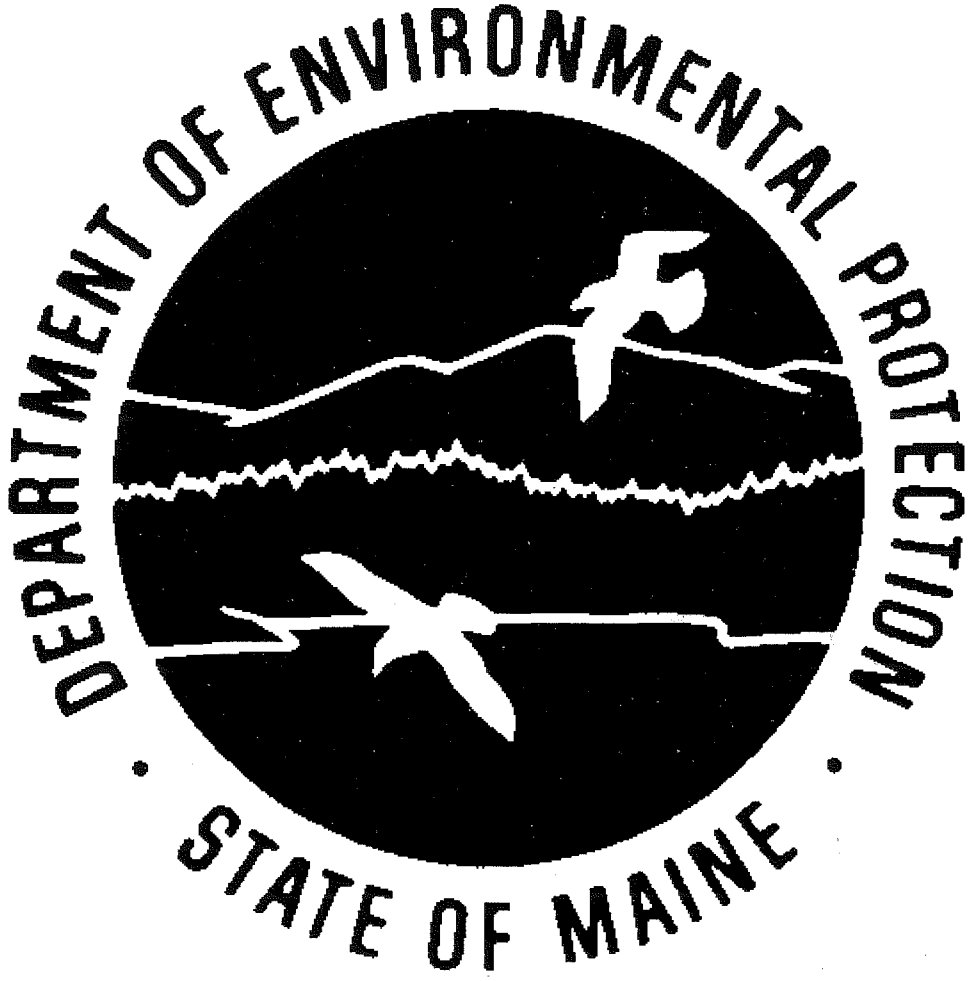
1996
Statistical Report
Division of Response Services
Spill Report Case Load

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



January 2001

Compiled by:
Michelle R. Mason

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INTRODUCTION

This report is the statewide Statistical Report of the Division of Response Services spill caseload for 1996. Response Services Division staff in the Bureau of Hazardous Materials & Solid Waste Control (formerly the Bureau of Oil and Hazardous Materials Control), 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 1996, the Division of Response Services, consisting of 23 Oil and Hazardous Material Specialists (OHMS), 2 Environmental Specialists, 3 Maintenance Mechanics, and one Division Director, filed 2,300 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

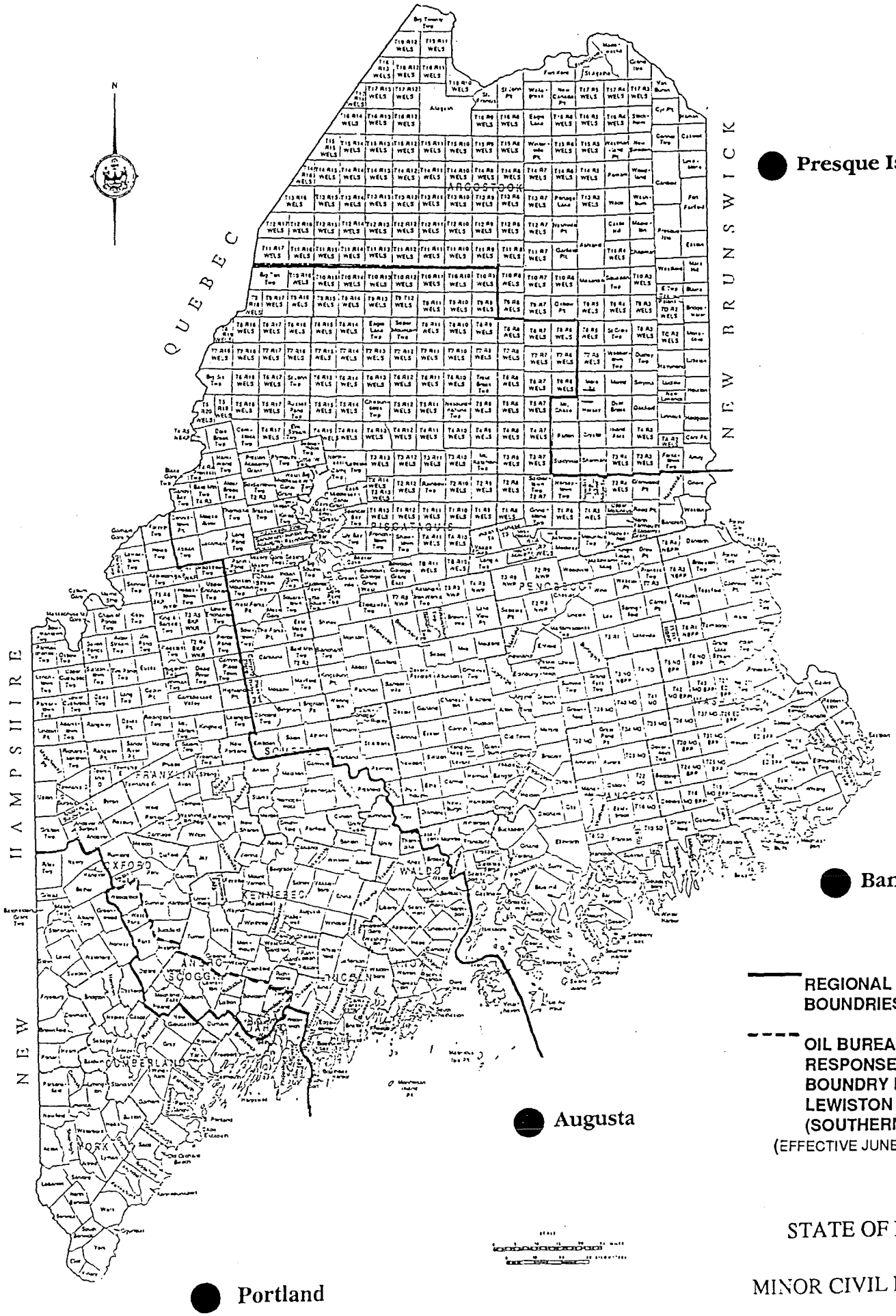
Abbreviations may also be used with Incidents/Investigations and Hazardous Material:

Incident	Inc
Investigation	Inv
Hazardous	Haz
Materials	Mat

Response Personnel Responsible for Writing Reports in 1996

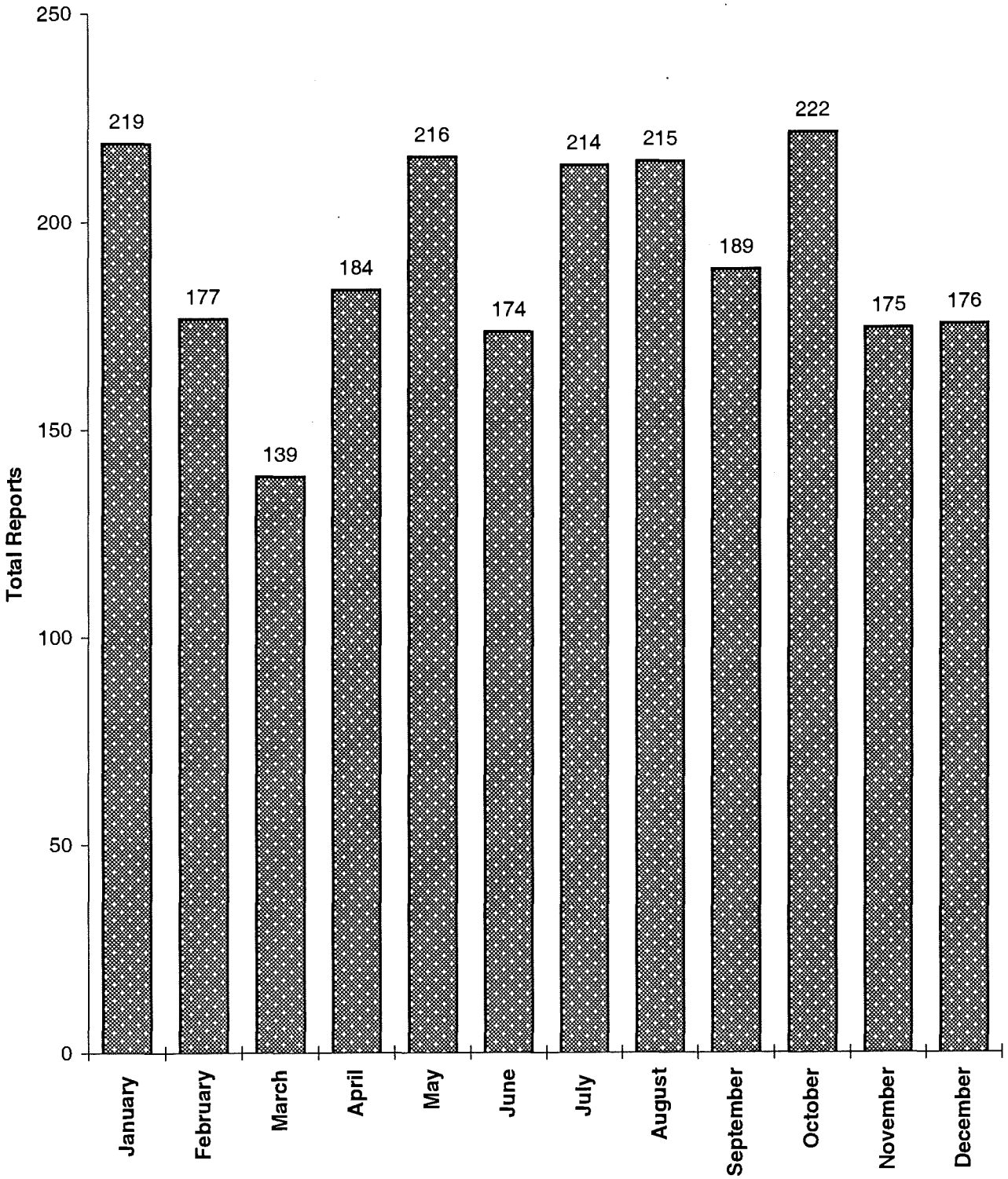
INVESTIGATOR	POSITION	LOCATION
DAVID SAIT	Division Director	Augusta
DENNIS PHILLIPS	OHMS III	"
FRED BRANN	OHMS II	"
WILLIAM WALLACE	OHMS II	"
MARY CORR	OHMS I	"
GLEN WALL	OHMS I	"
FRANK GERHLING	OHMS I	"
JON ANDREWS	OHMS I	"
BILL KEENE	Maintenance Mechanic	"
ROBERT RANDALL	OHMS III	Bangor
TOM VARNEY	OHMS II	"
CLEVE LECKEY	OHMS II	"
TOM MALECK	OHMS I	"
DARRYL LUCE	OHMS I	"
BOB WHITTIER	OHMS I	"
JAKE WARD	ESS II	"
MILTON KETCH	Maintenance Mechanic	"
STEVE EUFEMIA	OHMS III	Portland
SHERYL BERNARD	OHMS II	"
STEVE BREZINSKI	OHMS II	"
STEPHEN FLANNERY	OHMS II	"
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	"
WILLIAM SHEEHAN	ESS III	"

