ALASKA LEGISLATURE COMMITTEE FILES 1993-1994 8672

8006 HOUSE RESOURCES

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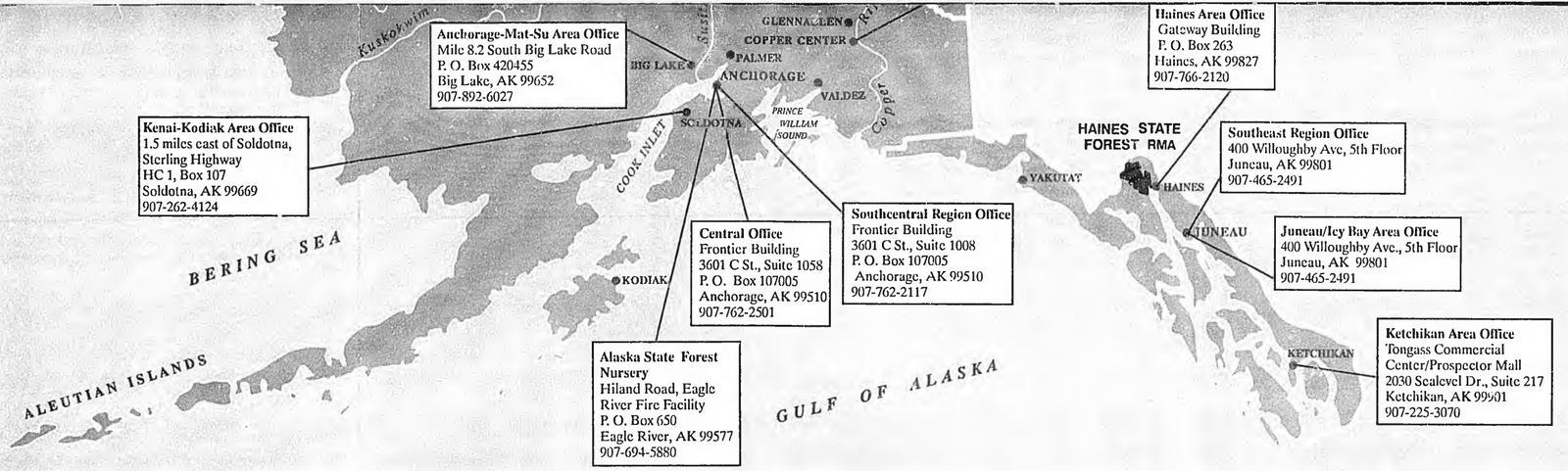


Private sawmill operation on state-owned forest land.

LEGISLATIVELY DESIGNATED STATE FORESTS

There are two state forests in Alaska, both created by the Alaska state legislature for multiple use management of the forest lands and resources. State forests are managed for sustained yield to guarantee a continuing supply of state-owned forest resources.

The Tanana Valley State Forest is located in interior Alaska and is in the area generally bordered by Fairbanks, Delta, and Tok. This state forest is administered through the Northern Region Office and the Fairbanks, Delta, and Tok Area Offices. The Tanana Valley State Forest contains 1,786,330 acres of state land.

The Haines State Forest and Resource Management Area is located in southeast Alaska near Haines and is administered through the Southeastern Region Office and the Haines Area Office. The Haines State Forest and Resource Management Area contains 250,600 acres of state land.

Photos contributed by-

Division of Forestry Staff:
Lisa Holzapfel
Cindy Forrest
Dave Wallingford
McGrath Area Office
Valdez-Copper River Area Office
Southcentral Region Office

United States Forest Service:
State and Private Forestry

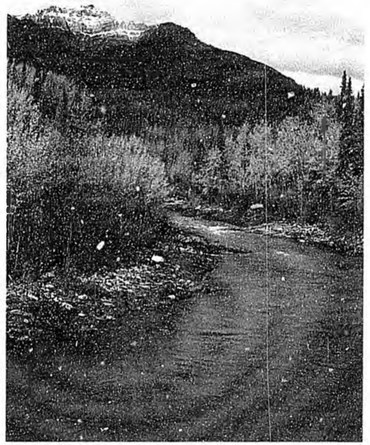
Forest user asks for advice from a state forester.

ALASKA STATE FOREST NURSERY

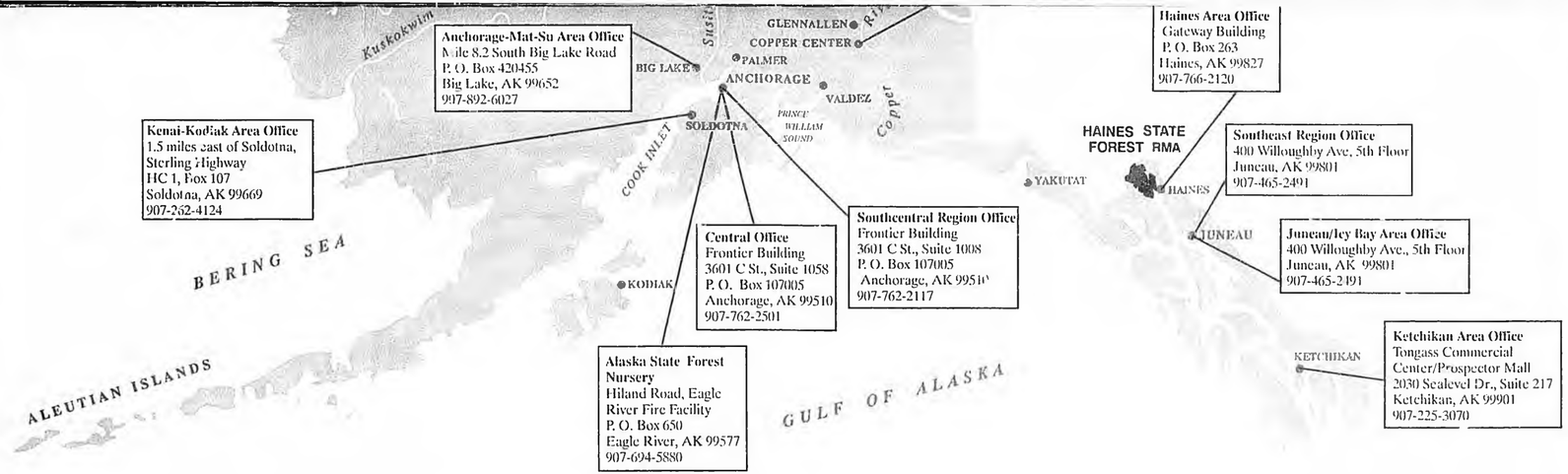
The 1990 legislature provided the Division of Forestry with funding for reforestation. The division will use this money to build two more greenhouses at the State Forest Nursery in Eagle River, doubling its capacity to produce seedlings. State foresters are actively collecting seed from cones statewide to use in the nursery. This funding will also improve the water system at the nursery, increase staffing capability, and provide a bare-root growing yard. With the additional staff and facilities, the state will improve the quality of the seedlings and will grow 1.6 million seedlings for use on state and private lands.

New seedlings for reforestation.

- optimizing forest uses with minimal impairment to the productivity of the land, air, and water
- caring equally for multiple use forest resources and timber-cutting
- improving our fire prevention program
- using fire as a management tool to improve wildlife habitat and forest growth
- protecting forest resources, human life, and property from wildland fire
- expanding the aviation program to also support the division's forest practices and resource management work
- providing clear policy direction for sustained productivity and multiple use
- improving interagency communications and public relations
- motivating and training division staff
- learning from previous forest management mistakes and not repeating them



Early snow in a southcentral Alaska forest.



Anchorage-Mat-Su Area Office
Mile 8.2 South Big Lake Road
P. O. Box 420455
Big Lake, AK 99652
907-892-6027

Kenai-Kodiak Area Office
1.5 miles east of Soldotna,
Sterling Highway
HC 1, Box 107
Soldotna, AK 99669
907-262-4124

Central Office
Frontier Building
3601 C St., Suite 1058
P. O. Box 107005
Anchorage, AK 99510
907-762-2501

Southcentral Region Office
Frontier Building
3601 C St., Suite 1008
P. O. Box 107005
Anchorage, AK 99510
907-762-2117

Alaska State Forest Nursery
Hiland Road, Eagle River Fire Facility
P. O. Box 650
Eagle River, AK 99577
907-694-5880

Haines Area Office
Gateway Building
P. O. Box 263
Haines, AK 99827
907-766-2120

Southeast Region Office
400 Willoughby Ave, 5th Floor
Juneau, AK 99801
907-465-2491

Juneau/Icy Bay Area Office
400 Willoughby Ave., 5th Floor
Juneau, AK 99801
907-465-2491

Ketchikan Area Office
Tongass Commercial Center/Prospector Mall
2030 Sealevel Dr., Suite 217
Ketchikan, AK 99901
907-225-3070

Private sawmill operation on state-owned forest land.

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Early snow in a southcentral Alaska forest.

THE FOLLOWING DOCUMENT
HAS NOT BEEN FILMED
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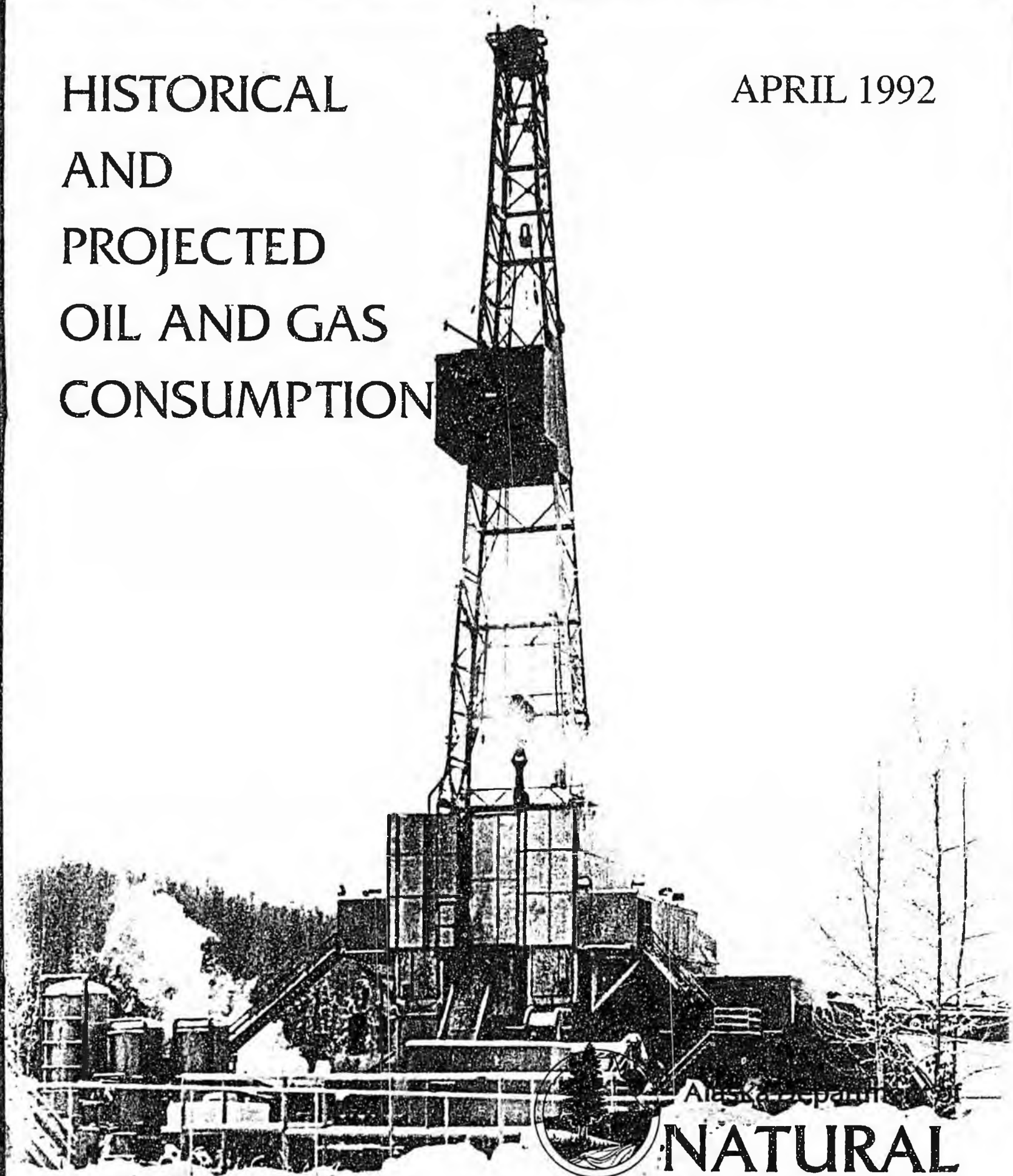
ORIGINAL FILE

