1997
Statistical Report
Division of Response Services
Spill Report Case Load

Bureau of Remediation & Waste Management
(formerly the Bureau of Hazardous Materials & Solid Waste Control)

September 2001

Compiled by:
Michelle R. Mason

TABLE OF CONTENTS

INTRODUCTION

This report is the statewide Statistical Report of the Division of Response Services spill caseload for 1997. Response Services Division staff in the Bureau of Remediation and Waste Management respond to oil and hazardous material spills throughout the state and act to mitigate the damage of these events to Maine's environment, public safety, and public health. In 1997, the Division of Response Services, consisting of 24 Oil and Hazardous Material Specialists (OHMS), 3 Environmental Specialists, 3 Maintenance Mechanics, and one Division Director, filed 2,198 reports dealing with oil and hazardous incidents and investigations throughout Maine.
A summary of this activity is contained in this report. These statistics examine Response Services' activity from a variety of perspectives; in an attempt to highlight both Maine's environmental concerns and the kinds and numbers of situations Response Services personnel handle in a year.

The reader may notice a slight discrepancy in the total number of reports for the year. Several months are needed to compile all of the data, and the database content may change slightly during that time period. However, we at the Department are confident that these discrepancies are insignificant in regards to the statistical summaries.

Most Response reports concern a product, which is either oil or hazardous material and can be either:

1) An incident: a known or unknown product was released to the environment; or

2) An investigation: a known or unknown product was reported to have been released to the environment; but upon investigation none could be found or the product found did not meet the criteria of an oil or hazardous waste, and so did not fall within this division's jurisdiction. The product also may have spilled at an industrial site, but was contained and diverted to a neutralization system, or fully recovered from a containment area and put back into a production process.

In 1996, the separate spill type codes for incidents and investigations were consolidated. The resulting codes (A, B, C) simply show that an event involved (or was investigated for) surface oil, groundwater oil, or hazardous material.

Office names are, on occasion, abbreviated:

Augusta	A
Bangor	B
Portland	P
Presque Isle	PI

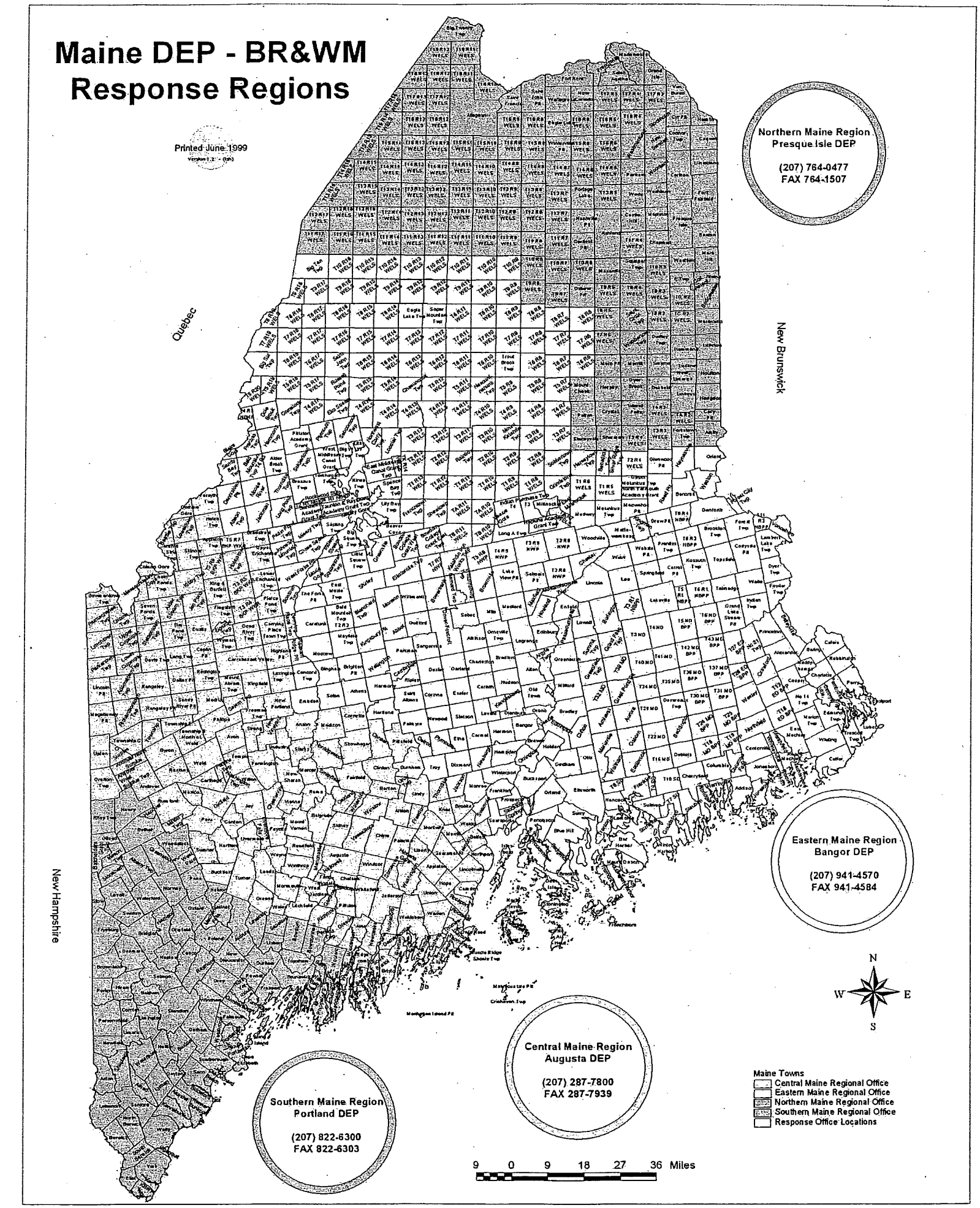
Abbreviations may also be used with Incidents/Investigations and Hazardous Material:

Incident	Inc
Investigation	Inv
Hazardous	Haz
Materials	Mat

Response Personnel Responsible for Writing Reports in 1997

INVESTIGATOR	POSITION	LOCATION
DAVID SAIT	Division Director	Augusta
MARY JAMES	OHMS III	"
DENNIS PHILLIPS	OHMS III	"
FRED BRANN	OHMS II	"
WILLIAM WALLACE	OHMS II	"
MARY CORR	OHMS I	"
GLEN WALL	OHMS I	"
FRANK GERHLING	OHMS I	"
JON ANDREWS	OHMS I	"
BILL KEENE	Maintenance Mechanic	"
ROBERT RANDALL	OHMS III	Bangor
TOM VARNEY	OHMS II	"
CLEVE LECKEY	OHMS II	"
TOM MALECK	OHMS I	"
DARRYL LUCE	OHMS I	"
BOB WHITTIER	OHMS I	"
JAKE WARD	ES II	"
MILTON KETCH	Maintenance Mechanic	"
STEVE EUFEMIA	OHMS III	Portland
SHERYL BERNARD	OHMS II	"
STEPHEN FLANNERY	OHMS II	"
STEVE BREZINSKI	OHMS I	"
LINDA DORAN	OHMS I	"
JOHN DUNLAP	OHMS I	"
JON WOODARD	OHMS I	"
NATHAN THOMPSON	OHMS I	"
CHRIS ESTES	Maintenance Mechanic	"
CARL ALLEN	OHMS II	Presque Isle
FRANK WEZNER	OHMS I	"
JIM GRAMLICH	ES III	"
WILLIAM SHEEHAN	ES III	"

