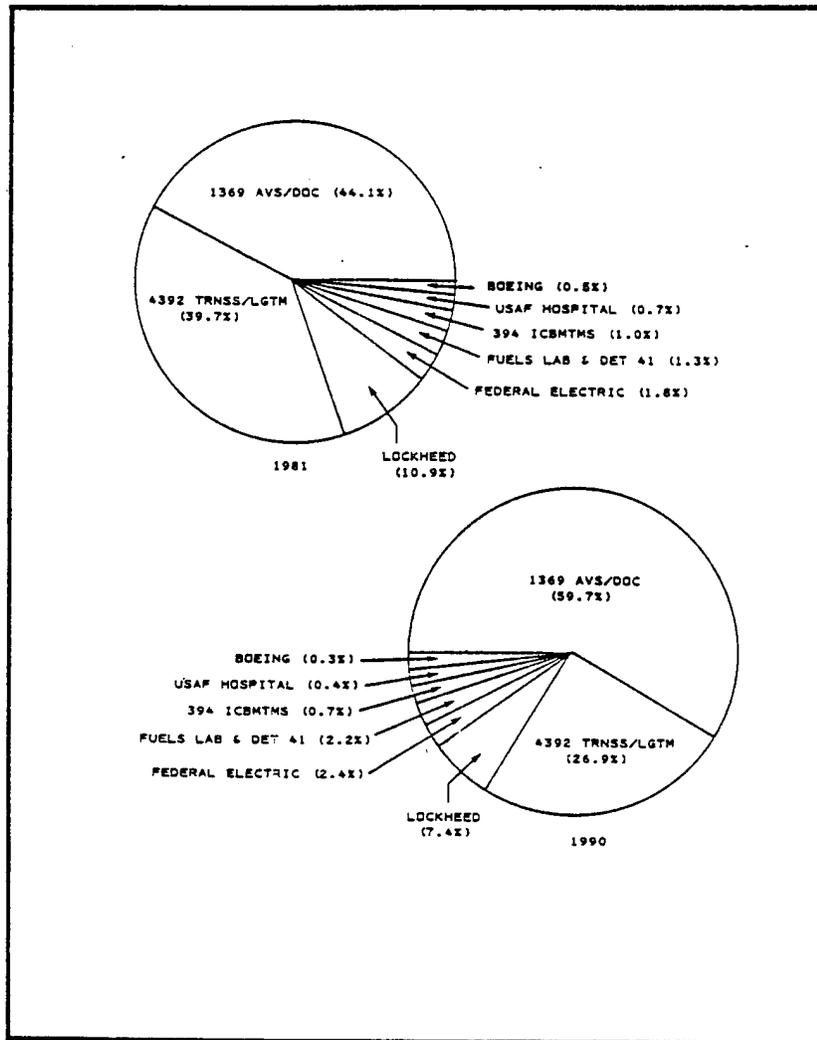


Figure 4. Percent (by weight) of baseline liquid hazardous waste generated by VAFB host base for the years 1981 and 1990.

The generators of solid waste are the 4392 TRNSS/LGTM, Federal Electric, Lockheed, Boeing, 394 ICBMTMS, and USAF Hospital (Figure 5). In 1981, the 4392 TRNSS/LGTM facility generated 73.6 percent of the total solid hazardous wastes, followed by Federal Electric and Lockheed (13.0 and 7.8 percent, respectively); Boeing, 394 ICBMTMS, and USAF Hospital generated only 4.1, 1.5, and 0.01 percent, respectively. In 1990, the 4392 TRNSS/LGTM is expected to generate 64.7 percent of the total baseline solid hazardous wastes, followed by Federal Electric (23.5 percent), and Lockheed (6.9 percent) (Figure 5). The balance of these wastes will be generated by Boeing (3.6 percent), 394 ICBMTMS (1.3 percent), and USAF Hospital (0.01 percent).

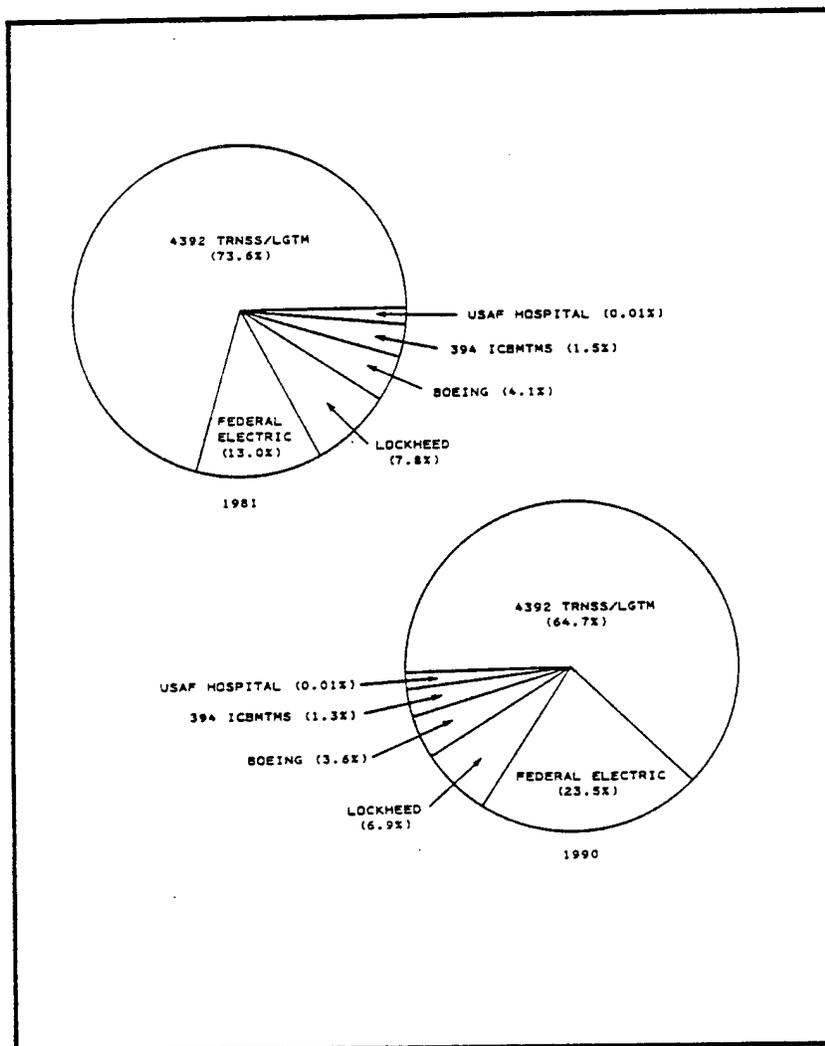


Figure 5. Percent (by weight) of baseline solid hazardous waste generated by VAFB host base for the years 1981 and 1990.

4. MAJOR TYPES OF WASTE GENERATED BY HOST BASE PROGRAMS

Basewide generation (percent by weight) of both major and minor hazardous waste categories for the years 1981 and 1990 is given in Figures 6 and 7, respectively. In both years, the wastes generated are associated with the following major categories:

- | | |
|--|-----------------------------|
| 1. Photographic developer | 7. Photographic prehardener |
| 2. Photographic chemicals, miscellaneous | 8. Nitric acid |
| 3. Oils, used | 9. Hydrazine/water wastes |
| 4. Oil/water wastes | 10. Rags, solvent/oily |
| 5. Battery wastes | 11. Lube oils |
| 6. Solvents, mixed or unspecified | 12. Freon solvents |
| | 13. Chromium Wastewaters |

Only the first four categories given above are listed in descending order according to quantities generated. In 1981, these four categories jointly contributed 62.7 percent of the total waste generated by the host base (Figure 6); in 1990, they are projected to constitute 66.9 percent (Figure 7).

The minor waste categories for the years 1981 and 1990 are as follows:

- | | |
|------------------------|---------------------------------------|
| 1. Dyna-brite wastes | 13. Trichloroethylene |
| 2. Hydrofluoric acid | 14. Methanol |
| 3. Aviation fuel | 15. Nitrogen tetroxide |
| 4. Isopropanol | 16. Ethylenediamine |
| 5. Paint thinners | 17. Sulfuric acid |
| 6. Methyl ethyl ketone | 18. Aerozine 50 |
| 7. Chloroform | 19. Carbon tetrachloride |
| 8. Trichloroethane | 20. Containers |
| 9. Dichloromethane | 21. Petroleum ether |
| 10. Acetone | 22. PCB solid wastes |
| 11. RP-1 | 23. Corrosive liquids,
unspecified |
| 12. Hydrazine | |

The first four categories jointly contribute almost 40 percent of the basewide minor waste generation in the years 1981 and 1990.

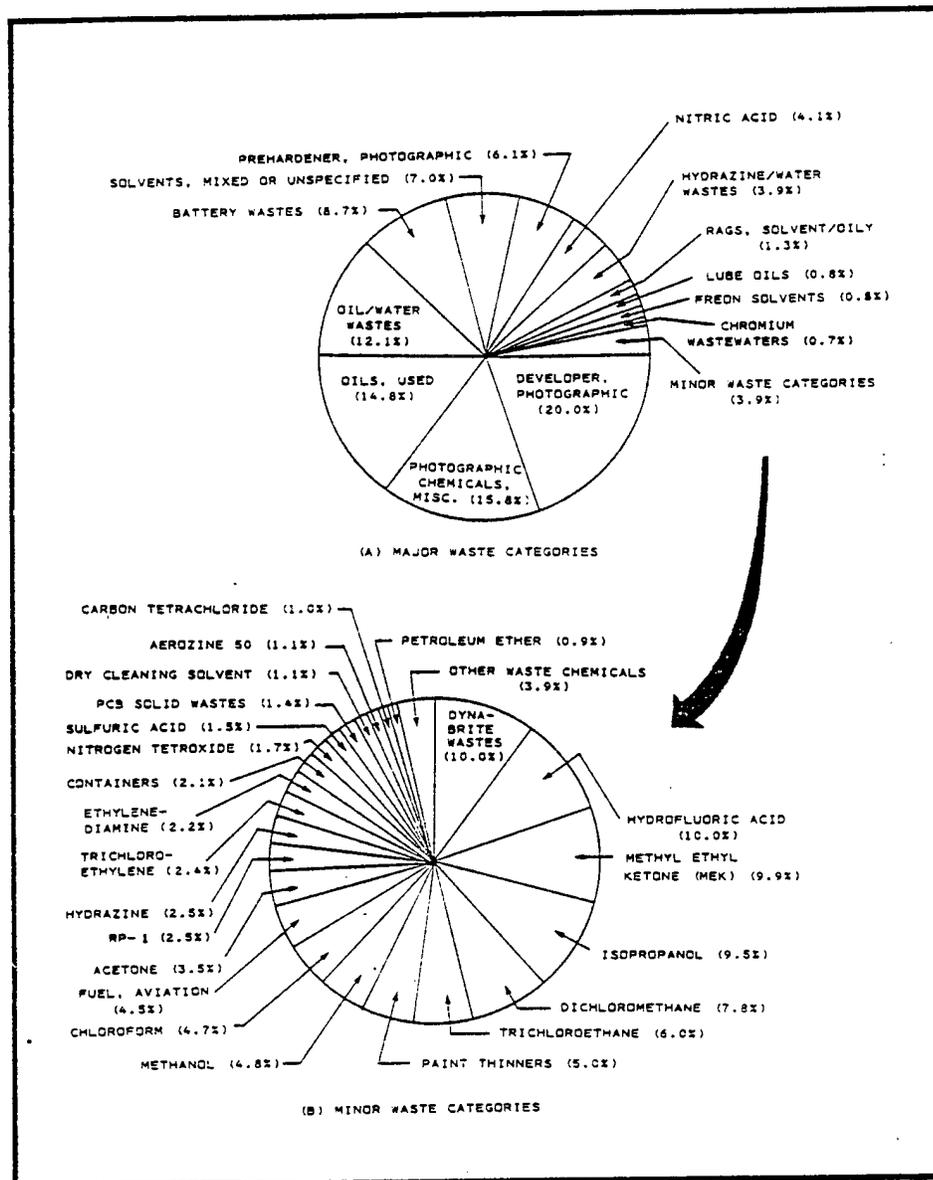


Figure 6. Categories of baseline hazardous waste generated by VAFB host base in 1981 (given as percent by weight).

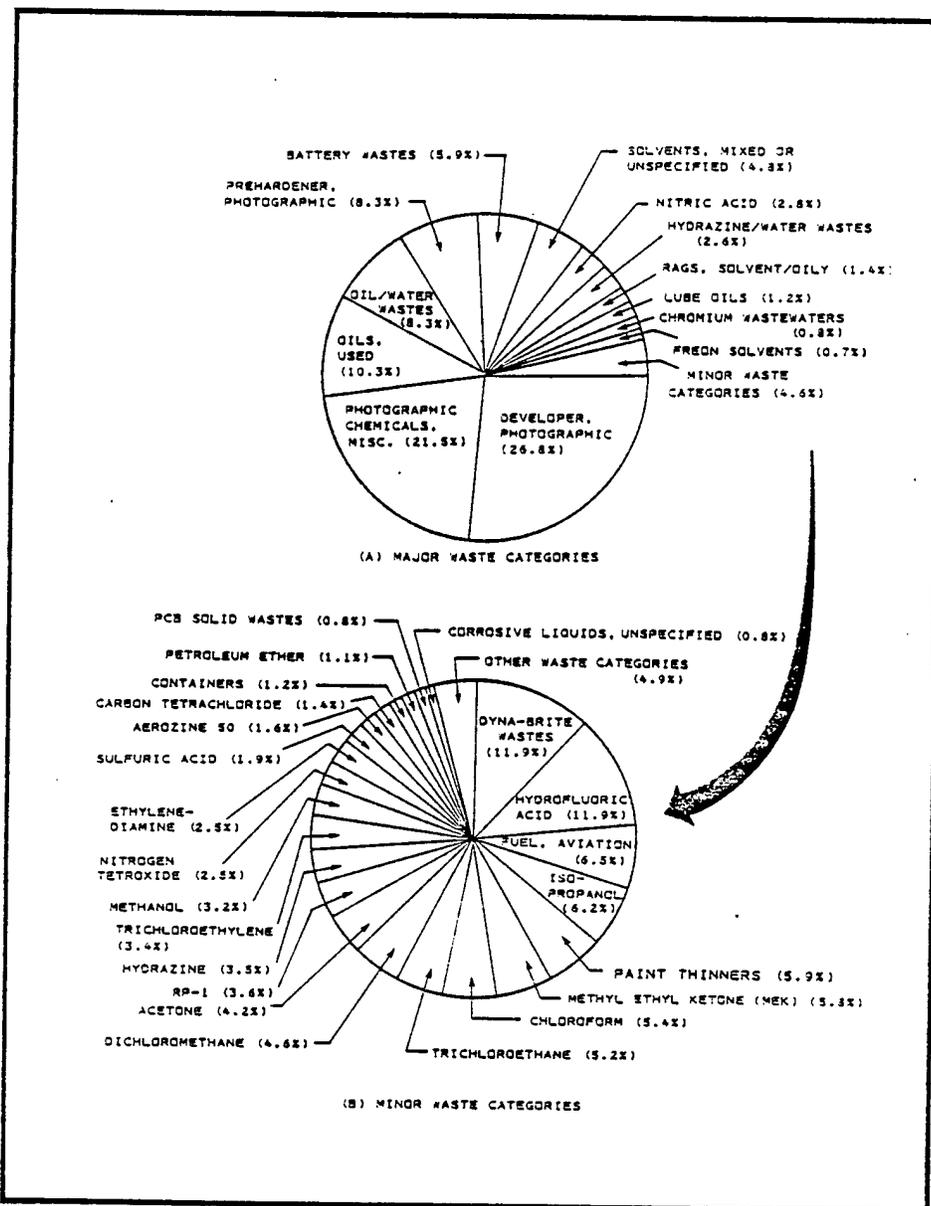


Figure 7. Categories of baseline hazardous waste generated by VAFB host base in 1990 (given as percent by weight).

5. HAZARDOUS AND ACUTELY HAZARDOUS WASTES GENERATED BY VAFB HOST BASE PROGRAMS

A breakdown of wastes into hazardous and acutely hazardous categories is shown in Figure 8. As shown, 6.3, 10.8, and 4.1 percent by weight of the wastes generated by Fuels Lab & Det 41, Boeing, and 1369 AVS/DOC, respectively, exhibit acutely hazardous properties; the remaining facilities do not generate wastes which are acutely hazardous.

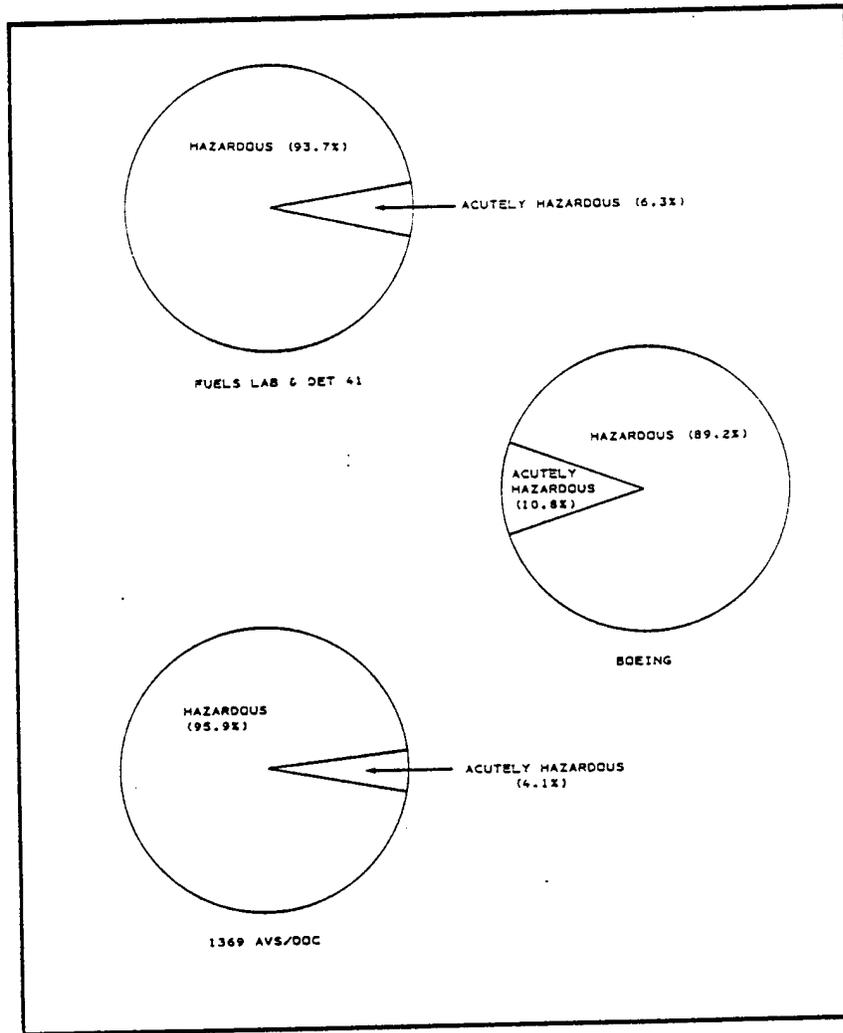


Figure 8. Hazardous and acutely hazardous waste generated under baseline conditions by organization for VAFB host base (facilities not shown do not generate acutely hazardous waste).

Further investigations into annual generation of acutely hazardous wastes by the VAFB host base show that 1369 AVS/DOC generated 94.2 percent of these wastes in 1981, followed by Fuels Lab & Det 41 (4.3 percent), and Boeing (1.5 percent) (Figure 9). In 1990, 1369 AVS/DOC is projected to generate 93.9 percent of the acutely hazardous wastes, followed by Fuels Lab & Det 41 (5.4 percent), and Boeing (0.7 percent) (Figure 9).

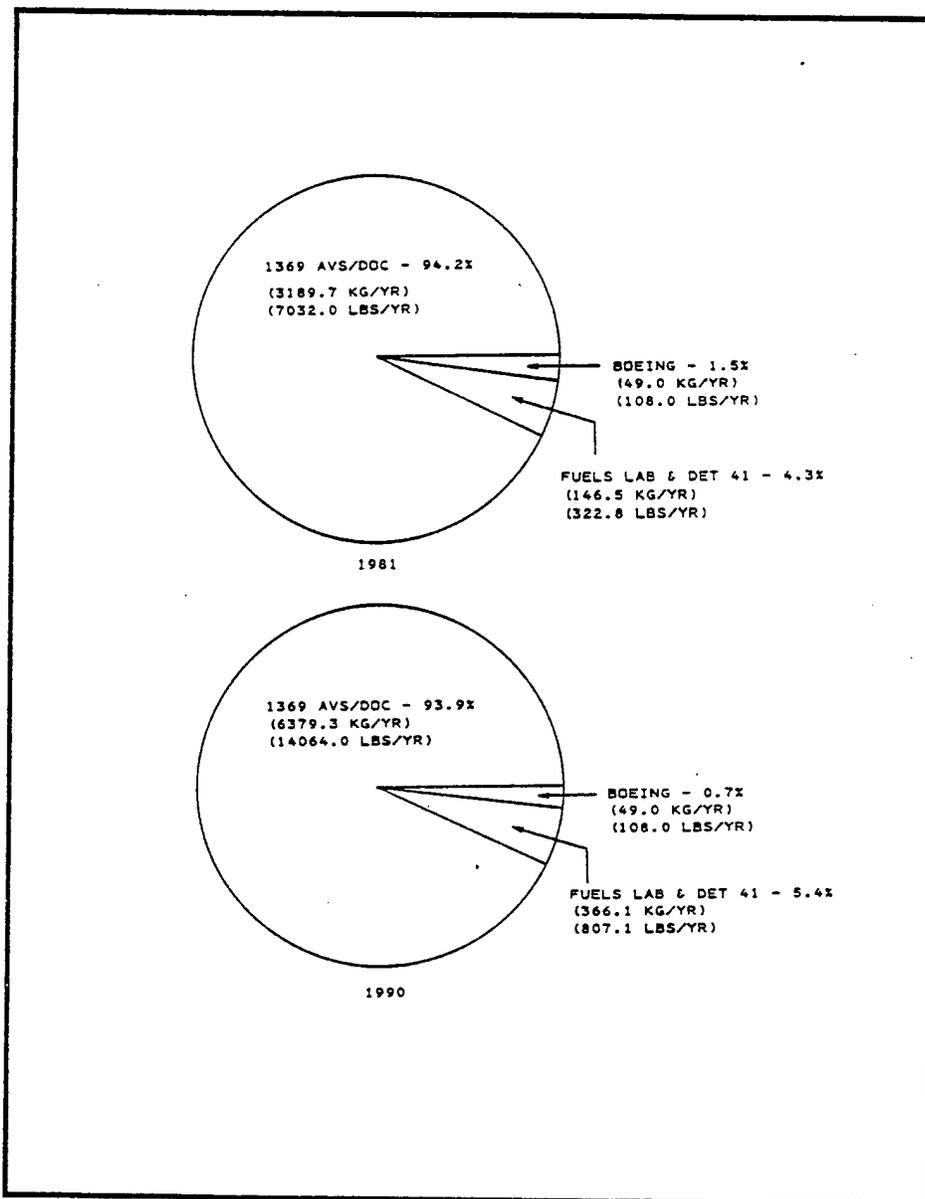


Figure 9. Acutely hazardous waste generated by VAFB host base for the years 1981 and 1990.

6. SOURCES OF WASTE GENERATED BY COMBINED VAFB HOST BASE AND TENANTS

Summaries of liquid and solid baseline hazardous wastes generated on a monthly and yearly basis by host base operations and all tenants at VAFB combined during the period 1981 through 1990 are given in Tables 4 and 5. As shown in Table 5, total baseline liquid waste generation is anticipated to be 204.5 million liters (54.0 million gallons), ranging from 1.9 million liters (0.5 million gallons) in 1981 to 46.2 million liters (12.2 million gallons) in 1990. Total baseline solid waste generation is anticipated to be 0.4 million kg (0.9 million lb), ranging from 0.02 million kg (0.05 million lb) in 1981 to 0.06 million kg (0.14 million lb) in 1990 (Table 5).

TABLE 4. SUMMARY OF BASELINE MONTHLY HAZARDOUS WASTE GENERATION BY VAFB HOST BASE AND TENANTS, 1981-1990

Year	Liquid Waste		Solid Waste	
	Liters	Gallons	Kilograms	Pounds
1981	155,300	41,000	1,600	3,700
1982	183,600	48,500	1,700	3,800
1983	225,800	59,700	1,800	4,100
1984	187,000	49,400	1,800	4,100
1985	649,700	171,600	2,200	4,900
1986	1,321,700	349,200	2,800	6,400
1987	2,768,300	731,400	4,200	9,500
1988	3,850,800	1,017,400	5,300	11,800
1989	3,850,600	1,017,300	5,300	11,900
1990	3,846,700	1,016,300	5,300	11,900

TABLE 5. SUMMARY OF BASELINE YEARLY HAZARDOUS WASTE GENERATION BY VAFB HOST BASE AND TENANTS, 1981-1990

Year	Liquid Waste		Solid Waste	
	Liters	Gallons	Kilograms	Pounds
1981	1,863,800	492,400	19,500	43,900
1982	2,203,500	582,200	20,000	45,000
1983	2,709,400	715,800	22,100	49,800
1984	2,244,000	592,900	21,700	48,900
1985	7,796,200	2,059,800	26,300	59,200
1986	15,860,500	4,190,400	34,100	76,600
1987	33,219,100	8,776,500	50,600	113,800
1988	46,210,200	12,208,700	63,000	141,800
1989	46,207,300	12,208,000	63,200	142,200
1990	46,160,800	12,195,700	63,400	142,600
Total	204,474,800	54,022,400	384,000	863,800

Total baseline liquid and solid waste generation by each individual program at VAFB is shown in Table 6. The largest quantities of liquid wastes for the period 1981 through 1990 are generated by the SD-STC program, followed by SD-TAC and the host base. The smallest quantities of liquid wastes are generated by the BMO and NASA programs.

TABLE 6. SUMMARY BY HOST BASE AND EACH TENANT OF TOTAL BASELINE HAZARDOUS WASTE GENERATION AT VAFB FOR THE PERIOD 1981-1990

Organization	Total Quantities, 1981-1990			
	Liquid		Solid	
	Liters	Gallons	Kilograms	Pounds
SD-STC	177,553,200	46,909,700	167,300	376,300
SD-TAC	23,625,300	6,241,800	2,700	6,100
Host Base	2,548,000	673,200	201,100	452,300
BMO	719,800	190,200	12,900	29,100
NASA	28,500	7,500	0	0
Total	204,474,800	54,022,400	384,000	863,800

The factors used to calculate yearly amounts for VAFB host base and tenant facilities are listed in Table 7. As shown, the STS, Titan, Atlas, Delta, and TIROS/NOAA launch activities are expected to be completely launch-dependent. Some M-X test activities will be launch-related, while others will be independent of launch. Yearly waste generation at the Component Cleaning Facility, Fuels Lab & Det 41, Federal Electric, and 1369 AVS/DOC are expected to increase with the start of STS launches. All other facilities are considered to generate waste at a constant rate regardless of launch activities.

TABLE 7. FACTORS USED TO PROJECT BASELINE HAZARDOUS WASTE GENERATION FOR THE YEARS 1981-1990

Organization	Time Unit Used for Data Input	Multiplicative Factor Used to Convert to Annual Quantities									
		1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Space Division - STS	STS Launch	0	0	0	0	1	3	7	10	10	10
Space Division - Atlas	Atlas Launch	0	2	2	2	2	2	1	1	0	0
Space Division - Titan	Titan Launch	0	2	5	2	4	0	0	0	0	0
Space Division - Component Cleaning Facility	Year, 1982-84	1	1	1	1	1.5	1.5	1.5	1.5	1.5	1.5
Host Base - Fuels Lab/Det 41	Year, 1982-84	1	1	1	1	2.5	2.5	2.5	2.5	2.5	2.5
Host Base - Federal Electric	Year, 1982	1	1.05	1.10	1.16	1.27	1.40	1.54	1.69	1.86	2.05
Host Base - 1369 AVS/DOC	Year, 1982-84	1	1	1	1	2	2	2	2	2	2
Host Base - Other Organizations	Year	1	1	1	1	1	1	1	1	1	1
BMO - M-X Test Pad & Part of MMF	M-X Test Launch	0	0	4	4	4	7	12	12	12	6
BMO - Other M-X Test Facilities	Year	1	1	1	1	1	1	1	1	1	1
NASA - Delta	Delta Launch	0	2	0	0	0	0	0	0	0	0
NASA - TIROS/NOAA	NOAA Launch	0	1	1	1	1	1	1	0	0	0
NASA - Shop & Paint Facilities	Year	0	1	1	1	1	1	1	0	0	0

The major generators of solid waste are expected to be the SD-STs program and the VAFB host base, followed by BMO and SD-TAC operations. NASA programs are not expected to generate any solid waste. Baseline cumulative liquid and solid waste generation for the years 1981 through 1990 is depicted in Figures 10 and 11, respectively.

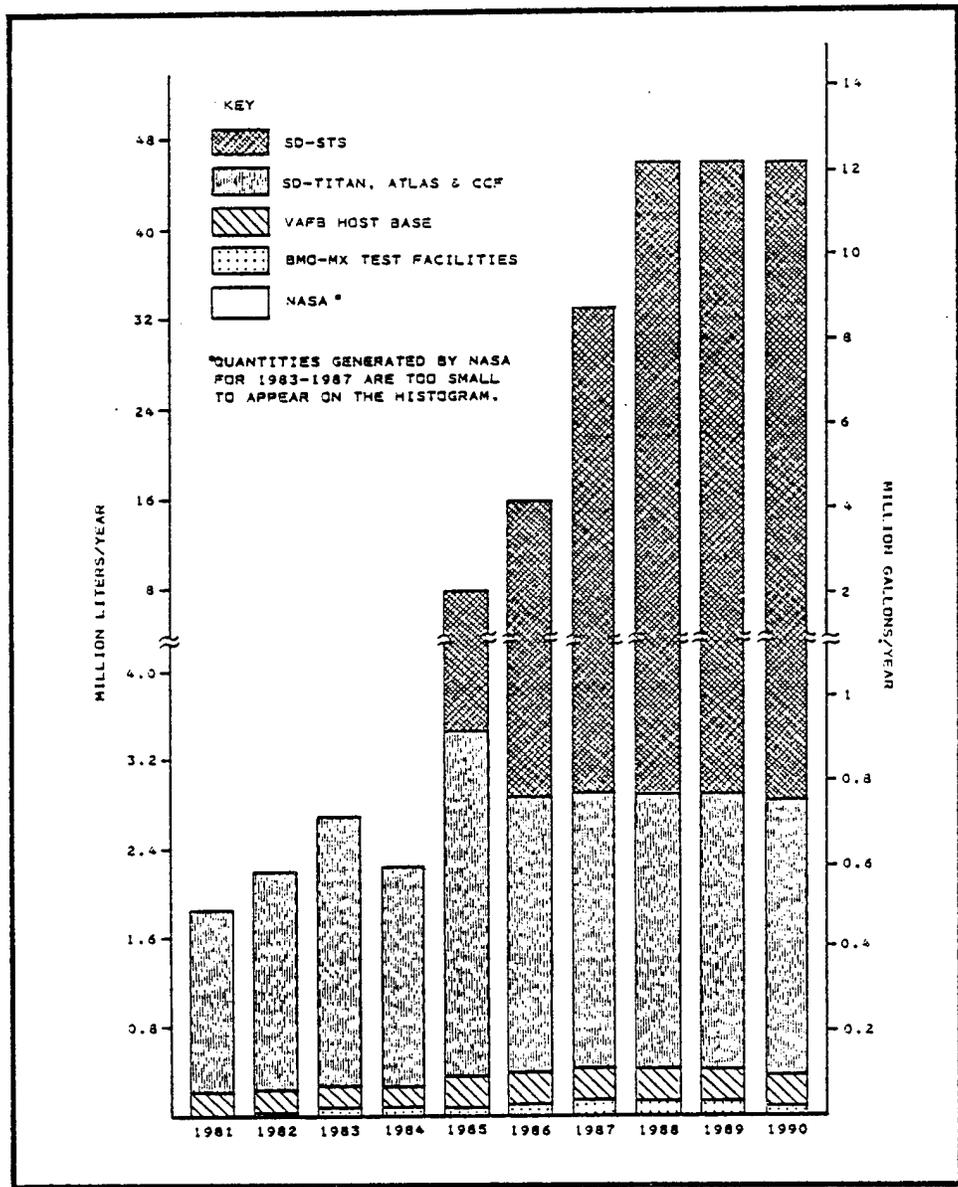


Figure 10. Baseline quantities of liquid hazardous waste generated by host base and each tenant at VAFB for the years 1981-1990.

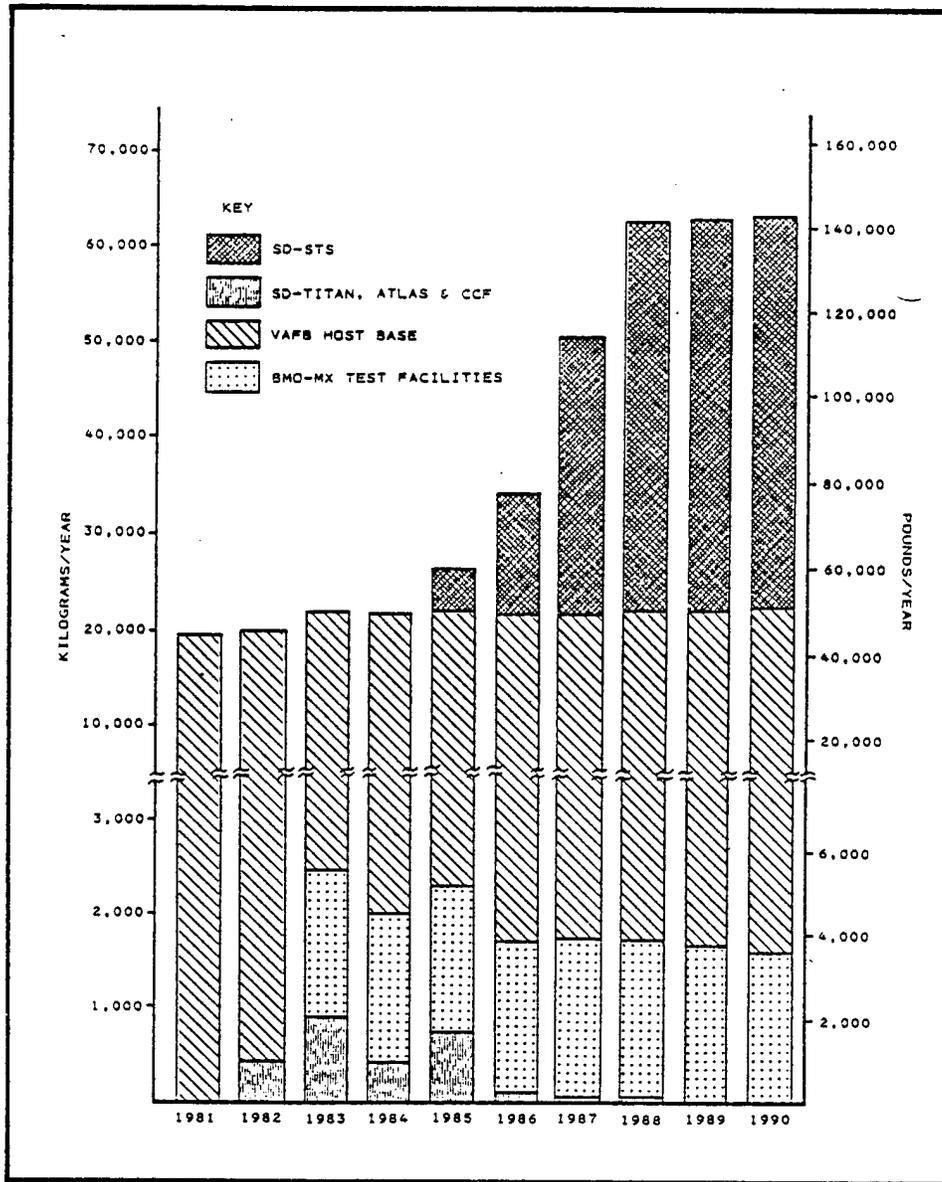


Figure 11. Baseline quantities of solid hazardous waste generated by host base and each tenant at VAFB for the years 1981-1990.

The relative contributions of the host base and each tenant to total liquid hazardous waste generation at VAFB are depicted in Figure 12. For the period 1981 through 1984, SD-TAC is the largest generator of liquid hazardous waste, contributing 88 to 90 percent by volume. The host base will also produce a substantial portion during this period, with percentages ranging from 8 to 11 percent. NASA will generate 1 percent in 1982, and 0.04 to 0.05 percent in both 1983 and 1984, while BMO will produce 2 to 3 percent of the liquid waste annually during the period from 1983 to 1984.

Beginning in 1985, the percent contributions of other organizations to the total volumes of liquid hazardous waste will decline substantially, due to the large quantities of hazardous liquids generated by STS launches. SD-STS is expected to generate 56 percent in 1985, 82 percent in 1986, and 91 to 94 percent annually from 1987 through 1990 (Figure 12). The percentage of liquid waste generation by SD-TAC is expected to be 40 percent in 1985, 16 percent in 1986, 8 percent in 1987, and 5 percent annually from 1988 through 1990. Percentages contributed by the host base will decrease to 4 percent in 1985, 2 percent in 1986, and less than 1 percent annually from 1987 through 1990. Percentages for BMO range between 0.2 and 0.8 percent from 1985 through 1990, while NASA's contribution will decrease from 0.02 percent in 1985 to 0.004 percent in 1987.

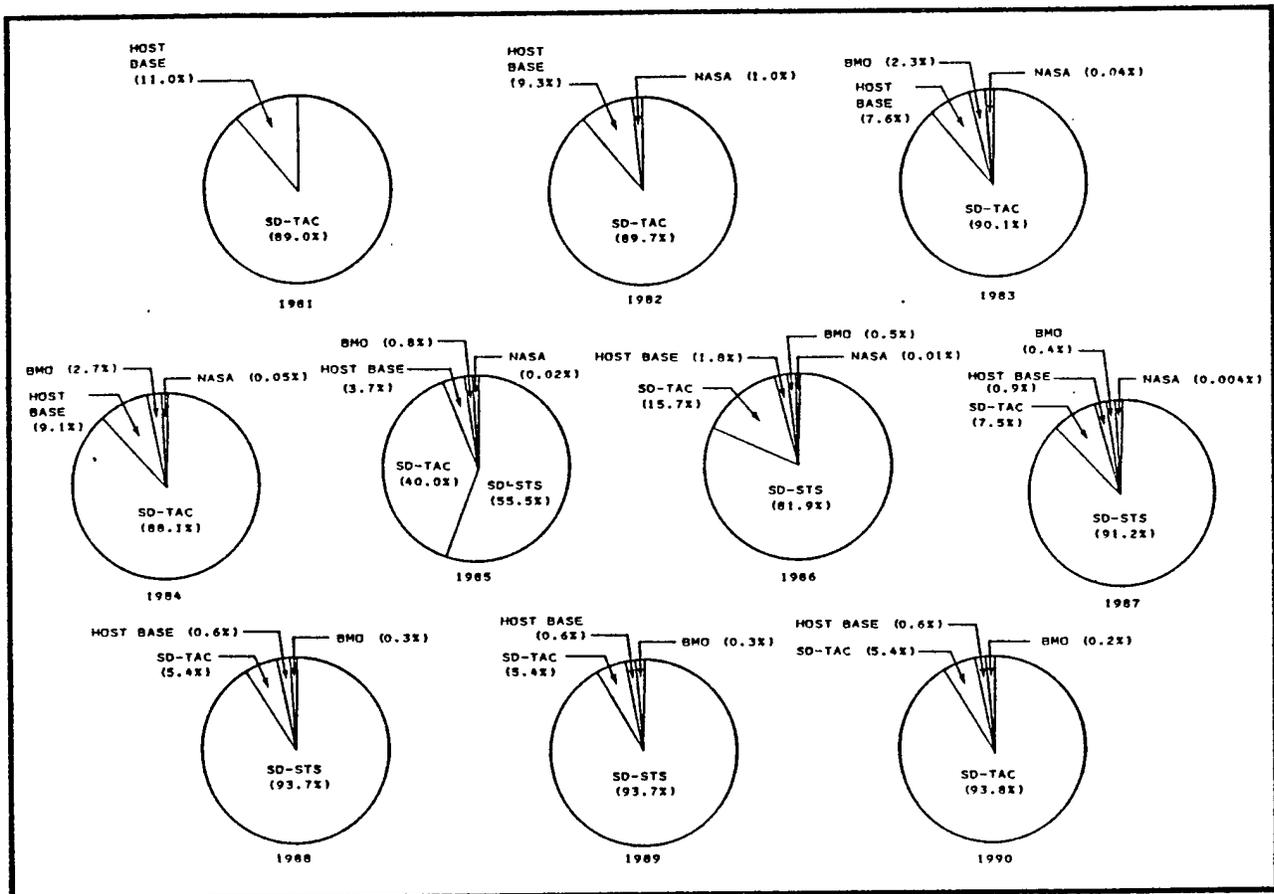


Figure 12. Percent (by volume) of baseline liquid hazardous waste generated by VAFB host base and tenants for the years 1981-1990.

For solid waste categories, Figure 13 shows that the major generator of solid hazardous waste for the period 1981 through 1984 is the host base, producing 89 to 100 percent by weight of the total solids. BMO generates 7 percent annually during the years 1983 and 1984, while SD-TAC contributes 2 to 4 percent annually from 1982 through 1984.

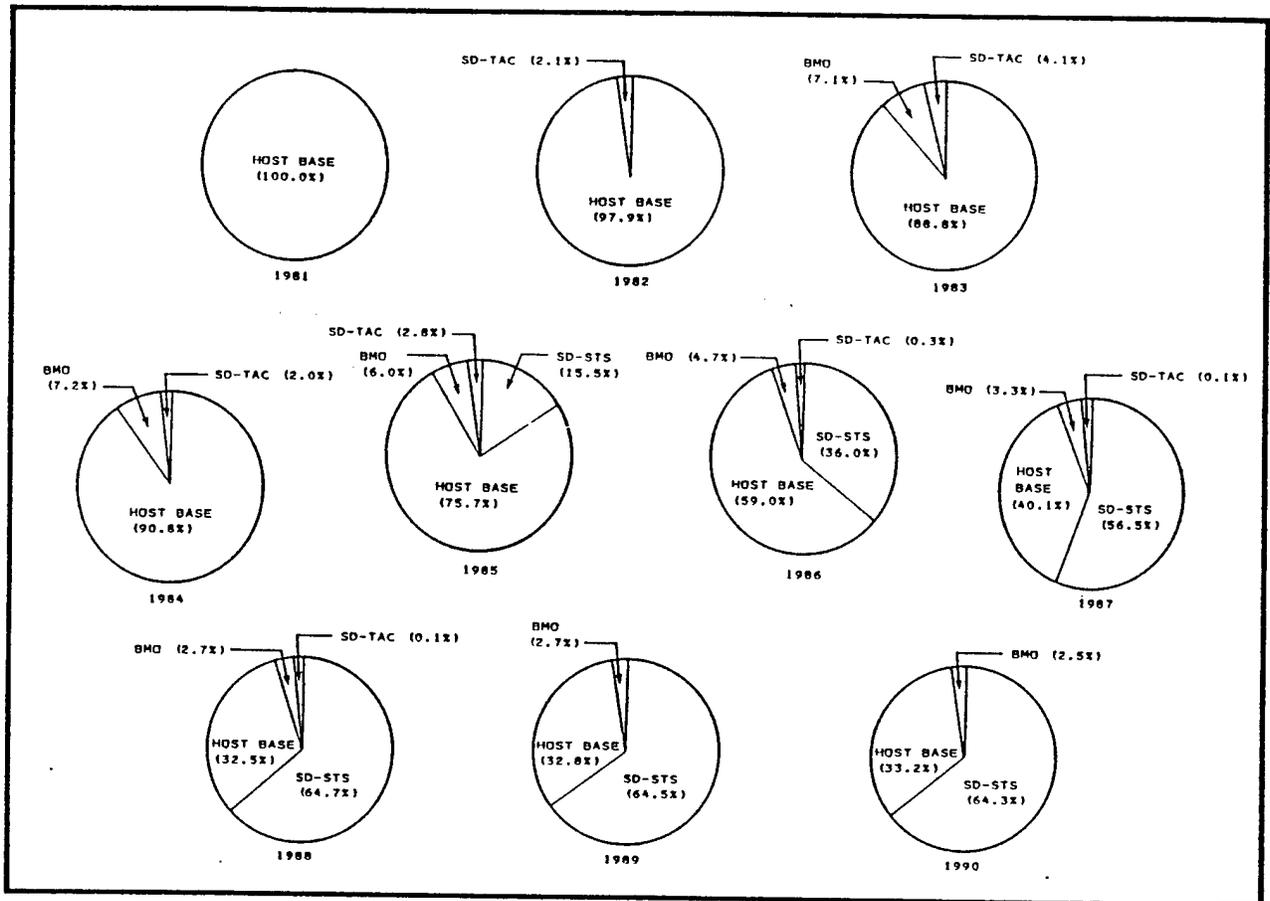


Figure 13. Percent (by weight) of baseline solid hazardous waste generated by VAFB host base and each tenant for the years 1981-1990.

Again, beginning in 1985, STS launches will produce substantial quantities of solid waste, thus reducing the present contributions of the other organizations. SD-STS will generate 16 percent of the hazardous solids in 1985, 36 percent in 1986, 57 percent in 1987, and 64 to 65 percent annually from 1988 through 1990 (Figure 13). This reduces the host base's percentages to 75 percent in 1985, 59 percent in 1986, 40 percent in 1987, and 33 percent annually from 1988 through 1990. BMO's contribution is reduced from 6 percent in 1985 to 3 percent annually during the period from 1987 through 1990, while SD-TAC generates 3 percent in 1985, and then decreases to 0.1 to 0.3 percent annually from 1986 through 1988.

7. MAJOR TYPES OF WASTE GENERATED BY COMBINED VAFB HOST BASE AND TENANTS

The composition (by waste category) of the hazardous liquids generated by the VAFB host base and tenants combined is depicted in Figure 14. Prior to 1985, sodium hydroxide wastewaters constitute the largest liquid waste category, generating 51 to 74

percent of the total hazardous liquid waste. Deluge water, which shows no quantities for 1981, comprises 14 to 28 percent annually from 1982 through 1984. Chromium and cyanide wastewaters each generate 5 to 7 percent annually prior to 1985.

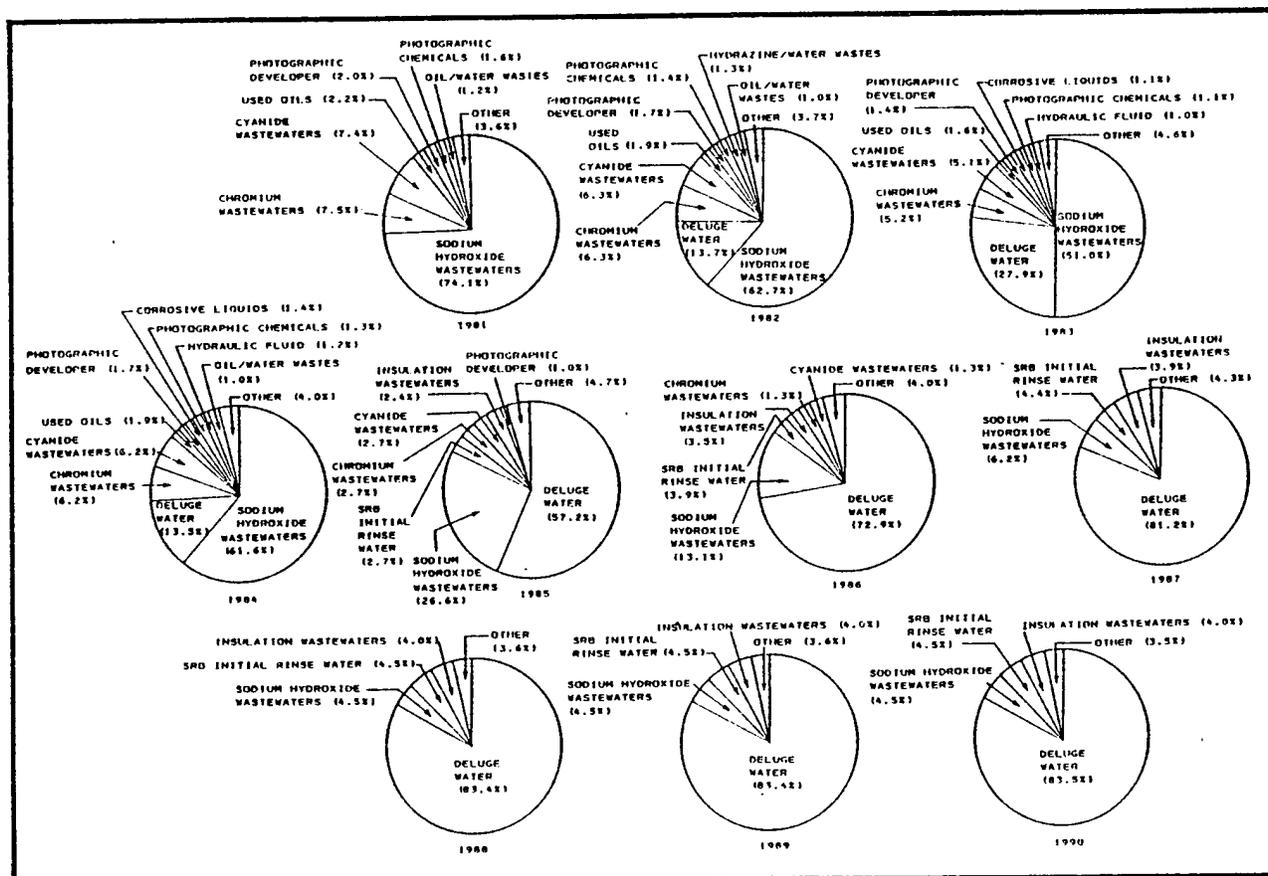


Figure 14. Percent (by volume) of major categories of liquid hazardous waste generated by VAFB host base and tenants for the years 1981-1990.

Smaller waste categories producing 1 to 2 percent of the hazardous liquids annually from 1981 through 1984 are the used oils, photographic developer, photographic chemicals, and oil/water wastes. Hydrazine/water wastes contribute 1 percent in 1982, while corrosive liquids and hydraulic fluids each generate 1 percent annually in 1983 and 1984.

With the start of STS launches at VAFB in 1985, the liquid wastes generated from STS operations will add substantially to the volume of hazardous liquids. Deluge water will become the major liquid waste category, constituting 57 percent in 1985, 73 percent in 1986, 81 percent in 1987, and 83 to 84 percent annually from 1988 through 1990 (Figure 14). Sodium hydroxide wastewaters decrease to 27 percent in 1985, 13 percent in 1986, 6 percent in 1987, and less than 5 percent per year from 1988 through 1990.

During the period from 1985 through 1990, two STS-specific waste categories, the SRB initial rinse water and the insulation wastewaters, each show percentages of between 2 and 5 percent (Figure 14). Chromium and cyanide wastewaters each decrease from 3 percent in 1985 to 1 percent in 1986, and contribute less than 1 percent in subsequent years. Similarly, percentages for each of the other waste categories considered to be major during the period prior to 1985 fall below 1 percent starting in 1985.

For hazardous solids, battery wastes constitute the largest solid waste category prior to 1985, comprising 53 to 60 percent of all hazardous solids (Figure 15). Solvent/oily rags are also a large waste category, with percentages ranging between 28 and 35 percent prior to 1985. Among the other major categories, sulfamic acid constitutes 10 to 11 percent of the total, while containers contribute between 0.7 and 0.8 percent.

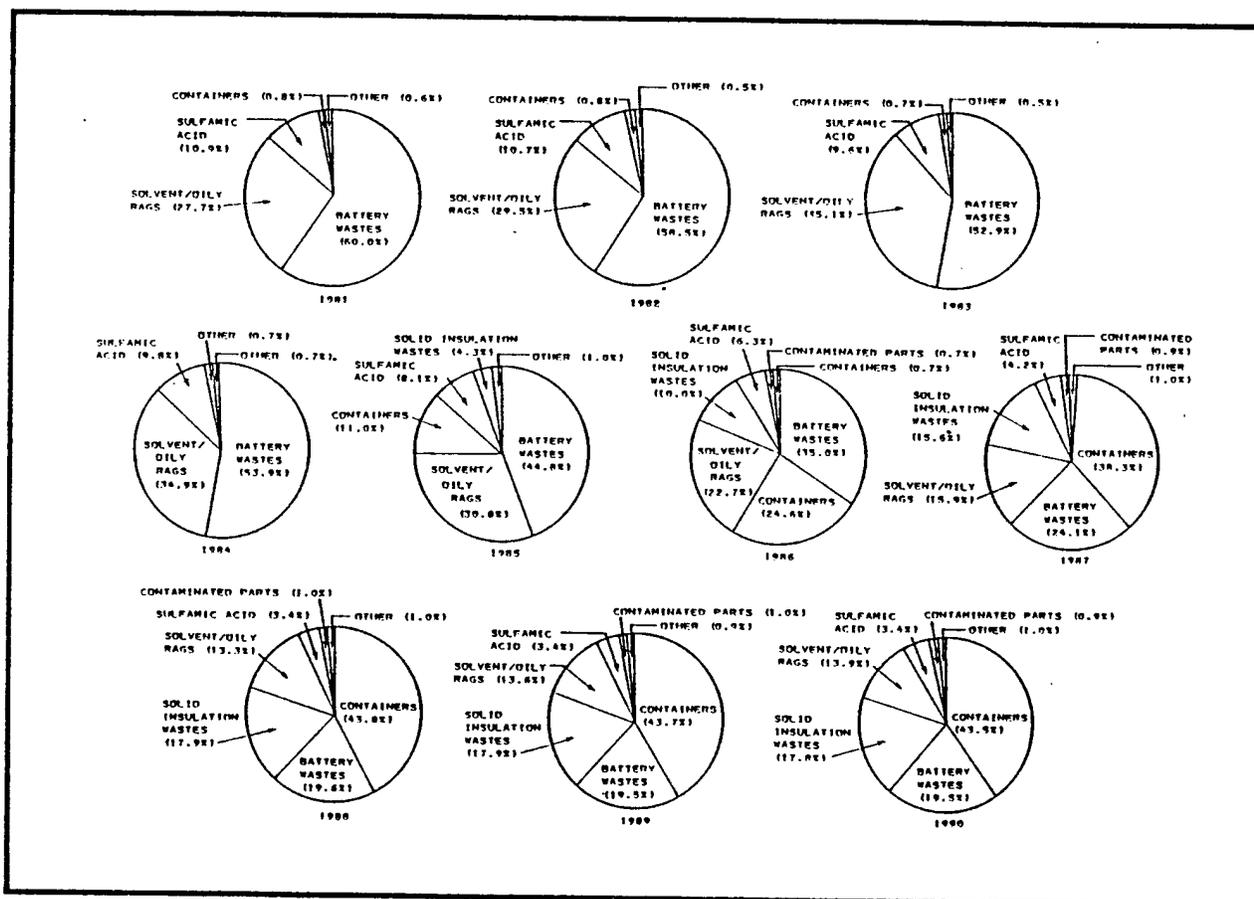


Figure 15. Percent (by weight) of major categories of solid hazardous waste generated by VAFB host base and tenants for the years 1981-1990.

In 1985 and subsequent years, containers contribute a substantial portion of the total solid waste, constituting 11 percent in 1985, 25 percent in 1986, 38 percent in 1987, and 44

percent annually from 1988 through 1990 (Figure 15). Battery wastes total 45 percent in 1985, 35 percent in 1986, 24 percent in 1987, and 20 percent annually from 1988 through 1990. The STS-specific waste category of solid insulation wastes comprises 4.3 percent in 1985, and increases to 10 percent in 1986, 16 percent in 1987, and 18 percent annually from 1988 through 1990.

The relative percentage of sulfamic acid decreases from 1985 on, although its yearly quantity remains constant. Its wastes constitute 8 percent in 1985, 6 percent in 1986, 4 percent in 1987, and 3 percent annually from 1988 through 1990. Contaminated parts comprise the only other substantial solid waste category, contributing 0.7 to 1.0 percent annually from 1986 through 1990.

8. HAZARDOUS AND ACUTELY HAZARDOUS WASTES GENERATED BY COMBINED VAFB HOST BASE AND TENANTS

Analysis of the VAFB host base and tenant waste inventory shows that all acutely hazardous wastes expected are liquids. Figure 16, which depicts the percentages (by volume) of acutely hazardous waste generated, shows that the host base is the major generator of acutely hazardous liquids prior to 1985. For the period 1981 through 1984, it contributes between 71 and 100 percent, while SD-TAC generates 16 to 29 percent annually from 1982 through 1984 (Figure 16). NASA is expected to produce acutely hazardous waste in 1982 only, with quantities totalling 12 percent.

Beginning in 1985, SD-STC becomes the primary generator of acutely hazardous waste, contributing 71 percent in 1985, 89 percent in 1986, 95 percent in 1987, and 97 percent annually from 1988 through 1990 (Figure 16). Although host base quantities double in 1985, its percentages drop to 25 percent in that same year. These percentages decline to 10 percent in 1986, 5 percent in 1987, and 3 percent annually from 1988 through 1990. Acutely hazardous waste from SD-TAC totals 4 percent in 1985, 1 percent in 1986, and 0.1 percent annually in 1987 and 1988.