HISTORICAL AND PROJECTED OIL AND GAS CONSUMPTION

APRIL 1992



Alaska Department of

NATURAL RESOURCES

DIVISION OF OIL & GAS

HISTORICAL AND PROJECTED OIL AND GAS CONSUMPTION

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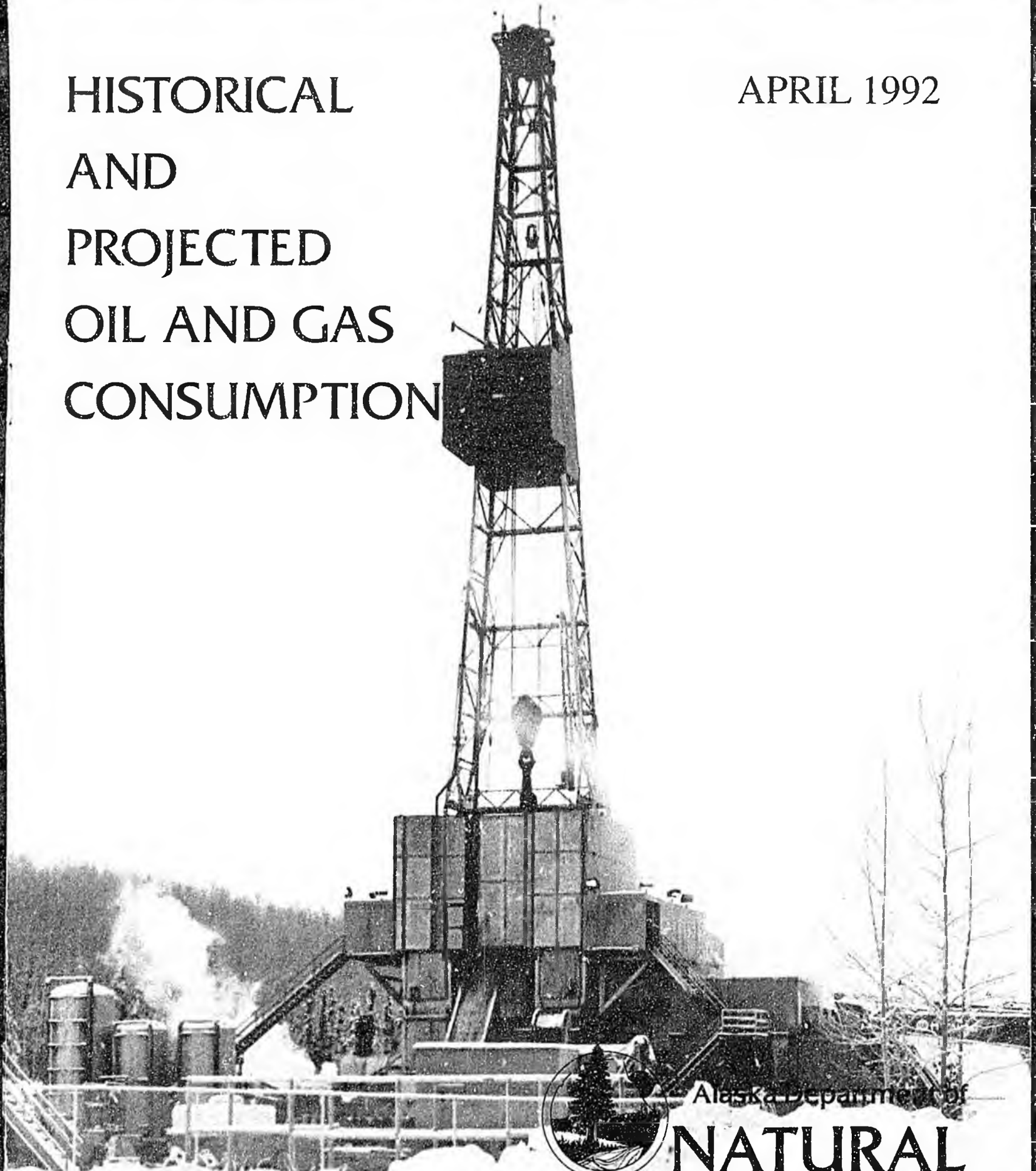

Alaska Department of
NATURAL RESOURCES
DIVISION OF OIL & GAS

Cover Photo: Arco BLT #1
Exploratory Well at Big Lake.
Alaska. Photo by Div. of
Oil & Gas Staff.

This publication was released by the Department of Natural Resources, Division of Oil and Gas. 1000 copies were produced at a cost of $1.88 per copy. The purpose of the publication is to inform the legislature and the public of the state's Historical and Projected Oil and Gas Consumption. This publication was printed in Anchorage.

STATE OF ALASKA

HISTORICAL AND PROJECTED OIL AND GAS CONSUMPTION

Walter J. Hickel
Governor

Harold C. Heinze
Commissioner
Department of Natural Resources

April 1992

Prepared for the Second Session
Seventeenth Alaska Legislature

TABLE OF CONTENTS

SECTION 1
RESERVES OF OIL AND NATURAL GAS

PROVEN RESERVES

Reserves is the volume of oil or gas that can be recovered from a reservoir under existing economic and operating conditions. A reserve estimate is a single volume which summarizes a range of scenarios: a low-range estimate assumes combinations of low prices and sub-standard reservoir performance, a mid-range estimate assumes stable prices and average reservoir performance, a high-range estimate assumes rising prices and better-than-predicted reservoir performance.

The Division of Oil and Gas (DO&G) estimates that Alaska's reserves are:

Oil: 7.0 billion barrels

Gas: 30.8 trillion cubic feet

North Slope fields hold 99% of the oil and 89% of the gas reserves. Reserves of Alaskan fields as of January 1, 1992 are listed on Table 1. DO&G Gas staff recalculated the reserves of the major fields this year. Estimates of the other fields were calculated in 1988 by the Alaska Oil and Gas Conservation Commission (AOGCC) and DO&G staff have subtracted subsequent production from these estimates to arrive at 1992 reserves.

ROYALTY RESERVES

The state's royalty share of reserves are:

Oil: 891 million barrels

Gas: 3.7 trillion cubic feet.

Table 1 lists the royalty share of reserves by region and field. The division calculated the royalty reserves for each field by multiplying the fields reserves by the respective royalty rate.

ESTIMATED REMAINING RESERVES AND ROYALTY SHARE, AS OF 1/1/92

TABLE 1

	OIL (MILLIONS OF BARRELS)						GAS (BILLIONS OF CUBIC FEET)					
	RESERVES			ROYALTY SHARE			RESERVES			ROYALTY SHARE		
	LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH	LOW	MID	HIGH
NORTH SLOPE												
DEVELOPED												
East Barrow	--	--	--	--	--	--	6	6	6 [1]	--	--	--
Endicott	194	252	282 [2]	27	35	39	563	763	1,163 [2]	79	107	163
Kuparuk River	823	1,058	1,173 [2]	103	132	147	343	468	618 [2]	43	59	77
Lisburne	70	90	100 [2]	9	11	13	770	870	970 [2]	96	109	121
Milne Point	67	97	117 [2]	12	17	21	--	--	--	--	--	--
Prudhoe Bay	3,532	4,537	5,037 [2]	442	567	630	25,479	25,479	25,479 [2][3]	3,185	3,185	3,185
South Barrow	--	--	--	--	--	--	5	5	5 [1]	--	--	--
UNDEVELOPED												
Beaufort Sea	0	180	300 [2]	0	36	60	--	--	--	--	--	--
Pt. Thomson/Flaxman Id	0	0	200 [2]	0	0	25	0	0	3,500 [2]	0	0	438
West Sak	0	310	1,000 [2]	0	39	125	--	--	--	--	--	--
Niakuk/Alapah	0	60	80 [2]	0	8	10	--	--	--	--	--	--
Point McIntyre	220	300	400 [2]	28	38	50	--	--	--	--	--	--
TOTAL	4,906	6,884	8,689	620	883	1,119	27,166	27,591	31,741	3,403	3,459	3,984
COOK INLET												
PROVEN AND DEVELOPED												
Beaver Creek		<1 [1]			0			128 [1]			0	
Beluga River		--			--			615 [2]			46	
Cannery Loop		--			--			124 [2]			5	
Granite Point		12 [2]			2			9 [1]			1	
Ivan River, Lewis River,		--										
Pretty Creek, Stump Lake		--			--			490 [2]			61	
Kenai		--			--			508 [2]			11	
McArthur River		40 [2]			5			477 [2]			60	
Middle Ground Shoal		15 [2]			2			<1 [1]			<1	
North Cook Inlet		--			--			597 [2]			75	
Swanson River		4 [1]			0			152 [1]			0	
Trading Bay		7 [2]			<1			27 [1]			3	
PROVEN BUT UNDEVELOPED OR SHUT-IN												
Birch Hill		--			--			11 [1]			0	
Falls Creek		--			--			13 [1]			2	
Nicolai Creek		--			--			3 [1]			<1	
North Fork		--			--			12 [1]			<1	
Sterling		--			--			23 [1]			<1	
West Foreland		--			--			20 [1]			0	
West Fork		--			--			6 [1]			<1	
TOTAL		78			8			3,215			263	
STATE												
TOTAL	4,984	6,962	8,767	628	891	1,128	30,381	30,806	34,956	3,666	3,722	4,247

[1] Alaska Oil and Gas Conservation Commission, "Estimate of Oil Reserves in Alaska" and "Estimate of Gas Reserves in Alaska". Estimates calculated as of 1/1/88, adjusted for subsequent production.
[2] William Van Dyke, Division of Oil and Gas.
[3] Not adjusted for future fuel use.
02/07/92

SECTION 2
PROJECTED PRODUCTION OF OIL

NORTH SLOPE

North Slope production of oil and other liquid hydrocarbons peaked at an average of 2.0 million barrels per day in 1988. Since then, production has declined to an average of 1.8 million barrels per day in 1991, despite a slight increase during the Gulf War. DO&G estimates that the combined production of the five operating fields and five planned fields will decline to 1.6 million barrels per day in 1995, to 1.1 million barrels per day in 2000, and to 109 thousand barrels per day in 2016. Cumulative production during this period will be about 7.2 billion barrels. Projected production between 1992 and 2016 is shown in Table 2.1 and Fig. 2A.

COOK INLET

Cook Inlet fields will continue to produce at least through the 1990s. DO&G projects the region's production for five years to 2000, a shorter span than for North Slope, because Cook Inlet production depends on economic factors which can not be reasonably estimated beyond five years. The projection does not include Swanson River and Beaver Creek fields, though they will continue producing oil and gas, because the state holds no leases in the fields.

Production will decline from 32 thousand barrels per day in 1992 to 14 thousand barrels per day in 2000. During this period the region will produce 72 million barrels.

AVAILABLE ROYALTY OIL

The state's estimated total royalty share of production will decline from 220 thousand barrels per day in 1992, to 203 thousand barrels per day in 1995, to 137 thousand barrels per day in 2000, and to 14 thousand barrels per day in 2016. Between 1992 and 2016, North Slope royalty production will be 916 million barrels and Cook Inlets royalty production will be 9 million barrels, for a state total of 926 million barrels.

Table 2.1, Table 2.2, and Fig. 2B show how much royalty oil the state has contracted to sell in-kind and how much will be available to sell in-value for the next 25 years. The state sells all Cook Inlet oil in-value, whereas it sells North Slope royalty oil both in-value and in-kind. The two North Slope in-kind contracts commit a maximum of 191 million barrels, which leaves a minimum of 735 billion barrels available for in-value sales. The Tesoro contract expires in 1995 and the Mapco contract expires in 2003. The state is negotiating with Petrostar for an in-kind sale of 30,000 barrels per day of Kuparuk royalty oil. If the legislature approves the contracts, oil deliveries may begin in late 1992.

PRODUCERS SHARE OF NORTH SLOPE PRODUCTION

Production projections from Table 2.1 for presently operating North Slope fields is repeated in Table 2.2 and the field production is then allocated to each of the field's producers.