Maine DEP - BR&WM Response Regions



Maine DEP - BR&WM
Response Regions

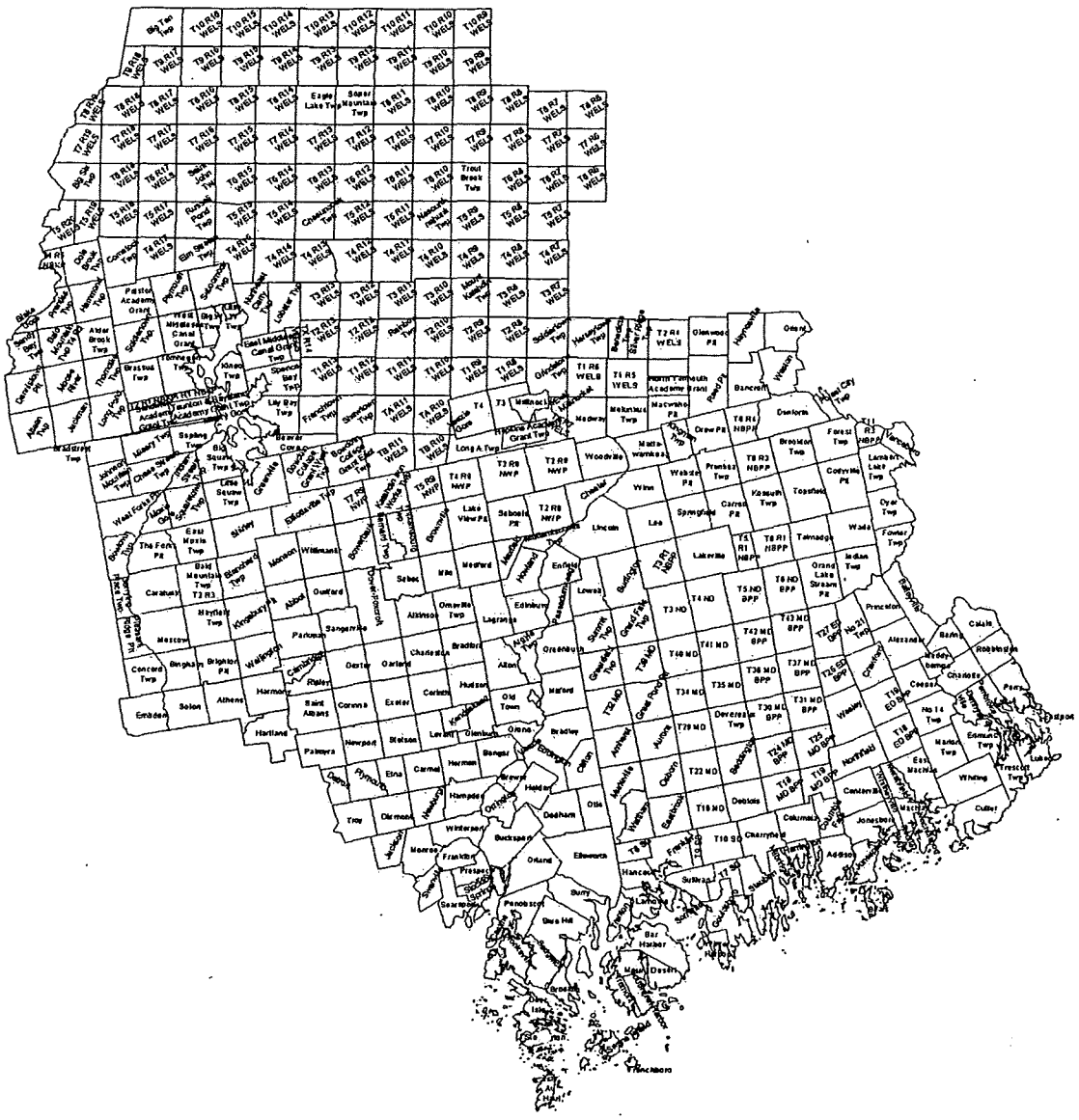
Augusta Region

Central Maine Region
Augusta DEP

(207) 287-7800
FAX 287-7939

Maine DEP - BR&WM
Response Regions

Bangor Region

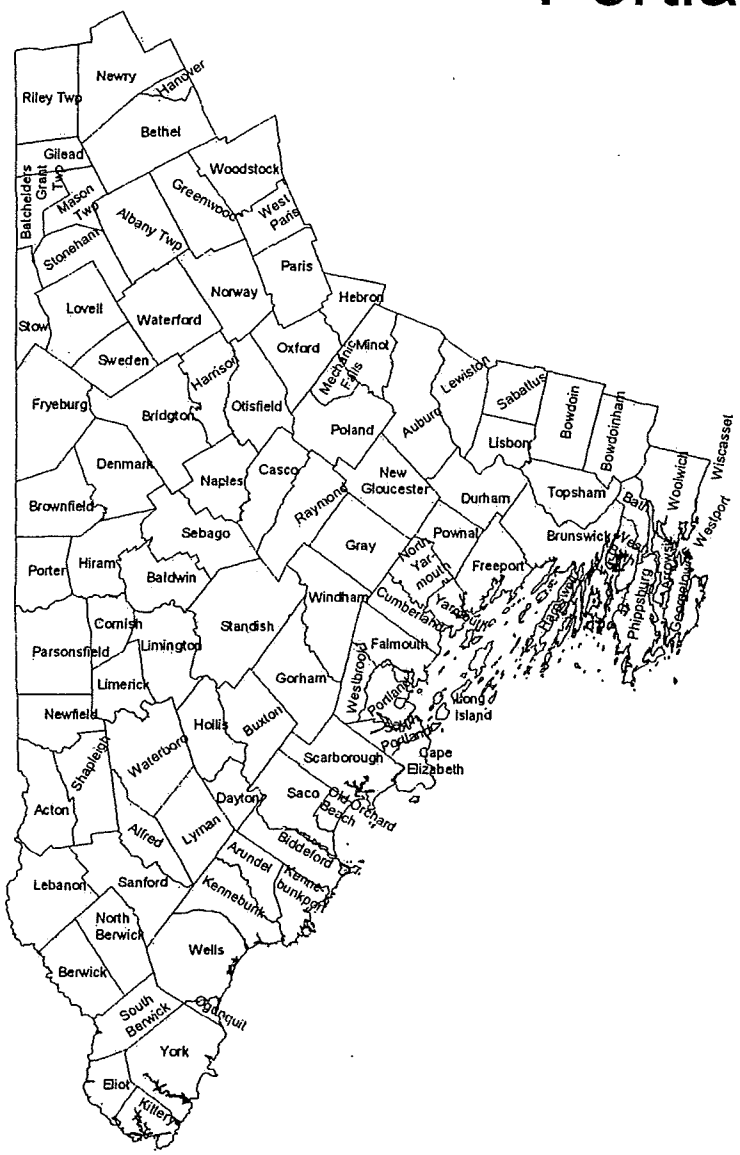


Eastern Maine Region
Bangor DEP

(207) 941-4570
FAX 941-4584

Maine DEP - BR&WM
Response Regions

Portland Region

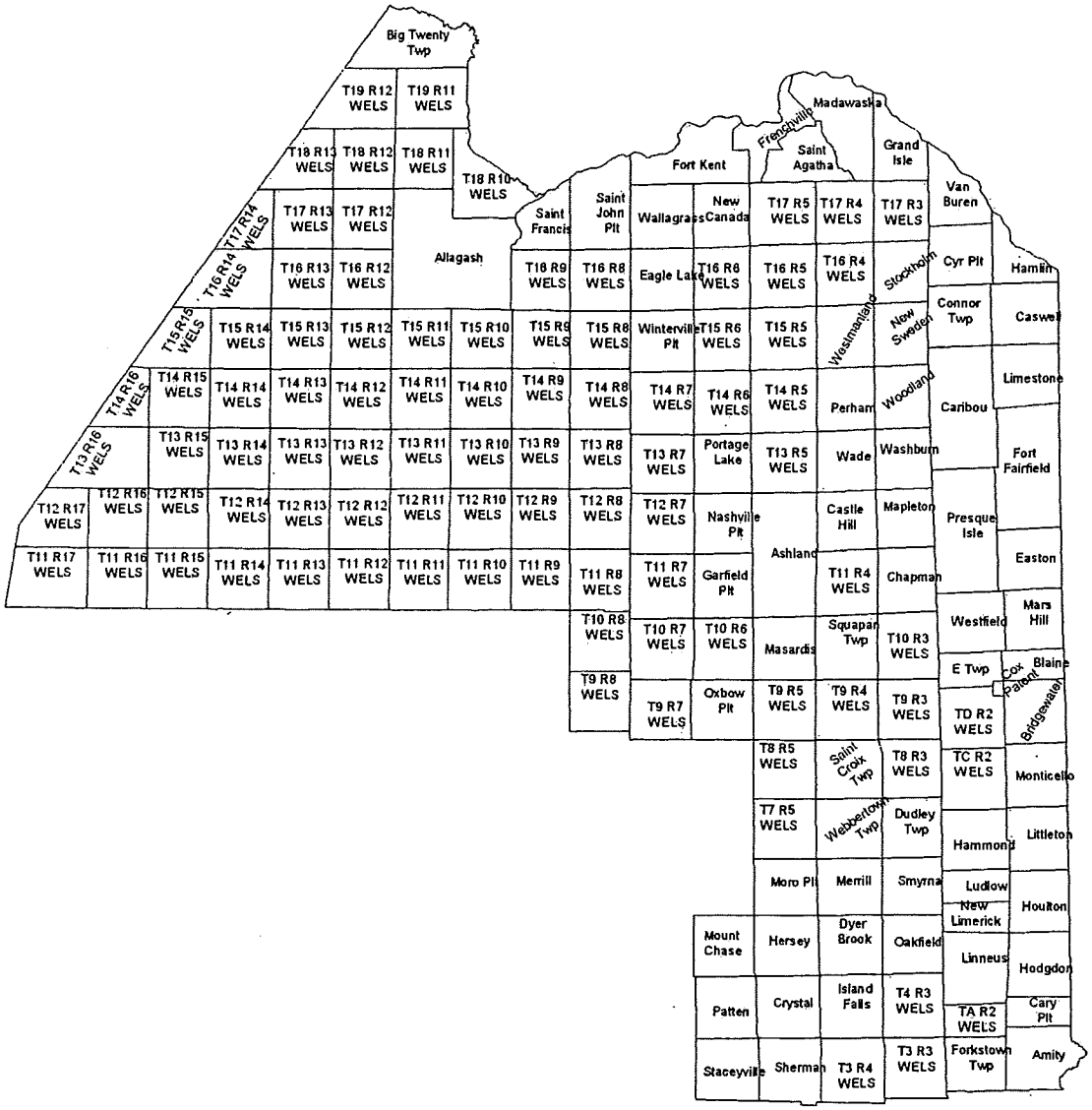


Southern Maine Region
Portland DEP

(207) 822-6300
FAX 822-6303

Maine DEP - BR&WM
Response Regions

Presque Isle Region



Northern Maine Region
Presque Isle DEP

(207) 764-0477
FAX 764-1507

Large Spills in 1997

This page lists some of the larger spills that took place during the year. The spill number, location town, and responsible party are listed. A brief synopsis of the official spill report provides basic information about the incident, including the amount spilled.

A-49-97 Rumford Mead Corporation: A pinhole leak in a white liquor line developed as a result of internal corrosion. About 6,000 gallons of white liquor was washed to the process sewer and effluent treatment plant.

A-183-97 Jay International Paper: The mill was in start up mode. One of the process tanks overflowed, the associated dike overflowed, and weak black liquor foam went to the process sewer. The amount spilled was initially reported as 50,000 gallons; recalculations based on the fact that the liquor was in the form of foam brought the spilled amount to 12,000 gallons.

A-387-97 Jay International Paper: A line valve failed during delivery of a 50% caustic soda solution. Operators didn't discover the 3,800-gallon leak until a discrepancy between the delivered amount and the tank amount was discovered.

A-483-97 Jay International Paper: An overflow prevention device failed, and 4,500 gallons of caustic soda went to the mill's process sewer system and waste treatment plant.

B-94-97 Orrington Holtrachem Manufacturing Company: A crack developed in the sidewall of the north filter backwash receiver tank. It was noticed during a mill outage when the liquid level dropped in the tank, which was not supposed to be losing liquid at that time. A total of 135,000 gallons of mercury-bearing salt solution was lost into the ground.

B-241-97 Lincoln Lincoln Pulp & Paper Company: The lower plug or valve of an out-of-service step down transformer was left open. When ice inside the transformer melted, 1,830 gallons of oil drained out. The oil was found to contain 64 ppm PCBs. Soil was excavated and sent to a hazardous waste facility.

B-665-97 Old Town Fort James (Old Town Mill): Weak black liquor escaped from a holding tank. The process sewer contained the 285,000 gallons of liquor.

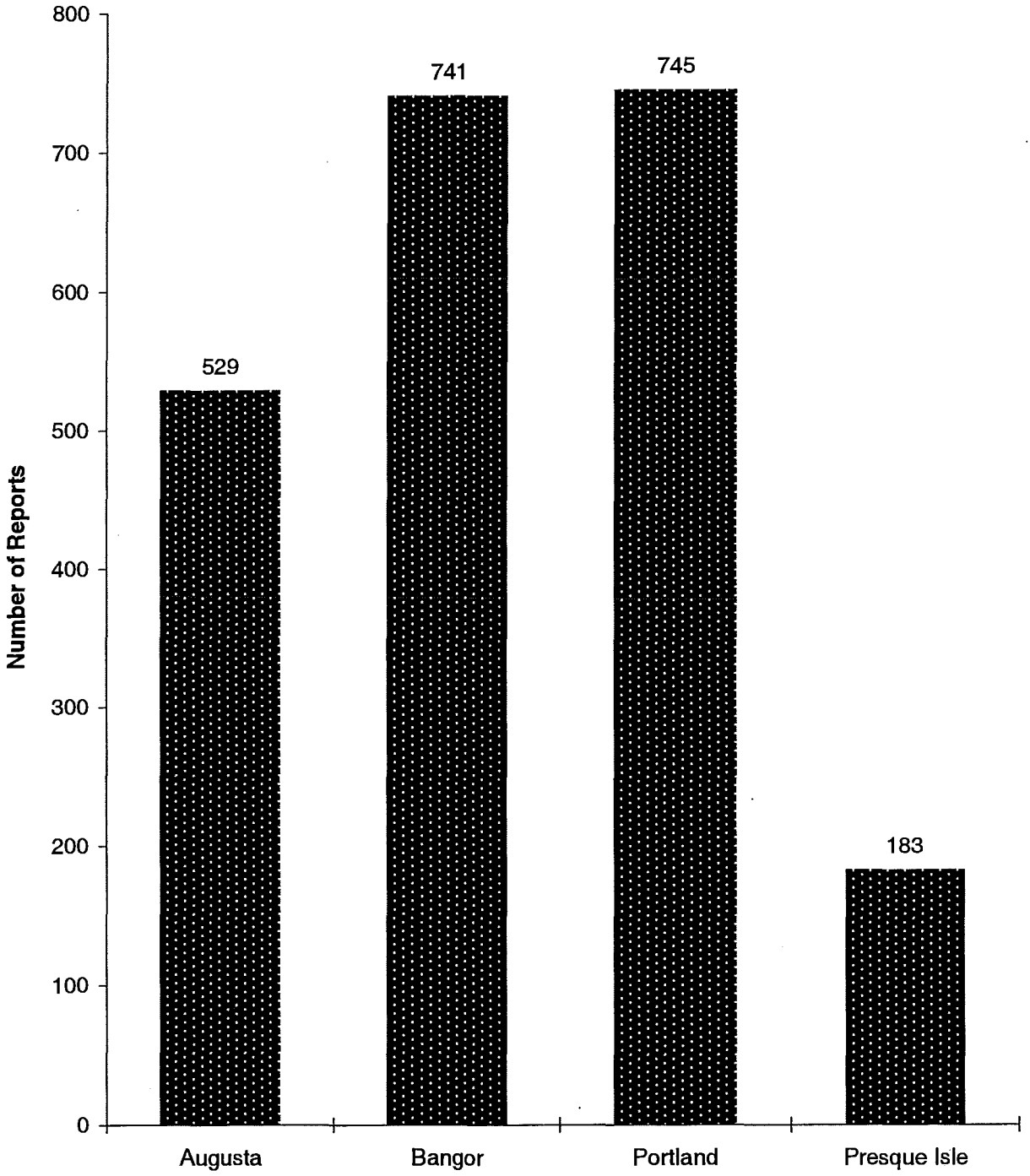
P-79-97 Auburn Gates Formed-Fibre Products, Inc.: A fire broke out in a pile of raw material waste scrapes. The 360,000 pounds of material was a mixture of polyester and polypropylene.

P-576-97 West Paris St. Lawrence & Atlantic Railroad Co.: A train derailment resulted in the breaching of a mineral pulp tank car. An estimated 19,000 gallons of mineral pulp discharged to the environment.

P-752-97 Sanford Cyro Industries: A cooling water hose failed and 20,000 gallons of water flooded a space containing a chemical storage tank. The water (containing low levels of methyl methacrylate) was pumped outside, and it flowed into a stormwater collection system.