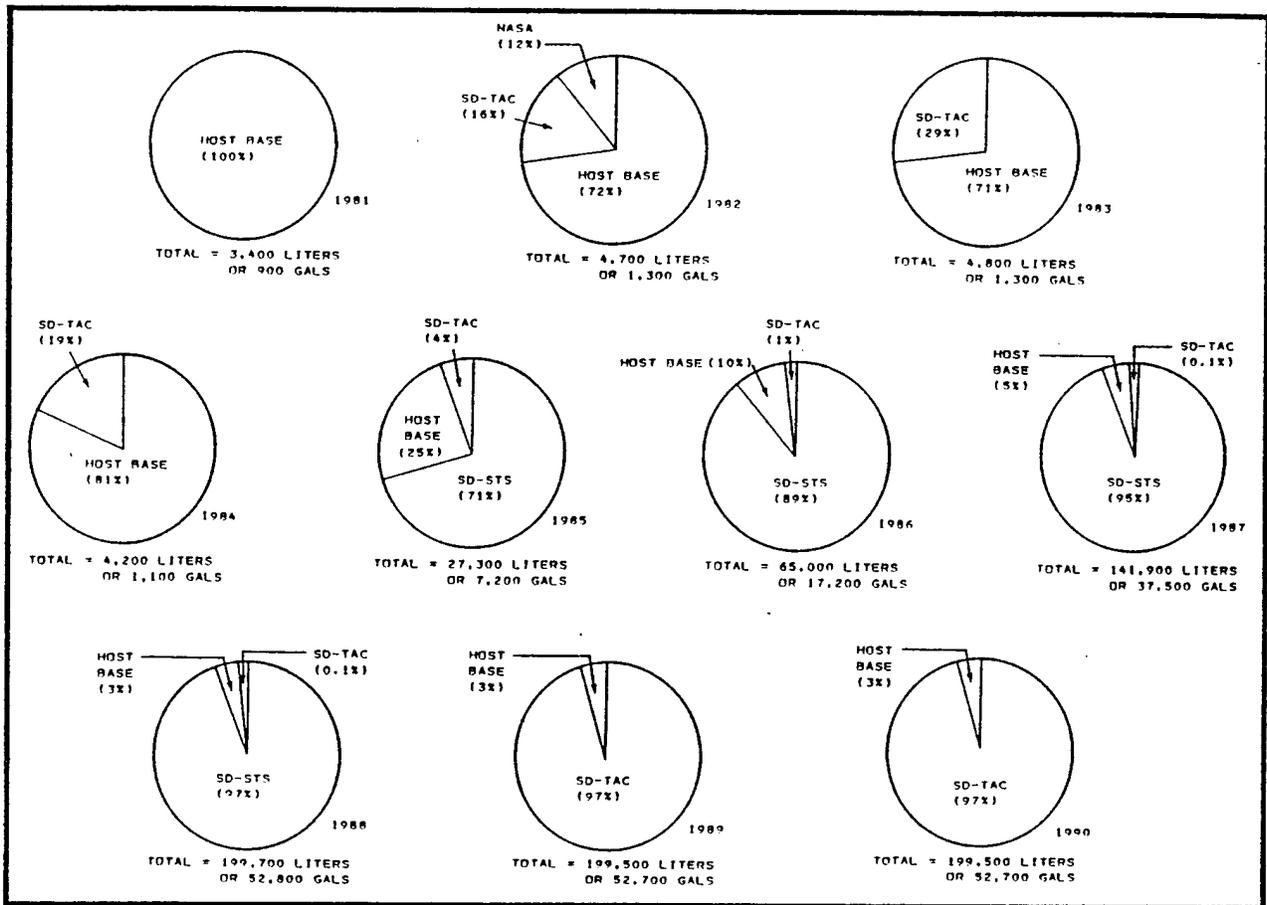


Figure 16. Percent (by volume) of baseline acutely hazardous waste generated by VAFB host base and each tenant for the years 1981-1990.

SECTION 2

INTRODUCTION

1. BACKGROUND

Vandenberg Air Force Base (VAFB) host and tenant organizations routinely generate hazardous wastes in the course of their normal operations. In anticipation of an increased waste load with the inauguration of space shuttle launches and landings at VAFB, one tenant, Space Division (SD), recently conducted a projected inventory of hazardous wastes for the shuttle and other SD operations at VAFB (1, 2, 3, 4). One facet of this study was an assessment of treatment and disposal options for these wastes. An analysis of these options showed that some treatment and storage on base is cost-effective. It was further suggested that similar hazardous wastes from other VAFB activities could conceivably be treated or stored in common facilities with SD wastes for a more cost-effective waste management program. Consequently, 1 STRAD decided that the host base and other tenants should conduct inventories similar to the SD inventories, so that common base-wide treatment, storage, and disposal options could be considered.

The principal objective of this report is to provide a detailed liquid and solid hazardous waste inventory for the host base and tenant programs at VAFB (STS, other SD, M-X, and NASA). All inventories presented in this report are based on the hazardous waste definitions of the California Department of Health Services (Title 22, Division 4, Chapter 30, Articles 9 and 10) and the U.S. Environmental Protection Agency (EPA) Regulations for Identifying Hazardous Waste (40 CFR 261). The host base facilities/organizations inventoried for this report include the following VAFB host base organizations and buildings:

- Group I:

- Fuels Lab (Det 41 AFLC/SFQLE) and Det 41, AFLC/MA - Buildings 7422, 11248, and 9320
- Lockheed - Building 8310
- Federal Electric Corporation (ITT) - Building 9320
- Boeing - Building 6523
- Martin Marietta Corporation - Building 8401
- 4392 TRNSS/LGTM - Buildings 10726A, 10726B, 10721, 10710, 10700, and 7501
- 394 ICBMTMS - Building 6601 and Launch Facility

- Bionetics Corporation - Building 8430
- 1369 AVS/DOC - Building 8314
- USAF Hospital - Building 13850.

● Group II:

- RCA Corporation, Astro Electronics - Building 1768
- Stearns-Roger - Building 1792
- Avco - Building 1555
- Martin Marietta Aerospace
- 394 Corrosion Control Facility - Building 1930
- Agena Tank Farm - Building 1180
- Civil Engineering Squadron.

Group I organizations/facilities represent those that were specified for this project under the Scope of Work. While conducting the inventory for Group I facilities, however, some additional facilities which generate hazardous wastes were identified. In view of the need to account for all hazardous wastes generated by the host VAFB, these additional facilities (listed under Group II) were also inventoried, and their hazardous wastes were subsequently incorporated into the comprehensive inventory of the host VAFB and its tenants.

2. REPORT ORGANIZATION

Consideration of the state and federal regulations governing generators of hazardous wastes is essential to this inventory. These regulations define what is hazardous, and specify the responsibilities of the generator in regard to these materials. Section 3 of this report provides references to the major provisions regulating hazardous wastes, and summarizes the principal responsibilities of VAFB generators. Copies of EPA report forms required for generators who ship hazardous wastes off site are presented in Appendix B.

In the past, comprehensive records of waste generation rates and characteristics have not been consistently maintained by all facilities. Consequently, a number of assumptions, estimations, and simplifications were needed to adequately address hazardous waste generation at VAFB. Section 4 details these assumptions, and describes the approach used to obtain the inventory data for both host base and tenant operations at VAFB.

Section 5 presents a detailed inventory of VAFB host base hazardous wastes generated by Group I organizations/facilities. A summary of hazardous waste generation by Group I facilities is provided in Section 6. Appendix A presents tables of summary hazardous waste generation for the host base, arranged by EPA hazardous waste number.

A combined inventory for VAFB host base and its tenants is given in Section 7. Section 8 provides a discussion and summary of the combined hazardous waste inventory presented in Section 7.

Appendices C and D provide detailed hazardous waste inventories of the additional host base facilities (Group II) and NASA programs, respectively. Appendix E presents summaries by waste category of the unit quantities of liquid and solid hazardous wastes which can be used to project annual amounts of wastes generated by the VAFB host base and each tenant.

SECTION 3

FEDERAL AND STATE REGULATIONS FOR HAZARDOUS WASTE GENERATORS

1. INTRODUCTION

The U.S. EPA has developed a nationwide program to regulate hazardous wastes from generation to final disposal, through directives in the Resource Conservation and Recovery Act (RCRA) of 1976 (PL 94-580). These regulations are not industry-specific; all industries, including Department of Defense (DOD) facilities, which generate, store, transport, treat, or dispose of hazardous wastes, are affected by RCRA, and must comply with the same set of rules. VAFB is considered a generator of hazardous waste, and, depending on its final waste management plan, may also be considered as a storage, treatment, and/or disposal facility.

At the present time, California hazardous waste generators are regulated under both RCRA and California Title 22. The major provisions under RCRA for controlling hazardous wastes are:

- 40 CFR Part 260: Definitions used in other parts corresponding to Sections 3001 through 3004 RCRA rules, and general provisions applicable to these parts (FR date 5/19/80, Part II).
- 40 CFR Part 261: Section 3001: Identification and listing of hazardous waste (FR date 5/19/80, Part III).
- 40 CFR Part 262: Section 3002: Standards applicable to generators of hazardous waste, including manifest system, recordkeeping, and reporting (FR date 5/19/80, Part V).
- 40 CFR Part 263: Section 3003: Standards applicable to transporters of hazardous waste, including manifest system, recordkeeping, and reporting (FR date 5/19/80, Part VI).
- 40 CFR Part 264: Section 3004: Standards applicable to owners and operators of hazardous waste treatment, storage, and disposal facilities, including manifest system, recordkeeping, and reporting (FR date 5/19/80, Part VII).

- 40 CFR Part 265: Section 3004: Interim status standards applicable to owners and operators of hazardous waste treatment, storage, and disposal facilities (FR date 5/19/80, Part VII).
- 40 CFR Part 267: Interim standards for owners and operators of new hazardous waste land disposal facilities (FR date 2/13/81).
- 40 CFR Parts 122 and 124: Section 3005: Permits for treatment, storage, and disposal of hazardous waste (FR date 5/19/80, Part X).
- 40 CFR Part 123: Section 3006: Guidelines for authorized state hazardous waste programs (FR date 5/19/80, Part X).
- Section 3010: Preliminary notification of hazardous waste activity (FR date 2/26/80).

Section 3006 of RCRA (40 CFR Part 123) provides for individual states to operate their own hazardous waste programs (HWP) in lieu of the federal program. Phase I interim authorization allows the state to administer an HWP corresponding to the portions of the federal program contained in 40 CFR Parts 261, 262, and 263, and the preliminary (interim status) standards of 40 CFR Part 265. Phase II interim authorization will allow the state to administer the permit program of 40 CFR Parts 122, 124, and 264. Final authorization will transfer all hazardous waste management responsibilities to the state. To receive interim authorization, a state program must be substantially equivalent to the federal program, at least as far as the minimum standards are concerned. The state can adapt or enforce more stringent or extensive requirements than those of RCRA, although these are not considered part of the federally approved program.

The State of California Department of Health Services (CDHS) and the State Water Resources Control Board (WRCB) have applied for Phase I interim authorization to administer a state HWP. EPA reviewed the application for Phase I interim authorization, and determined that the state program is substantially equivalent to the Phase I federal program as defined in 40 CFR Part 123. In accordance with Section 3006(c) of RCRA, California was granted interim authorization to operate an HWP in lieu of Phase I of the federal HWP (FR date 6/4/81). The practical effect of this decision is that generators, transporters, and owners and operators of hazardous waste management facilities in California will be subject to the State of California HWP in lieu of the federal HWP, and will not again be subject to Phase I of the federal program unless (1) the state fails to obtain final authorization within 24 months after the effective date of the last component of Phase II, or (2) authorization is withdrawn for cause by EPA.

2. RESPONSIBILITIES OF GENERATORS

In order to comply with both EPA and California regulations, a California generator will have the duties and obligations outlined below.

a. Identifying Hazardous Wastes

It must first be determined if a waste meets the hazardous waste criteria as defined by RCRA (40 CFR 261) and/or the California Administrative Code (CAC), Title 22. Any solid waste (see glossary definition of a solid waste) is considered hazardous if it is flammable, corrosive, toxic, reactive, irritating, a strong sensitizer, or exhibits EP toxicity. The definitions of these hazardous characteristics are found in 40 CFR 261, Subpart C, and in CAC Title 22. Federal regulations also identify specific wastes considered to be acutely hazardous (40 CFR 261, Subpart D). Similar, but not identical, to the EPA listing are the extremely hazardous wastes identified in CAC Title 22. Eventually, the California rules will include all of EPA's listed wastes, and perhaps additional wastes which the state considers hazardous. For the present, all wastes listed by the State of California must be manifested. However, EPA annual reports require only EPA-listed wastes.

If a waste is unlisted, a generator may choose to test the suspected waste to determine whether or not it is hazardous, or may declare the waste to be hazardous without testing, based on a knowledge of its hazardous properties (45 FR 262.11). Test protocols are published in Test Methods for Evaluating Solid Waste, USEPA Office of Water and Waste Management, SW-846, 1980.

The regulations on identification and listing of hazardous waste (40 CFR 261) have recently been amended. The interim final rule (FR 56582, November 17, 1981) revises the regulations to exempt certain mixtures of hazardous and nonhazardous wastes from the presumption of hazardousness as presently defined in the regulations. For instance, a mixture of a nonhazardous solid waste and a listed hazardous waste will no longer be considered hazardous if the mixture does not exhibit any of the defined characteristics of hazardous wastes. Furthermore, mixtures of wastewater and certain solvents or toxic chemicals may be excluded based on the average weekly concentration. It is the responsibility of the generator to justify any exclusion based on the mixture principles through laboratory testing or other means.

b. Small-Quantity Generator Exceptions

Under the EPA regulations, small waste generators (i.e., <1,000 kg/month hazardous waste; <1 kg/month acutely hazardous waste) are exempt from recordkeeping/manifest requirements (45 FR 261.5). California regulations are more stringent, allowing no exemptions. Even if the generator qualifies as a small generator under RCRA, no exemption would be allowed under California law.

However, California provides a variance for small quantities or low concentrations. Exact quantities and concentrations are not specified; insignificance as a potential hazard to human health, domestic livestock, or wildlife because of small quantity, low concentration, or physical or chemical characteristics is the criterion. EPA plans to amend the small generator exceptions over the next 2 to 5 years, possibly reducing the present limit for hazardous wastes from 1,000 to 100 kg/month. The limit for acutely hazardous waste is not expected to change.

c. Notification of Hazardous Activities

Within 90 days from the time that operations at the SD facility commence, and before any waste can be transported, the generator will be required to notify the EPA Region IX Administrator and apply for an EPA identification number (45 FR, Part 262.12; 45 FR, Page 12746). If the generator also plans to own/operate facilities for treatment, storage, or disposal of hazardous waste, it may file a single form to cover all activities that occur on the base. There are stiff penalties for failing to notify EPA, including suspension of all operations.

d. Transportation of Hazardous Waste

The generator has two options available if hazardous waste is to be transported off site. It may contract with a state-licensed commercial hauler, or transport waste itself, in which case it must obtain an EPA Transporter's Identification Number (45 FR 263.11) and a California Registered Hazardous Waste Hauler's Permit (CAC Title 22). In addition, it must comply with all applicable EPA (40 CFR 263.11 and 263.31) and Department of Transportation (DOT) (Hazardous Materials Transportation Act, 49 CFR Parts 171 through 179) regulations. A generator must insure that the hazardous waste is properly containerized and labeled, and that trucks are placarded in accordance with EPA (40 CFR Part 262.30) and DOT (49 CFR Parts 171 through 179) regulations controlling the transportation of hazardous materials.

e. Hazardous Waste Manifest

Before shipping any hazardous wastes, a generator must prepare the California Hazardous Waste Manifest. Figure 17 presents the new California Hazardous Waste Manifest, which has been developed to insure that California hazardous waste generators, transporters, and facility operators will be in conformance with both the requirements of the new federal hazardous waste regulations adopted pursuant to RCRA, and the requirements of state law.

As has been the practice in the past, transporters are expected to print their own manifests. Each manifest will have a unique serial number, as described in Item 1 of "Instructions for Completing Manifest" (see Figure 17). The instructions will be printed on the backs of each manifest and manifest copy. These

INSTRUCTIONS FOR COMPLETING MANIFEST

TYPE OR PRINT CLEARLY. ILLEGIBLE OR INCOMPLETE MANIFESTS WILL BE RETURNED TO YOU BY THE STATE FOR CLARIFICATION.

GENERATOR

- Item 1 Before filling out the manifest, a unique manifest serial number shall be written or printed on the manifest. (Write to TRANSPORTER item 3 below)
- Item 2 Provide the complete name, EPA ID, numbers, address, and telephone numbers of the generator and designated TSD facilities.
- Item 3 Provide all US DOT required information. Refer to 49 CFR 172 for assistance. If not applicable write "none" in item 3.
- Item 4 Provide the most applicable industrial waste category number from the following list. In cases where a waste could be described by more than one category, select the most specific (e.g. example: If you generate a waste acid solution containing dissolved metal, select the category "Fuming solution, acid" rather than "Acid solution" or "Heavy metal solution". If name of the listed category adequately describes your waste, write the waste's category in item 6).

1 Acid sludge	16 Organic waste	31 Fuming solution, acid	46 Inorganic waste
2 Acid solution	17 Organic liquid	32 Fuming solution, base	47 Organic waste
3 Aqueous solution	18 Organic solid	33 Fuming solution, gas	48 Organic waste
4 Aqueous sludge	19 Organic sludge	34 Fuming solution, solid	49 Organic waste
5 Aqueous solution	20 Organic waste	35 Fuming solution, liquid	50 Organic waste
6 Aqueous solution	21 Organic waste	36 Fuming solution, solid	51 Organic waste
7 Aqueous solution	22 Organic waste	37 Fuming solution, liquid	52 Organic waste
8 Aqueous solution	23 Organic waste	38 Fuming solution, solid	53 Organic waste
9 Aqueous solution	24 Organic waste	39 Fuming solution, liquid	54 Organic waste
10 Aqueous solution	25 Organic waste	40 Fuming solution, solid	55 Organic waste
11 Aqueous solution	26 Organic waste	41 Fuming solution, liquid	56 Organic waste
12 Aqueous solution	27 Organic waste	42 Fuming solution, solid	57 Organic waste
13 Aqueous solution	28 Organic waste	43 Fuming solution, liquid	58 Organic waste
14 Aqueous solution	29 Organic waste	44 Fuming solution, solid	59 Organic waste
15 Aqueous solution	30 Organic waste	45 Fuming solution, liquid	60 Organic waste

- Item 5 If the waste is extremely hazardous, provide the 3-year extremely hazardous waste number.
- Item 6 Indicate the process, activity, or operation which generated the waste (Examples: air craft cleaning, insulation stripping, reactor cleaning, DD7 production, all other printed circuit board etching)
- Item 7 Indicate the hazard class, activity, or operation which generated the waste (Examples: air craft cleaning, insulation stripping, reactor cleaning, DD7 production, all other printed circuit board etching)
- Item 8 Information must be provided in item 8. Do not leave blank. Identify the major hazardous constituents in the waste along with probable upper and lower concentrations. (Examples: hydrochloric acid, lead oxide, phenol, PCB, cyanide, DDT, sodium hydroxide). Provide the approximate concentration of nonhazardous material.
- Item 9 Check the appropriate boxes to show the hazardous properties and physical state of the waste. If a waste has more than one hazardous property (e.g. toxic and corrosive), check all appropriate properties. If the waste is pyrophoric liquid, the pH must be reported in item 11.
- Item 10 Indicate by checking the appropriate boxes whether (flow, gasses, vapors, or respirations should be worn by persons handling the waste. Any special equipment, precautions or hazards should also be noted (Example: Sulfuric solution will generate toxic gas if mixed with acid).
- Item 11 Sign the manifest, provide your title and the date that the waste was removed from your facility. The person signing item 11 shall be knowledgeable about the chemical and physical properties of the waste and shall be authorized by the management of the generating establishment to sign the manifest. It is unlawful for a transporter who is not the generator to sign item 11.

TRANSPORTER

- Item 1 Provide the serial number of the manifest. The first three digits shall be your State hazardous waste number. The last ten digits may be any combination of digits (e.g. numerical or chronological). For example, if your registration number is 899, the number of your air shipment load would be 899 001000. The complete nine digit manifest number shall be unique for any 5 year period (Example: If you use manifest number 899 001000 on May 31, 1981, it should not be used on a manifest again before June 1, 1981).
- Item 2 Enter company name, EPA ID number, address, and telephone number.
- Item 3 Indicate the date and exact time the waste was removed from the generator's facility.
- Item 4 Sign the manifest upon receipt of the shipment.
- Item 5 The driver shall carry a copy of the manifest in a location prescribed in 49CFR 177.817(d).

TSD FACILITY OPERATOR

- Item 6 Provide the TSD facility name and EPA ID number.
- Item 7 If the quantity of waste is measured or estimated at the TSD facility (e.g. weight), indicate the quantity.
- Item 8 If the waste is applied to the land (e.g. surface impoundment, landfill, injection well, or land treatment area), the State hazardous waste fee must be sent to DOHS. Indicate the fee in item 19.
- Item 9 Write in any discrepancies noted between the manifest information provided by the generator or transporter, and that found when the shipment was delivered to the facility. (Examples: all items in quantity or character of waste, container type, vehicle type). Some significant discrepancies are described in 49CFR 175.72.
- Item 10 Check the boxes to indicate the methods used to handle or dispose of the waste at the hazardous waste facility. If the waste is treated prior to, or instead of, land disposal write in the treatment method (Examples: incineration, incineration, oxidation).
- Item 11 If the waste is held at the TSD facility prior to eventual shipment to another facility for treatment, storage or disposal, provide the name of the designated final TSD facility, and its EPA ID number. In such cases, you, as the facility (transfer station) operator, shall fill out a new manifest indicating your facility as the generator of the waste and describing all waste in the shipment. Completed copies of all original manifests associated with the original waste shipments accepted by you shall be attached to the master manifest.
- Item 12 Sign the manifest, provide your title within the organization and indicate the date that the shipment was accepted at your facility.
- Item 13 The facility operator shall send a copy of the completed manifest to the DOHS on a monthly basis or as otherwise required. If wastes are received from transfer facilities, the final TSD facility shall send a copy of each master manifest to DOHS with copies of all original manifests attached to it. Transfer facilities shall send only one set of copies to DOHS to satisfy the manifest submission requirements for generators and TSD facility operators.

Distribution of Manifest Copies:

- Copy Number 1 (original) TSD Facility (send photocopy to DOHS)
- Copy Number 2 To Transporter after signed by TSDO
- Copy Number 3 To Generator from TSDO
- Copy Number 4 Generator (send after signed by Transporter (send photocopy to DOHS))

TO INSURE LEGIBLE COPIES USE ONLY BLACK CARBON INSERTS OR BLACK PRINT CARBONLESS TRANSFER PAPER.

Figure 17 (continued).

instructions specify the requirements for using the manifest, for transferring waste, and for distributing manifest copies.

The new federal regulations, which became effective on November 19, 1980, require that certain information which was not previously required by California law now be provided on all hazardous waste manifests. This information includes the following:

- EPA identification number of the generator, transporter, and treatment, storage, and disposal (TSD) facilities.
- Hazardous materials descriptions as required by DOT in 49 CFR.
- Name, address, and EPA identification number of the TSD facility designated by the generator to receive the waste, and, if desired, an alternate facility.
- Generator's certification with the statement exactly as shown on the enclosed manifest.

After completing the manifest and transferring the waste to the transporter, a designated person representing the generator signs the certification on the original manifest and all copies (one for each person handling the waste). The transporter then signs and dates the manifest, and returns one copy to the generator. The generator retains it until a copy is received from the designated permitted facility following delivery of the waste. A generator is required to initiate a trace if it does not receive a copy of the manifest from the disposal facility within 35 days after the waste has been shipped. All contacts made while tracing a delinquent manifest should be well documented. If the manifest has not been received within 45 days after shipment, the generator must report the incident to CDHS. Supporting documentation may be required.

f. Reporting Requirements for Generators

The generator will be required to send copies of all manifests from the previous month to CDHS, Hazardous Materials Management Branch, Sacramento, California. In addition, federal regulations require an annual report from generators who ship hazardous waste off site (45 FR 262, Subpart D). The annual report, comprised of EPA Forms 8700-13 and 8700-13a (Appendix B), is sent to CDHS in Sacramento. However, if a generator decides to treat, store, or dispose of wastes on base, it must submit an annual report covering those wastes in accordance with the provisions of 40 CFR Parts 264, 265, and 266, and 40 CFR Part 122. In addition to following these requirements, generators must comply with reporting requirements for TSD facilities, and should make provisions to hold all records, manifests, and reports for 3 years.

Manifest requirements are somewhat different for rail shipment or bulk shipment of hazardous wastes by water. The generator should consult the regulations if such means are used to transport wastes to permitted handling facilities (45 FR 263, Subpart B).

g. Disposal of Extremely Hazardous Waste by Generators

Some of the wastes generated by the SD (e.g., monomethyl hydrazine) are defined as extremely hazardous (CAC Sections 66064 and 66680 to 66685). No extremely hazardous waste shall be handled or disposed of in California without an Extremely Hazardous Waste Disposal Permit issued by the state. The generator must apply for this permit at least 15 days prior to the intended date of disposal. It can be expected that TSD facilities will require generators to make arrangements prior to shipment of these special wastes to their sites. Unexpected shipments will be returned at the generator's expense.

h. Storage Treatment and Disposal of Hazardous Wastes by Generators

If generators store hazardous wastes on site for more than 60 days (the 90-day limit set by EPA is preempted by California law), or treat or dispose of hazardous wastes on site, they must apply for and receive a Hazardous Waste Facility Permit, and comply with all applicable regulations (45 FR 264, Subpart A).

3. RESPONSIBILITIES OF BASE AGENCIES

A recent (June 1981) DOD publication, Consolidated Hazardous Material/Hazardous Waste Disposal Guidance, outlines the responsible agencies for hazardous waste management on the base. Briefly, this guidance states that:

- The Defense Logistics Agency (DLA) has been designated as the responsible agency within DOD for disposal of those hazardous materials regulated under RCRA.
- DLA has delegated operational responsibilities for this mission to the Defense Property Disposal Service (DPDS).
- The Defense Property Disposal Organization (DPDO) will take accountability for all of these wastes, and if proper facilities are available, will take physical custody.
- All wastes must be identified by National Stock Number (NSN), List Stock Number (LSN), or Federal Stock Class (FSC), and amount and type of contaminant.
- Wastes must be turned in to the DPDO in nonleaking, safe-to-handle containers (DOT-specified containers for pre-determined hazardous wastes), properly labeled.

- The base commander is responsible to insure compliance with all RCRA or California requirements for the base; the individual facility operational managers are accountable for conducting their activities in accordance with the regulations.

SECTION 4

METHODOLOGY AND ASSUMPTIONS

In compiling the host base inventory for Group I facilities, SCS made as much use as possible of existing data. This consisted of site visits and interviews, and review of a series of system evaluation worksheets prepared in 1980. The site visits were intended to acquaint the SCS staff with the personnel, facilities, and operations involved in this inventory. A general overview of each facility's operations and waste production was obtained. The appropriate contractors were interviewed in person, by telephone, and by letter to determine specific details of the operational procedures and wastes produced (both quality and quantity). The system evaluation worksheets, which are part of a one-time comprehensive hazardous waste inventory prepared in response to RCRA regulations, were used to refine the information collected from the contractors and site personnel.

The Group II host base inventory, which appears in Appendix C, consists of those facilities identified during the original host base inventory as significant generators of hazardous waste. These facilities, which were not designated in the initial scope of work, were inventoried by telephone and by letter in order to include their waste generation in the combined host base and tenant inventory.

The NASA inventory, shown in Appendix D, was compiled from information provided by NASA (personal communication by B. W. Stevens to VAFB/DEV dated August 18, 1981). Operations at SLC2W, SLC2E, and Building 831 are included in this inventory.

Comprehensive, detailed records of waste generation and characteristics have not been consistently maintained by all facilities in the past. Consequently, some of the numbers presented herein are estimates prepared by the contractors working with these systems. This is particularly true of those wastes which heretofore have not been routinely collected and treated and/or disposed of as hazardous wastes, but which are considered hazardous under the RCRA regulations.

Some assumptions and simplifications were needed to identify and quantify some of the hazardous waste streams, as follows:

- There will be no reclamation or reuse of excess or waste products. This does not include those drums and other containers which are currently being triple-rinsed for reuse on the base.

- Where waste generation data were available as a range, the higher value in the range was taken for this inventory.
- All wastes identified as potentially hazardous are included, whether or not they are currently being handled as hazardous wastes.
- Wastes listed with contingency quantities only (no baseline numbers) are indicative of non-normal events which nonetheless are possible.
- In converting from volume to mass units (or vice versa) for mixtures of wastes with uncertain compositions, densities were estimated based on similar waste types of known densities or on densities of the predominant component of the mix.
- In those cases where waste quantities were unknown, inventory estimates were based on purchase records modified by use characteristics.
- According to the regulations, only those containers which have held acutely hazardous materials are themselves hazardous; however, all containers were included in the inventory except those empty containers that were routinely triple-rinsed.
- Industrial wastewaters occupy an ambiguous position vis-a-vis the regulations, as there is some uncertainty regarding which act/regulation governs a given situation; for this inventory, all wastewaters containing hazardous materials were included, regardless of their disposition.
- Hazardous materials which are treated in-house for disposal (e.g., some wastewaters) or reuse (e.g., recoverable silver and mercury) are still considered hazardous until treated; furthermore, the subject facility is considered a treatment facility.
- Several of the host base facilities will be involved with the STS program when it becomes operational, at which time their work load and waste generation will increase; quantity data for 1985 through 1990 reflect estimates by facility personnel.

To evaluate waste generation for the VAFB host base and tenants combined, SCS incorporated inventories previously conducted for SD-STS (1, 2), SD-TAC (3, 4), BMO (5), Group II host base facilities (Appendix C), and NASA (Appendix D) into the Group I host base inventory. The following changes were made

from previous inventories to more accurately evaluate VAFB hazardous waste generation:

- The new launch schedule assumed for STS is 1 launch in 1985, 3 launches in 1986, 7 launches in 1987, and 10 launches per year for 1988 through 1990 (personal communication to SCS from Mr. John Edwards, April 1982).
- Atlas deluge water has been eliminated from the inventory, based on results of a chemical analysis which indicated that the water is not hazardous under RCRA regulations (3).
- Estimates of STS deluge water quantities have been revised upwards since the original STS inventory (1, 2), based on the results of the first launches at Cape Kennedy.
- Waste solids and liquids have been kept separate in the combined inventory, with solid quantities presented by weight and liquid quantities given by volume.

SECTION 5

VAFB HOST BASE INVENTORY

The operations of the host base facilities at VAFB produce significant volumes of hazardous materials. An inventory of these wastes is necessary to comply with EPA hazardous waste generator regulations and to assess alternative treatment/disposal options.

The intent of this inventory is to identify and quantify all potentially hazardous liquid and solid wastes routinely generated by VAFB host base facilities per year for the period 1981 through 1990. Baseline waste generation is representative of wastes produced routinely under normal conditions.

Table 8 is a list of the types and characteristics of the hazardous wastes generated by the host base facilities, arranged by organization. From left to right, this table shows:

- ORGANIZATION - the organization and building generating the wastes; this inventory is building-specific, and any other buildings occupied by the same organization are not necessarily included.
- WASTE MATERIAL - descriptions of the hazardous wastes. These wastes may be individual chemicals, excess commercial formulations, or mixed wastes. Items which have been slightly indented in the table represent the hazardous constituents of a mixed waste or commercial product.
- WASTE CAT - waste category. This is a sorting tool for grouping wastes with similar characteristics (see Glossary).
- TRT CAT - treatment category. This is a sorting tool for grouping wastes that can be treated by the same treatment processes. These treatment categories are not discussed in this report; for further information, the reader is invited to consult Volume 2 of either the STS or SD inventory.
- SOL OR LIQ - solid or liquid; the physical state of the waste material.
- OPERATION - a brief description, where appropriate, of the particular operation producing the waste material.

TABLE 8. HAZARDOUS CHARACTERISTICS OF WASTES GENERATED BY VAFB HOST BASE ORGANIZATIONS

ORGANIZATION (& BLDG. NOS.)	WASTE MATERIAL	WASTE CAT ⁽¹⁾	TRT CAT ⁽²⁾	SOL OR LIQ OPERATION	HAZ. WASTE NO.		HAZ. PROPERTY ⁽³⁾		CALIFORNIA COMPATIBILITY CLASS	
					EPA	CAL.	EPA	CAL.		
<u>FUELS LAB & DET 41 AFLC/MA (7422, 9320, 11248)</u>										
	ACETIC ACID	AB	10	L	ANALYTICAL REAGENTS	D002	2	C	TF	6B
	ACETONE	AC	5	L	ANALYTICAL REAGENTS	U002	3	iT	TF	4A
	AEROZINE 50 HYDRAZINE UDMH	AJ	2	L	SAMPLE FOR ANALYSES	U133 U133 U098	376 376 285	RT	TIF	6B
	BENZENE	BJ	5	L	ANALYTICAL REAGENTS	U019	101	iT	TF	4A
	CARBON TETRACHLORIDE	CD	5	L	ANALYTICAL REAGENTS	U211	179	T	T	4A
	CHLOROFORM	CK	5	L	ANALYTICAL REAGENTS	U044	194	T	T	4A
	CHROMIUM WASTEWATERS CHROMIC ACID	CN	8	L	ANALYTICAL REAGENTS	U032 U032	198 198	EC	TCFS	6A
	IRIDITE CLEANER CHROMIUM	CH	8	L	SAMPLE FOR ANALYSES	D007 D007	204 204	E	TCFS	6A
	AMMONIUM HYDROXIDE SOLUTION	CV	10	L	ANALYTICAL REAGENTS	D002	34	C	TC	1A
	ALKALINE CLEANER	CV	10	L	SAMPLE FOR ANALYSES	D002	HL ⁽⁴⁾	C		1A
	ALCOHOLIC PHOSPHORIC ACID	CV	10	L	SAMPLE FOR ANALYSES	D002	591	C	C	1B
	DEVELOPER, PHOTOGRAPHIC SODIUM THIOCYANATE	DI	10	L	ANALYTICAL REAGENTS	HL HL	691 691		T	1A
	ETHANOL	EH	5	L	ANALYTICAL REAGENTS	D001	318	i	TF	4A
	FREON 113	FR	1	L	ANALYTICAL REAGENTS	F002	HL	T		4A
	FREON 113	FR	1	L	SAMPLE FOR ANALYSES	F002	HL	T		4A
	JP-7 FUEL	FW	3	L	SAMPLE FOR ANALYSES	D001	HL	i		4A
	JP-4 FUEL	FW	3	L	SAMPLE FOR ANALYSES	D001	HL	i		4A
	RJ-1 FUEL	FW	3	L	SAMPLE FOR ANALYSES	D001	HL	i		4A
	FUEL, DIESEL, NO.2	FX	3	L	SAMPLE FOR ANALYSES	D001	HL	iT		4A
	GASOLINE	GC	3	L	SAMPLE FOR ANALYSES	D001	335	i	F	4A
	HYDRAZINE	HM	2	L	SAMPLE FOR ANALYSES	U133	376	RT	TIF	6B
	HYDROCHLORIC ACID	HU	10	L	ANALYTICAL REAGENTS	D002	381	C	TC	1B
	HYDROCHLORIC ACID	HU	10	L	SAMPLE FOR ANALYSES	D002	381	C	TC	1B

TABLE 8 (CONT.)

HAZARDOUS CHARACTERISTICS OF WASTES GENERATED BY VAFB HOST BASE ORGANIZATIONS

ORGANIZATION (& BLDG. NOS.) WASTE MATERIAL	WASTE CAT ⁽¹⁾	TRT CAT ⁽²⁾	SOL OR LIQ	OPERATION	HAZ. WASTE NO.		HAZ. PROPERTY ⁽³⁾		CALIFORNIA COMPATIBILITY CLASS
					EPA	CAL.	EPA	CAL.	
FUELS LAB & DET 41 AFLC/MA (7422, 9320, 11248) (CONT.)									
ISOPROPAHOL	IV	5	L	ANALYTICAL REAGENTS	D001	396	i	TF	4A
ISOPROPAHOL	IV	5	L	SAMPLE FOR ANALYSES	D001	396	i	TF	4A
LUBE OIL	LT	3	L	SAMPLE FOR ANALYSES	D001	NL ⁽⁴⁾	i		4A
METHANOL	MN	5	L	ANALYTICAL REAGENTS	U154	481	iT	TF	4A
METHANOL IODINE SULFUR DIOXIDE PYRIDINE	MN	5	L	KARL FISCHER REAGENT	U154 NL NL P075	481 NL NL 642	iHT	TF	4A
METHANOL	MN	5	L	SAMPLE FOR ANALYSES	U154	481	iT	TF	4A
METHYLENE CHLORIDE	MQ	5	L	ANALYTICAL REAGENTS	U080	262	T	TI	4A
METHYL ISOBUTYL KETONE (MIBK)	MU	5	L	ANALYTICAL REAGENTS	U161	NL	iT		4A
MONOMETHYL HYDRAZINE	MX	2	L	SAMPLE FOR ANALYSES	P068	502	HT	TF	6B
NITRIC ACID	NE	10	L	ANALYTICAL REAGENTS	D002	540	C	TCF	6A
IRFNA	NE	10	L	SAMPLE FOR ANALYSES	D002	540	C	TCF	6A
NITROGEN TETROXIDE	NK	10	L	SAMPLE FOR ANALYSES	P078	548	TH	TF	6A
PETROLEUM ETHER	PP	3	L	ANALYTICAL REAGENTS	D001	579	i	TF	4A
HYDROGEN PEROXIDE	RI	10	L	SAMPLE FOR ANALYSES	D001	385	Ri	TCFP	6A
RP-1 FUEL	RS	3	L	SAMPLE FOR ANALYSES	D001	NL	i		4A
SODIUM HYDROXIDE SOLUTION	SL	10	L	ANALYTICAL REAGENTS	D002	677	C	TC	1A
SULFURIC ACID	SZ	10	L	ANALYTICAL REAGENTS	D002	705	C	TC	1B
TRICHLOROETHANE	TH	5	L	SAMPLE FOR ANALYSES	F002	743	T	TI	4A
TRICHLOROETHYLENE	TP	5	L	ANALYTICAL REAGENTS	F001	744	T	TF	4A
TRICHLOROETHYLENE	TP	5	L	SAMPLE FOR ANALYSES	F001	744	Ti	TF	4A
UDMH	UD	2	L	SAMPLE FOR ANALYSES	U098	285	T	TF	6B
USO FUEL UDMH	UD	2	L	SAMPLE FOR ANALYSES	U098 U098	285 285	T	TF	6B

TABLE 8 (CONT.)

HAZARDOUS CHARACTERISTICS OF WASTES GENERATED BY VAFB HOST BASE ORGANIZATIONS

ORGANIZATION (& BLDG. NOS.)	WASTE MATERIAL	WASTE CAT ⁽¹⁾	TRT CAT ⁽²⁾	SOL OR LIQ	OPERATION	HAZ. WASTE NO.		HAZ. PROPERTY ⁽³⁾		CALIFORNIA COMPATIBILITY CLASS
						EPA	CAL.	EPA	CAL.	
<u>LOCKHEED (8310)</u>										
	BATTERY WASTES	BG	10	L	FLIGHT BATTERIES, KOH	D002	621	C	TC	1A
	DICHLOROMETHANE	DH	5	L	PARTS CLEANING	U080	262	T	TI	6B
	FREON T.F.	FR	1	L	PARTS CLEANING	F002	NL ⁽⁴⁾	T		4A
	HYDRAZINE	HM	2	L	SAMPLE ANALYSIS	U133	376	RT	TIF	6B
	HYDRAZINE	HM	2	L	OUT OF SPEC FUEL	U133	376	RT	TIF	6B
	HYDRAZINE/WATER WASTES	HQ	2	L	DEIONIZED WATER FLUSH	U133	376	RT	TIF	6B
	UDMH/WATER WASTES	HQ	2	L	SYSTEM FLUSH	U098	285	T	TF	6B
	ISOPROPANOL	IV	2	L	SYSTEM FLUSH	D001	396	i	TF	4A
	LUBRICATING OILS	LT	3	L	MACHINERY/VEHICLE MAINTENANCE	D001	L ⁽⁵⁾	i	F	6B
	METHANOL	MN	2	L	SYSTEM FLUSH	U154	481	i	TF	4A
	METHYL ETHYL KETONE	MS	5	L	PARTS CLEANING	F005	499	iT	TF	4A
	IRFNA/WATER WASTES	NE	10	L	DEIONIZED WATER FLUSH	D002	540	C	C	6A
	IRFNA	NE	10	L	SAMPLE ANALYSIS	D002	540	TCR	TCF	6A
	IRFNA	NE	10	L	OUT OF SPEC OXIDIZER	D002	540	TCR	TCF	6A
	RAGS, SOLVENT/OILY	RE	13	S	PAINTING CLEAN-UP	D001	NL	i		6B
	SOLVENTS, UNSPECIFIED	SU	5	L	PAINT STRIPPING	D001	NL	i		4A
	TRICHLOROETHANE	TH	5	L	PARTS CLEANING	F002	743	T	TI	6B
	UDMH	UD	2	L	SAMPLE ANALYSIS	U098	285	T	TF	6B
	UDMH	UD	2	L	OUT OF SPEC FUEL	U098	285	T	TF	6B
<u>FEDERAL ELECTRIC CORPORATION - ITT (9320)</u>										
	ACETONE	AC	5	L	PAINT FACILITY	U002	3	i	TF	4A
	IRIDITE RINSEWATERS CHROMIUM	CH	8	L	PAINTING FACILITY	D007	204 D007 204	E	TCFS	6A
	DYNABRITE HYDROFLUORIC ACID	DY	10	L	PRINTED CIRCUIT FACILITY	U134	383 U134 383	CT	CT	1B
	R66C CLEANER HYDROFLUORIC ACID PHOSPHORIC ACID	HX	10	L	ALUMINUM CLEANING	D002	383 U134 383 D002 591	CT	CT	1B, 6A

TABLE 8 (CONT.)

HAZARDOUS CHARACTERISTICS OF WASTES GENERATED BY VAFB HOST BASE ORGANIZATIONS

ORGANIZATION (& BLDG. NOS.)	WASTE MATERIAL	WASTE CAT ⁽¹⁾	TRT. OR CAT ⁽²⁾	SOL OR LIQ	OPERATION	HAZ. WASTE NO.		HAZ. PROPERTY ⁽³⁾		CALIFORNIA COMPATIBILITY CLASS
						EPA	CAL.	EPA	CAL.	
<u>FEDERAL ELECTRIC CORPORATION - ITI (9320)</u>										
(CONT.)										
	METHYL ETHYL KETONE	MS	5	L	PAINT FACILITY	F005	499	1T	TF	4A
	WASTE OILS	OG	3	L	MACHINE SHOP	D001	L ⁽⁵⁾	i	F	6B
	PAINT THINNERS	PE	5	L	PRINTED CIRCUIT FACILITY	D001	HL ⁽⁴⁾	i		4A
	RAGS, SOLVENT/OILY	RE	13	S	MACHINE SHOP	D001	NL	i		6B
<u>BOEING (6523)</u>										
	LIQUID AMMONIA	AU	10	L	COPIER	D002	34	C	TC	1A
	BATTERY WASTES LEAD	BG	14	S	EXPENDED USE	D008	406	E	T	
	BATTERY ACID	BG	8	L	DISCARDED BATTERIES	D002	705	C	CIT	1B
	FREON-CONT. AEROSOL CANS	CT	14	S	CLEANING	D003	HL	R		6B
	CYANIDE WASTEWATERS (TRACE)	CW	10	L	PRINTING PROCESS	P030	233	H	T	5A
	METHYL ETHYL KETONE	MS	5	L	CLEANING	U159	499	1T	TF	4A
	CUTTING OIL	OG	3	L	OIL CHANGE	D001	L	i	F	6B
	MOTOR OIL	OG	3	L	OIL CHANGE	D001	L	i	F	6B
	PCBE	PM	14	S	SPILL CLEAN-UP	* ⁽⁶⁾	606		TI	4A
	ISOPROPANOL-SOAKED COTTON PADS	RE	13	S	COPY MACHINE CLEANING	D001	HL	i		6B
	SOLVENTS, MIXED	SU	5	L	CLEANING	D001	HL	1T	TF	4A
<u>4392 TRHSS/LGTM (7501, 10700, 10711, 10721, 10726A&B)</u>										
	BATTERY ACID	BG	8	L	DISCARDED BATTERIES	D002	705	C	CIT	1B
	BATTERIES LEAD	BG	14	S	GROUND SUPPORT VEHICLES	D008	406			
						D008	406			
	OIL/WATER	OD	4	L	OIL SEPARATOR	K051	L	T	T	6B
	USED OILS	OG	3	L	VEHICLE MAINTENANCE	D001	L	i	F	6B
	RAGS, SOLVENT/OILY	RE	13	S	CLEANING	D001	NL	i		6B
	SOLVENTS (PAINT/LACQUER)	SU	5	L	VEHICLE MAINTENANCE	D001	L	i	1F	4A
	SOLVENTS (SD2/STODDARD)	SU	5	L	DEGREASING	D001	L	1T	T1F	4A

TABLE 8 (CONT.)

HAZARDOUS CHARACTERISTICS OF WASTES GENERATED BY VA FB HOST BASE ORGANIZATIONS

ORGANIZATION (& BLDG. NOS.)	WASTE MATERIAL	WASTE CAT ⁽¹⁾	TRT. OR LIQ ⁽²⁾	SOL OR LIQ OPERATION	HAZ. WASTE NO.		HAZ. PROPERTY ⁽³⁾		CALIFORNIA COMPATIBILITY CLASS		
					EPA	CAL.	EPA	CAL.			
<u>394 ICBMTMS (6601, Launch Facility)</u>											
	ACETONE	AC	5	L	DEGREASING	U002	3	I	TF	4A	
	SODIUM CHROMATE SOLN 2%	CN	8	L	FACILITY MAINTENANCE	D007	670	E	TCS	6A	
	FREON 12 AEROSOL CANS	CT	14	S	FACILITY MAINTENANCE	D003	NL ⁽⁴⁾		TR	6B	
	FREON 22 AEROSOL CANS	CT	14	S	FACILITY MAINTENANCE	D003	NL		TR	6B	
	FREON TF AEROSOL CANS	CT	14	S	REFURBISHMENT	D003	NL		TR	6B	
	GRAPHITE LUBE AEROSOL CANS	CT	14	S	MISSILE MAINTENANCE	D003	NL		R	6B	
	WD-40 AEROSOL CANS	CT	14	S	MISSILE MAINTENANCE	D003	NL		R	6B	
	CPC AEROSOL CANS	CT	14	S	MISSILE MAINTENANCE	D003	NL		R	6B	
	CHROMATE PUTTY CANS	CT	14	S	MISSILE MAINTENANCE	NL	NL			6B	
	LUBE OIL CANS	CT	14	S	MISSILE MAINTENANCE	NL	NL			6B	
	ANTI-SIEZE COMPOUND CANS	CT	14	S	MISSILE MAINTENANCE	NL	NL			6B	
	PETROLATUM CANS	CT	14	S	MISSILE MAINTENANCE	NL	NL			6B	
	MOLYCOAT LUBRICANT CANS	CT	14	S	MISSILE MAINTENANCE	NL	NL			6B	
	DRY CLEANING SOLVENT (PD-680)	DV	5	L	FACILITY MAINTENANCE	D001	NL		i	4A	
	DRY CLEANING SOLVENT (PD-680)	DV	5	L	PNEUDRAULICS	D001	NL		i	4A	
	DRY CLEANING SOLVENT (PD-680)	DV	5	L	REFURBISHMENT	D001	NL		i	4A	
	ISOPROPAHOL	IV	5	L	FACILITY MAINTENANCE	D001	396		i	TF	4A
	LUBRICATING OILS	LT	3	L	FACILITY MAINTENANCE	D001	L ⁽⁵⁾		i	F	6B
	LUBE OIL	LT	3	L	MISSILE MAINTENANCE	D001	L		i	F	6B
	METHYL ETHYL KETONE	MS	5	L	FACILITY MAINTENANCE	U159	499		i	TF	4A
	METHYL ETHYL KETONE	MS	5	L	REFURBISHMENT	U159	499		i	TF	4A
	PCB SOLID WASTES	PM	14	S	FACILITY MAINTENANCE	* ⁽⁶⁾	606			TI	4A
	PETROLEUM ETHER	PP	3	L	MISSILE MAINTENANCE	D001	579		i	TF	4A
	RAGS, SOLVENT/OILY	RE	13	S	PNEUDRAULICS	D001	NL		i		6B
	SULFURIC ACID	SZ	10	L	FACILITY MAINTENANCE	D002	705		C	TC	1B
	TOLUENE	TJ	5	L	DEGREASING	U220	738		I	TF	4A

TABLE 8 (CONT.)

HAZARDOUS CHARACTERISTICS OF WASTES GENERATED BY VAFB HOST BASE ORGANIZATIONS

ORGANIZATION (& BLDG. NOS.)	WASTE MATERIAL	WASTE CAT ⁽¹⁾	TRT CAT ⁽²⁾	SOL OR LIQ	OPERATION	HAZ. WASTE NO.		HAZ. PROPERTY ⁽³⁾		CALIFORNIA COMPATIBILITY CLASS
						EPA	CAL.	EPA	CAL.	
<u>394 ICBMTMS (6601, Launch Facility)</u>										
<u>(CONT.)</u>										
	TRICHLOROETHYLENE	TP	5	L	MISSILE MAINTENANCE	F001	744	T	TF	4A
<u>1369 AYS/DOC (9314)</u>										
	ACETONE	AC	5	L	MOTION PICTURE PROCESSING	U002	3	I	TF	4A
	CHLOROFORM	CK	5	L	MOTION PICTURE PROCESSING	U044	194	IT	T	4A
	DEVELOPER, PHOTOGRAPHIC SODIUM THIOCYANATE 0.14%	DI	10	L	MOTION PICTURE PROCESSING	NL ⁽⁴⁾	691		T	1A, 3A
	COLOR DEVELOPER, PHOTOGRAPHIC	DI	10	L	MOTION PICTURE PROCESSING	D002	NL	C		1A, 3A
	SOUND REDEVELOPER ETHYLENEDIAMINE 1.5%	DI	10	L	MOTION PICTURE PROCESSING	P053	327	H	TIS	1A, 3A
	ETHYLENEDIAMINE	ED	5	L	MOTION PICTURE PROCESSING	P053	327	H	TIS	4A
	SOUND SULFIDING SOLUTION THIOUREA 4%	PR	10	L	MOTION PICTURE PROCESSING	U219	NL	T		1A, 5A
	STABILIZER FORMALDEHYDE 2.2%	PR	10	L	MOTION PICTURE PROCESSING	U122	350	T	T	3A, 1B
	PREHARDENER PHOTOGRAPHIC FORMALDEHYDE 1.3% METHANOL 0.4%	PU	10	L	MOTION PICTURE PROCESSING	U122	NL	T	T	3A, 1B
	RECOVERABLE SILVER SALTS	SG	6	L	PHOTOGRAPHIC PROCESSES	D011	653	E	T	3A
<u>USAF HOSPITAL (13850)</u>										
	CHLOROFORM	CK	5	L	DENTAL LAB	U044	194	IT	T	4A
	DEVELOPER, PHOTOGRAPHIC SODIUM THIOCYANATE	DI	10	L	X-RAY PROCESSING	NL	691		T	1A, 3A
	FORMALDEHYDE	FJ	5	L	WASTE PHARMACEUTICALS	U122	350	T	TFS	4A
	IGNITABLE WASTES, MISC.	ID	5	L	WASTE PHARMACEUTICALS	D001	L ⁽⁵⁾	I	TF	4A
	RECOVERABLE MERCURY	MF	7	L	DENTAL LAB	U151	472	T	T	
	REACTIVE WASTES, MISC BENZOYL PEROXIDE	RI	5	L	WASTE PHARMACEUTICALS	D003	L	R	TFP	4A
	RECOVERABLE SILVER	SG	6	S	DENTAL LAB	D003	108			

FOOTNOTES

- (1) See list of Waste Category Codes for definition of abbreviations.
- (2) For discussion of treatment categories, see Hazardous Waste Inventory and Disposal Assessment for the Space Shuttle Project, Vol. II, or Hazardous Waste Inventory for SD Operations at Vandenberg AFB, Vol. II.
- (3) See Glossary for definitions of hazardous property abbreviations.
- (4) NL - Not listed.
- (5) L - Listed, but not assigned a specific number.
- (6) "*" equals regulated under Code of Federal Regulations 40 CFR 761.

- HAZ WST NO. EPA/CAL - EPA and California hazardous waste numbers. Both EPA and the State of California have issued lists of wastes that they consider to be hazardous. These are presented in 45 FR 33084-33133 (40 CFR 261) and CAC, Title 22, Division 4, Chapter 30, Article 9, respectively. Appendix A includes tables of waste quantities arranged by EPA number. The EPA numbers will be needed to complete all of the EPA hazardous waste notification, application, and reporting forms required of all hazardous waste generators under RCRA.
- HAZARDOUS PROPERTY EPA/CAL - the hazardous properties of the wastes, according to EPA and California lists or definitions. This information is useful in determining waste compatibility and assessing treatment alternatives (see Glossary for definitions of hazard codes).
- CALIFORNIA COMPATIBILITY CLASS - special precautions are needed when managing or treating chemically incompatible wastes. The CDHS developed a set of 12 groups to generally classify incompatible hazardous wastes (Laws, Regulations, and Guidelines for Hauling of Hazardous Waste, February 1975). These incompatibility groups are also listed in 45 FR 33257-33258.

Table 9 is a detailed listing of the quantities of wastes generated by these facilities. Wastes are listed alphabetically for each organization/building. Table 10 is a similar listing arranged by waste material, and shown by organization within each waste category. Table 9 gives total waste generation for each organization; Table 10 gives total quantities of each waste material generated by the host base. Mass and volume values in both tables are given in both metric and English units. Under the volume column (English units), liquid wastes are given in gallons, and solid waste in cubic feet. A missing number indicates insufficient information to quantify a particular waste.

Quantities are given for 2 years, 1981 and 1990. Quantities for 1981 are indicative of current waste generation rates. Values for 1990 show the expected increases after the STS has become operational at VAFB.

Table 11 presents the annual mass waste generation for each organization for the years 1981 to 1990. Totals for each waste material are presented within each organization. Table 12, which is a summary table of total waste material generation rates for the VAFB host base organizations combined, shows annual mass rates for the years 1981 to 1990.

Table 13 is a list of the contingency wastes generated by the VAFB host base facilities. Contingency wastes are those which will be generated only sporadically from unplanned events, such as abortions, spills, etc. Contingency values are expressed as estimated quantities per event. The only contingency wastes identified were out-of-spec hypergolic propellants.