PRODUCTION FORECAST AND AVAILABLE ROYALTY OIL

THOUSANDS OF BARRELS PER DAY

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
PRODUCTION FORECAST [1]													
NORTH SLOPE													
Prudhoe Bay	1,260	1,190	1,110	1,110	1,020	912	830	755	687	625	526	474	426
Kuparuk	310	310	300	280	250	220	190	170	150	125	105	90	75
Lisburne	40	40	34	27	22	17	14	11	10	9	7	5	-
Endicott [2]	110	94	83	72	63	55	47	40	34	29	24	21	18
Milne Point [3]	19	17	16	16	17	18	19	20	20	18	16	14	13
Prudhoe Bay Other	-	-	-	-	-	10	10	10	10	8	6	5	-
West Sak	-	-	-	6	12	12	12	25	25	50	50	75	75
Point McIntyre	-	20	80	80	80	80	72	65	58	52	47	41	36
Beaufort Sea	-	-	-	-	-	-	-	-	60	54	49	44	39
Niakuk/Alapah	-	-	-	20	20	20	20	17	14	12	10	9	7
TOTAL	1,739	1,671	1,623	1,611	1,484	1,344	1,214	1,113	1,068	982	840	778	689
COOK INLET [4]													
Granite Point	5.1	4.6	4.1	3.7	3.3	3.0	2.7	2.4	2.2				
McArthur River	17.5	15.8	14.2	12.8	11.5	10.3	9.3	8.4	7.5				
Trading Bay	3.0	2.7	2.4	2.2	2.0	1.8	1.6	1.4	1.3				
Middle Ground Shoal	6.6	5.9	5.3	4.8	4.3	3.9	3.5	3.2	2.8				
TOTAL	32.2	29.0	26.1	23.5	21.1	19.0	17.1	15.4	13.9				
STATE													
TOTAL	1,771	1,700	1,649	1,634	1,505	1,363	1,231	1,128	1,082	982	840	778	689
AVAILABLE ROYALTY OIL													
NORTH SLOPE													
Prudhoe Bay [5]	158	149	139	139	128	114	104	94	86	78	66	59	53
Kuparuk [5]	39	39	38	35	31	28	24	21	19	16	13	11	9
Lisburne [5]	5	5	4	3	3	2	2	1	1	1	1	1	-
Endicott [2] [6]	15	13	12	10	9	8	7	6	5	4	3	3	3
Milne Point [3] [7]	3	3	3	3	3	3	3	3	3	3	3	2	2
Prudhoe Bay Other [5]	-	-	-	-	-	1	1	1	1	1	1	1	-
West Sak [5]	-	-	-	1	2	2	2	3	3	6	6	9	9
Point McIntyre [5]	-	-	10	10	10	10	9	8	7	7	6	5	5
Beaufort Sea [8]	-	-	-	-	-	-	-	-	10	9	8	7	6
Niakuk/Alapah [5]	-	-	-	3	3	3	3	2	2	2	1	1	1
TOTAL	220	209	205	203	187	170	153	141	137	126	108	100	88
COOK INLET [4][5]													
Granite Point	0.6	0.6	0.5	0.5	0.4	0.4	0.3	0.3	0.3				
McArthur River	2.2	2.0	1.8	1.6	1.4	1.3	1.2	1.0	0.9				
Trading Bay	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2				
Middle Ground Shoal	0.8	0.7	0.7	0.6	0.5	0.5	0.4	0.4	0.4				
TOTAL	4.0	3.6	3.3	2.9	2.6	2.4	2.1	1.9	1.7				
STATE													
TOTAL	224	212	208	206	190	172	155	143	139	126	108	100	88
IN-KIND ROYALTY OIL SALES													
Mapco [9]	35	35	35	35	35	35	35	35	35	35	35	35	
Tesoro [10]	38	34	30										
TOTAL	73	69	65	35	35	35	35	35	35	35	35	35	
IN-VALUE ROYALTY OIL													
TOTAL	151	144	143	171	155	137	120	108	104	91	73	65	88

Note: numbers may not sum to totals due to rounding errors.
[1] Includes oil, condensate, and NGL.
[2] Includes Sag Delta North.
[3] Includes Schrader Bluff.
[4] Projection is not extended beyond 2000 because production is very sensitive to short term economics.
[5] 12.5% of production.
[6] 14.0% of production (weighted average).
[7] 18.0% of production (weighted average).
[8] Calculated as 16% of production. Royalty rate is 20% but state controlls only 80% of production.
[9] 35,000 BPD of Prudhoe royalty production.
[10] Maximum 24.533% of Prudhoe Bay royalty production. Contract expires January 1995.
02/03/92

TABLE 2.1

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL (MBbl)
PRODUCTION FORECAST [1]													
NORTH SLOPE													
Prudhoe Bay	383	345	293	249	212	180	153	130	110	94	80	68	4,826,030
Kuparuk	65	55	45	35	30	25	20	20	15	15	10	10	1,065,800
Lisburne	-	-	-	-	-	-	-	-	-	-	-	-	86,140
Endicott [2]	16	-	-	-	-	-	-	-	-	-	-	-	257,690
Milne Point [3]	12	10	8	6	5	-	-	-	-	-	-	-	96,360
Prudhoe Bay Other	-	-	-	-	-	-	-	-	-	-	-	-	21,535
West Sak	75	67	61	55	50	42	35	30	26	22	18	16	306,235
Point McIntyre	30	26	22	19	16	14	12	10	8	7	6	5	323,390
Beaufort Sea	35	32	29	26	23	21	19	17	15	14	12	10	182,135
Niakuk/Alapah	6	5	5	-	-	-	-	-	-	-	-	-	60,225
TOTAL	622	540	463	390	336	282	239	207	174	152	126	109	7,225,540
COOK INLET [4]													
Granite Point													11,403
McArthur River													39,129
Trading Bay													6,708
Middle Ground Shoal													14,757
TOTAL													71,996
STATE													
TOTAL	622	540	463	390	336	282	239	207	174	152	126	109	7,297,536
AVAILABLE ROYALTY OIL													
NORTH SLOPE													
Prudhoe Bay [5]	48	43	37	31	27	23	19	16	14	12	10	9	603,254
Kuparuk [5]	8	7	6	4	4	3	3	3	2	2	1	1	133,225
Lisburne [5]	-	-	-	-	-	-	-	-	-	-	-	-	10,768
Endicott [2] [6]	2	-	-	-	-	-	-	-	-	-	-	-	36,0.7
Milne Point [3] [7]	2	2	1	1	1	-	-	-	-	-	-	-	16,381
Prudhoe Bay Other [5]	-	-	-	-	-	-	-	-	-	-	-	-	2,692
West Sak [5]	9	8	8	7	6	5	4	4	3	3	2	2	38,279
Point McIntyre [5]	4	3	3	2	2	2	2	1	1	1	1	1	39,511
Beaufort Sea [8]	6	5	5	4	4	3	3	3	2	2	2	2	29,142
Niakuk/Alapah [5]	1	1	1	-	-	-	-	-	-	-	-	-	7,528
TOTAL	80	69	59	50	43	36	31	26	22	19	16	14	916,856
COOK INLET [4][5]													
Granite Point													1,425
McArthur River													4,891
Trading Bay													838
Middle Ground Shoal													1,845
TOTAL													9,000
STATE													
TOTAL	80	69	59	50	43	36	31	26	22	19	16	14	925,856
IN-KIND ROYALTY OIL SALES													
Mapco [9]													153,300
Tesoro [10]													37,284
TOTAL													190,584
IN-VALUE ROYALTY OIL													
TOTAL	80	69	59	50	43	36	31	26	22	19	16	14	735,271

PRODUCTION FORECAST AND AVAILABLE ROYALTY OIL FOR PRODUCING NORTH SLOPE FIELDS

THOUSANDS OF BARRELS PER DAY

	Working Interest	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
PRODUCTION FORECAST FOR NORTH SLOPE [1]														
Prudhoe Bay [2]		1,260	1,190	1,110	1,110	1,020	912	830	755	687	625	526	474	426
Amerada	0.54%	7	6	6	6	5	5	4	4	4	3	3	3	2
Arco	21.78%	274	259	242	242	222	199	181	164	150	136	115	103	93
BP	50.68%	639	603	563	563	517	462	421	383	348	317	267	240	216
Chevron	0.67%	8	8	7	7	7	6	6	5	5	4	4	3	3
Exxon	21.78%	274	259	242	242	222	199	181	164	150	136	115	103	93
LL&E	0.04%	1	-	-	-	-	-	-	-	-	-	-	-	-
Marathon	0.05%	1	1	1	1	-	-	-	-	-	-	-	-	-
Mobil	1.89%	24	23	21	21	19	17	16	14	13	12	10	9	8
Phillips	1.88%	24	22	21	21	19	17	16	14	13	12	10	9	8
Shell	0.14%	2	2	2	2	1	1	1	1	1	1	1	1	1
Texaco	0.55%	7	7	6	6	6	5	5	4	4	3	3	3	2
Kuparuk		310	310	300	280	250	220	190	170	150	125	105	90	75
Arco	56.30%	175	175	169	158	141	124	107	96	84	70	59	51	42
BP	38.76%	120	120	116	109	97	85	74	66	58	48	41	35	29
Chevron	0.11%	-	-	-	-	-	-	-	-	-	-	-	-	-
Exxon	0.22%	1	1	1	1	1	-	-	-	-	-	-	-	-
Mobil	0.37%	1	1	1	1	1	1	1	1	1	-	-	-	-
Union	4.25%	13	13	13	12	11	9	8	7	6	5	4	4	3
Lisburne		40	40	34	27	22	17	14	11	10	9	7	5	-
Arco	40.00%	16	16	14	11	9	7	6	4	4	4	3	2	-
BP	20.00%	8	8	7	5	4	3	3	2	2	2	1	1	-
Exxon	40.00%	16	16	14	11	9	7	6	4	4	4	3	2	-
Endicott [3]		110	94	83	72	63	55	47	40	34	29	24	21	18
Amoco	10.49%	12	10	9	8	7	6	5	4	4	3	3	2	2
Arco	0.02%	-	-	-	-	-	-	-	-	-	-	-	-	-
BP	56.78%	62	53	47	41	36	31	27	23	19	16	14	12	10
CIRI	0.65%	1	1	1	-	-	-	-	-	-	-	-	-	-
Doyon	0.13%	-	-	-	-	-	-	-	-	-	-	-	-	-
Exxon	21.02%	23	20	17	15	13	12	10	8	7	6	5	4	4
NANA	0.39%	-	-	-	-	-	-	-	-	-	-	-	-	-
Unocal	10.52%	12	10	9	8	7	6	5	4	4	3	3	2	2
Milne Point [4]		19	17	16	16	17	18	19	20	20	18	16	14	13
Chevron	17.37%	3	3	3	3	3	3	3	3	3	3	3	2	2
Conoco	72.15%	14	12	12	12	12	13	14	14	14	13	12	10	9
Oxy	10.48%	2	2	2	2	2	2	2	2	2	2	2	1	1
TOTAL		1,739	1,651	1,543	1,505	1,372	1,222	1,100	996	901	806	678	604	532
AVAILABLE ROYALTY OIL														
Prudhoe Bay [5]		158	149	139	139	128	114	104	94	86	78	66	59	53
Kuparuk [5]		39	39	38	35	31	28	24	21	19	16	13	11	9
Lisburne [5]		5	5	4	3	3	2	2	1	1	1	1	1	-
Endicott [3][6]		15	13	12	10	9	8	7	6	5	4	3	3	3
Milne Point [4][7]		3	3	3	3	3	3	3	4	4	3	3	3	2
TOTAL		220	209	195	190	173	155	139	126	114	102	86	77	67
IN-KIND ROYALTY OIL SALES														
Mapco [8]		35	35	35	35	35	35	35	35	35	35	35	35	35
Tesoro [9]		39	36	34	34									
TOTAL		74	71	69	69	35	35	35	35	35	35	35	35	35
IN-VALUE ROYALTY OIL														
TOTAL		146	137	126	121	138	120	104	91	79	67	51	42	32

Note: numbers may not sum to totals due to rounding errors.
[1] Oil, condensate, and NGL.
[2] Oil Rim %.
[3] Does not include Sag Delta North.
[4] Does not include Schrader Bluff.
[5] 12.5% of production.
[6] 14.0% of production (weighted average).
[7] 18.0% of production (weighted average).
[8] 35,000 BPD of Prudhoe royalty production.
[9] Maximum 24.533% of Prudhoe Bay royalty production. Contract expires January 1995.
02/03/92