18 Reports Missing

Number of Spill Reports Filed by Response Office for 1997



(refer to page 6 for details)

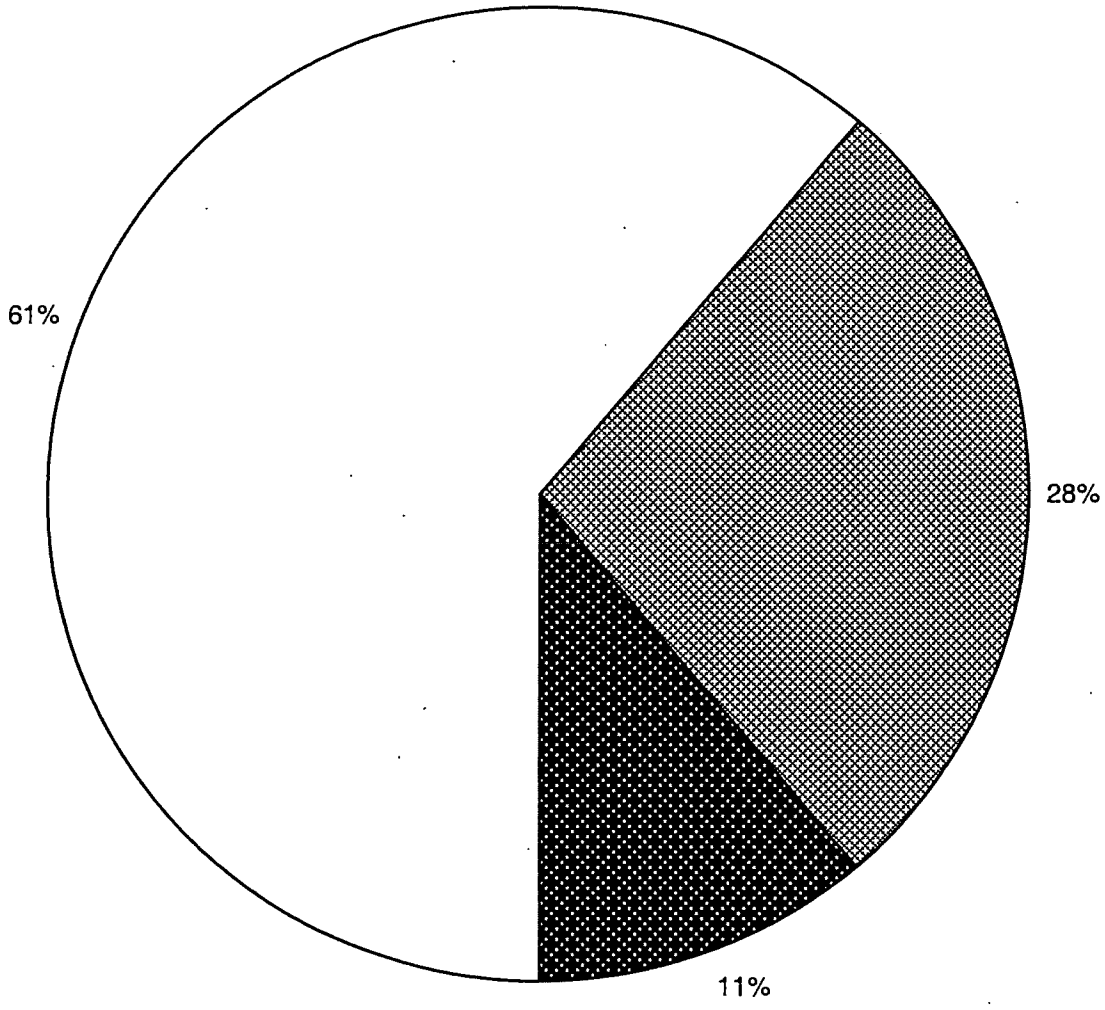
18 Reports Missing

A Listing, by Response Office, of the Number of Oil vs Hazardous Material Reports: Broken Down By Spill Types for 1997

Office	Type	Count	Percent of Reports
Augusta	Surface Oil Inc/Inv	300	57%
	Groundwater Inc/Inv	148	28%
	Haz. Mat. Inc/Inv	81	15%
	Office Total	**529**	
Bangor	Surface Oil Inc/Inv	471	64%
	Groundwater Inc/Inv	199	27%
	Haz. Mat. Inc/Inv	71	9%
	Office Total	**741**	
Portland	Surface Oil Inc/Inv	444	60%
	Groundwater Inc/Inv	222	30%
	Haz. Mat. Inc/Inv	79	10%
	Office Total	**745**	
Presque Isle	Surface Oil Inc/Inv	119	65%
	Groundwater Oil Inc/Inv	43	24%
	Haz. Mat. Inc/Inv	21	11%
	Office Total	**183**	
	1997 Grand Total for All Offices	**2198**	

Totals of Types for All Offices		
Surface Oil Inc/Inv	1334	61%
Groundwater Oil Inc/Inv	612	28%
Haz. Mat. Inc/Inv	252	11%

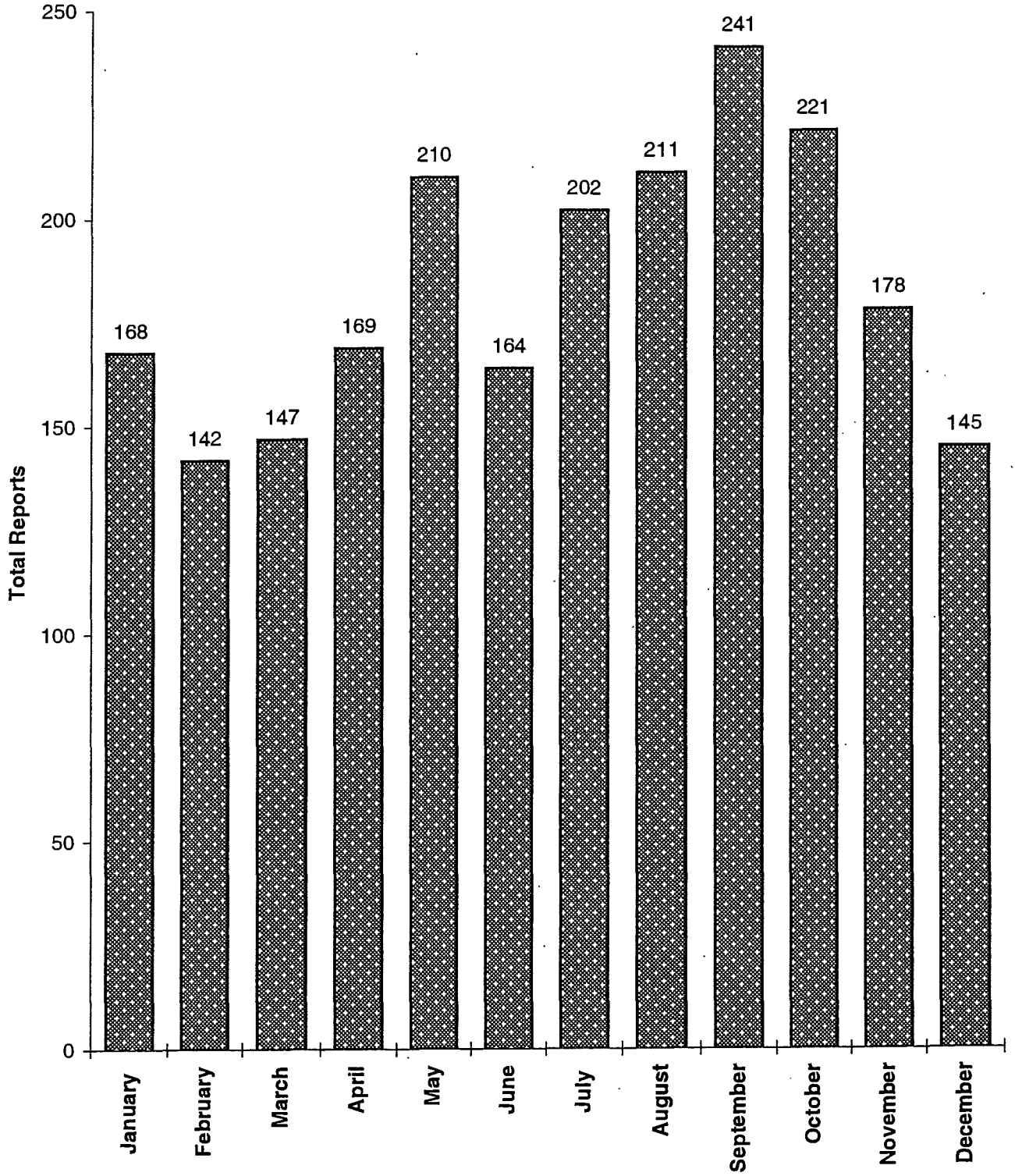
Percentage of Oil and Hazardous Material Incident and Investigation Reports for 1997 by Spill Types



(refer to page 6 for details)

18 Reports Missing

Number of Spills by Month for 1997



18 reports missing

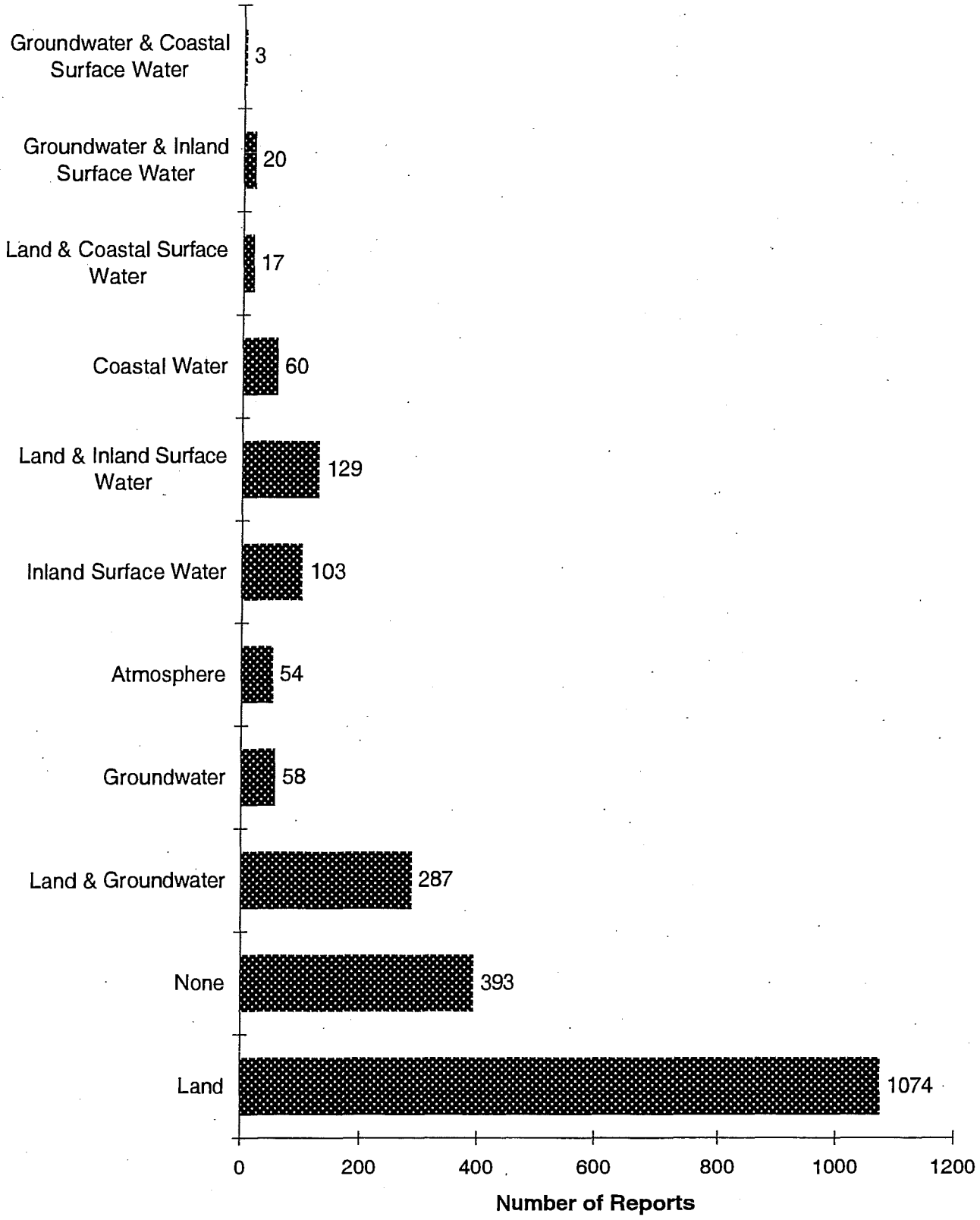
Spill Reports Arranged by Medium Effected for 1997

Medium Effected	Field Offices				Total
	Augusta	Bangor	Portland	Presque Isle	
Atmosphere	23	9	20	2	**54**
Coastal Water	7	16	37	0	**60**
Groundwater	15	26	5	12	**58**
Inland Surface Water	48	20	28	7	**103**
Land	283	408	286	97	**1074**
None	60	139	182	12	**393**
Land & Coastal Surface Water	4	3	10	0	**17**
Land & Inland Surface Water	35	34	48	12	**129**
Groundwater & Coastal Surface Water	1	1	1	0	**3**
Groundwater & Inland Surface Water	3	7	3	7	**20**
Land & Groundwater	50	78	125	34	**287**
Totals	**529**	**741**	**745**	**183**	**2198**

** We use "effected" for this page and page 10 to mean that the spilled product had the effect of contamination on the reported medium.

18 reports missing

Medium Effected by Spills for 1997



(refer to page 9 for details)

Man Hours

The following two pages deal with man hour expenditures of the Division of Response Services during 1997. Oil incidents make up the majority of the workload. Surface oil spills were reported or came to our attention about twice as often as groundwater oil spills. However, the potential for damage when groundwater becomes contaminated is generally far greater than that of surface spills. Soil generally acts as a barrier to the movement of contaminants, but groundwater helps dissolve and spread them.

The following table compares the number of work hours to the number of reports for each response office. Only surface oil and groundwater oil incidents are represented. These ratios are based on 1997 data found on the next page.