TABLE 9. BASELINE WASTE GENERATION BY VAFB HOST BASE ORGANIZATIONS FOR THE YEARS 1981 AND 1990

ORGANIZATION (& BLDG. NOS.)	SOL OR LIQ	QUANTITY PER YEAR, 1981				QUANTITY PER YEAR, 1990			
		MASS		VOLUME		MASS		VOLUME	
		KILOGRAMS	POUNDS	LITERS	GAL OR CF	KILOGRAMS	POUNDS	LITERS	GAL OR CF
<u>FUELS LAB & DET 41 AFLC/MA (7422, 9320, 11248)</u>									
ACETIC ACID	L	2.3	5.0	2.3	.6	5.7	12.5	5.7	1.5
ACETONE	L	72.3	159.4	90.8	24.0	180.8	398.5	227.1	60.0
AEROZINE 50 HYDRAZINE UDMH	L	81.2	179.0	90.8	24.0	203.0	447.5	227.1	60.0
BENZENE	L	.4	.9	.4	.1	1.0	2.3	.9	.3
CARBON TETRACHLORIDE	L	71.9	158.6	45.4	12.0	179.8	396.5	113.6	30.0
CHLOROFORM	L	13.4	29.5	9.1	2.4	33.5	73.8	22.7	6.0
CHROMIUM WASTEWATERS CHROMIC ACID	L	9.1	20.0	9.1	2.4	22.7	50.0	22.7	6.0
IRIDITE CLEANER CHROMIUM	L	2.3	5.1	2.3	.6	5.8	12.8	5.7	1.5
AMMONIUM HYDROXIDE SOLUTION	L	36.3	80.1	36.3	9.6	90.8	200.3	90.8	24.0
ALKALINE CLEANER	L	2.3	5.1	2.3	.6	5.8	12.8	5.7	1.5
ALCOHOLIC PHOSPHORIC ACID	L	2.3	5.0	2.3	.6	5.7	12.5	5.7	1.5
DEVELOPER, PHOTOGRAPHIC SODIUM THIOCYANATE	L	22.7	50.1	22.7	6.0	56.8	125.3	56.8	15.0
ETHANOL	L	3.7	8.2	4.5	1.2	9.3	20.5	11.4	3.0
FREON 113	L	129.0	284.4	90.8	24.0	322.5	711.0	227.1	60.0
FREON 113	L	129.0	284.4	90.8	24.0	322.5	711.0	227.1	60.0
JP-7 FUEL	L	16.1	35.6	22.7	6.0	40.4	89.0	56.8	15.0
JP-4 FUEL	L	258.2	569.2	363.4	96.0	645.5	1423.0	908.4	240.0
RJ-1 FUEL	L	64.5	142.3	90.8	24.0	161.4	355.8	227.1	60.0
FUEL, DIESEL, NO.2	L	20.7	45.7	22.7	6.0	51.8	114.3	56.8	15.0
GASOLINE	L	6.7	14.8	9.1	2.4	16.8	37.0	22.7	6.0
HYDRAZINE	L	182.3	402.0	181.7	48.0	455.9	1005.0	454.2	120.0
HYDROCHLORIC ACID	L	22.7	50.1	22.7	6.0	56.8	125.3	56.8	15.0

TABLE 9 (CONT.) BASELINE WASTE GENERATION BY VAFB HOST BASE ORGANIZATIONS FOR THE YEARS 1981 AND 1990

ORGANIZATION (& BLDG. NOS.)	SOL OR LIQ	QUANTITY PER YEAR, 1981				QUANTITY PER YEAR, 1990			
		MASS		VOLUME		MASS		VOLUME	
		KILOGRAMS	POUNDS	LITERS	GAL OR CF	KILOGRAMS	POUNDS	LITERS	GAL OR CF
<u>FUELS LAB & DET 41 AFELC/MA (7422,9320,11248)</u>									
(CONT.)									
HYDROCHLORIC ACID	L	2.3	5.0	2.3	.6	5.7	12.5	5.7	1.5
ISOPROPANOL	L	53.6	118.1	68.1	18.0	133.9	295.3	170.3	45.0
ISOPROPANOL	L	7.1	15.7	9.1	2.4	17.8	39.3	22.7	6.0
LUBE OIL	L	124.3	274.1	136.3	36.0	310.8	685.3	340.7	90.0
METHANOL	L	17.9	39.5	22.7	6.0	44.8	98.8	56.8	15.0
METHANOL	L	10.8	23.7	13.6	3.6	26.9	59.3	34.1	9.0
IODINE									
SULFUR DIOXIDE									
PYRIDINE									
METHANOL	L	7.2	15.8	9.1	2.4	17.9	39.5	22.7	6.0
METHYLENE CHLORIDE	L	30.1	66.4	22.7	6.0	75.3	166.0	56.8	15.0
METHYL ISOBUTYL KETONE (MIBK)	L	7.3	16.0	9.1	2.4	18.1	40.0	22.7	6.0
MONOMETHYL HYDRAZINE	L	4.0	8.8	4.5	1.2	10.0	22.0	11.4	3.0
NITRIC ACID	L	22.7	50.1	45.4	12.0	56.8	125.3	113.6	30.0
IRFNA	L	22.7	50.1	45.4	12.0	56.8	125.3	113.6	30.0
NITROGEN TETROXIDE	L	131.7	290.3	90.8	24.0	329.2	725.8	227.1	60.0
PETROLEUM ETHER	L	54.5	120.2	90.8	24.0	136.3	300.5	227.1	60.0
HYDROGEN PEROXIDE	L	19.8	43.6	13.6	3.6	49.4	109.0	34.1	9.0
RP-1 FUEL	L	186.4	411.0	227.1	60.0	466.1	1027.5	567.8	150.0
SODIUM HYDROXIDE SOLUTION	L	36.3	80.1	36.3	9.6	90.8	200.3	90.8	24.0
SULFURIC ACID	L	83.6	184.2	45.4	12.0	208.9	460.5	113.6	30.0
TRICHLOROETHANE	L	150.5	331.7	113.6	30.0	376.1	829.3	283.9	75.0
TRICHLOROETHYLENE	L	6.6	14.6	4.5	1.2	16.6	36.5	11.4	3.0
TRICHLOROETHYLENE	L	165.8	365.5	113.6	30.0	414.5	913.8	283.9	75.0
UDMH	L	17.8	39.2	22.7	6.0	44.5	98.0	56.8	15.0

TABLE 9 (CONT.) BASELINE WASTE GENERATION BY VAFB HOST BASE ORGANIZATIONS FOR THE YEARS 1981 AND 1990

ORGANIZATION (& BLDG. NOS.)	WASTE MATERIAL	SOL OR LIQ	QUANTITY PER YEAR, 1981				QUANTITY PER YEAR, 1990			
			MASS		VOLUME		MASS		VOLUME	
			KILOGRAMS	POUNDS	LITERS	GAL OR CF	KILOGRAMS	POUNDS	LITERS	GAL OR CF
<u>FUELS LAB & DET 41 AFCL/MA (7422,9320,11249)</u> (CONT.)										
	USD FUEL UDMH	L	17.8	39.2	22.7	6.0	44.5	98.0	56.8	15.0
TOTALS FOR FUELS LAB & DET 41 AFCL/MA (7422,9320,11249)										
	SOLIDS		.0	.0	.0	.0	.0	.0	.0	.0
	LIQUIDS		2330.3	5137.4	2382.7	629.5	5825.7	12843.5	5956.6	1573.8
	TOTAL		2330.3	5137.4			5825.7	12843.5		
<u>LOCKHEED (8310)</u>										
	BATTERY WASTES	L	3.8	8.3	3.8	1.0	3.8	8.3	3.8	1.0
	DICHLOROMETHANE	L	592.7	1306.7	416.3	110.0	592.7	1306.7	416.3	110.0
	FREON T.F.	L	1181.6	2605.0	832.7	220.0	1181.6	2605.0	832.7	220.0
	HYDRAZINE	L	3.8	8.4	3.8	1.0	3.8	8.4	3.8	1.0
	HYDRAZINE	L	.0	.0	.0	.0	.0	.0	.0	.0
	HYDRAZINE/WATER WASTES	L	3646.8	8039.8	3648.7	964.0	3646.8	8039.8	3648.7	964.0
	UDMH/WATER WASTES	L	3628.7	8000.0	4651.8	1229.0	3628.7	8000.0	4651.8	1229.0
	ISOPROPANOL	L	654.4	1442.7	832.7	220.0	654.4	1442.7	832.7	220.0
	LUBRICATING OILS	L	375.3	827.5	416.3	110.0	375.3	827.5	416.3	110.0
	METHANOL	L	328.8	724.9	416.3	110.0	328.8	724.9	416.3	110.0
	METHYL ETHYL KETONE	L	669.6	1476.2	832.7	220.0	669.6	1476.2	832.7	220.0
	IRFHA/WATER WASTES	L	7593.1	16740.0	7570.0	2000.0	7593.1	16740.0	7570.0	2000.0
	IRFHA	L	11.3	25.0	7.6	2.0	11.3	25.0	7.6	2.0
	IRFHA	L	.0	.0	.0	.0	.0	.0	.0	.0
	RAGS, SOLVENT/OILY ⁽¹⁾	S	870.9	1920.0	3624.4	128.0	870.9	1920.0	3624.4	128.0
	SOLVENTS, UNSPECIFIED	L	208.7	460.0	208.2	55.0	208.7	460.0	208.2	55.0
	TRICHLOROETHANE	L	299.4	660.0	208.2	55.0	299.4	660.0	208.2	55.0
	UDMH	L	2.9	6.5	3.8	1.0	2.9	6.5	3.8	1.0

TABLE 9 (CONT.) BASELINE WASTE GENERATION BY VAFB HOST BASE ORGANIZATIONS FOR THE YEARS 1981 AND 1990

ORGANIZATION (& BLDG. NOS.)	SOL OR LIQ	QUANTITY PER YEAR, 1981				QUANTITY PER YEAR, 1990			
		MASS		VOLUME		MASS		VOLUME	
		KILOGRAMS	POUNDS	LITERS	GAL OR CF	KILOGRAMS	POUNDS	LITERS	GAL OR CF
<u>LOCKHEED (8310)</u> (CONT.)									
UDMH	L	.0	.0	.0	.0	.0	.0	.0	.0
TOTALS FOR LOCKHEED (8310)									
SOLIDS		870.9	1920.0	3624.4	128.0	870.9	1920.0	3624.4	128.0
LIQUIDS		19200.9	42331.0	20052.9	5298.0	19200.9	42331.0	20052.9	5298.0
TOTAL		20071.8	44251.0			20071.8	44251.0		
<u>FEDERAL ELECTRIC CORPORATION - ITT (9320)</u>									
ACETONE	L	.0	.0	.0	.0	.0	.0	.0	.0
IRIDITE RINSEWATERS CHROMIUM	L	756.6	1668.0	757.0	200.0	1551.8	3421.1	1552.6	410.2
DYNABRITE HYDROFLUORIC ACID	L	756.6	1668.0	757.0	200.0	1551.8	3421.1	1552.6	410.2
R66C CLEANER HYDROFLUORIC ACID PHOSPHORIC ACID	L	756.6	1668.0	757.0	200.0	1551.8	3421.1	1552.6	410.2
METHYL ETHYL KETONE	L	.0	.0	.0	.0	.0	.0	.0	.0
WASTE OILS	L	442.6	975.8	492.0	130.0	907.8	2001.4	1009.2	266.6
PAINT THINNERS	L	374.5	825.7	416.3	110.0	768.2	1693.5	853.9	225.6
RAGS, SOLVENT/OILY ⁽¹⁾	S	1451.5	3200.0	6039.8	213.3	2977.0	6563.2	12387.6	437.5
TOTALS FOR FEDERAL ELECTRIC CORPORATION - ITT (9320)									
SOLIDS		1451.5	3200.0	6039.8	213.3	2977.0	6563.2	12387.6	437.5
LIQUIDS		3086.9	6805.5	3179.4	840.0	6331.2	13959.1	6520.9	1722.8
TOTAL		4538.4	10005.5			9308.2	20521.3		
<u>BOEING (6523)</u>									
LIQUID AMMONIA	L	.4	.8	.4	.1	.4	.8	.4	.1
BATTERY WASTES LEAD	S	306.6	676.0	161.4	5.7	306.6	676.0	161.4	5.7
BATTERY ACID	L	93.5	184.0	45.4	12.0	93.5	184.0	45.4	12.0

TABLE 9 (CONT.) BASELINE WASTE GENERATION BY VAFB HOST BASE ORGANIZATIONS FOR THE YEARS 1981 AND 1990

ORGANIZATION (4 BLDG. NOS.)	SOL OR LIQ	QUANTITY PER YEAR, 1981				QUANTITY PER YEAR, 1990			
		MASS		VOLUME		MASS		VOLUME	
		KILOGRAMS	POUNDS	LITERS	GAL OR CF	KILOGRAMS	POUNDS	LITERS	GAL OR CF
BOEING (6523)									
(CONT.)									
FREON-CONT. AEROSOL CANS ⁽²⁾	S	4.5	10.0	48.1	1.7	4.5	10.0	48.1	1.7
CYANIDE WASTEWATERS (TRACE)	L	49.0	108.0	49.2	13.0	49.0	108.0	49.2	13.0
METHYL ETHYL KETONE	L	45.4	100.0	56.8	15.0	45.4	100.0	56.8	15.0
CUTTING OIL	L	307.1	677.0	340.6	90.0	307.1	677.0	340.6	90.0
MOTOR OIL	L	357.5	788.1	397.4	105.0	357.5	788.1	397.4	105.0
PCBs ⁽³⁾	S	100.0	220.5	416.2	14.7	100.0	220.5	416.2	14.7
ISOPROPAHOL-SOAKED COTTON PADS ⁽⁴⁾	S	40.8	90.0	28.3	1.0	40.8	90.0	28.3	1.0
SOLVENTS, MIXED	L	19.4	42.7	22.7	6.0	19.4	42.7	22.7	6.0
TOTALS FOR BOEING (6523)									
SOLIDS		452.0	996.5	654.1	23.1	452.0	996.5	654.1	23.1
LIQUIDS		862.1	1900.6	912.6	241.1	862.1	1900.6	912.6	241.1
TOTAL		1314.1	2897.1			1314.1	2897.1		
4392 TRNSS/LGTM (7501,10700,10711,10721,10726A&B)									
BATTERY ACID	L	7762.6	17113.7	4542.0	1200.0	7762.6	17113.7	4542.0	1200.0
BATTERIES ⁽⁵⁾ LEAD	S	8164.6	18000.0	11666.2	412.0	8164.6	18000.0	11666.2	412.0
OIL/WATER	L	22709.9	50067.0	22710.0	6000.0	22709.9	50067.0	22710.0	6000.0
USED OILS	L	26615.3	58676.9	29523.0	7800.0	26615.3	58676.9	29523.0	7800.0
RAGS, SOLVENT/OILY	S	29.5	65.0	121.8	4.3	29.5	65.0	121.8	4.3
SOLVENTS (PAINT/LACQUER)	L	215.0	473.9	249.8	66.0	215.0	473.9	249.8	66.0
SOLVENTS (SD2/STODDARD)	L	12710.7	28022.4	9084.0	2400.0	12710.7	28022.4	9084.0	2400.0
TOTALS FOR 4392 TRNSS/LGTM (7501,10700,10711,10721,10726A&B)									
SOLIDS		8194.1	18065.0	11788.0	416.3	8194.1	18065.0	11788.0	416.3
LIQUIDS		70013.4	154353.9	66108.8	17466.0	70013.4	154353.9	66108.8	17466.0
TOTAL		78207.5	172418.9			78207.5	172418.9		

TABLE 9 (CONT.) BASELINE WASTE GENERATION BY VAFB HOST BASE ORGANIZATIONS FOR THE YEARS 1981 AND 1990

ORGANIZATION (& BLDG. NOS.)	SOL OR LIQ	QUANTITY PER YEAR, 1981				QUANTITY PER YEAR, 1990			
		MASS		VOLUME		MASS		VOLUME	
		KILOGRAMS	POUNDS	LITERS	GAL OR CF	KILOGRAMS	POUNDS	LITERS	GAL OR CF
<u>394 ICBMIMS (6601 Launch Facility)</u>									
ACETONE	L	9.0	19.9	11.4	3.0	9.0	19.9	11.4	3.0
SODIUM CHROMATE SOLN 2%	L	567.4	1251.0	567.8	150.0	567.4	1251.0	567.8	150.0
FREON 12 AEROSOL CANS ⁽²⁾	S	113.4	250.0	1180.8	41.7	113.4	250.0	1180.8	41.7
FREON 22 AEROSOL CANS ⁽²⁾	S	2.3	5.0	22.7	.8	2.3	5.0	22.7	.8
FREON TF AEROSOL CANS ⁽²⁾	S	1.4	3.0	14.2	.5	1.4	3.0	14.2	.5
GRAPHITE LUBE AEROSOL CANS ⁽²⁾	S	4.5	10.0	48.1	1.7	4.5	10.0	48.1	1.7
WD-40 AEROSOL CANS ⁽²⁾	S	18.1	40.0	189.7	6.7	18.1	40.0	189.7	6.7
CPC AEROSOL CANS ⁽²⁾	S	7.3	16.0	76.5	2.7	7.3	16.0	76.5	2.7
CHROMATE PUTTY CANS ⁽⁶⁾	S	.2	.5	2.8	.1	.2	.5	2.8	.1
LUBE OIL CANS ⁽⁶⁾	S	6.8	15.0	56.6	2.0	6.8	15.0	56.6	2.0
ANTI-SIEZE COMPOUND CANS ⁽²⁾	S	.5	1.0	5.7	.2	.5	1.0	5.7	.2
PETROLATUM CANS ⁽²⁾	S	.5	1.0	5.7	.2	.5	1.0	5.7	.2
NGLYCOAT LUBRICANT CANS ⁽²⁾	S	2.3	5.0	22.7	.8	2.3	5.0	22.7	.8
DRY CLEANING SOLVENT (PD-680)	L	17.0	37.5	18.9	5.0	17.0	37.5	18.9	5.0
DRY CLEANING SOLVENT (PD-680)	L	34.0	75.0	37.8	10.0	34.0	75.0	37.8	10.0
DRY CLEANING SOLVENT (PD-680)	L	34.0	75.0	37.8	10.0	34.0	75.0	37.8	10.0
ISOPROPAHOL	L	3.0	6.6	3.8	1.0	3.0	6.6	3.8	1.0
LUBRICATING OILS	L	851.2	1876.5	946.3	250.0	851.2	1876.5	946.3	250.0
LUBE OIL	L	127.7	281.5	141.9	37.5	127.7	281.5	141.9	37.5
METHYL ETHYL KETONE	L	15.1	33.3	18.9	5.0	15.1	33.3	18.9	5.0
METHYL ETHYL KETONE	L	21.2	46.8	26.5	7.0	21.2	46.8	26.5	7.0
PCB SOLID WASTES ⁽⁷⁾	S	2.7	6.0	14.2	.5	2.7	6.0	14.2	.5
PETROLEUM ETHER	L	11.3	25.0	18.9	5.0	11.3	25.0	18.9	5.0
RAGS, SOLVENT/OILY ⁽¹⁾	S	9.1	20.0	56.4	1.3	9.1	20.0	36.8	1.3

TABLE 9 (CONT.) BASELINE WASTE GENERATION BY VAFB HOST BASE ORGANIZATIONS FOR THE YEARS 1981 AND 1990

ORGANIZATION (& BLDG. NOS.)	SOL OR LIQ	QUANTITY PER YEAR, 1981				QUANTITY PER YEAR, 1990			
		MASS		VOLUME		MASS		VOLUME	
		KILOGRAMS	POUNDS	LITERS	GAL OR CF	KILOGRAMS	POUNDS	LITERS	GAL OR CF
<u>394 ICBMINS (6601, Launch Facility)</u> (CONT.)									
SULFURIC ACID	L	32.3	71.3	18.9	5.0	32.3	71.3	18.9	5.0
TOLUENE	L	9.8	21.7	11.4	3.0	9.8	21.7	11.4	3.0
TRICHLOROETHYLENE	L	5.5	12.2	3.8	1.0	5.5	12.2	3.8	1.0
TOTALS FOR 394 ICBMINS (6601, Launch Facility)									
SOLIDS		169.0	372.5	1676.3	59.2	169.0	372.5	1676.3	59.2
LIQUIDS		1738.7	3833.3	1864.1	492.5	1738.7	3833.3	1864.1	492.5
TOTAL		1907.7	4205.8			1907.7	4205.8		
<u>1369 AVS/DOC (8314)</u>									
ACETONE	L	180.7	398.4	227.1	60.0	361.4	796.8	454.2	120.0
CHLOROFORM	L	334.5	737.4	227.1	60.0	669.0	1474.8	454.2	120.0
DEVELOPER, PHOTOGRAPHIC SODIUM THIOCYANATE 0.14%	L	16834.1	37113.0	16843.3	4450.0	33668.2	74226.0	33686.5	8900.0
COLOR DEVELOPER, PHOTOGRAPHIC	L	16361.0	36070.0	16370.1	4325.0	32722.0	72140.0	32740.3	8650.0
SOUND REDEVELOPER ETHYLENEDIAMINE 1.5%	L	3026.4	6672.0	3028.0	800.0	6052.7	13344.0	6056.0	1600.0
ETHYLENEDIAMINE	L	163.3	360.0	181.7	48.0	326.6	720.0	363.4	96.0
SOUND SULFIDING SOLUTION THIOUREA 4%	L	.0	.0	.0	.0	.0	.0	.0	.0
STABILIZER FORMALDEHYDE 2.2%	L	29506.9	65052.0	29523.0	7800.0	59013.9	130104.0	59046.0	15600.0
PREHARDENER PHOTOGRAPHIC FORMALDEHYDE 1.3% METHANOL 0.4%	L	11348.8	25020.0	11355.0	3000.0	22697.6	50040.0	22710.0	6000.0
RECOVERABLE SILVER SALTS	L	.0	.0	.0	.0	.0	.0	.0	.0
TOTALS FOR 1369 AVS/DOC (8314)									
SOLIDS		.0	.0	.0	.0	.0	.0	.0	.0
LIQUIDS		77755.7	171422.8	77755.3	20543.0	155511.3	342845.6	155510.5	41086.0
TOTAL		77755.7	171422.8			155511.3	342845.6		

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TABLE 9 (CONT.) BASELINE WASTE GENERATION BY VAFB HOST BASE ORGANIZATIONS FOR THE YEARS 1981 AND 1990

ORGANIZATION (& BLDG. NOS.)	SOL OR LIQ	QUANTITY PER YEAR, 1981				QUANTITY PER YEAR, 1990			
		MASS		VOLUME		MASS		VOLUME	
		KILOGRAMS	POUNDS	LITERS	GAL OR CF	KILOGRAMS	POUNDS	LITERS	GAL OR CF
<u>USAF HOSPITAL (13850)</u>									
CHLOROFORM	L	5.6	12.3	3.8	1.0	5.6	12.3	3.8	1.0
DEVELOPER, PHOTOGRAPHIC SODIUM THIOCYANATE	L	1134.9	2502.0	1135.5	300.0	1134.9	2502.0	1135.5	300.0
FORMALDEHYDE	L	1.6	3.6	1.5	.4	1.6	3.6	1.5	.4
IGNITABLE WASTES, MISC.	L	3.6	8.0	3.8	1.0	3.6	8.0	3.8	1.0
RECOVERABLE MERCURY	L	1.8	4.0	<.1	<.1	1.8	4.0	.0	.0
REACTIVE WASTES, MISC BENZOYL PEROXIDE	L	.4	.8	.4	.1	.4	.8	.4	.1
RECOVERABLE SILVER	S	.7	1.5	<.1	<.1	.7	1.5	.0	.0
TOTALS FOR USAF HOSPITAL (13850)									
SOLIDS		.7	1.5	.0	.0	.7	1.5	.0	.0
LIQUIDS		1147.9	2530.7	1145.0	302.5	1147.9	2530.7	1145.0	302.5
TOTAL		1148.6	2532.2			1148.6	2532.2		
GRAND TOTAL, HOST VAFB ORGANIZATIONS									
SOLIDS		11138.1	24555.5	23782.6	839.9	12663.6	27918.7	30130.4	1064.1
LIQUIDS		176135.9	388315.3	173400.7	45812.6	260631.3	574596.8	258071.5	68182.7
TOTAL		187274.0	412870.8			273295.0	602515.5		

- (1) Rags are assumed to have a density of 15 lb/ft³ (240 kg/m³).
- (2) Aerosol cans are assumed to have a density of 6 lb/ft³ (96 kg/m³).
- (3) Solid PCB wastes (rags, filters, parts, etc.) from spill cleanup are assumed to have a density of 15 lb/ft³ (240 kg/m³).
- (4) Wet cotton pads are assumed to have a density of 90 lb/ft³ (1,440 kg/m³).
- (5) Each battery is assumed to weigh 50 lb (23 kg).
- (6) Chrome putty cans are assumed to have a density of 7.5 lb/ft³ (120 kg/m³).
- (7) PCB solid wastes (filters, gloves, etc.) from maintenance work are assumed to have a density of 12 lb/ft³ (192 kg/m³).

TABLE 10. BASELINE WASTE GENERATION FOR VAFB HOST BASE ORGANIZATIONS BY WASTE CATEGORY FOR THE YEARS 1981 AND 1990

WASTE CATEGORY ORGANIZATION (AND BUILDING NUMBERS)	SOL OR LIQ	BASELINE QUANTITIES PER YEAR, 1981				BASELINE QUANTITIES PER YEAR, 1990			
		MASS		VOLUME		MASS		VOLUME	
		KILOGRAMS	POUNDS	LITERS	GALLONS OR CF	KILOGRAMS	POUNDS	LITERS	GALLONS OR CF
<u>AB - ACETIC ACID</u>									
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)	L	2.3	5.0	2.3	.6	5.7	12.5	5.7	1.5
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRHSS/LGTM (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL AB FOR VAFB HOST BASE		2.3	5.0	2.3	.6	5.7	12.5	5.7	1.5
<u>AC - ACETONE</u>									
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)	L	72.3	159.4	90.8	24.0	180.8	398.5	227.1	60.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRHSS/LGTM (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		9.0	19.9	11.4	3.0	9.0	19.9	11.4	3.0
1369 AVS/DOC (8314)		180.7	398.4	227.1	60.0	361.4	796.8	454.2	120.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL AC FOR VAFB HOST BASE		262.0	577.7	329.3	87.0	551.2	1215.2	692.7	183.0
<u>AJ - AEROZINE 50</u>									
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)	L	81.2	179.0	90.8	24.0	203.0	447.5	227.1	60.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRHSS/LGTM (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL AJ FOR VAFB HOST BASE		81.2	179.0	90.8	24.0	203.0	447.5	227.1	60.0
<u>AU - AMMONIA</u>									
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)	L	.0	.0	.0	.0	.0	.0	.0	.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.4	.8	.4	.1	.4	.8	.4	.1
4392 TRHSS/LGTM (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL AU FOR VAFB HOST BASE		.4	.8	.4	.1	.4	.8	.4	.1

TABLE 10 (CONT.) BASELINE WASTE GENERATION FOR VAFB HOST BASE ORGANIZATIONS BY WASTE CATEGORY FOR THE YEARS 1981 AND 1990

WASTE CATEGORY ORGANIZATION (AND BUILDING NUMBERS)	SOL OR LIQ	BASELINE QUANTITIES PER YEAR, 1981				BASELINE QUANTITIES PER YEAR, 1990			
		MASS		VOLUME		MASS		VOLUME	
		KILOGRAMS	POUNDS	LITERS	GALLONS OR CF	KILOGRAMS	POUNDS	LITERS	GALLONS OR CF
BG - BATTERY WASTES									
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)	L	.0	.0	.0	.0	.0	.0	.0	.0
LOCKHEED (8310)		3.8	8.3	3.8	1.0	3.8	8.3	3.8	1.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		390.1	860.0	206.8	17.7	390.1	860.0	206.8	17.7
4392 TRHSS/LGTM (7501,10700,10711,10721,10726A&B)		15927.2	35113.7	16208.2	1612.0	15927.2	35113.7	16208.2	1612.0
394 ICBNTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL BG FOR VAFB HOST BASE		16321.1	35982.0	16418.8	1630.7	16321.1	35982.0	16418.8	1630.7
BJ - BENZENE									
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)	L	.4	.9	.4	.1	1.0	2.3	.9	.3
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRHSS/LGTM (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBNTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL BJ FOR VAFB HOST BASE		.4	.9	.4	.1	1.0	2.3	.9	.3
CD - CARBON TETRACHLORIDE									
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)	L	71.9	158.6	45.4	12.0	179.8	396.5	113.6	30.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRHSS/LGTM (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBNTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL CD FOR VAFB HOST BASE		71.9	158.6	45.4	12.0	179.8	396.5	113.6	30.0
CK - CHLOROFORM									
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)	L	13.4	29.5	9.1	2.4	33.5	73.8	22.7	6.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRHSS/LGTM (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBNTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		334.5	737.4	227.1	60.0	669.0	1474.8	454.2	120.0
USAF HOSPITAL (13850)		5.6	12.3	3.8	1.0	5.6	12.3	3.8	1.0
TOTAL CK FOR VAFB HOST BASE		353.4	779.2	240.0	63.4	708.0	1560.9	480.7	127.0

TABLE 10 (CONT.) BASELINE WASTE GENERATION FOR VAFB HOST BASE ORGANIZATIONS BY WASTE CATEGORY FOR THE YEARS 1981 AND 1990

WASTE CATEGORY ORGANIZATION (AND BUILDING NUMBERS)	SOL OR LIQ	BASELINE QUANTITIES PER YEAR, 1981				BASELINE QUANTITIES PER YEAR, 1990			
		MASS		VOLUME		MASS		VOLUME	
		KILOGRAMS	POUNDS	LITERS	GALLONS OR CF	KILOGRAMS	POUNDS	LITERS	GALLONS OR CF
CN - CHROMIUM WASTEWATERS									
	S								
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)		11.4	25.1	11.4	3.0	28.5	62.8	28.4	7.5
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		756.6	1668.0	757.0	200.0	1551.8	3421.1	1552.6	410.2
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRHSS/LGTH (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		567.4	1251.0	567.8	150.0	567.4	1251.0	567.8	150.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL CN FOR VAFB HOST BASE		1335.4	2944.1	1336.1	353.0	2147.7	4734.8	2148.7	567.7
CT - CONTAINERS									
	L								
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)		.0	.0	.0	.0	.0	.0	.0	.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		4.5	10.0	48.1	1.7	4.5	10.0	48.1	1.7
4392 TRHSS/LGTH (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		157.2	346.5	1625.3	57.4	157.2	346.5	1625.3	57.4
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL CT FOR VAFB HOST BASE		161.7	356.5	1673.5	59.1	161.7	356.5	1673.5	59.1
CV - CORROSIVE LIQUIDS, UNSPECIFIED									
	L								
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)		40.9	90.2	40.9	10.8	102.3	225.5	102.2	27.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRHSS/LGTH (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL CV FOR VAFB HOST BASE		40.9	90.2	40.9	10.8	102.3	225.5	102.2	27.0
CW - CYANIDE WASTEWATERS									
	L								
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)		.0	.0	.0	.0	.0	.0	.0	.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		49.0	108.0	49.2	13.0	49.0	108.0	49.2	13.0
4392 TRHSS/LGTH (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL CW FOR VAFB HOST BASE		49.0	108.0	49.2	13.0	49.0	108.0	49.2	13.0

TABLE 10 (CONT.) BASELINE WASTE GENERATION FOR VAFB HOST BASE ORGANIZATIONS BY WASTE CATEGORY FOR THE YEARS 1981 AND 1990

WASTE CATEGORY ORGANIZATION (AND BUILDING NUMBERS)	SOL OR LIQ	BASELINE QUANTITIES PER YEAR, 1981				BASELINE QUANTITIES PER YEAR, 1990			
		MASS		VOLUME		MASS		VOLUME	
		KILOGRAMS	POUNDS	LITERS	GALLONS OR CF	KILOGRAMS	POUNDS	LITERS	GALLONS OR CF
DI - DEVELOPER, PHOTOGRAPHIC									
	L								
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)		22.7	50.1	22.7	6.0	56.8	125.3	56.8	15.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRHSS/LGTH (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		36221.4	79855.0	36241.4	9575.0	72442.9	159710.0	72482.8	19150.0
USAF HOSPITAL (13850)		1134.9	2502.0	1135.5	300.0	1134.9	2502.0	1135.5	300.0
TOTAL DI FOR VAFB HOST BASE		37379.0	82407.1	37399.6	9881.0	73634.5	162337.3	73675.0	19465.0
DH - DICHLOROMETHANE									
	L								
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)		.0	.0	.0	.0	.0	.0	.0	.0
LOCKHEED (8310)		592.7	1306.7	416.3	110.0	592.7	1306.7	416.3	110.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRHSS/LGTH (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL DH FOR VAFB HOST BASE		592.7	1306.7	416.3	110.0	592.7	1306.7	416.3	110.0
DV - DRY CLEANING SOLVENT									
	L								
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)		.0	.0	.0	.0	.0	.0	.0	.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRHSS/LGTH (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		85.0	187.5	94.6	25.0	85.0	187.5	94.6	25.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL DV FOR VAFB HOST BASE		85.0	187.5	94.6	25.0	85.0	187.5	94.6	25.0
DY - DYNA-BRITE WASTES									
	L								
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)		.0	.0	.0	.0	.0	.0	.0	.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		756.6	1668.0	757.0	200.0	1551.8	3421.1	1552.6	410.2
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRHSS/LGTH (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL DY FOR VAFB HOST BASE		756.6	1668.0	757.0	200.0	1551.8	3421.1	1552.6	410.2

TABLE 10 (CONT.) BASELINE WASTE GENERATION FOR VAFB HOST BASE ORGANIZATIONS BY WASTE CATEGORY FOR THE YEARS 1981 AND 1990

WASTE CATEGORY ORGANIZATION (AND BUILDING NUMBERS)	SOL OR LIQ	BASELINE QUANTITIES PER YEAR, 1981				BASELINE QUANTITIES PER YEAR, 1990			
		MASS		VOLUME		MASS		VOLUME	
		KILOGRAMS	POUNDS	LITERS	GALLONS OR CF	KILOGRAMS	POUNDS	LITERS	GALLONS OR CF
<u>EH - ETHANOL</u>									
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)	L	3.7	8.2	4.5	1.2	9.3	20.5	11.4	3.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTH (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL EH FOR VAFB HOST BASE		3.7	8.2	4.5	1.2	9.3	20.5	11.4	3.0
<u>EO - ETHYLENEDIAMINE</u>									
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)	L	.0	.0	.0	.0	.0	.0	.0	.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTH (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		163.3	360.0	181.7	48.0	326.6	720.0	363.4	96.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL EO FOR VAFB HOST BASE		163.3	360.0	181.7	48.0	326.6	720.0	363.4	96.0
<u>FJ - FORMALDEHYDE</u>									
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)	L	.0	.0	.0	.0	.0	.0	.0	.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTH (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		1.6	3.6	1.5	.4	1.6	3.6	1.5	.4
TOTAL FJ FOR VAFB HOST BASE		1.6	3.6	1.5	.4	1.6	3.6	1.5	.4
<u>FR - FREON SOLVENTS</u>									
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)	L	259.0	568.8	181.7	48.0	645.0	1422.0	454.2	120.0
LOCKHEED (8310)		1181.6	2605.0	832.7	220.0	1181.6	2605.0	832.7	220.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTH (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL FR FOR VAFB HOST BASE		1439.6	3173.8	1014.4	268.0	1826.6	4027.0	1286.9	340.0

TABLE 10 (CONT.) BASELINE WASTE GENERATION FOR VAFB HOST BASE ORGANIZATIONS BY WASTE CATEGORY FOR THE YEARS 1981 AND 1990

WASTE CATEGORY ORGANIZATION (AND BUILDING NUMBERS)	SOL OR LIQ	BASELINE QUANTITIES PER YEAR, 1981				BASELINE QUANTITIES PER YEAR, 1990			
		MASS		VOLUME		MASS		VOLUME	
		KILOGRAMS	POUNDS	LITERS	GALLONS OR CF	KILOGRAMS	POUNDS	LITERS	GALLONS OR CF
<u>FW - FUEL, AVIATION</u>									
	L								
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)		338.9	747.1	476.9	126.0	847.2	1867.8	1192.3	315.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTH (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBHTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL FW FOR VAFB HOST BASE		338.9	747.1	476.9	126.0	847.2	1867.8	1192.3	315.0
<u>FX - FUEL, DIESEL</u>									
	L								
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)		20.7	45.7	22.7	6.0	51.8	114.3	56.8	15.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTH (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBHTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL FX FOR VAFB HOST BASE		20.7	45.7	22.7	6.0	51.8	114.3	56.8	15.0
<u>GC - GASOLINE</u>									
	L								
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)		6.7	14.8	9.1	2.4	16.8	37.0	22.7	6.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTH (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBHTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL GC FOR VAFB HOST BASE		6.7	14.8	9.1	2.4	16.8	37.0	22.7	6.0
<u>HM - HYDRAZINE</u>									
	L								
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)		182.3	402.0	181.7	48.0	455.9	1005.0	454.2	120.0
LOCKHEED (8310)		3.8	8.4	3.8	1.0	3.8	8.4	3.8	1.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTH (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBHTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL HM FOR VAFB HOST BASE		186.2	410.4	185.5	49.0	459.7	1013.4	458.0	121.0

TABLE 10 (CONT.) BASELINE WASTE GENERATION FOR VAFB HOST BASE ORGANIZATIONS BY WASTE CATEGORY FOR THE YEARS 1981 AND 1990

WASTE CATEGORY ORGANIZATION (AND BUILDING NUMBERS)	SOL OR LIQ	BASELINE QUANTITIES PER YEAR, 1981				BASELINE QUANTITIES PER YEAR, 1990			
		MASS		VOLUME		MASS		VOLUME	
		KILOGRAMS	POUNDS	LITERS	GALLONS OR CF	KILOGRAMS	POUNDS	LITERS	GALLONS OR CF
HQ - HYDRAZINE/WATER WASTES									
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)	L	.0	.0	.0	.0	.0	.0	.0	.0
LOCKHEED (8310)		7275.5	16039.8	8300.5	2193.0	7275.5	16039.8	8300.5	2193.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTM (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL HQ FOR VAFB HOST BASE		7275.5	16039.8	8300.5	2193.0	7275.5	16039.8	8300.5	2193.0
HW - HYDROCHLORIC ACID									
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)	L	25.0	55.1	25.0	6.6	62.5	137.8	62.5	16.5
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTM (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL HW FOR VAFB HOST BASE		25.0	55.1	25.0	6.6	62.5	137.8	62.5	16.5
HX - HYDROFLUORIC ACID									
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)	L	.0	.0	.0	.0	.0	.0	.0	.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		756.6	1668.0	757.0	200.0	1551.8	3421.1	1552.6	410.2
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTM (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL HX FOR VAFB HOST BASE		756.6	1668.0	757.0	200.0	1551.8	3421.1	1552.6	410.2
ID - IGHITABLE WASTES, UNSPECIFIED									
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)	L	.0	.0	.0	.0	.0	.0	.0	.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTM (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		3.6	8.0	3.8	1.0	3.6	8.0	3.8	1.0
TOTAL ID FOR VAFB HOST BASE		3.6	8.0	3.8	1.0	3.6	8.0	3.8	1.0

TABLE 10 (CONT.) BASELINE WASTE GENERATION FOR VAFB HOST BASE ORGANIZATIONS BY WASTE CATEGORY FOR THE YEARS 1981 AND 1990

WASTE CATEGORY ORGANIZATION (AND BUILDING NUMBERS)	SOL OR LIQ	BASELINE QUANTITIES PER YEAR, 1981				BASELINE QUANTITIES PER YEAR, 1990			
		MASS		VOLUME		MASS		VOLUME	
		KILOGRAMS	POUNDS	LITERS	GALLONS OR CF	KILOGRAMS	POUNDS	LITERS	GALLONS OR CF
IV - ISOPROPAHOL									
FUELS LAB & DET 41 AFCL/MA (7422,9320,11248)	L	60.7	133.8	77.2	20.4	151.7	334.5	193.0	51.0
LOCKHEED (8310)		654.4	1442.7	832.7	220.0	654.4	1442.7	832.7	220.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTH (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBNTMS (6601,Launch Facility)		3.0	6.6	3.8	1.0	3.0	6.6	3.8	1.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL IV FOR VAFB HOST BASE		718.1	1593.1	913.7	241.4	809.1	1783.8	1029.5	272.0
LT - LUBE OILS									
FUELS LAB & DET 41 AFCL/MA (7422,9320,11248)	L	124.3	274.1	136.3	36.0	310.8	685.3	340.7	90.0
LOCKHEED (8310)		375.3	827.5	416.3	110.0	375.3	827.5	416.3	110.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTH (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBNTMS (6601,Launch Facility)		978.8	2158.0	1088.2	287.5	978.8	2158.0	1088.2	287.5
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL LT FOR VAFB HOST BASE		1478.5	3259.6	1640.8	433.5	1665.0	3670.8	1845.2	487.5
MF - MERCURY									
FUELS LAB & DET 41 AFCL/MA (7422,9320,11248)	L	.0	.0	.0	.0	.0	.0	.0	.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTH (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBNTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		1.8	4.0	.1	<.1	1.8	4.0	.1	<.1
TOTAL MF FOR VAFB HOST BASE		1.8	4.0	.1	<.1	1.8	4.0	.1	<.1
MN - METHANOL									
FUELS LAB & DET 41 AFCL/MA (7422,9320,11248)	L	35.8	79.0	45.4	12.0	89.6	197.5	113.6	30.0
LOCKHEED (8310)		328.8	724.9	416.3	110.0	328.8	724.9	416.3	110.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTH (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBNTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL MN FOR VAFB HOST BASE		364.6	803.9	461.8	122.0	418.4	922.4	529.9	140.0

TABLE 10 (CONT.) BASELINE WASTE GENERATION FOR VAFB HOST BASE ORGANIZATIONS BY WASTE CATEGORY FOR THE YEARS 1981 AND 1990

WASTE CATEGORY ORGANIZATION (AND BUILDING NUMBERS)	SOL OR LIQ	BASELINE QUANTITIES PER YEAR, 1981				BASELINE QUANTITIES PER YEAR, 1990			
		MASS		VOLUME		MASS		VOLUME	
		KILOGRAMS	POUNDS	LITERS	GALLONS OR CF	KILOGRAMS	POUNDS	LITERS	GALLONS OR CF
MQ - METHYLENE CHLORIDE									
	L								
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)		30.1	66.4	22.7	6.0	75.3	166.0	56.8	15.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTM (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL MQ FOR VAFB HOST BASE		30.1	66.4	22.7	6.0	75.3	166.0	56.8	15.0
MS - METHYL ETHYL KETONE (MEK)									
	L								
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)		.0	.0	.0	.0	.0	.0	.0	.0
LOCKHEED (8310)		669.6	1476.2	832.7	220.0	669.6	1476.2	832.7	220.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		45.4	100.0	56.8	15.0	45.4	100.0	56.8	15.0
4392 TRNSS/LGTM (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		36.3	80.1	45.4	12.0	36.3	80.1	45.4	12.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL MS FOR VAFB HOST BASE		751.3	1656.3	934.9	247.0	751.3	1656.3	934.9	247.0
MU - METHYL ISOBUTYL KETONE (MIBK)									
	L								
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)		7.3	16.0	9.1	2.4	18.1	40.0	22.7	6.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTM (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL MU FOR VAFB HOST BASE		7.3	16.0	9.1	2.4	18.1	40.0	22.7	6.0
MX - MONOMETHYL HYDRAZINE									
	L								
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)		4.0	8.8	4.5	1.2	10.0	22.0	11.4	3.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTM (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL MX FOR VAFB HOST BASE		4.0	8.8	4.5	1.2	10.0	22.0	11.4	3.0

TABLE 10 (CONT.) BASELINE WASTE GENERATION FOR VAFB HOST BASE ORGANIZATIONS BY WASTE CATEGORY FOR THE YEARS 1981 AND 1990

WASTE CATEGORY ORGANIZATION (AND BUILDING NUMBERS)	SOL OR LIQ	BASELINE QUANTITIES PER YEAR, 1981				BASELINE QUANTITIES PER YEAR, 1990			
		MASS		VOLUME		MASS		VOLUME	
		KILOGRAMS	POUNDS	LITERS	GALLONS OR CF	KILOGRAMS	POUNDS	LITERS	GALLONS OR CF
NE - NITRIC ACID									
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)	L	45.4	100.2	90.8	24.0	113.6	250.5	227.1	60.0
LOCKHEED (8310)		7604.4	16765.0	7577.6	2002.0	7604.4	16765.0	7577.6	2002.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTH (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL NE FOR VAFB HOST BASE		7649.9	16865.2	7668.4	2026.0	7718.1	17015.5	7804.7	2062.0
NK - NITROGEN TETROXIDE									
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)	L	131.7	290.3	90.8	24.0	329.2	725.8	227.1	60.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTH (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL NK FOR VAFB HOST BASE		131.7	290.3	90.8	24.0	329.2	725.8	227.1	60.0
OD - OIL/WATER WASTES									
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)	L	.0	.0	.0	.0	.0	.0	.0	.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTH (7501,10700,10711,10721,10726A&B)		22709.9	50067.0	22710.0	6000.0	22709.9	50067.0	22710.0	6000.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL OD FOR VAFB HOST BASE		22709.9	50067.0	22710.0	6000.0	22709.9	50067.0	22710.0	6000.0
OG - OILS, USED									
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)	L	.0	.0	.0	.0	.0	.0	.0	.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		442.6	975.8	492.0	130.0	907.8	2001.4	1009.2	266.6
BOEING (6523)		664.6	1465.1	738.1	195.0	664.6	1465.1	738.1	195.0
4392 TRNSS/LGTH (7501,10700,10711,10721,10726A&B)		26615.3	58676.9	29523.0	7800.0	26615.3	58676.9	29523.0	7800.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL OG FOR VAFB HOST BASE		27722.4	61117.8	30753.1	8125.0	28187.6	62143.4	31270.3	8261.6

TABLE 10 (CONT.) BASELINE WASTE GENERATION FOR VAFB HOST BASE ORGANIZATIONS BY WASTE CATEGORY FOR THE YEARS 1981 AND 1990

WASTE CATEGORY ORGANIZATION (AND BUILDING NUMBERS)	SOL OR LIQ	BASELINE QUANTITIES PER YEAR, 1981				BASELINE QUANTITIES PER YEAR, 1990			
		MASS		VOLUME		MASS		VOLUME	
		KILOGRAMS	POUNDS	LITERS	GALLONS OR CF	KILOGRAMS	POUNDS	LITERS	GALLONS OR CF
PE - PAINT THINNERS									
S									
FUELS LAB & DET 41 AFLC/NA (7422,9320,11248)		.0	.0	.0	.0	.0	.0	.0	.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		374.5	825.7	416.3	110.0	768.2	1693.5	853.9	225.6
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTM (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL PE FOR VAFB HOST BASE		374.5	825.7	416.3	110.0	768.2	1693.5	853.9	225.6
PH - PCB SOLID WASTES									
L									
FUELS LAB & DET 41 AFLC/NA (7422,9320,11248)		.0	.0	.0	.0	.0	.0	.0	.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTM (7501,10700,10711,10721,10726A&B)		100.0	220.5	416.2	14.7	100.0	220.5	416.2	14.7
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		2.7	6.0	14.2	.5	2.7	6.0	14.2	.5
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL PH FOR VAFB HOST BASE		102.7	226.5	430.4	15.2	102.7	226.5	430.4	15.2
PP - PETROLEUM ETHER									
L									
FUELS LAB & DET 41 AFLC/NA (7422,9320,11248)		54.5	120.2	90.8	24.0	136.3	300.5	227.1	60.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTM (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		11.3	25.0	18.9	5.0	11.3	25.0	18.9	5.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL PP FOR VAFB HOST BASE		65.9	145.2	109.8	29.0	147.6	325.5	246.0	65.0
PR - PHOTOGRAPHIC CHEMICALS, MISC.									
L									
FUELS LAB & DET 41 AFLC/NA (7422,9320,11248)		.0	.0	.0	.0	.0	.0	.0	.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTM (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		29506.9	65052.0	29523.0	7800.0	59013.9	130104.0	59046.0	15600.0
TOTAL PR FOR VAFB HOST BASE		.0	.0	.0	.0	.0	.0	.0	.0

TABLE 10 (CONT.) BASELINE WASTE GENERATION FOR VAFB HOST BASE ORGANIZATIONS BY WASTE CATEGORY FOR THE YEARS 1981 AND 1990

WASTE CATEGORY ORGANIZATION (AND BUILDING NUMBERS)	SOL OR LIQ	BASELINE QUANTITIES PER YEAR, 1981				BASELINE QUANTITIES PER YEAR, 1990			
		MASS		VOLUME		MASS		VOLUME	
		KILOGRAMS	POUNDS	LITERS	GALLONS OR CF	KILOGRAMS	POUNDS	LITERS	GALLONS OR CF
<u>PU - PREHARDENER, PHOTOGRAPHIC</u>									
	S								
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)		.0	.0	.0	.0	.0	.0	.0	.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNRS/LGTM (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		11348.8	25020.0	11355.0	3000.0	22697.6	50040.0	22710.0	6000.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL PU FOR VAFB HOST BASE		11348.8	25020.0	11355.0	3000.0	22697.6	50040.0	22710.0	6000.0
<u>RE - RAGS, SOLVENT/OILY</u>									
	L								
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)		.0	.0	.0	.0	.0	.0	.0	.0
LOCKHEED (8310)		870.9	1920.0	3624.4	128.0	870.9	1920.0	3624.4	128.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		1451.5	3200.0	6039.8	213.3	2977.0	6563.2	12387.6	437.5
BOEING (6523)		40.8	90.0	28.3	1.0	40.8	90.0	28.3	1.0
4392 TRNRS/LGTM (7501,10700,10711,10721,10726A&B)		29.5	65.0	121.8	4.3	29.5	65.0	121.8	4.3
394 ICBMTMS (6601,Launch Facility)		9.1	20.0	36.8	1.3	9.1	20.0	36.8	1.3
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL RE FOR VAFB HOST BASE		2401.8	5295.0	9851.1	347.9	3927.3	8658.2	16199.0	572.1
<u>RI - REACTIVE WASTES, UNSPECIFIED</u>									
	L								
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)		19.8	43.6	13.6	3.6	49.4	109.0	34.1	9.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNRS/LGTM (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.4	.8	.4	.1	.4	.8	.4	.1
TOTAL RI FOR VAFB HOST BASE		20.1	44.4	14.0	3.7	49.8	109.8	34.4	9.1
<u>RS - RP-1</u>									
	L								
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)		186.4	411.0	227.1	60.0	466.1	1027.5	567.8	150.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNRS/LGTM (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTMS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL RS FOR VAFB HOST BASE		186.4	411.0	227.1	60.0	466.1	1027.5	567.8	150.0

TABLE 10 (CONT.) BASELINE WASTE GENERATION FOR VAFB HOST BASE ORGANIZATIONS BY WASTE CATEGORY FOR THE YEARS 1981 AND 1990

WASTE CATEGORY ORGANIZATION (AND BUILDING NUMBERS)	SOL OR LIQ	BASELINE QUANTITIES PER YEAR, 1981				BASELINE QUANTITIES PER YEAR, 1990			
		MASS		VOLUME		MASS		VOLUME	
		KILOGRAMS	POUNDS	LITERS	GALLONS OR CF	KILOGRAMS	POUNDS	LITERS	GALLONS OR CF
<u>SG - SILVER SALTS</u>									
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)	L	.0	.0	.0	.0	.0	.0	.0	.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTM (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTHS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.7	1.5	.1	<.1	.7	1.5	.1	<.1
TOTAL SG FOR VAFB HOST BASE		.7	1.5	.1	<.1	.7	1.5	.1	<.1
<u>SL - SODIUM HYDROXIDE WASTEWATERS</u>									
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)	L	36.3	80.1	36.3	9.6	90.8	200.3	90.8	24.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTM (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTHS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL SL FOR VAFB HOST BASE		36.3	80.1	36.3	9.6	90.8	200.3	90.8	24.0
<u>SU - SOLVENTS, MIXED OR UNSPEC.</u>									
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)	L	.0	.0	.0	.0	.0	.0	.0	.0
LOCKHEED (8310)		208.7	460.0	208.2	55.0	208.7	460.0	208.2	55.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		19.4	42.7	22.7	6.0	19.4	42.7	22.7	6.0
4392 TRNSS/LGTM (7501,10700,10711,10721,10726A&B)		12925.6	28496.3	9333.8	2466.0	12925.6	28496.3	9333.8	2466.0
394 ICBMTHS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL SU FOR VAFB HOST BASE		13153.7	28999.0	9564.7	2527.0	13153.7	28999.0	9564.7	2527.0
<u>SZ - SULFURIC ACID</u>									
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)	L	83.6	184.2	45.4	12.0	208.9	460.5	113.6	30.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTM (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTHS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		32.3	71.3	18.9	5.0	32.3	71.3	18.9	5.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL SZ FOR VAFB HOST BASE		115.9	255.5	64.3	17.0	241.2	531.8	132.5	35.0

TABLE 10 (CONT.) BASELINE WASTE GENERATION FOR VAFB HOST BASE ORGANIZATIONS BY WASTE CATEGORY FOR THE YEARS 1981 AND 1990

WASTE CATEGORY ORGANIZATION (AND BUILDING NUMBERS)	SOL OR LIQ	BASELINE QUANTITIES PER YEAR, 1981				BASELINE QUANTITIES PER YEAR, 1990			
		MASS		VOLUME		MASS		VOLUME	
		KILOGRAMS	POUNDS	LITERS	GALLONS OR CF	KILOGRAMS	POUNDS	LITERS	GALLONS OR CF
TJ - TOLUENE									
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)	L	.0	.0	.0	.0	.0	.0	.0	.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTM (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTHS (6601,Launch Facility)		9.8	21.7	11.4	3.0	9.8	21.7	11.4	3.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL TJ FOR VAFB HOST BASE		9.8	21.7	11.4	3.0	9.8	21.7	11.4	3.0
TN - TRICHLOROETHANE									
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)	L	150.5	331.7	113.6	30.0	376.1	829.3	283.9	75.0
LOCKHEED (8310)		299.4	660.0	208.2	55.0	299.4	660.0	208.2	55.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTM (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTHS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL TN FOR VAFB HOST BASE		449.8	991.7	321.7	85.0	675.5	1489.3	492.0	130.0
TP - TRICHLOROETHYLENE									
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)	L	172.4	380.1	118.1	31.2	431.0	950.3	295.2	78.0
LOCKHEED (8310)		.0	.0	.0	.0	.0	.0	.0	.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTM (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTHS (6601,Launch Facility)		5.5	12.2	3.8	1.0	5.5	12.2	3.8	1.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL TP FOR VAFB HOST BASE		177.9	392.3	121.9	32.2	436.6	962.4	299.0	79.0
UD - UDMH (UNSYM DIMETHYLHYDRAZINE)									
FUELS LAB & DET 41 AFLC/MA (7422,9320,11248)	L	35.6	78.4	45.4	12.0	88.9	196.0	113.6	30.0
LOCKHEED (8310)		2.9	6.5	3.8	1.0	2.9	6.5	3.8	1.0
FEDERAL ELECTRIC CORPORATION - ITT (9320)		.0	.0	.0	.0	.0	.0	.0	.0
BOEING (6523)		.0	.0	.0	.0	.0	.0	.0	.0
4392 TRNSS/LGTM (7501,10700,10711,10721,10726A&B)		.0	.0	.0	.0	.0	.0	.0	.0
394 ICBMTHS (6601,Launch Facility)		.0	.0	.0	.0	.0	.0	.0	.0
1369 AVS/DOC (8314)		.0	.0	.0	.0	.0	.0	.0	.0
USAF HOSPITAL (13850)		.0	.0	.0	.0	.0	.0	.0	.0
TOTAL UD FOR VAFB HOST BASE		38.5	84.9	49.2	13.0	91.9	202.5	117.3	31.0

TABLE 11. SUMMARY OF BASELINE WASTE GENERATION FOR VAFB HOST BASE BY ORGANIZATION FOR THE YEARS 1981 - 1990

ORGANIZATION (& BLDG. NUMBERS)	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
WASTE CATEGORY	POUNDS									
<u>FUELS LAB & DET 41 AFLC/MA (7422, 9320, 11248)</u>										
AB - ACETIC ACID	5.0	5.0	5.0	5.0	12.5	12.5	12.5	12.5	12.5	12.5
AC - ACETONE	159.4	159.4	159.4	159.4	398.5	398.5	398.5	398.5	398.5	398.5
AJ - AEROZINE 50	179.0	179.0	179.0	179.0	447.5	447.5	447.5	447.5	447.5	447.5
BJ - BENZENE	.9	.9	.9	.9	2.3	2.3	2.3	2.3	2.3	2.3
CD - CARBON TETRACHLORIDE	158.6	158.6	158.6	158.6	396.5	396.5	396.5	396.5	396.5	396.5
CK - CHLOROFORM	29.5	29.5	29.5	29.5	73.8	73.8	73.8	73.8	73.8	73.8
CH - CHROMIUM WASTEWATERS	25.1	25.1	25.1	25.1	62.8	62.8	62.8	62.8	62.8	62.8
CV - CORROSIVE LIQUIDS, UNSPECIFIED	90.2	90.2	90.2	90.2	225.5	225.5	225.5	225.5	225.5	225.5
DI - DEVELOPER, PHOTOGRAPHIC	50.1	50.1	50.1	50.1	125.3	125.3	125.3	125.3	125.3	125.3
EH - ETHANOL	8.2	8.2	8.2	8.2	20.5	20.5	20.5	20.5	20.5	20.5
FR - FREON SOLVENTS	568.8	568.8	568.8	568.8	1422.0	1422.0	1422.0	1422.0	1422.0	1422.0
FW - FUEL, AVIATION	747.1	747.1	747.1	747.1	1867.8	1867.8	1867.8	1867.8	1867.8	1867.8
FX - FUEL, DIESEL	45.7	45.7	45.7	45.7	114.3	114.3	114.3	114.3	114.3	114.3
GC - GASOLINE	14.8	14.8	14.8	14.8	37.0	37.0	37.0	37.0	37.0	37.0
HM - HYDRAZINE	402.0	402.0	402.0	402.0	1005.0	1005.0	1005.0	1005.0	1005.0	1005.0
HW - HYDROCHLORIC ACID	55.1	55.1	55.1	55.1	137.8	137.8	137.8	137.8	137.8	137.8
IV - ISOPROPANOL	133.8	133.8	133.8	133.8	334.5	334.5	334.5	334.5	334.5	334.5
LT - LUBE OILS	274.1	274.1	274.1	274.1	685.3	685.3	685.3	685.3	685.3	685.3
MH - METHANOL	79.0	79.0	79.0	79.0	197.5	197.5	197.5	197.5	197.5	197.5
HQ - METHYLENE CHLORIDE	66.4	66.4	66.4	66.4	166.0	166.0	166.0	166.0	166.0	166.0
HU - METHYL ISOBUTYL KETONE (MIBK)	16.0	16.0	16.0	16.0	40.0	40.0	40.0	40.0	40.0	40.0
HX - MONOMETHYL HYDRAZINE	8.8	8.8	8.8	8.8	22.0	22.0	22.0	22.0	22.0	22.0
HE - NITRIC ACID	100.2	100.2	100.2	100.2	250.5	250.5	250.5	250.5	250.5	250.5
HK - NITROGEN TETROXIDE	290.3	290.3	290.3	290.3	725.8	725.8	725.8	725.8	725.8	725.8

TABLE 11 (CONT.) SUMMARY OF BASELINE WASTE GENERATION FOR VAFB HOST BASE BY ORGANIZATION FOR THE YEARS 1981 - 1990

ORGANIZATION (& BLDG. NUMBERS)

<u>WASTE CATEGORY</u>	<u>1981 POUNDS</u>	<u>1982 POUNDS</u>	<u>1983 POUNDS</u>	<u>1984 POUNDS</u>	<u>1985 POUNDS</u>	<u>1986 POUNDS</u>	<u>1987 POUNDS</u>	<u>1988 POUNDS</u>	<u>1989 POUNDS</u>	<u>1990 POUNDS</u>
<u>FUELS LAB & DET 41 AFLC/MQ (7422, 9320, 11248)</u>										
(CONT.)										
PP - PETROLEUM ETHER	120.2	120.2	120.2	120.2	300.5	300.5	300.5	300.5	300.5	300.5
RI - REACTIVE WASTES, UNSPECIFIED	43.6	43.6	43.6	43.6	109.0	109.0	109.0	109.0	109.0	109.0
RS - RP-1	411.0	411.0	411.0	411.0	1027.5	1027.5	1027.5	1027.5	1027.5	1027.5
SL - SODIUM HYDROXIDE WASTEWATERS	80.1	80.1	80.1	80.1	200.3	200.3	200.3	200.3	200.3	200.3
SZ - SULFURIC ACID	184.2	184.2	184.2	184.2	460.5	460.5	460.5	460.5	460.5	460.5
TH - TRICHLOROETHANE	331.7	331.7	331.7	331.7	829.3	829.3	829.3	829.3	829.3	829.3
TP - TRICHLOROETHYLENE	380.1	380.1	380.1	380.1	950.3	950.3	950.3	950.3	950.3	950.3
UD - UDMH (UNSYN DIMETHYLHYDRAZINE)	78.4	78.4	78.4	78.4	196.0	196.0	196.0	196.0	196.0	196.0
<u>LOCKHEED (8310)</u>										
BG - BATTERY WASTES	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
DH - DICHLOROMETHANE	1306.7	1306.7	1306.7	1306.7	1306.7	1306.7	1306.7	1306.7	1306.7	1306.7
FR - FREON SOLVENTS	2605.0	2605.0	2605.0	2605.0	2605.0	2605.0	2605.0	2605.0	2605.0	2605.0
HM - HYDRAZINE	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
HQ - HYDRAZINE/WATER WASTES	16039.8	16039.8	16039.8	16039.8	16039.8	16039.8	16039.8	16039.8	16039.8	16039.8
IV - ISOPROPANOL	1442.7	1442.7	1442.7	1442.7	1442.7	1442.7	1442.7	1442.7	1442.7	1442.7
LT - LUBE OILS	827.5	827.5	827.5	827.5	827.5	827.5	827.5	827.5	827.5	827.5
MN - METHANOL	724.9	724.9	724.9	724.9	724.9	724.9	724.9	724.9	724.9	724.9
MS - METHYL ETHYL KETONE (MEK)	1476.2	1476.2	1476.2	1476.2	1476.2	1476.2	1476.2	1476.2	1476.2	1476.2
NE - NITRIC ACID	16765.0	16765.0	16765.0	16765.0	16765.0	16765.0	16765.0	16765.0	16765.0	16765.0
RE - RAGS, SOLVENT/OILY	1920.0	1920.0	1920.0	1920.0	1920.0	1920.0	1920.0	1920.0	1920.0	1920.0
SU - SOLVENTS, MIXED OR UNSPEC.	460.0	460.0	460.0	460.0	460.0	460.0	460.0	460.0	460.0	460.0
TH - TRICHLOROETHANE	660.0	660.0	660.0	660.0	660.0	660.0	660.0	660.0	660.0	660.0
UD - UDMH (UNSYN DIMETHYLHYDRAZINE)	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5