RESPONSE ZONES MAP



14 Reports Missing

Number of Spills by Month- 1996

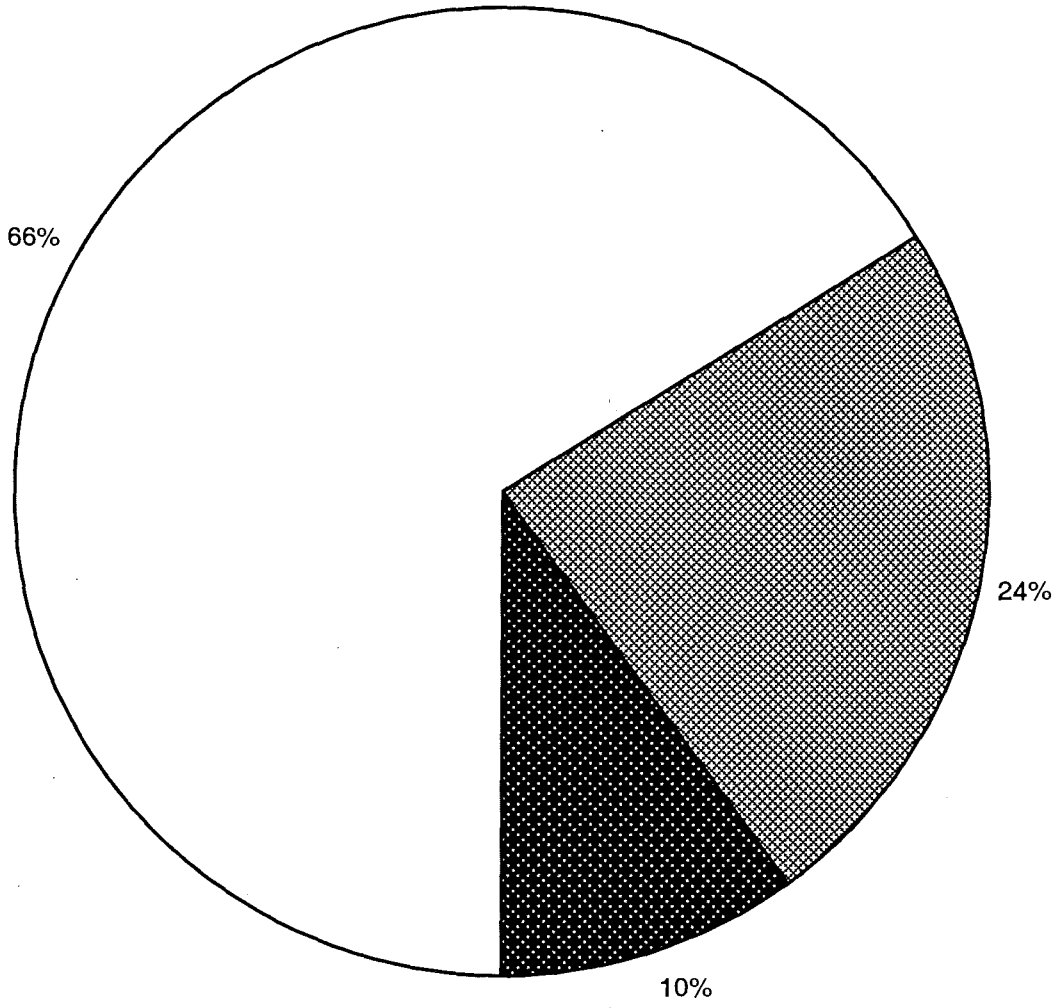


A Listing, by Response Office, of the Number of Oil vs Hazardous Material Reports: Broken Down By Spill Types for 1996

Office	Type	Count	Percent of Reports
Augusta	Surface Oil Inc/Inv	391	66%
	Groundwater Inc/Inv	122	20%
	Haz. Mat. Inc/Inv	82	14%
	Office Total	**595**	
Bangor	Surface Oil Inc/Inv	472	67%
	Groundwater Inc/Inv	159	22%
	Haz. Mat. Inc/Inv	77	11%
	Office Total	**708**	
Portland	Surface Oil Inc/Inv	549	65%
	Groundwater Inc/Inv	237	28%
	Haz. Mat. Inc/Inv	59	7%
	Office Total	**845**	
Presque Isle	Surface Oil Inc/Inv	97	64%
	Groundwater Oil Inc/Inv	39	26%
	Haz. Mat. Inc/Inv	16	10%
	Office Total	**152**	
	1996 Grand Total for All Offices	**2300**	

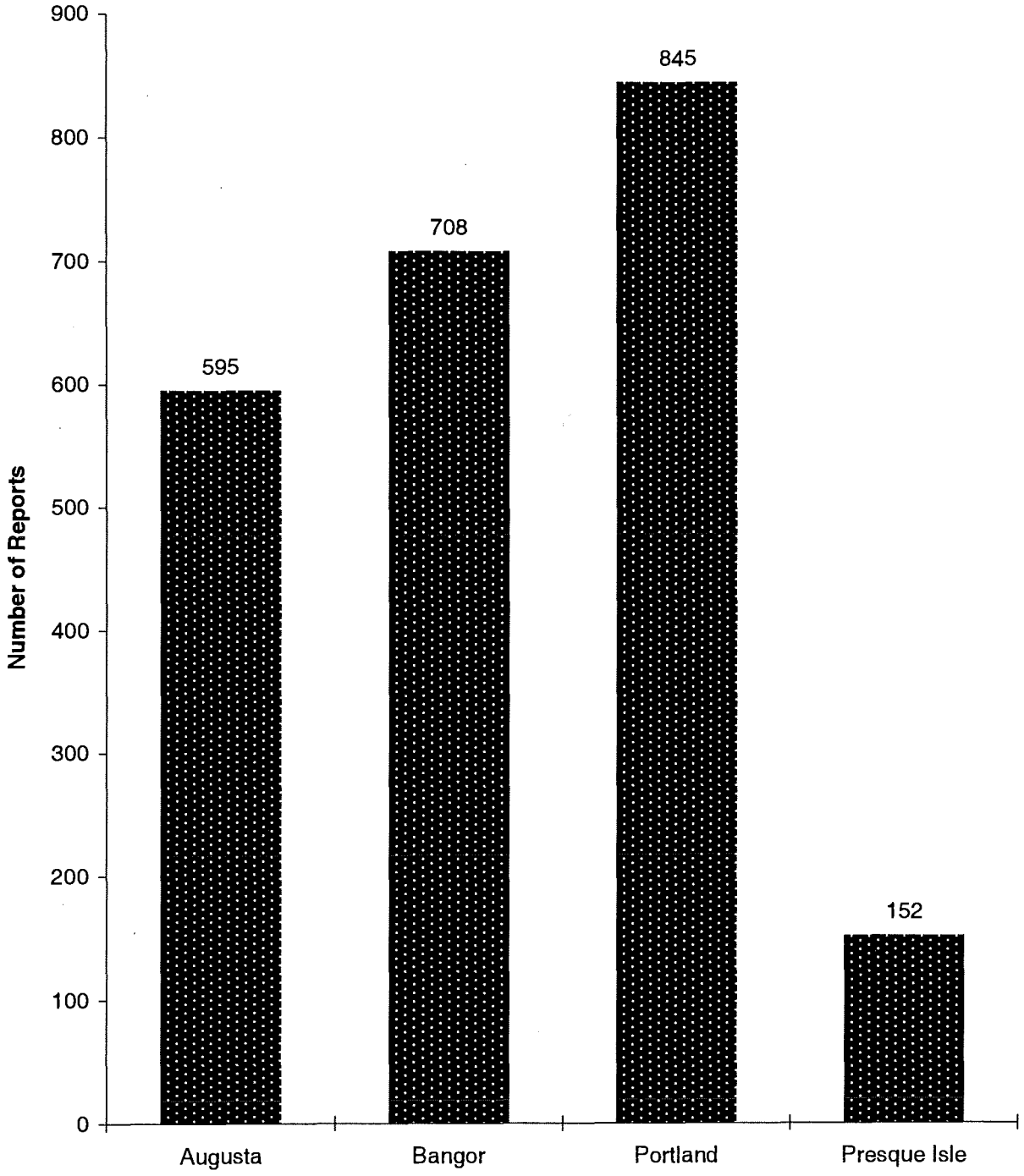
Totals of Types for All Offices		
Surface Oil Inc/Inv	1509	66%
Groundwater Oil Inc/Inv	557	24%
Haz. Mat. Inc/Inv	234	10%

Percentage of Oil and Hazardous Material Reports for 1996



(refer to page 5 for details)