Office	Report Type	Ratio of Hours to Reports
Augusta	Surface Oil Inc	5
	Groundwater Oil Inc	7
Bangor	Surface Oil Inc	5
	Groundwater Oil Inc	10
Portland	Surface Oil Inc	5
	Groundwater Oil Inc	7
Presque Isle	Surface Oil Inc	5
	Groundwater Oil Inc	6

It is important to remember these statistics take into consideration only the first year of a groundwater spill.

Normally, a surface spill is cleaned up within the first year. Groundwater spills, in contrast, require a good deal of follow-up time in later years. Groundwater recovery systems can often only be run from spring to fall, since many recovery systems require pumping contaminated water out of the ground for treatment. In the winter months, the water freezes in the recovery unit and clogs the system or bursts its piping. Warm weather operation of groundwater recovery equipment also has problems. Most microorganisms like oxygen and carbon for growth. In a recovery system both are often present and this makes filters and air strippers magnificent breeding ground for bacteria. All these quickly breeding bacteria eventually clog the recovery unit and it has to be cleaned, requiring further man-hour expenditures. These factors and others make the clean up of groundwater a cost-intensive undertaking.

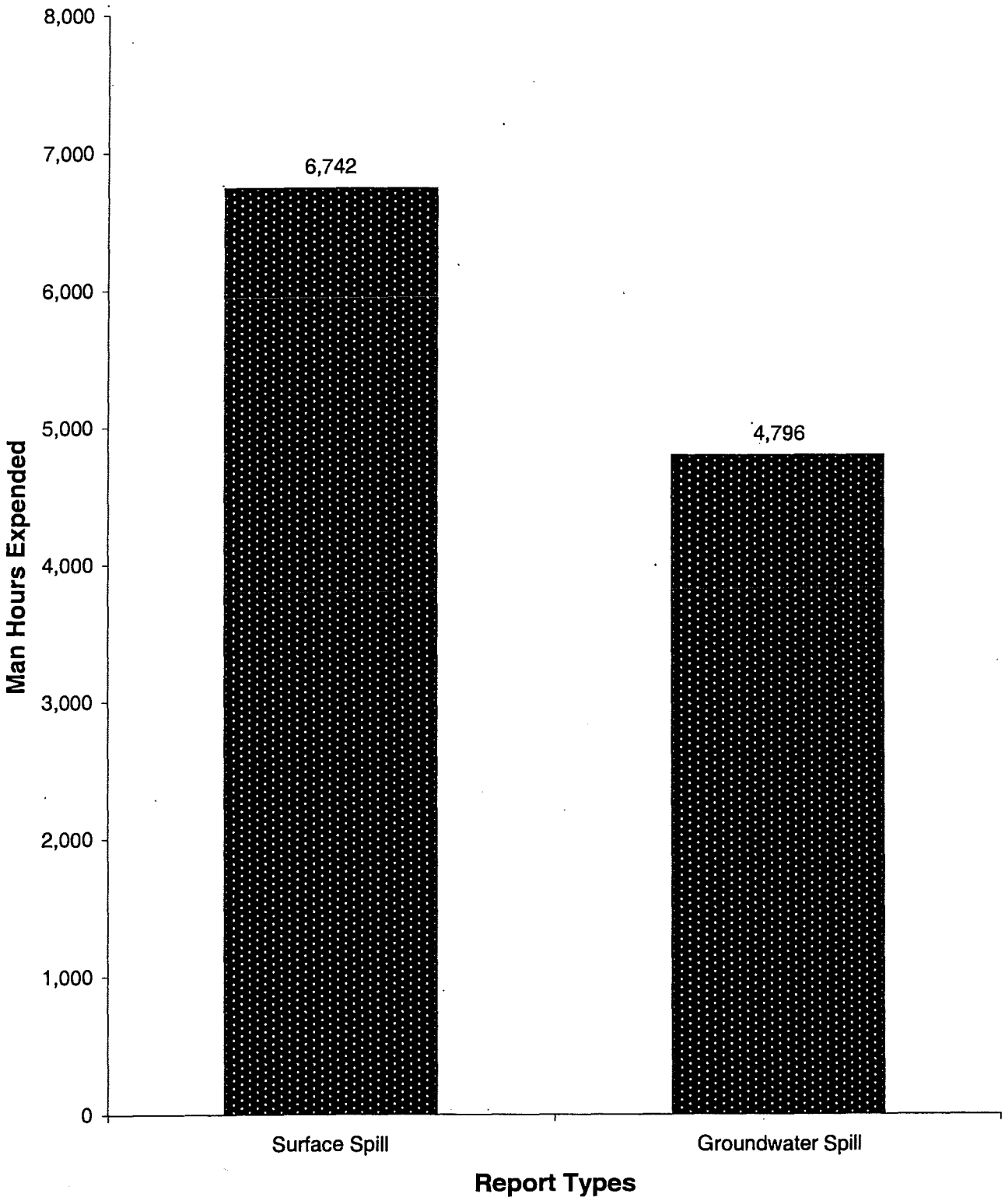
23 Reports Missing

Man Hours Expended on Oil & Hazardous Materials Incident/Investigation Reports By Response Offices For 1997

Office	Report Type	Hours	Number of Reports
Augusta	Surface Oil Inc/Inv	1,627.3	300
	Groundwater Oil Inc/Inv	983.2	145
	Haz. Mat. Inc/Inv	689.5	81
Bangor	Surface Oil Incident	2,386.8	471
	Groundwater Oil Incident	2,043.2	198
	Haz. Mat. Incident	1,154.4	70
Portland	Surface Oil Incident	2,184.1	440
	Groundwater Oil Incident	1,527.8	219
	Haz. Mat. Incident	377.3	76
Presque Isle	Surface Oil Incident	543.4	114
	Groundwater Oil Incident	241.3	43
	Haz. Mat. Incident	153.8	18

	Man Hours	Reports
Totals for all Offices:	**13,912.1**	**2175**

Total Man Hours Expended in Surface vs Groundwater Work for 1997



(refer to page 12 for details)

18 Reports Missing

Reports in 1997 Broken Down by Cause of Spill

Cause of Spill	*Number of Reports*
Augusta	
No Cause Apparent	35
Corrosion (tank)	33
Piping Corrosion	10
Corrosion Other	5
Physical Breakage	25
Piping or Hose Failure	32
Valve Failure	8
Loose Fitting	39
Overfill (tank or vessel)	77
Bilge discharge	0
Accident (traffic,vessel collision or grounding)	31
Marine Incident	2
Accident Other	24
Storm Damage	5
Poor Workmanship	9
Human Error	37
Unknown	93
Vandalism	12
Deliberate Discharge	9
Mechanical or Process Failure	19
Other Known Cause	24
Augusta Total	**529**
Bangor	
No Cause Apparent	123
Corrosion (tank)	63
Piping Corrosion	8
Corrosion Other	5
Physical Breakage	49
Piping or Hose Failure	65
Valve Failure	14
Loose Fitting	27
Overfill (tank or vessel)	60
Bilge discharge	0
Accident (traffic,vessel collision or grounding)	46
Marine Incident	5
Accident Other	34
Storm Damage	5
Poor Workmanship	8
Human Error	59
Unknown	101
Vandalism	8
Deliberate Discharge	4
Mechanical or Process Failure	27
Other Known Cause	30
Bangor Total	**741**

18 Reports Missing

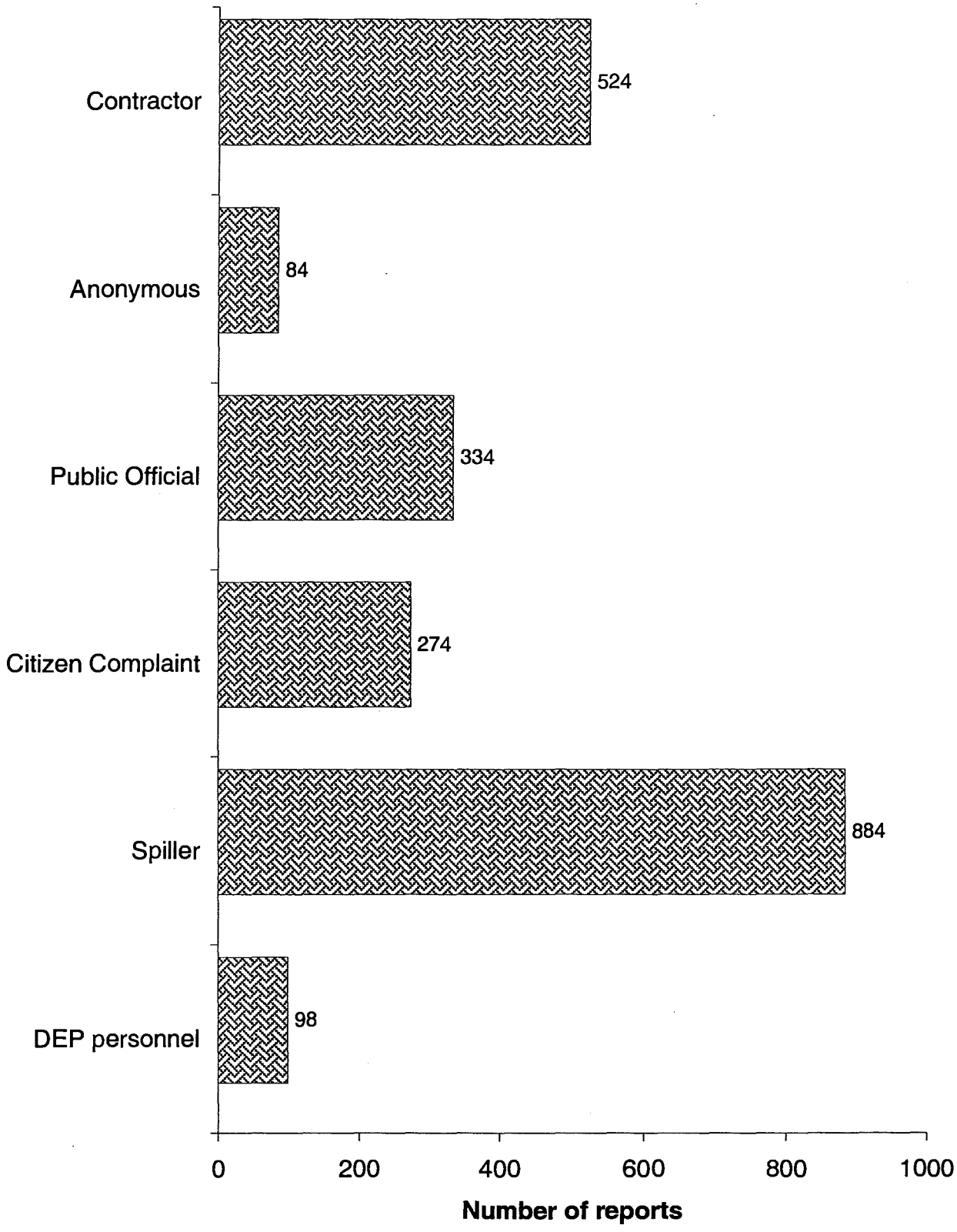
Reports By Cause of Spill, cont.