TABLE 11 (CONT.) SUMMARY OF BASELINE WASTE GENERATION FOR VAFB HOST BASE BY ORGANIZATION FOR THE YEARS 1981 - 1990

ORGANIZATION (& BLDG. NUMBERS)

<u>WASTE CATEGORY</u>	<u>1981 POUNDS</u>	<u>1982 POUNDS</u>	<u>1983 POUNDS</u>	<u>1984 POUNDS</u>	<u>1985 POUNDS</u>	<u>1986 POUNDS</u>	<u>1987 POUNDS</u>	<u>1988 POUNDS</u>	<u>1989 POUNDS</u>	<u>1990 POUNDS</u>
<u>FEDERAL ELECTRIC CORPORATION - ITT (9320)</u>										
CN - CHROMIUM WASTEWATERS	1668.0	1751.4	1839.8	1931.5	2123.4	2336.9	2570.4	2827.3	3109.2	3421.1
DY - DYHA-BRITE WASTES	1668.0	1751.4	1839.8	1931.5	2123.4	2336.9	2570.4	2827.3	3109.2	3421.1
HX - HYDROFLUORIC ACID	1668.0	1751.4	1839.8	1931.5	2123.4	2336.9	2570.4	2827.3	3109.2	3421.1
OG - OILS, USED	975.8	1024.6	1076.3	1130.0	1242.2	1367.1	1503.7	1654.0	1818.9	2001.4
PE - PAINT THINNERS	825.7	867.0	910.7	956.2	1051.1	1156.8	1272.4	1399.6	1539.1	1693.5
RE - RAGS, SOLVENT/OILY	3200.0	3360.0	3529.6	3705.6	4073.6	4483.2	4931.2	5424.0	5964.8	6563.2
<u>BOEING (6523)</u>										
AU - AMMONIA	.8	.8	.8	.8	.8	.8	.8	.8	.8	.8
BG - BATTERY WASTES	860.0	860.0	860.0	860.0	860.0	860.0	860.0	860.0	860.0	860.0
CT - CONTAINERS	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
CW - CYANIDE WASTEWATERS	108.0	108.0	108.0	108.0	108.0	108.0	108.0	108.0	108.0	108.0
MS - METHYL ETHYL KETONE (MEK)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
OG - OILS, USED	1465.1	1465.1	1465.1	1465.1	1465.1	1465.1	1465.1	1465.1	1465.1	1465.1
PM - PCB SOLID WASTES	220.5	220.5	220.5	220.5	220.5	220.5	220.5	220.5	220.5	220.5
RE - RAGS, SOLVENT/OILY	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
SU - SOLVENTS, MIXED OR UNSPEC.	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7
<u>4392 TRNBS/LGTM (7501,10700,10711,10721,10726A&B)</u>										
BG - BATTERY WASTES	35113.7	35113.7	35113.7	35113.7	35113.7	35113.7	35113.7	35113.7	35113.7	35113.7
OD - OIL/WATER WASTES	50067.0	50067.0	50067.0	50067.0	50067.0	50067.0	50067.0	50067.0	50067.0	50067.0
OG - OILS, USED	58676.9	58676.9	58676.9	58676.9	58676.9	58676.9	58676.9	58676.9	58676.9	58676.9
RE - RAGS, SOLVENT/OILY	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0	65.0
SU - SOLVENTS, MIXED OR UNSPEC.	28496.3	28496.3	28496.3	28496.3	28496.3	28496.3	28496.3	28496.3	28496.3	28496.3

TABLE 11 (CONT.) SUMMARY OF BASELINE WASTE GENERATION FOR VAFB HOST BASE BY ORGANIZATION FOR THE YEARS 1981 - 1990

ORGANIZATION (& BLDG. NUMBERS)

WASTE CATEGORY	1981 POUNDS	1982 POUNDS	1983 POUNDS	1984 POUNDS	1985 POUNDS	1986 POUNDS	1987 POUNDS	1988 POUNDS	1989 POUNDS	1990 POUNDS
<u>394 ICBHTMS (6601, Launch Facility)</u>										
AC - ACETONE	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9
CH - CHROMIUM WASTEWATERS	1251.0	1251.0	1251.0	1251.0	1251.0	1251.0	1251.0	1251.0	1251.0	1251.0
CT - CONTAINERS	346.5	346.5	346.5	346.5	346.5	346.5	346.5	346.5	346.5	346.5
DV - DRY CLEANING SOLVENT	187.5	187.5	187.5	187.5	187.5	187.5	187.5	187.5	187.5	187.5
IV - ISOPROPNOL	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
LT - LUBE OILS	2158.0	2158.0	2158.0	2158.0	2158.0	2158.0	2158.0	2158.0	2158.0	2158.0
MS - METHYL ETHYL KETONE (MEK)	80.1	80.1	80.1	80.1	80.1	80.1	80.1	80.1	80.1	80.1
PN - PCB SOLID WASTES	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
PP - PETROLEUM ETHER	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
RE - RAGS, SOLVENT/OILY	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
SZ - SULFURIC ACID	71.3	71.3	71.3	71.3	71.3	71.3	71.3	71.3	71.3	71.3
TJ - TOLUENE	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7
TP - TRICHLOROETHYLENE	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2
<u>1369 AVS/DOC (8314)</u>										
AC - ACETONE	398.4	398.4	398.4	398.4	796.8	796.8	796.8	796.8	796.8	796.8
CK - CHLOROFORM	737.4	737.4	737.4	737.4	1474.8	1474.8	1474.8	1474.8	1474.8	1474.8
DI - DEVELOPER, PHOTOGRAPHIC	79855.0	79855.0	79855.0	79855.0	159710.0	159710.0	159710.0	159710.0	159710.0	159710.0
EO - ETHYLENEDIAMINE	360.0	360.0	360.0	360.0	720.0	720.0	720.0	720.0	720.0	720.0
PR - PHOTOGRAPHIC CHEMICALS, MISC.	65052.0	65052.0	65052.0	65052.0	130104.0	130104.0	130104.0	130104.0	130104.0	130104.0
PU - PREHARDENER, PHOTOGRAPHIC	25020.0	25020.0	25020.0	25020.0	50040.0	50040.0	50040.0	50040.0	50040.0	50040.0

TABLE 11 (CONT.) SUMMARY OF BASELINE WASTE GENERATION FOR VAFB HOST BASE BY ORGANIZATION FOR THE YEARS 1981 - 1990

ORGANIZATION (& BLDG. NUMBERS)

<u>WASTE CATEGORY</u>	<u>1981 POUNDS</u>	<u>1982 POUNDS</u>	<u>1983 POUNDS</u>	<u>1984 POUNDS</u>	<u>1985 POUNDS</u>	<u>1986 POUNDS</u>	<u>1987 POUNDS</u>	<u>1988 POUNDS</u>	<u>1989 POUNDS</u>	<u>1990 POUNDS</u>
<u>USAF HOSPITAL (13850)</u>										
CK - CHLOROFORM	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3
DI - DEVELOPER, PHOTOGRAPHIC	2502.0	2502.0	2502.0	2502.0	2502.0	2502.0	2502.0	2502.0	2502.0	2502.0
FJ - FORMALDEHYDE	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
ID - IGNITABLE WASTES, UNSPECIFIED	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
NF - MERCURY	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
RI - REACTIVE WASTES, UNSPECIFIED	.8	.8	.8	.8	.8	.8	.8	.8	.8	.8
SG - SILVER SALTS	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

TABLE 12. BASELINE WASTE GENERATION BY WASTE CATEGORY FOR VAFB HOST BASE ORGANIZATIONS COMBINED

ORGANIZATION (& BLDG. NUMBERS)	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
WASTE CATEGORY	POUNDS	POUNDS	POUNDS	POUNDS	POUNDS	POUNDS	POUNDS	POUNDS	POUNDS	POUNDS
AB - ACETIC ACID	5.0	5.0	5.0	5.0	12.5	12.5	12.5	12.5	12.5	12.5
AC - ACETONE	577.7	577.7	577.7	577.7	1215.2	1215.2	1215.2	1215.2	1215.2	1215.2
AJ - AEROZINE 50	179.0	179.0	179.0	179.0	447.5	447.5	447.5	447.5	447.5	447.5
AU - AMMONIA	.8	.8	.8	.8	.8	.8	.8	.8	.8	.8
BG - BATTERY WASTES	35982.0	35982.0	35982.0	35982.0	35982.0	35982.0	35982.0	35982.0	35982.0	35982.0
BJ - BENZENE	.9	.9	.9	.9	2.3	2.3	2.3	2.3	2.3	2.3
CD - CARBON TETRACHLORIDE	158.6	158.6	158.6	158.6	396.5	396.5	396.5	396.5	396.5	396.5
CK - CHLOROFORM	779.2	779.2	779.2	779.2	1560.9	1560.9	1560.9	1560.9	1560.9	1560.9
CN - CHROMIUM WASTEWATERS	2944.1	3027.5	3115.9	3207.6	3437.1	3650.6	3884.1	4141.0	4422.9	4734.8
CT - CONTAINERS	356.5	356.5	356.5	356.5	356.5	356.5	356.5	356.5	356.5	356.5
CV - CORROSIVE LIQUIDS, UNSPECIFIED	90.2	90.2	90.2	90.2	225.5	225.5	225.5	225.5	225.5	225.5
CW - CYANIDE WASTEWATERS	108.0	108.0	108.0	108.0	108.0	108.0	108.0	108.0	108.0	108.0
DI - DEVELOPER, PHOTOGRAPHIC	82407.1	82407.1	82407.1	82407.1	162337.3	162337.3	162337.3	162337.3	162337.3	162337.3
DH - DICHLOROMETHANE	1306.7	1306.7	1306.7	1306.7	1306.7	1306.7	1306.7	1306.7	1306.7	1306.7
DV - DRY CLEANING SOLVENT	187.5	187.5	187.5	187.5	187.5	187.5	187.5	187.5	187.5	187.5
DY - DYNA-BRITE WASTES	1668.0	1751.4	1839.8	1931.5	2123.4	2336.9	2570.4	2827.3	3109.2	3421.1
EH - ETHANOL	8.2	8.2	8.2	8.2	20.5	20.5	20.5	20.5	20.5	20.5
EO - ETHYLENEDIAMINE	360.0	360.0	360.0	360.0	720.0	720.0	720.0	720.0	720.0	720.0
FJ - FORMALDEHYDE	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
FR - FREON SOLVENTS	3173.8	3173.8	3173.8	3173.8	4027.0	4027.0	4027.0	4027.0	4027.0	4027.0
FW - FUEL, AVIATION	747.1	747.1	747.1	747.1	1867.8	1867.8	1867.8	1867.8	1867.8	1867.8
FX - FUEL, DIESEL	45.7	45.7	45.7	45.7	114.3	114.3	114.3	114.3	114.3	114.3
GC - GASOLINE	14.8	14.8	14.8	14.8	37.0	37.0	37.0	37.0	37.0	37.0
HH - HYDRAZINE	410.4	410.4	410.4	410.4	1013.4	1013.4	1013.4	1013.4	1013.4	1013.4
HQ - HYDRAZINE/WATER WASTES	16039.8	16039.8	16039.8	16039.8	16039.8	16039.8	16039.8	16039.8	16039.8	16039.8

TABLE 12 (CONT.) BASELINE WASTE GENERATION BY WASTE CATEGORY FOR VAFB HOST BASE ORGANIZATIONS COMBINED

ORGANIZATION (& BLDG. NUMBERS)

WASTE CATEGORY	1981 POUNDS	1982 POUNDS	1983 POUNDS	1984 POUNDS	1985 POUNDS	1986 POUNDS	1987 POUNDS	1988 POUNDS	1989 POUNDS	1990 POUNDS
HW - HYDROCHLORIC ACID	55.1	55.1	55.1	55.1	137.8	137.8	137.8	137.8	137.8	137.8
HX - HYDROFLUORIC ACID	1668.0	1751.4	1839.8	1931.5	2123.4	2336.9	2570.4	2827.3	3109.2	3421.1
ID - IGNITABLE WASTES, UNSPECIFIED	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
IV - ISOPROPANOL	1583.1	1583.1	1583.1	1583.1	1783.8	1783.8	1783.8	1783.8	1783.8	1783.8
LT - LUBE OILS	3259.6	3259.6	3259.6	3259.6	3670.8	3670.8	3670.8	3670.8	3670.8	3670.8
MF - MERCURY	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MH - METHANOL	803.9	803.9	803.9	803.9	922.4	922.4	922.4	922.4	922.4	922.4
MQ - METHYLENE CHLORIDE	66.4	66.4	66.4	66.4	166.0	166.0	166.0	166.0	166.0	166.0
MS - METHYL ETHYL KETONE (MEK)	1656.3	1656.3	1656.3	1656.3	1656.3	1656.3	1656.3	1656.3	1656.3	1656.3
NU - METHYL ISOBUTYL KETONE (MIBK)	16.0	16.0	16.0	16.0	40.0	40.0	40.0	40.0	40.0	40.0
NX - MONOMETHYL HYDRAZINE	8.8	8.8	8.8	8.8	22.0	22.0	22.0	22.0	22.0	22.0
HE - NITRIC ACID	16865.2	16865.2	16865.2	16865.2	17015.5	17015.5	17015.5	17015.5	17015.5	17015.5
HK - NITROGEN TETROXIDE	290.3	290.3	290.3	290.3	725.8	725.8	725.8	725.8	725.8	725.8
OD - OIL/WATER WASTES	50067.0	50067.0	50067.0	50067.0	50067.0	50067.0	50067.0	50067.0	50067.0	50067.0
OG - OILS, USED	61117.8	61166.6	61218.3	61272.0	61384.2	61509.1	61645.7	61796.0	61960.9	62143.4
PE - PAINT THINNERS	825.7	867.0	910.7	956.2	1051.1	1156.8	1272.4	1399.6	1539.1	1693.5
PM - PCB SOLID WASTES	226.5	226.5	226.5	226.5	226.5	226.5	226.5	226.5	226.5	226.5
PP - PETROLEUM ETHER	145.2	145.2	145.2	145.2	325.5	325.5	325.5	325.5	325.5	325.5
PR - PHOTOGRAPHIC CHEMICALS, MISC.	65052.0	65052.0	65052.0	65052.0	130104.0	130104.0	130104.0	130104.0	130104.0	130104.0
PU - PREHARDENER, PHOTOGRAPHIC	25020.0	25020.0	25020.0	25020.0	50040.0	50040.0	50040.0	50040.0	50040.0	50040.0
RE - RAGS, SOLVENT/OILY	5295.0	5455.0	5624.6	5800.6	6168.6	6578.2	7026.2	7519.0	8059.8	8658.2
RI - REACTIVE WASTES, UNSPECIFIED	44.4	44.4	44.4	44.4	109.8	109.8	109.8	109.8	109.8	109.8
RS - RP-1	411.0	411.0	411.0	411.0	1027.5	1027.5	1027.5	1027.5	1027.5	1027.5
SG - SILVER SALTS	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
SL - SODIUM HYDROXIDE WASTEWATERS	80.1	80.1	80.1	80.1	200.3	200.3	200.3	200.3	200.3	200.3

TABLE 12 (CONT.) BASELINE WASTE GENERATION BY WASTE CATEGORY FOR VAFB HOST BASE ORGANIZATIONS COMBINED

<u>ORGANIZATION (& BLDG. NUMBERS)</u>										
<u>WASTE CATEGORY</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>
	<u>POUNDS</u>									
SU - SOLVENTS, MIXED OR UNSPEC.	28999.0	28999.0	28999.0	28999.0	28999.0	28999.0	28999.0	28999.0	28999.0	28999.0
SZ - SULFURIC ACID	255.5	255.5	255.5	255.5	531.8	531.8	531.8	531.8	531.8	531.8
TJ - TOLUENE	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7
TH - TRICHLOROETHANE	991.7	991.7	991.7	991.7	1489.3	1489.3	1489.3	1489.3	1489.3	1489.3
TP - TRICHLOROETHYLENE	392.3	392.3	392.3	392.3	962.4	962.4	962.4	962.4	962.4	962.4
UD - UDMH (UNSYM DIMETHYLHYDRAZINE)	84.9	84.9	84.9	84.9	202.5	202.5	202.5	202.5	202.5	202.5

TABLE 13. CONTINGENCY WASTE GENERATION BY VAFB
HOST BASE ORGANIZATIONS*

<u>Waste Material</u>	<u>Sol or Liq</u>	<u>Quantity Per Contingency</u>			
		<u>Mass</u>		<u>Volume</u>	
		<u>Kilograms</u>	<u>Pounds</u>	<u>Liters</u>	<u>Gal or CF</u>
Lockheed (8310)					
Hydrazine	L	45.7	100.8	45.4	12.0
IRFNA	L	680.4	1,500.0	461.8	122.0
UDMH	L	680.4	1,500.0	2,959.9	782.0

* Only Lockheed anticipates contingency waste generation.

SECTION 6

SUMMARY OF HAZARDOUS WASTE GENERATION FOR VAFB HOST BASE

1. INTRODUCTION

The purpose of this section is to present an inventory of the types and quantities of waste expected to be generated by the host base facilities during the years 1981 through 1990. The inventory provides information for:

- Types of wastes generated.
- Chemical constituents in each waste stream.
- Mass and/or volume of waste generated during scheduled ground operations (per month, per year, and totals for the period 1981 through 1990).
- Mass and/or volume of waste generated under contingency conditions (per contingency event).
- EPA and California hazardous waste numbers for each waste.
- EPA and California hazardous properties for each waste.
- California compatibility class for each waste.

The discussion which follows will focus primarily on the years 1981 and 1990.

2. SOURCES OF WASTE

A summary of liquid and solid hazardous wastes generated during the years 1981 through 1990 by host base programs at VAFB is given in Tables 14 and 15. Projected increases in hazardous waste generation for each facility over the 10-year period are shown in Table 16. These projections are used to calculate monthly program quantities (reported in Table 14), and yearly and total program quantities (Table 15).

Table 14

SUMMARY OF BASELINE MONTHLY HAZARDOUS WASTE GENERATION BY ORGANIZATION
FOR VAFB HOST BASE, 1981-1990

Organization	Kilograms/Month (Pounds/Month)									
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Fuels Lab & Det 41	194.2 (428.1)	194.2 (428.1)	194.2 (428.1)	194.2 (428.1)	485.5 (1,070.3)	485.5 (1,070.3)	485.5 (1,070.3)	485.5 (1,070.3)	485.5 (1,070.3)	485.5 (1,070.3)
Lockheed	1,672.7 (3,687.6)	1,672.7 (3,687.6)	1,672.7 (3,687.6)	1,672.7 (3,687.6)	1,672.7 (3,687.6)	1,672.7 (3,687.6)	1,672.7 (3,687.6)	1,672.7 (3,687.6)	1,672.7 (3,687.6)	1,672.7 (3,687.6)
Federal Electric	378.2 (833.8)	397.1 (875.5)	417.2 (919.7)	438.0 (965.5)	481.5 (1,061.4)	529.9 (1,168.2)	582.8 (1,284.9)	641.1 (1,413.3)	705.2 (1,554.6)	775.7 (1,710.1)
Boeing	109.5 (241.4)	109.5 (241.4)	109.5 (241.4)	109.5 (241.4)	109.5 (241.4)	109.5 (241.4)	109.5 (241.4)	109.5 (241.4)	109.5 (241.4)	109.5 (241.4)
4392 TRNSS/LGTM	6,517.3 (14,368.2)	6,517.3 (14,368.2)	6,517.3 (14,368.2)	6,517.3 (14,368.2)	6,517.3 (14,368.2)	6,517.3 (14,368.2)	6,517.3 (14,368.2)	6,517.3 (14,368.2)	6,517.3 (14,368.2)	6,517.3 (14,368.2)
394 ICBMTMS	159.0 (350.5)	159.0 (350.5)	159.0 (350.5)	159.0 (350.5)	159.0 (350.5)	159.0 (350.5)	159.0 (350.5)	159.0 (350.5)	159.0 (350.5)	159.0 (350.5)
1369 AVS/DOC	6,479.6 (14,285.2)	6,479.6 (14,285.2)	6,479.6 (14,285.2)	6,479.6 (14,285.2)	12,959.3 (28,570.5)	12,959.3 (28,570.5)	12,959.3 (28,570.5)	12,959.3 (28,570.5)	12,959.3 (28,570.5)	12,959.3 (28,570.5)
USAF Hospital	95.7 (211.0)	95.7 (211.0)	95.7 (211.0)	95.7 (211.0)	95.7 (211.0)	95.7 (211.0)	95.7 (211.0)	95.7 (211.0)	95.7 (211.0)	95.7 (211.0)
Total	15,606.2 (34,405.8)	15,625.1 (34,447.5)	15,645.2 (34,491.7)	15,666.0 (34,537.5)	22,480.5 (49,560.9)	22,528.9 (49,667.7)	22,581.8 (49,784.4)	22,640.1 (49,912.8)	22,704.2 (50,054.1)	22,774.7 (50,209.6)

Table 15

SUMMARY OF BASELINE YEARLY HAZARDOUS WASTE GENERATION BY ORGANIZATION
FOR VAFB HOST BASE, 1981-1990

Organization	Kilograms/Year (Pounds/Year)										10-Year Total
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	
Fuels Lab & Det 41	2,330.3 (5,137.4)	2,330.3 (5,137.4)	2,330.3 (5,137.4)	2,330.3 (5,137.4)	5,825.7 (12,843.5)	5,825.7 (12,843.5)	5,825.7 (12,843.5)	5,825.7 (12,843.5)	5,825.7 (12,843.5)	5,825.7 (12,843.5)	44,275.4 (97,610.6)
Lockheed	20,071.8 (44,251.0)	20,071.8 (44,251.0)	20,071.8 (44,251.0)	20,071.8 (44,251.0)	20,071.8 (44,251.0)	20,071.8 (44,251.0)	20,071.8 (44,251.0)	20,071.8 (44,251.0)	20,071.8 (44,251.0)	20,071.8 (44,251.0)	200,718.0 (422,510.0)
Federal Electric	4,538.4 (10,005.5)	4,765.3 (10,505.8)	5,005.9 (11,036.0)	5,255.5 (11,586.3)	5,777.4 (12,737.1)	6,358.3 (14,017.8)	6,993.7 (15,418.5)	7,692.6 (16,959.5)	8,462.1 (18,655.5)	9,308.2 (20,521.3)	64,157.4 (141,433.3)
Boeing	1,314.1 (2,897.1)	1,314.1 (2,897.1)	1,314.1 (2,897.1)	1,314.1 (2,897.1)	1,314.1 (2,897.1)	1,314.1 (2,897.1)	1,314.1 (2,897.1)	1,314.1 (2,897.1)	1,314.1 (2,897.1)	1,314.1 (2,897.1)	13,141.0 (28,971.0)
4392 TRNSS/LGTM	78,207.5 (172,418.9)	78,207.5 (172,418.9)	78,207.5 (172,418.9)	78,207.5 (172,418.9)	78,207.5 (172,418.9)	78,207.5 (172,418.9)	78,207.5 (172,418.9)	78,207.5 (172,418.9)	78,207.5 (172,418.9)	78,207.5 (172,418.9)	782,075.0 (1,724,185.0)
394 ICBMTMS	1,907.7 (4,205.8)	1,907.7 (4,205.8)	1,907.7 (4,205.8)	1,907.7 (4,205.8)	1,907.7 (4,205.8)	1,907.7 (4,205.8)	1,907.7 (4,205.8)	1,907.7 (4,205.8)	1,907.7 (4,205.8)	1,907.7 (4,205.8)	19,077.0 (42,058.0)
1369 AVS/DOC	77,755.7 (171,422.8)	77,755.7 (171,422.8)	77,755.7 (171,422.8)	77,755.7 (171,422.8)	155,511.3 (342,845.6)	155,511.3 (342,845.6)	155,511.3 (342,845.6)	155,511.3 (342,845.6)	155,511.3 (342,845.6)	155,511.3 (342,845.6)	1,244,090.6 (2,742,764.8)
USAF Hospital	1,148.6 (2,532.2)	1,148.6 (2,532.2)	1,148.6 (2,532.2)	1,148.6 (2,532.2)	1,148.6 (2,532.2)	1,148.6 (2,532.2)	1,148.6 (2,532.2)	1,148.6 (2,532.2)	1,148.6 (2,532.2)	1,148.6 (2,532.2)	11,486.0 (25,322.0)
Total	187,274.1 (412,870.7)	187,501.0 (413,371.0)	187,741.6 (413,901.2)	187,991.2 (414,451.5)	269,764.1 (594,731.2)	270,345.0 (596,011.9)	270,980.4 (597,412.6)	271,679.3 (598,953.6)	272,448.8 (600,649.6)	273,294.9 (602,515.4)	2,379,020.4 (5,244,864.7)

Table 16

PROJECTED INCREASES IN BASELINE HAZARDOUS WASTE GENERATION BY ORGANIZATION FOR VAFB HOST BASE FOR THE YEARS 1981-1990

Organization	Kilograms/Year - % Increase									
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Fuels Lab & Det 41	2,330.3 --	--	--	--	5,825.7 150%	--	--	--	--	--
Lockheed	20,071.8 --	--	--	--	--	--	--	--	--	--
Federal Electric	4,538.4 --	4,765.3 5%	5,005.9 5%	5,255.5 5%	5,777.4 10%	6,358.3 10%	6,993.7 10%	7,692.6 10%	8,462.1 10%	9,308.2 10%
Boeing	1,314.1 --	--	--	--	--	--	--	--	--	--
4392 TRNSS/LGTM	78,207.5 --	--	--	--	--	--	--	--	--	--
394 ICBMTMS	1,907.7 --	--	--	--	--	--	--	--	--	--
1369 AVS/DOC	77,755.7 --	--	--	--	155,511.3 100%	--	--	--	--	--
USAF Hospital	1,148.6 --	--	--	--	--	--	--	--	--	--

As shown in Table 15, total baseline waste generation at the host base facilities for the period 1981 through 1990 is anticipated to be 2.4 million kg (5.2 million lb). Annual waste generation is expected to escalate as follows:

- 1981 - 187,300 kg (412,900 lb).
- 1982 - 187,500 kg (413,400 lb).
- 1983 - 187,700 kg (413,900 lb).
- 1984 - 188,000 kg (414,500 lb).
- 1985 - 269,800 kg (594,700 lb).
- 1986 - 270,300 kg (596,000 lb).
- 1987 - 271,000 kg (597,400 lb).
- 1988 - 271,700 kg (599,000 lb).
- 1989 - 272,400 kg (600,600 lb).
- 1990 - 273,300 kg (602,500 lb).

Baseline waste generation for the years 1981 through 1990 is graphically presented in Figures 18 and 19.

The highest quantities of wastes in 1981 were generated by 4392 TRNSS/LGTM (78,200 kg; 172,400 lb), followed by 1369 AVS/DOC (77,800 kg; 171,400 lb), and Lockheed (20,100 kg; 44,300 lb). The lowest quantities of wastes in 1981 were generated by Federal Electric (4,500 kg; 10,000 lb), Fuels Lab & Det 41 (2,300 kg; 5,100 lb), 394 ICBMTMS (1,900 kg; 4,200 lb), Boeing (1,300 kg; 2,900 lb), and USAF Hospital (1,100 kg; 2,500 lb) (Figure 18).

In 1990, the highest quantities of wastes are expected to be generated by 1369 AVS/DOC (155,500 kg; 342,800 lb), and 4392 TRNSS/LGTM (78,200 kg; 172,400 lb), followed by Lockheed (20,100 kg; 44,200 lb), Federal Electric (9,300 kg; 20,500 lb), and Fuels Lab & Det 41 (5,800 kg; 12,800 lb) (Figure 18). The smallest quantities in 1990 are expected to be generated by 394 ICBMTMS (1,900 kg; 4,200 lb), Boeing (1,300 kg; 2,900 lb), and USAF Hospital (1,100 kg; 2,500 lb).

The anticipated percent increases in waste generation by facility are shown on Table 16. Waste generation from USAF Hospital, Boeing, 394 ICBMTMS, Lockheed, and 4392 TRNSS/LGTM is expected to remain constant during the period 1981 through 1990. Fuels Lab & Det 41 and 1369 AVS/DOC exhibit a step function in their projected waste generation, with the increase occurring at the beginning of the STS program in 1985. Federal Electric is expected to continuously generate increased amounts of hazardous waste each year during the period 1981 through 1990 (Table 16).

Expressed as percentage by weight, the 1369 AVS/DOC has generated 41.5 percent of the total waste in 1981; 4392 TRNSS/LGTM, 41.8 percent; Lockheed, 10.7 percent; and Federal Electric, Fuels Lab & Det 41, 394 ICBMTMS, Boeing, and USAF Hospital, 2.4, 1.2, 1.0, 0.7, and 0.6 percent, respectively (Figure 19). In 1990, 1369 AVS/DOC is projected to generate 56.9 percent of the total baseline waste; 4392 TRNSS/LGTM, 28.6 percent; Lockheed, 7.3 percent; and Federal Electric, Fuels Lab & Det 41, 394

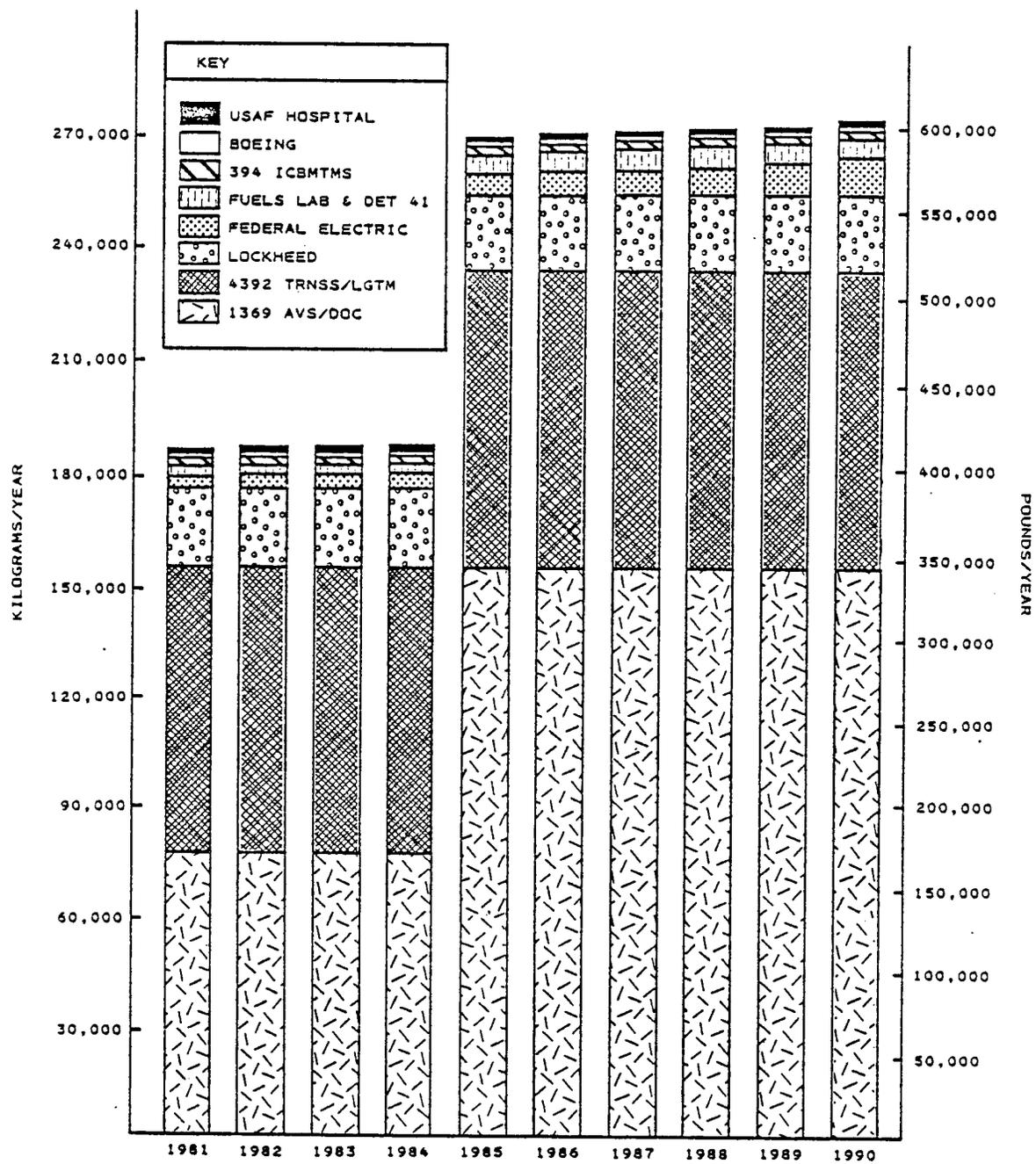


Figure 18. Baseline quantities of hazardous waste generated by VAFB host base for the years 1981 through 1990.

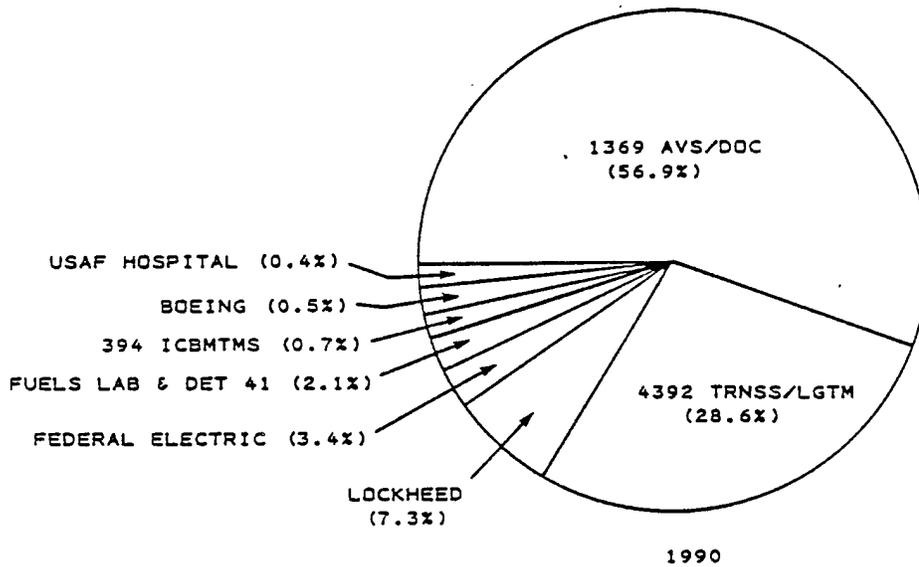
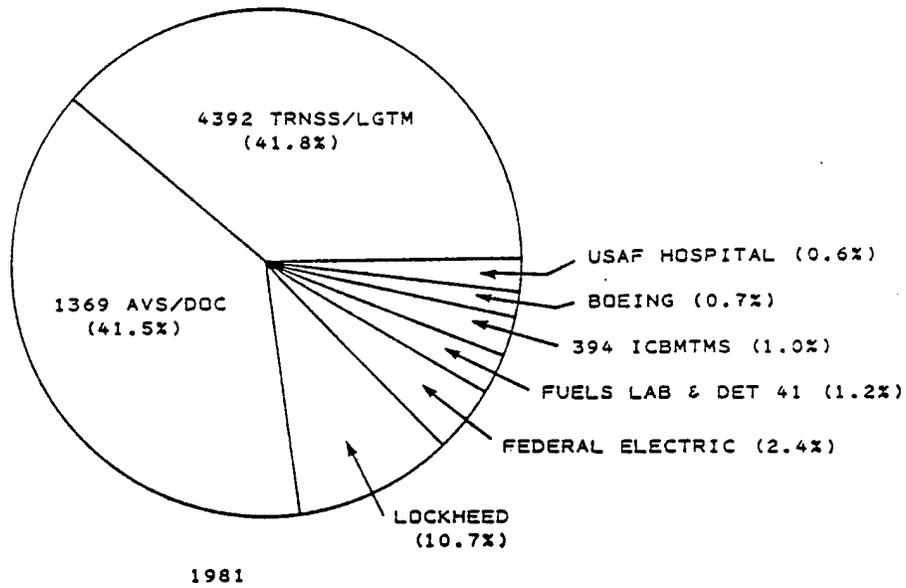


Figure 19. Percent (by weight) of baseline hazardous waste generated by VAFB host base for the years 1981 and 1990.

ICBMTMS, Boeing, and USAF Hospital, 3.4, 2.1, 0.7, 0.5, and 0.4 percent, respectively.

Investigations into the physical state of the hazardous wastes generated during normal operations indicate that the majority of wastes at Lockheed, Federal Electric, Boeing, 4392 TRNSS/LGTM, 394 ICBMTMS, and USAF Hospital (Figures 20B, C, D, E, F, and H, respectively) are in a liquid state (95.7, 68.0, 65.6, 89.5, 91.1, and 99.9 percent, respectively). Fuels Lab & Det 41 (Figure 20A) and 1369 AVS/DOC (Figure 20G) generate liquid wastes only.

In 1981, 1369 AVS/DOC, 4392 TRNSS/LGTM, and Lockheed were the major sources of liquid wastes (44.1, 39.7, and 10.9 percent, respectively), followed by Federal Electric (1.8 percent), Fuels Lab & Det 41 (1.3 percent), 394 ICBMTMS (1.0 percent), USAF Hospital (0.7 percent), and Boeing (0.5 percent) (Figure 21). Projections for 1990 indicate that 59.7 percent of the total baseline liquid wastes will be generated by 1369 AVS/DOC; 26.9 percent by 4392 TRNSS/LGTM; 7.4 percent by Lockheed; and the balance by Federal Electric, Fuels Lab & Det 41, 394 ICBMTMS, USAF Hospital, and Boeing (2.4, 2.2, 0.7, 0.4, and 0.3 percent, respectively) (Figure 21).

The generators of solid waste are the 4392 TRNSS/LGTM, Federal Electric, Lockheed, Boeing, 394 ICBMTMS, and USAF Hospital (Figure 22). In 1981, the 4392 TRNSS/LGTM facility generated 73.6 percent of the total solid hazardous wastes, followed by Federal Electric and Lockheed (13.0 and 7.8 percent, respectively); Boeing, 394 ICBMTMS, and USAF Hospital generated only 4.1, 1.5, and 0.01 percent, respectively. In 1990, the 4392 TRNSS/LGTM is expected to generate 64.7 percent of the total baseline solid hazardous wastes, followed by Federal Electric (23.5 percent), and Lockheed (6.9 percent) (Figure 22). The balance of these wastes will be generated by Boeing (3.6 percent), 394 ICBMTMS (1.3 percent), and USAF Hospital (0.01 percent).

3. MAJOR TYPES OF WASTE

The Fuels Lab & Det 41 Facilities (Buildings 7422, 9320, and 11248) generate the following waste categories in the largest quantities (Figure 23):

- | | |
|-----------------------|------------------------------------|
| 1. Aviation fuel | 11. Acetone |
| 2. Freon solvents | 12. Carbon tetrachloride |
| 3. RP-1 | 13. Isopropanol |
| 4. Hydrazine | 14. Petroleum ether |
| 5. Trichloroethylene | 15. Nitric acid |
| 6. Trichloroethane | 16. Corrosive liquids, unspecified |
| 7. Nitrogen Tetroxide | 17. Sodium hydroxide wastewaters |
| 8. Lube oils | 18. Methanol |
| 9. Sulfuric acid | 19. UDMH |
| 10. Aerozine | |

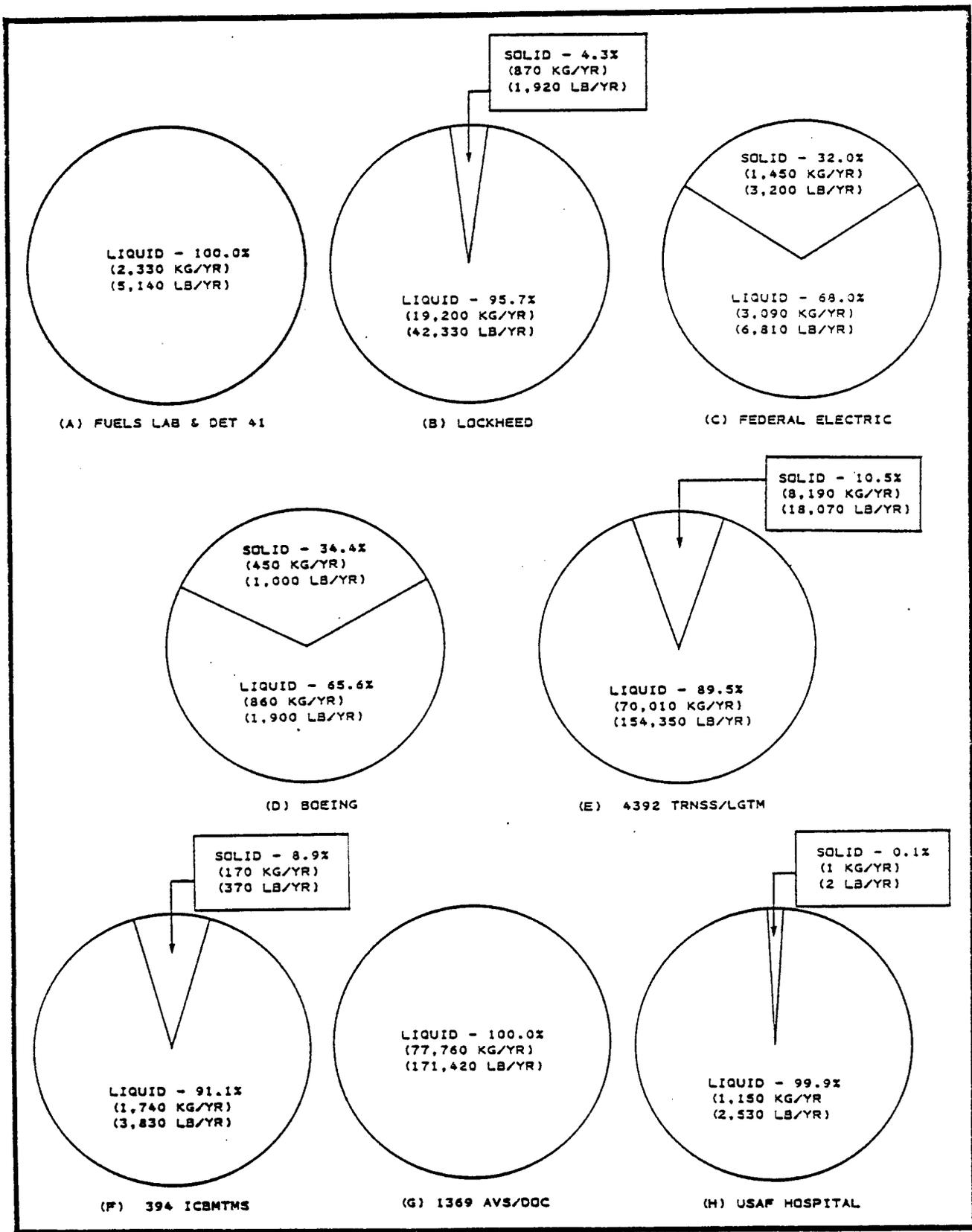


Figure 20. Physical state of hazardous waste generated by VAFB host base under baseline conditions.

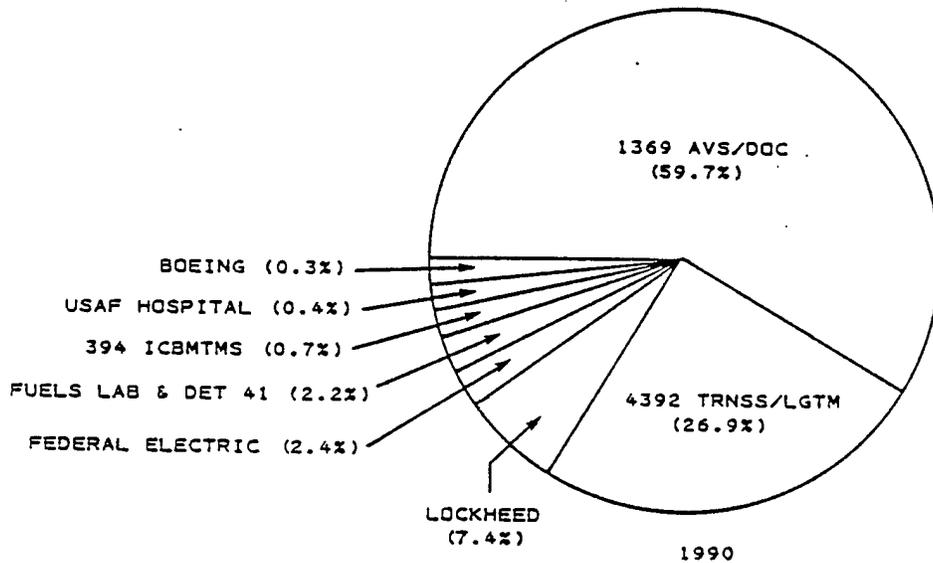
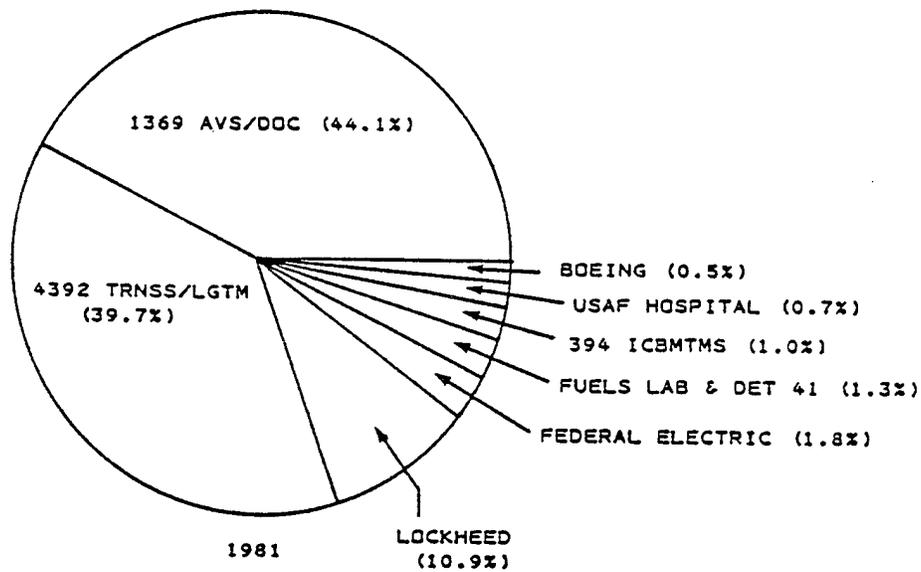


Figure 21. Percent (by weight) of baseline-liquid hazardous waste generated by VAFB host base for the years 1981 and 1990.

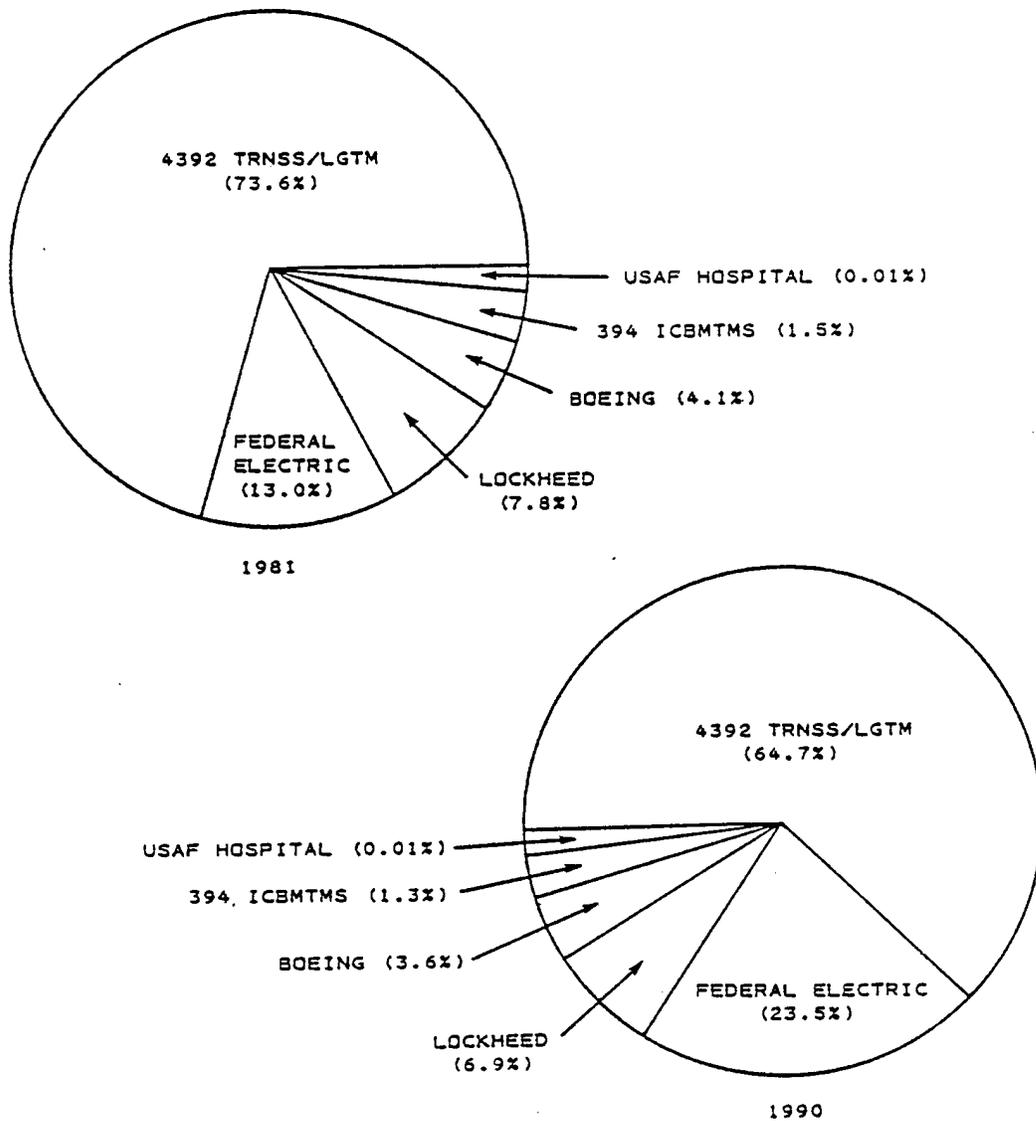


Figure 22. Percent (by weight) of baseline solid hazardous waste generated by VAFB host base for the years 1981 and 1990.

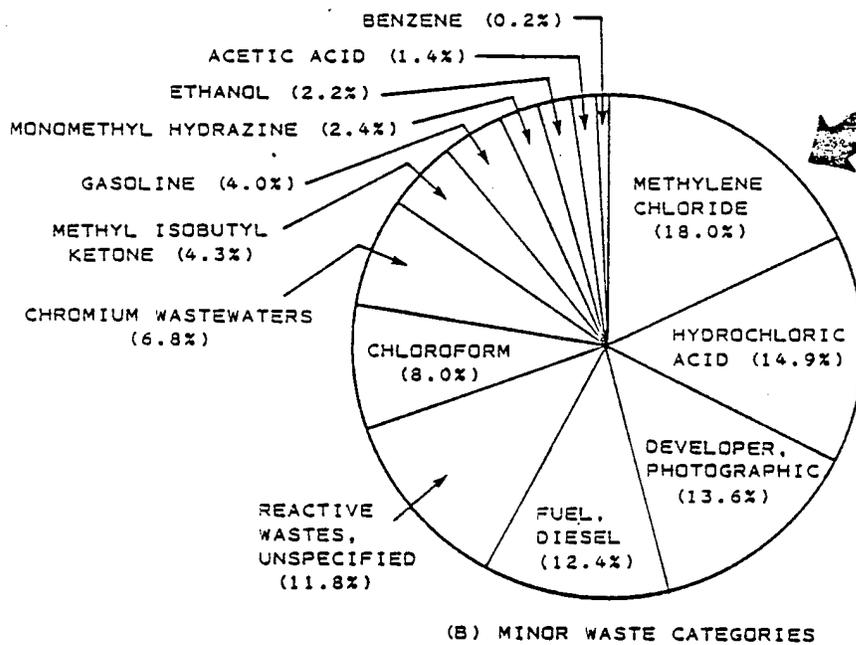
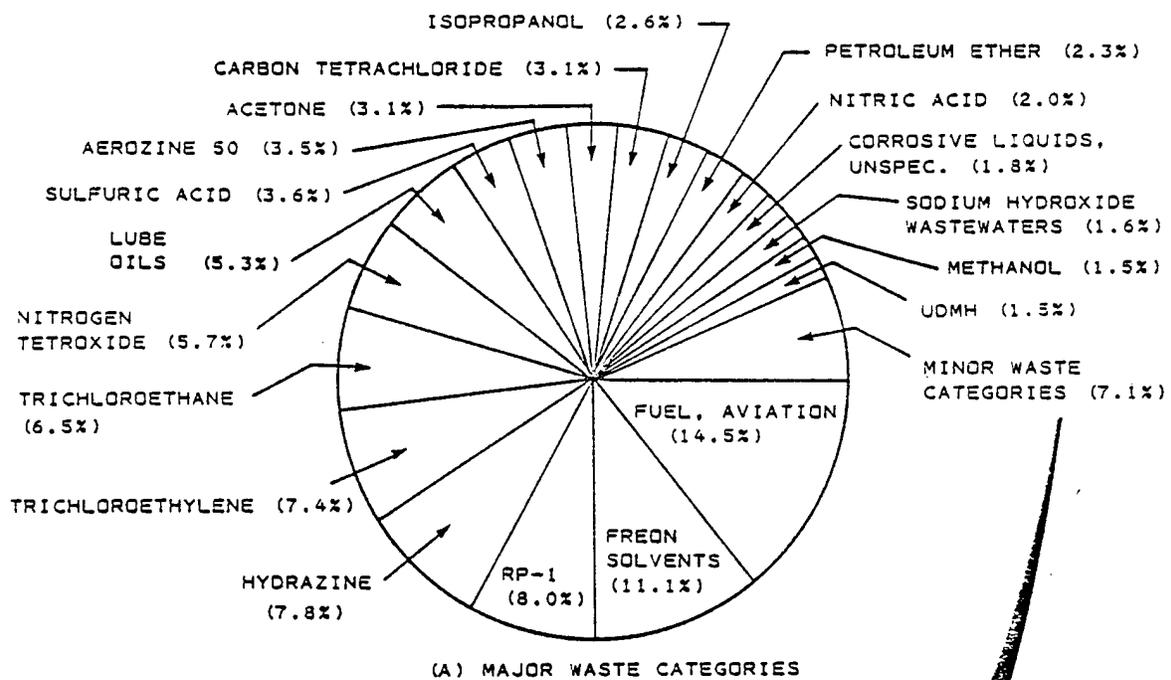


Figure 23. Categories of baseline hazardous waste generated by Fuels Lab & Det 41 AFLC/MA (Buildings 7422, 9320, and 11248), given as percent by weight.

These wastes constitute 92.9 percent by weight of the total waste generation at Fuels Lab & Det 41. The remaining 7.1 percent consists of the following minor categories (Figure 23):

- | | |
|--------------------------------|---------------------------|
| 1. Methylene chloride | 8. Methyl isobutyl ketone |
| 2. Hydrochloric acid | 9. Gasoline |
| 3. Photographic developer | 10. Monomethyl hydrazine |
| 4. Diesel fuel | 11. Ethanol |
| 5. Reactive wastes unspecified | 12. Acetic acid |
| 6. Chloroform | 13. Benzene |
| 7. Chromium wastewaters | |

Lockheed programs (Building 8310) generate the following major waste categories (Figure 24):

- | | |
|---------------------------|---------------------|
| 1. Nitric acid | 6. Isopropanol |
| 2. Hydrazine/water wastes | 7. Dichloromethane |
| 3. Freon solvents | 8. Lube oils |
| 4. Rags, solvent/oily | 9. Methanol |
| 5. Methyl ethyl ketone | 10. Trichloroethane |

The above wastes constitute 98.9 percent by weight of the total waste generation at this location. The first two categories jointly contribute 74.1 percent by weight of the total Lockheed-related major wastes generated. The remaining 1.1 percent is associated with the following minor categories (Figure 24):

1. Solvents, mixed or unspecified
2. Hydrazine
3. Battery wastes
4. UDMH

All wastes generated by Federal Electric programs (Building 9320) are associated with the following major categories (Figure 25):

1. Rags, solvent/oily
2. Chromium wastewaters
3. Dyna-brite wastes
4. Hydrofluoric acid
5. Oils, used
6. Paint thinners

The first four categories jointly contribute 82.1 percent by weight of the total hazardous waste generated at this facility.