Number of Spill Reports Filed by Regional Office for 1996



(refer to page 5 for details)

14 reports missing

Spill Reports Arranged

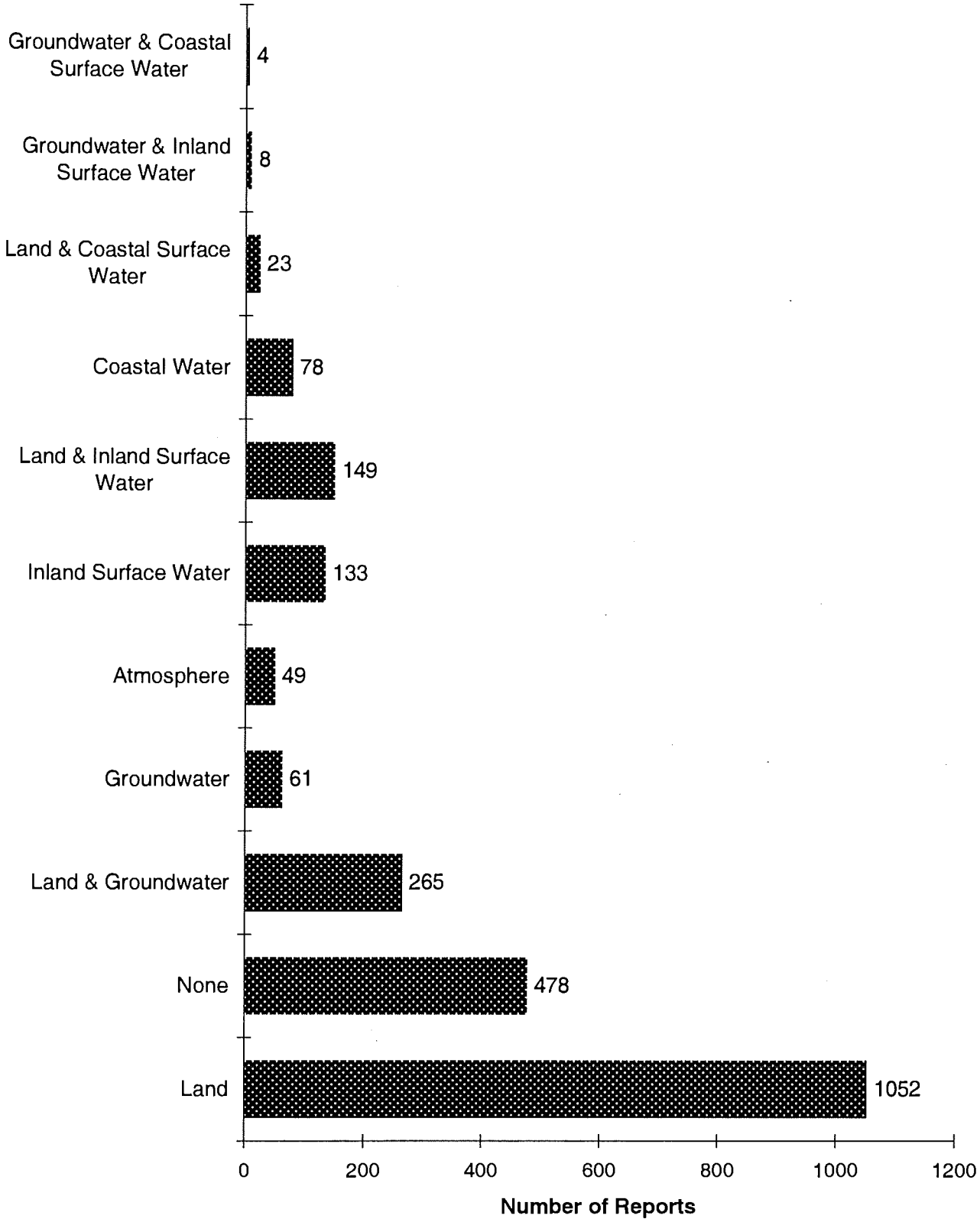
by Medium Affected

for 1996

Medium Affected	Field Offices				Total
	Augusta	Bangor	Portland	Presque Isle	
Atmosphere	18	18	11	2	**49**
Coastal Water	15	13	50	0	**78**
Groundwater	12	23	16	10	**61**
Inland Surface Water	63	31	33	6	**133**
Land	300	381	298	73	**1052**
None	98	130	235	15	**478**
Land & Coastal Surface Water	5	12	6	0	**23**
Land & Inland Surface Water	49	45	43	12	**149**
Groundwater & Coastal Surface Water	0	1	3	0	**4**
Groundwater & Inland Surface Water	0	3	2	3	**8**
Land & Groundwater	35	51	148	31	**265**
Totals	**595**	**708**	**845**	**152**	**2300**

14 reports missing

Medium Affected by Spills for 1996



(refer to page 8 for details)

Man Hours

The following two pages deal with man hour expenditures of the Division of Response Services during 1996. 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 1996 data found on the next page.

Office	Report Type	Ratio of Hours to Reports
Augusta	Surface Oil Inc	6
	Groundwater Oil Inc	7
Bangor	Surface Oil Inc	5
	Groundwater Oil Inc	9
Portland	Surface Oil Inc	10
	Groundwater Oil Inc	7
Presque Isle	Surface Oil Inc	6
	Groundwater Oil Inc	7

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.

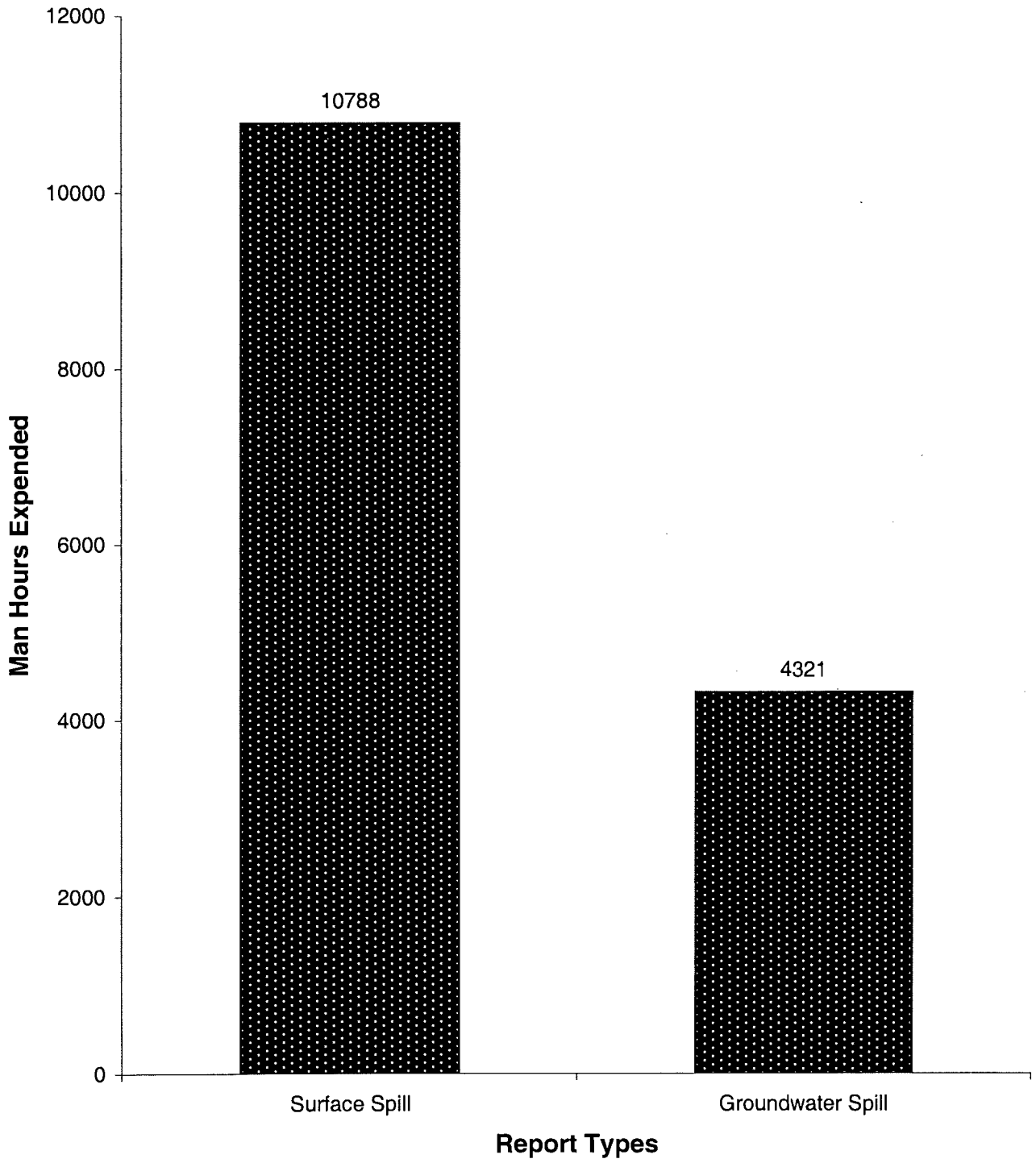
20 reports missing

Man Hours Expended on Oil & Hazardous Materials Incident/Investigation Reports By Regional Offices For 1996

Office	Report Type	Hours	Number of Reports
Augusta	Surface Oil Inc/Inv	2196.9	388
	Groundwater Oil Inc/Inv	812.5	122
	Haz. Mat. Inc/Inv	389.4	81
Bangor	Surface Oil Incident	2541.3	472
	Groundwater Oil Incident	1461.1	159
	Haz. Mat. Incident	407.8	77
Portland	Surface Oil Incident	5505.4	547
	Groundwater Oil Incident	1761.1	237
	Haz. Mat. Incident	335.9	59
Presque Isle	Surface Oil Incident	545.3	97
	Groundwater Oil Incident	286.4	39
	Haz. Mat. Incident	57.6	16

	Man Hours	Reports
Totals for all Offices:	**16,300.7**	**2294**

Total Man Hours Expended in Surface vs Groundwater Work for 1996



(refer to page 11 for details)