Cause of Spill	*Number of Reports*
Portland	
No Cause Apparent	112
Corrosion (tank)	46
Piping Corrosion	13
Corrosion Other	5
Physical Breakage	22
Piping or Hose Failure	49
Valve Failure	13
Loose Fitting	23
Overfill (tank or vessel)	91
Bilge discharge	3
Accident (traffic,vessel collision or grounding)	42
Marine Incident	5
Accident Other	28
Storm Damage	3
Poor Workmanship	4
Human Error	69
Unknown	135
Vandalism	11
Deliberate Discharge	24
Mechanical or Process Failure	8
Other Known Cause	39
Portland Total	**745**
Presque Isle	
No Cause Apparent	11
Corrosion (tank)	15
Piping Corrosion	6
Corrosion Other	3
Physical Breakage	15
Piping or Hose Failure	17
Valve Failure	1
Loose Fitting	13
Overfill (tank or vessel)	14
Bilge discharge	1
Accident (traffic,vessel collision or grounding)	19
Marine Incident	0
Accident Other	11
Storm Damage	0
Poor Workmanship	3
Human Error	25
Unknown	24
Vandalism	2
Deliberate Discharge	1
Mechanical or Process Failure	0
Other Known Cause	2
Presque Isle Totals	**183**
1997 Grand Total	**2198**

Reports by Detection Method for 1997

Office	Detection Method	Number of Reports
Augusta	DEP personnel	7
	Spiller	257
	Citizen Complaint	66
	Public Official	60
	Anonymous	28
	Contractor	111
	Office Total	**529**
Bangor	DEP personnel	17
	Spiller	306
	Citizen Complaint	82
	Public Official	108
	Anonymous	26
	Contractor	202
	Office Total	**741**
Portland	DEP personnel	70
	Spiller	247
	Citizen Complaint	109
	Public Official	133
	Anonymous	26
	Contractor	160
	Office Total	**745**
Presque Isle	DEP personnel	4
	Spiller	74
	Citizen Complaint	17
	Public Official	33
	Anonymous	4
	Contractor	51
	Office Total	**183**

Reports by Detection Method for 1997



(refer to page 16 for details)

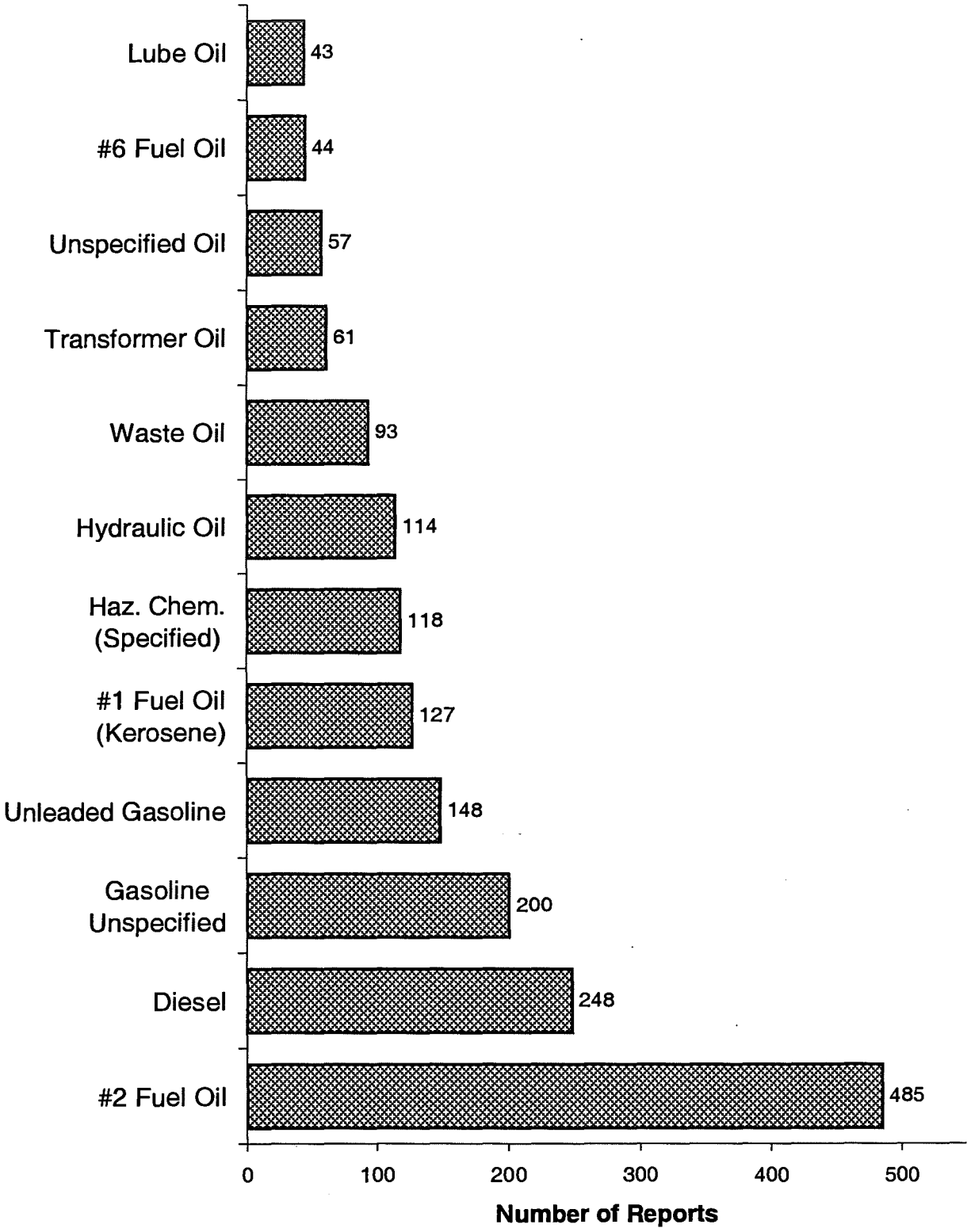
18 Reports Missing

Reports by Product Spilled for 1997

Product Type	Number of Reports	Product Type	Number of Reports
None	246	Non-Chem. Non-Oil Unspecified	2
#1 Fuel Oil (Kerosene)	127	Non-Chem. Non-Oil Specified	15
#2 Fuel Oil	485	Crude Oil	2
#3 Fuel Oil	0	Pesticide (General)	21
#4 Fuel Oil	8	PCB Oil	10
#5 Fuel Oil	4	Sulfuric Acid	6
#6 Fuel Oil	44	Caustic Soda	7
Heating Oil Unspecified	5	Chlorine	14
Lube Oil	43	Hazardous Chemical Unspecified	2
Unknown Substance	6	Ammonia	5
Gasoline Unspecified	200	Hydrochloric Acid	4
Leaded Gasoline	7	Medical Waste	1
Unleaded Gasoline	148	Hazardous Chem. (Specified in report)	118
Aviation Gasoline	5	Unspecified Oil	57
Jet Fuel	13	Waste Oil	93
Diesel	248	Antifreeze	3
Unspecified Motor Fuel	11	Transmission Oil	4
Asphalt	5	Water Storage	0
Animal Fats/Remains	3	Hydraulic Oil	114
Marsh Sheen	15	Transformer (non-PCB) Oil	61
Algae Bloom/Pollen Sheen	7	Liquors (specified in report)	4
Demolition Debris	0	Non-hazardous Chem. Unspecified	1
		Non-haz. Chem. (specified in report)	24
		Total	**2198**

18 Reports Missing

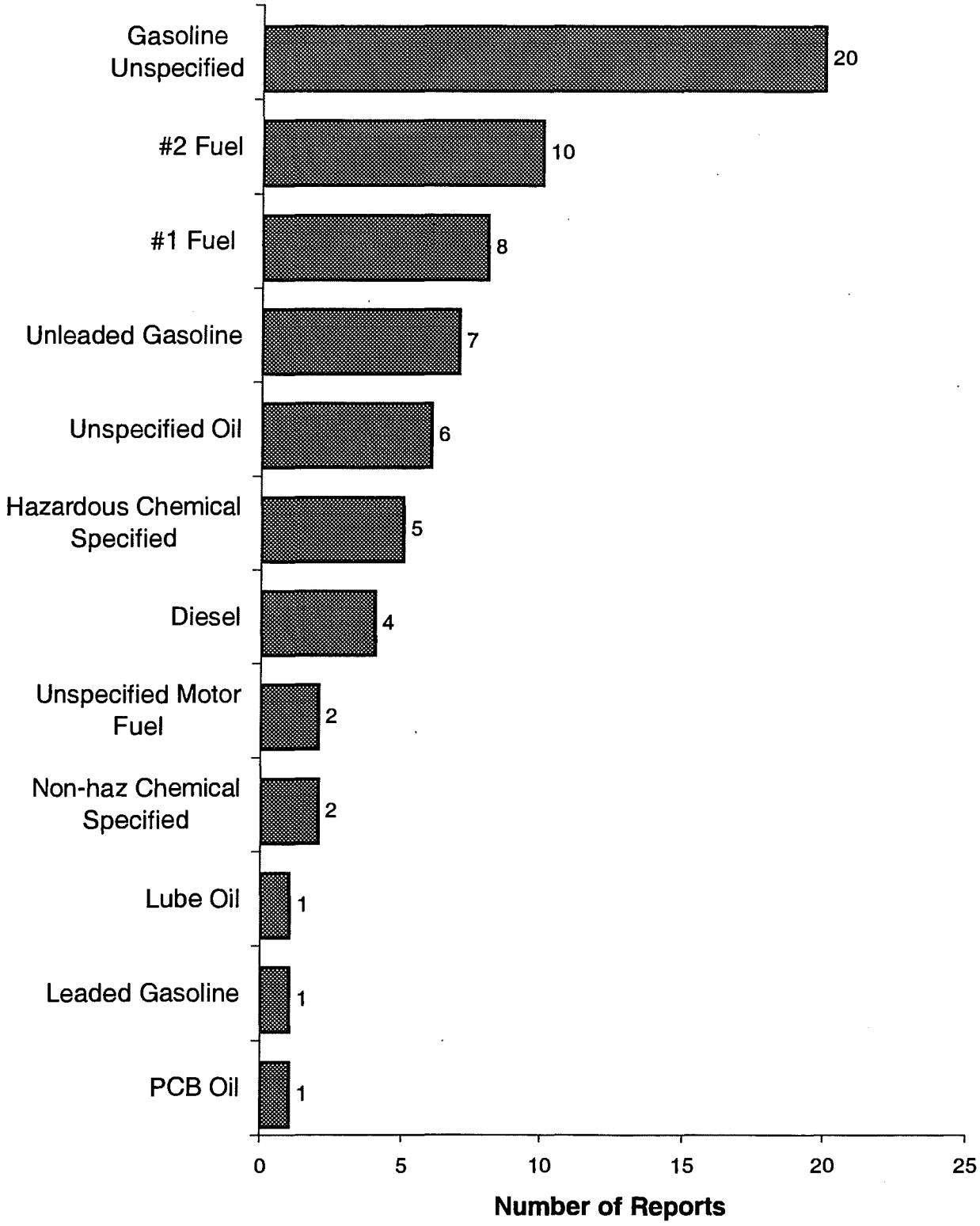
Top Twelve Products Involved in Reports for 1997



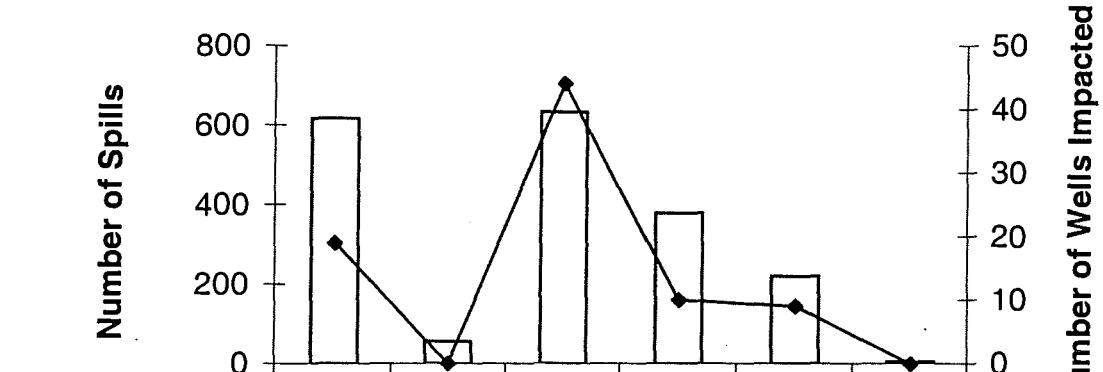
(refer to page 18 for details)

18 Reports Missing

Top Twelve Products Contaminating Wells in 1997



Product Categories vs Wells Impacted For 1997



	Home Heating	Heavy Fuel Oils	Motor Fuels	Other Oils	Haz Chemica	Unknow n
# of Spills	617	56	632	379	220	6
Wells Impacted	19	0	44	10	9	0

The Product Catagories above contain the following product types:

Home Heating Oils	**Heavy Fuel Oils**	**Motor Fuels**	**Other Oils**	**Hazardous & Nonhazardous Chemicals**
#1 Fuel	#4 Fuel	Gasoline Unspecified	Lube Oil	Pesticide (General)
#2 Fuel	#5 Fuel	Leaded Gasoline	Asphalt	PCB Oil (over 50 ppm)
Heating Oil Unspecified	#6 Fuel	Unleaded Gasoline	Crude Oil	Sulfuric Acid
		Aviation Gasoline	Unspecified Oil	Caustic Soda
		Jet Fuel	Waste Oil	Chlorine
		Diesel	Transmission Oil	Hazardous Chem.
		Unspecified Motor Fuel	Hydraulic Oil	Ammonia
			Transformer Oil	Hydrochloric Acid
				Medical Waste
				Anti-freeze
				Liquors
				Nonhaz. Chem.

Note 1) This chart's primary purpose is to show that Home Heating Oils and Motor Fuels are the most frequent contaminants found by response services in wells (for groundwater). By this analysis, they are the greatest threat to Maine's groundwater. Close examination of the chart data also shows that the ratio of home heating oil and motor fuel spills to well contaminations is about 20:1. That is to say, on average, every twentieth spill of home heating oil or motor fuel results in one contaminated well case.

Note 2) Eighty-two wells were contaminated in 1997.