Wastes generated by Boeing operations (Building 6523) can be grouped into both major and minor categories (Figure 26). The major categories constitute 98.2 percent by weight of the total wastes generated at this location, as follows:

1. Oils, used
2. Battery wastes

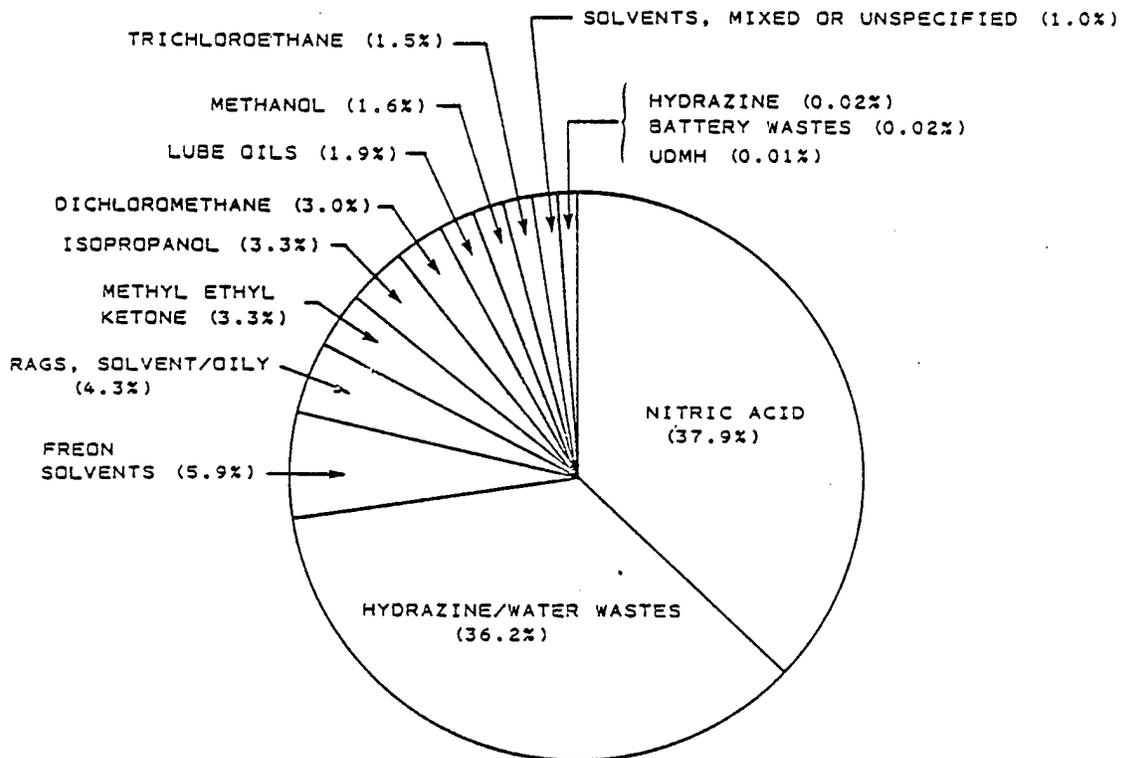


Figure 24. Categories of baseline hazardous waste generated by Lockheed (Building 8310), given as percent by weight.

PAINT THINNERS (8.2%)

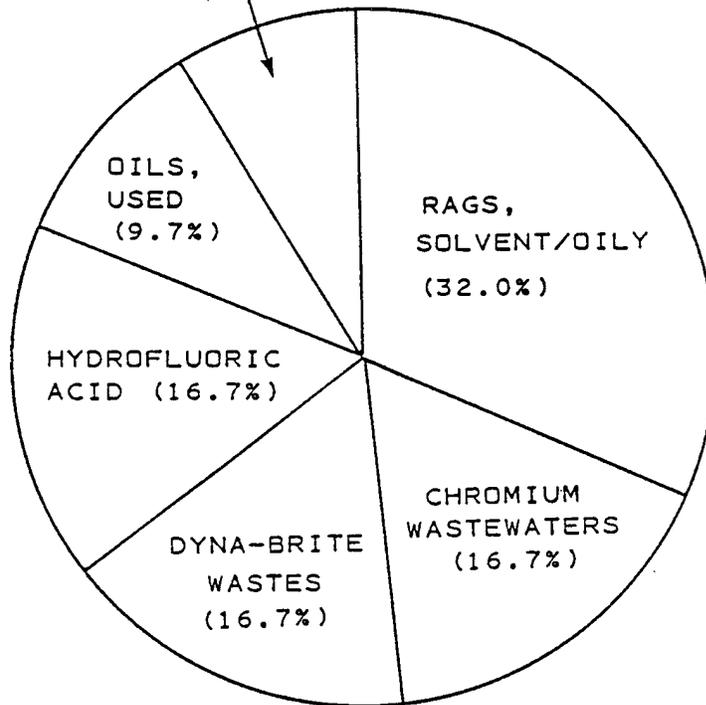


Figure 25. Categories of baseline hazardous waste generated by Federal Electric Corporation (Building 9320), given as percent by weight.

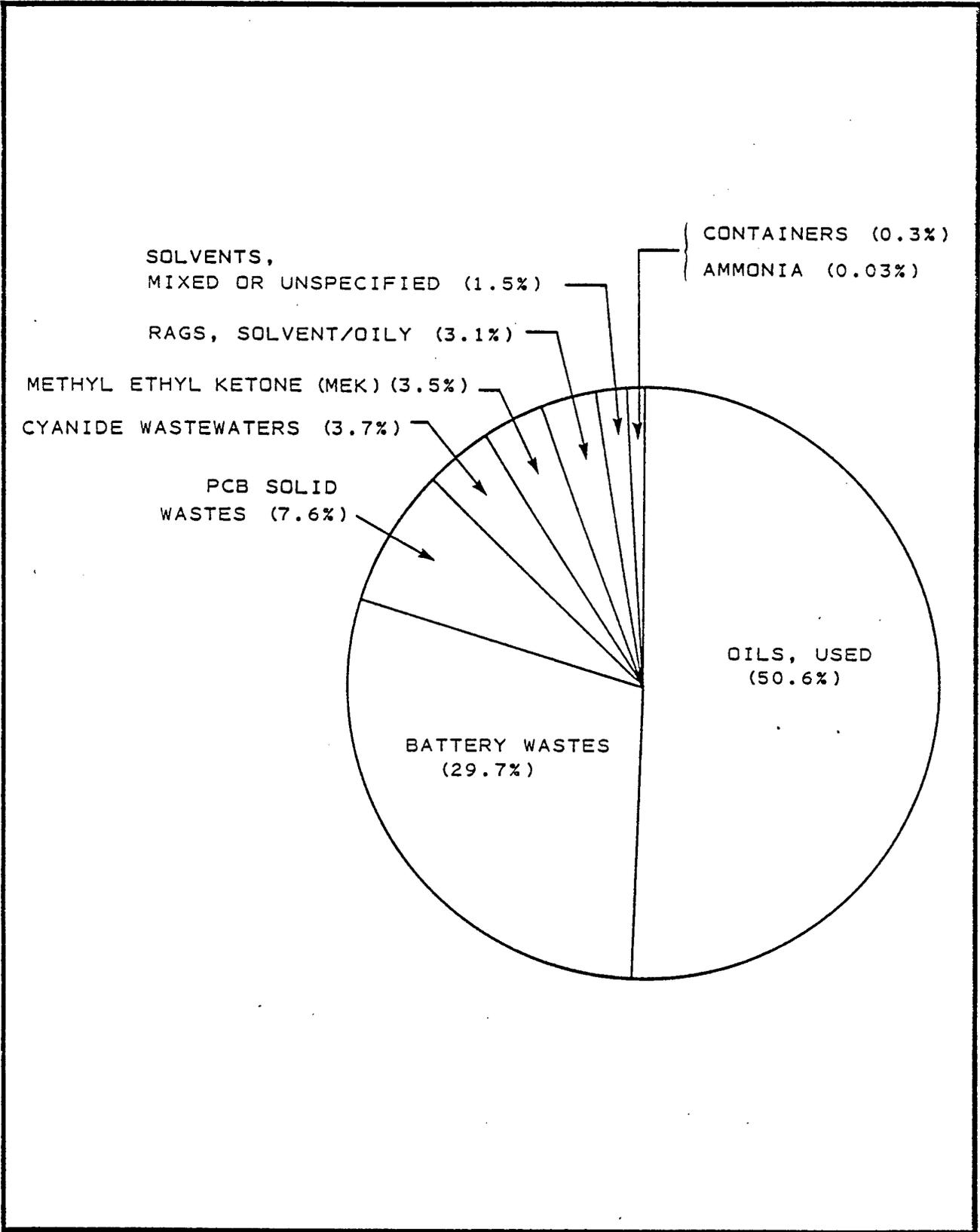


Figure 26. Categories of baseline hazardous waste generated by Boeing (Building 6523), given as percent by weight.

3. PCB solid wastes
4. Cyanide wastewaters
5. Methyl ethyl ketone
6. Rags, solvent/oily

The first two categories jointly contribute 80.3 percent of the total waste generation. The remaining 1.8 percent is contributed by the following minor waste categories (Figure 26):

1. Solvents, mixed or unspecified
2. Containers
3. Ammonia

The 4392 TRNSS/LGTM operations (Buildings 7501, 10700, 10711, 10721, 10721A, and 10721B) generate the following waste categories (Figure 27):

1. Oils, used
2. Oil/water wastes
3. Battery wastes
4. Solvents, mixed or unspecified
5. Rags, solvent/oily

The first four categories jointly contribute 99.96 percent by weight of the total waste generated.

The 394 ICBMTMS operations at Building 6601 and the launch facility generate both major and minor waste categories. The following major categories constitute 97.3 percent by weight of the total hazardous waste generation at these locations (Figure 28):

1. Lube oils
2. Chromium wastewaters
3. Containers
4. Dry-cleaning solvent
5. Methyl ethyl ketone
6. Sulfuric acid

The first two categories jointly contribute 81.0 percent by weight of the total waste generation. The following minor waste categories constitute 2.7 percent of the total hazardous waste generation at these locations (Figure 28):

1. Petroleum ether
2. Toluene
3. Rags, solvent/oily
4. Acetone
5. Trichloroethylene
6. Isopropanol
7. PCB solid wastes

The first five waste categories jointly constitute 88.8 percent of the total minor wastes generated by the above programs.

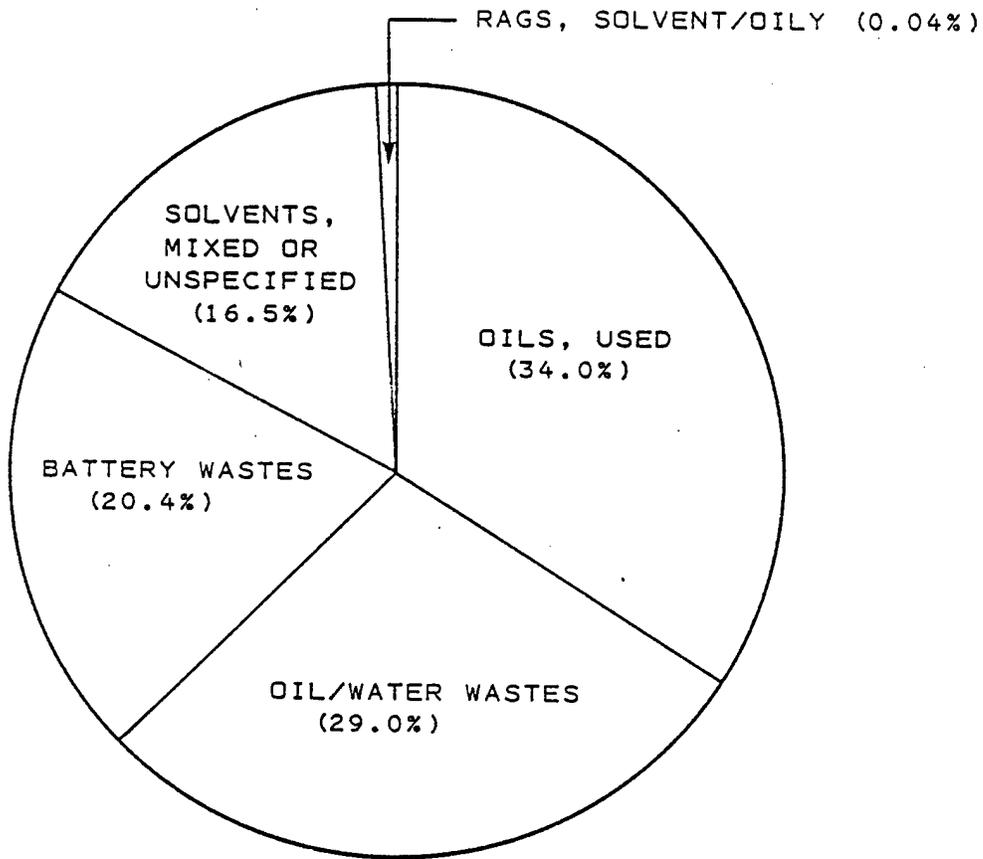
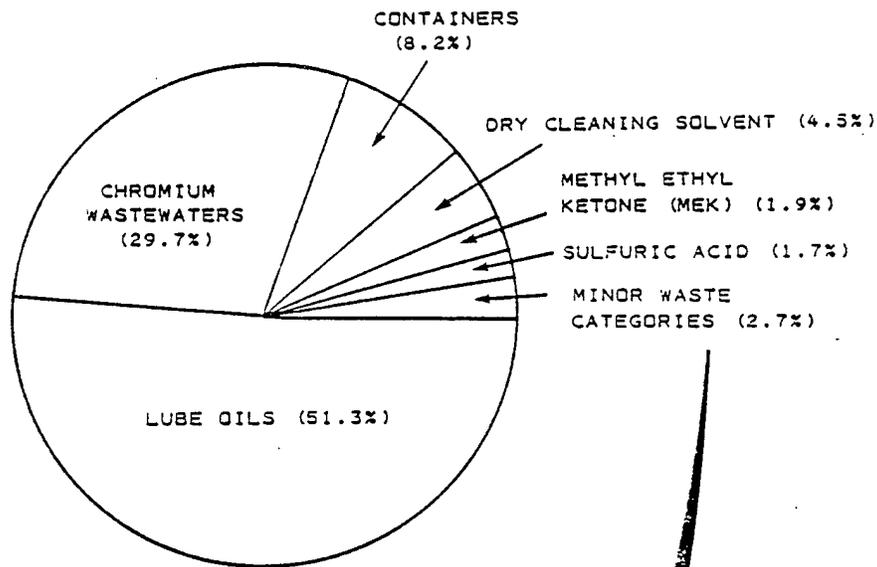
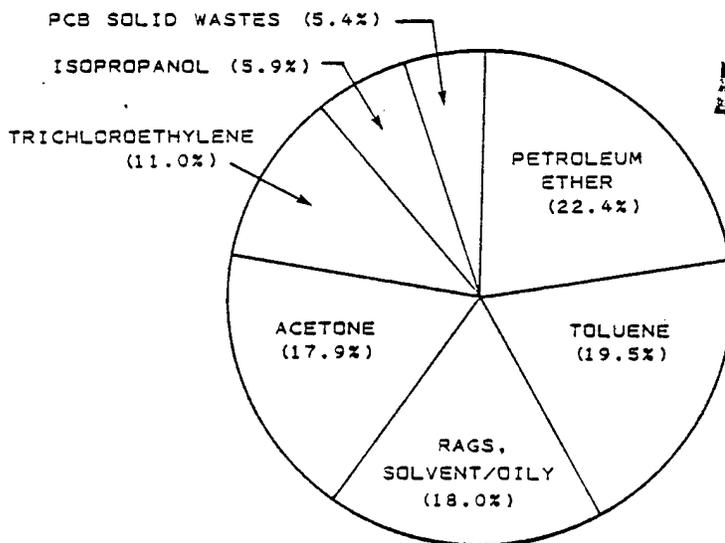


Figure 27. Categories of baseline hazardous waste generated by 4392 TRNSS/LGTM (Buildings 7501, 10700, 10711, 10721, 10726A, and 10726B), given as percent by weight.



(A) MAJOR WASTE CATEGORIES



(B) MINOR WASTE CATEGORIES

Figure 28. Categories of baseline hazardous waste generated by 394 ICBMTMS (Building 6601 and Launch Facility), given as percent by weight.

The 1369 AVS/DOC programs (Building 8314) generate only the following three major waste categories (Figure 29):

1. Photographic developer
2. Photographic chemicals, miscellaneous
3. Photographic prehardener

These wastes constitute 46.6, 37.9, and 14.6 percent, respectively, of the total hazardous wastes generated at this location. The remaining 0.9 percent is contributed by the following minor categories (Figure 29):

1. Chloroform
2. Acetone
3. Ethylenediamine

These wastes constitute 0.4, 0.2, and 0.2 percent by weight, respectively, of the total 1369 AVS/DOC waste generation.

The USAF Hospital (Building 13850) generates only one major waste category, photographic developer, which constitutes 98.8 percent of the total waste generation at this location (Figure 30). The remaining 1.2 percent is associated with the following minor categories (Figure 30):

1. Chloroform
2. Ignitable wastes, unspecified
3. Mercury
4. Formaldehyde
5. Silver salts
6. Reactive wastes, unspecified

The first four categories jointly contribute 92.4 percent by weight of the total minor wastes generated by the USAF Hospital.

Basewide generation (percent by weight) of both major and minor hazardous waste categories for the years 1981 and 1990 is given in Figures 31 and 32, respectively. In both years, the wastes generated are associated with the following major categories:

- | | |
|--|-----------------------------|
| 1. Photographic developer | 7. Photographic prehardener |
| 2. Photographic chemicals, miscellaneous | 8. Nitric acid |
| 3. Oils, used | 9. Hydrazine/water wastes |
| 4. Oil/water wastes | 10. Rags, solvent/oily |
| 5. Battery wastes | 10. Rags, solvent/oily |
| 6. Solvents, mixed or unspecified | 11. Lube oils |
| | 12. Freon solvents |
| | 13. Chromium wastewaters |

Only the first four categories given above are listed in descending order according to quantities generated. In 1981, these four categories jointly contributed 62.7 percent of the total waste

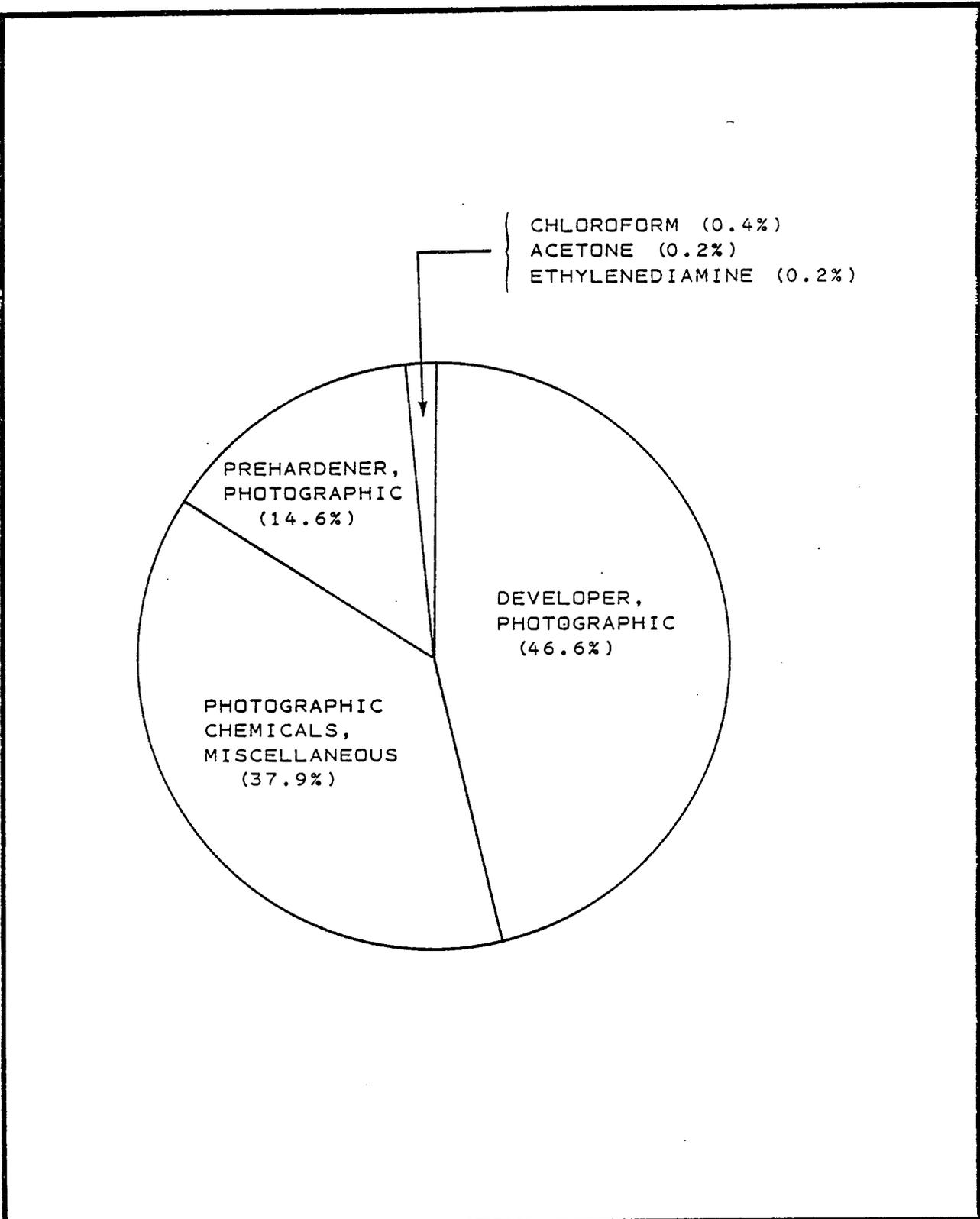


Figure 29. Categories of baseline hazardous waste generated by 1369 AVS/DOC (Building 8314), given as percent by weight.

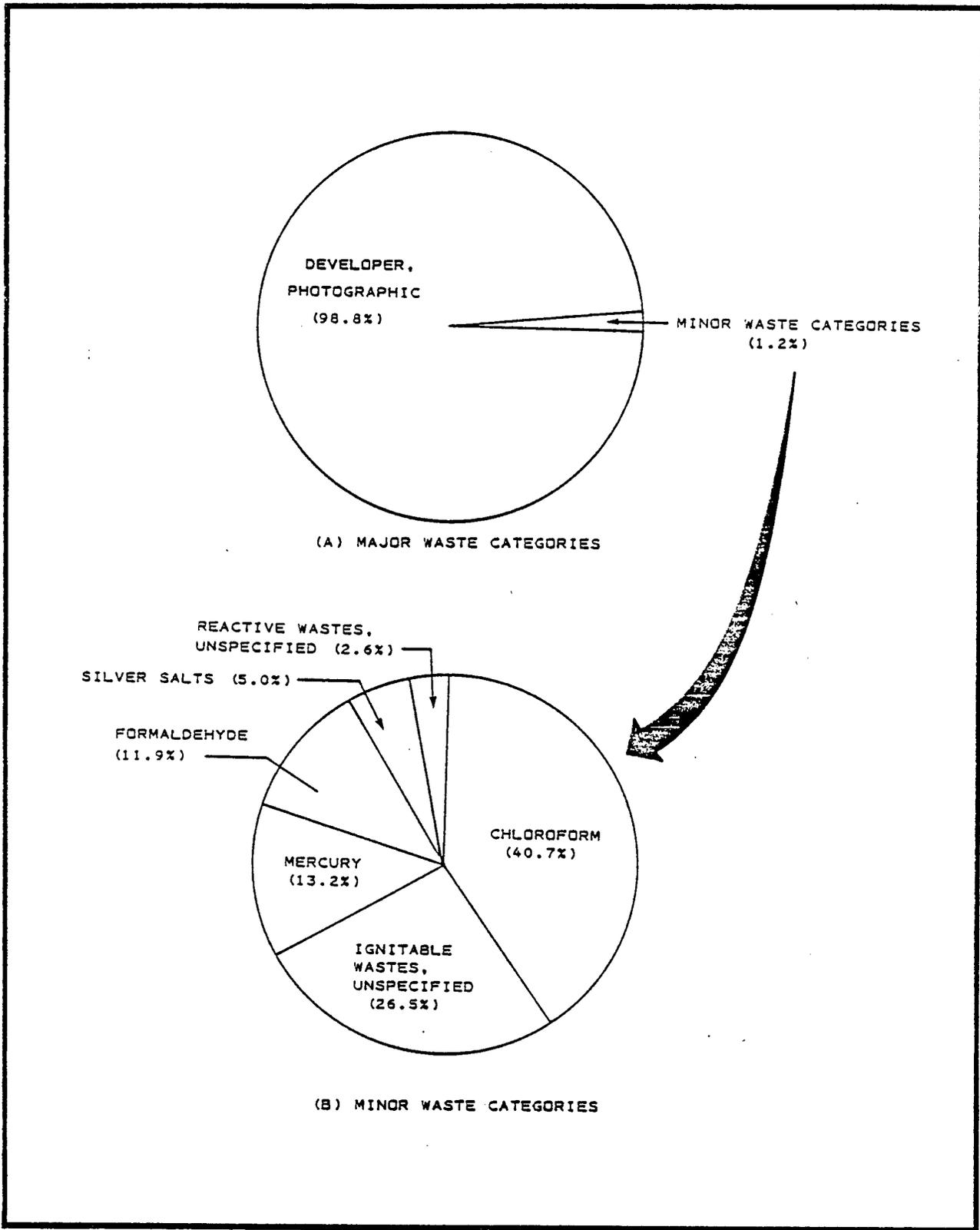


Figure 30. Categories of baseline hazardous waste generated by USAF Hospital at VAFB (Building 13850), given as percent by weight.

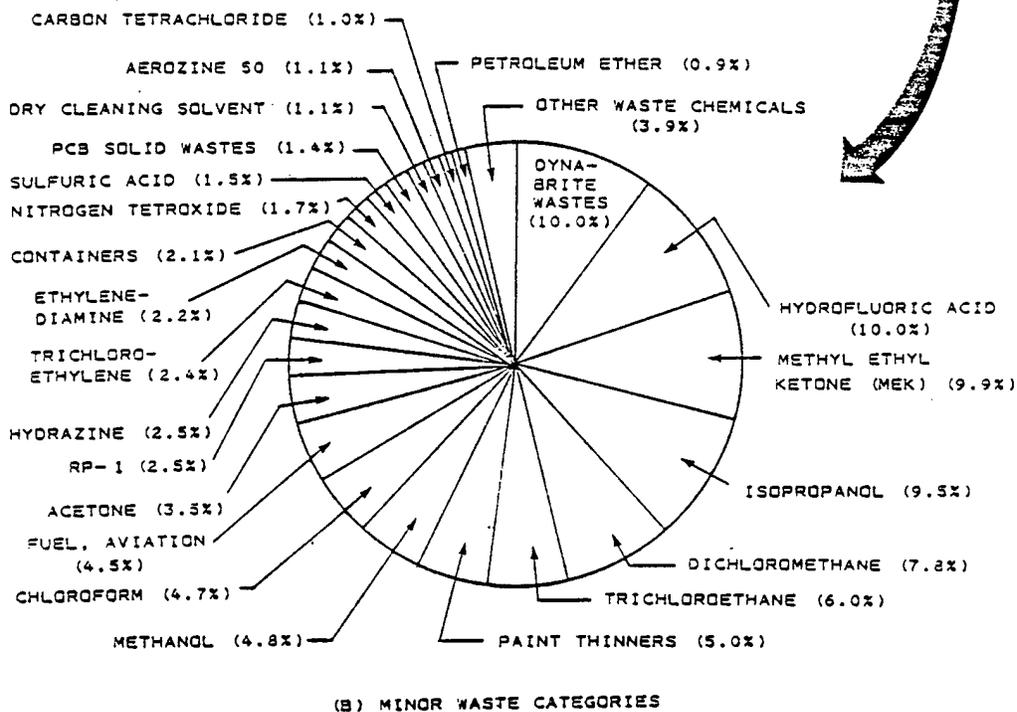
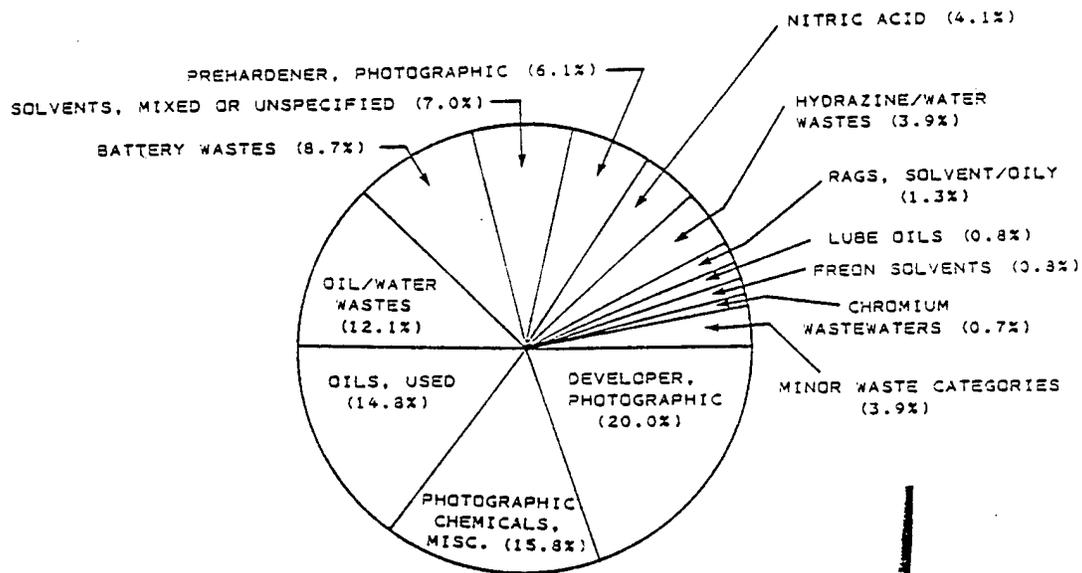
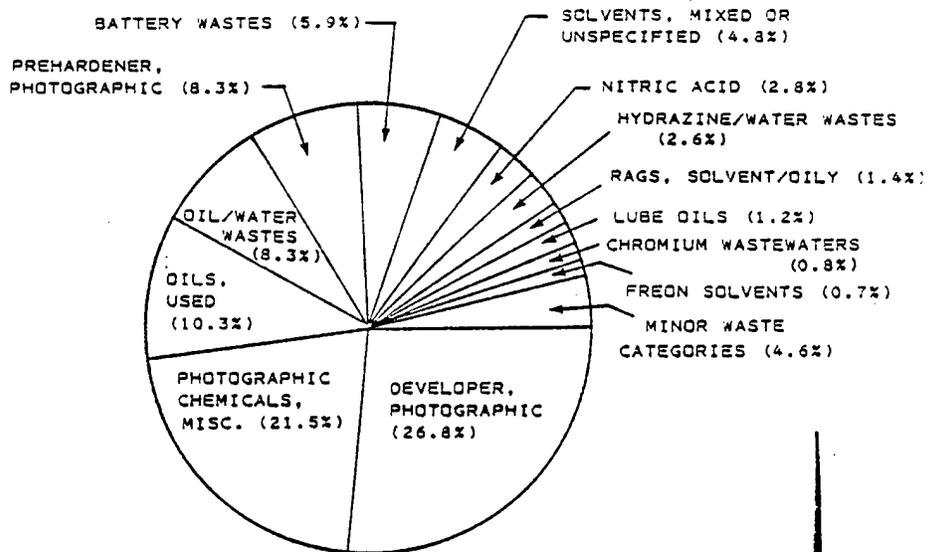
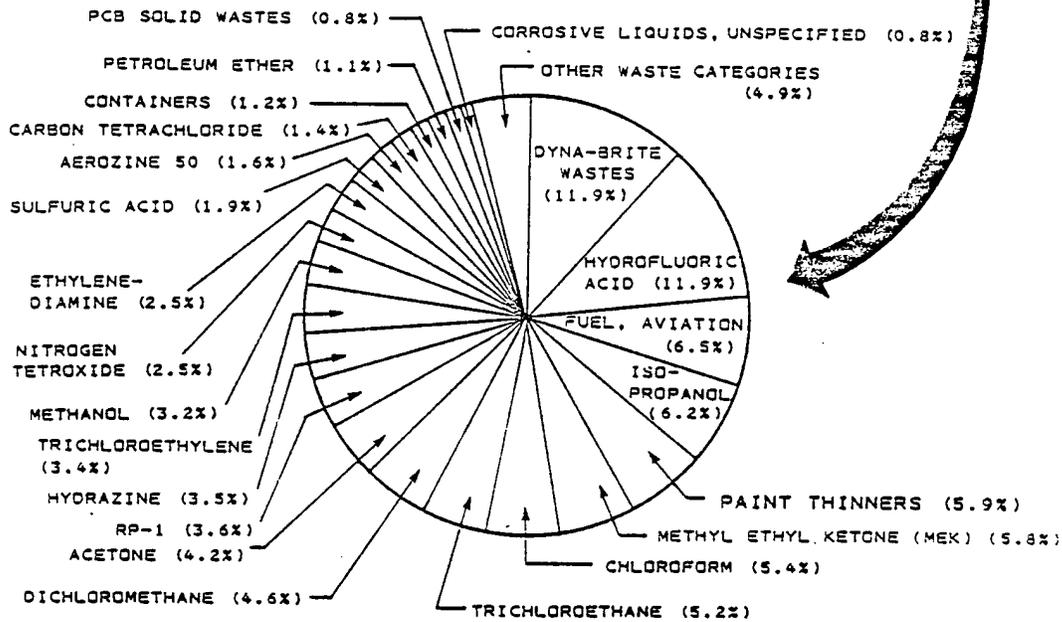


Figure 31. Categories of baseline hazardous waste generated by VAFB host base in 1981 (given as percent by weight).



(A) MAJOR WASTE CATEGORIES



(B) MINOR WASTE CATEGORIES

Figure 32. Categories of baseline hazardous waste generated by VAFB host base in 1990 (given as percent by weight).

generated by the host base (Figure 31); in 1990, they are projected to constitute 66.9 percent (Figure 32).

The minor waste categories for the years 1981 and 1990 are as follows:

- | | |
|------------------------|---------------------------------------|
| 1. Dyna-brite wastes | 13. Trichloroethylene |
| 2. Hydrofluoric acid | 14. Methanol |
| 3. Aviation fuel | 15. Nitrogen tetroxide |
| 4. Isopropanol | 16. Ethylenediamine |
| 5. Paint thinners | 17. Sulfuric acid |
| 6. Methyl ethyl ketone | 18. Aerozine 50 |
| 7. Chloroform | 19. Carbon tetrachloride |
| 8. Trichloroethane | 20. Containers |
| 9. Dichloromethane | 21. Petroleum ether |
| 10. Acetone | 22. PCB solid wastes |
| 11. RP-1 | 23. Corrosive liquids,
unspecified |
| 12. Hydrazine | |

The first four categories jointly contribute almost 40 percent of the basewide minor waste generation in the years 1981 and 1990.

4. HAZARDOUS AND ACUTELY HAZARDOUS WASTES

A breakdown of wastes into hazardous and acutely hazardous categories is shown in Figure 33. As shown, 6.3, 10.8, and 4.1 percent by weight of the wastes generated by Fuels Lab & Det 41, Boeing, and 1369 AVS/DOC, respectively, exhibit acutely hazardous properties; the remaining facilities do not generate wastes in this category.

Further investigations into annual generation of acutely hazardous wastes by the VAFB host base show that 1369 AVS/DOC generated 94.2 percent of these wastes in 1981, followed by Fuels Lab & Det 41 (4.3 percent), and Boeing (1.5 percent) (Figure 34). In 1990, 1369 AVS/DOC is projected to generate 93.9 percent of the acutely hazardous wastes, followed by Fuels Lab & Det 41 (5.4 percent), and Boeing (0.7 percent) (Figure 34).

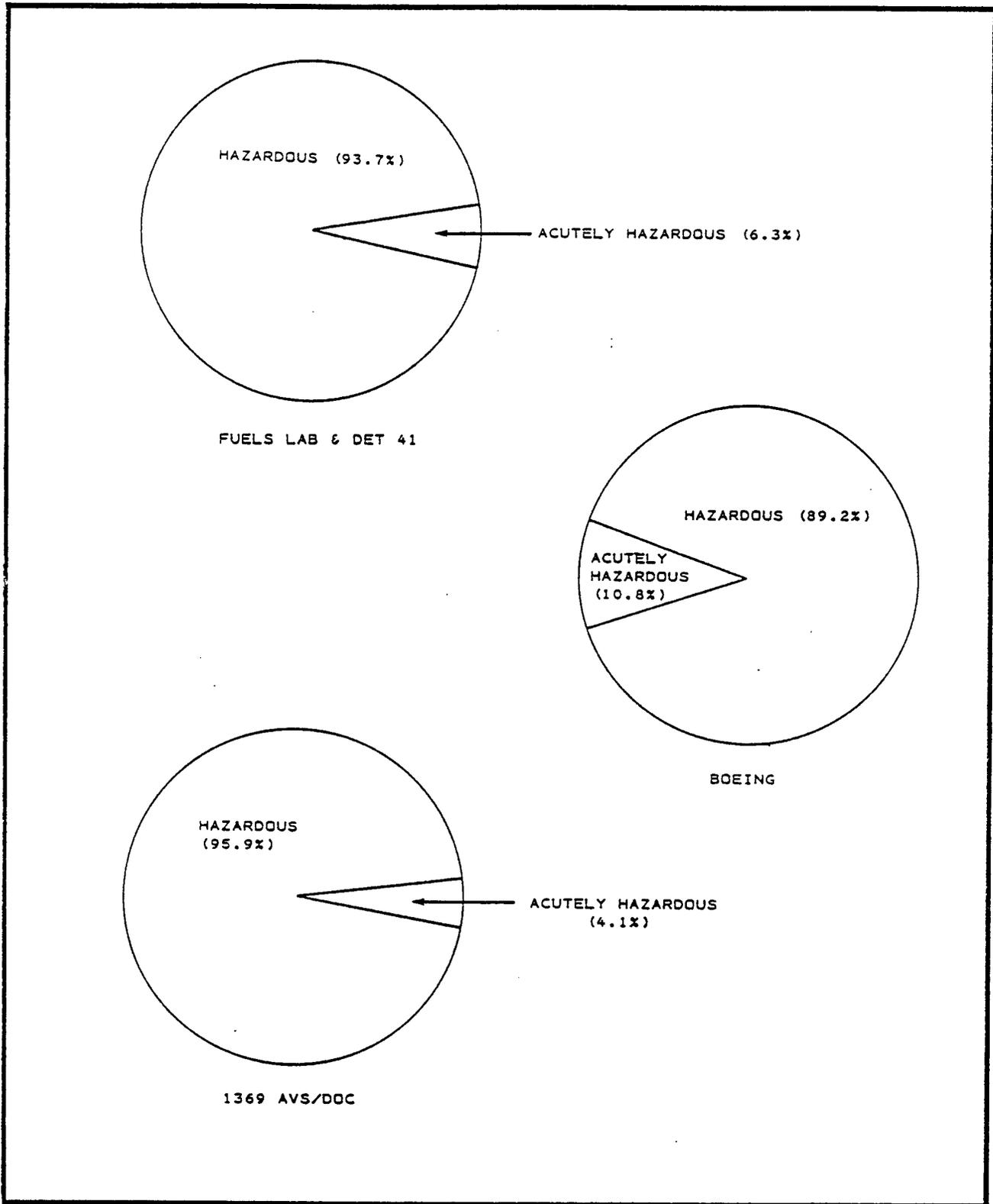
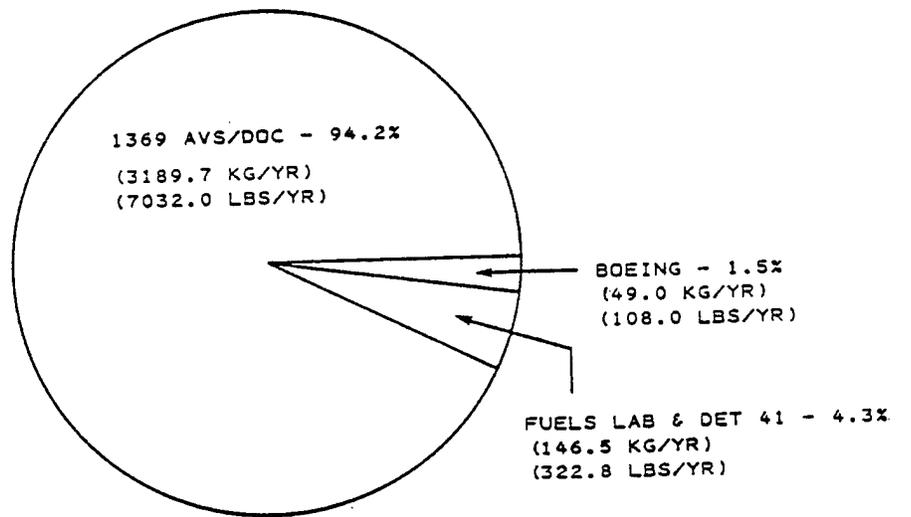
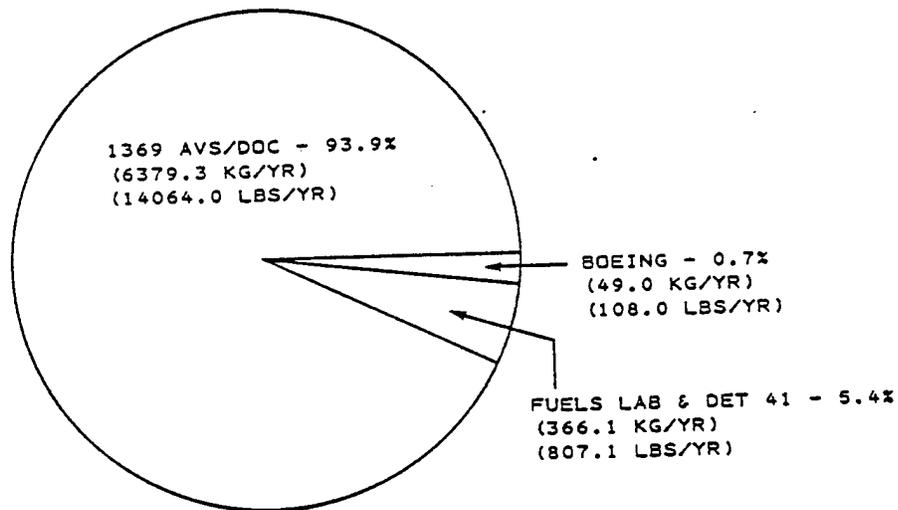


Figure 33. Hazardous and acutely hazardous waste generated under baseline conditions by organization for VAFB host base (facilities not shown do not generate acutely hazardous waste).



1981



1990

Figure 34. Acutely hazardous waste generated by VAFB host base for the years 1981 and 1990.

SECTION 7

COMBINED INVENTORY FOR VAFB HOST BASE AND TENANTS

In view of the need to account for all hazardous wastes generated by the host base and its tenants at VAFB, the inventory of wastes generated by the host base, presented in the previous sections and in Appendix C of this report, is combined in this section with the inventories for SD-STC (1), SD-TAC (3), BMO (5), and NASA (Appendix D).

Table 17 is compiled to assist VAFB personnel in distinguishing between those host base and tenant programs that generate hazardous waste as a function of launch schedule, and those that generate waste on a yearly basis. Table 17 lists factors used to project baseline hazardous waste generated by different host base and tenant organizations for the years 1981 through 1990.

Among the organizations inventoried, the Component Cleaning Facility; Fuels Lab & Det 41, 1369 AVS/DOC, and Federal Electric anticipate an increase in annual waste generation with the start of STS launches at VAFB. Federal Electric, which anticipates an annual increase of 5 percent in waste generation prior to 1985, expects this rate to increase to 10 percent starting in 1985. The three other organizations expect a single step-function increase when STS becomes operational.

Tables 18 and 19 group VAFB hazardous wastes by EPA hazardous waste number for liquids and solids, respectively. Annual quantities of wastes generated during the period 1981 through 1990 are shown for the host base and each tenant, grouped as follows:

- SD-STC.
- SD-TAC.
- Host base.
- BMO.
- NASA.

Amounts are given in gallons for liquid wastes, and in pounds for solid wastes.

Tables 20 and 21 group the VAFB hazardous waste inventory by waste category for liquids and solids, respectively. Subtotals for the years 1981 through 1990 are given for the host base and each tenant under each waste category, along with totals for that

waste category. Grand totals for all waste categories combined are also shown for the host base and each tenant. For a summary of the quantities per unit time used to compile these tables, see Appendix E.

TABLE 17. FACTORS USED TO PROJECT BASELINE HAZARDOUS WASTE GENERATION FOR THE YEARS 1981-1990

<u>Organization</u>	<u>Time Unit Used for Data Input</u>	<u>Multiplicative Factor Used to Convert to Annual Quantities</u>									
		<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>
Space Division - STS	STS Launch	0	0	0	0	1	3	7	10	10	10
Space Division - Atlas	Atlas Launch	0	2	2	2	2	2	1	1	0	0
Space Division - Titan	Titan Launch	0	2	5	2	4	0	0	0	0	0
Space Division - Component Cleaning Facility	Year, 1982-84	1	1	1	1	1.5	1.5	1.5	1.5	1.5	1.5
Host Base - Fuels Lab/Det 41	Year, 1982-84	1	1	1	1	2.5	2.5	2.5	2.5	2.5	2.5
Host Base - Federal Electric	Year, 1982	1	1.05	1.10	1.16	1.27	1.40	1.54	1.69	1.86	2.05
Host Base - 1369 AVS/DOC	Year, 1982-84	1	1	1	1	2	2	2	2	2	2
Host Base - Other Organizations	Year	1	1	1	1	1	1	1	1	1	1
BMO - M-X Test Pad & Part of MMF	M-X Test Launch	0	0	4	4	4	7	12	12	12	6
BMO - Other M-X Test Facilities	Year	1	1	1	1	1	1	1	1	1	1
NASA - Delta	Delta Launch	0	2	0	0	0	0	0	0	0	0
NASA - TIROS/NOAA	NOAA Launch	0	1	1	1	1	1	1	0	0	0
NASA - Shop & Paint Facilities	Year	0	1	1	1	1	1	1	0	0	0

TABLE 18. SUMMARY BY EPA NUMBER OF BASELINE LIQUID HAZARDOUS WASTE GENERATION FOR VAFB HOST BASE AND TENANTS, 1981 - 1990

EPA NUMBER ORGANIZATION	GALLONS PER YEAR									
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<u>D000</u>										
SPACE DIVISION - STS	.0	.0	.0	.0	370.0	1110.0	2590.0	3700.0	3700.0	3700.0
TOTAL - VAFB & TENANTS	.0	.0	.0	.0	370.0	1110.0	2590.0	3700.0	3700.0	3700.0
<u>D001</u>										
SPACE DIVISION - STS	.0	.0	.0	.0	690.9	2072.7	4836.3	6909.0	6909.0	6909.0
SPACE DIVISION - TAC	.0	1248.0	2454.0	1248.0	2052.0	444.0	222.0	222.0	.0	.0
HOST BASE	14855.1	14867.1	14879.7	14892.9	15340.1	15370.7	15404.3	15441.3	15482.0	15526.7
BMD - MX TEST FACs.	.0	.0	8033.4	8033.4	8033.4	8108.4	8233.4	8233.4	8233.4	8083.4
NASA	.0	471.0	261.0	261.0	261.0	261.0	261.0	.0	.0	.0
TOTAL - VAFB & TENANTS	14855.1	16586.1	25628.1	24435.3	26377.4	26256.8	28957.0	30805.7	30624.4	30519.1
<u>D002</u>										
SPACE DIVISION - STS	.0	.0	.0	.0	1020456.6	3061370.0	7143196.0	10204566.0	10204566.0	10204566.0
SPACE DIVISION - TAC	365000.0	365202.0	365352.0	365202.0	547802.0	547602.0	547551.0	547551.0	547500.0	547500.0
HOST BASE	7973.7	7983.7	7994.2	8005.2	12448.8	12474.2	12502.3	12533.1	12567.0	12604.3
BMD - MX TEST FACs.	.0	.0	8160.0	8160.0	8160.0	14280.0	24480.0	24480.0	24480.0	12240.0
TOTAL - VAFB & TENANTS	372973.7	373185.7	381506.2	381367.2	1588867.3	3635726.0	7727729.0	10789130.0	10789112.0	10776910.0
<u>D003</u>										
HOST BASE	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1
TOTAL - VAFB & TENANTS	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1
<u>D007</u>										
SPACE DIVISION - STS	.0	.0	.0	.0	40.0	120.0	280.0	400.0	400.0	400.0
HOST BASE	350.6	360.6	371.1	382.1	406.2	431.6	459.7	490.5	524.4	561.7
TOTAL - VAFB & TENANTS	350.6	360.6	371.1	382.1	446.2	551.6	739.7	890.5	924.4	961.7
<u>D011</u>										
HOST BASE	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0
TOTAL - VAFB & TENANTS	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0
<u>D016</u>										
HOST BASE	420.0	420.0	420.0	420.0	420.0	420.0	420.0	420.0	420.0	420.0
TOTAL - VAFB & TENANTS	420.0	420.0	420.0	420.0	420.0	420.0	420.0	420.0	420.0	420.0
<u>F001</u>										
SPACE DIVISION - TAC	330.0	330.0	330.0	330.0	495.0	495.0	495.0	495.0	495.0	495.0
HOST BASE	32.2	32.2	32.2	32.2	79.0	79.0	79.0	79.0	79.0	79.0
TOTAL - VAFB & TENANTS	362.2	362.2	362.2	362.2	574.0	574.0	574.0	574.0	574.0	574.0
<u>F002</u>										
SPACE DIVISION - STS	.0	.0	.0	.0	1112.3	3336.9	7786.1	11123.0	11123.0	11123.0
SPACE DIVISION - TAC	.0	1210.0	1210.0	1210.0	1210.0	1210.0	605.0	605.0	.0	.0
HOST BASE	668.0	668.0	668.0	668.0	785.0	785.0	785.0	785.0	785.0	785.0
BMD - MX TEST FACs.	.0	.0	37.3	37.3	37.3	37.3	37.3	37.3	37.3	37.3
NASA	.0	290.0	.0	.0	.0	.0	.0	.0	.0	.0
TOTAL - VAFB & TENANTS	668.0	2168.0	1915.3	1915.3	3144.6	5369.2	9213.4	12550.3	11945.3	11945.3

TABLE 18 (CONT.) SUMMARY BY EPA NUMBER OF BASELINE LIQUID HAZARDOUS WASTE GENERATION FOR VAFB HOST BASE AND TENANTS, 1981 - 1990

EPA NUMBER ORGANIZATION	GALLONS PER YEAR									
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
F003										
HOST BASE	241.0	241.0	241.0	241.0	241.0	241.0	241.0	241.0	241.0	241.0
BMO - MX TEST FACs.	.0	.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
TOTAL - VAFB & TENANTS	241.0	241.0	245.0	245.0	245.0	245.0	245.0	245.0	245.0	245.0
F005										
SPACE DIVISION - STS	.0	.0	.0	.0	130.0	390.0	910.0	1300.0	1300.0	1300.0
HOST BASE	285.0	285.0	285.0	285.0	285.0	285.0	285.0	285.0	285.0	285.0
TOTAL - VAFB & TENANTS	285.0	285.0	285.0	285.0	415.0	675.0	1195.0	1585.0	1585.0	1585.0
F007										
SPACE DIVISION - TAC	36500.0	36500.0	36500.0	36500.0	54750.0	54750.0	54750.0	54750.0	54750.0	54750.0
TOTAL - VAFB & TENANTS	36500.0	36500.0	36500.0	36500.0	54750.0	54750.0	54750.0	54750.0	54750.0	54750.0
F009										
SPACE DIVISION - TAC	36500.0	36500.0	36500.0	36500.0	54750.0	54750.0	54750.0	54750.0	54750.0	54750.0
TOTAL - VAFB & TENANTS	36500.0	36500.0	36500.0	36500.0	54750.0	54750.0	54750.0	54750.0	54750.0	54750.0
F017										
SPACE DIVISION - STS	.0	.0	.0	.0	13.5	40.5	94.5	135.0	135.0	135.0
TOTAL - VAFB & TENANTS	.0	.0	.0	.0	13.5	40.5	94.5	135.0	135.0	135.0
F002										
HOST BASE	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
TOTAL - VAFB & TENANTS	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
K051										
HOST BASE	6000.0	6000.0	6000.0	6000.0	6000.0	6000.0	6000.0	6000.0	6000.0	6000.0
TOTAL - VAFB & TENANTS	6000.0	6000.0	6000.0	6000.0	6000.0	6000.0	6000.0	6000.0	6000.0	6000.0
P030										
HOST BASE	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
TOTAL - VAFB & TENANTS	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
P053										
HOST BASE	848.0	848.0	848.0	848.0	1696.0	1696.0	1696.0	1696.0	1696.0	1696.0
TOTAL - VAFB & TENANTS	848.0	848.0	848.0	848.0	1696.0	1696.0	1696.0	1696.0	1696.0	1696.0
P068										
SPACE DIVISION - STS	.0	.0	.0	.0	3341.4	10024.2	23389.8	33414.0	33414.0	33414.0
HOST BASE	1.2	1.2	1.2	1.2	3.0	3.0	3.0	3.0	3.0	3.0
TOTAL - VAFB & TENANTS	1.2	1.2	1.2	1.2	3344.4	10027.2	23392.8	33417.0	33417.0	33417.0
P078										
HOST BASE	39.0	39.0	39.0	39.0	75.0	75.0	75.0	75.0	75.0	75.0
TOTAL - VAFB & TENANTS	39.0	39.0	39.0	39.0	75.0	75.0	75.0	75.0	75.0	75.0
P080										
SPACE DIVISION - STS	.0	.0	.0	.0	419.3	1257.9	2935.1	4193.0	4193.0	4193.0
SPACE DIVISION - TAC	.0	4.6	11.5	4.6	9.2	.0	.0	.0	.0	.0
NASA	.0	140.0	.0	.0	.0	.0	.0	.0	.0	.0
TOTAL - VAFB & TENANTS	.0	144.6	11.5	4.6	428.5	1257.9	2935.1	4193.0	4193.0	4193.0

TABLE 18 (CONT.) SUMMARY BY EPA NUMBER OF BASELINE LIQUID HAZARDOUS WASTE GENERATION FOR VAFB HOST BASE AND TENANTS, 1981 - 1990

EPA NUMBER ORGANIZATION	GALLONS PER YEAR									
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<u>U002</u>										
HOST BASE	87.0	87.0	87.0	87.0	183.0	183.0	183.0	183.0	183.0	183.0
TOTAL - VAFB & TENANTS	87.0	87.0	87.0	87.0	183.0	183.0	183.0	183.0	183.0	183.0
<i>Benzine</i> <u>U019</u>										
HOST BASE	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2
TOTAL - VAFB & TENANTS	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2
<i>CaCrO3</i> <u>U032</u>										
HOST BASE	2.4	2.4	2.4	2.4	6.0	6.0	6.0	6.0	6.0	6.0
TOTAL - VAFB & TENANTS	2.4	2.4	2.4	2.4	6.0	6.0	6.0	6.0	6.0	6.0
<u>U044</u>										
HOST BASE	63.4	63.4	63.4	63.4	127.0	127.0	127.0	127.0	127.0	127.0
TOTAL - VAFB & TENANTS	63.4	63.4	63.4	63.4	127.0	127.0	127.0	127.0	127.0	127.0
<u>U080</u>										
HOST BASE	116.0	116.0	116.0	116.0	125.0	125.0	125.0	125.0	125.0	125.0
TOTAL - VAFB & TENANTS	116.0	116.0	116.0	116.0	125.0	125.0	125.0	125.0	125.0	125.0
<u>U098</u>										
SPACE DIVISION - TAC	.0	12.2	30.5	12.2	24.4	.0	.0	.0	.0	.0
HOST BASE	1242.0	1242.0	1242.0	1242.0	1260.0	1260.0	1260.0	1260.0	1260.0	1260.0
TOTAL - VAFB & TENANTS	1242.0	1254.2	1272.5	1254.2	1284.4	1260.0	1260.0	1260.0	1260.0	1260.0
<i>114</i> <u>U122</u>										
HOST BASE	10800.4	10800.4	10800.4	10800.4	21600.4	21600.4	21600.4	21600.4	21600.4	21600.4
TOTAL - VAFB & TENANTS	10800.4	10800.4	10800.4	10800.4	21600.4	21600.4	21600.4	21600.4	21600.4	21600.4
<i>Formaldehyde</i> <u>U133</u>										
SPACE DIVISION - STS	.0	.0	.0	.0	107.6	322.8	753.2	1076.0	1076.0	1076.0
SPACE DIVISION - TAC	.0	402.0	1005.0	402.0	804.0	.0	.0	.0	.0	.0
HOST BASE	1064.0	1064.0	1064.0	1064.0	1172.0	1172.0	1172.0	1172.0	1172.0	1172.0
HASA	.0	5055.0	55.0	55.0	55.0	55.0	55.0	.0	.0	.0
TOTAL - VAFB & TENANTS	1064.0	6521.0	2124.0	1521.0	2138.6	1549.8	1980.2	2248.0	2248.0	2248.0
<i>HF</i> <u>U134</u>										
HOST BASE	200.0	210.0	220.5	231.5	254.7	280.1	308.2	339.0	372.9	410.2
TOTAL - VAFB & TENANTS	200.0	210.0	220.5	231.5	254.7	280.1	308.2	339.0	372.9	410.2
<i>Hg</i> <u>U151</u>										
TOTAL - VAFB & TENANTS	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
<i>Methanol</i> <u>U154</u>										
SPACE DIVISION - TAC	.0	672.0	1680.0	672.0	1344.0	.0	.0	.0	.0	.0
HOST BASE	122.0	122.0	122.0	122.0	140.0	140.0	140.0	140.0	140.0	140.0
TOTAL - VAFB & TENANTS	122.0	794.0	1802.0	794.0	1484.0	140.0	140.0	140.0	140.0	140.0
<i>MEK</i> <u>U159</u>										
SPACE DIVISION - STS	.0	.0	.0	.0	157.1	471.3	1099.7	1571.0	1571.0	1571.0
SPACE DIVISION - TAC	.0	4.0	4.0	4.0	4.0	4.0	2.0	2.0	.0	.0
HOST BASE	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0
TOTAL - VAFB & TENANTS	27.0	31.0	31.0	31.0	188.1	502.3	1128.7	1600.0	1598.0	1598.0

TABLE 18 (CONT.) SUMMARY BY EPA NUMBER OF BASELINE LIQUID HAZARDOUS WASTE GENERATION FOR VAFB HOST BASE AND TENANTS, 1981 - 1990

EPA NUMBER ORGANIZATION	GALLONS PER YEAR									
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<i>Methyl isobutyl Ketone</i> U161										
HOST BASE	2.4	2.4	2.4	2.4	6.0	6.0	6.0	6.0	6.0	6.0
TOTAL - VAFB & TENANTS	2.4	2.4	2.4	2.4	6.0	6.0	6.0	6.0	6.0	6.0
U185										
HOST BASE	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0
TOTAL - VAFB & TENANTS	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0	180.0
U211										
HOST BASE	12.0	12.0	12.0	12.0	30.0	30.0	30.0	30.0	30.0	30.0
TOTAL - VAFB & TENANTS	12.0	12.0	12.0	12.0	30.0	30.0	30.0	30.0	30.0	30.0
<i>Toluene</i> U220										
HOST BASE	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
TOTAL - VAFB & TENANTS	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Not Listed										
SPACE DIVISION - STS	.0	.0	.0	.0	117300.0	351900.0	821100.0	1173000.0	1173000.0	1173000.0
SPACE DIVISION - TAC	.0	80000.0	200000.0	80000.0	160000.0	.0	.0	.0	.0	.0
HOST BASE	8236.0	8236.0	8236.0	8236.0	12695.0	12695.0	12695.0	12695.0	12695.0	12695.0
BMO - MX TEST FAC.	.0	.0	24.8	24.8	24.8	43.4	74.4	74.4	74.4	37.2
TOTAL - VAFB & TENANTS	8236.0	88236.0	208260.8	88260.8	290019.8	364638.4	833869.4	1185769.4	1185769.4	1185732.2

TABLE 19. SUMMARY BY EPA NUMBER OF BASELINE SOLID HAZARDOUS WASTE GENERATION FOR VAFB HOST BASE AND TENANTS, 1981 - 1990

EPA NUMBER ORGANIZATION	POUNDS PER YEAR									
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
* HOST BASE	226.5	226.5	226.5	226.5	226.5	226.5	226.5	226.5	226.5	226.5
TOTAL - VAFB & TENANTS	226.5	226.5	226.5	226.5	226.5	226.5	226.5	226.5	226.5	226.5
<u>D001</u>										
SPACE DIVISION - STS	.0	.0	.0	.0	7367.1	22101.3	51569.7	73671.0	73671.0	73671.0
SPACE DIVISION - TAC	.0	955.6	2035.6	955.6	1675.6	235.6	117.8	117.8	.0	.0
HOST BASE	12169.5	12329.5	12497.5	12673.8	13044.4	13451.7	13900.1	14393.2	14935.6	15532.1
BMD - MX TEST FACs.	.0	.0	3521.0	3521.0	3521.0	3614.0	3769.0	3769.0	3769.0	3583.0
TOTAL - VAFB & TENANTS	12169.5	13285.1	18054.1	17150.4	25608.1	39402.6	69356.5	91951.0	92375.6	92766.1
<u>D002</u>										
SPACE DIVISION - STS	.0	.0	.0	.0	54.0	162.0	378.0	540.0	540.0	540.0
TOTAL - VAFB & TENANTS	.0	.0	.0	.0	54.0	162.0	378.0	540.0	540.0	540.0
<u>D003</u>										
SPACE DIVISION - STS	.0	.0	.0	.0	284.0	852.0	1988.0	2840.0	2840.0	2840.0
HOST BASE	334.0	334.0	334.0	334.0	334.0	334.0	334.0	334.0	334.0	334.0
TOTAL - VAFB & TENANTS	334.0	334.0	334.0	334.0	618.0	1186.0	2322.0	3174.0	3174.0	3174.0
<u>D007</u>										
SPACE DIVISION - STS	.0	.0	.0	.0	5.0	15.0	35.0	50.0	50.0	50.0
TOTAL - VAFB & TENANTS	.0	.0	.0	.0	5.0	15.0	35.0	50.0	50.0	50.0
<u>D008</u>										
HOST BASE	18676.0	18676.0	18676.0	18676.0	18676.0	18676.0	18676.0	18676.0	18676.0	18676.0
TOTAL - VAFB & TENANTS	18676.0	18676.0	18676.0	18676.0	18676.0	18676.0	18676.0	18676.0	18676.0	18676.0
<u>D011</u>										
SPACE DIVISION - STS	.0	.0	.0	.0	90.0	270.0	630.0	900.0	900.0	900.0
HOST BASE	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
TOTAL - VAFB & TENANTS	1.5	1.5	1.5	1.5	91.5	271.5	631.5	901.5	901.5	901.5
<u>F001</u>										
SPACE DIVISION - STS	.0	.0	.0	.0	10.0	30.0	70.0	100.0	100.0	100.0
TOTAL - VAFB & TENANTS	.0	.0	.0	.0	10.0	30.0	70.0	100.0	100.0	100.0
<u>F017</u>										
SPACE DIVISION - STS	.0	.0	.0	.0	63.0	189.0	441.0	630.0	630.0	630.0
TOTAL - VAFB & TENANTS	.0	.0	.0	.0	63.0	189.0	441.0	630.0	630.0	630.0
<u>Hot Listed</u>										
SPACE DIVISION - STS	.0	.0	.0	.0	1304.5	3913.5	9131.5	13045.0	13045.0	13045.0
HOST BASE	12502.5	12502.5	12502.5	12502.5	12502.5	12502.5	12502.5	12502.5	12502.5	12502.5
TOTAL - VAFB & TENANTS	12502.5	12502.5	12502.5	12502.5	13807.0	16416.0	21634.0	25547.5	25547.5	25547.5

* PCB-contaminated wastes are specially regulated under Code of Federal Regulations 40 CFR 761. They are not listed in RCRA.