Reports in 1996 Broken Down by Cause of Spill

Cause of Spill	*Number of Reports*
Augusta	
No Cause Apparent	57
Corrosion (tank)	47
Piping Corrosion	8
Corrosion Other	2
Physical Breakage	38
Piping or Hose Failure	64
Valve Failure	7
Loose Fitting	25
Overfill (tank or vessel)	64
Bilge discharge	2
Accident (traffic,vessel collision or grounding)	32
Marine Incident	3
Accident Other	36
Storm Damage	10
Poor Workmanship	16
Human Error	42
Unknown	92
Vandalism	5
Deliberate Discharge	8
Mechanical or Process Failure	15
Other Known Cause	22
Augusta Total	**595**
Bangor	
No Cause Apparent	124
Corrosion (tank)	43
Piping Corrosion	17
Corrosion Other	1
Physical Breakage	58
Piping or Hose Failure	60
Valve Failure	16
Loose Fitting	30
Overfill (tank or vessel)	69
Bilge discharge	0
Accident (traffic,vessel collision or grounding)	46
Marine Incident	2
Accident Other	17
Storm Damage	14
Poor Workmanship	7
Human Error	60
Unknown	67
Vandalism	6
Deliberate Discharge	11
Mechanical or Process Failure	21
Other Known Cause	39
Bangor Total	**708**

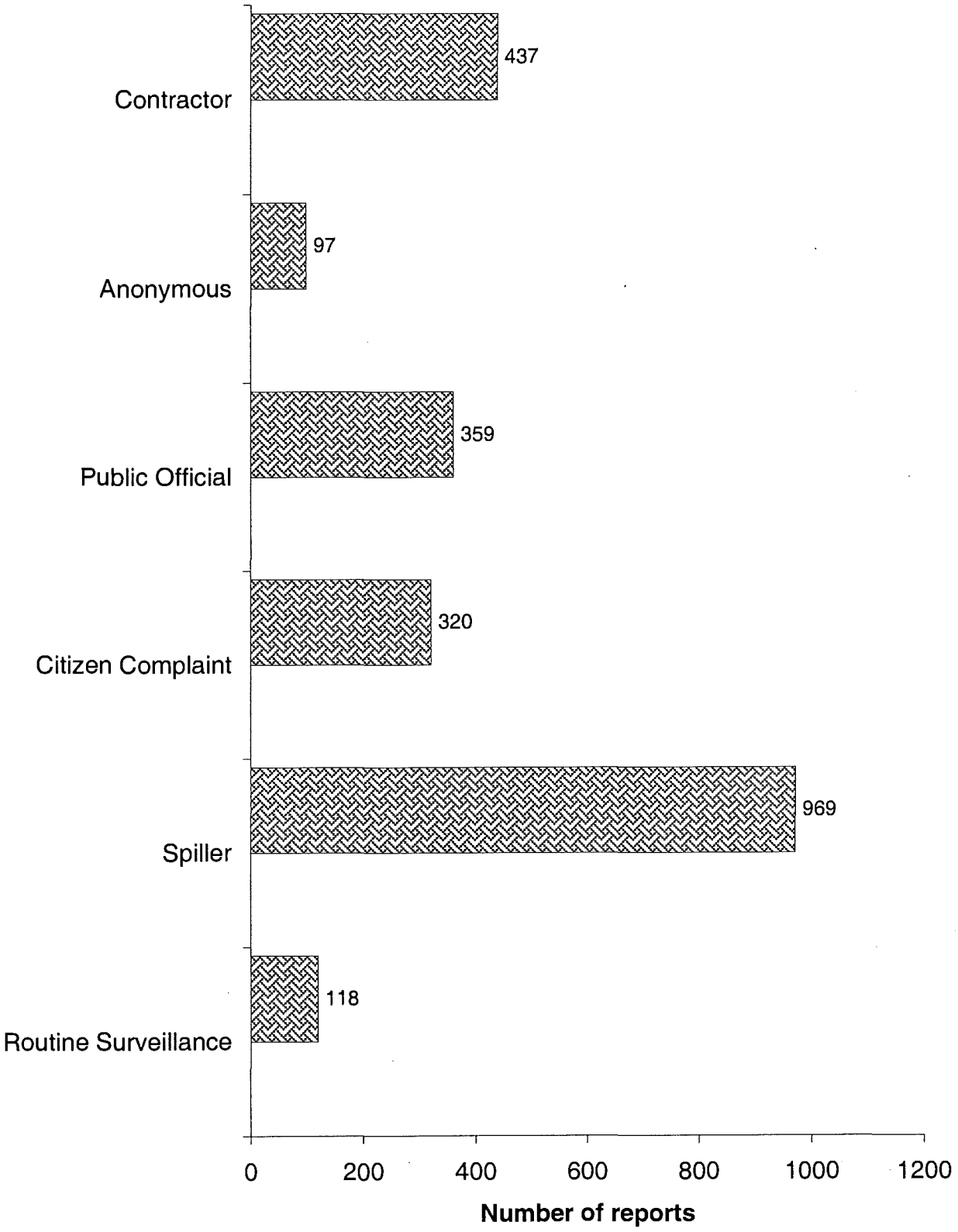
Reports in 1996 Broken Down by Cause of Spill

Cause of Spill	*Number of Reports*
Portland	
No Cause Apparent	134
Corrosion (tank)	61
Piping Corrosion	17
Corrosion Other	3
Physical Breakage	43
Piping or Hose Failure	49
Valve Failure	15
Loose Fitting	27
Overfill (tank or vessel)	69
Bilge discharge	1
Accident (traffic,vessel collision or grounding)	47
Marine Incident	14
Accident Other	29
Storm Damage	37
Poor Workmanship	4
Human Error	59
Unknown	129
Vandalism	13
Deliberate Discharge	21
Mechanical or Process Failure	20
Other Known Cause	53
Portland Total	**845**
Presque Isle	
No Cause Apparent	13
Corrosion (tank)	11
Piping Corrosion	1
Corrosion Other	1
Physical Breakage	19
Piping or Hose Failure	16
Valve Failure	2
Loose Fitting	12
Overfill (tank or vessel)	18
Bilge discharge	0
Accident (traffic,vessel collision or grounding)	11
Marine Incident	0
Accident Other	7
Storm Damage	0
Poor Workmanship	2
Human Error	15
Unknown	15
Vandalism	1
Deliberate Discharge	5
Mechanical or Process Failure	1
Other Known Cause	2
Presque Isle Totals	**152**
1992 Grand Total	**2300**

Reports By Method of Detection for 1996

Office	Method of Detection	Number of Reports
Augusta	Routine Surveillance	16
	Spiller	306
	Citizen Complaint	89
	Public Official	67
	Anonymous	23
	Contractor	94
	Office Total	**595**
Bangor	Routine Surveillance	16
	Spiller	305
	Citizen Complaint	80
	Public Official	124
	Anonymous	39
	Contractor	144
	Office Total	**708**
Portland	Routine Surveillance	83
	Spiller	290
	Citizen Complaint	125
	Public Official	148
	Anonymous	31
	Contractor	168
	Office Total	**845**
Presque Isle	Routine Surveillance	3
	Spiller	68
	Citizen Complaint	26
	Public Official	20
	Anonymous	4
	Contractor	31
	Office Total	**152**

Reports by Method of Detection for 1996



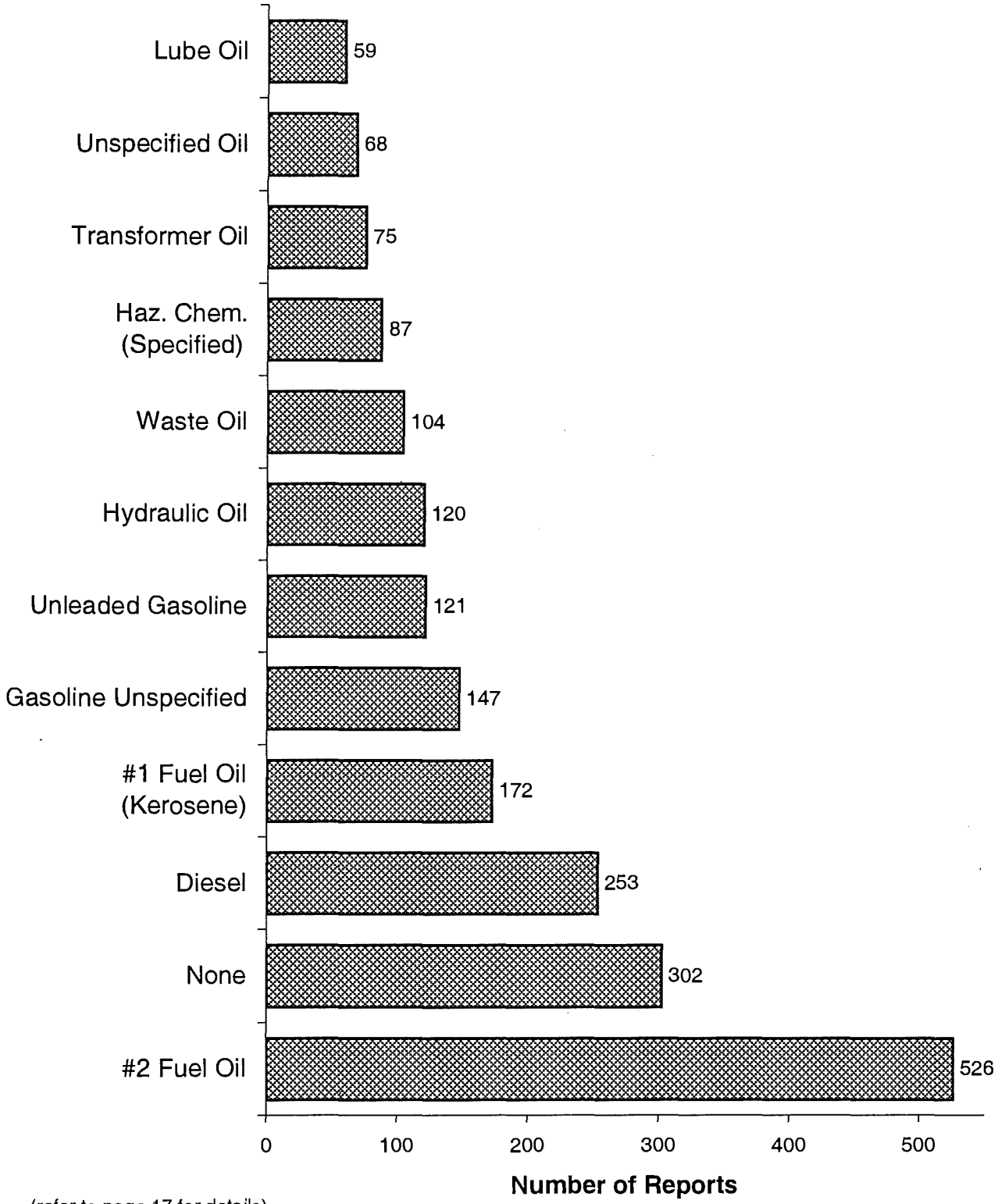
(refer to page 15 for details)