18 Reports Missing

Number of Wells Impacted or Threatened; Broken Down by Spill Type, Product Found and Response Office for 1997

Office

Augusta

Product Found	Number of Incidents		Wells At Risk		Wells Impacted
Surface Oil Inc/Inv					
# 1 Fuel Oil	12		13		0
# 2 Fuel Oil	19		27		4
Gasoline Unspecified	1		1		0
Diesel	2		2		1
Unspecified Oil	1		1		0
Hydraulic Oil	1		1		0
Groundwater Oil Inc/Inv					
None	3		4		0
# 1 Fuel Oil	2		3		2
# 2 Fuel Oil	5		5		2
Lube Oil	1		0		1
Gasoline Unspecified	13		20		9
Unleaded Gasoline	7		8		1
Unspecified Oil	5		18		8
Haz Mat Inc/Inv					
Haz Chemical Specified	1		1		0
Non-Haz Chemical Specified	1		1		1
Augusta Office Totals	**74**		**105**		**29**

Office

Bangor

Surface Oil Inc/Inv

Product Found	Number of Incidents		Wells At Risk		Wells Impacted
None	1		1		0
# 1 Fuel Oil	13		15		2
# 2 Fuel Oil	9		9		2
Diesel	3		6		0
Haz Chemical Specified	1		0		1
Waste Oil	1		1		0

Groundwater Oil Inc/Inv

None	2		2		0
# 2 Fuel Oil	5		8		1
Gasoline Unspecified	21		54		8
Leaded Gasoline	2		4		1
Unleaded Gasoline	4		6		1
Diesel	6		13		1
PCB Oil	1		1		1
Unspecified Oil	1		1		0
Waste Oil	1		1		0

Haz Mat Inc/Inv

Haz Chem Specified	1		0		1

Bangor Office Totals	**72**		**122**		**19**

Office

Portland

Surface Oil Inc/Inv

Product Found	Number of Incidents		Wells At Risk		Wells Impacted
None	2		2		0
# 1 Fuel Oil	11		12		2
# 2 Fuel Oil	21		24		1
Unknown Substance	1		2		0
Gasoline Unspecified	1		0		1
Unleaded Gasoline	1		1		0
Diesel	2		3		0
Marsh Sheen	1		1		0
Haz Chemical Specified	1		1		1
Unspecified Oil	2		7		1
Waste Oil	1		2		0
Transmission Oil	1		1		0
Hydraulic Oil	2		3		0

Groundwater Oil Inc/Inv

Product Found	Number of Incidents		Wells At Risk		Wells Impacted
None	7		10		0
# 2 Fuel Oil	2		2		0
Gasoline Unspecified	8		12		3
Leaded Gasoline	1		3		0
Unleaded Gasoline	10		22		9
Diesel	1		1		0
Unspecified Motor Fuel	1		1		0

Portland Office Totals	**83**		**119**		**21**

Office

Presque Isle

Surface Oil Inc/Inv

Product Found	Number of Incidents		Wells At Risk		Wells Impacted
# 1 Fuel Oil	11		14		2
# 2 Fuel Oil	5		8		1
Gasoline Unspecified	1		1		0
Unleaded Gasoline	1		1		0
Diesel	3		3		0
Unspecified Motor Fuel	1		1		0
Hydraulic Oil	1		1		0

Groundwater Oil Inc/Inv

#1Fuel Oil	1		1		0
# 2 Fuel Oil	4		4		0
Gasoline Unspecified	6		13		4
Unleaded Gasoline	3		7		1
Diesel	2		6		2
Unspecified Motor Fuel	2		2		2

Haz Mat Inc/Inv

Pesticide General	1		2		0
Haz Chem Specified	1		1		1

Presque Isle Office Totals	**43**		**65**		**13**

Amount of Material Spilled in 1997 by Response Office & Incident Class

RESPONSE OFFICE	SPILL INCIDENT CLASSIFICATION	U	G	CY	P	B
AUGUSTA	Surface Oil Inc/Inv	6	24,686	0	0	0
	Groundwater Oil Inc/Inv	37	612	0	0	0
	Haz Mat Inc/Inv	2	68,071	6	19,214	0
	Office Totals	**45**	**93,369**	**6**	**19,214**	**0**
BANGOR	Surface Oil Inc/Inv	3	14,658	0	0	0
	Groundwater Oil Inc/Inv	10	19,658	0	0	0
	Haz Mat Inc/Inv	1	428,003	0	3,394	0
	Office Totals	**14**	**462,319**	**0**	**3,394**	**0**
PORTLAND	Surface Oil Inc/Inv	33	68,605	1	0	0
	Groundwater Oil Inc/Inv	27	3,378	0	0	0
	Haz Mat Inc/Inv	10	41,070	1	361,086	0
	Office Totals	**70**	**113,053**	**2**	**361,086**	**0**
PRESQUE ISLE	Surface Oil Inc/Inv	52	5,092	12	0	0
	Groundwater Oil Inc/Inv	3,116	6,288	25	0	0
	Haz Mat Inc/Inv	0	476	60	225	0
	Office Totals	**3,168**	**11,856**	**97**	**225**	**0**

			U	G	CY	P	B
All Offices	**Total**	Surface Oil Inc/Inv	94	113,041	13	0	0
	Total	Groundwater Oil Inc/Inv	3,190	29,936	25	0	0
	Total	Haz. Mat. Inc/Inv	13	537,620	67	383,919	0
Grand	**Total**	**All Offices & Classifications**	**3,297**	**680,597**	**105**	**383,919**	**0**

NOTE: All Numeric fields are BEST ESTIMATES by the OHMS involved based on the years of experience with spill events. Units of measure are abbreviated as:

Unknown= U
Gallons= G
Cubic Yards=CY
Pounds= P
Barrels=B

Recovery Method

The following four pages detail the amount of material that was recovered using various recovery methods. Although it would seem logical to compare the amounts of material spilled in each region to the amounts recovered, the reader should avoid this comparison. The data is incomparable because the physical form of the recovered product may be different than the spilled form. A thousand gallons of gasoline could spill onto the ground, but cleanup may involve cubic yards of soil, gallons of pure gasoline, or pounds of saturated sorbent material.

The following list shows the recovery methods used by the responders when they enter report data into the HOSS (Hazardous Oil Spill System) database at the Maine Department of Environmental Protection. The skimmers recovery category is marked with an asterisk in the following pages to alert the reader to the fact that a glitch exists in the HOSS database at the time of this report generation. When the 1995 HOSS code sheets were created, the recovery method sand was supposed to be moved into the sorbents category, and skimmers would use the vacant code. The change was made on paper, but not in the database. As a result, responders may want to enter skimmers when they choose the code D, but the database recognizes it as sand. Therefore, the data for the skimmers category could be misleading.

Code	Meaning
A	Vacuum Trucks
B	Pumps
C	Sorbents
D	Skimmers (Sand in HOSS)
G	Excavation
H	Burning
I	Treatment in Place
J	Other
K	None
L	(Treated by) Licensed Treatment Facility

Recovered Amounts of Spilled Material in 1997 by Response Office, Incident Classification, and Recovery Method

Office

Augusta

Surface Oil Inc/Inv

Recovery Method	Gallons	Pounds	Cubic Yards	Unknown
Vacuum Trucks	7,249	0	0	0
Pumps	3,379	0	0	0
Sorbents	7,223	0	0	0
* Skimmers	5,000	0	0	0
Excavation	8,920	0	0	0
Burning	0	0	0	0
Treatment in Place	3	0	0	0
Other	333	0	0	0
Licensed Treatment Facility	423	0	0	0

Groundwater Oil Inc/Inv

Vacuum Trucks	201	0	0	0
Pumps	22	0	0	2
Sorbents	229	0	0	0
* Skimmers	0	0	0	0
Excavation	329	0	0	8
Burning	0	0	0	0
Treatment in Place	62	0	0	0
Other	7	0	0	0
Licensed Treatment Facility	0	0	0	0

Haz Mat Inc/Inv

Vacuum Trucks	1	1	0	0
Pumps	507	2	0	0
Sorbents	117	1	0	0
* Skimmers	0	0	0	0
Excavation	7	0	6	0
Burning	0	0	0	0
Treatment in Place	1	0	0	0
Other	103	8,009	0	0
Licensed Treatment Facility	14,242	51	0	0

(refer to page 27 for information on recovery methods)

Office

Bangor

Surface Oil Inc/Inv

Recovery Method	Gallons	Pounds	Cubic Yards	Unknown
Vacuum Trucks	513	0	0	0
Pumps	698	0	0	0
Sorbents	6,555	0	0	0
* Skimmers	16	0	0	0
Excavation	3,401	0	60	1
Burning	0	0	0	0
Treatment in Place	2,037	0	0	0
Other	346	0	0	0
Licensed Treatment Facility	0	0	0	0

Groundwater Oil Inc/Inv

Vacuum Trucks	1	0	0	0
Pumps	2	0	0	1
Sorbents	344	0	0	0
* Skimmers	340	0	0	0
Excavation	15,800	0	805	0
Burning	0	0	0	0
Treatment in Place	7	0	0	0
Other	0	0	0	0
Licensed Treatment Facility	0	0	0	0

Haz Mat Inc/Inv

Vacuum Trucks	0	0	0	0
Pumps	198	0	0	1
Sorbents	1,809	0	0	0
* Skimmers	0	0	0	0
Excavation	2,737	1	41	1
Burning	0	0	0	0
Treatment in Place	286,126	302	0	0
Other	402	28	0	0
Licensed Treatment Facility	3,460	0	0	1

Recovered Amounts of Spilled Material, continued

Office

Portland

Surface Oil Inc/Inv

Recovery Method	Gallons	Pounds	Cubic Yards	Unknown
Vacuum Trucks	28,101	0	0	0
Pumps	3,053	0	0	0
Sorbents	30,833	0	0	5
* Skimmers	184	0	0	0
Excavation	5,480	0	22	3
Burning	0	0	0	0
Treatment in Place	214	0	0	0
Other	3,782	0	1	2
Licensed Treatment Facility	0	0	0	0

Groundwater Oil Inc/Inv

Vacuum Trucks	614	0	0	1
Pumps	170	0	1,333	1
Sorbents	395	0	0	0
* Skimmers	0	0	0	0
Excavation	2,172	0	1,380	128
Burning	0	0	0	0
Treatment in Place	61	0	0	101
Other	22	0	0	1
Licensed Treatment Facility	0	0	0	0

Haz Mat Inc/Inv

Vacuum Trucks	30	0	0	0
Pumps	1,202	0	0	0
Sorbents	419	95	0	0
* Skimmers	0	0	0	0
Excavation	1,001	0	0	0
Burning	0	0	0	0
Treatment in Place	0	0	0	0
Other	463	56	0	0
Licensed Treatment Facility	0	0	0	0

(refer to page 27 for information on recovery methods)

Office

Presque Isle

Surface Oil Inc/Inv

Recovery Method	Gallons	Pounds	Cubic Yards	Unknown
Vacuum Trucks	6	0	0	0
Pumps	297	0	0	0
Sorbents	1,741	0	0	0
* Skimmers	53	0	0	0
Excavation	1,932	0	12	0
Burning	58	0	0	0
Treatment in Place	5	0	0	1
Other	581	0	0	0
Licensed Treatment Facility	58	0	0	0

Groundwater Oil Inc/Inv

Vacuum Trucks	0	0	0	0
Pumps	0	0	0	0
Sorbents	46	0	0	0
* Skimmers	26	0	25	0
Excavation	3,276	0	0	501
Burning	0	0	0	0
Treatment in Place	0	0	0	0
Other	101	0	0	0
Licensed Treatment Facility	26	0	0	0

Haz Mat Inc/Inv

Vacuum Trucks	0	0	0	0
Pumps	105	51	0	0
Sorbents	38	0	0	0
* Skimmers	0	0	0	0
Excavation	311	0	60	0
Burning	0	0	0	0
Treatment in Place	0	0	0	0
Other	20	0	0	0
Licensed Treatment Facility	0	0	0	0