TABLE 2.2

		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL (MBbl)
PRODUCTION FORECAST FOR NORTH SLOPE [1]														
Prudhoe Bay [2]		383	345	293	249	212	180	153	130	110	94	80	68	4,826,030
Amerada	0.54%	2	2	2	1	1	1	1	1	1	1	-	-	25,672
Arco	21.78%	83	75	64	54	46	39	33	28	24	20	17	15	1,051,187
BP	50.68%	194	175	149	126	107	91	78	66	56	48	41	34	2,446,250
Chevron	0.67%	3	2	2	2	1	1	1	1	1	1	1	-	32,256
Exxon	21.78%	83	75	64	54	46	39	33	28	24	20	17	15	1,051,075
LL&E	0.04%	-	-	-	-	-	-	-	-	-	-	-	-	183
Marathon	0.05%	-	-	-	-	-	-	-	-	-	-	-	-	851
Mobil	1.89%	7	7	6	5	4	3	3	2	2	2	2	1	91,295
Phillips	1.88%	7	6	6	5	4	3	3	2	2	2	2	1	90,760
Shell	0.14%	1	-	-	-	-	-	-	-	-	-	-	-	5,683
Texaco	0.55%	2	2	2	1	1	1	1	1	1	1	-	-	26,173
Kuparuk		65	55	45	35	30	25	20	20	15	15	10	10	1,065,800
Arco	56.30%	37	31	25	20	17	14	11	11	8	8	6	6	600,261
BP	38.76%	25	21	17	14	12	10	8	8	6	6	4	4	413,207
Chevron	0.11%	-	-	-	-	-	-	-	-	-	-	-	-	0
Exxon	0.22%	-	-	-	-	-	-	-	-	-	-	-	-	1,155
Mobil	0.37%	-	-	-	-	-	-	-	-	-	-	-	-	2,914
Union	4.25%	3	2	2	1	1	1	1	1	1	1	-	-	44,998
Lisburne		-	-	-	-	-	-	-	-	-	-	-	-	86,140
Arco	40.00%	-	-	-	-	-	-	-	-	-	-	-	-	34,602
BP	20.00%	-	-	-	-	-	-	-	-	-	-	-	-	17,301
Exxon	40.00%	-	-	-	-	-	-	-	-	-	-	-	-	34,602
Endicott [3]		16	-	-	-	-	-	-	-	-	-	-	-	257,690
Amoco	10.49%	2	-	-	-	-	-	-	-	-	-	-	-	27,080
Arco	0.02%	-	-	-	-	-	-	-	-	-	-	-	-	0
BP	56.78%	9	-	-	-	-	-	-	-	-	-	-	-	146,530
CIRI	0.65%	-	-	-	-	-	-	-	-	-	-	-	-	679
Doyon	0.13%	-	-	-	-	-	-	-	-	-	-	-	-	0
Exxon	21.02%	3	-	-	-	-	-	-	-	-	-	-	-	54,245
NANA	0.39%	-	-	-	-	-	-	-	-	-	-	-	-	1
Unocal	10.52%	2	-	-	-	-	-	-	-	-	-	-	-	27,141
Milne Point [4]		12	10	8	6	5	-	-	-	-	-	-	-	96,360
Chevron	17.37%	2	2	1	1	1	-	-	-	-	-	-	-	16,805
Conoco	72.15%	9	7	6	4	4	-	-	-	-	-	-	-	69,786
Oxy	10.48%	1	1	1	1	1	-	-	-	-	-	-	-	10,134
TOTAL		476	410	346	290	247	205	173	150	125	109	90	78	6,332,020
AVAILABLE ROYALTY OIL														
Prudhoe Bay [5]		48	43	37	31	27	23	19	16	14	12	10	9	603,254
Kuparuk [5]		8	7	6	4	4	3	3	3	2	2	1	1	133,225
Lisburne [5]		-	-	-	-	-	-	-	-	-	-	-	-	10,768
Endicott [3][6]		2	-	-	-	-	-	-	-	-	-	-	-	36,077
Milne Point [4][7]		2	2	1	1	1	-	-	-	-	-	-	-	17,345
TOTAL		60	52	44	37	31	26	22	19	16	14	11	10	800,668
IN-KIND ROYALTY OIL SALES														
Mapco [8]														166,075
Tesoro [9]														52,272
TOTAL														218,347
IN-VALUE ROYALTY OIL														
TOTAL		60	52	44	37	31	26	22	19	16	14	11	10	582,320

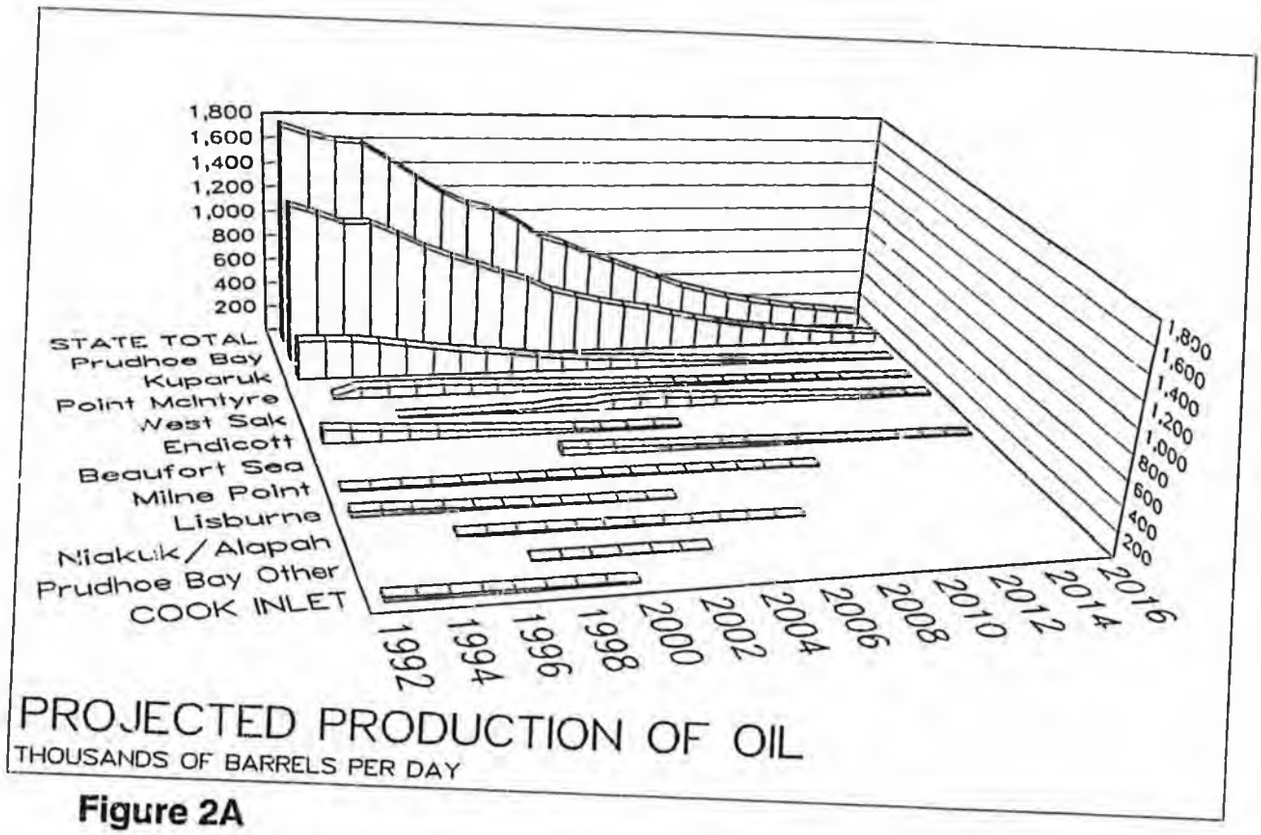

Figure 2A

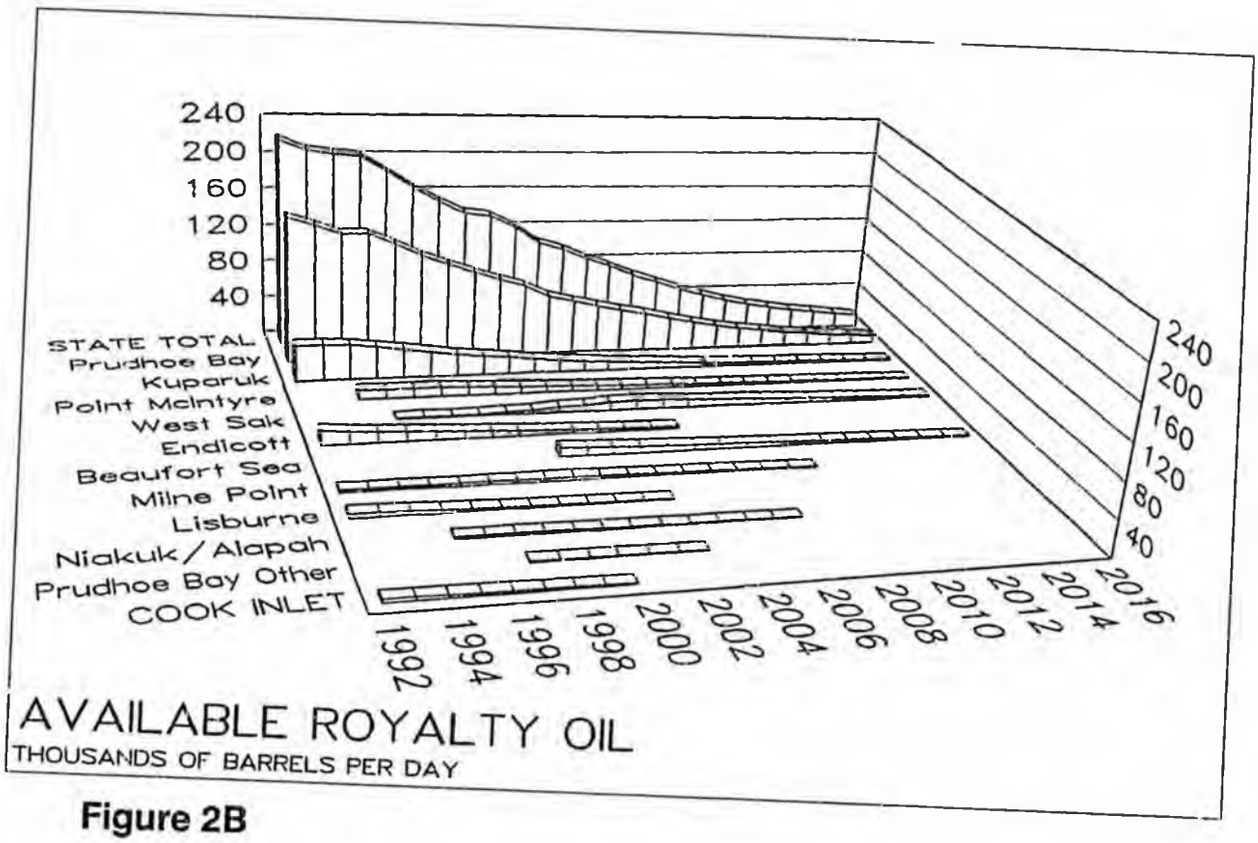

Figure 2B

SECTION 3
HISTORICAL PRODUCTION OF OIL

Alaska produces oil from two regions, Cook Inlet and North Slope. Katalla field on the Gulf of Alaska southeast of Cordova did produce a total of 154,000 barrels of oil, but the on-site refinery burned in 1933 and was not replaced. Fig. 3B list the annual production from the fields in each region.

NORTH SLOPE

North Slope oil production began from Prudhoe Bay field. during development of the field, between 1969 and 1977, small amounts of oil and gas were produced. Some of this was used for on-site fuel and the rest was injected. Commercial production began in 1977 when the TAPS line was completed. North Slope production peaked at an average of 744 million barrels per year in 1988 and declined to 654 million barrels in 1990. The Gulf War in January 1991 boosted that year's production to 665 millon barrels but daily production has since fallen below pre-war levels.

COOK INLET

Cook Inlet production began at Swanson River field in 1959, peaked in 1970 at 83 million barrels per year and subsequently declined to 15.4 million barrels in 1991. By the end of 1991 Cook Inlet fields had produced 1.1 billion barrels of oil.

The Table 3 data in this year's report are significantly revised from last year's. First, the historical data now extends back to the start-up of Swanson River field in 1958, and the beginning of Alaska's oil industry. Second, production figures now incorporate all the data revisions which producers have submitted to AOGCC through February 1992.