Reports by Product Spilled for 1996

Product Type	Number of Reports	Product Type	Number of Reports
None	302	Non-Chem. Non-Oil Unspecified	2
#1 Fuel Oil (Kerosene)	172	Non-Chem. Non-Oil Specified	13
#2 Fuel Oil	526	Crude Oil	0
#3 Fuel Oil	0	Pesticide (General)	6
#4 Fuel Oil	6	PCB Oil	4
#5 Fuel Oil	4	Sulfuric Acid	15
#6 Fuel Oil	29	Caustic Soda	7
Heating Oil Unspecified	10	Chlorine	19
Lube Oil	59	Hazardous Chemical Unspecified	6
Unknown Substance	12	Ammonia	4
Gasoline Unspecified	147	Hydrochloric Acid	1
Leaded Gasoline	4	Medical Waste	3
Unleaded Gasoline	121	Hazardous Chem. (Specified in report)	87
Aviation Gasoline	3	Unspecified Oil	68
Jet Fuel	11	Waste Oil	104
Diesel	253	Antifreeze	7
Unspecified Motor Fuel	18	Transmission Oil	5
Asphalt	4	Water Storage	1
Animal Fats/Remains	1	Hydraulic Oil	120
Marsh Sheen	22	Transformer (non-PCB) Oil	75
Algae Bloom	7	Liquors (specified in report)	12
Demolition Debris	0	Non-hazardous Chem. Unspecified	4
		Non-haz. Chem. (specified in report)	25
		Total	**2299**

14 missing reports

Top Twelve Products Involved in Reports for 1996

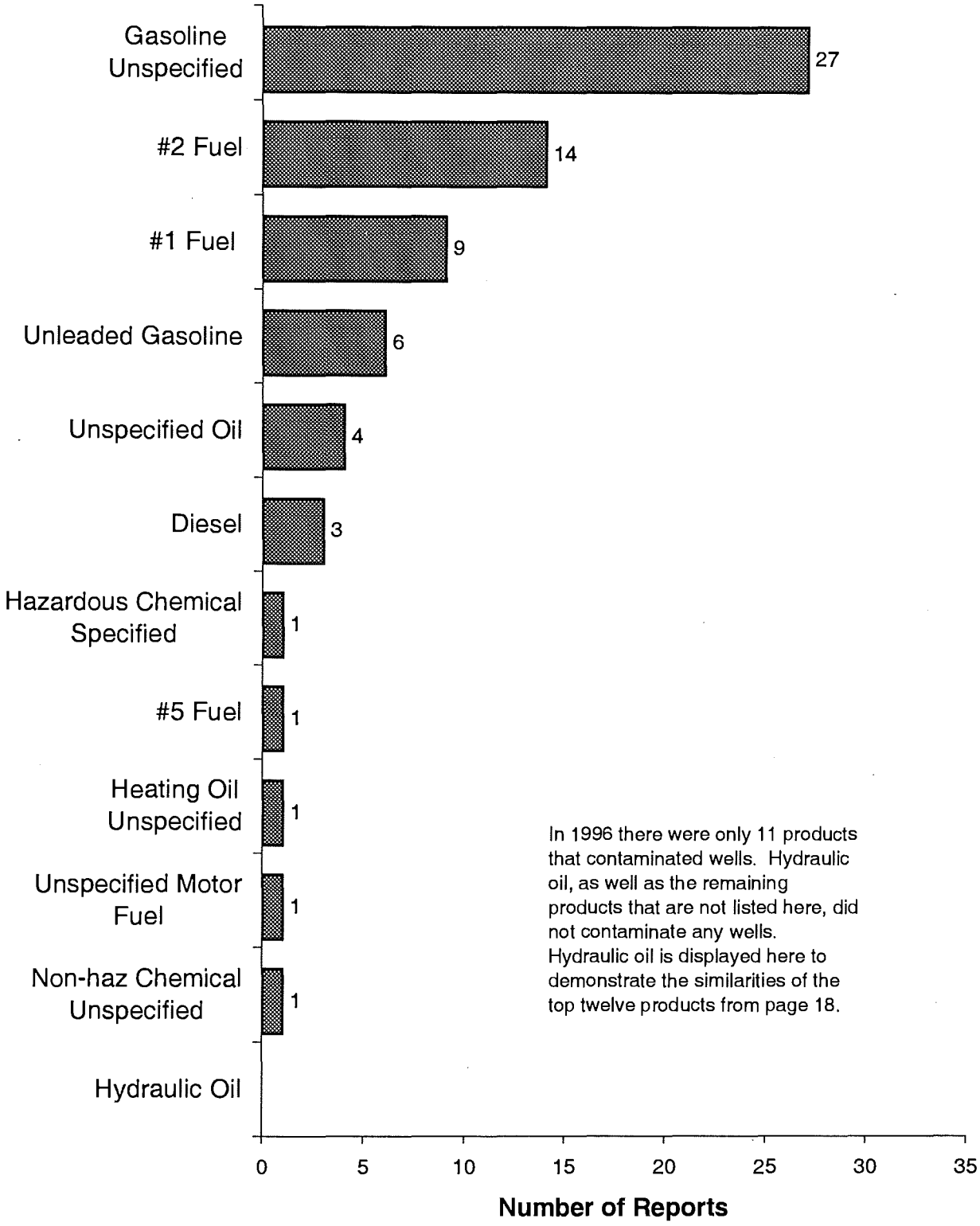


(refer to page 17 for details)

Response Statistics 1996

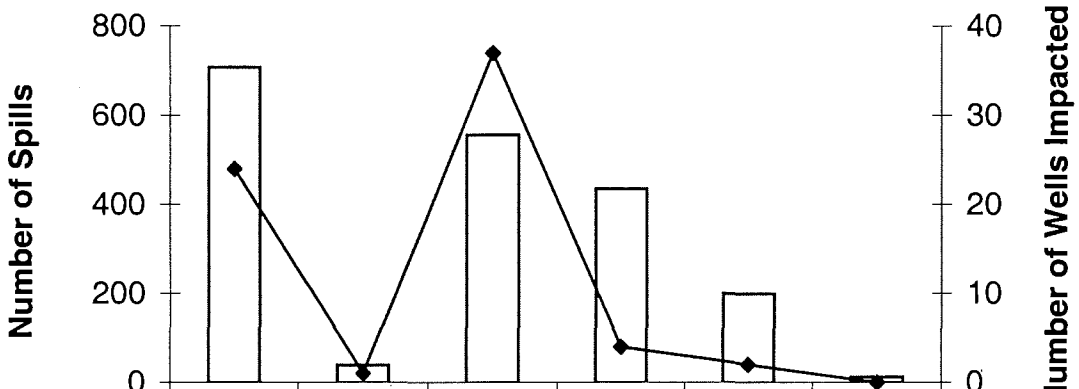
14 missing reports

Top Twelve Products Contaminating Wells in 1996



In 1996 there were only 11 products that contaminated wells. Hydraulic oil, as well as the remaining products that are not listed here, did not contaminate any wells. Hydraulic oil is displayed here to demonstrate the similarities of the top twelve products from page 18.

Product Categories vs Wells Impacted For 1996



	Home Heating	Heavy Fuel Oils	Motor Fuels	Other Oils	Haz Chemical	Unknown
# of Spills	708	39	557	435	200	12
Wells Impacted	24	1	37	4	2	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	#6 Fuel	Unleaded Gasoline	Crude Oil	Sulfuric Acid
Unspecified		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 21:1. That is to say, on average, every twenty-first spill of home heating oil or motor fuel results in one contaminated well case.

Note 2) Sixty-eight wells were contaminated in 1996.

14 missing reports

Number of Wells Impacted or Threatened; Broken Down by Spill Type, Product Found and Regional Office for 1996

Office

Augusta

Surface Oil Inc/Inv

Product Found	Number of Incidents		Wells At Risk		Wells Impacted
None	3		4		0
# 1 Fuel Oil	21		24		1
# 2 Fuel Oil	20		29		1
Heating Oil Unspecified	1		2		0
Unleaded Gasoline	1		2		1
Diesel	4		4		0
Unspecified Oil	3		5		1
Waste Oil	1		2		0
Transmission Oil	1		1		0

Groundwater Oil Inc/Inv

None	2		2		0
# 1 Fuel Oil	1		2		0
# 2 Fuel Oil	5		9		3
#5 Fuel Oil	1		4		1
Heating Oil Unspecified	1		1		1
Gasoline Unspecified	16		32		11
Unleaded Gasoline	3		5		3
Diesel	1		1		0
Unspecified Motor Fuel	1		0		1
Unspecified Oil	1		2		0
Non-Haz Chem Unspecified	1		1		1

Haz Mat Inc/Inv

None	0		0		0

Augusta Office Totals	**88**		**132**		**25**

Office

Bangor

Surface Oil Inc/Inv

Product Found	Number of Incidents		Wells At Risk		Wells Impacted
# 1 Fuel Oil	8		14		1
# 2 Fuel Oil	8		8		0
Gasoline Unspecified	1		0		1
Unleaded Gasoline	2		2		0
Diesel	6		9		0
Waste Oil	3		4		0

Groundwater Oil Inc/Inv

None	3		3		0
# 2 Fuel Oil	6		4		3
Gasoline Unspecified	5		10		5
Unleaded Gasoline	3		4		1
Diesel	4		16		1
Unspecified Oil	1		2		2

Haz Mat Inc/Inv

None	1		1		0
Haz Chem Specified	1		1		0

Bangor Office Totals	**52**		**78**		**14**

Office

Portland

Surface Oil Inc/Inv

Product Found	Number of Incidents		Wells At Risk		Wells Impacted
None	3		3		0
# 1 Fuel Oil	19		36		5
# 2 Fuel Oil	22		31		4
#6 Fuel Oil	1		2		0
Lube Oil	1		2		0
Gasoline Unspecified	3		4		2
Unleaded Gasoline	1		1		0
Diesel	3		4		0
Marsh Sheen	1		1		0
Non-Chem, Non-Oil Specified	1		2		0
Unspecified Oil	2		2		0
Waste Oil	1		1		0
Transformer Oil	1		1		0

Groundwater Oil Inc/Inv

Product Found	Number of Incidents		Wells At Risk		Wells Impacted
None	4		5		0
# 2 Fuel Oil	2		3		0
Gasoline Unspecified	7		14		5
Leaded Gasoline	1		1		0
Unleaded Gasoline	4		8		1
Diesel	1		1		0
Unspecified Motor Fuel	1		2		0
Unspecified Oil	1		1		1

Haz Mat Inc/Inv

None	1		1		0
Antifreeze	1		1		0

Portland Office Totals	**82**		**127**		**18**

Office

Presque Isle

Surface Oil Inc/Inv

Product Found	Number of Incidents		Wells At Risk		Wells Impacted
None	1		3		0
# 1 Fuel Oil	7		8		0
# 2 Fuel Oil	5		5		0
Unleaded Gasoline	2		2		0
Diesel	3		3		0
Unspecified Oil	1		1		0
Hydraulic Oil	1		1		0

Groundwater Oil Inc/Inv

None	1		1		0
#1Fuel Oil	2		4		2
# 2 Fuel Oil	5		6		3
Gasoline Unspecified	3		10		3
Unleaded Gasoline	2		5		0
Diesel	3		3		2

Haz Mat Inc/Inv

Haz Chem Specified	1		0		1

Presque Isle Office Totals	**37**		**52**		**11**

Discrepancies in Amount Spilled vs. Amount Recovered

The following two pages detail the amounts of material spilled during 1996, compared to the amounts of material recovered. The reader will notice inconsistencies in the data when units of measure are compared. For example; the Bangor office had no cubic yards of material spilled in a surface oil incident, but recovered 88 cubic yards of material in surface oil incidents during the year. There are several underlying reasons for these discrepancies, and material not being recovered during the year.