TABLE 20. SUMMARY OF BASELINE LIQUID WASTE GENERATION FOR VAFB HOST BASE AND TENANTS BY WASTE CATEGORY FOR 1981 - 1990

WASTE CATEGORY ORGANIZATION	GALLONS PER YEAR									
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
<u>AB - ACETIC ACID</u>										
HOST BASE	.6	.6	.6	.6	1.5	1.5	1.5	1.5	1.5	1.5
TOTAL - VAFB & TENANTS	.6	.6	.6	.6	1.5	1.5	1.5	1.5	1.5	1.5
<u>AC - ACETONE</u>										
HOST BASE	87.0	87.0	87.0	87.0	183.0	183.0	183.0	183.0	183.0	183.0
TOTAL - VAFB & TENANTS	87.0	87.0	87.0	87.0	183.0	183.0	183.0	183.0	183.0	183.0
<u>AJ - AEROZINE 50</u>										
HOST BASE	51.0	51.0	51.0	51.0	87.0	87.0	87.0	87.0	87.0	87.0
TOTAL - VAFB & TENANTS	51.0	51.0	51.0	51.0	87.0	87.0	87.0	87.0	87.0	87.0
<u>AM - ALCOHOLS, UNSPECIFIED</u>										
HOST BASE	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
TOTAL - VAFB & TENANTS	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
<u>AP - ALDACIDES, UNSPECIFIED</u>										
HOST BASE	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0
TOTAL - VAFB & TENANTS	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0
<u>AU - AMMONIA</u>										
SPACE DIVISION - STS	.0	.0	.0	.0	10.0	30.0	70.0	100.0	100.0	100.0
HOST BASE	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1
TOTAL - VAFB & TENANTS	.1	.1	.1	.1	10.1	30.1	70.1	100.1	100.1	100.1
<u>BG - BATTERY WASTES</u>										
HOST BASE	1213.0	1213.0	1213.0	1213.0	1213.0	1213.0	1213.0	1213.0	1213.0	1213.0
TOTAL - VAFB & TENANTS	1213.0	1213.0	1213.0	1213.0	1213.0	1213.0	1213.0	1213.0	1213.0	1213.0
<u>BJ - BENZENE</u>										
HOST BASE	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2
TOTAL - VAFB & TENANTS	.1	.1	.1	.1	.2	.2	.2	.2	.2	.2
<u>BR - BIOCIDES, UNSPECIFIED</u>										
HOST BASE	2340.0	2340.0	2340.0	2340.0	2340.0	2340.0	2340.0	2340.0	2340.0	2340.0
TOTAL - VAFB & TENANTS	2340.0	2340.0	2340.0	2340.0	2340.0	2340.0	2340.0	2340.0	2340.0	2340.0
<u>CD - CARBON TETRACHLORIDE</u>										
HOST BASE	12.0	12.0	12.0	12.0	30.0	30.0	30.0	30.0	30.0	30.0
TOTAL - VAFB & TENANTS	12.0	12.0	12.0	12.0	30.0	30.0	30.0	30.0	30.0	30.0
<u>CH - CELLOSOLVE SOLVENTS</u>										
SPACE DIVISION - STS	.0	.0	.0	.0	29.9	89.7	209.3	299.0	299.0	299.0
TOTAL - VAFB & TENANTS	.0	.0	.0	.0	29.9	89.7	209.3	299.0	299.0	299.0
<u>CK - CHLOROFORM</u>										
HOST BASE	63.4	63.4	63.4	63.4	127.0	127.0	127.0	127.0	127.0	127.0
TOTAL - VAFB & TENANTS	63.4	63.4	63.4	63.4	127.0	127.0	127.0	127.0	127.0	127.0

TABLE 20 (CONT.) SUMMARY OF BASELINE LIQUID WASTE GENERATION FOR VAFB HOST BASE AND TENANTS BY WASTE CATEGORY FOR 1981 - 1990

WASTE CATEGORY ORGANIZATION	GALLONS PER YEAR									
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
CN - CHROMIUM WASTEWATERS										
SPACE DIVISION - STS	.0	.0	.0	.0	40.0	120.0	280.0	400.0	400.0	400.0
* SPACE DIVISION - TAC	36500.0	36500.0	36500.0	36500.0	54750.0	54750.0	54750.0	54750.0	54750.0	54750.0
HOST BASE	353.0	363.0	373.5	384.5	412.2	437.6	465.7	496.5	530.4	567.7
TOTAL - VAFB & TENANTS	36853.0	36863.0	36873.5	36884.5	55202.2	55307.6	55495.7	55646.5	55680.4	55717.7
CV - CORROSIVE LIQUIDS, UNSPECIFIED										
HOST BASE	11.8	11.8	11.8	11.8	28.0	28.0	28.0	28.0	28.0	28.0
BMD - MX TEST FAC.	.0	.0	8160.0	8160.0	8160.0	14280.0	24480.0	24480.0	24480.0	12240.0
TOTAL - VAFB & TENANTS	11.8	11.8	8171.8	8171.8	8188.0	14308.0	24508.0	24508.0	24508.0	12268.0
CW - CYANIDE WASTEWATERS										
* SPACE DIVISION - TAC	36500.0	36500.0	36500.0	36500.0	54750.0	54750.0	54750.0	54750.0	54750.0	54750.0
HOST BASE	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
TOTAL - VAFB & TENANTS	36513.0	36513.0	36513.0	36513.0	54763.0	54763.0	54763.0	54763.0	54763.0	54763.0
DB - 2,4-D										
HOST BASE	420.0	420.0	420.0	420.0	420.0	420.0	420.0	420.0	420.0	420.0
TOTAL - VAFB & TENANTS	420.0	420.0	420.0	420.0	420.0	420.0	420.0	420.0	420.0	420.0
DE - DELUGE WATER										
SPACE DIVISION - STS	.0	.0	.0	.0	1018264.4	3054793.0	7127850.0	10182642.0	10182642.0	10182642.0
SPACE DIVISION - TAC	.0	800000.0	2000000.0	800000.0	1600000.0	.0	.0	.0	.0	.0
TOTAL - VAFB & TENANTS	.0	800000.0	2000000.0	800000.0	1178264.3	3054793.0	7127850.0	10182642.0	10182642.0	10182642.0
DI - DEVELOPER, PHOTOGRAPHIC										
HOST BASE	10001.0	10001.0	10001.0	10001.0	19585.0	19585.0	19585.0	19585.0	19585.0	19585.0
TOTAL - VAFB & TENANTS	10001.0	10001.0	10001.0	10001.0	19585.0	19585.0	19585.0	19585.0	19585.0	19585.0
DH - DICHLOROMETHANE										
HOST BASE	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0
TOTAL - VAFB & TENANTS	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0
DV - DRY CLEANING SOLVENT										
HOST BASE	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
TOTAL - VAFB & TENANTS	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
DY - DYNA-BRITE WASTES										
HOST BASE	200.0	210.0	220.5	231.5	254.7	280.1	308.2	339.0	372.9	410.2
TOTAL - VAFB & TENANTS	200.0	210.0	220.5	231.5	254.7	280.1	308.2	339.0	372.9	410.2
EC - EEW&S WASTEWATERS										
SPACE DIVISION - STS	.0	.0	.0	.0	3570.0	10710.0	24990.0	35700.0	35700.0	35700.0
TOTAL - VAFB & TENANTS	.0	.0	.0	.0	3570.0	10710.0	24990.0	35700.0	35700.0	35700.0
EH - ETHANOL										
HOST BASE	1.2	1.2	1.2	1.2	3.0	3.0	3.0	3.0	3.0	3.0
TOTAL - VAFB & TENANTS	1.2	1.2	1.2	1.2	3.0	3.0	3.0	3.0	3.0	3.0

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TABLE 20 (CONT.) SUMMARY OF BASELINE LIQUID WASTE GENERATION FOR VAFB HOST BASE AND TENANTS BY WASTE CATEGORY FOR 1981 - 1990

WASTE CATEGORY ORGANIZATION	GALLONS PER YEAR									
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
EO - ETHYLENEDIAMINE										
HOST BASE	48.0	48.0	48.0	48.0	96.0	96.0	96.0	96.0	96.0	96.0
TOTAL - VAFB & TENANTS	48.0	48.0	48.0	48.0	96.0	96.0	96.0	96.0	96.0	96.0
FJ - FORMALDEHYDE										
HOST BASE	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
TOTAL - VAFB & TENANTS	.4	.4	.4	.4	.4	.4	.4	.4	.4	.4
FR - FREON SOLVENTS										
SPACE DIVISION - STS	.0	.0	.0	.0	400.1	1200.3	2800.7	4001.0	4001.0	4001.0
HOST BASE	388.0	388.0	388.0	388.0	460.0	460.0	460.0	460.0	460.0	460.0
NASA	.0	200.0	.0	.0	.0	.0	.0	.0	.0	.0
TOTAL - VAFB & TENANTS	388.0	588.0	388.0	388.0	860.1	1660.3	3260.7	4461.0	4461.0	4461.0
FW - FUEL, AVIATION										
HOST BASE	126.0	126.0	126.0	126.0	315.0	315.0	315.0	315.0	315.0	315.0
TOTAL - VAFB & TENANTS	126.0	126.0	126.0	126.0	315.0	315.0	315.0	315.0	315.0	315.0
FX - FUEL, DIESEL										
HOST BASE	6.0	6.0	6.0	6.0	15.0	15.0	15.0	15.0	15.0	15.0
TOTAL - VAFB & TENANTS	6.0	6.0	6.0	6.0	15.0	15.0	15.0	15.0	15.0	15.0
GC - GASOLINE										
HOST BASE	2.4	2.4	2.4	2.4	6.0	6.0	6.0	6.0	6.0	6.0
TOTAL - VAFB & TENANTS	2.4	2.4	2.4	2.4	6.0	6.0	6.0	6.0	6.0	6.0
HC - HEPTANE										
SPACE DIVISION - STS	.0	.0	.0	.0	29.9	89.7	209.3	299.0	299.0	299.0
TOTAL - VAFB & TENANTS	.0	.0	.0	.0	29.9	89.7	209.3	299.0	299.0	299.0
HE - HERBICIDES, UNSPECIFIED										
HOST BASE	1200.0	1200.0	1200.0	1200.0	1200.0	1200.0	1200.0	1200.0	1200.0	1200.0
TOTAL - VAFB & TENANTS	1200.0	1200.0	1200.0	1200.0	1200.0	1200.0	1200.0	1200.0	1200.0	1200.0
HI - HYDRAULIC FLUID										
SPACE DIVISION - STS	.0	.0	.0	.0	102.5	307.5	717.5	1025.0	1025.0	1025.0
BHO - MX TEST FAC.	.0	.0	7060.0	7060.0	7060.0	7060.0	7060.0	7060.0	7060.0	7060.0
TOTAL - VAFB & TENANTS	.0	.0	7060.0	7060.0	7162.5	7367.5	7777.5	8085.0	8085.0	8085.0
HM - HYDRAZINE										
SPACE DIVISION - STS	.0	.0	.0	.0	107.6	322.8	753.2	1076.0	1076.0	1076.0
SPACE DIVISION - TAC	.0	2.0	5.0	2.0	4.0	.0	.0	.0	.0	.0
HOST BASE	49.0	49.0	49.0	49.0	121.0	121.0	121.0	121.0	121.0	121.0
TOTAL - VAFB & TENANTS	49.0	51.0	54.0	51.0	232.6	443.8	874.2	1197.0	1197.0	1197.0
HO - HYDRAZINE SCRUBBER LIQUOR										
SPACE DIVISION - STS	.0	.0	.0	.0	1060.0	3180.0	7420.0	10600.0	10600.0	10600.0
SPACE DIVISION - TAC	.0	202.0	352.0	202.0	302.0	102.0	51.0	51.0	.0	.0
TOTAL - VAFB & TENANTS	.0	202.0	352.0	202.0	1362.0	3282.0	7471.0	10651.0	10600.0	10600.0

TABLE 20 (CONT.) SUMMARY OF BASELINE LIQUID WASTE GENERATION FOR VAFB HOST BASE AND TENANTS BY WASTE CATEGORY FOR 1981 - 1990

WASTE CATEGORY ORGANIZATION	GALLONS PER YEAR									
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
HQ - HYDRAZINE/WATER WASTES										
SPACE DIVISION - STS	.0	.0	.0	.0	1120.0	3360.0	7840.0	11200.0	11200.0	11200.0
SPACE DIVISION - TAC	.0	400.0	1000.0	400.0	800.0	.0	.0	.0	.0	.0
HOST BASE	2193.0	2193.0	2193.0	2193.0	2193.0	2193.0	2193.0	2193.0	2193.0	2193.0
NASA	.0	5055.0	55.0	55.0	55.0	55.0	55.0	.0	.0	.0
TOTAL - VAFB & TENANTS	2193.0	7648.0	3248.0	2648.0	4168.0	5608.0	10088.0	13393.0	13393.0	13393.0
HN - HYDROCHLORIC ACID										
HOST BASE	6.6	6.6	6.6	6.6	16.5	16.5	16.5	16.5	16.5	16.5
TOTAL - VAFB & TENANTS	6.6	6.6	6.6	6.6	16.5	16.5	16.5	16.5	16.5	16.5
HX - HYDROFLUORIC ACID										
HOST BASE	200.0	210.0	220.5	231.5	254.7	280.1	308.2	339.0	372.9	410.2
TOTAL - VAFB & TENANTS	200.0	210.0	220.5	231.5	254.7	280.1	308.2	339.0	372.9	410.2
ID - IGNITABLE WASTES, UNSPECIFIED										
HOST BASE	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
TOTAL - VAFB & TENANTS	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
IK - INSULATION WASTES, LIQUID										
SPACE DIVISION - STS	.0	.0	.0	.0	50.0	150.0	350.0	500.0	500.0	500.0
TOTAL - VAFB & TENANTS	.0	.0	.0	.0	50.0	150.0	350.0	500.0	500.0	500.0
IL - INSULATION WASTEWATERS										
SPACE DIVISION - STS	.0	.0	.0	.0	48960.0	146880.0	342720.0	489600.0	489600.0	489600.0
TOTAL - VAFB & TENANTS	.0	.0	.0	.0	48960.0	146880.0	342720.0	489600.0	489600.0	489600.0
IV - ISOPROPHANOL										
SPACE DIVISION - TAC	.0	804.0	2010.0	804.0	1608.0	.0	.0	.0	.0	.0
HOST BASE	241.4	241.4	241.4	241.4	272.0	272.0	272.0	272.0	272.0	272.0
NASA	.0	255.0	55.0	55.0	55.0	55.0	55.0	.0	.0	.0
TOTAL - VAFB & TENANTS	241.4	1300.4	2306.4	1100.4	1935.0	327.0	327.0	272.0	272.0	272.0
LI - LUBE OILS										
HOST BASE	433.5	433.5	433.5	433.5	487.5	487.5	487.5	487.5	487.5	487.5
BHO - MX TEST FACs.	.0	.0	86.0	86.0	86.0	86.0	86.0	86.0	86.0	86.0
TOTAL - VAFB & TENANTS	433.5	433.5	519.5	519.5	573.5	573.5	573.5	573.5	573.5	573.5
MF - MERCURY										
TOTAL - VAFB & TENANTS	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
MN - METHANOL										
SPACE DIVISION - TAC	.0	672.0	1680.0	672.0	1344.0	.0	.0	.0	.0	.0
HOST BASE	122.0	122.0	122.0	122.0	140.0	140.0	140.0	140.0	140.0	140.0
TOTAL - VAFB & TENANTS	122.0	794.0	1802.0	794.0	1484.0	140.0	140.0	140.0	140.0	140.0
MO - METHYLENE CHLORIDE										
SPACE DIVISION - STS	.0	.0	.0	.0	351.0	1053.0	2457.0	3510.0	3510.0	3510.0
HOST BASE	6.0	6.0	6.0	6.0	15.0	15.0	15.0	15.0	15.0	15.0
TOTAL - VAFB & TENANTS	6.0	6.0	6.0	6.0	366.0	1068.0	2472.0	3525.0	3525.0	3525.0

TABLE 20 (CONT.) SUMMARY OF BASELINE LIQUID WASTE GENERATION FOR VAFB HOST BASE AND TENANTS BY WASTE CATEGORY FOR 1981 - 1990

WASTE CATEGORY ORGANIZATION	GALLONS PER YEAR									
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
MS - METHYL ETHYL KETONE (MEK)										
SPACE DIVISION - STS	.0	.0	.0	.0	29.0	87.0	203.0	290.0	290.0	290.0
SPACE DIVISION - TAC	.0	4.0	4.0	4.0	4.0	4.0	2.0	2.0	.0	.0
HOST BASE	247.0	247.0	247.0	247.0	247.0	247.0	247.0	247.0	247.0	247.0
TOTAL - VAFB & TENANTS	247.0	251.0	251.0	251.0	280.0	338.0	452.0	539.0	537.0	537.0
MU - METHYL ISOBUTYL KETONE (MIBK)										
HOST BASE	67.4	67.4	67.4	67.4	71.0	71.0	71.0	71.0	71.0	71.0
TOTAL - VAFB & TENANTS	67.4	67.4	67.4	67.4	71.0	71.0	71.0	71.0	71.0	71.0
MX - MMH (MONOMETHYL HYDRAZINE)										
SPACE DIVISION - STS	.0	.0	.0	.0	141.4	424.2	989.8	1414.0	1414.0	1414.0
HOST BASE	1.2	1.2	1.2	1.2	3.0	3.0	3.0	3.0	3.0	3.0
TOTAL - VAFB & TENANTS	1.2	1.2	1.2	1.2	144.4	427.2	992.8	1417.0	1417.0	1417.0
NE - NITRIC ACID										
HOST BASE	2046.0	2046.0	2046.0	2046.0	2082.0	2082.0	2082.0	2082.0	2082.0	2082.0
TOTAL - VAFB & TENANTS	2046.0	2046.0	2046.0	2046.0	2082.0	2082.0	2082.0	2082.0	2082.0	2082.0
NK - NITROGEN TETROXIDE										
SPACE DIVISION - STS	.0	.0	.0	.0	79.3	237.9	555.1	793.0	793.0	793.0
SPACE DIVISION - TAC	.0	4.6	11.5	4.6	9.2	.0	.0	.0	.0	.0
HOST BASE	39.0	39.0	39.0	39.0	75.0	75.0	75.0	75.0	75.0	75.0
TOTAL - VAFB & TENANTS	39.0	43.6	50.5	43.6	163.5	312.9	630.1	868.0	868.0	868.0
OD - OIL/WATER WASTES										
HOST BASE	6000.0	6000.0	6000.0	6000.0	6000.0	6000.0	6000.0	6000.0	6000.0	6000.0
TOTAL - VAFB & TENANTS	6000.0	6000.0	6000.0	6000.0	6000.0	6000.0	6000.0	6000.0	6000.0	6000.0
OG - OILS, USED										
SPACE DIVISION - STS	.0	.0	.0	.0	11.2	33.6	78.4	112.0	112.0	112.0
SPACE DIVISION - TAC	.0	4.0	4.0	4.0	4.0	4.0	2.0	2.0	.0	.0
HOST BASE	11009.0	11015.5	11022.3	11029.5	11044.5	11061.1	11079.3	11099.3	11121.4	11145.6
BND - MX TEST FAC.	.0	.0	437.4	437.4	437.4	437.4	437.4	437.4	437.4	437.4
TOTAL - VAFB & TENANTS	11009.0	11019.5	11463.7	11470.9	11497.1	11536.1	11597.1	11650.7	11670.8	11695.0
OH - OILY WASTES, GENERAL										
HASA	.0	200.0	200.0	200.0	200.0	200.0	200.0	.0	.0	.0
TOTAL - VAFB & TENANTS	.0	200.0	200.0	200.0	200.0	200.0	200.0	.0	.0	.0
OX - OXIDIZER/WATER WASTES										
SPACE DIVISION - STS	.0	.0	.0	.0	340.0	1020.0	2380.0	3400.0	3400.0	3400.0
HASA	.0	140.0	.0	.0	.0	.0	.0	.0	.0	.0
TOTAL - VAFB & TENANTS	.0	140.0	.0	.0	340.0	1020.0	2380.0	3400.0	3400.0	3400.0
PC - PAINT STRIPPERS										
HOST BASE	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0
TOTAL - VAFB & TENANTS	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0

TABLE 20 (CONT.) SUMMARY OF BASELINE LIQUID WASTE GENERATION FOR VAFB HOST BASE AND TENANTS BY WASTE CATEGORY FOR 1981 - 1990

WASTE CATEGORY ORGANIZATION	GALLONS PER YEAR									
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
PE - PAINT THINNERS										
SPACE DIVISION - STS	.0	.0	.0	.0	.2	.6	1.4	2.0	2.0	2.0
HOST BASE	512.0	517.5	523.3	529.3	542.1	556.1	571.5	588.4	607.1	627.6
BMD - MX TEST FACs.	.0	.0	20.0	20.0	20.0	35.0	60.0	60.0	60.0	30.0
TOTAL - VAFB & TENANTS	512.0	517.5	543.3	549.3	562.3	591.7	632.9	650.4	669.1	659.6
PG - PAINT WASTES, LIQUID										
SPACE DIVISION - STS	.0	.0	.0	.0	13.7	41.1	95.9	137.0	137.0	137.0
HOST BASE	130.0	130.0	130.0	130.0	130.0	130.0	130.0	130.0	130.0	130.0
BMD - MX TEST FACs.	.0	.0	24.8	24.8	24.8	43.4	74.4	74.4	74.4	37.2
TOTAL - VAFB & TENANTS	130.0	130.0	154.8	154.8	168.5	214.5	300.3	341.4	341.4	304.2
PO - PERCHLOROETHYLENE										
SPACE DIVISION - STS	.0	.0	.0	.0	345.1	1035.3	2415.7	3451.0	3451.0	3451.0
TOTAL - VAFB & TENANTS	.0	.0	.0	.0	345.1	1035.3	2415.7	3451.0	3451.0	3451.0
PP - PETROLEUM ETHER										
HOST BASE	29.0	29.0	29.0	29.0	65.0	65.0	65.0	65.0	65.0	65.0
TOTAL - VAFB & TENANTS	29.0	29.0	29.0	29.0	65.0	65.0	65.0	65.0	65.0	65.0
PR - PHOTOGRAPHIC CHEMICALS, MISC.										
HOST BASE	7980.0	7980.0	7980.0	7980.0	15780.0	15780.0	15780.0	15780.0	15780.0	15780.0
TOTAL - VAFB & TENANTS	7980.0	7980.0	7980.0	7980.0	15780.0	15780.0	15780.0	15780.0	15780.0	15780.0
PS - POTASSIUM HYDROXIDE										
SPACE DIVISION - STS	.0	.0	.0	.0	2.3	6.9	16.1	23.0	23.0	23.0
TOTAL - VAFB & TENANTS	.0	.0	.0	.0	2.3	6.9	16.1	23.0	23.0	23.0
PU - PREHARDENER, PHOTOGRAPHIC										
HOST BASE	3000.0	3000.0	3000.0	3000.0	6000.0	6000.0	6000.0	6000.0	6000.0	6000.0
TOTAL - VAFB & TENANTS	3000.0	3000.0	3000.0	3000.0	6000.0	6000.0	6000.0	6000.0	6000.0	6000.0
RI - REACTIVE WASTES, UNSPECIFIED										
HOST BASE	3.7	3.7	3.7	3.7	9.1	9.1	9.1	9.1	9.1	9.1
TOTAL - VAFB & TENANTS	3.7	3.7	3.7	3.7	9.1	9.1	9.1	9.1	9.1	9.1
RS - RP-1										
HOST BASE	60.0	60.0	60.0	60.0	150.0	150.0	150.0	150.0	150.0	150.0
TOTAL - VAFB & TENANTS	60.0	60.0	60.0	60.0	150.0	150.0	150.0	150.0	150.0	150.0
RT - RP-1 SLUDGES										
SPACE DIVISION - TAC	.0	440.0	440.0	440.0	440.0	440.0	220.0	220.0	.0	.0
NASA	.0	10.0	.0	.0	.0	.0	.0	.0	.0	.0
TOTAL - VAFB & TENANTS	.0	450.0	440.0	440.0	440.0	440.0	220.0	220.0	.0	.0
SC - SEAWATER, CONTAMINATED										
SPACE DIVISION - STS	.0	.0	.0	.0	4000.0	12000.0	28000.0	40000.0	40000.0	40000.0
TOTAL - VAFB & TENANTS	.0	.0	.0	.0	4000.0	12000.0	28000.0	40000.0	40000.0	40000.0

TABLE 20 (CONT.) SUMMARY OF BASELINE LIQUID WASTE GENERATION FOR VAFB HOST BASE AND TENANTS BY WASTE CATEGORY FOR 1981 - 1990

WASTE CATEGORY ORGANIZATION	GALLONS PER YEAR									
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
SL - SODIUM HYDROXIDE WASTEWATERS										
* SPACE DIVISION - TAC	365000.0	365000.0	365000.0	365000.0	547500.0	547500.0	547500.0	547500.0	547500.0	547500.0
HOST BASE	9.6	9.6	9.6	9.6	24.0	24.0	24.0	24.0	24.0	24.0
TOTAL - VAFB & TENANTS	365009.6	365009.6	365009.6	365009.6	547524.0	547524.0	547524.0	547524.0	547524.0	547524.0
SS - SOLVENT/WATER WASTES										
SPACE DIVISION - STS	.0	.0	.0	.0	414.0	1242.0	2898.0	4140.0	4140.0	4140.0
TOTAL - VAFB & TENANTS	.0	.0	.0	.0	414.0	1242.0	2898.0	4140.0	4140.0	4140.0
SU - SOLVENTS, MIXED OR UNSPEC.										
SPACE DIVISION - STS	.0	.0	.0	.0	311.1	933.3	2177.7	3111.0	3111.0	3111.0
HOST BASE	2527.0	2527.0	2527.0	2527.0	2527.0	2527.0	2527.0	2527.0	2527.0	2527.0
BMO - MX TEST FACs.	.0	.0	434.0	434.0	434.0	494.0	594.0	594.0	594.0	474.0
NASA	.0	6.0	6.0	6.0	6.0	6.0	6.0	.0	.0	.0
TOTAL - VAFB & TENANTS	2527.0	2533.0	2967.0	2967.0	3278.1	3960.3	5304.7	6232.0	6232.0	6112.0
SY - SRB INITIAL RINSE WATER										
SPACE DIVISION - STS	.0	.0	.0	.0	54740.0	164220.0	383180.0	547400.0	547400.0	547400.0
TOTAL - VAFB & TENANTS	.0	.0	.0	.0	54740.0	164220.0	383180.0	547400.0	547400.0	547400.0
SW - SRB WASH WATER										
SPACE DIVISION - STS	.0	.0	.0	.0	9600.0	28800.0	67200.0	96000.0	96000.0	96000.0
TOTAL - VAFB & TENANTS	.0	.0	.0	.0	9600.0	28800.0	67200.0	96000.0	96000.0	96000.0
SZ - SULFURIC ACID										
HOST BASE	41.0	41.0	41.0	41.0	59.0	59.0	59.0	59.0	59.0	59.0
TOTAL - VAFB & TENANTS	41.0	41.0	41.0	41.0	59.0	59.0	59.0	59.0	59.0	59.0
TE - TETRACHLOROETHYLENE										
HOST BASE	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0
TOTAL - VAFB & TENANTS	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0
TJ - TOLUENE										
HOST BASE	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
TOTAL - VAFB & TENANTS	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
TH - TRICHLOROETHANE										
SPACE DIVISION - STS	.0	.0	.0	.0	16.1	48.3	112.7	161.0	161.0	161.0
SPACE DIVISION - TAC	330.0	330.0	330.0	330.0	495.0	495.0	495.0	495.0	495.0	495.0
HOST BASE	160.0	160.0	160.0	160.0	205.0	205.0	205.0	205.0	205.0	205.0
BMO - MX TEST FACs.	.0	.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
TOTAL - VAFB & TENANTS	490.0	490.0	520.0	520.0	746.1	778.3	842.7	891.0	891.0	891.0
TP - TRICHLOROETHYLENE										
SPACE DIVISION - TAC	.0	1210.0	1210.0	1210.0	1210.0	1210.0	605.0	605.0	.0	.0
HOST BASE	32.2	32.2	32.2	32.2	79.0	79.0	79.0	79.0	79.0	79.0
NASA	.0	90.0	.0	.0	.0	.0	.0	.0	.0	.0
TOTAL - VAFB & TENANTS	32.2	1332.2	1242.2	1242.2	1289.0	1289.0	684.0	684.0	79.0	79.0

TABLE 20 (CONT.) SUMMARY OF BASELINE LIQUID WASTE GENERATION FOR VAFB HOST BASE AND TENANTS BY WASTE CATEGORY FOR 1981 - 1990

WASTE CATEGORY ORGANIZATION	GALLONS PER YEAR									
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
TR - TRICHLOROTRIFLUOROETHANE										
BMO - MX TEST FACs.	.0	.0	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
TOTAL - VAFB & TENANTS	.0	.0	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
UD - UDMH (UNSYM DIMETHYLHYDRAZINE)										
SPACE DIVISION - TAC	.0	12.2	30.5	12.2	24.4	.0	.0	.0	.0	.0
HOST BASE	13.0	13.0	13.0	13.0	31.0	31.0	31.0	31.0	31.0	31.0
TOTAL - VAFB & TENANTS	13.0	25.2	43.5	25.2	55.4	31.0	31.0	31.0	31.0	31.0
GRAND TOTALS										
SPACE DIVISION - STS	.0	.0	.0	.0	1144138.8	3432416.3	8008971.4	11441387.8	11441387.8	11441387.8
SPACE DIVISION - TAC	438330.0	522084.8	645077.0	522084.8	823244.6	659255.0	658375.0	658375.0	657495.0	657495.0
HOST BASE	54076.6	54118.6	54162.7	54209.0	75793.5	75900.4	76018.1	76147.6	76289.9	76446.5
BMO - MX TEST FACs.	.0	.0	16259.5	16259.5	16259.5	22473.1	32829.1	32829.1	32829.1	20401.9
NASA	.0	5956.0	316.0	316.0	316.0	316.0	316.0	.0	.0	.0
TOTAL - VAFB & TENANTS	492406.6	582159.4	715815.2	592869.3	2059752.4	4190360.9	8776509.6	12208739.4	12208001.8	12195731.2

92,368

STS					8,500	25,500	58,500	89,000	89,000	89,000
TAC	438,000	442,000	445,000	442,000	663,000	659,000	658,000	658,000	657,000	657,000

TABLE 21. SUMMARY OF BASELINE SOLID WASTE GENERATION FOR VAFB HOST BASE AND TENANTS BY WASTE CATEGORY FOR 1981 - 1990

WASTE CATEGORY ORGANIZATION	POUNDS PER YEAR									
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
AH - ADHESIVE WASTES										
SPACE DIVISION - STS	.0	.0	.0	.0	63.5	190.5	444.5	635.0	635.0	635.0
TOTAL - VAFB & TENANTS	.0	.0	.0	.0	63.5	190.5	444.5	635.0	635.0	635.0
BG - BATTERY WASTES										
SPACE DIVISION - STS	.0	.0	.0	.0	72 144.0	432.0	1008.0	1440.0	1440.0	1440.0
HOST BASE	26356.0	26356.0	26356.0	26356.0	26356.0	26356.0	26356.0	26356.0	26356.0	26356.0
TOTAL - VAFB & TENANTS	26356.0	26356.0	26356.0	26356.0	26500.0	26788.0	27364.0	27796.0	27796.0	27796.0
CT - CONTAINERS										
SPACE DIVISION - STS	.0	.0	.0	.0	6174.5	18523.5	43221.5	61745.0	61745.0	61745.0
HOST BASE	356.5	356.5	356.5	356.5	356.5	356.5	356.5	356.5	356.5	356.5
TOTAL - VAFB & TENANTS	356.5	356.5	356.5	356.5	6531.0	18880.0	43578.0	62101.5	62101.5	62101.5
IL - INSULATION WASTES, SOLID										
SPACE DIVISION - STS	.0	.0	.0	.0	1610 2542.6	7627.8	17798.2	25426.0	25426.0	25426.0
TOTAL - VAFB & TENANTS	.0	.0	.0	.0	2542.6	7627.8	17798.2	25426.0	25426.0	25426.0
PH - PAINT WASTES, SOLID										
SPACE DIVISION - STS	.0	.0	.0	.0	48.0	144.0	336.0	480.0	480.0	480.0
TOTAL - VAFB & TENANTS	.0	.0	.0	.0	48.0	144.0	336.0	480.0	480.0	480.0
PJ - PARTS, CONTAMINATED										
SPACE DIVISION - STS	.0	.0	.0	.0	120.0	360.0	840.0	1200.0	1200.0	1200.0
BMD - MX TEST FAC.	.0	.0	96.0	96.0	96.0	144.0	224.0	224.0	224.0	128.0
TOTAL - VAFB & TENANTS	.0	.0	96.0	96.0	216.0	504.0	1064.0	1424.0	1424.0	1328.0
PN - PCB SOLID WASTES										
HOST BASE	226.5	226.5	226.5	226.5	226.5	226.5	226.5	226.5	226.5	226.5
TOTAL - VAFB & TENANTS	226.5	226.5	226.5	226.5	226.5	226.5	226.5	226.5	226.5	226.5
RC - RAGS, CHROMATE										
SPACE DIVISION - STS	.0	.0	.0	.0	5.0	15.0	35.0	50.0	50.0	50.0
TOTAL - VAFB & TENANTS	.0	.0	.0	.0	5.0	15.0	35.0	50.0	50.0	50.0
RE - RAGS, SOLVENT/OILY										
SPACE DIVISION - STS	.0	.0	.0	.0	80.0	240.0	560.0	800.0	800.0	800.0
SPACE DIVISION - TAC	.0	955.6	2035.6	955.6	1675.6	235.6	117.8	117.8	.0	.0
HOST BASE	12169.5	12329.5	12497.5	12673.8	13044.4	13451.7	13900.1	14393.2	14935.6	15532.1
BMD - MX TEST FAC.	.0	.0	3425.0	3425.0	3425.0	3470.0	3545.0	3545.0	3545.0	3455.0
TOTAL - VAFB & TENANTS	12169.5	13285.1	17958.1	17654.4	18225.0	17397.3	18122.9	18856.0	19280.6	19787.1
SG - SILVER SALTS										
HOST BASE	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
TOTAL - VAFB & TENANTS	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
SY - SULFAMIC ACID										
HOST BASE	4800.0	4800.0	4800.0	4800.0	4800.0	4800.0	4800.0	4800.0	4800.0	4800.0
TOTAL - VAFB & TENANTS	4800.0	4800.0	4800.0	4800.0	4800.0	4800.0	4800.0	4800.0	4800.0	4800.0

TABLE 21 (CONT.) SUMMARY OF BASELINE SOLID WASTE GENERATION FOR VAFB HOST BASE AND TENANTS BY WASTE CATEGORY FOR 1981 - 1990

WASTE CATEGORY ORGANIZATION	POUNDS PER YEAR									
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
GRAND TOTALS					8,000	22,000	53,000	75,000	75,000	75,000
SPACE DIVISION - STS	.0	.0	.0	.0	9177.6	27532.8	64243.2	91776.0	91776.0	91776.0
SPACE DIVISION - TAC	.0	955.6	2035.6	955.6	1675.6	235.6	117.8	117.8	.0	.0
HOST BASE	43910.0	44070.0	44238.0	44414.3	44784.9	45192.2	45640.6	46133.7	46676.1	47272.6
BMO - MX TEST FAC.	.0	.0	3521.0	3521.0	3521.0	3614.0	3769.0	3769.0	3769.0	3583.0
HASA	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
TOTAL - VAFB & TENANTS	43910.0	45025.6	49734.6	48890.9	59159.1	76574.7	113770.6	141796.5	142221.1	142631.6

SECTION 8

SUMMARY OF HAZARDOUS WASTE GENERATION FOR COMBINED VAFB HOST BASE AND TENANTS

1. INTRODUCTION

The purpose of this section is to evaluate the hazardous waste generated by combined host base and tenant organizations at VAFB during the years 1981 through 1990. This time period provides a point of reference from which to compare the quantities of hazardous waste projected after the start of STS launches and the M-X test program with those amounts being generated by the existing programs at VAFB. Information is provided for:

- Baseline quantities of liquid and solid wastes generated monthly and annually for the years 1981 through 1990.
- Contributions of the host base and each tenant to liquid and solid waste generation.
- Major categories of liquid and solid waste generated.
- Hazardous and acutely hazardous waste quantities.
- Contributions of the host base and each tenant to acutely hazardous waste generation.

2. SOURCES OF WASTE

A summary of liquid hazardous waste generation by the VAFB host base and tenants for 1981 through 1990 is given in Tables 22 and 23. Table 22 shows volumes of waste liquids generated per month, while Table 23 lists quantities on an annual basis and for the total 10-year time span. Annual baseline liquid waste generation is depicted in Figure 35.

As shown in Table 23, the VAFB host base and tenants combined are expected to generate 204.5 million liters (54.0 million gallons) of liquid hazardous waste during the period from 1981 through 1990, as follows:

- 1981 - 1.9 million liters (0.5 million gallons).
- 1982 - 2.2 million liters (0.6 million gallons).
- 1983 - 2.7 million liters (0.7 million gallons).
- 1984 - 2.2 million liters (0.6 million gallons).
- 1985 - 7.8 million liters (2.1 million gallons).

TABLE 22. BASELINE HAZARDOUS WASTE LIQUIDS GENERATED PER MONTH BY HOST BASE AND TENANTS AT VAFB, 1981-1990

Year	Liters/Month (Gallons/Month)					Monthly Total
	SD-STG	SD-TAC	Host Base	BMO	NASA	
1981	0 (0)	138,300 (36,500)	17,100 (4,500)	0 (0)	0 (0)	155,300 (41,000)
1982	0 (0)	164,700 (43,500)	17,100 (4,500)	0 (0)	1,900 (500)	183,600 (48,500)
1983	0 (0)	203,500 (53,800)	17,100 (4,500)	5,100 (1,400)	100 (30)	225,800 (59,700)
1984	0 (0)	164,700 (43,500)	17,100 (4,500)	5,100 (1,400)	100 (30)	187,000 (49,400)
1985	360,900 (95,300)	259,700 (68,600)	23,900 (6,300)	5,100 (1,400)	100 (30)	649,700 (171,600)
1986	1,082,600 (286,000)	207,900 (54,900)	23,900 (6,300)	7,100 (1,900)	100 (30)	1,321,700 (349,200)
1987	2,526,200 (667,400)	207,700 (54,900)	24,000 (6,300)	10,400 (2,700)	100 (30)	2,768,300 (731,400)
1988	3,608,800 (953,400)	207,700 (54,900)	24,000 (6,300)	10,400 (2,700)	0 (0)	3,850,800 (1,017,400)
1989	3,608,800 (953,400)	207,400 (54,800)	24,100 (6,400)	10,400 (2,700)	0 (0)	3,850,600 (1,017,300)
1990	3,608,800 (953,400)	207,400 (54,800)	24,100 (6,400)	6,400 (1,700)	0 (0)	3,846,700 (1,016,300)

TABLE 23. BASELINE HAZARDOUS WASTE LIQUIDS GENERATED ANNUALLY BY HOST BASE
AND TENANTS AT VAFB, 1981-1990

Year	Liters/Year (Gallons/Year)					Total, Host Base and Tenants
	SD-STG	SD-TAC	Host Base	BMO	NASA	
1981	0 (0)	1,659,100 (438,300)	204,700 (54,100)	0 (0)	0 (0)	1,863,800 (492,400)
1982	0 (0)	1,976,100 (522,100)	204,800 (54,100)	0 (0)	22,500 (6,000)	2,203,500 (582,200)
1983	0 (0)	2,441,600 (645,100)	205,000 (54,200)	61,500 (16,300)	1,200 (300)	2,709,400 (715,800)
1984	0 (0)	1,976,100 (522,100)	205,200 (54,200)	61,500 (16,300)	1,200 (300)	2,244,000 (592,900)
1985	4,330,600 (1,144,100)	3,116,000 (823,200)	286,900 (75,800)	61,500 (16,300)	1,200 (300)	7,796,200 (2,059,800)
1986	12,991,700 (3,432,400)	2,495,300 (659,300)	287,300 (75,900)	85,100 (22,500)	1,200 (300)	15,860,500 (4,190,400)
1987	30,314,000 (8,009,000)	2,491,900 (658,400)	287,700 (76,000)	124,300 (32,800)	1,200 (300)	33,219,100 (8,776,500)
1988	43,305,700 (11,441,400)	2,491,900 (658,400)	288,200 (76,100)	124,300 (32,800)	0 (0)	46,210,100 (12,208,700)
1989	43,305,700 (11,441,400)	2,488,600 (657,500)	288,800 (76,300)	124,300 (32,800)	0 (0)	46,207,300 (12,208,000)
1990	43,305,700 (11,441,400)	2,488,600 (657,500)	289,400 (76,400)	77,200 (20,400)	0 (0)	46,160,800 (12,195,700)
10-Year Total	177,553,200 (46,909,700)	23,625,300 (6,241,800)	2,547,900 (673,200)	719,700 (190,100)	28,500 (7,500)	204,474,600 (54,022,300)

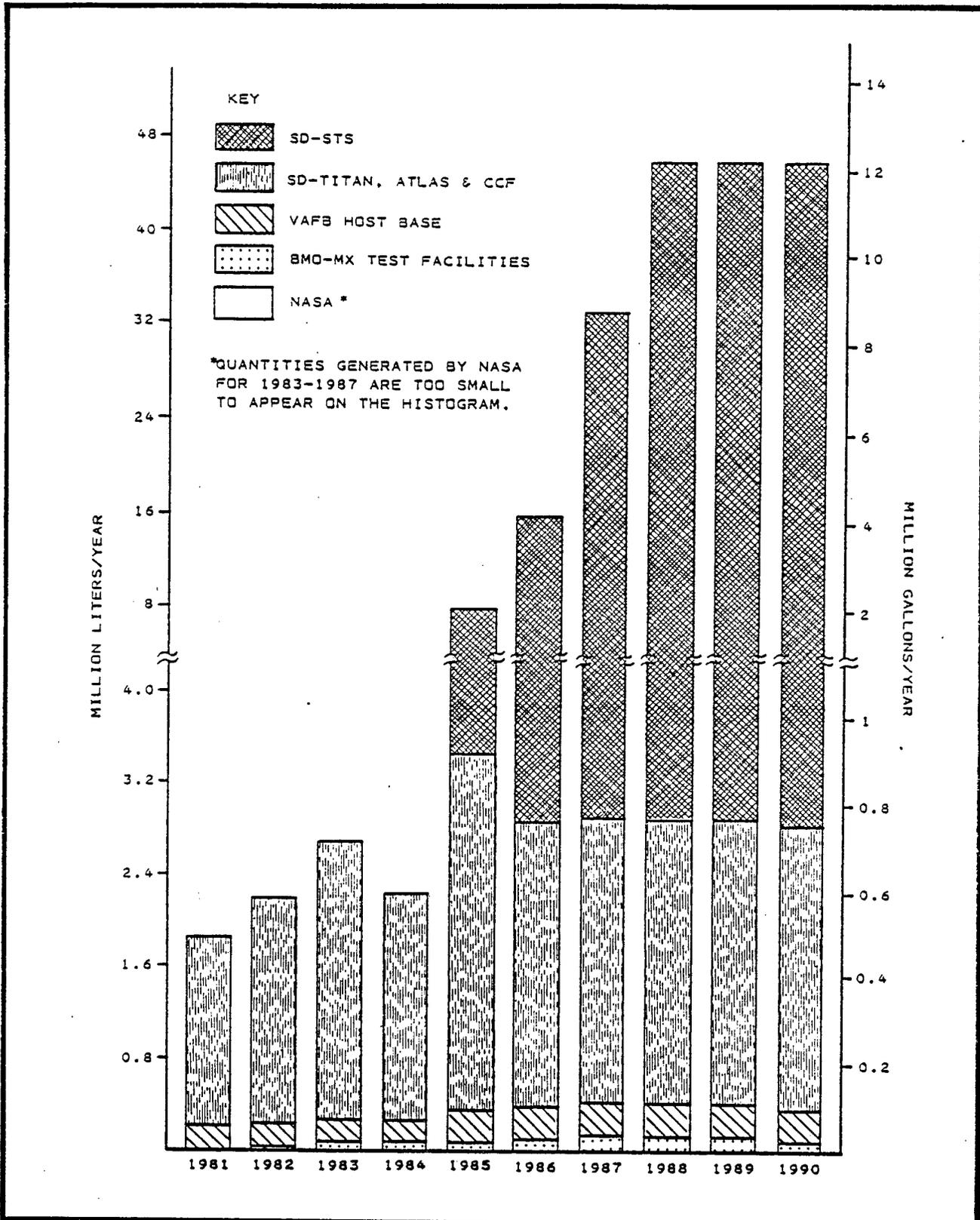


Figure 35. Baseline quantities of liquid hazardous waste generated by host base and each tenant at VAFB for the years 1981 through 1990.

- 1986 - 15.9 million liters (4.2 million gallons).
- 1987 - 33.2 million liters (8.8 million gallons).
- 1988 - 46.2 million liters (12.2 million gallons).
- 1989 - 46.2 million liters (12.2 million gallons).
- 1990 - 46.2 million liters (12.2 million gallons).

The only generators of liquid waste in 1981 were SD-TAC and the host base, which generated 1.66 million liters (0.44 million gallons) and 0.2 million liters (0.05 million gallons), respectively (Table 23). In 1982, liquid wastes are expected to be generated by SD-TAC (1.98 million liters; 0.5 million gallons), host base (0.2 million liters; 0.05 million gallons), and NASA (0.02 million liters; 0.006 million gallons).

During 1983 and 1984, liquid wastes are also expected to be generated by the BMO M-X test program. SD-TAC is expected to generate 2.44 million liters (0.65 million gallons) in 1983, and 1.98 million liters (0.52 million gallons) in 1984. The host base, BMO, and NASA are expected to generate yearly quantities of 0.2 million liters (0.05 million gallons), 0.06 million liters (0.02 million gallons), and 1,200 liters (300 gallons), respectively.

During the period from 1985 through 1990, the SD-STC program will generate the highest quantities of liquid waste, ranging from 4.3 million liters (1.1 million gallons) to 177.6 million liters (46.9 million gallons) (see Table 23). Over the same time period, SD-TAC is expected to generate from 3.1 million liters (0.8 million gallons) to 23.6 million liters (6.2 million gallons); host base, from 0.3 million liters (0.08 million gallons) to 2.5 million liters (0.7 million gallons); and BMO, from 0.06 million liters (0.02 million gallons) to 0.7 million liters (0.2 million gallons).

From 1985 through 1987, NASA is expected to generate only 1,200 liters (300 gallons) of liquid waste each year; no liquid waste generation by NASA is anticipated for the years 1988, 1989, and 1990.

Solid hazardous waste generation for the host base and tenants is summarized in Tables 24 and 25 for the period 1981 through 1990. Table 24 presents monthly weights of solid waste generated; Table 25 shows annual quantities and 10-year totals. Figure 36 presents histograms of annual solid waste generation for 1981 through 1990.

As presented in Table 25, the VAFB host base and tenants combined are expected to generate a total of 384,000 kg (864,000 lb) of hazardous solid waste for 1981 through 1990. Projections for annual solid waste generation are as follows:

- 1981 - 20,000 kg (44,000 lb).
- 1982 - 20,000 kg (45,000 lb).
- 1983 - 22,000 kg (50,000 lb).

TABLE 24. BASELINE HAZARDOUS WASTE SOLIDS GENERATED PER MONTH
BY HOST BASE AND TENANTS AT VAFB, 1981-1990

Year	Kilograms/Month (Pounds/Month)					Monthly Total
	SD-STG	SD-TAC	Host Base	BMO	NASA	
1981	0 (0)	0 (0)	1,630 (3,660)	0 (0)	0 (0)	1,630 3,660
1982	0 (0)	40 (80)	1,630 (3,670)	0 (0)	0 (0)	1,670 (3,750)
1983	0 (0)	80 (170)	1,640 (3,690)	130 (290)	0 (0)	1,840 (4,150)
1984	0 (0)	40 (80)	1,650 (3,700)	130 (290)	0 (0)	1,820 (4,070)
1985	340 (760)	60 (140)	1,660 (3,730)	130 (290)	0 (0)	2,190 (4,930)
1986	1,020 (2,290)	10 (20)	1,670 (3,770)	130 (300)	0 (0)	2,840 (6,380)
1987	2,380 (5,350)	5 (10)	1,690 (3,800)	140 (310)	0 (0)	4,220 (9,480)
1988	3,400 (7,650)	5 (10)	1,710 (3,840)	140 (310)	0 (0)	5,250 (11,820)
1989	3,400 (7,650)	0 (0)	1,730 (3,890)	140 (310)	0 (0)	5,270 (11,850)
1990	3,400 (7,650)	0 (0)	1,750 (3,940)	130 (300)	0 (0)	5,280 (11,890)

TABLE 25. BASELINE HAZARDOUS WASTE SOLIDS GENERATED ANNUALLY BY
HOST BASE AND TENANTS AT VAFB, 1981-1990

Year	Kilograms/Year (Pounds/Year)					Total, Host Base and Tenants
	SD-STG	SD-TAC	Host Base	BMO	NASA	
1981	0 (0)	0 (0)	19,500 (43,900)	0 (0)	0 (0)	19,500 (43,900)
1982	0 (0)	400 (1,000)	19,600 (44,100)	0 (0)	0 (0)	20,000 (45,000)
1983	0 (0)	900 (2,000)	19,700 (44,200)	1,600 (3,500)	0 (0)	22,100 (49,800)
1984	0 (0)	400 (1,000)	19,700 (44,400)	1,600 (3,500)	0 (0)	21,700 (48,900)
1985	4,100 (9,200)	700 (1,700)	19,900 (44,800)	1,600 (3,500)	0 (0)	26,300 (59,200)
1986	12,200 (27,500)	100 (200)	20,100 (45,200)	1,600 (3,600)	0 (0)	34,000 (76,600)
1987	28,600 (64,200)	50 (100)	20,300 (45,600)	1,700 (3,800)	0 (0)	50,600 (113,800)
1988	40,800 (91,800)	50 (100)	20,500 (46,100)	1,700 (3,800)	0 (0)	63,000 (141,800)
1989	40,800 (91,800)	0 (0)	20,800 (46,700)	1,700 (3,800)	0 (0)	63,200 (142,200)
1990	40,800 (91,800)	0 (0)	21,000 (47,300)	1,600 (3,600)	0 (0)	63,400 (142,600)
10-Year Total	167,300 (376,300)	2,700 (6,100)	201,100 (452,300)	12,900 (29,100)	0 (0)	384,000 (863,800)

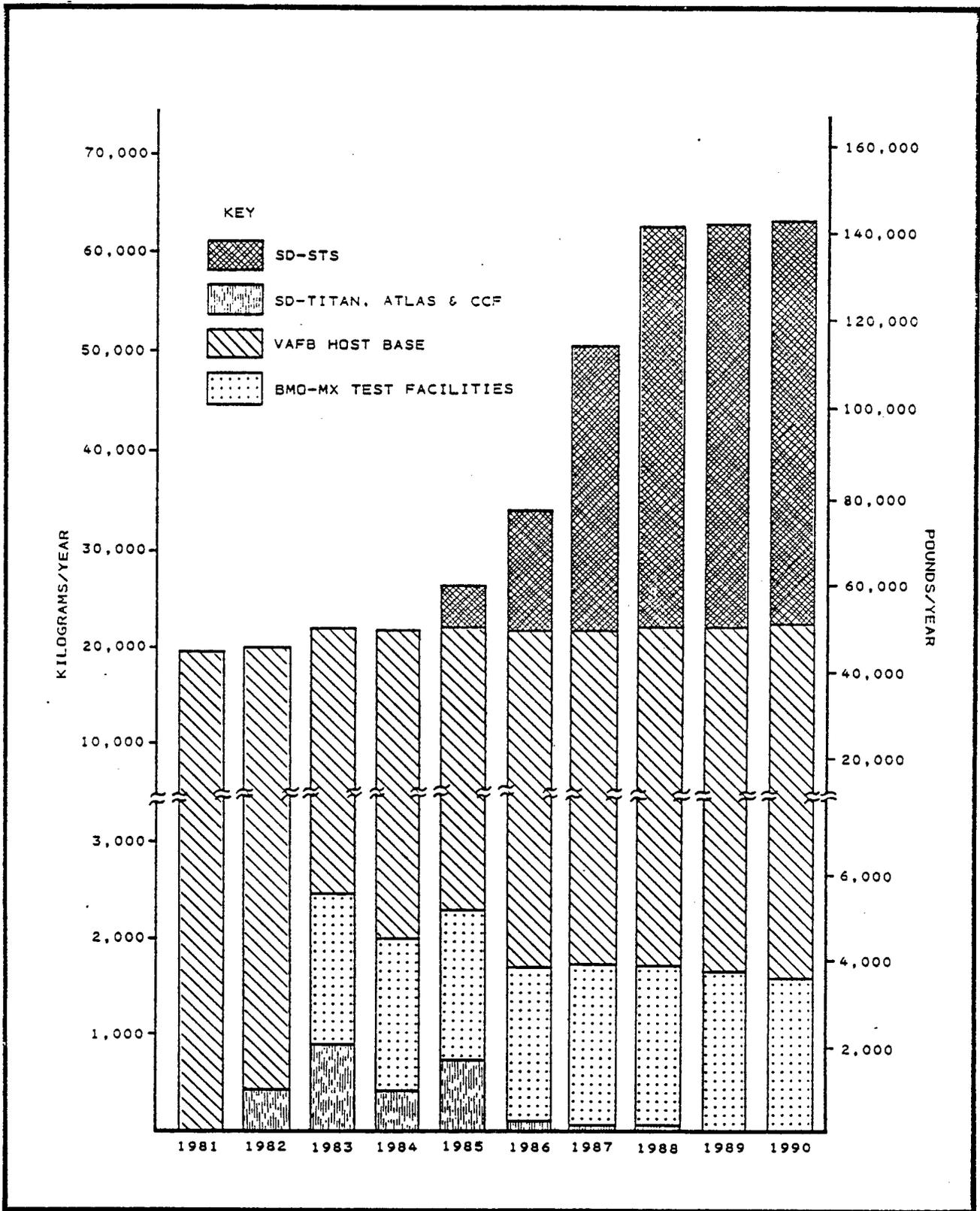


Figure 36. Baseline quantities of solid hazardous waste generated by host base and each tenant at VAFB for the years 1981 through 1990.