HISTORICAL OIL PRODUCTION

MILLIONS OF BARRELS PER YEAR

	Type*	1958	1959	1960	1961	1962	1963	1964	1965	1966
NORTH SLOPE										
Endicott	oil	-	-	-	-	-	-	-	-	-
	NGL	-	-	-	-	-	-	-	-	-
	inj	-	-	-	-	-	-	-	-	-
Kuparuk River	oil	-	-	-	-	-	-	-	-	-
	NGL	-	-	-	-	-	-	-	-	-
Lisburne	oil	-	-	-	-	-	-	-	-	-
	NGL	-	-	-	-	-	-	-	-	-
Milne Point	oil	-	-	-	-	-	-	-	-	-
Prudhoe Bay	oil[1]	-	-	-	-	-	-	-	-	-
	NGL	-	-	-	-	-	-	-	-	-
	inj	-	-	-	-	-	-	-	-	-
Sag Delta	oil	-	-	-	-	-	-	-	-	-
	NGL	-	-	-	-	-	-	-	-	-
Schrader Bluff	oil	-	-	-	-	-	-	-	-	-
West Sak	oil	-	-	-	-	-	-	-	-	-
TOTAL	oil[1]	-	-	-	-	-	-	-	-	-
	NGL	-	-	-	-	-	-	-	-	-
	liq	-	-	-	-	-	-	-	-	-
COOK INLET										
Beaver Creek	oil	-	-	-	-	-	-	-	-	-
Granite Point	oil	-	-	-	-	-	-	-	0.002	-
Kenai	NGL	-	-	-	-	-	-	-	-	-
McArthur River	oil	-	-	-	-	-	-	-	0.001	0.003
	NGL	-	-	-	-	-	-	-	-	-
Middle Ground Shoal	oil	-	-	-	-	-	-	-	0.027	2.649
Redoubt Shoal	oil	-	-	-	-	-	-	-	-	-
Swanson River	oil	0.036	0.187	0.558	6.327	10.259	10.740	11.054	11.099	11.712
	NGL	-	-	-	-	-	-	-	-	-
Trading Bay	oil	-	-	-	-	-	-	-	-	-
	NGL	-	-	-	-	-	-	-	-	-
TOTAL	oil[1]	0.036	0.187	0.558	6.327	10.259	10.740	11.054	11.131	14.364
	NGL	-	-	-	-	-	-	-	-	-
	liq	0.036	0.187	0.558	6.327	10.259	10.740	11.054	11.131	14.364
STATE										
TOTAL	oil[1]	0.036	0.187	0.558	6.327	10.259	10.740	11.054	11.131	14.364
	NGL	-	-	-	-	-	-	-	-	-
	liq	0.036	0.187	0.558	6.327	10.259	10.740	11.054	11.131	14.364
TAPS FLOW [2]										
Throughput at PS #1		-	-	-	-	-	-	-	-	-
Liftings at Valdez		-	-	-	-	-	-	-	-	-

* oil = crude oil, NGL = natural gas liquids, inj = injected, Liq = liquids (oil + NGL)
Source: Alaska Oil and Gas Conservation Commission (OGCC), "Alaska Production Summary by Field and Pool", monthly repor..
[1] Includes condensates.
[2] 1977–81: Alaska Oil and Gas Conservation Commission, "Statistical Report."
1982–91: Alyeska Pipeline Service Co.
02/08/92

TABLE 3

		1967	1968	1969	1970	1971	1972	1973	1974	1975
NORTH SLOPE										
Endicott	oil	-	-	-	-	-	-	-	-	-
	NGL	-	-	-	-	-	-	-	-	-
	inj	-	-	-	-	-	-	-	-	-
Kuparuk River	oil	-	-	-	-	-	-	-	-	-
	NGL	-	-	-	-	-	-	-	-	-
Lisburne	oil	-	-	-	-	-	-	-	-	-
	NGL	-	-	-	-	-	-	-	-	-
Milne Point	oil	-	-	-	-	-	-	-	-	-
Prudhoe Bay	oil[1]	-	-	0.277	1.193	1.157	0.922	0.944	2.170	2.870
	NGL	-	-	-	-	-	-	-	-	-
	inj	-	-	0.217	0.879	0.833	0.792	0.817	1.640	2.147
Sag Delta	oil	-	-	-	-	-	-	-	-	-
	NGL	-	-	-	-	-	-	-	-	-
Schrader Bluff	oil	-	-	-	-	-	-	-	-	-
West Sak	oil	-	-	-	-	-	-	-	-	-
TOTAL	oil[1]	-	-	0.060	0.320	0.323	0.130	0.127	0.529	0.722
	NGL	-	-	-	-	-	-	-	-	-
	liq	-	-	0.060	0.320	0.323	0.130	0.127	0.529	0.722
COOK INLET										
Beaver Creek	oil	-	-	-	-	-	0.002	0.416	0.375	0.322
Granite Point	oil	7.052	13.131	9.183	7.522	5.577	4.663	4.767	4.237	4.361
Kenai	NGL	-	-	0.002	0.002	0.001	0.002	0.001	<.001	0.001
McArthur River	oil	0.749	21.782	31.301	40.165	40.537	40.774	38.884	39.145	40.876
	NGL	-	-	-	0.426	0.593	0.570	0.661	0.654	0.644
Middle Ground Shoal	oil	7.404	14.134	10.467	12.719	11.304	9.720	10.239	9.001	8.670
Redoubt Shoal	oil	-	0.002	-	-	-	-	-	-	-
Swanson River	oil	12.980	13.619	13.151	12.408	11.466	8.896	10.064	9.765	8.754
	NGL	-	0.004	0.070	0.063	0.077	0.012	0.098	0.096	0.089
Trading Bay	oil	0.729	3.477	9.936	9.600	8.744	8.585	7.825	7.552	6.128
	NGL	-	-	-	0.039	0.039	0.025	0.051	0.043	0.031
TOTAL	oil[1]	28.913	66.146	74.038	82.415	77.628	72.640	72.196	70.074	69.111
	NGL	-	0.004	0.073	0.530	0.710	0.608	0.812	0.793	0.765
	liq	28.913	66.150	74.111	82.945	78.338	73.248	73.007	70.867	69.876
STATE										
TOTAL	oil[1]	28.913	66.146	74.098	82.735	77.952	72.770	72.322	70.603	69.833
	NGL	-	0.004	0.073	0.530	0.710	0.608	0.812	0.793	0.765
	liq	28.913	66.150	74.171	83.265	78.661	73.378	73.134	71.396	70.598
TAPS FLOW [2]										
Throughput at PS #1		-	-	-	-	-	-	-	-	-
Liftings at Valdez		-	-	-	-	-	-	-	-	-

HISTORICAL OIL PRODUCTION

MILLIONS OF BARRELS PER YEAR

		1976	1977	1978	1979	1980	1981	1982	1983	1984
NORTH SLOPE										
Endicott	oil	-	-	-	-	-	-	-	-	-
	NGL	-	-	-	-	-	-	-	-	-
	inj	-	-	-	-	-	-	-	-	-
Kuparuk River	oil	-	-	-	-	-	1.092	32.406	39.876	46.169
	NGL	-	-	-	-	-	-	-	-	-
Lisburne	oil	-	-	-	-	-	0.002	0.208	0.087	0.294
	NGL	-	-	-	-	-	-	-	-	-
Milne Point	oil	-	-	-	-	-	-	-	-	-
Prudhoe Bay	oil[1]	4.604	115.258	397.679	468.412	555.394	555.170	558.889	560.837	561.952
	NGL	-	-	-	-	0.254	0.450	0.500	0.311	0.317
	inj	3.611	2.075	-	-	-	-	-	-	-
Sag Delta	oil	-	-	-	-	-	-	-	-	-
	NGL	-	-	-	-	-	-	-	-	-
Schrader Bluff	oil	-	-	-	-	-	-	-	-	-
West Sak	oil	-	-	-	-	-	-	-	0.006	0.124
TOTAL	oil[1]	0.993	113.183	397.679	468.412	555.394	556.264	591.503	600.806	608.539
	NGL	-	-	-	-	0.254	0.450	0.500	0.311	0.317
	liq	0.993	113.183	397.679	468.412	555.648	556.714	592.003	601.117	608.856
COOK INLET										
Beaver Creek	oil	0.302	0.276	0.223	0.211	0.214	0.180	0.182	0.170	0.159
Granite Point	oil	4.471	4.711	4.867	4.613	4.394	3.975	3.467	3.550	3.287
Kenai	NGL	0.001	<.001	<.001	<.001	-	-	-	-	-
McArthur River	oil	35.810	33.235	30.223	25.440	20.894	18.022	15.806	13.564	11.707
	NGL	0.653	0.733	0.730	0.541	0.412	0.484	0.449	0.332	0.317
Middle Ground Shoal	oil	8.864	7.617	6.382	5.423	4.854	4.291	3.573	3.381	3.238
Redoubt Shoal	oil	-	-	-	-	-	-	-	-	-
Swanson River	oil	7.591	5.981	4.870	4.344	3.724	2.938	2.999	3.017	2.517
	NGL	0.090	0.086	0.065	0.080	0.064	0.048	0.048	0.045	0.039
Trading Bay	oil	5.366	4.276	3.567	2.892	2.167	1.669	1.384	1.081	1.076
	NGL	0.026	0.044	0.019	0.014	0.006	0.005	0.002	0.004	0.005
TOTAL	oil[1]	62.404	56.095	50.132	42.923	36.247	31.075	27.411	24.763	21.985
	NGL	0.770	0.863	0.815	0.635	0.481	0.538	0.499	0.381	0.361
	liq	63.175	56.958	50.946	43.558	36.728	31.613	27.910	25.144	22.346
STATE										
TOTAL	oil[1]	63.398	169.278	447.810	511.335	591.641	587.339	618.914	625.569	630.524
	NGL	0.770	0.863	0.815	0.635	0.735	0.988	0.999	0.692	0.678
	liq	64.168	170.141	448.625	511.970	592.376	588.327	619.912	626.261	631.201
TAPS FLOW [2]										
Throughput at PS #1		-	112.315	397.149	467.939	554.934	556.067	591.142	600.859	608.836
Liftings at Valdez		-	96.669	394.080	464.394	548.895	547.026	583.370	592.319	596.588

TABLE 3 – CONTINUED

		1985	1986	1987	1988	1989	1990	1991	Cum. Prod. (MMBbl)	Field Deplstn.
NORTH SLOPE										
Endicott	oil	–	0.011	8.796	37.441	35.746	36.181	38.996	157.171	39%
	NGL	–	–	0.003	0.492	0.839	0.845	1.170	3.348	
	inj	–	0.007	0.014	–	–	–	–	0.021	
Kuparuk River	oil	78.926	93.900	102.448	110.891	109.770	107.206	113.532	836.222	44%
	NGL	0.761	1.072	1.257	0.256	–	–	–	3.346	
Lisburne	oil	1.123	3.594	10.158	14.773	13.091	14.466	13.315	77.111	48%
	NGL	–	–	0.458	1.008	1.093	1.204	1.337	5.099	
Milne Point	oil	0.704	4.709	0.040	–	3.715	6.624	6.701	22.494	19%
Prudhoe Bay	oil[1]	568.534	561.538	572.045	559.412	505.940	470.140	465.399	7,490.736	63%
	NGL	0.056	0.230	14.610	19.274	16.928	16.094	21.307	90.331	
	inj	–	–	–	–	–	–	–	13.013	
Sag Delta	oil	–	–	–	–	0.349	1.542	2.309	4.200	ND
	NGL	–	–	–	–	0.005	0.028	0.048	0.080	
Schrader Bluff	oil	–	–	–	–	–	0.004	0.756	0.760	ND
West Sak	oil	0.326	0.300	–	–	–	–	–	0.755	0%
TOTAL	oil[1]	649.613	664.045	699.472	722.517	668.611	636.164	641.009	8,576.415	
	NGL	0.817	1.302	16.328	21.029	18.864	18.171	23.861	102.204	
	liq	650.430	665.347	715.799	743.546	687.476	654.335	664.870	8,678.619	
COOK INLET										
Beaver Creek	oil	0.146	0.158	0.185	0.141	0.227	0.212	0.179	4.279	81%
Granite Point	oil	3.052	3.169	2.803	2.677	2.275	1.462	2.064	115.332	91%
Kenai	NGL	–	–	–	–	–	–	–	0.012	NA
McArthur River	oil	7.454	7.942	7.375	7.143	6.955	4.265	7.250	547.303	93%
	NGL	0.194	0.228	0.196	0.162	–	–	–	8.979	
Middle Ground Shoal	oil	3.098	3.211	2.834	2.742	2.769	2.688	2.670	163.968	92%
Redoubt Shoal	oil	–	–	–	–	–	–	–	0.002	ND
Swanson River	oil	2.165	2.055	2.059	2.127	1.875	1.878	1.962	215.177	98%
	NGL	0.026	0.054	0.030	0.033	0.024	0.019	0.023	1.283	
Trading Bay	oil	1.029	1.046	0.935	0.886	1.264	0.643	1.216	93.074	93%
	NGL	0.004	0.002	0.001	0.000	0.000	0.000	0.000	0.360	
TOTAL	oil[1]	16.944	17.580	16.191	15.716	15.366	11.147	15.340	1,139.135	
	NGL	0.223	0.284	0.227	0.195	0.024	0.019	0.023	10.633	
	liq	17.167	17.865	16.418	15.911	15.390	11.167	15.363	1,149.768	
STATE										
TOTAL	oil[1]	666.557	681.625	715.662	738.233	683.978	647.311	656.349	9,715.550	
	NGL	1.040	1.586	16.555	21.224	18.888	18.191	23.884	112.837	
	liq	667.597	683.211	732.217	759.457	702.866	665.502	680.233	9,828.388	
TAPS FLOW [2]										
Throughput at PS #1		649.887	665.435	716.662	743.302	688.062	654.551	665.199		
Liftings at Valdez		643.512	603.028	700.878	736.047	672.461	636.199	647.345		