1. Some industrial sites have spills of oil or hazardous material and contact the Department as required, but the material was contained and neutralized, or recovered and put back into the production process. Therefore, the responder makes note of the amount spilled, but it is not included under recovery amounts because the Department did not participate in its recovery.

2. Spilled product, such as jet fuel, may escape into a marsh. Responders may decide that, to avoid further environmental impact, the fuel should be burned off the water and vegetation. Therefore, product is spilled but not listed as recovered. This situation also includes product, such as oil, escaping into bedrock or a river, and being unrecoverable. Gaseous materials lost to the atmosphere are also unrecoverable.

3. More gallons may be recovered than spilled because the responders estimate the total gallons recovered, not just gallons of pure product. This happens when a contaminated well, or tank containing water, is pumped to recover product. Water makes up a portion of the recovered gallons. A similar situation happens for solid units of measure. If product is spilled on the ground or absorbed by solid materials, the responder estimates the total amount of soiled material. This amount may only contain a small percentage of pure product.

4. Barrels are recorded when they are found abandoned, but nothing was spilled from them. The Department wants to record, and dispose of, the barrels. Some responders also estimate barrel amounts when contaminated soil is packed into barrels for disposal.

5. For some spills, gallons of material are released, and cubic yards or pounds are recovered.

Amount of Material Spilled by Response Area and Incident Classification for 1996

REGIONAL OFFICE	SPILL INCIDENT CLASSIFICATION	GALLONS	CUBIC YARDS	POUNDS	BARRELS
AUGUSTA	Surface Oil Inc/Inv	35,412	0	0	0
	Groundwater Oil Inc/Inv	1,202	0	0	0
	Haz Mat Inc/Inv	82,956	0	266	0
	Office Totals	119,570	0	266	0
BANGOR	Surface Oil Inc/Inv	24,032	0	29	0
	Groundwater Oil Inc/Inv	8,760	0	0	0
	Haz Mat Inc/Inv	4,656,707	0.1	508	0
	Office Totals	4,689,499	0.1	537	0
PORTLAND	Surface Oil Inc/Inv	220,739	0	1	0
	Groundwater Oil Inc/Inv	24,848	0	0	0
	Haz Mat Inc/Inv	8,475	0	41,682	0
	Office Totals	254,062	0	41,683	0
PRESQUE ISLE	Surface Oil Inc/Inv	4,959	0	0	0
	Groundwater Oil Inc/Inv	11,509	0	0	0
	Haz Mat Inc/Inv	191	0	840	0
	Office Totals	16,659	0	840	0

			GALLONS	CUBIC YARDS	POUNDS	BARRELS
All Offices	**Total**	Surface Oil Inc/Inv	285,142	0	30	0
	Total	Groundwater Oil Inc/Inv	46,319	0	0	0
	Total	Haz. Mat. Inc/Inv	4,748,329	0.1	43,296	0
Grand	**Total**	**All Offices & Classifications**	**5,079,790**	**0.1**	**43,326**	**0**

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

14 missing reports and 462 null codes

Amount of Material Recovered in 1996 by Response Area & Incident Class

REGIONAL OFFICE	SPILL INCIDENT CLASSIFICATION	U	G	CY	P	B
AUGUSTA	Surface Oil Inc/Inv	3	15,427	0	0	0
	Groundwater Oil Inc/Inv	10	614	5	0	0
	Haz Mat Inc/Inv	2	62,527	0	10	0
	Office Totals	15	78,568	5	10	0
BANGOR	Surface Oil Inc/Inv	3	17,291	88	29	0
	Groundwater Oil Inc/Inv	0	6,022	474	0	4
	Haz Mat Inc/Inv	0	155,488	1	1,797	0
	Office Totals	3	178,801	563	1,826	4
PORTLAND	Surface Oil Inc/Inv	6	163,044	6	0	0
	Groundwater Oil Inc/Inv	5	14,083	154	0	0
	Haz Mat Inc/Inv	0	2,466	400	1	0
	Office Totals	11	179,593	560	1	0
PRESQUE ISLE	Surface Oil Inc/Inv	0	2,801	0	0	0
	Groundwater Oil Inc/Inv	0	838	0	0	0
	Haz Mat Inc/Inv	0	71	0	2	0
	Office Totals	0	3,710	0	2	0

			U	G	CY	P	B
All Offices	**Total**	Surface Oil Inc/Inv	12	198,563	94	29	0
	Total	Groundwater Oil Inc/Inv	15	21,557	633	0	4
	Total	Haz. Mat. Inc/Inv	2	220,552	401	1,810	0
Grand	**Total**	**All Offices & Classifications**	**29**	**440,672**	**1128**	**1,839**	**4**

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

Percentage of Material Recovered in 1996 Incidents by Spill Type and Regional Office

Augusta

Surface Inc/Inv

	Amount Spilled	Amount Recovered	Percent Recovered
Gallons	35,412	15,427	44%
Cubic Yards	0	0	0%
Pounds	0	0	0%
Barrels	0	0	0%

Groundwater Inc/Inv

	Amount Spilled	Amount Recovered	Percent Recovered
Gallons	1,202	614	51%
Cubic Yards	0	5	N/A
Pounds	0	0	0%
Barrels	0	0	0%

Haz Mat Inc/Inv

	Amount Spilled	Amount Recovered	Percent Recovered
Gallons	82,956	62,527	75%
Cubic Yards	0	0	0%
Pounds	266	10	4%
Barrels	0	0	0%

Bangor

Surface Inc/Inv

	Amount Spilled	Amount Recovered	Percent Recovered
Gallons	24,032	17,291	72%
Cubic Yards	0	88	N/A
Pounds	29	29	100% (FR)
Barrels	0	0	0%

FR- Full Recovery or seemingly so
NA- Not Applicable
NOTE- All Numeric fields are BEST ESTIMATES

Percent Recovered, cont.

Bangor

continued

Groundwater Inc/Inv

	Amount Spilled	Amount Recovered	Percent Recovered
Gallons	8,760	6,022	69%
Cubic Yards	0	474	N/A
Pounds	0	0	0%
Barrels	0	4	N/A

Haz Mat Inc/Inv

	Amount Spilled	Amount Recovered	Percent Recovered
Gallons	4,656,707	155,488	3%
Cubic Yards	0.1	1	1000%
Pounds	508	1,797	354%
Barrels	0	0	0%

Portland

Surface Inc/Inv

	Amount Spilled	Amount Recovered	Percent Recovered
Gallons	220,739	163,044	74%
Cubic Yards	0	6	N/A
Pounds	1	0	0%
Barrels	0	0	0%

Groundwater Inc/Inv

	Amount Spilled	Amount Recovered	Percent Recovered
Gallons	24,848	14,083	57%
Cubic Yards	0	154	N/A
Pounds	0	0	0%
Barrels	0	0	0%

Percent Recovered, cont.

Portland

continued

Haz Mat Inc/Inv

	Amount Spilled	Amount Recovered	Percent Recovered
Gallons	8,475	2,466	29%
Cubic Yards	0	400	N/A
Pounds	41,682	1	0%
Barrels	0	0	0%

Presque Isle

Surface Inc/Inv

	Amount Spilled	Amount Recovered	Percent Recovered
Gallons	4,959	2,801	56%
Cubic Yards	0	0	0%
Pounds	0	0	0%
Barrels	0	0	0%

Groundwater Inc/Inv

	Amount Spilled	Amount Recovered	Percent Recovered
Gallons	11,509	838	7%
Cubic Yards	0	0	0%
Pounds	0	0	0%
Barrels	0	0	0%

Haz Mat Inc/Inv

	Amount Spilled	Amount Recovered	Percent Recovered
Gallons	191	71	37%
Cubic Yards	0	0	0%
Pounds	840	2	0%
Barrels	0	0	0%