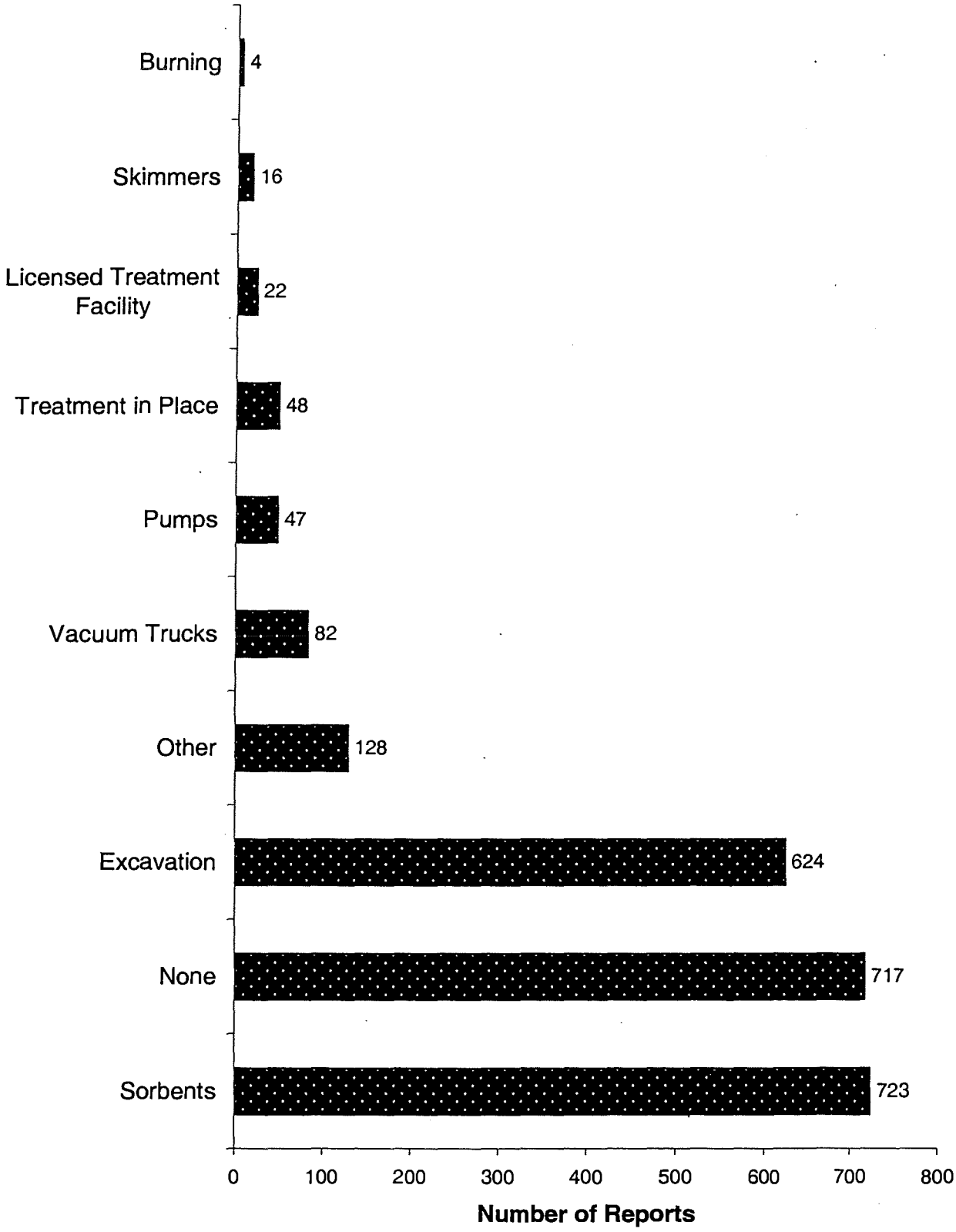
Methods Used in the Recovery of Spilled Products for 1997

Recovery Method	Regional Field Offices A	B	P	I	Total
Vacuum Trucks	27	5	49	1	**82**
Pumps	14	13	13	7	**47**
Sorbents	179	249	237	58	**723**
Skimmers	1	3	4	8	**16**
Excavation	151	217	174	82	**624**
Burning	0	0	0	4	**4**
Treatment in Place	14	20	12	2	**48**
Other	36	25	51	16	**128**
None	158	267	272	20	**717**
Licensed Treatment Facility	13	6	0	3	**22**
			Grand	**Total**	**2411**

A - Augusta
B - Bangor
P - Portland
I - Presque Isle

The total number of recovery methods used in 1997 is greater than the total number of reports because some reports had multiple recovery methods during a spill.

Recovery Methods Used in 1997



(refer to page 32 for details)

Types of Hazardous Material Spilled

The following table, "Hazardous Materials and Other Non-Oil Materials Spilled in 1997", contains a summary of the best information available to Response Services as to the types of chemicals and other hazardous materials spilled during 1997. It is not always possible to identify an unknown substance in any but the broadest of terms. General characteristics such as flash point, or pH are often the only factors that can be determined about an unknown without costly laboratory analysis. Given these factors, a substance may qualify as a hazardous material, yet remain an unknown.

The problem of estimating amounts spilled can also be difficult. Uncontrolled sites may have had any number of products dumped there for months or years, before anyone noticed or decided to report the event(s). Catastrophic events, like floods, result in barrels and other containers being released into the environment full or partially filled with product. These containers are often found empty or with their contents diluted. When a tank truck rolls over, a best estimate is made of the amount spilled, but the exact amount is seldom measured. If a responder is called to inspect leaking barrels at a site, it is often difficult to know how much product has already been lost into the ground. As a result of this, estimates of amounts spilled are often based on past experience with other similar spills. Each substance listed was discharged in at least the amount listed; usually it is reasonable to assume more than that amount was lost to the environment.

There are cases where this assumption should not be made. Most spills are industrial in nature; when a company either public or private has had an accident and product was lost. In general, industries know what chemicals are in what processes and in what volumes. CMP, for instance, knows how much oil is in a transformer and on those occasions when one is ruptured they make a fairly accurate assessment as to how much oil is lost. Keeping in mind the health and safety of the public as well as its employees, CMP then handles the material as though it were PCB contaminated until enough evidence is collected to indicate otherwise. Also, paper companies are quite precise in their figures of the amount of chlorine released into the atmosphere and the amount of chlorine dioxide spilled. Pure product fields, as a result of this industry scrutiny, should contain accurate data. Cases where a general family of hazardous materials is listed may well contain spill amounts that are much more than the amounts listed.

The following symbols have been utilized:

G	-	Gallons
P	-	Pounds
CY	-	Cubic Yards
B	-	Barrels

Hazardous Materials and Other Non-Oil Materials Spilled in 1997

Number of Incidents	Material	At Least This Amount Was Spilled	Units
1	Accord Herbicide	10.99	G
1	Acetone	0.40	G
1	Acetone/Toluene	5.99	G
2	Aluminum Sulfate	531.98	G
1	Aluminum Sulfate	200.99	P
2	Ammonia	7.99	G
4	Ammonia	504.96	P
1	Antifreeze	0.99	U
1	Asbestos	0.99	Y
1	Ash	6.00	Y
2	Black Liquor	335,000.00	G
1	Black/White Liquor Mix	900.00	G
1	Bostik Cement	0.50	G
1	Butyl Acetate	1.00	G
1	Calcium Chlorate	25.99	P
1	Carbon Dioxide	100.00	P
1	Carbon Monoxide	0.99	U
5	Caustic Soda	8,541.98	G
1	Caustic Soda	900.99	P
1	Caustic Soda	0.99	U
1	Chlorinated Solvents	0.99	U
9	Chlorine	1,823.37	P
1	Chlorine	0.99	U
2	Chlorine Dioxide	3.39	P
1	Chlorine Dioxide	0.99	G
1	Chlorine Dioxide	0.99	U
1	Cooling Water with Corrosion Inhibitors (NC-84) and (NC-52)	200.00	G
1	Cyanide	0.99	U
2	Daracide 723	165.99	G
1	Daracide 6202	20.99	G
1	Dieldrin	2,000.00	P
1	Dithane Mix	5.99	G
1	Dowtherm Preheater (Diphenyl Oxide and Biphenyl)	10.99	G
1	Driveway Sealer	35.99	G
2	Dye	31.99	G
1	Fiberglass Resin	25.99	G
2	Formaldehyde	16.98	G
2	Freon	500.99	P
1	Freon-22	350.00	P
1	Gasoline/Chemical Mixture	0.99	G
1	Gasoline/Muriatic Acid	0.99	U
1	Heptane	0.12	G
1	Hydraulic Oil/Heavy Petroleum Products	0.99	G
1	Hydrocarbons/Lead/1,2 Dichloroethylene	0.99	G
3	Hydrochloric Acid	253.98	G
1	Hydrochloric Acid	0.99	U
2	Hydrogen Peroxide	60.50	G
1	Hydrogen Sulfide	177.00	P

Haz Material and Other Material Spilled, cont.

Number of Incidents	Material	At Least This Amount Was Spilled	Units
1	Inks/Glues	200.99	G
1	Kodicide LF	30.99	G
1	Lime	50.99	P
1	Liquid Oxygen	0.99	P
1	Lithium Batteries	8.00	P
1	Lead Arsenate/Paris Green	1,000.99	P
1	Leather Conditioner	1.00	G
2	Melamine Powder	56.00	P
4	Mercury	1.06	G
17	Mercury	72.45	P
2	Mercury	1.00	U
1	Mercury-Bearing Salt Solution	135,000.99	G
1	Mercury-Contaminated Brine	1,000.00	G
1	Mercury-Contaminated Condensate	200.99	G
1	Mercury-Contaminated Wastewater	270.99	G
1	Methyl Isobutyl Ketone	0.50	G
2	Methyl Mercaptan	808.00	P
1	Methyl Methacrylate	20,000.99	G
2	Mineral Spirits	5.98	G
1	Mixed Acids	40.00	G
1	Napthalene	1.99	G
1	Natural Gas	0.99	P
2	Nitric Acid	7.98	G
1	Paint	100.99	G
1	Paint Chips	0.99	P
6	PCB Oil	2,128.98	G
1	PCB Oil	0.01	P
1	PCB-contaminated sludge	200.00	G
1	Pendimethalin and Confront Pesticides	25.99	G
1	Perchloroethylene	15.99	G
1	Perephthalic Acid	10.00	P
2	Pesticide (General)	2.98	P
3	Pesticide (General)	1.74	G
4	Petroleum Naptha	14.49	G
2	Phenolic Resin	1,151.98	G
1	Propane/Fertilizer	10.99	G
1	Propane/Mineral Pulp	19,000.00	G
1	Pulp	10,000.00	P
1	Resin and Methanol	0.10	G
1	Salt Cake	3.99	P
1	Sandblast Grit	0.99	P
1	Sludge containing Methyl Methacrylate Monomer	0.90	P
1	Sodium Chlorate	300.00	P
1	Sodium Chlorate-Contaminated Water	70.00	G
3	Sodium Hypochlorite	2,800.00	G
1	Solid Waste/Paint/Solvent	0.50	G
6	Sulfuric Acid	1,154.34	G
1	Systox	5.99	G

Haz Material and Other Material Spilled, cont.

Number of Incidents	Material	At Least This Amount Was Spilled	Units
1	Terephthalic Acid	10.00	P
2	Unknown Substance	101.98	G
2	Unknown Substance	1.98	P
1	Unknown Substance	0.99	U
1	Unspecified Distillate	19.00	G
1	V-Brite (Sodium Hydrosulfite)	55.00	G
1	V-Brite (Sodium Hydrosulfite)	1.00	P
1	Video Jet Cleaning Solution	1.00	G
1	Wash Monomer containing Methyl Methacrylate	10.00	G
1	Waste Oil/Acetone	0.10	G
1	Waste Oil/Antifreeze Mix	0.99	G
1	Waste Paint	2.00	G
1	Wax	300.00	G
1	Weather Proofer Spray	0.50	G
1	White Liquor	6,000.00	G

Types of Facilities with Corresponding Subcategories

The graphs on the next three pages utilize the following categories and subcategories:

BUSINESS includes:
- Industrial
- Commercial
- Farm
- Other

RESIDENTIAL includes:
- Single Family
- Multifamily
- Other

TERMINAL includes:
- Licensed
- Bulk Plant
- Service Station
- Marina
- Other

VESSEL includes:
- Fishing
- Tank Vessel
- Freighter
- Pleasure
- Government
- Other

TRANSPORTATION includes:
- Tank Truck
- Private Vehicle
- Truck
- Railroad
- Aircraft
- Other