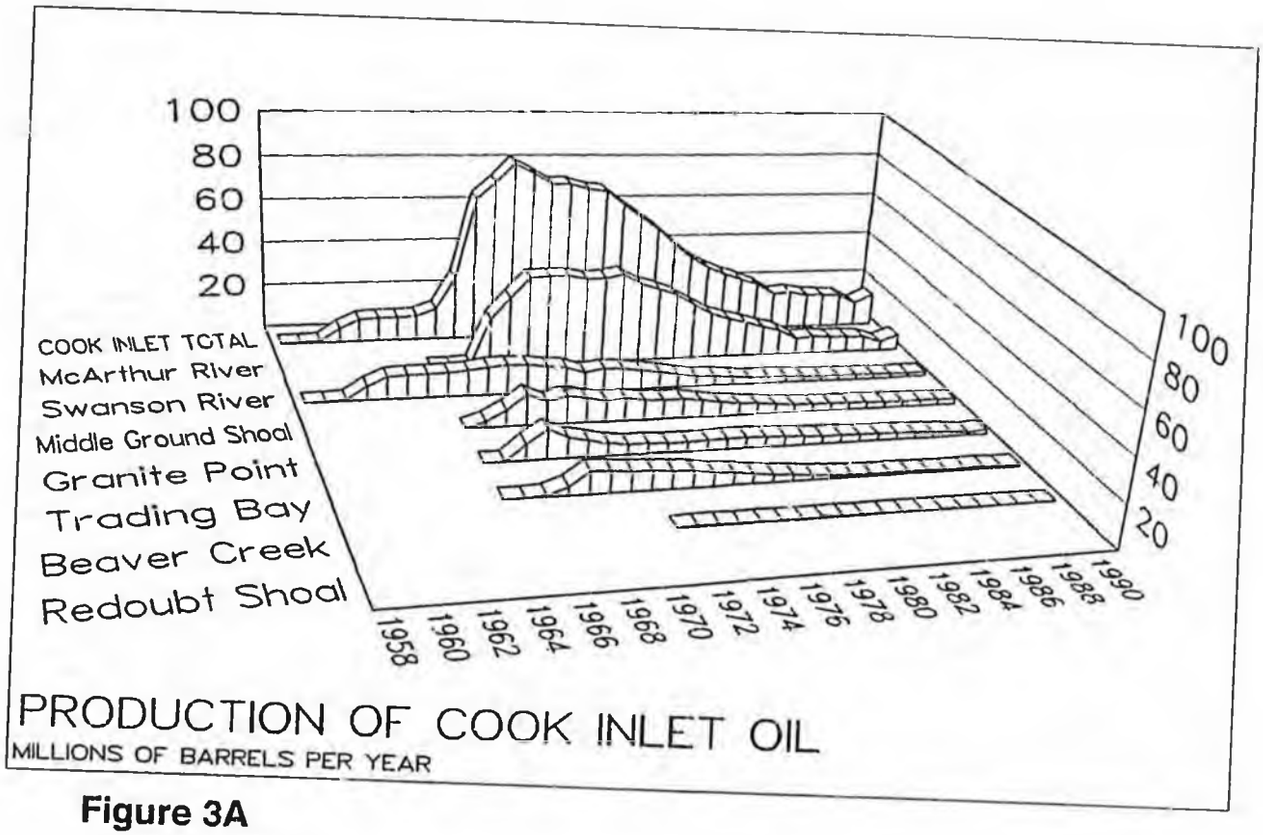

Figure 3A

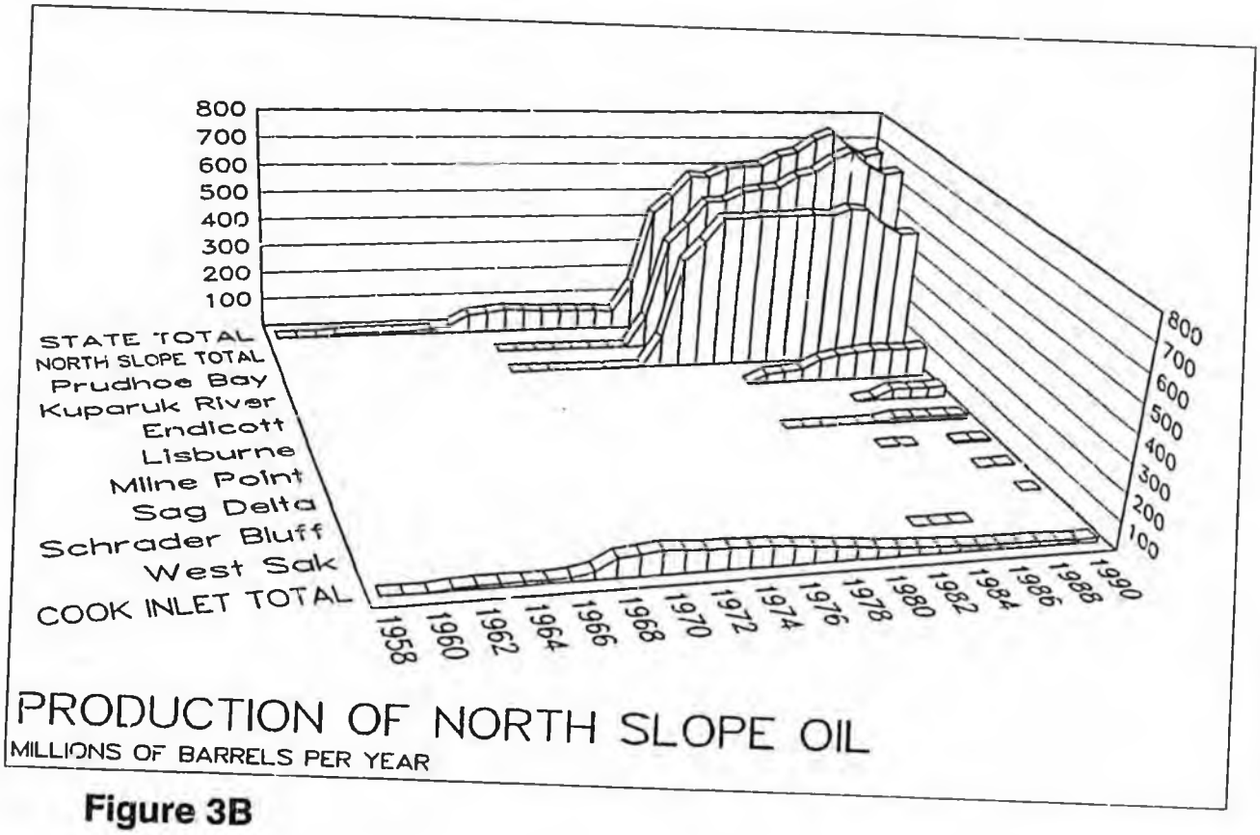

Figure 3B

SECTION 4
HISTORICAL PRODUCTION OF NATURAL GAS

A discussion of natural gas production uses several terms that are unique to the industry. The terms dry gas and casinghead gas refer to the reservoir source of the gas. Alaska produces gas from three types of reservoirs, those which 1) contain only gas, 2) contain oil with dissolved gas, and 3) contain oil with dissolved gas and which also have gas caps which contain only gas. Gas which has not been dissolved in oil is termed dry gas whereas gas which has been separated from oil is termed casinghead gas.

Three production terms, extraction, injection, and production, refer to the disposition of gas after it emerges from a well. Oil and dissolved gas and oil are extracted from the reservoir and separated. Gas which is sold or consumed as fuel or raw material is termed produced but gas which is injected back into the reservoir is not considered produced because it is still available for consumption. Table 4, Fig. 4A, and Fig. 4B show how much dry and casinghead gas has been extracted, injected, and produced from each field.

Cook Inlet and North Slope are the only regions currently producing natural gas. The production regimes of the two regions are very different because their markets are very different. The only market for North Slope, at present, is as fuel for oil production facilities and related activities and, consequently, most of the extracted gas is injected. Cook Inlet fields, however, lie near Anchorage and Kenai markets, so nearly all extracted gas is consumed and relatively little is injected.

NORTH SLOPE

Alaskan gas production began on North slope in 1946 from South Barrow field, which still produces gas for local consumption in Barrow. Prudhoe Bay oil field was discovered in 1969 and during the development of the field some gas was produced for fuel. Large scale gas production began in 1977 when TAPS was completed and commercial oil production began. Gas production has grown each year, to 248 billion cubic feet in 1991, and is expected to increase for the next several years, whether or not a gas pipeline is built. Cumulatively, North Slope fields have produced a net 1.7 trillion cubic feet by the end of 1991.

COOK INLET

Cook Inlet gas production began from Swanson River field in 1954. Production rose to an average of 309 billion cubic feet per year in 1982 and has varied to an average of 308 billion cubic feet per year in 1991. The region's fields have produced a cumulative net 4.1 trillion cubic feet by the end of 1991.

HISTORICAL GAS PRODUCTION

BILLIONS OF CUBIC FEET PER YEAR

	Type*	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
NORTH SLOPE											
East Barrow	dry	-	-	-	-	-	-	-	-	-	-
Endicott	csg	-	-	-	-	-	-	-	-	-	-
	inj	-	-	-	-	-	-	-	-	-	-
Kuparuk River	csg	-	-	-	-	-	-	-	-	-	-
	inj	-	-	-	-	-	-	-	-	-	-
Lisburne	csg	-	-	-	-	-	-	-	-	-	-
	inj	-	-	-	-	-	-	-	-	-	-
Milne Point	csg	-	-	-	-	-	-	-	-	-	-
	inj	-	-	-	-	-	-	-	-	-	-
Prudhoe Bay	csg	-	-	-	-	-	-	-	-	-	-
	inj	-	-	-	-	-	-	-	-	-	-
Sag Delta	csg	-	-	-	-	-	-	-	-	-	-
Schrader Bluff	csg	-	-	-	-	-	-	-	-	-	-
South Barrow	dry	0.119	0.132	0.172	0.172	0.197	0.211	0.249	0.389	0.438	0.475
West Sak	csg	-	-	-	-	-	-	-	-	-	-
TOTAL GROSS		0.119	0.132	0.172	0.172	0.197	0.211	0.249	0.389	0.438	0.475
TOTAL INJECTED		-	-	-	-	-	-	-	-	-	-
TOTAL NET		0.119	0.132	0.172	0.172	0.197	0.211	0.249	0.389	0.438	0.475
COOK INLET											
Albert Kaloa	dry	-	-	-	-	-	-	-	-	-	-
Beaver Creek	csg	-	-	-	-	-	-	-	-	-	-
	dry	-	-	-	-	-	-	-	-	-	-
	inj	-	-	-	-	-	-	-	-	-	-
Beluga River	dry	-	-	-	-	-	0.014	0.137	-	-	0.168
Birch Hill	dry	-	-	-	-	-	-	-	0.065	-	-
Cannery Loop	dry	-	-	-	-	-	-	-	-	-	-
Falls Creek	dry	-	-	-	-	-	-	-	-	0.019	-
Granite Point	csg	-	-	-	-	-	-	-	-	-	4.890
Ivan River	dry	-	-	-	-	-	-	-	-	-	-
Kenai	dry	-	-	0.017	0.215	1.460	3.106	4.493	5.985	33.375	39.624
Lewis River	dry	-	-	-	-	-	-	-	-	-	-
McArthur River	csg	-	-	-	-	-	-	-	-	-	0.220
	dry	-	-	-	-	-	-	-	-	-	-
Middle Ground	csg	-	-	-	-	-	-	-	0.010	1.200	3.215
Shoal	dry	-	-	-	-	-	-	-	-	-	-
Moquawkie	dry	-	-	-	-	-	-	-	-	-	0.034
Nicolai Creek	dry	-	-	-	-	-	-	-	-	-	-
North Cook Inlet	dry	-	-	-	-	-	-	-	-	-	-
North Fork	dry	-	-	-	-	-	-	-	-	0.105	-
Pretty Creek	dry	-	-	-	-	-	-	-	-	-	-
Redoubt Shoal	csg	-	-	-	-	-	-	-	-	-	-
Sterling	dry	-	-	-	-	0.025	0.046	0.058	0.120	0.157	0.180
Stump Lake	dry	-	-	-	-	-	-	-	-	-	-
Swanson River	csg	0.006	0.027	0.099	1.293	1.914	2.808	3.233	3.831	5.622	13.541
	dry	-	-	0.020	-	0.157	4.836	3.943	2.141	0.740	-
	inj	-	-	46.482	-	0.259	6.478	5.620	4.843	28.770	37.944
Trading Bay	csg	-	-	-	-	-	-	-	0.001	0.315	0.722
	dry	-	-	-	-	-	-	-	-	-	-
West Fork	dry	-	-	-	-	-	-	-	-	-	-
TOTAL GROSS		0.006	0.027	0.137	1.508	3.557	10.810	11.865	12.155	41.534	62.593
TOTAL INJECTED		-	-	46.482	-	0.259	6.478	5.620	4.843	28.770	37.944
TOTAL NET		0.006	0.027	(46.345)	1.508	3.298	4.333	6.245	7.311	12.764	24.649
STATE											
TOTAL GROSS		0.124	0.159	0.309	1.680	3.753	11.021	12.114	12.543	41.971	63.069
TOTAL INJECTED		0.000	0.000	46.482	0.000	0.259	6.478	5.620	4.843	28.770	37.944
TOTAL NET		0.124	0.159	(46.173)	1.680	3.495	4.543	6.494	7.700	13.201	25.124