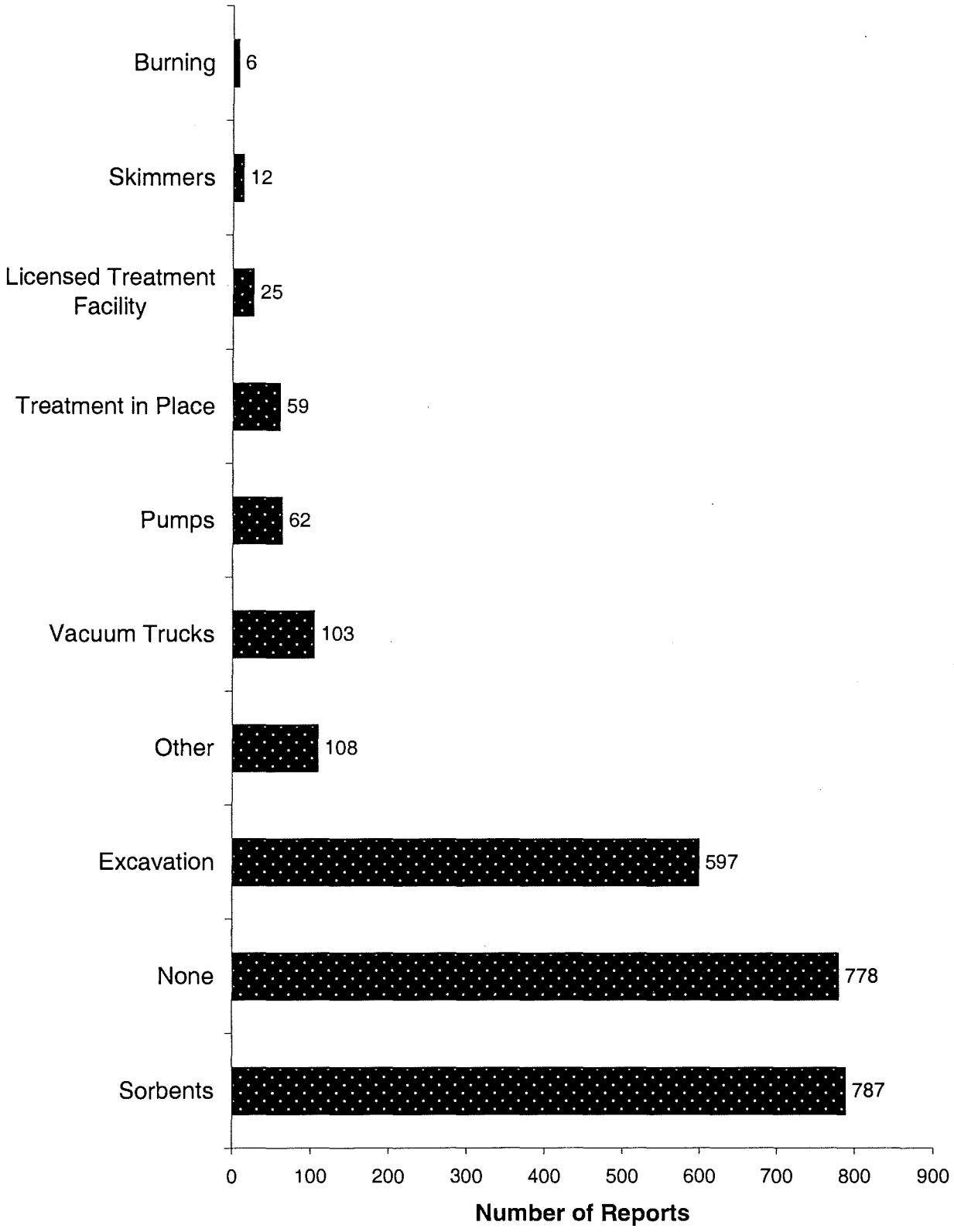
Methods Used in the Recovery of Spilled Products for 1996

Recovery Method	Regional Field Offices A	B	P	I	Total
Vacuum Trucks	30	11	61	1	**103**
Pumps	16	19	23	4	**62**
Sorbents	213	269	258	47	**787**
Skimmers	1	1	8	2	**12**
Excavation	149	198	189	61	**597**
Burning	2	3	0	1	**6**
Treatment in Place	15	24	19	1	**59**
Other	23	21	58	6	**108**
None	179	238	348	13	**778**
Licensed Treatment Facility	18	4	3	0	**25**
			Grand	**Total**	**2537**

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

The total number of recovery methods used in 1996 is greater than the total number of reports because some reports had multiple recovery methods during a spill.

Recovery Methods Used in 1996



(refer to page 31 for details)

Types of Hazardous Material Spilled

The following table, "Hazardous Materials and Other Non-Oil Materials Spilled in 1996", contains a summary of the best information available to Response Services as to the types of chemicals and other hazardous materials spilled during 1996. 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 1996

Number of Incidents	Material	At Least This Amount Was Spilled	Units
1	359 Adhesive	0.30	G
1	Acetyl Chloride	0.07	G
1	Acetylene, Propane, Mapp Gas, Argon, Nitrogen, Nitrous Oxide	41,000.99	P
1	Acids, Bases, Waste Oil, Aqueous Ammonia, Blue Dyes	5,700.99	G
1	Acrylic Enamel Automotive Paint	1.00	G
1	Acyrysol-SAE-60	50.00	G
1	Ammonia	105.00	G
3	Ammonia	2.98	P
3	Ammonium Hydroxide	217.08	G
4	Antifreeze	580.98	G
1	Antifreeze	0.99	U
1	APSA-80	55.00	G
2	Asbestos	1.98	P
1	Assorted Household Hazardous Material	0.99	U
1	Bastik Adhesive	0.25	G
1	Bentonite Slurry	0.99	G
3	Black Liquor	110,151.98	G
1	Blue Dye	100.00	G
1	Blue Dye	834.00	P
1	Bostic Cement	0.75	G
1	Burning Plastic Wire Insulation	0.99	P
1	Calcium Nitrate	30.00	G
1	Calcium Stearate	8,000.00	G
1	Caustic Material	0.99	G
6	Caustic Soda	9,513.99	G
1	Caustic Soda	24.99	P
3	Chlorine	31.40	G
16	Chlorine	297.30	P
4	Chlorine Dioxide	103.96	P
1	Creosote	0.10	Y
1	D6861 Cleaner	0.10	G
1	Darex II AEA	220.99	G
1	Ethyl Acetate	0.50	G
1	Freon	12.00	P
1	Freon-22	20.99	P
2	Green Liquor	42,500.00	G
1	Heptane or Toluene	0.22	G
1	Hydraded Lime	9.00	P
1	Hydromulch/Fertilizer	0.99	P
1	Intratex DD	55.00	G
1	Lead	0.99	P
1	Lead Arsenate	5.00	P
2	Medical Waste	2.05	P
1	Medical Waste	17.00	U
1	MEK	5.00	G
1	Melamine Resin	100.00	G
1	Mercury	0.99	G
1	Mercury	0.01	P

Hazardous Materials and Other Non-Oil Materials Spilled in 1996

Number of Incidents	Material	At Least This Amount Was Spilled	Units
1	Mercury Dust	0.01	P
1	Methyl Mercaptan Gas	102.60	P
5	Mineral Spirits	35.97	G
1	Mixed Acids	0.99	U
1	NCC Sludge Solvent	1.00	G
1	Napthalene/ # 6 Heating Oil Mix	50.99	G
1	Nitric/Sulfuric Acid Mixture	0.30	G
1	Nitrous Oxide	25.99	P
1	O-Chloro-Toluene & Biphenyl	0.03	G
1	Old Dynamite	4.00	P
1	P275 Resin	0.99	U
2	Paint	2.99	G
2	PCB Oil	2.49	G
1	Pesticides	0.99	G
1	Phenolic Resin	40.00	G
1	Phosphoric Acid	2,000.99	G
1	Process Water (Sodium Aluminate and Aluminum Sulfate)	50.99	G
1	Propane Cylinders	0.99	U
2	Propane Gas	201.98	P
1	Pulp Mill Sewer Liquid	4,500,000.00	G
1	Pyridine	1.00	G
1	Rayon Caustic	5.00	G
1	Sewage	0.99	G
1	Slimicide	150.00	G
1	Sodium Bisulfite/Sodium Hydroxide Mix	70.00	G
2	Sodium Chlorate	800.00	G
1	Sodium Dicyanite	0.99	P
1	Sodium Hydrosulfite	110.00	G
1	Sodium Hydroxide	0.06	G
5	Sodium Hypochlorite	1,571.98	G
1	Sodium Nitrate/Chromic Acid Mix	0.99	P
2	Solvent	1.99	G
1	Styrene	0.12	G
1	Sulfate	0.99	G
16	Sulfuric Acid	4,449.07	G
1	TCE	10.99	G
1	Tetrachloroethylene	20.99	G
1	Tetrahydrofuran	2.00	G
1	Thinner/Solvent Mix	5.99	G
1	Toluene/Heptane mix	1.00	G
1	Unidentified Paint	0.99	U
1	V-Brite	0.50	P
1	WTS-1919 Stain	2.00	G
1	WW260	0.25	G
1	Wash Water	100.99	G
10	White Liquor	54,077.95	G
1	White Water (5% clay)	7,500.00	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

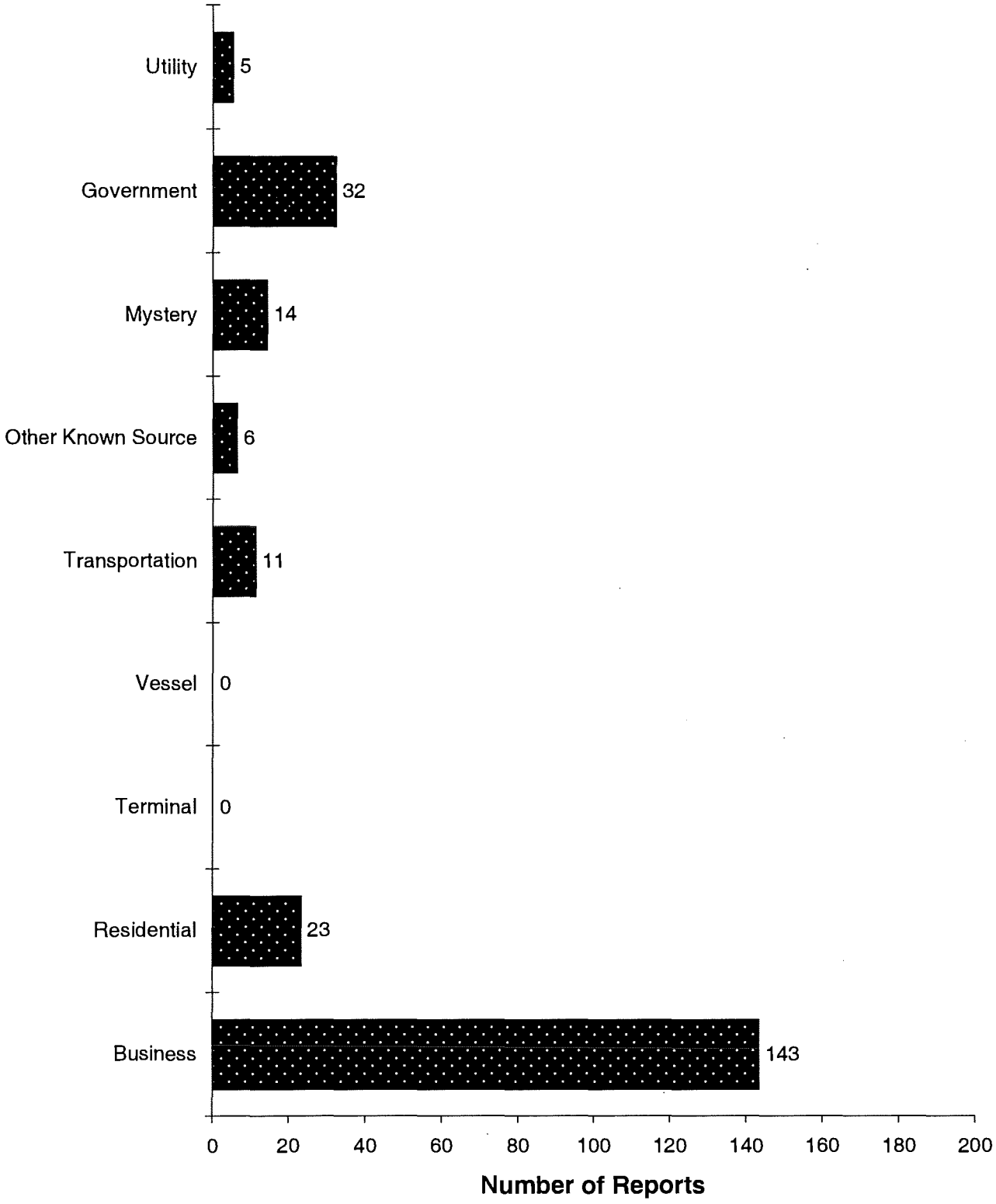
OTHER KNOWN SOURCE includes:
- Religious
- Other Known Source