- 1984 - 22,000 kg (49,000 lb).
- 1985 - 26,000 kg (59,000 lb).
- 1986 - 34,000 kg (77,000 lb).
- 1987 - 51,000 kg (114,000 lb).
- 1988 - 63,000 kg (142,000 lb).
- 1989 - 63,000 kg (142,000 lb).
- 1990 - 63,000 kg (143,000 lb).

In 1981, solid waste was generated by the host base only, for a total of 19,500 kg (43,900 lb) (Table 25). During 1982, the host base and SD-TAC are expected to generate 19,600 kg (44,100 lb) and 400 kg (1,000 lb) of solid waste, respectively. During the years 1983 and 1984, the primary source of hazardous solids will be the host base, with annual quantities of 19,700 kg (44,200 to 44,400 lb). SD-TAC will generate 900 kg (2,000 lb) in 1983 and 400 kg (1,000 lb) in 1984, while BMO will produce 1,600 kg (3,500 lb) during each of these years.

During the period from 1985 through 1990, SD-STs will contribute the highest quantities of hazardous solids, producing 4,100 kg (9,200 lb) in 1985, 12,200 kg (27,500 lb) in 1986, 28,600 kg (64,200 lb) in 1987, and 40,800 kg (91,800 lb) annually from 1988 through 1990. Solids generated by the host base will increase slightly from 19,900 kg (44,800 lb) in 1985 to 21,000 kg (47,300 lb) in 1990, whereas BMO quantities will fluctuate between 1,600 and 1,700 kg (3,500 and 3,800 lb) from 1985 through 1990. SD-TAC will generate 700 kg (1,700 lb) in 1985, 100 kg (200 lb) in 1986, and 50 kg (100 lb) annually in 1987 and 1988. No solid wastes are anticipated from SD-TAC during 1989 and 1990, or from NASA during the entire period from 1981 to 1990.

The relative contributions of the host base and each tenant to total hazardous waste generation at VAFB are depicted in Figures 37 and 38 for liquids and solids, respectively. The percentage of hazardous waste expected from each organization is shown for the years 1981 through 1990.

As shown in Figure 37, for the period 1981 through 1984, SD-TAC is the largest generator of liquid hazardous waste, contributing 88 to 90 percent by volume. The host base will also produce a substantial portion during this period, with percentages ranging from 8 to 11 percent. NASA will generate 1 percent in 1982, and 0.04 to 0.05 percent in both 1983 and 1984, while BMO will produce 2 to 3 percent of the liquid waste annually during the period from 1983 to 1984.

Beginning in 1985, the percent contributions of other organizations to the total volumes of liquid hazardous waste will decline substantially, due to the large quantities of hazardous liquids generated by STS launches. SD-STs is expected to generate 56 percent in 1985, 82 percent in 1986, and 91 to 94 percent annually from 1987 through 1990 (Figure 37). The percentage of liquid waste generation by SD-TAC is expected to be 40 percent in

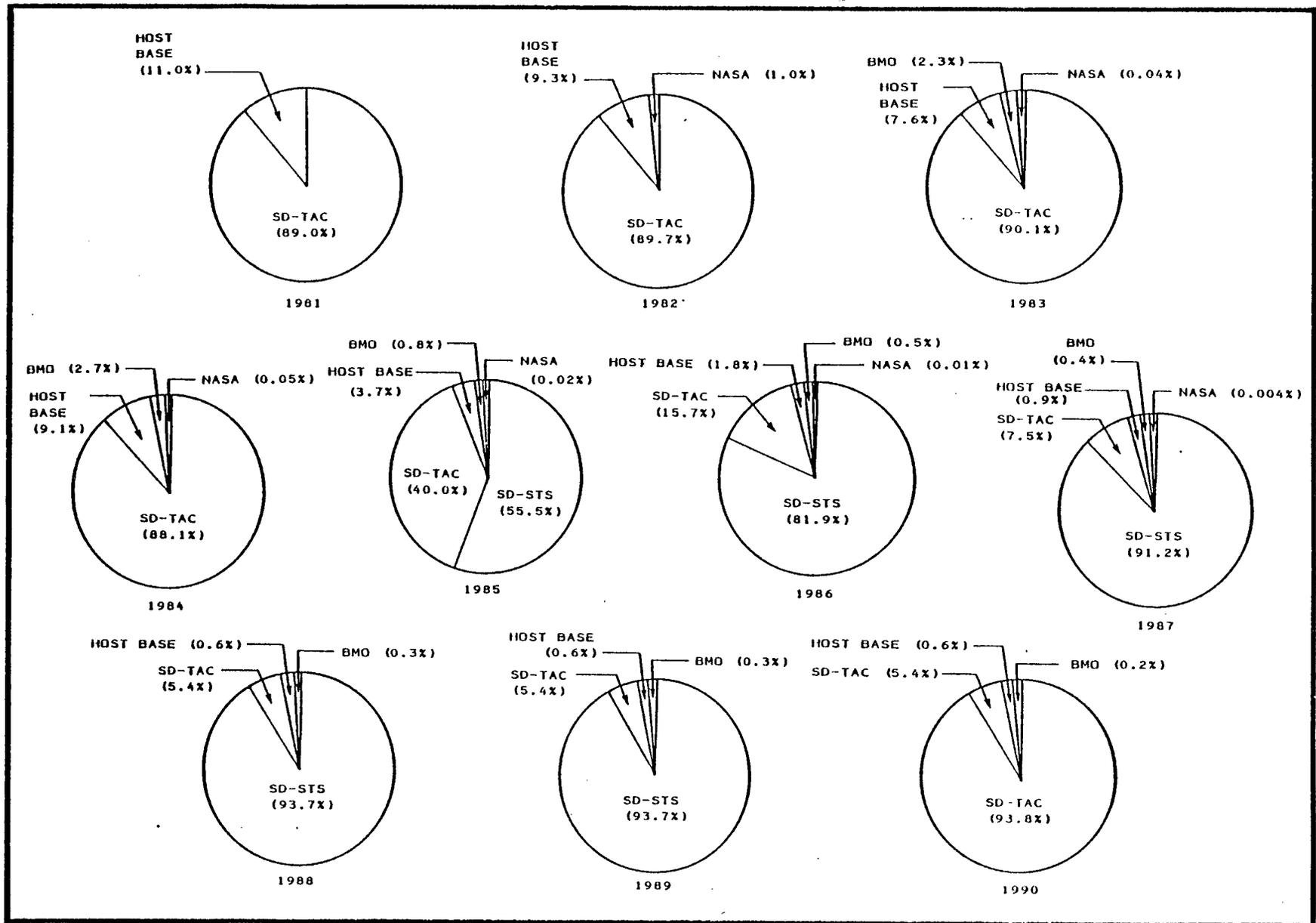


Figure 37. Percent (by volume) of baseline liquid hazardous waste generated by VAFB host base and tenants for the years 1981 through 1990.

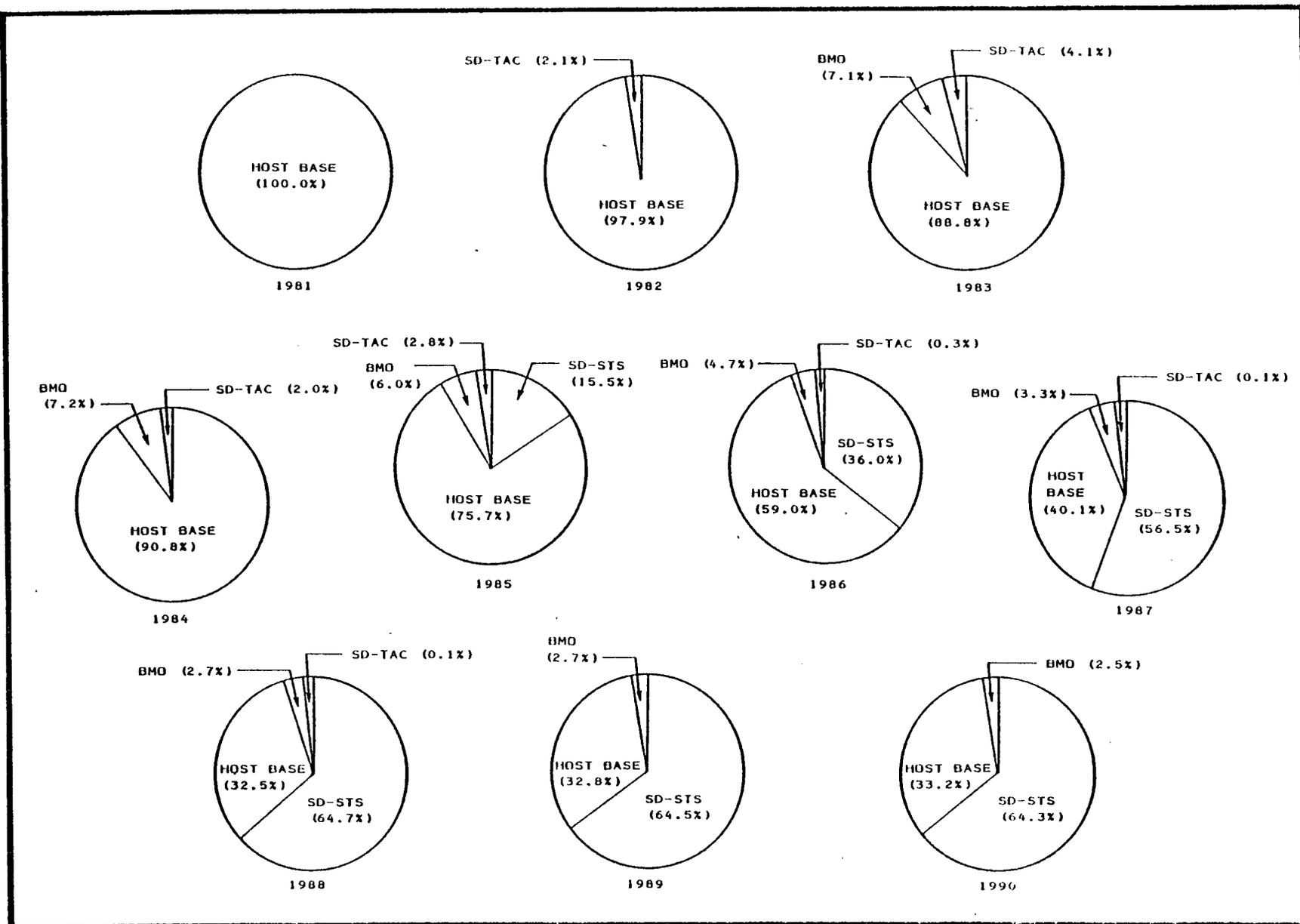


Figure 38. Percent (by weight) of baseline solid hazardous waste generated by VAFB host base and each tenant for the years 1981 through 1990.

1985, 16 percent in 1986, 8 percent in 1987, and 5 percent annually from 1988 through 1990. Percentages contributed by the host base will decrease to 4 percent in 1985, 2 percent in 1986, and less than 1 percent annually from 1987 through 1990. Percentages for BMO range between 0.2 and 0.8 percent from 1985 through 1990, while NASA's contribution will decrease from 0.02 percent in 1985 to 0.004 percent in 1987.

As shown in Figure 38, the major generator of solid hazardous waste for the period 1981 through 1984 is the host base, producing 89 to 100 percent by weight of the total solids. BMO generates 7 percent annually during the years 1983 and 1984, while SD-TAC contributes 2 to 4 percent annually from 1982 through 1984.

Again, beginning in 1985, STS launches will produce substantial quantities of solid waste, thus reducing the percent contributions of the other organizations. SD-STS will generate 16 percent of the hazardous solids in 1985, 36 percent in 1986, 57 percent in 1987, and 64 to 65 percent annually from 1988 through 1990 (Figure 38). This reduces the host base's percentages to 76 percent in 1985, 59 percent in 1986, 40 percent in 1987, and 33 percent annually from 1988 through 1990. BMO's contribution is reduced from 6 percent in 1985 to 3 percent annually during the period from 1987 through 1990, while SD-TAC generates 3 percent in 1985, and then decreases to 0.1 to 0.3 percent annually from 1986 through 1988.

3. TYPES OF WASTE

Tables 26 and 27 show hazardous waste generation by waste category for the major categories of liquid and solid waste, respectively. Yearly quantities for each major waste category are presented, along with totals for the 10-year time span. Liquid amounts are given by volume, while solids are quantified on a mass basis.

As shown in Table 26, deluge water constitutes the largest liquid waste category over the 10-year time span, with a total generation of 160.0 million liters (42.3 million gallons). Other large liquid waste categories are the sodium hydroxide wastewaters (18.0 million liters; 4.7 million gallons), the SRB initial rinse water (8.5 million liters; 2.2 million gallons), and the insulation wastewaters (7.6 million liters; 2.0 million gallons). The chromium and cyanide wastewater categories each total 1.8 million liters (0.5 million gallons). Totals for all other liquid waste categories are under 0.6 million liters (0.2 million gallons) for the 10-year period.

Figure 39 graphically depicts the composition by waste category of the liquid waste generated by the VAFB host base and its tenants. Percentages (by volume) are given for each major waste category for the years 1981 through 1990.

TABLE 26. MAJOR CATEGORIES OF LIQUID HAZARDOUS WASTE GENERATED BY VAFB HOST BASE AND TENANTS, 1981-1990

Liquid Waste Category	Liters/Year (Gallons/Year)										
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	10-Year Total
Deluge Water	0 (0)	302,800 (80,000)	757,000 (200,000)	302,800 (80,000)	4,459,700 (1,178,300)	11,562,400 (3,054,800)	26,978,900 (7,127,900)	38,541,300 (10,182,600)	38,541,300 (10,182,600)	38,541,300 (10,182,600)	159,987,500 (42,268,800)
Sodium Hydroxide Wastewaters	1,381,600 (365,000)	1,381,600 (365,000)	1,381,600 (365,000)	1,381,600 (365,000)	2,072,400 (547,500)	2,072,400 (547,500)	2,072,400 (547,500)	2,072,400 (547,500)	2,072,400 (547,500)	2,072,400 (547,500)	17,960,800 (4,745,000)
SRB Initial Rinse Water	0 (0)	0 (0)	0 (0)	0 (0)	207,200 (54,700)	621,600 (164,200)	1,450,300 (383,200)	2,071,900 (547,400)	2,071,900 (547,400)	2,071,900 (547,400)	8,494,800 (2,244,300)
Insulation Wastewaters	0 (0)	0 (0)	0 (0)	0 (0)	185,300 (49,000)	555,900 (146,900)	1,297,200 (342,700)	1,853,100 (489,600)	1,853,100 (489,600)	1,853,100 (489,600)	7,597,700 (2,007,400)
Chromium Wastewaters	139,500 (36,900)	139,500 (36,900)	139,600 (36,900)	139,600 (36,900)	208,900 (55,200)	209,300 (55,300)	210,100 (55,500)	210,600 (55,600)	210,800 (55,700)	210,900 (55,700)	1,818,800 (480,600)
Cyanide Wastewaters	138,200 (36,500)	138,200 (36,500)	138,200 (36,500)	138,200 (36,500)	207,300 (54,800)	207,300 (54,800)	207,300 (54,800)	207,300 (54,800)	207,300 (54,800)	207,300 (54,800)	1,796,600 (474,800)
Used Oils	41,700 (11,000)	41,700 (11,000)	43,400 (11,500)	43,400 (11,500)	43,500 (11,500)	43,700 (11,500)	43,900 (11,600)	44,100 (11,700)	44,200 (11,700)	44,300 (11,700)	433,900 (114,700)
Photographic Developer	37,900 (10,000)	37,900 (10,000)	37,900 (10,000)	37,900 (10,000)	74,100 (19,600)	74,100 (19,600)	74,100 (19,600)	74,100 (19,600)	74,100 (19,600)	74,100 (19,600)	596,200 (157,600)
Corrosive Liquids	40 (10)	40 (10)	30,900 (8,200)	30,900 (8,200)	31,000 (8,200)	54,200 (14,300)	92,800 (24,500)	92,800 (24,500)	92,800 (24,500)	46,400 (12,300)	471,900 (124,700)
Photographic Chemicals	30,200 (8,000)	30,200 (8,000)	30,200 (8,000)	30,200 (8,000)	59,700 (15,800)	59,700 (15,800)	59,700 (15,800)	59,700 (15,800)	59,700 (15,800)	59,700 (15,800)	479,000 (126,800)
Hydraulic Fluid	0 (0)	0 (0)	26,700 (7,100)	26,700 (7,100)	27,100 (7,200)	27,900 (7,400)	29,400 (7,800)	30,600 (8,100)	30,600 (8,100)	30,600 (8,100)	229,600 (60,900)
Oil/Water Wastes	22,700 (6,000)	22,700 (6,000)	22,700 (6,000)	22,700 (6,000)	22,700 (6,000)	22,700 (6,000)	22,700 (6,000)	22,700 (6,000)	22,700 (6,000)	22,700 (6,000)	227,000 (60,000)
Hydrazine/Water Wastes	8,300 (2,200)	28,900 (7,600)	12,300 (3,200)	10,000 (2,600)	15,800 (4,200)	21,200 (5,600)	38,200 (10,100)	50,700 (13,400)	50,700 (13,400)	50,700 (13,400)	286,800 (75,700)

TABLE 27. MAJOR CATEGORIES OF SOLID HAZARDOUS WASTE GENERATED BY VAFB HOST BASE AND TENANTS, 1981-1990

Solid Waste Category	Kilograms/Year (Pounds/Year)										
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	10-Year Total
Containers	200 (400)	200 (400)	200 (400)	200 (400)	2,900 (6,500)	8,400 (18,900)	19,400 (43,600)	27,600 (62,100)	27,600 (62,100)	27,600 (62,100)	114,300 (256,900)
Battery Wastes	11,700 (26,400)	11,700 (26,400)	11,700 (26,400)	11,700 (26,400)	11,800 (26,500)	11,900 (26,800)	12,200 (27,400)	12,400 (27,800)	12,400 (27,800)	12,400 (27,800)	119,900 (269,700)
Solid Insulation Wastes	0 (0)	0 (0)	0 (0)	0 (0)	1,100 (2,500)	3,400 (7,600)	7,900 (17,800)	11,300 (25,400)	11,300 (25,400)	11,300 (25,400)	46,300 (104,100)
Solvent/Oily Rags	5,400 (12,200)	5,900 (13,300)	8,000 (18,000)	7,600 (17,100)	8,100 (18,200)	7,700 (17,400)	8,100 (18,100)	8,400 (18,900)	8,600 (19,300)	8,800 (19,800)	76,600 (172,300)
Sulfamic Acid	2,100 (4,800)	2,100 (4,800)	2,100 (4,800)	2,100 (4,800)	2,100 (4,800)	2,100 (4,800)	2,100 (4,800)	2,100 (4,800)	2,100 (4,800)	2,100 (4,800)	21,000 (48,000)
Contaminated Parts	0 (0)	0 (0)	40 (100)	40 (100)	100 (200)	200 (500)	500 (1,100)	600 (1,400)	600 (1,400)	600 (1,300)	2,700 (6,100)
Adhesive Wastes	0 (0)	0 (0)	0 (0)	0 (0)	30 (60)	80 (200)	200 (400)	300 (600)	300 (600)	300 (600)	1,200 (2,500)
Paint Wastes	0 (0)	0 (0)	0 (0)	0 (0)	20 (50)	60 (100)	100 (300)	200 (500)	200 (500)	200 (500)	800 (2,000)
PCB Solid Wastes	100 (200)	100 (200)	100 (200)	100 (200)	100 (200)	100 (200)	100 (200)	100 (200)	100 (200)	100 (200)	1,000 (2,000)

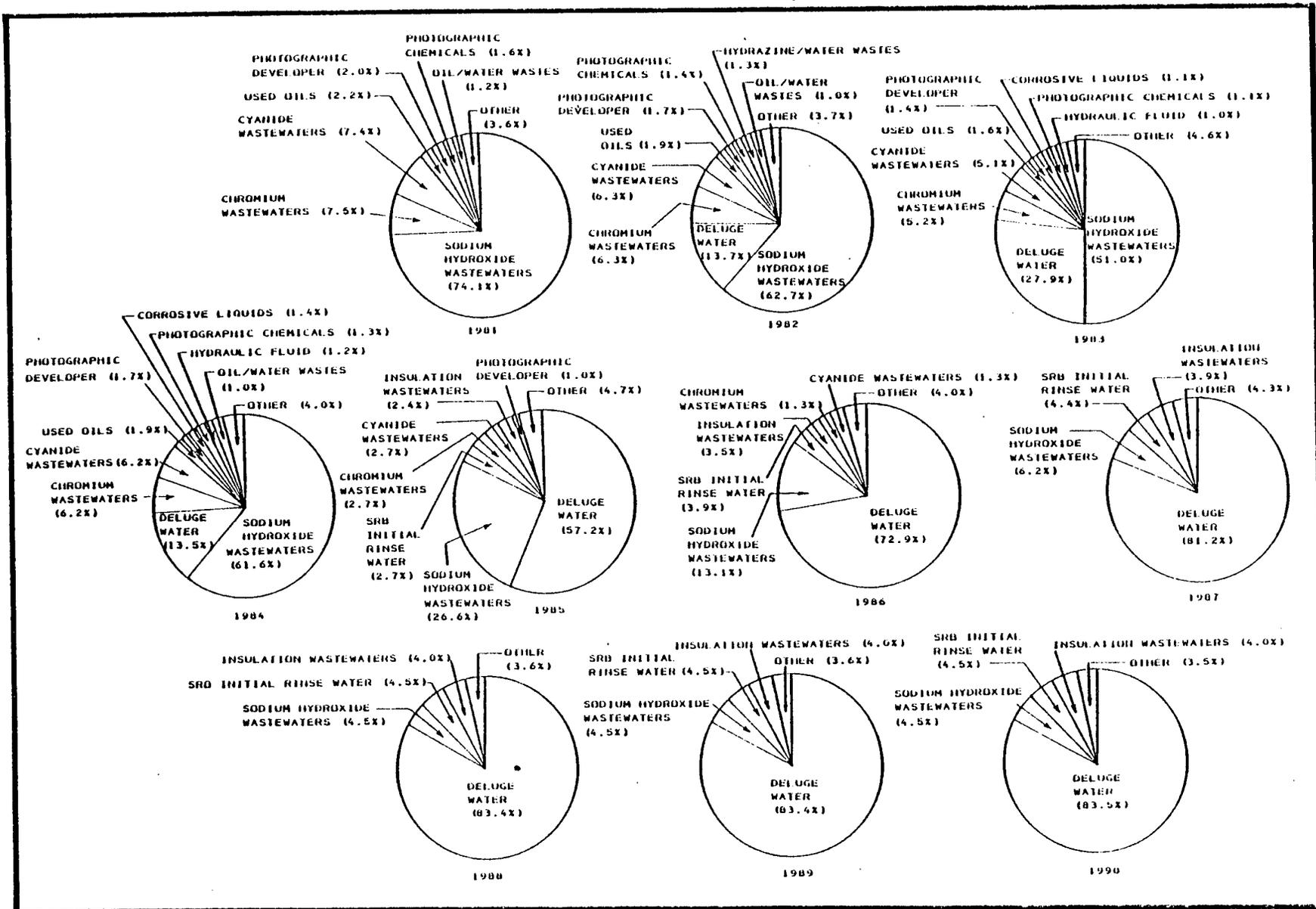


Figure 39. Percent (by volume) of major categories of liquid hazardous waste generated by VAFB host base and tenants for the years 1981 through 1990.

Prior to 1985, sodium hydroxide wastewaters constitute the largest liquid waste category, generating 51 to 74 percent of the total hazardous liquid waste (Figure 39). Deluge water, which shows no quantities for 1981, comprises 14 to 28 percent annually from 1982 through 1984. Chromium and cyanide wastewaters each generate 5 to 7 percent annually prior to 1985.

Smaller waste categories producing 1 to 2 percent of the hazardous liquids annually from 1981 through 1984 are the used oils, photographic developer, photographic chemicals, and oil/water wastes. Hydrazine/water wastes contribute 1 percent in 1982, while corrosive liquids and hydraulic fluids each generate 1 percent annually in 1983 and 1984.

With the start of STS launches at VAFB in 1985, the liquid wastes generated from STS operations will add substantially to the volume of hazardous liquids. Deluge water will become the major liquid waste category, constituting 57 percent in 1985, 73 percent in 1986, 81 percent in 1987, and 83 to 84 percent annually from 1988 through 1990 (Figure 39). Sodium hydroxide wastewaters decrease to 27 percent in 1985, 13 percent in 1986, 6 percent in 1987, and less than 5 percent per year from 1988 through 1990.

During the period from 1985 through 1990, two STS-specific waste categories, the SRB initial rinse water and the insulation wastewaters, each show percentages of between 2 and 5 percent (Figure 39). Chromium and cyanide wastewaters each decrease from 3 percent in 1985 to 1 percent in 1986, and contribute less than 1 percent in subsequent years. Similarly, percentages for each of the other waste categories considered to be major during the period prior to 1985 fall below 1 percent starting in 1985.

Major solid waste categories generated by the VAFB host base and tenants are quantified in Table 27. Yearly generation by weight is given for 1981 through 1990, along with totals by waste category for the 10-year period.

Battery wastes and containers constitute the two major categories of baseline solid hazardous waste. For the 10-year period, battery wastes total 120,000 kg (270,000 lb), and containers total 114,000 kg (257,000 lb). Solvent/oily rags generate 77,000 kg (172,000 lb), while solid insulation wastes constitute 46,000 kg (104,000 lb), and sulfamic acid yields 21,000 kg (48,000 lb). Each of the other solid waste categories has a 10-year total of 3,000 kg (6,000 lb) or less.

Figure 40 depicts each major solid waste category contributing to hazardous waste generation. Percentages (by weight) for each solid waste category that produces substantial quantities are shown for the years 1981 through 1990.

Prior to the start of STS launches in 1985, battery wastes constitute the largest solid waste category, comprising 53 to 60

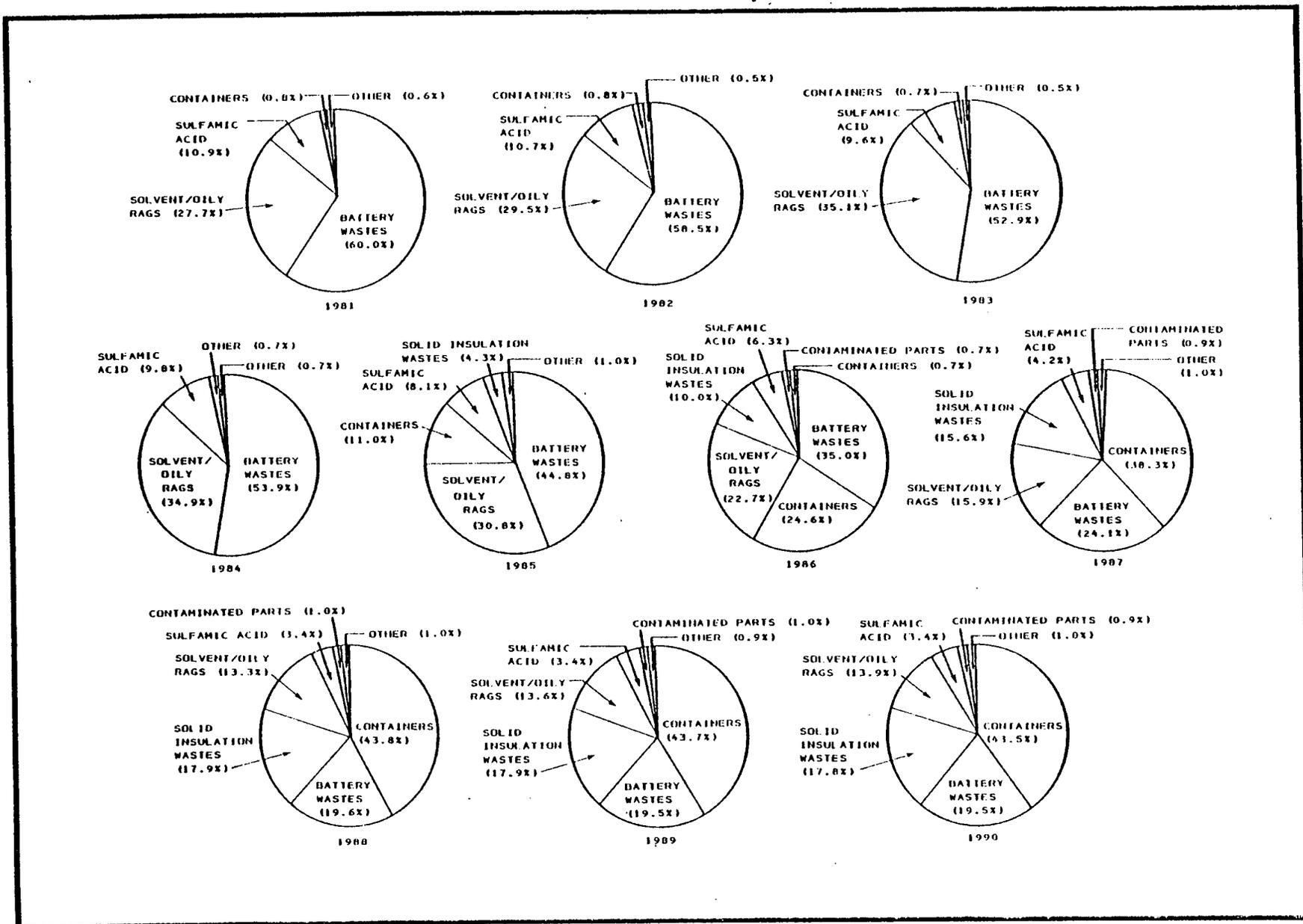


Figure 40. Percent (by weight) of major categories of solid hazardous waste generated by VAFB host base and tenants for the years 1981 through 1990.

percent of all hazardous solids (Figure 40). Solvent/oily rags are also a large waste category, with percentages ranging between 28 and 35 percent prior to 1985. Among the other major categories, sulfamic acid constitutes 10 to 11 percent of the total, while containers contribute between 0.7 and 0.8 percent.

In 1985 and subsequent years, containers contribute a substantial portion of the total solid waste, constituting 11 percent in 1985, 25 percent in 1986, 38 percent in 1987, and 44 percent annually from 1988 through 1990 (Figure 40). Battery wastes total 45 percent in 1985, 35 percent in 1986, 24 percent in 1987, and 20 percent annually from 1988 through 1990. The STS-specific waste category of solid insulation wastes comprises 4.3 percent in 1985, and increases to 10 percent in 1986, 16 percent in 1987, and 18 percent annually from 1988 through 1990.

The relative percentage of sulfamic acid decreases from 1985 on, although its yearly quantity remains constant. Its wastes constitute 8 percent in 1985, 6 percent in 1986, 4 percent in 1987, and 3 percent annually from 1988 through 1990. Contaminated parts comprise the only other substantial solid waste category, contributing 0.7 to 1.0 percent annually from 1986 through 1990.

4. HAZARDOUS AND ACUTELY HAZARDOUS WASTES

Analysis of the VAFB host base and tenant waste inventory shows that all acutely hazardous wastes expected are liquids. As shown in Table 28, acutely hazardous wastes constitute a small portion of the total liquid wastes; percentages vary between 0.2 and 0.4 percent between 1981 and 1990. Quantities of acutely hazardous waste escalate from a low of 3,400 liters (900 gallons) in 1981 to almost 200,000 liters (53,000 gallons) annually during the period from 1988 through 1990.

Table 29 presents acutely hazardous waste generation by the host base and each tenant for the years 1981 through 1990. In terms of total quantities generated for the 10-year period, SD-STS generates the largest portion, totalling 790,000 liters (208,700 gallons). The host base is the other substantial generator, with quantities of 54,500 liters (14,400 gallons).

Among the small generators of acutely hazardous waste, SD-TAC contributes a 10-year total of 4,900 liters (1,300 gallons). NASA is expected to generate acutely hazardous liquids in 1982 only, for a total of just over 500 liters (100 gallons). BMO is not projected to produce any acutely hazardous waste.

Figure 41 depicts the percentages (by volume) of acutely hazardous waste generated by the host base and each tenant. Total annual volumes of acutely hazardous waste are also shown.

TABLE 28. SUMMARY OF BASELINE HAZARDOUS AND ACUTELY HAZARDOUS LIQUID WASTE GENERATED BY VAFB HOST BASE AND TENANTS FOR THE YEARS 1981 THROUGH 1990*

	Liters/Year (Gallons/Year)									
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Hazardous Liquid Waste	1,860,340 (491,510)	2,198,740 (580,910)	2,704,560 (714,560)	2,239,810 (591,760)	7,768,910 (2,052,560)	15,795,530 (4,173,190)	33,077,220 (8,739,030)	46,010,410 (12,155,980)	46,007,810 (12,155,290)	45,961,360 (12,143,020)
Acutely Hazardous Liquid Waste	3,420 (900)	4,730 (1,250)	4,800 (1,260)	4,200 (1,110)	27,250 (7,200)	64,990 (17,170)	141,870 (37,480)	199,670 (52,760)	199,480 (52,710)	199,480 (52,710)
Total Liquid Waste	1,863,760 (492,410)	2,203,470 (582,160)	2,709,360 (715,820)	2,244,010 (592,870)	7,796,160 (2,059,760)	15,860,520 (4,190,360)	33,219,090 (8,776,510)	46,210,080 (12,208,740)	46,207,290 (12,208,000)	46,160,840 (12,195,730)
% of Liquid Waste Acutely Hazardous	0.18	0.21	0.18	0.19	0.35	0.41	0.43	0.43	0.43	0.43

* No solid wastes were identified as acutely hazardous.

TABLE 29. SUMMARY OF BASELINE ACUTELY HAZARDOUS WASTE GENERATED BY VAFB HOST BASE AND TENANTS FOR THE YEARS 1981 THROUGH 1990*

	Liters/Year (Gallons/Year)										
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	10-Year Total
Space Division - STS	0 (0)	0 (0)	0 (0)	0 (0)	19,270 (5,090)	57,800 (15,270)	134,880 (35,630)	192,680 (50,910)	192,680 (50,910)	192,680 (50,910)	789,990 (208,720)
Space Division - TAC	0 (0)	780 (210)	1,380 (360)	780 (210)	1,180 (310)	390 (100)	190 (50)	190 (50)	0 (0)	0 (0)	4,890 (1,290)
Host Base	3,420 (900)	3,420 (900)	3,420 (900)	3,420 (900)	6,800 (1,800)	6,800 (1,800)	6,800 (1,800)	6,800 (1,800)	6,800 (1,800)	6,800 (1,800)	54,480 (14,400)
BMO - M-X Test Facilities	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
NASA	0 (0)	530 (140)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	530 (140)
Total	3,420 (900)	4,730 (1,250)	4,800 (1,260)	4,200 (1,110)	27,250 (7,200)	64,990 (17,170)	141,870 (37,480)	199,670 (52,760)	199,480 (52,710)	199,480 (52,710)	849,890 (224,550)

* No solid wastes were identified as acutely hazardous.

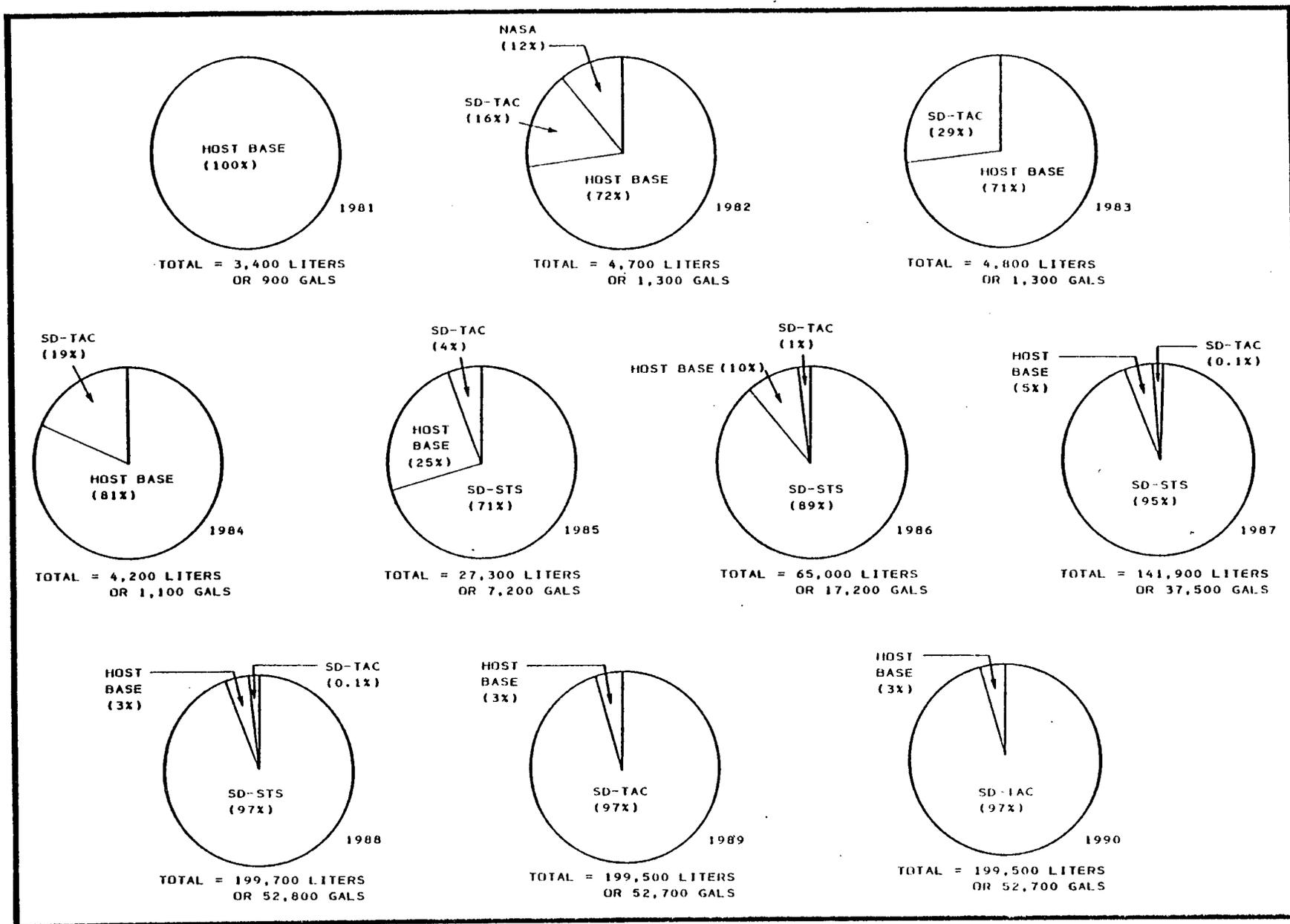


Figure 41. Percent (by volume) of baseline acutely hazardous waste generated by VAFB host base and each tenant for the years 1981 through 1990.

The host base is the major generator of acutely hazardous liquids prior to 1985. For the period 1981 through 1984, it contributes between 71 and 100 percent, while SD-TAC generates 16 to 29 percent annually from 1982 through 1984 (Figure 41). NASA is expected to produce acutely hazardous waste in 1982 only, with quantities totalling 12 percent.

Beginning in 1985, SD-STC becomes the primary generator of acutely hazardous waste, contributing 71 percent in 1985, 89 percent in 1986, 95 percent in 1987, and 97 percent annually from 1988 through 1990 (Figure 41). Although host base quantities double in 1985, its percentages drop to 25 percent in that same year. These percentages decline to 10 percent in 1986, 5 percent in 1987, and 3 percent annually from 1988 through 1990. Acutely hazardous waste from SD-TAC totals 4 percent in 1985, 1 percent in 1986, and 0.1 percent annually in 1987 and 1988.

REFERENCES

1. SCS Engineers. Hazardous Waste Inventory and Disposal Assessment for the Space Shuttle Project: Volume I. Hazardous Waste Inventory. SD-TR-81-32, March 1981.
2. SCS Engineers. Hazardous Waste Inventory and Disposal Assessment for the Space Shuttle Project: Volume II. Treatment and Disposal Alternatives; Volume III. Appendices. SD-TR-81-32, July 1981.
3. SCS Engineers. Hazardous Waste Inventory for SD Operations at Vandenberg AFB: Volume I. Hazardous Waste Inventory. Final Report, February 1982.
4. SCS Engineers. Hazardous Waste Inventory for SD Operations at Vandenberg AFB: Volume II. Hazardous Waste Disposal Assessment. Draft Final Report, January 1982.
5. SCS Engineers. Hazardous Waste Inventory for M-X Operations at Vandenberg AFB. Draft Final Report, April 1982.

APPENDIX A

HAZARDOUS WASTE GENERATION BY VAFB HOST BASE (GROUP I),
LISTED BY EPA HAZARDOUS WASTE NUMBER

APPENDIX A

HAZARDOUS WASTE GENERATION BY VAFB HOST BASE (GROUP I), LISTED BY EPA HAZARDOUS WASTE NUMBER

Table A-1 was compiled to assist VAFB personnel in completing all pertinent EPA notification and application forms. All of the tables are organized by EPA hazardous waste number, in much the same fashion as required by the Hazardous Waste Permit Application Form 3510-3. Estimated annual hazardous waste quantities are presented for each waste. These quantities are based on the baseline numerical data. Those hazardous waste numbers described as "included with above" are components of the preceding waste number; as components, they do not need to be separately quantified if the total mixed waste is quantified.

Table A-1 presents the hazardous waste numbers and annual quantities for each VAFB host base facility for 1981 and 1990.

TABLE A-1. EPA DESCRIPTION OF HAZARDOUS WASTE,
BY HOST BASE ORGANIZATION

Organization (and Bldg. Nos.)	EPA Hazardous Waste No.	Estimated Annual Quantity (kg)	
		1981	1990
Fuels Lab & Det 41 AFLC/MA (7422, 9320, 11248)	D001	816	2,040
	D002	234	584
	D007	2	6
	F001	172	431
	F002	408	1,021
	P068	4	10
	P078	132	329
	U002	72	181
	U019	0.4	1
	U032	9	23
	U044	13	34
	U080	30	75
	U098	36	89
	U133	264	659
	U098 included with above		
	U154	36	90
	P075 included with above		
	U161	7	18
	U211	72	180
	Lockheed (8310)	D001	2,109
D002		7,608	7,608
F002		1,481	1,481
F005		670	670
U080		593	593
U098		3,632	3,632
U133		3,651	3,651
U154		329	329
Federal Electric - ITT (9320)	D001	2,269	4,653
	D002	757	1,552
	U134 included with above		
	D007	757	1,552
	U134	757	1,552
	F005	Quantity unknown	
	U002	Quantity unknown	
Boeing (6523)	D001	725	725
	D002	84	84
	D003	4	4
	D008	307	307
	P030	49	49
	U159	45	45
	PCB's	100	100

TABLE A-1 (continued)

Organization (and Bldg. Nos.)	EPA Hazardous Waste No.	Estimated Annual Quantity (kg)	
		1981	1990
4392 TRNSS/LGTM (7501, 10700, 10711, 10721, 10726 A&B)	D001	39,570	39,570
	D002	7,763	7,763
	D008	8,165	8,165
	K051	22,710	22,710
394 ICBMTMS (6601, Launch Facility)	D001	1,087	1,087
	D002	32	32
	D003	147	147
	D007	567	567
	F001	6	6
	U002	9	9
	U159	36	36
	U220	10	10
	PCB's	3	3
1369 AVS/DOC (8314)	D002	16,361	32,722
	D011	Quantity unknown	
	P053	3,190	6,379
	U002	181	361
	U044	334	669
	U122	40,856	81,712
	U154	included with above	
U219	Quantity unknown		
USAF Hospital (13850)	D001	4	4
	D003	0.4	0.4
	D011	1	1
	U044	6	6
	U122	2	2
	U151	2	2

APPENDIX B
EPA FORMS 8700-13 AND 8700-13A

APPENDIX C

HAZARDOUS WASTE INVENTORY OF ADDITIONAL HOST BASE FACILITIES
(GROUP II)

TABLE C-1. HAZARDOUS CHARACTERISTICS OF WASTES GENERATED BY ADDITIONAL VAFB HOST BASE ORGANIZATIONS

ORGANIZATION (& BLDG. NOS.)	WASTE MATERIAL	WASTE CAT ⁽¹⁾	TRT CAT ⁽²⁾	SOL OR LIQ	OPERATION	HAZ. WASTE NO. ⁽³⁾		HAZ. PROPERTY ⁽⁴⁾		CALIFORNIA COMPATIBILITY CLASS ⁽⁵⁾
						EPA	CAL.	EPA	CAL.	
<u>AYCO SYSTEMS DIVISION (1355)</u>										
	RAGS, SOLVENT/OILY ISOPROPNOL	RE	13	S	CLEANING OF MATERIALS/COMP	D001	NL ⁽⁶⁾ NL	1		6B
	RAGS, SOLVENT/OILY ACETONE	RE	13	S	CLEANING OF MATERIALS/COMP	D001	NL F003	1		6B
	RAGS, SOLVENT/OILY MEK	RE	13	S	CLEANING OF MATERIALS/COMP	D001	NL F005	1		6B
<u>MARTIN MARIETTA AEROSPACE</u>										
	ALCOHOLS	AM	5	L	SCAPE SUIT REPAIR, BLDG 9325	F003	L ⁽⁷⁾	1	F	4A
	1,1,1-TRICHLOROETHANE	TH	5	L	DECREASING, BLDG 9325	F002	NL	T		4A
<u>STEARNS ROGER, INC. (1792)</u>										
	OILS, USED	OG	3	L	OIL CHANGES	D001	L	1	F	6B
	LACQUER THINNER	PE	5	L	BLDG 1785	F003	L	1	TIF	4A
<u>RCA CORPORATION, ASTRO (1768)</u>										
	DEVELOPER, PHOTOGRAPHIC	DI	10	L	PHOTOGRAPHIC PROCESSING	D002	NL	C		1A, 3A
	FIXER AND WASH WATER SILVER	PR	8	L	PHOTOGRAPHIC PROCESSING	D011	653 D011 653	E	T	3A
<u>AGENA TANK FARM (1180)</u>										
	AERDZINE 50 HYDRAZINE UDMH	AJ	2	L	WASTE FUELS	U133	376 U133 376 U098 285	RT	TIF	4A
	IRFNA	NE	10	L	WASTE OXIDIZER	D002	540	C	TCF	6A
	IRFNA	NE	10	L	OUT-OF-SPEC OXIDIZER	D002	540	C	TCF	6A
	NITROGEN TETROXIDE	NK	10	L	WASTE OXIDIZER	P078	548	H	TF	6A

TABLE C-1 (CONT.) HAZARDOUS CHARACTERISTICS OF WASTES GENERATED BY ADDITIONAL VAFB HOST BASE ORGANIZATIONS

ORGANIZATION (& BLDG. NOS.)	WASTE MATERIAL	WASTE CAT ⁽¹⁾	TRT. OR CAT ⁽²⁾	SOL. OR LIQ.	OPERATION	HAZ. WASTE NO. ⁽³⁾		HAZ. PROPERTY ⁽⁴⁾		CALIFORNIA COMPATIBILITY CLASS ⁽⁵⁾
						EPA	CAL.	EPA	CAL.	
<u>ELECTRICAL SECTION/DEM</u>										
	BATTERY CARCASS	BC	14	S	EXHAUSTED BATTERIES	NL ⁽⁶⁾	L ⁽⁷⁾	T	T	
	PCB's	PL	5	L	DRAINED FROM ELEC. EQUIPMENT	* ⁽⁸⁾	606	T	TI	4A
	TRANSFORMERS (3) PCB's	PM	14	S	OBSOLETE ELECTRICAL EQUIPMENT	* ⁽⁸⁾	606 606	T	TI	
	CAPACITORS (4) PCB's	PM	14	S	OBSOLETE ELECTRICAL EQUIPMENT	* ⁽⁸⁾	606 606	T	TI	
	SULFURIC ACID LEAD	SZ	8	L	DRAINED FROM BATTERIES	D002 D008	705 406	CE	TC	1B
<u>SANITATION SECTION/DEM</u>										
	MISCELLANEOUS BIOCIDES DIAZINON BAYGON RONHEL	BR	15	L	SPRAY TANK RINSE WATER	NL NL NL NL	NL L NL NL	T	T	3A
<u>PAVEMENTS AND GROUNDS/DEM</u>										
	TERRACLORE FUNGICIDE	BR	15	L	SPRAY TANK RINSE WATER	U185	NL	T		3A
	ACTIDONE FUNGICIDE	BR	15	L	SPRAY TANK RINSE WATER	NL	242		T	3A
	MISCELLANEOUS INSECTICIDES PROXOL SEVIN DIAZINON	BR	15	L	SPRAY TANK RINSE WATER	NL NL NL NL	L NL NL NL		T	3A
	MISCELLANEOUS FUNGICIDES FROTURF DACINIL DYREHE	BR	15	L	SPRAY TANK RINSE WATER	NL NL NL NL	NL NL NL NL			3A
	2,4-D	DB	15	L	SPRAY TANK RINSE WATER	D016	263	E	TI	3A
	MISCELLANEOUS HERBICIDES KARMEX BETASAN ROUNDUP DIURON SIDURON SINAZINE/PRINCEP	HE	15	L	SPRAY TANK RINSE WATER	NL NL NL NL NL NL NL	NL NL NL NL NL NL NL			3A

TABLE C-1 (CONT.) HAZARDOUS CHARACTERISTICS OF WASTES GENERATED BY ADDITIONAL VAFB HOST BASE ORGANIZATIONS

ORGANIZATION (& BLDG. NOS.)	WASTE MATERIAL	WASTE CAT ⁽¹⁾	TRT CAT ⁽²⁾	SOL OR LIQ	OPERATION	HAZ. WASTE NO. ⁽³⁾		HAZ. PROPERTY ⁽⁴⁾		CALIFORNIA COMPATIBILITY CLASS ⁽⁵⁾
						EPA	CAL.	EPA	CAL.	
<u>MECHANICAL SECTION/DEM</u>										
	ALGACIDES	AP	15	L	COOLING TOWER	NL ⁽⁶⁾	NL	T		3A
	HALOCARBON LUBE OIL	FR	5	L	DRAINED FROM RECHARGER UNITS	F002	NL	T		4A
	MOTOR OIL	OG	3	L	LEAKS IN AIR COMPRESSOR	D001	L ⁽⁷⁾	I	F	6B
	REFRIGERANT OIL	OG	3	L	LEAKS IN AC SYSTEM	F002	NL	T		4A
	HYDROCARBON SLUDGE	OG	3	L	TANK CLEANING	D001	L	I	F	6B
	SULFAMIC ACID	SY	14	S	BOILER CLEANING	NL	NL	CT		6B
	TETRACHLOROETHYLENE	TE	5	L	RESIDUAL FROM PARTS CLEANING	F002	576	T	TI	4A
<u>STRUCTURES SECTION/DEM</u>										
	CUTTING OIL	OG	3	L	CUTTING AND THREADING PIPE	D001	L	I	T	6B
	CUTTING OIL	OG	3	L	MACHINE USE	D001	L	I	T	6B
	PAINT REMOVER METHYLENE CHLORIDE	PC	5	L	PAINT REMOVAL	F002 F002	262 262	T	TI	4A
	PAINT THINNERS	PE	5	L	CLEANING PAINTING EQUIPMENT	D001	L	I	TIF	6B
<u>394 - CORROSION CONTROL FACILITY (1930)</u>										
	METAL BRIGHTENER	CV	10	L	CORROSION REMOVAL	D002	L	C	CI	1B
	METHYL ETHYL KETONE	MU	5	L	METAL CLEANING	F005	499	IT	TF	4A
	SYNTHETIC ENAMEL	PG	5	L	PAINT WASTE	D001	L	I	TF	6B
	RAGS, SOLVENT/OILY MEK	RE	13	S	METAL CLEANING	D001 F005	L 499	I	TF	6B

- (1) See list of Waste Category Codes for definitions of abbreviations.
- (2) For discussion of treatment categories, see Reference (2) or (4).
- (3) EPA numbers are given in 45 FR 33084-33133 (40 CFR 261); California numbers are presented in CAC, Title 22, Division 4, Chapter 30, Article 9.
- (4) See Glossary for definitions of hazardous property abbreviations.
- (5) California Compatibility Classes are listed in 45 FR 33257-33258.
- (6) NL = Not listed.
- (7) L = Listed, but not assigned a specific number.
- (8) "*" indicates it is regulated under Code of Federal Regulations 40 CFR 761.