* dry = dry gas, csg = casinghead gas, inj = injected.
NA = Not Applicable, ND = No Data
Source: Alaska Oil and Gas Conservation Commission, "Alaska Production Summary by Field and Pool", monthly report.
[1] Milne Point is assigned no gas reserves because most of its gas will be used for production fuel.
[2] Ivan River, Lewis River, Pretty Creek and Stump Lake are computed as a single reservoir.
[3] More gas is injected into the field than is produced, to maintain oil production.
03/27/92

TABLE 4

		1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
NORTH SLOPE											
East Barrow	dry	-	-	-	-	-	-	-	-	-	-
Endicott	csg	-	-	-	-	-	-	-	-	-	-
	inj	-	-	-	-	-	-	-	-	-	-
Kuparuk River	csg	-	-	-	-	-	-	-	-	-	-
	inj	-	-	-	-	-	-	-	-	-	-
Lisburne	csg	-	-	-	-	-	-	-	-	-	-
	inj	-	-	-	-	-	-	-	-	-	-
Milne Point	csg	-	-	-	-	-	-	-	-	-	-
	inj	-	-	-	-	-	-	-	-	-	-
Prudhoe Bay	csg	-	0.243	1.037	0.889	0.658	0.699	2.022	3.046	5.077	94.936
	inj	-	-	-	-	-	-	-	-	-	68.118
Sag Delta	csg	-	-	-	-	-	-	-	-	-	-
Schrader Bluff	csg	-	-	-	-	-	-	-	-	-	-
South Barrow	dry	0.504	0.582	0.619	0.627	0.675	0.707	0.765	0.799	0.832	0.879
West Sak	csg	-	-	-	-	-	-	-	-	-	-
TOTAL GROSS		0.504	0.825	1.657	1.516	1.333	1.406	2.787	3.845	5.909	95.814
TOTAL INJECTED		-	-	-	-	-	-	-	-	-	68.118
TOTAL NET		0.504	0.825	1.657	1.516	1.333	1.406	2.787	3.845	5.909	27.696
COOK INLET											
Albert Kaloa	dry	-	-	0.095	0.024	-	-	-	-	-	-
Beaver Creek	csg	-	-	-	-	-	0.153	0.130	0.104	0.095	0.090
	dry	-	-	-	-	-	0.054	0.020	0.218	0.166	0.113
	inj	-	-	-	-	-	-	0.019	-	0.091	0.100
Beluga River	dry	2.018	3.038	3.571	4.055	4.142	4.929	5.596	6.980	11.211	13.353
Birch Hill	dry	-	-	-	-	-	-	-	-	-	-
Cannery Loop	dry	-	-	-	-	-	-	-	-	-	-
Falls Creek	dry	-	-	-	-	-	-	-	-	-	-
Granite Point	csg	10.036	8.043	9.211	7.753	5.773	4.518	3.265	3.390	3.205	3.634
Ivan River	dry	-	-	-	-	-	-	-	-	-	-
Kenai	dry	46.014	59.340	80.612	72.184	76.007	71.345	68.485	77.175	79.467	81.886
Lewis River	dry	-	-	-	-	-	-	-	-	-	-
McArthur River	csg	6.124	9.565	14.989	15.732	15.477	14.178	12.739	13.474	12.402	11.969
	dry	0.032	4.629	4.699	3.572	4.245	4.085	6.861	7.997	6.825	7.737
Middle Ground	csg	6.654	6.006	6.137	5.147	4.075	4.826	4.259	4.199	4.347	4.108
Shoal	dry	-	-	-	-	-	-	-	-	-	-
Moquawkie	dry	0.353	0.514	0.083	-	-	-	-	-	-	-
Nicolai Creek	dry	0.026	0.387	0.202	0.141	0.066	0.006	0.011	0.083	0.108	0.032
North Cook Inlet	dry	-	7.881	40.947	45.024	41.580	42.709	44.238	45.622	45.091	47.201
North Fork	dry	-	-	-	-	-	-	-	-	-	-
Pretty Creek	dry	-	-	-	-	-	-	-	-	-	-
Redoubt Shoal	csg	<.001	-	-	-	-	-	-	-	-	-
Sterling	dry	0.198	0.265	0.265	0.267	0.172	0.027	0.032	0.035	0.035	0.029
Stump Lake	dry	-	-	-	-	-	-	-	-	-	-
Swanson River	csg	25.434	40.756	50.396	66.569	67.441	74.067	80.869	90.665	101.427	106.911
	dry	-	-	-	-	-	-	-	-	-	-
	inj	58.316	67.215	73.139	73.892	76.133	87.482	86.793	97.976	113.279	118.279
Trading Bay	csg	2.961	7.119	7.156	9.097	5.668	3.539	3.312	2.613	2.473	2.890
	dry	-	-	-	-	-	-	-	-	-	-
West Fork	dry	-	-	-	-	-	-	-	-	-	-
TOTAL GROSS		99.852	147.543	218.363	229.566	224.647	225.236	229.816	252.554	266.651	279.955
TOTAL INJECTED		58.316	67.215	73.139	73.892	76.133	87.482	86.812	97.976	113.370	118.380
TOTAL NET		41.535	80.328	145.224	155.674	148.514	137.754	143.004	154.578	153.281	161.575
STATE											
TOTAL GROSS		100.355	148.368	220.021	231.081	225.980	226.642	232.603	256.399	272.560	375.769
TOTAL INJECTED		58.316	67.215	73.139	73.892	76.133	87.482	86.812	97.976	113.370	186.498
TOTAL NET		42.039	81.153	146.882	157.189	149.847	139.160	145.791	158.423	159.190	189.271

HISTORICAL GAS PRODUCTION

BILLIONS OF CUBIC FEET PER YEAR

		1978	1979	1980	1981	1982	1983	1984	1985
NORTH SLOPE									
East Barrow	dry	-	-	-	0.037	0.717	0.689	0.693	0.632
Endicott	csg	-	-	-	-	-	-	-	-
	inj	-	-	-	-	-	-	-	-
Kuparuk River	csg	-	-	-	0.615	22.989	44.391	57.508	104.279
	inj	-	-	-	-	17.822	38.277	47.930	85.909
Lisburne	csg	-	-	-	0.003	0.374	0.154	0.343	1.902
	inj	-	-	-	-	-	-	-	-
Milne Point	csg	-	-	-	-	-	-	-	0.253
	inj	-	-	-	-	-	-	-	-
Prudhoe Bay	csg	307.966	432.475	597.148	647.768	756.884	818.993	846.674	936.613
	inj	271.854	390.136	546.509	595.106	697.813	754.044	768.899	346.786
Sag Delta	csg	-	-	-	-	-	-	-	-
Schrader Bluff	csg	-	-	-	-	-	-	-	-
South Barrow	dry	0.893	0.913	1.027	1.009	0.532	0.541	0.650	0.678
West Sak	csg	-	-	-	-	-	0.005	0.079	0.134
TOTAL GROSS		308.859	433.388	598.175	649.431	781.496	864.775	905.947	1,044.491
TOTAL INJECTED		271.854	390.136	546.509	595.106	715.635	792.321	816.829	932.695
TOTAL NET		37.004	43.252	51.665	54.325	65.861	72.454	89.119	111.796
COOK INLET									
Albert Kaloa	dry	-	-	-	-	-	-	-	-
Beaver Creek	csg	0.092	0.094	0.091	0.080	0.082	0.092	0.101	0.094
	dry	0.237	0.088	0.090	0.137	0.308	8.252	9.234	10.833
	inj	0.144	0.079	0.029	0.020	0.037	0.031	-	-
Beluga River	dry	14.253	16.994	17.002	17.248	18.653	18.084	19.833	22.571
Birch Hill	dry	-	-	-	-	-	-	-	-
Cannery Loop	dry	-	-	-	-	-	-	-	-
Falls Creek	dry	-	-	-	-	-	-	-	-
Granite Point	csg	3.851	3.287	3.233	3.509	2.780	2.578	2.340	2.147
Ivan River	dry	-	-	-	-	-	-	-	-
Kenai	dry	97.290	97.029	98.846	105.800	115.913	112.978	110.109	115.843
Lewis River	dry	-	-	-	-	-	-	0.696	1.644
McArthur River	csg	10.923	8.849	8.043	7.830	7.521	6.444	5.834	4.073
	dry	7.662	7.756	7.547	7.555	8.719	7.931	9.242	6.603
Middle Ground	csg	3.290	2.744	2.628	2.502	2.277	2.294	2.212	2.129
Shoal	dry	-	-	-	-	0.097	0.371	0.514	0.493
Moquawkie	dry	-	-	-	-	-	-	-	-
Nicolai Creek	dry	-	-	-	-	-	-	-	-
North Cook Inlet	dry	46.757	49.448	41.540	49.486	45.368	47.877	46.981	45.819
North Fork	dry	-	-	-	-	-	-	-	-
Pretty Creek	dry	-	-	-	-	-	-	-	-
Redoubt Shoal	csg	-	-	-	-	-	-	-	-
Sterling	dry	0.024	0.025	0.026	0.023	0.024	0.022	0.018	0.012
Stump Lake	dry	-	-	-	-	-	-	-	-
Swanson River	csg	106.934	116.068	113.787	103.592	105.654	97.508	96.710	92.104
	dry	-	0.198	0.068	-	-	-	-	-
	inj	114.557	120.268	120.636	106.137	113.023	95.353	93.687	89.025
Trading Bay	csg	2.427	1.708	1.448	1.232	1.221	0.915	0.940	1.115
	dry	-	-	0.104	0.192	0.411	0.631	0.626	0.417
West Fork	dry	0.052	0.770	0.476	0.030	0.086	0.067	0.037	0.022
TOTAL GROSS		293.792	305.058	299.929	299.218	309.114	306.044	305.427	305.919
TOTAL INJECTED		114.701	120.347	120.666	106.157	113.060	95.384	93.687	89.025
TOTAL NET		179.091	184.712	179.264	193.061	196.054	210.660	211.739	216.894
STATE									
TOTAL GROSS		602.651	738.446	898.104	948.648	1,090.610	1,170.819	1,211.374	1,350.410
TOTAL INJECTED		386.556	510.482	667.175	701.263	828.695	887.705	910.516	1,021.720
TOTAL NET		216.095	227.964	230.929	247.386	261.915	283.114	300.858	328.690