MYSTERY

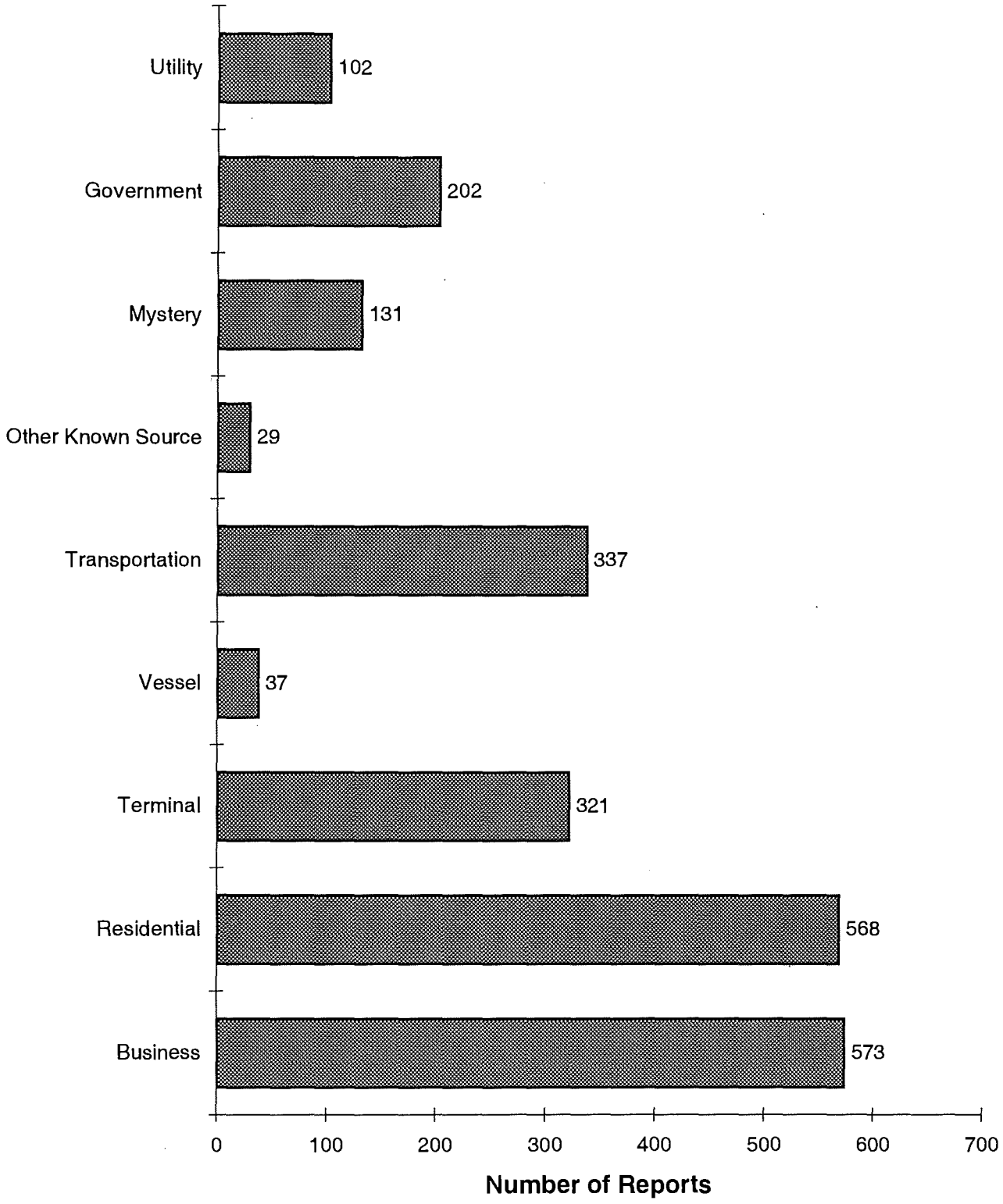
GOVERNMENT includes:
- Military
- Federal
- State
- Local
- Other

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

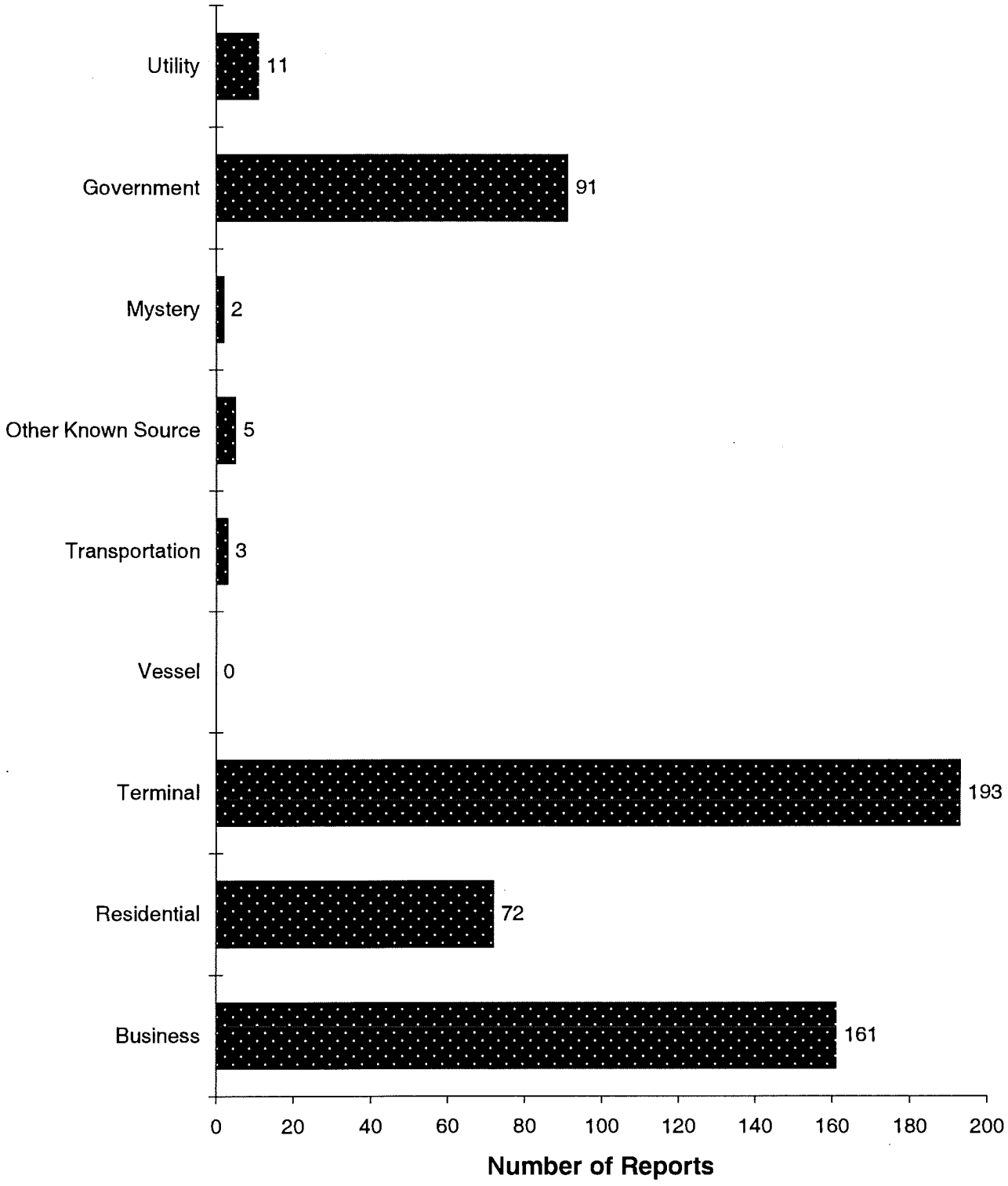
Types of Facilities Involved in Hazardous Material Incidents in 1996



Types of Facilities Involved in Spill Reports for 1996



Reports by Facility Where Underground Storage Tanks Were Involved in 1996



Explanation of Discrepancies between 1996 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 1996.

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 1996

Product	# of Barrels
Kerosene #1	1,922,332
Fuel Oil #2 (Diesel)	14,582,394
Fuel Oil -Railroad	0
Fuel Oil #5	146
Fuel Oil #6	9,928,902
Leaded Regular	404,959
Leaded Premium	115,439
No Lead (Regular & Super)	21,174,870
Aviation	33,171
JP-3 (Jet Fuel)	0
JP-4 (Jet Fuel)	48,135
JP-1 & Jet-A (Jet Fuel)	828,703
Asphalt	474,996
Crude Oil	70,187,359
Other Petroleum Products: (Mineral Oil, Hydraulic Fluid, etc)	6,541
Total Barrels	**119,707,947**

Surface Fund Barrels of Product Transported/Transferred in Maine for 1996

Product	# of Barrels
Kerosene #1	2,007,762
Fuel Oil #2 (Diesel)	15,082,897
Fuel Oil -Railroad	0
Fuel Oil #5	146
Fuel Oil #6	9,948,054
Leaded Regular	404,959
Leaded Premium	115,439
No Lead (Regular & Super)	22,774,618
Aviation	33,171
JP-3 (Jet Fuel)	0
JP-4 (Jet Fuel)	137,894
JP-1 & Jet-A (Jet Fuel)	828,703
Asphalt	474,996
Crude Oil	70,187,359
Other Petroleum Products: (Mineral Oil, Hydraulic Fluid, etc)	6,541
Total Barrels	**122,002,539**