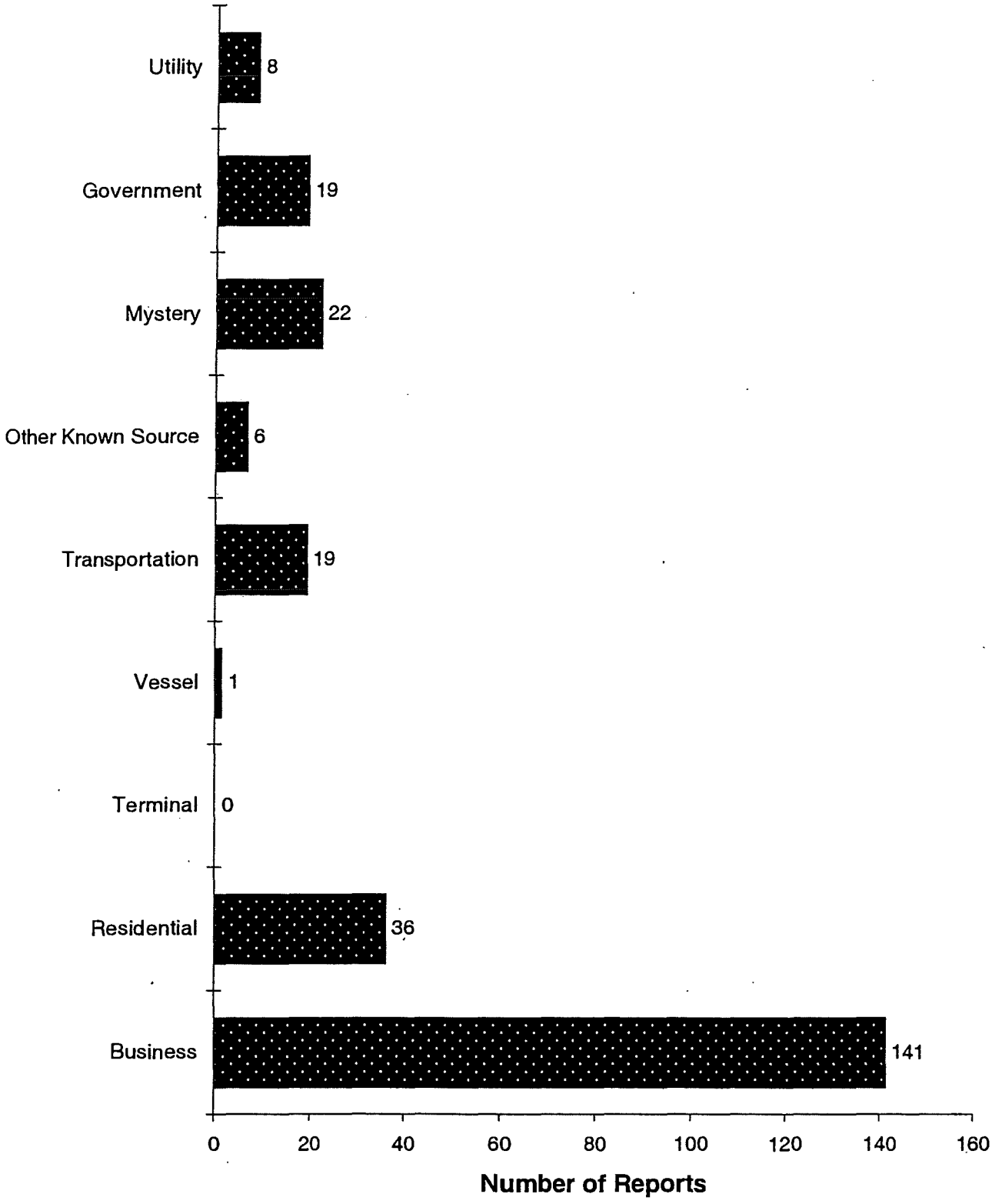
OTHER KNOWN SOURCE includes:
- Religious
- Other Known Source

MYSTERY

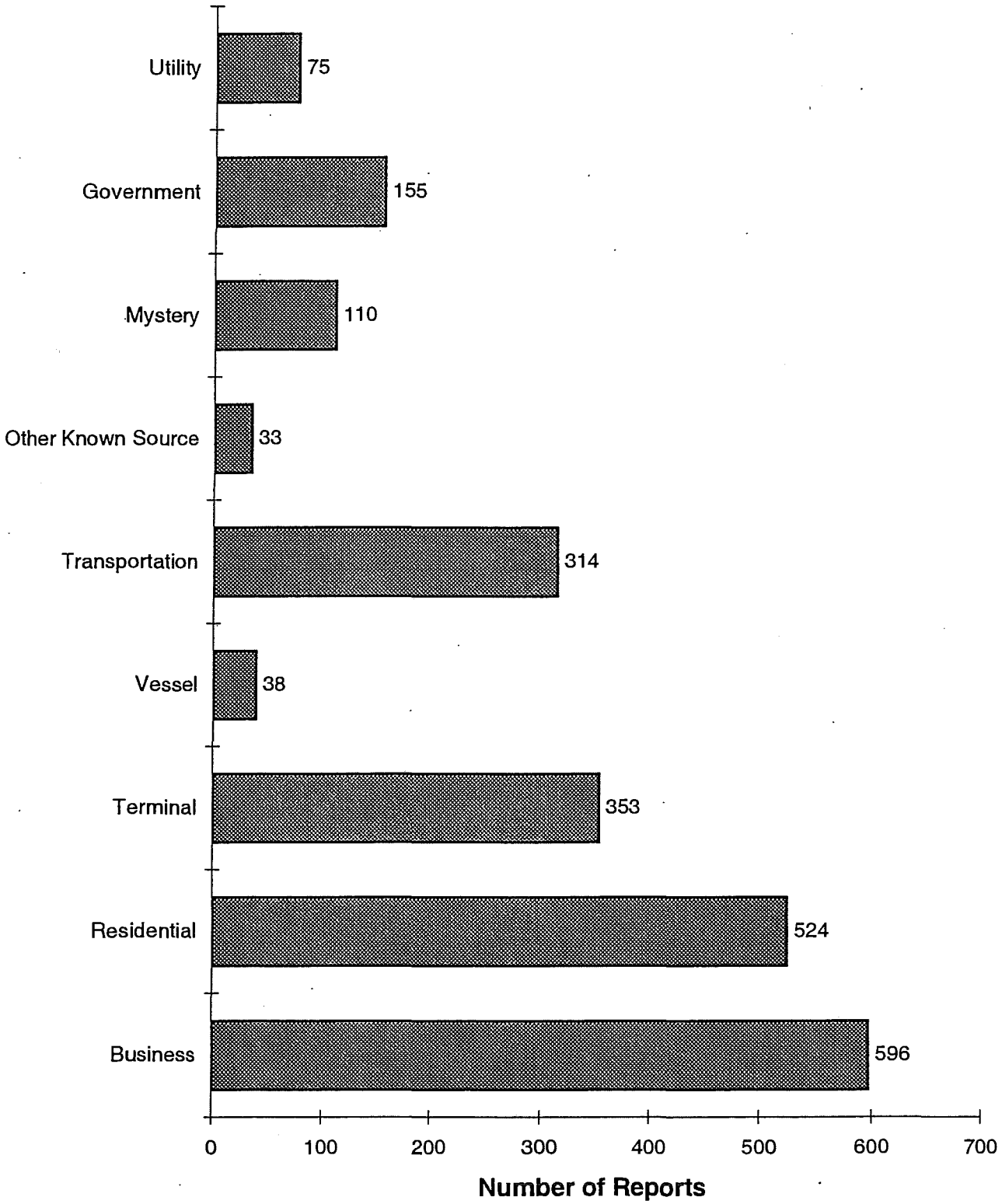
GOVERNMENT includes:
- Military
- Federal
- State
- Local
- Other

UTILITY includes:
- Power
- Water
- Sewer
- Telecommunications
- Other

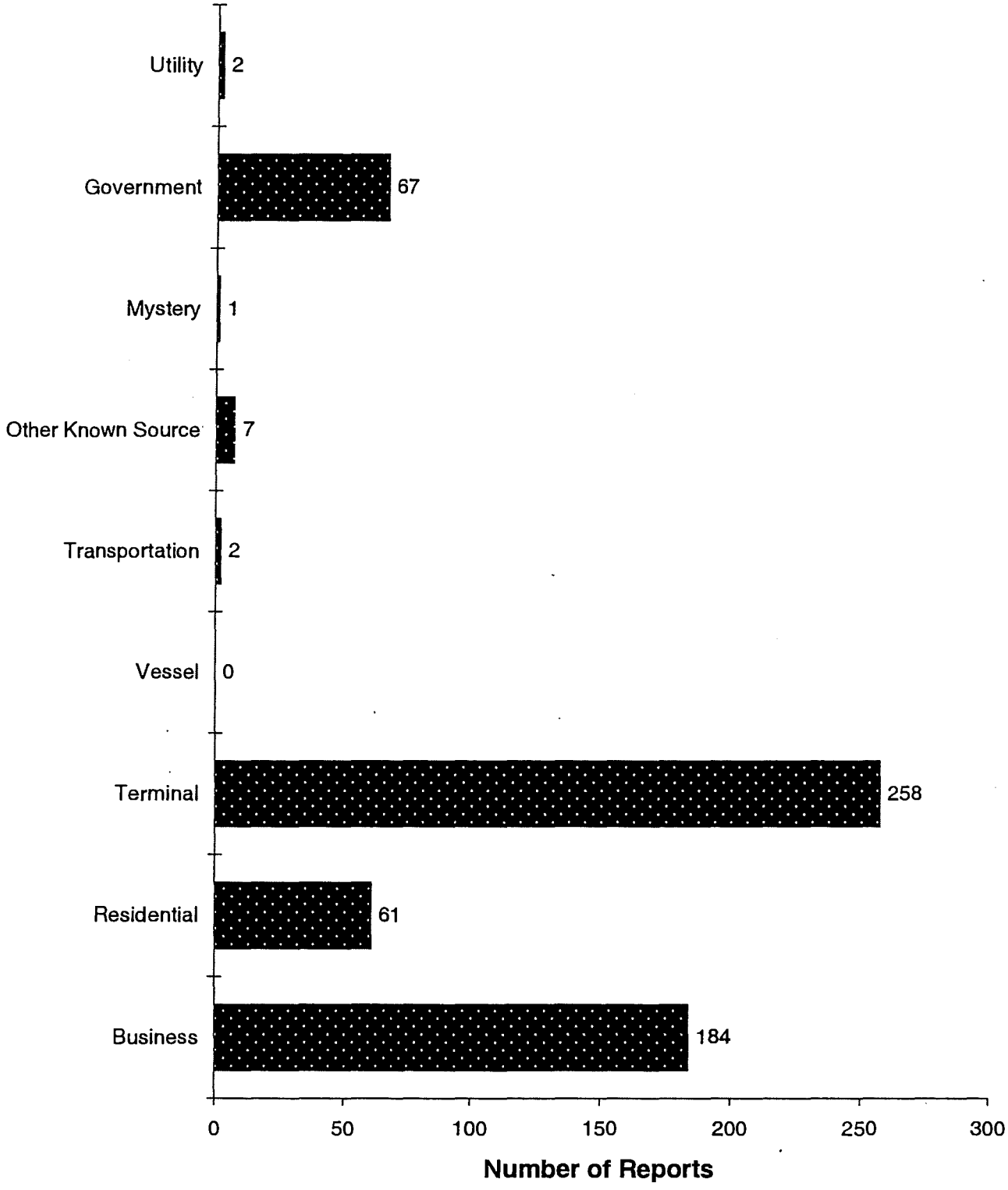
Types of Facilities Involved in Hazardous Material Incidents in 1997



Types of Facilities Involved in Spill Reports for 1997



Reports by Facility Where Underground Storage Tanks Were Involved in 1997



Explanation of Discrepancies between 1997 Maine Coastal & Inland Surface Oil Clean-up Fund and Ground Water Oil Clean-up Fund Number of Barrels

The following two pages summarize the amount of specified products that have entered, or been transferred inside, Maine borders for 1997.

When product is first transferred into the state, the DEP applies the appropriate Maine Coastal & Inland Surface Oil Clean-up Fund and Ground Water Oil Clean-up Fund fees per barrel and these fees are deposited into the funds for the cleanup of future spills. The number of barrels of product is tracked by month and product type. Occasionally, product is transferred within the State from its initial repository to another storage site. The Maine Coastal & Inland Surface Oil Clean-up Fund transfer fees again apply and the number of barrels are tracked as a second transfer. As a result, the number of Maine Coastal & Inland Surface Oil Clean-up Fund barrels may be higher than the number of Ground Water Oil Clean-up Fund barrels in any given month.

The next two pages involve the following product types:

Kerosene #1
Fuel Oil #2 (Diesel)
Fuel Oil -Railroad
Fuel Oil #5
Fuel Oil #6
Leaded Regular
Leaded Premium
No Lead (Regular & Super)
Aviation
JP-3 (Jet Fuel)
JP-4 (Jet Fuel)
JP-1 & Jet-A (Jet Fuel)
Asphalt
Crude Oil
Other Petroleum Products:
(Mineral Oil, Hydraulic Fluid, etc)

Ground Water Fund Barrels of Product Transported into Maine for 1997

Product	# of Barrels
Kerosene #1	1,574,574
Fuel Oil #2 (Diesel)	16,120,405
Fuel Oil -Railroad	0
Fuel Oil #5	0
Fuel Oil #6	10,916,196
Leaded Regular	0
Leaded Premium	33,349
No Lead (Regular & Super)	22,274,427
Aviation	32,190
JP-3 (Jet Fuel)	0
JP-4 (Jet Fuel)	0
JP-1 & Jet-A (Jet Fuel)	653,702
Asphalt	1,001,170
Crude Oil	75,375,132
Other Petroleum Products: (Mineral Oil, Hydraulic Fluid, etc)	6,855
Total Barrels	**127,988,000**

Surface Fund Barrels of Product Transported/Transferred in Maine for 1997

Product	# of Barrels
Kerosene #1	1,641,105
Fuel Oil #2 (Diesel)	16,950,293
Fuel Oil -Railroad	0
Fuel Oil #5	0
Fuel Oil #6	10,922,155
Leaded Regular	0
Leaded Premium	33,349
No Lead (Regular & Super)	24,313,054
Aviation	32,190
JP-3 (Jet Fuel)	0
JP-4 (Jet Fuel)	401,567
JP-1 & Jet-A (Jet Fuel)	653,702
Asphalt	1,001,170
Crude Oil	75,375,132
Other Petroleum Products: (Mineral Oil, Hydraulic Fluid, etc)	6,855
Total Barrels	**131,330,572**