TABLE C-2. BASELINE AND CONTINGENCY WASTE GENERATION FOR ADDITIONAL VAFB HOST BASE ORGANIZATIONS

ORGANIZATION (& BLDG. NOS.)	SOL OR LIQ	QUANTITY PER YEAR				CONTINGENCY QUANTITY PER EVENT				
		MASS		VOLUME		MASS		VOLUME		
		KILOGRAMS	POUNDS	LITERS	GAL OR CF	KILOGRAMS	POUNDS	LITERS	GAL OR CF	
<u>AVCO SYSTEMS DIVISION (1555)</u>										
RE	RAGS, SOLVENT/OILY ISOPROPAHOL	S	.7	1.5	2.8	.1	.0	.0	.0	.0
RE	RAGS, SOLVENT/OILY ACETONE	S	.7	1.5	2.8	.1	.0	.0	.0	.0
RE	RAGS, SOLVENT/OILY NEK	S	.7	1.5	2.8	.1	.0	.0	.0	.0
TOTALS FOR AVCO SYSTEMS DIVISION (1555)										
	SOLIDS		2.0	4.5	8.5	.3				
	LIQUIDS		.0	.0	.0	.0				
	TOTAL		2.0	4.5						
<u>MARTIN MARIETTA AEROSPACE</u>										
AM	ALCOHOLS	L	3.2	7.0	3.8	1.0	.0	.0	.0	.0
TH	1,1,1-TRICHLOROETHANE	L	376.0	829.0	283.9	75.0	.0	.0	.0	.0
TOTALS FOR MARTIN MARIETTA AEROSPACE										
	SOLIDS		.0	.0	.0	.0				
	LIQUIDS		379.2	836.0	287.7	76.0				
	TOTAL		379.2	836.0						
<u>STEARNS ROGER, INC. (1792)</u>										
OG	OILS, USED	L	1143.0	2520.0	1135.5	300.0	.0	.0	.0	.0
PE	LACQUER THINNER	L	816.5	1800.0	908.4	240.0	.0	.0	.0	.0
TOTALS FOR STEARNS ROGER, INC. (1792)										
	SOLIDS		.0	.0	.0	.0				
	LIQUIDS		1959.5	4320.0	2043.9	540.0				
	TOTAL		1959.5	4320.0						
<u>RCA CORPORATION, ASTRO (1768)</u>										
DI	DEVELOPER, PHOTOGRAPHIC	L	453.6	1000.0	454.2	120.0	.0	.0	.0	.0
PR	FIXER AND WASH WATER SILVER	L	680.8	1501.0	681.3	180.0	.0	.0	.0	.0
TOTALS FOR RCA CORPORATION, ASTRO (1768)										
	SOLIDS		.0	.0	.0	.0				
	LIQUIDS		1134.4	2501.0	1135.5	300.0				
	TOTAL		1134.4	2501.0						

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TABLE C-2 (CONT.) BASELINE AND CONTINGENCY WASTE GENERATION FOR ADDITIONAL VAFB HOST BASE ORGANIZATIONS

ORGANIZATION (& BLDG. NOS.)	SOL OR LIQ	QUANTITY PER YEAR				CONTINGENCY QUANTITY PER EVENT				
		MASS		VOLUME		MASS		VOLUME		
		KILOGRAMS	POUNDS	LITERS	GAL OR CF	KILOGRAMS	POUNDS	LITERS	GAL OR CF	
<u>AGENA TANK FARM (1180)</u>										
AJ	AERDZINE 50 HYDRAZINE UDMH	L	91.2	201.0	102.2	27.0	.0	.0	.0	.0
HE	IRFNA	L	113.4	250.0	75.7	20.0	.0	.0	.0	.0
HE	IRFNA	L	.0	.0	.0	.0	11793.3	26000.0	7846.3	2073.0
HK	NITROGEN TETROXIDE	L	82.6	182.0	56.8	15.0	.0	.0	.0	.0
TOTALS FOR AGENA TANK FARM (1180)										
	SOLIDS		.0	.0	.0	.0				
	LIQUIDS		287.1	633.0	234.7	62.0				
	TOTAL		287.1	633.0						
<u>ELECTRICAL SECTION/DEM</u>										
BG	BATTERY CARCASS	S	3483.6	7680.0	1359.2	48.0	.0	.0	.0	.0
FL	PCB's	L	.0	.0	.0	.0	6843.8	15088.0	4568.5	1207.0
PM	TRANSFORMERS (5) PCB's	S	.0	.0	.0	.0	4876.1	10750.0	29448.6	1040.0
PM	CAPACITORS (4) PCB's	S	.0	.0	.0	.0	25.4	56.0	113.3	4.0
SZ	SULFURIC ACID LEAD	L	166.9	368.0	90.8	24.0	.0	.0	.0	.0
TOTALS FOR ELECTRICAL SECTION/DEM										
	SOLIDS		3483.6	7680.0	1359.2	48.0				
	LIQUIDS		166.9	368.0	90.8	24.0				
	TOTAL		3650.5	8048.0						
<u>SANITATION SECTION/DEM</u>										
BR	MISCELLANEOUS BIOCIDES DIAZINON BAYGON RONNEL	L	4539.5	10008.0	4542.0	1200.0	.0	.0	.0	.0
TOTALS FOR SANITATION SECTION/DEM										
	SOLIDS		.0	.0	.0	.0				
	LIQUIDS		4539.5	10008.0	4542.0	1200.0				
	TOTAL		4539.5	10008.0						

TABLE C-2 (CONT.) BASELINE AND CONTINGENCY WASTE GENERATION FOR ADDITIONAL VAFB HOST BASE ORGANIZATIONS

ORGANIZATION (& BLDG. NOS.)	SOL OR LIQ	QUANTITY PER YEAR				CONTINGENCY QUANTITY PER EVENT				
		MASS		VOLUME		MASS		VOLUME		
		KILOGRAMS	POUNDS	LITERS	GAL OR CF	KILOGRAMS	POUNDS	LITERS	GAL OR CF	
<u>PAVEMENTS AND GROUNDS/DEM</u>										
BR	TERRACLORE FUNGICIDE	L	680.8	1501.0	681.3	180.0	.0	.0	.0	.0
BR	ACTIDONE FUNGICIDE	L	680.8	1501.0	681.3	180.0	.0	.0	.0	.0
BR	MISCELLANEOUS INSECTICIDES PROXUL SEVIN DIAZINON	L	1361.7	3002.0	1362.6	360.0	.0	.0	.0	.0
BR	MISCELLANEOUS FUNGICIDES PROTURF DACIHIL DYRENE	L	1589.9	3503.0	1589.7	420.0	.0	.0	.0	.0
DB	2,4-D	L	1588.9	3503.0	1589.7	420.0	.0	.0	.0	.0
HE	MISCELLANEOUS HERBICIDES KARNEX BETASAN ROUNDUP DIURON SIDURON SIMAZINE/PRINCEP	L	4539.5	10008.0	4542.0	1200.0	.0	.0	.0	.0
TOTALS FOR PAVEMENTS AND GROUNDS/DEM										
SOLIDS			.0	.0	.0	.0				
LIQUIDS			10440.7	23018.0	10446.6	2760.0				
TOTAL			10440.7	23018.0	10446.6	2760.0				
<u>MECHANICAL SECTION/DEM</u>										
AP	ALGACIDES	L	454.0	1001.0	454.2	120.0	.0	.0	.0	.0
FR	HALOCARBON LUBE OIL	L	644.6	1421.0	454.2	120.0	.0	.0	.0	.0
OG	MOTOR OIL	L	40.8	90.0	45.4	12.0	.0	.0	.0	.0
OG	REFRIGERANT OIL	L	64.4	142.0	45.4	12.0	.0	.0	.0	.0
OG	HYDROCARBON SLUDGE	L	9412.0	20750.0	9462.5	2500.0	.0	.0	.0	.0
SY	SULFAMIC ACID	S	2177.2	4800.0	1036.4	36.6	.0	.0	.0	.0
TE	TETRACHLOROETHYLENE	L	366.3	807.6	227.1	60.0	.0	.0	.0	.0
TOTALS FOR MECHANICAL SECTION/DEM										
SOLIDS			2177.2	4800.0	1036.4	36.6				
LIQUIDS			10982.1	24211.6	10688.8	2824.0				
TOTAL			13159.4	29011.6	10688.8	2824.0				

TABLE C-2 (CONT.) BASELINE AND CONTINGENCY WASTE GENERATION FOR ADDITIONAL VAFB HOST BASE ORGANIZATIONS

ORGANIZATION (& BLDG. NOS.)	SOL OR CAT WASTE MATERIAL	QUANTITY PER YEAR				CONTINGENCY QUANTITY PER EVENT				
		MASS		VOLUME		MASS		VOLUME		
		LIQ	KILOGRAMS	POUNDS	LITERS	GAL OR CF	KILOGRAMS	POUNDS	LITERS	GAL OR CF
<u>STRUCTURES SECTION/DEM</u>										
OG	CUTTING OIL	L	81.6	180.0	90.8	24.0	.0	.0	.0	.0
OG	CUTTING OIL	L	122.5	270.0	136.3	36.0	.0	.0	.0	.0
PC	PAINT REMOVER METHYLENE CHLORIDE	L	299.4	660.0	227.1	60.0	.0	.0	.0	.0
PE	PAINT THINNERS	L	367.7	810.6	613.2	162.0	.0	.0	.0	.0
TOTALS FOR STRUCTURES SECTION/DEM										
	SOLIDS		.0	.0	.0	.0				
	LIQUIDS		871.2	1920.6	1067.4	282.0				
	TOTAL		871.2	1920.6						
<u>394 - CORROSION CONTROL FACILITY (1930)</u>										
CV	METAL BRIGHTENER	L	3.8	8.3	3.8	1.0	.0	.0	.0	.0
MU	METHYL ETHYL KETONE	L	197.8	436.0	246.0	65.0	.0	.0	.0	.0
PG	SYNTHETIC ENAMEL	L	498.9	1100.0	492.0	130.0	.0	.0	.0	.0
RE	RAGS, SOLVENT/OILY NEK	S	3116.2	6870.0	12968.7	458.0	.0	.0	.0	.0
TOTALS FOR 394 - CORROSION CONTROL FACILITY (1930)										
	SOLIDS		3116.2	6870.0	12968.7	458.0				
	LIQUIDS		700.5	1544.3	741.9	196.0				
	TOTAL		3816.6	8414.3						
<u>GRAND TOTAL, ADDITIONAL HOST VAFB ORGANIZATIONS</u>										
	SOLIDS		8779.0	19354.5	15372.8	542.9				
	LIQUIDS		31461.2	69360.5	31279.2	8264.0				
	TOTAL		40240.2	88715.0						

TABLE C-3. ANNUAL BASELINE WASTE GENERATION FOR ADDITIONAL VAFB HOST BASE ORGANIZATIONS BY WASTE CATEGORY

WASTE CATEGORY ORGANIZATION (AND BUILDING NUMBER)	SOL OR LIO	BASELINE MASS PER YEAR		BASELINE VOLUME PER YEAR	
		KILOGRAMS	POUNDS	LITERS	GAL OR CF
<u>AJ - AEROZINE 50</u> AGEHA TANK FARM (1180)	L	91.2	201.0	102.2	27.0
TOTAL AJ FOR ADDITIONAL ORGANIZATIONS		91.2	201.0	102.2	27.0
<u>AM - ALCOHOLS, UNSPECIFIED</u> MARTIN MARIETTA AEROSPACE	L	3.2	7.0	3.8	1.0
TOTAL AM FOR ADDITIONAL ORGANIZATIONS		3.2	7.0	3.8	1.0
<u>AP - ALGACIDES, UNSPECIFIED</u> MECHANICAL SECTION/DEM	S	454.0	1001.0	454.2	120.0
TOTAL AP FOR ADDITIONAL ORGANIZATIONS		454.0	1001.0	454.2	120.0
<u>BG - BATTERY WASTES</u> ELECTRICAL SECTION/DEM	L	3483.6	7680.0	1359.2	48.0
TOTAL BG FOR ADDITIONAL ORGANIZATIONS		3483.6	7680.0	1359.2	48.0
<u>BR - BIOCIDES, UNSPECIFIED</u> SANITATION SECTION/DEM PAYEMENTS AND GROUNDS/DEM	L	4539.5 4312.3	10008.0 9507.0	4542.0 4314.9	1200.0 1140.0
TOTAL BR FOR ADDITIONAL ORGANIZATIONS		8851.8	19515.0	8856.9	2340.0
<u>CV - CORROSIVE LIQUIDS, UNSPECIFIED</u> 394 - CORROSION CONTROL FACILITY (1930)	L	3.8	8.3	3.8	1.0
TOTAL CV FOR ADDITIONAL ORGANIZATIONS		3.8	8.3	3.8	1.0
<u>DB - 2,4-D</u> PAYEMENTS AND GROUNDS/DEM	L	1588.9	3503.0	1589.7	420.0
TOTAL DB FOR ADDITIONAL ORGANIZATIONS		1588.9	3503.0	1589.7	420.0
<u>DI - DEVELOPER, PHOTOGRAPHIC</u> RCA CORPORATION, ASTRO (1768)	L	453.6	1000.0	454.2	120.0
TOTAL DI FOR ADDITIONAL ORGANIZATIONS		453.6	1000.0	454.2	120.0

TABLE C-3 (CONT.) ANNUAL BASELINE WASTE GENERATION FOR ADDITIONAL VAFB HOST BASE ORGANIZATIONS BY WASTE CATEGORY

WASTE CATEGORY ORGANIZATION (AND BUILDING NUMBER)	SOL OR LIQ	BASELINE MASS PER YEAR		BASELINE VOLUME PER YEAR	
		KILOGRAMS	POUNDS	LITERS	GAL OR CF
<u>FR - FREON SOLVENTS</u> MECHANICAL SECTION/DEM	L	644.6	1421.0	454.2	120.0
TOTAL FR FOR ADDITIONAL ORGANIZATIONS		644.6	1421.0	454.2	120.0
<u>HE - HERBICIDES, UNSPECIFIED</u> PAVEMENTS AND GROUNDS/DEM	L	4539.5	10008.0	4542.0	1200.0
TOTAL HE FOR ADDITIONAL ORGANIZATIONS		4539.5	10008.0	4542.0	1200.0
<u>NU - METHYL ISOBUTYL KETONE (MIBK)</u> 394th - CORROSION CONTROL FACILITY (1930)	L	197.8	436.0	246.0	65.0
TOTAL NU FOR ADDITIONAL ORGANIZATIONS		197.8	436.0	246.0	65.0
<u>HE - NITRIC ACID</u> AGEHA TANK FARM (1180)	L	113.4	250.0	75.7	20.0
TOTAL HE FOR ADDITIONAL ORGANIZATIONS		113.4	250.0	75.7	20.0
<u>NK - NITROGEN TETROXIDE</u> AGEHA TANK FARM (1180)	L	82.6	182.0	56.8	15.0
TOTAL NK FOR ADDITIONAL ORGANIZATIONS		82.6	182.0	56.8	15.0
<u>OG - OILS, USED</u> STEARNS ROGER, INC. (1792) MECHANICAL SECTION/DEM STRUCTURES SECTION/DEM	L	1143.0 9517.2 204.1	2520.0 20982.0 450.0	1135.5 9553.3 227.1	300.0 2524.0 60.0
TOTAL OG FOR ADDITIONAL ORGANIZATIONS		10864.4	23952.0	10915.9	2884.0
<u>PC - PAINT STRIPPERS</u> STRUCTURES SECTION/DEM	L	299.4	660.0	227.1	60.0
TOTAL PC FOR ADDITIONAL ORGANIZATIONS		299.4	660.0	227.1	60.0
<u>PE - PAINT THINNERS</u> STEARNS ROGER, INC. (1792) STRUCTURES SECTION/DEM	L	816.5 367.7	1800.0 810.6	908.4 613.2	240.0 162.0
TOTAL PE FOR ADDITIONAL ORGANIZATIONS		1184.1	2610.6	1521.6	402.0

TABLE C-3 (CONT.) ANNUAL BASELINE WASTE GENERATION FOR ADDITIONAL VAFB HOST BASE ORGANIZATIONS BY WASTE CATEGORY

WASTE CATEGORY ORGANIZATION (AND BUILDING NUMBER)	SOL OR LIQ	BASELINE MASS PER YEAR		BASELINE VOLUME PER YEAR	
		KILOGRAMS	POUNDS	LITERS	GAL OR CF
<u>PG - PAINT WASTES</u>	L				
394 - CORROSION CONTROL FACILITY (1930)		498.9	1100.0	492.0	130.0
TOTAL PG FOR ADDITIONAL ORGANIZATIONS		498.9	1100.0	492.0	130.0
<u>PL - PCB LIQUID WASTES</u>	S				
TOTAL PL FOR ADDITIONAL ORGANIZATIONS		.0	.0	.0	.0
<u>PM - PCB SOLID WASTES</u>	L				
TOTAL PM FOR ADDITIONAL ORGANIZATIONS		.0	.0	.0	.0
<u>PR - PHOTOGRAPHIC CHEMICALS, MISC.</u>	S				
RCA CORPORATION, ASTRO (1768)		680.8	1501.0	681.3	180.0
TOTAL PR FOR ADDITIONAL ORGANIZATIONS		680.8	1501.0	681.3	180.0
<u>RE - RAGS, SOLVENT/OILY</u>	S				
AVCO SYSTEMS DIVISION (1555)		2.0	4.5	8.5	.3
394 - CORROSION CONTROL FACILITY (1930)		3116.2	6870.0	12968.7	458.0
TOTAL RE FOR ADDITIONAL ORGANIZATIONS		3118.2	6874.5	12977.2	458.3
<u>SY - SULFAMIC ACID</u>	L				
MECHANICAL SECTION/DEM		2177.2	4800.0	1036.4	36.6
TOTAL SY FOR ADDITIONAL ORGANIZATIONS		2177.2	4800.0	1036.4	36.6
<u>SZ - SULFURIC ACID</u>	L				
ELECTRICAL SECTION/DEM		166.9	368.0	90.8	24.0
TOTAL SZ FOR ADDITIONAL ORGANIZATIONS		166.9	368.0	90.8	24.0
<u>TE - TETRACHLOROETHYLENE</u>	L				
MECHANICAL SECTION/DEM		366.3	807.6	227.1	60.0
TOTAL TE FOR ADDITIONAL ORGANIZATIONS		366.3	807.6	227.1	60.0
<u>TN - TRICHLOROETHANE</u>	L				
MARTIN MARIETTA AEROSPACE		376.0	829.0	283.9	75.0
TOTAL TN FOR ADDITIONAL ORGANIZATIONS		376.0	829.0	283.9	75.0

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APPENDIX D
HAZARDOUS WASTE INVENTORY OF NASA PROGRAMS

TABLE D-1. HAZARDOUS CHARACTERISTICS OF WASTES GENERATED BY THE NASA PROGRAM AT VAFB.

FACILITY	WASTE MATERIAL	WASTE CAT ⁽¹⁾	TRT OR CAT ⁽²⁾	SOL OR LIQ	OPERATION	HAZ. WASTE NO. ⁽³⁾		HAZ. PROPERTY ⁽⁴⁾		CALIFORNIA COMPATIBILITY CLASS ⁽⁵⁾
						EPA	CAL.	EPA	CAL.	
SLC2W DELTA	FREON 113 N2O4 (TRACE AMOUNTS)	FR	1	L	PROPEL. TRANSFER - 2ND STAGE	F002 P080	NL ⁽⁶⁾ 548	T H	TF	6B
SLC2W DELTA	HYDRAZINE WASTEWATER	HQ	2	L	PROPEL. TRANSFER - 2ND STAGE	U133	376	RT	TIF	6B
SLC2W DELTA	ISOPROPYL ALCOHOL HYDRAZINE (TRACE AMOUNTS)	IV	2	L	PROPEL. TRANSFER - 2ND STAGE	D001 U133	396 376	i RT	TF TIF	6B
SLC2W DELTA	NITROGEN TETROXIDE WASTEWATER	OX	10	L	PROPEL. TRANSFER - 2ND STAGE	P080	548	H	TF	3A, 6A
SLC2W DELTA	RP-1 FUEL/WATER MIXTURE	RT	3	L	DEWATERING OF FUEL	D001	NL	I		4A
SLC2W DELTA	TRICHLOROETHYLENE	TP	5	L	FIRST STAGE ENGINE FLUSH	F002	744	Ti	TF	4A
SLC2W NOAA	HYDRAZINE WASTEWATER	HQ	2	L	PROPELLANT LOADING	U133	376	RT	TIF	6B
SLC2W NOAA	ISOPROPYL ALCOHOL HYDRAZINE (TRACE AMOUNTS)	IV	2	L	PROPELLANT LOADING	D001 U133	396 376	i RT	TF TIF	6B
SLC2E	SOLVENT/PAINT MIXTURE PAINT, LEAD-BASED METHYL ETHYL KETONE TOLUENE	SU	5	L	PAINTING, CLEANING, DEGREASING	D001 F017 U159 U220	NL NL 499 738	iT i iT T	TF F TF TF	4A, 6B
BLDG. 831	OIL/PAINT/THINNER MIXTURE MOTOR OIL PAINT, LEAD-BASED PAINT THINNERS	OH	3	L	MAINTENANCE ACTIVITIES	D001 D001 F017 D001	L ⁽⁷⁾ L NL NL	iT i i iT	TF F F TF	4A, 6B

- (1) See list of Waste Category Codes for definitions of abbreviations.
- (2) For discussion of treatment categories, see Reference (2) or (4).
- (3) EPA numbers are given in 45 FR 33084-33133 (40 CFR 261); California numbers are presented in CAC, Title 22, Division 4, Chapter 30, Article 9.
- (4) See Glossary for definitions of hazardous property abbreviations.
- (5) California Compatibility Classes are listed in 45 FR 33257-33258.
- (6) NL = Not listed.
- (7) L = Listed, but not assigned a specific number.

TABLE D-2. UNIT GENERATION OF HAZARDOUS WASTES FROM THE DELTA AND TIROS/NOAA LAUNCHES UNDER THE NASA PROGRAM AT VAFB

FACILITY	WASTE MATERIAL	SOL OR LIQ	QUANTITY PER LAUNCH BASELINE				QUANTITY PER EVENT CONTINGENCY			
			MASS		VOLUME		MASS		VOLUME	
			KILOGRAMS	POUNDS	LITERS	GALLONS OR CF	KILOGRAMS	POUNDS	LITERS	GALLONS OR CF
SLC2W DELTA	FREON 113 N2O4 (TRACE AMOUNTS)	L	530.7	1170.0	378.5	100.0	.0	.0	.0	.0
SLC2W DELTA	HYDRAZINE WASTEWATER	L	9462.3	20861.0	9462.5	2500.0	.0	.0	.0	.0
SLC2W DELTA	ISOPROPYL ALCOHOL HYDRAZINE (TRACE AMOUNTS)	L	530.7	1170.0	378.5	100.0	.0	.0	.0	.0
SLC2W DELTA	NITROGEN TETROXIDE WASTEWATER	L	264.9	584.0	265.0	70.0	.0	.0	.0	.0
SLC2W DELTA	RP-1 FUEL/WATER MIXTURE	L	19.1	42.0	18.9	5.0	.0	.0	.0	.0
SLC2W DELTA	TRICHLOROETHYLENE	L	238.6	526.0	170.3	45.0	.0	.0	.0	.0
TOTAL FOR DELTA AT SLC2W										
	SOLIDS		.0	.0	.0	.0				
	LIQUIDS		11046.3	24353.0	10673.7	2820.0				
	TOTAL		11046.3	24353.0						
SLC2W NOAA	HYDRAZINE WASTEWATER	L	208.2	459.0	208.2	55.0	.0	.0	.0	.0
SLC2W NOAA	ISOPROPYL ALCOHOL HYDRAZINE (TRACE AMOUNTS)	L	291.7	643.0	208.2	55.0	.0	.0	.0	.0
TOTAL FOR TIROS/NOAA AT SLC2W										
	SOLIDS		.0	.0	.0	.0				
	LIQUIDS		499.9	1102.0	416.3	110.0				
	TOTAL		499.9	1102.0						

TABLE D-3. UNIT GENERATION OF HAZARDOUS WASTES FROM THE PAINT AND SHOP FACILITIES UNDER THE HASA PROGRAM AT VAFB

FACILITY	WASTE MATERIAL	SOL OR LIQ	QUANTITY PER YEAR BASELINE				QUANTITY PER EVENT CONTINGENCY			
			MASS		VOLUME		MASS		VOLUME	
			KILOGRAMS	POUNDS	LITERS	GALLONS OR CF	KILOGRAMS	POUNDS	LITERS	GALLONS OR CF
SLC2E	SOLVENT/PAINT MIXTURE PAINT, LEAD-BASED METHYL ETHYL KETONE TOLUENE	L	31.8	70.0	22.7	6.0	.0	.0	.0	.0
TOTAL FOR PAINT FACILITY AT SLC2E										
	SOLIDS		.0	.0	.0	.0				
	LIQUIDS		31.8	70.0	22.7	6.0				
	TOTAL		31.8	70.0						
BLDG. 831	OIL/PAINT/THINNER MIXTURE MOTOR OIL PAINT, LEAD-BASED PAINT THINNERS	L	1061.4	2340.0	757.0	200.0	.0	.0	.0	.0
TOTAL FOR SHOP FAC. AT BLDG. 831										
	SOLIDS		.0	.0	.0	.0				
	LIQUIDS		1061.4	2340.0	757.0	200.0				
	TOTAL		1061.4	2340.0						

TABLE D-4. BASELINE UNIT WASTE GENERATION FOR THE HASA PROGRAM AT VAFB BY WASTE CATEGORY

FACILITY - LOCATION	SOL OR LIQ	BASELINE QUANTITY PER UNIT TIME			
		KILOGRAMS	POUNDS	LITERS	GAL OR CF
TOTALS FOR FR - FREON SOLVENTS					
DELTA LAUNCHES - SLC2W (PER LAUNCH)	L	530.7	1170.0	378.5	100.0
TIROS/NOAA LAUNCHES - SLC2W (PER LAUNCH)		.0	.0	.0	.0
PAINT FACILITY - SLC2E (PER YEAR)		.0	.0	.0	.0
SHOP FACILITY - BLDG. 831 (PER YEAR)		.0	.0	.0	.0
TOTALS FOR HQ - HYDRAZINE/WATER WASTES					
DELTA LAUNCHES - SLC2W (PER LAUNCH)	L	9462.3	20861.0	9462.5	2500.0
TIROS/NOAA LAUNCHES - SLC2W (PER LAUNCH)		208.2	459.0	208.2	55.0
PAINT FACILITY - SLC2E (PER YEAR)		.0	.0	.0	.0
SHOP FACILITY - BLDG. 831 (PER YEAR)		.0	.0	.0	.0
TOTALS FOR IV - ISOPROPAHOL					
DELTA LAUNCHES - SLC2W (PER LAUNCH)	L	530.7	1170.0	378.5	100.0
TIROS/NOAA LAUNCHES - SLC2W (PER LAUNCH)		291.7	643.0	208.2	55.0
PAINT FACILITY - SLC2E (PER YEAR)		.0	.0	.0	.0
SHOP FACILITY - BLDG. 831 (PER YEAR)		.0	.0	.0	.0
TOTALS FOR OH - OILY WASTES, GENERAL					
DELTA LAUNCHES - SLC2W (PER LAUNCH)	L	.0	.0	.0	.0
TIROS/NOAA LAUNCHES - SLC2W (PER LAUNCH)		.0	.0	.0	.0
PAINT FACILITY - SLC2E (PER YEAR)		.0	.0	.0	.0
SHOP FACILITY - BLDG. 831 (PER YEAR)		1061.4	2340.0	757.0	200.0
TOTALS FOR OX - OXIDIZER/WATER WASTES					
DELTA LAUNCHES - SLC2W (PER LAUNCH)	L	264.9	584.0	265.0	70.0
TIROS/NOAA LAUNCHES - SLC2W (PER LAUNCH)		.0	.0	.0	.0
PAINT FACILITY - SLC2E (PER YEAR)		.0	.0	.0	.0
SHOP FACILITY - BLDG. 831 (PER YEAR)		.0	.0	.0	.0
TOTALS FOR RT - RP-1 SLUDGES					
DELTA LAUNCHES - SLC2W (PER LAUNCH)	L	19.1	42.0	18.9	5.0
TIROS/NOAA LAUNCHES - SLC2W (PER LAUNCH)		.0	.0	.0	.0
PAINT FACILITY - SLC2E (PER YEAR)		.0	.0	.0	.0
SHOP FACILITY - BLDG. 831 (PER YEAR)		.0	.0	.0	.0
TOTALS FOR SU - SOLVENTS, MIXED OR UNSPEC.					
DELTA LAUNCHES - SLC2W (PER LAUNCH)	L	.0	.0	.0	.0
TIROS/NOAA LAUNCHES - SLC2W (PER LAUNCH)		.0	.0	.0	.0
PAINT FACILITY - SLC2E (PER YEAR)		31.8	70.0	22.7	6.0
SHOP FACILITY - BLDG. 831 (PER YEAR)		.0	.0	.0	.0
TOTALS FOR TP - TRICHLOROETHYLENE					
DELTA LAUNCHES - SLC2W (PER LAUNCH)	L	238.6	526.0	170.3	45.0
TIROS/NOAA LAUNCHES - SLC2W (PER LAUNCH)		.0	.0	.0	.0
PAINT FACILITY - SLC2E (PER YEAR)		.0	.0	.0	.0
SHOP FACILITY - BLDG. 831 (PER YEAR)		.0	.0	.0	.0

TABLE D-5. BASELINE WASTE GENERATION FOR EACH NASA FACILITY AT VAFB BY WASTE CATEGORY FOR 1982 - 1987

WASTE CATEGORY*	1982		1983		1984		1985		1986		1987	
	POUNDS	GALLONS OR CF	POUNDS	GALLONS OR CF	POUNDS	GALLONS OR CF	POUNDS	GALLONS OR CF	POUNDS	GALLONS OR CF	POUNDS	GALLONS OR CF
<u>DELTA LAUNCHES AT SLC2W</u>												
FR	2340.0	200.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
HQ	41722.0	5000.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
IV	2340.0	200.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
OX	1168.0	140.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
RT	84.0	10.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
TP	1052.0	90.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
<u>TIROS/NOAA LAUNCHES AT SLC2W</u>												
HQ	459.0	55.0	459.0	55.0	459.0	55.0	459.0	55.0	459.0	55.0	459.0	55.0
IV	643.0	55.0	643.0	55.0	643.0	55.0	643.0	55.0	643.0	55.0	643.0	55.0
<u>PAINT FACILITY AT SLC2E</u>												
SU	70.0	6.0	70.0	6.0	70.0	6.0	70.0	6.0	70.0	6.0	70.0	6.0
<u>SHOP FACILITY AT BLDG. 931</u>												
OH	2340.0	200.0	2340.0	200.0	2340.0	200.0	2340.0	200.0	2340.0	200.0	2340.0	200.0

* KEY TO WASTE CATEGORY ABBREVIATIONS:

FR - FREON SOLVENTS
 HQ - HYDRAZINE/WATER WASTES
 IV - ISOPROPANOL
 OH - OILY WASTES, GENERAL

OX - OXIDIZER/WATER WASTES
 RT - RP-1 SLUDGES
 SU - SOLVENTS, MIXED OR UNSPEC.
 TP - TRICHLOROETHYLENE

TABLE D-6. BASELINE WASTE GENERATION FOR COMBINED NASA FACILITIES AT VAFB BY WASTE CATEGORY FOR 1982 - 1987

WASTE CATEGORY*	1982		1983		1984		1985		1986		1987	
	POUNDS	GALLONS OR CF	POUNDS	GALLONS OR CF	POUNDS	GALLONS OR CF	POUNDS	GALLONS OR CF	POUNDS	GALLONS OR CF	POUNDS	GALLONS OR CF
FR	2340.0	200.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
HQ	42181.0	5055.0	459.0	55.0	459.0	55.0	459.0	55.0	459.0	55.0	459.0	55.0
IV	2983.0	255.0	643.0	55.0	643.0	55.0	643.0	55.0	643.0	55.0	643.0	55.0
OH	2340.0	200.0	2340.0	200.0	2340.0	200.0	2340.0	200.0	2340.0	200.0	2340.0	200.0
OX	1168.0	140.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
RT	84.0	10.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
SU	70.0	6.0	70.0	6.0	70.0	6.0	70.0	6.0	70.0	6.0	70.0	6.0
TP	1052.0	90.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

* KEY TO WASTE CATEGORY ABBREVIATIONS:

FR - FRESH SOLVENTS
 HQ - HYDRAZINE/WATER WASTES
 IV - ISOPROPANOL
 OH - OILY WASTES, GENERAL

OX - OXIDIZER/WATER WASTES
 RT - RP-1 SLUDGES
 SU - SOLVENTS, MIXED OR UNSPEC.
 TP - TRICHLOROETHYLENE

APPENDIX E

SUMMARIES BY WASTE CATEGORY OF UNIT QUANTITIES OF LIQUID
AND SOLID HAZARDOUS WASTES FOR VAFB HOST BASE AND TENANTS

APPENDIX E

SUMMARIES BY WASTE CATEGORY OF UNIT QUANTITIES OF LIQUID AND SOLID HAZARDOUS WASTES FOR VAFB HOST BASE AND TENANTS

Tables E-1 and E-2 were compiled to assist VAFB personnel in distinguishing between those host base and tenant programs that generate hazardous wastes as a function of launch schedule and those that generate wastes at a constant rate regardless of launch schedule. VAFB host base and tenant organizations are separated in these tables according to the projected variations in waste generation rates, with a separate entry for each of the following groups:

- SD-STs.
- SD-TAC.
- Host VAFB - Fuels Lab & Det 41.
- Host VAFB - Federal Electric.
- Host VAFB - 1369 AVS/DOC.
- Host VAFB - Other organizations (combined).
- BMO - M-X test pad and part of MMF (launch-dependent).
- BMO - Other M-X test facilities (launch-independent).
- NASA - Delta.
- NASA - TIROS/NOAA.
- NASA - Shop and paint facilities.

Among the host base organizations, Fuels Lab & Det 41 and 1369 AVS/DOC are expected to undergo an increase in waste generation when the STS program becomes operational. Federal Electric expects its waste generation to increase annually, with different rates of increase prior to and during the STS program. All other host base organizations are projected to have constant waste generation rates regardless of year.

Table E-1 presents information on liquid waste generation, and Table E-2 provides data on solid waste generation. These tables will also assist VAFB host base and tenant personnel in recalculating waste generation in case of any changes in projected waste generation, so that facilities can be sized for management of these wastes.

TABLE E-1. SUMMARY BY WASTE CATEGORY OF QUANTITIES PER UNIT TIME OF BASELINE LIQUID WASTE GENERATED BY VAFB HOST BASE AND TENANTS

WASTE CATEGORY ORGANIZATION	UNIT TIME	BASELINE MASS/UNIT TIME		BASELINE VOLUME/UNIT TIME		
		KILOGRAMS	POUNDS	LITERS	GALLONS	
<u>AB - ACETIC ACID</u>						
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	2.2	5.0	2.3	.6	
<u>AC - ACETONE</u>						
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	70.9	159.4	90.8	24.0	
HOST VAFB - 1369 AVS/DOC	PER YEAR, 1982-84.	177.1	398.4	227.1	60.0	
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	8.8	19.9	11.4	3.0	
<u>AJ - AEROZINE 50</u>						
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	79.6	179.0	90.8	24.0	
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	89.4	201.0	102.2	27.0	
<u>AM - ALCOHOLS, UNSPECIFIED</u>						
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	3.1	7.0	3.8	1.0	
<u>AP - ALGACIDES, UNSPECIFIED</u>						
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	445.0	1001.0	454.2	120.0	
<u>AU - AMMONIA</u>						
SPACE DIVISION - STS	PER STS LAUNCH	35.6	80.0	37.8	10.0	
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	.4	.8	.4	.1	
<u>BG - BATTERY WASTES</u>						
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	7694.1	17306.0	4591.2	1213.0	
<u>BJ - BENZENE</u>						
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	.4	.9	.4	.1	
<u>BR - BIOCIDES, UNSPECIFIED</u>						
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	8676.2	19515.0	8856.9	2340.0	
<u>CD - CARBON TETRACHLORIDE</u>						
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	70.5	158.6	45.4	12.0	
<u>CH - CELLOSOLVE SOLVENTS</u>						
SPACE DIVISION - STS	PER STS LAUNCH	104.9	236.0	113.2	29.9	
<u>CK - CHLOROFORM</u>						
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	13.1	29.5	9.1	2.4	
HOST VAFB - 1369 AVS/DOC	PER YEAR, 1982-84	327.8	737.4	227.1	60.0	
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	5.5	12.3	3.8	1.0	
<u>CI - CHROMIUM WASTEWATERS</u>						
SPACE DIVISION - STS	PER STS LAUNCH	148.5	334.0	151.4	40.0	
SPACE DIVISION - COMP CLN FAC	PER YEAR, 1982-84	135410.7	304574.3	138152.5	36500.0	
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	11.2	25.1	11.4	3.0	
HOST VAFB - FEDERAL ELECTRIC	PER YEAR, 1982	741.6	1668.0	757.0	200.0	
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	556.2	1251.0	567.8	150.0	

TABLE E-1 (CONT.) SUMMARY BY WASTE CATEGORY OF QUANTITIES PER UNIT TIME OF BASELINE LIQUID WASTE
GENERATED BY VAFB HOST BASE AND TENANTS

WASTE CATEGORY ORGANIZATION	UNIT TIME	BASELINE MASS/UNIT TIME		BASELINE VOLUME/UNIT TIME	
		KILOGRAMS	POUNDS	LITERS	GALLONS
<u>CV - CORROSIVE LIQUIDS, UNSPECIFIED</u>					
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	40.1	90.2	40.9	10.8
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	3.7	8.3	3.8	1.0
BNO - MX TP & PART OF MNF	PER MX TEST LAUNCH	7568.3	17023.0	7721.4	2040.0
<u>CW - CYANIDE WASTEWATERS</u>					
SPACE DIVISION - COMP CLN FAC	PER YEAR, 1982-84	135410.7	304574.3	138152.5	36500.0
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	48.0	108.0	49.2	13.0
<u>DB - 2,4-D</u>					
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	1557.4	3503.0	1589.7	420.0
<u>DE - DELUGE WATER</u>					
SPACE DIVISION - STS	PER STS LAUNCH	3777640.0	8496908.0	3854130.5	1018264.4
SPACE DIVISION - TITAN	PER TITAN LAUNCH	148493.1	334000.0	151400.0	40000.0
<u>DI - DEVELOPER, PHOTOGRAPHIC</u>					
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	22.3	50.1	22.7	6.0
HOST VAFB - 1369 AVS/DOC	PER YEAR, 1982-84	35502.7	79855.0	36241.4	9575.0
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	1557.0	3502.0	1589.7	420.0
<u>DN - DICHLOROMETHANE</u>					
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	580.9	1306.7	416.3	110.0
<u>DV - DRY CLEANING SOLVENT</u>					
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	83.4	187.5	94.6	25.0
<u>DY - DYNA-BRITE WASTES</u>					
HOST VAFB - FEDERAL ELECTRIC	PER YEAR, 1982	741.6	1668.0	757.0	200.0
<u>EC - EEW&S WASTEWATERS</u>					
SPACE DIVISION - STS	PER STS LAUNCH	13245.0	29791.4	13512.4	3570.0
<u>EH - ETHANOL</u>					
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	3.6	8.2	4.5	1.2
<u>EO - ETHYLENEDIAMINE</u>					
HOST VAFB - 1369 AVS/DOC	PER YEAR, 1982-84	160.1	360.0	181.7	48.0
<u>FJ - FORMALDEHYDE</u>					
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	1.6	3.6	1.5	.4
<u>FR - FREON SOLVENTS</u>					
SPACE DIVISION - STS	PER STS LAUNCH	2330.4	5241.6	1514.4	400.1
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	252.9	568.8	181.7	48.0
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	1789.9	4026.0	1286.9	340.0
NASA - DELTA	PER DELTA LAUNCH	520.2	1170.0	378.5	100.0

TABLE E-1 (CONT.) SUMMARY BY WASTE CATEGORY OF QUANTITIES PER UNIT TIME OF BASELINE LIQUID WASTE GENERATED BY VAFB HOST BASE AND TEHANTS

WASTE CATEGORY ORGANIZATION	UNIT TIME	BASELINE MASS/UNIT TIME		BASELINE VOLUME/UNIT TIME	
		KILOGRAMS	POUNDS	LITERS	GALLONS
<u>FW - FUEL, AVIATION</u>					
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	332.2	747.1	476.9	126.0
<u>FX - FUEL, DIESEL</u>					
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	20.3	45.7	22.7	6.0
<u>GC - GASOLINE</u>					
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	6.6	14.8	9.1	2.4
<u>HC - HEPTANE</u>					
SPACE DIVISION - STS	PER STS LAUNCH	73.6	165.5	113.2	29.9
<u>HE - HERBICIDES, UNSPECIFIED</u>					
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	4449.5	10008.0	4542.0	1200.0
<u>HI - HYDRAULIC FLUID</u>					
SPACE DIVISION - STS	PER STS LAUNCH	390.1	877.5	388.0	102.5
BMO - OTHER MX TEST FACILITIES	PER YEAR	23572.8	53021.5	26722.1	7060.0
<u>HM - HYDRAZINE</u>					
SPACE DIVISION - STS	PER STS LAUNCH	418.3	940.8	407.3	107.6
SPACE DIVISION - TITAN	PER TITAN LAUNCH	3.6	8.0	3.8	1.0
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	178.7	402.0	181.7	48.0
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	3.7	8.4	3.8	1.0
<u>HO - HYDRAZINE SCRUBBER LIQUOR</u>					
SPACE DIVISION - STS	PER STS LAUNCH	3802.1	8552.0	4012.1	1060.0
SPACE DIVISION - ATLAS	PER ATLAS LAUNCH	189.1	425.3	193.0	51.0
SPACE DIVISION - TITAN	PER TITAN LAUNCH	184.5	415.0	189.3	50.0
<u>HQ - HYDRAZINE/WATER WASTES</u>					
SPACE DIVISION - STS	PER STS LAUNCH	4083.6	9185.0	4239.2	1120.0
SPACE DIVISION - TITAN	PER TITAN LAUNCH	741.6	1668.0	757.0	200.0
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	7131.1	16039.8	8300.5	2193.0
NASA - DELTA	PER DELTA LAUNCH	9274.6	20861.0	9462.5	2500.0
NASA - TIROS/NOAA	PER NOAA LAUNCH	204.1	459.0	208.2	55.0
<u>HW - HYDROCHLORIC ACID</u>					
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	24.5	55.1	25.0	6.6
<u>HX - HYDROFLUORIC ACID</u>					
HOST VAFB - FEDERAL ELECTRIC	PER YEAR, 1982	741.6	1668.0	757.0	200.0
<u>ID - IGHITABLE WASTES, UNSPECIFIED</u>					
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	3.6	8.0	3.8	1.0
<u>IK - INSULATION WASTES, LIQUID</u>					
SPACE DIVISION - STS	PER STS LAUNCH	25.8	58.0	189.2	50.0

TABLE E-1 (CONT.) SUMMARY BY WASTE CATEGORY OF QUANTITIES PER UNIT TIME OF BASELINE LIQUID WASTE
GENERATED BY VAFB HOST BASE AND TENANTS

WASTE CATEGORY ORGANIZATION	UNIT TIME	BASELINE MASS/UNIT TIME		BASELINE VOLUME/UNIT TIME	
		KILOGRAMS	POUNDS	LITERS	GALLONS
IM - INSULATION WASTEWATERS					
SPACE DIVISION - STS	PER STS LAUNCH	181615.0	408500.0	185313.6	48960.0
IV - ISOPROPNOL					
SPACE DIVISION - TITAN	PER TITAN LAUNCH	1167.9	2627.0	1521.6	402.0
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	59.5	133.8	77.2	20.4
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	644.3	1449.3	836.5	221.0
NASA - DELTA	PER DELTA LAUNCH	520.2	1170.0	378.5	100.0
NASA - TIROS/NOAA	PER NOAA LAUNCH	285.9	643.0	208.2	55.0
LT - LUBE OILS					
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	121.9	274.1	136.3	36.0
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	1327.3	2985.5	1504.5	397.5
BMO - OTHER MX TEST FACILITIES	PER YEAR	287.8	647.3	325.5	86.0
MF - MERCURY					
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	1.8	4.0	.0	.0
MN - METHANOL					
SPACE DIVISION - TITAN	PER TITAN LAUNCH	984.3	2214.0	1271.9	336.0
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	35.1	79.0	45.4	12.0
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	322.3	724.9	416.3	110.0
MO - METHYLENE CHLORIDE					
SPACE DIVISION - STS	PER STS LAUNCH	1726.3	3883.0	1328.5	351.0
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	29.5	66.4	22.7	6.0
MS - METHYL ETHYL KETONE (MEK)					
SPACE DIVISION - STS	PER STS LAUNCH	86.7	194.9	109.8	29.0
SPACE DIVISION - ATLAS	PER ATLAS LAUNCH	6.0	13.4	7.6	2.0
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	736.4	1656.3	934.9	247.0
MU - METHYL ISOBUTYL KETONE (MIBK)					
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	7.1	16.0	9.1	2.4
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	193.8	436.0	246.0	65.0
MX - MMH (MONOMETHYL HYDRAZINE)					
SPACE DIVISION - STS	PER STS LAUNCH	458.4	1031.0	535.2	141.4
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	3.9	8.8	4.5	1.2
NE - NITRIC ACID					
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	44.5	100.2	90.8	24.0
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	7564.7	17015.0	7653.3	2022.0
NK - NITROGEN TETROXIDE					
SPACE DIVISION - STS	PER STS LAUNCH	428.1	962.9	300.2	79.3
SPACE DIVISION - TITAN	PER TITAN LAUNCH	12.7	28.6	8.7	2.3
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	129.1	290.3	90.8	24.0
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	80.9	182.0	56.8	15.0

TABLE E-1 (CONT.) SUMMARY BY WASTE CATEGORY OF QUANTITIES PER UNIT TIME OF BASELINE LIQUID WASTE GENERATED BY VAFB HOST BASE AND TENANTS

WASTE CATEGORY ORGANIZATION	UNIT TIME	BASELINE MASS/UNIT TIME		BASELINE VOLUME/UNIT TIME	
		KILOGRAMS	POUNDS	LITERS	GALLONS
<u>OD - OIL/WATER WASTES</u>					
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	22259.3	50067.0	22710.0	6000.0
<u>OG - OILS, USED</u>					
SPACE DIVISION - STS	PER STS LAUNCH	41.8	94.0	42.4	11.2
SPACE DIVISION - ATLAS	PER ATLAS LAUNCH	7.5	16.8	7.6	2.0
HOST VAFB - FEDERAL ELECTRIC	PER YEAR, 1982	433.8	975.8	492.0	130.0
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	37387.3	84094.0	41177.0	10879.0
BMO - OTHER MX TEST FACILITIES	PER YEAR	1458.7	3281.0	1655.6	437.4
<u>OH - OILY WASTES, GENERAL</u>					
HASA - SHOP & PAINT FACILITIES	PER YEAR	1040.3	2340.0	757.0	200.0
<u>OK - OXIDIZER/WATER WASTES</u>					
SPACE DIVISION - STS	PER STS LAUNCH	1208.1	2717.4	1286.9	340.0
HASA - DELTA	PER DELTA LAUNCH	259.6	584.0	265.0	70.0
<u>PC - PAINT STRIPPERS</u>					
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	293.4	660.0	227.1	60.0
<u>PE - PAINT THINNERS</u>					
SPACE DIVISION - STS	PER STS LAUNCH	.8	1.8	.8	.2
HOST VAFB - FEDERAL ELECTRIC	PER YEAR, 1982	367.1	825.7	416.3	110.0
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	1160.6	2610.6	1521.6	402.0
BMO - MX TP & PART OF MMF	PER MX TEST LAUNCH	16.7	37.6	18.9	5.0
<u>PG - PAINT WASTES, LIQUID</u>					
SPACE DIVISION - STS	PER STS LAUNCH	59.1	133.0	51.9	13.7
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	489.0	1100.0	492.0	130.0
BMO - MX TP & PART OF MMF	PER MX TEST LAUNCH	24.8	55.8	23.5	6.2
<u>PO - PERCHLOROETHYLENE</u>					
SPACE DIVISION - STS	PER STS LAUNCH	2088.0	4696.4	1306.2	345.1
<u>PP - PETROLEUM ETHER</u>					
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	53.4	120.2	90.8	24.0
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	11.1	25.0	18.9	5.0
<u>PR - PHOTOGRAPHIC CHEMICALS, MISC.</u>					
HOST VAFB - 1369 AVS/DOC	PER YEAR, 1982-84	28921.5	65052.0	29523.0	7800.0
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	667.3	1501.0	681.3	180.0
<u>PS - POTASSIUM HYDROXIDE</u>					
SPACE DIVISION - STS	PER STS LAUNCH	8.5	19.2	8.7	2.3
<u>PU - PREHARDENER, PHOTOGRAPHIC</u>					
HOST VAFB - 1369 AVS/DOC	PER YEAR, 1982-84	11123.6	25020.0	11355.0	3000.0

TABLE E-1 (CONT.) SUMMARY BY WASTE CATEGORY OF QUANTITIES PER UNIT TIME OF BASELINE LIQUID WASTE GENERATED BY VAFB HOST BASE AND TENANTS

WASTE CATEGORY ORGANIZATION	UNIT TIME	BASELINE MASS/UNIT TIME		BASELINE VOLUME/UNIT TIME	
		KILOGRAMS	POUNDS	LITERS	GALLONS
<u>RI - REACTIVE WASTES, UNSPECIFIED</u>					
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	19.4	43.6	13.6	3.6
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	.4	.8	.4	.1
<u>RS - RP-1</u>					
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	182.7	411.0	227.1	60.0
<u>RT - RP-1 SLUDGES</u>					
SPACE DIVISION - ATLAS	PER ATLAS LAUNCH	822.5	1850.0	832.7	220.0
NASA - DELTA	PER DELTA LAUNCH	18.7	42.0	18.9	5.0
<u>SC - SEAWATER, CONTAMINATED</u>					
SPACE DIVISION - STS	PER STS LAUNCH	14226.9	32000.0	15140.0	4000.0
<u>SL - SODIUM HYDROXIDE WASTEWATERS</u>					
SPACE DIVISION - COMP CLN FAC	PER YEAR, 1982-84	1354106.5	3045742.5	1381525.0	365000.0
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	35.6	80.1	36.3	9.6
<u>SS - SOLVENT/WATER WASTES</u>					
SPACE DIVISION - STS	PER STS LAUNCH	1498.0	3369.5	1567.0	414.0
<u>SU - SOLVENTS, MIXED OR UNSPEC.</u>					
SPACE DIVISION - STS	PER STS LAUNCH	1606.8	3614.1	1177.5	311.1
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	12892.7	28999.0	9564.7	2527.0
BMO - MX TP & PART OF MMF	PER MX TEST LAUNCH	104.0	234.0	75.7	20.0
BMO - OTHER MX TEST FACILITIES	PER YEAR	1832.6	4122.0	1339.9	354.0
NASA - SHOP & PAINT FACILITIES	PER YEAR	31.1	70.0	22.7	6.0
<u>SV - SRB INITIAL RINSE WATER</u>					
SPACE DIVISION - STS	PER STS LAUNCH	194694.8	437920.0	207190.9	54740.0
<u>SW - SRB WASH WATER</u>					
SPACE DIVISION - STS	PER STS LAUNCH	34144.5	76800.0	36336.0	9600.0
<u>SZ - SULFURIC ACID</u>					
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	81.9	184.2	45.4	12.0
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	195.3	439.3	109.8	29.0
<u>TE - TETRACHLOROETHYLENE</u>					
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	359.1	807.6	227.1	60.0
<u>TJ - TOLUENE</u>					
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	9.6	21.7	11.4	3.0
<u>TI - TRICHLOROETHANE</u>					
SPACE DIVISION - STS	PER STS LAUNCH	86.6	181.4	60.9	16.1
SPACE DIVISION - COMP CLN FAC	PER YEAR, 1982-84	1672.5	3762.0	1249.1	330.0
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	147.5	331.7	113.6	30.0
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	662.0	1489.0	492.0	130.0
BMO - OTHER MX TEST FACILITIES	PER YEAR	149.4	336.0	113.6	30.0

TABLE E-1 (CONT.) SUMMARY BY WASTE CATEGORY OF QUANTITIES PER UNIT TIME OF BASELINE LIQUID WASTE
GENERATED BY VAFB HOST BASE AND TENANTS

WASTE CATEGORY ORGANIZATION	UNIT TIME	BASELINE MASS/UNIT TIME		BASELINE VOLUME/UNIT TIME	
		KILOGRAMS	POUNDS	LITERS	GALLONS
<u>TP - TRICHLOROETHYLENE</u>					
SPACE DIVISION - ATLAS	PER ATLAS LAUNCH	3025.4	6805.0	2289.9	605.0
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	169.0	380.1	118.1	31.2
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	5.4	12.2	3.8	1.0
NASA - DELTA	PER DELTA LAUNCH	233.9	526.0	170.3	45.0
<u>TR - TRICHLOROTRIFLUOROETHANE</u>					
BMO - OTHER MX TEST FACILITIES	PER YEAR	42.2	95.0	27.6	7.3
<u>UD - UDMH (UNSYM DIMETHYLHYDRAZINE)</u>					
SPACE DIVISION - TITAN	PER TITAN LAUNCH	17.9	40.2	23.1	6.1
HOST VAFB - FUELS LAB/DET 41	PER YEAR, 1982-84	34.9	78.4	45.4	12.0
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	2.9	6.5	3.8	1.0

TABLE E-2. SUMMARY BY WASTE CATEGORY OF QUANTITIES PER UNIT TIME OF BASELINE SOLID WASTE GENERATED BY VAFB HOST BASE AND TENANTS

WASTE CATEGORY ORGANIZATION	UNIT TIME	BASELINE MASS/UNIT TIME		BASELINE VOLUME/UNIT TIME	
		KILOGRAMS	POUNDS	LITERS	CUBIC FEET
<u>AH - ADHESIVE WASTES</u> SPACE DIVISION - STS	PER STS LAUNCH	28.2	63.5	93.4	3.3
<u>BG - BATTERY WASTES</u> SPACE DIVISION - STS	PER STS LAUNCH	64.0	144.0	93.4	3.3
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	11717.6	26356.0	13186.8	465.7
<u>CT - CONTAINERS</u> SPACE DIVISION - STS	PER STS LAUNCH	2745.1	6174.5	51917.4	1833.5
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	158.5	356.5	1673.5	59.1
<u>IL - INSULATION WASTES, SOLID</u> SPACE DIVISION - STS	PER STS LAUNCH	1130.4	2542.6	26149.8	923.5
<u>PH - PAINT WASTES, SOLID</u> SPACE DIVISION - STS	PER STS LAUNCH	21.3	48.0	169.9	6.0
<u>PJ - PARTS, CONTAMINATED</u> SPACE DIVISION - STS	PER STS LAUNCH	53.4	120.0	3397.9	120.0
BNO - MX TP & PART OF MMF	PER MX TEST LAUNCH	7.1	16.0	84.9	3.0
BNO - OTHER MX TEST FACILITIES	PER YEAR	14.2	32.0	226.5	8.0
<u>PH - PCB SOLID WASTES</u> HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	100.7	226.5	430.4	15.2
<u>RC - RAGS, CHROMATE</u> SPACE DIVISION - STS	PER STS LAUNCH	2.2	5.0	28.3	1.0
<u>RE - RAGS, SOLVENT/DILY</u> SPACE DIVISION - STS	PER STS LAUNCH	35.6	80.0	538.0	19.0
SPACE DIVISION - ATLAS	PER ATLAS LAUNCH	52.4	117.8	68.0	2.4
SPACE DIVISION - TITAN	PER TITAN LAUNCH	160.1	360.0	209.5	7.4
HOST VAFB - FEDERAL ELECTRIC	PER YEAR, 1982	1422.7	3200.0	6039.8	213.3
HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	3987.7	8969.5	16788.6	592.9
BNO - MX TP & PART OF MMF	PER MX TEST LAUNCH	6.7	15.0	28.3	1.0
BNO - OTHER MX TEST FACILITIES	PER YEAR	1496.0	3365.0	6427.7	227.0
<u>SG - SILVER SALTS</u> HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	.7	1.5	.0	.0
<u>SY - SULFAMIC ACID</u> HOST VAFB - OTHER ORGANIZATIONS	PER YEAR	2134.0	4800.0	1036.4	36.6

GLOSSARY

AFB	Air Force Base
BMO	Ballistic Missiles Organization
C	Corrosive
CAC	California Administrative Code
CAL	California
CAT	Category
CCF	Component Cleaning Facility
CDHS	California Department of Health Services
CFR	Code of Federal Regulations
DLA	Defense Logistics Agency
DOD	Department of Defense
DOT	Department of Transportation
DPDO	Defense Property Disposal Organization
DPDS	Defense Property Disposal Service
E	EP toxic
EEW&S	Emergency Eyewash and Shower
EP	Extraction Procedure
EPA	Environmental Protection Agency
F	Flammable
FR	Federal Register
FSC	Federal Stock Class
FT ³	Cubic Feet
GAL	Gallons
H	EPA acutely hazardous
HAZ	Hazardous
HWP	Hazardous Waste Programs
i	Ignitable
I	Irritant
IRFNA	Inhibited Red Fuming Nitric Acid
KG	Kilograms
l	Liters

GLOSSARY (continued)

L	Listed (but no specific number)
LB	Pounds
LIQ	Liquid
LSN	List Stock Number
M ³	Cubic Meters
MEK	Methyl ethyl ketone
MIBK	Methyl isobutyl ketone
MMF	Mechanical Maintenance Facility
MMH	Monomethylhydrazine
MO	Month
N2O4	Nitrogen tetroxide
NASA	National Aeronautics and Space Administration
NL	Not Listed
NSN	National Stock Number
NVAFB	North Vandenberg Air Force Base
P	Pressure-generating
PCB	Polychlorinated biphenyl
R	Reactive
RCRA	Resource Conservation and Recovery Act
S	Strong sensitizer
SCS	Stearns, Conrad & Schmidt Consulting Engineers, Inc.
SD	Space Division
SOL	Solid
STS	Space Transportation System
SVAFB	South Vandenberg Air Force Base
T	Toxic
TAC	Titan, Atlas, and Component Cleaning Facility
TRT	Treatment
TSD	Treatment, Storage, and Disposal
UDMH	Unsymmetrical dimethylhydrazine
USAF	United States Air Force
VAFB	Vandenberg Air Force Base
WRCB	State Water Resources Control Board
WST	Waste
YR	Year

WASTE CATEGORY CODES

AB	Acetic Acid
AC	Acetone
AH	Adhesive Wastes
AJ	Aerazine 50
AM	Alcohols, Unspecified
AP	Algacides, Unspecified
AU	Ammonia
BG	Battery Wastes
BJ	Benzene
BR	Biocides, Unspecified
CD	Carbon Tetrachloride
CH	Cellosolve Solvents
CK	Chloroform
CN	Chromium Wastewaters
CT	Containers
CV	Corrosive Liquids, Unspecified
CW	Cyanide Wastewaters
DB	2,4-D
DE	Deluge Water
DI	Developer, Photographic
DN	Dichloromethane
DV	Dry-Cleaning Solvent
DY	Dyna-Brite Wastes
EC	EEW&S Wastewaters
EH	Ethanol
EO	Ethylenediamine
FJ	Formaldehyde
FR	Freon Solvents
FW	Fuel, Aviation
FX	Fuel, Diesel

WASTE CATEGORY CODES (continued)

GC	Gasoline
HC	Heptane
HE	Herbicides, Unspecified
HI	Hydraulic Fluid
HM	Hydrazine
HO	Hydrazine Scrubber Liquor
HQ	Hydrazine/Water Wastes
HW	Hydrochloric Acid
HX	Hydrofluoric Acid
ID	Ignitable Wastes, Unspecified
IK	Insulation Wastes, Liquid
IL	Insulation Wastes, Solid
IM	Insulation Wastewaters
IV	Isopropanol
LT	Lube Oils
MF	Mercury
MN	Methanol
MQ	Methylene Chloride
MS	Methyl Ethyl Ketone (MEK)
MU	Methyl Isobutyl Ketone (MIBK)
MX	Monomethyl Hydrazine
NE	Nitric Acid
NK	Nitrogen Tetroxide
OD	Oil/Water Wastes
OG	Oils, Used
OH	Oily Wastes, General
OX	Oxidizer/Water Wastes
PC	Paint Strippers
PE	Paint Thinners
PG	Paint Wastes, Liquid
PH	Paint Wastes, Solid
PJ	Parts, Contaminated
PM	PCB Solid Wastes
PO	Perchloroethylene

WASTE CATEGORY CODES (continued)

PP	Petroleum Ether
PR	Photographic Chemicals, Miscellaneous
PS	Potassium Hydroxide
PU	Prehardener, Photographic
RC	Rags, Chromate-Contaminated
RE	Rags, Solvent/Oily
RI	Reactive Wastes, Unspecified
RS	RP-1
RT	RP-1 Sludges
SC	Seawater, Contaminated
SG	Silver Salts
SL	Sodium Hydroxide Wastewaters
SS	Solvent/Water Wastes
SU	Solvents, Mixed or Unspecified
SV	SRB Initial Rinse Water
SW	SRB Wash Water
SY	Sulfamic Acid
SZ	Sulfuric Acid
TE	Tetrachloroethylene
TJ	Toluene
TN	Trichloroethane
TP	Trichloroethylene
TR	Trichlorotrifluoroethane
UD	UDMH (Unsymmetrical Dimethylhydrazine)