TABLE 4 – CONTINUED

		1986	1987	1988	1989	1990	1991	Cum. Prod. (Bcf)	Field Depletion
NORTH SLOPE									
East Barrow	dry	0.589	0.590	0.661	0.475	0.488	0.583	6.154	51%
Endicott	csg	0.196	8.237	34.834	41.197	42.490	60.246	187.200	4%
	inj	-	5.615	28.023	33.033	35.523	51.136	153.330	
Kuparuk River	csg	114.889	125.089	119.883	107.519	116.579	123.207	936.949	31%
	inj	90.449	89.191	87.906	83.323	91.273	95.982	728.062	
Lisburne	csg	8.677	64.849	94.507	104.527	107.132	124.263	506.731	5%
	inj	-	56.741	87.815	102.248	101.542	112.457	460 803	
Milne Point	csg	1.644	0.011	-	0.978	2.718	3.515	9.120	NA [1]
	inj	0.197	0.000	-	0.320	1.401	1.704	3.622	
Prudhoe Bay	csg	970.290	1,228.527	1,404.992	1,412.853	1,481.462	1,768.837	13,720.088	5%
	inj	925.630	1,104.827	1,245.254	1,244.000	1,312.874	1,574.366	12,346.215	
Sag Delta	csg	-	-	-	0.236	1.416	2.347	3.999	ND
Schrader Bluff	csg	-	-	-	-	-	0.244	0.244	ND
South Barrow	dry	0.589	0.622	0.598	0.758	0.733	0.662	20.574	80%
West Sak	csg	0.108	-	-	-	-	-	0.326	NA
TOTAL GROSS		1,096.982	1,427.925	1,655.476	1,668.543	1,753.018	2,083.904	15,391.386	
TOTAL INJECTED		1,016.276	1,256.374	1,448.997	1,462.924	1,542.612	1,835.645	13,692.032	
TOTAL NET		80.706	171.551	206.479	205.619	210.405	248.258	1,699.354	
COOK INLET									
Albert Kaloa	dry	-	-	-	-	-	-	0.119	ND
Beaver Creek	csg	0.078	0.053	0.039	0.064	0.058	0.049	1.640	47%
	dry	17.694	15.475	14.307	12.257	12.416	10.354	112.253	
	inj	-	-	-	-	-	-	0.551	
Beluga River	dry	25.357	23.971	25.586	30.126	39.512	38.494	386.896	39%
Birch Hill	dry	-	-	-	-	-	-	0.065	1%
Cannery Loop	dry	-	-	9.400	11.255	12.502	12.318	45.474	27%
Falls Creek	dry	-	-	-	-	-	-	0.019	0%
Granite Point	csg	2.415	2.431	2.543	2.251	1.431	1.586	100.100	92%
Ivan River	dry	-	-	-	-	0.676	2.132	2.809	3% [2]
Kenai	dry	82.471	90.014	76.299	65.706	38.393	25.581	2,033.059	80%
Lewis River	dry	1.338	0.345	0.045	0.095	1.485	1.420	7.068	NA [2]
McArthur River	csg	4.397	3.393	4.120	4.317	2.559	5.121	210.093	51%
	dry	9.163	9.884	12.603	26.683	48.897	56.075	277.802	
Middle Ground	csg	1.199	1.274	1.223	1.250	1.334	1.074	81.614	99%
Shoal	dry	0.394	0.312	0.411	0.715	1.246	0.513	5.067	
Moquawkie	dry	-	-	-	-	-	-	0.985	ND
Nicolai Creek	dry	-	-	-	-	-	-	1.062	26%
North Cook Inlet	dry	43.838	42.889	44.989	45.287	45.014	44.695	1,000.282	63%
North Fork	dry	-	-	-	-	-	-	0.105	1%
Pretty Creek	dry	0.067	0.776	0.871	0.641	0.607	0.742	3.704	NA [2]
Redoubt Shoal	csg	-	-	-	-	-	-	<.001	ND
Sterling	dry	0.002	-	-	-	-	-	2.088	8%
Stump Lake	dry	-	-	-	-	0.528	1.608	2.135	NA [2]
Swanson River	csg	95.083	83.508	101.685	102.910	101.685	101.885	2,161.024	0% [3]
	dry	-	0.555	0.915	1.184	2.710	2.944	20.412	
	inj	93.602	87.013	99.734	107.802	106.031	105.174	2,434.940	
Trading Bay	csg	0.994	0.991	1.120	1.291	0.465	0.944	64.678	72%
	dry	0.385	0.443	0.191	0.141	0.003	-	3.543	
West Fork	dry	-	-	-	-	-	0.460	2.001	
TOTAL GROSS		284.874	276.314	296.347	306.173	311.519	307.997	6,526.097	
TOTAL INJECTED		93.602	87.013	99.734	107.802	106.031	105.174	2,435.491	
TOTAL NET		191.272	189.302	196.614	198.370	205.488	202.823	4,090.606	
STATE									
TOTAL GROSS		1,381.856	1,704.239	1,951.823	1,974.715	2,064.536	2,391.900	21,917.483	
TOTAL INJECTED		1,109.877	1,343.387	1,548.731	1,570.726	1,648.643	1,940.819	16,127.522	
TOTAL NET		271.978	360.852	403.092	403.989	415.893	451.081	5,789.961	

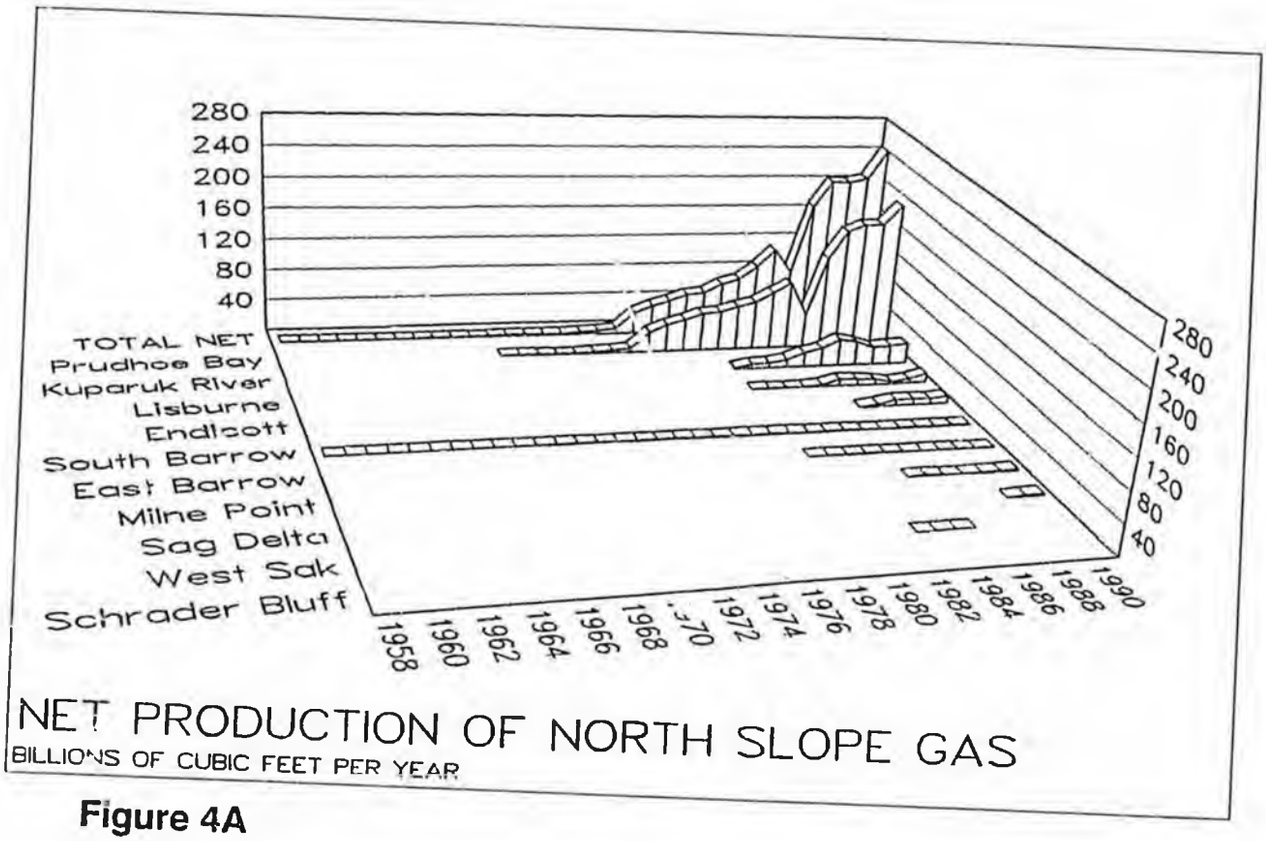

Figure 4A

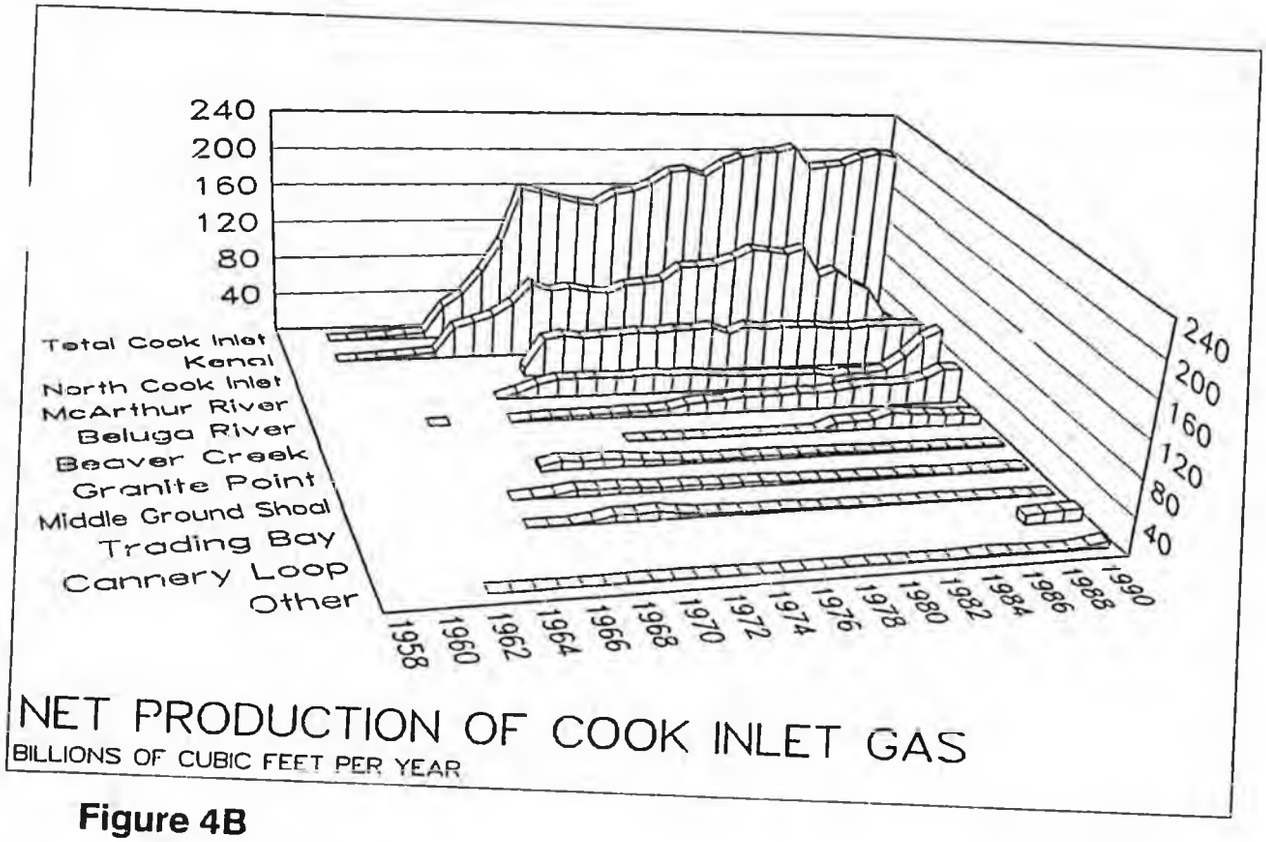

Figure 4B

SECTION 5
HISTORICAL CONSUMPTION OF OIL

Virtually all oil consumed in Alaska is in the form of refined fuels. Much of this fuel is supplied by the state's three refineries, though the exact amount is not publicly available. Suppliers barge the rest from West Coast refineries to fuel docks and storage facilities along the Alaska coast.

The Alaska Department of Revenue (DOR) compiles data on how much fuel is reported sold within the state. DOR compiled their sales categories for tax purposes, not to record fuel use patterns, so some categories are more definitive than others. Table 5.1 lists historical fuel sales of DOR's six major fuel categories, and Table 5.2 lists 1991 sales of the major categories and their subcategories. A major caveat is that the category, "Other Diesel/Exported as Cargo" is primarily residual oil from Tesoro refinery sold to West Coast or Pacific Rim refineries and so, under most definitions, is not consumed in Alaska. Table 5.2 shows that in 1991, when Exported as Cargo is subtracted from total fuel sales, Alaska consumed 2.0 billion gallons of fuel, consisting of 724 million gallons of Aviation Jet fuel, 968 million gallons of diesel, and 249 million gallons of gasoline.

HISTORICAL OIL CONSUMPTION

TABLE 5.1

MILLIONS OF GALLONS PER YEAR

	1977	1978	1979	1980	1981	1982	1983	1984
FUEL SALES								
Aviation Gas	16.770	15.830	16.925	16.912	18.754	16.596	15.244	17.399
Exempt	1.521	0.685	0.552	0.558	0.574	0.589	0.498	0.574
Taxable	15.249	15.145	16.373	16.354	18.180	16.007	14.746	16.825
Aviation Jet	330.744	363.607	415.164	416.184	400.177	432.366	517.575	611.314
Exempt	227.581	250.601	288.974	286.110	247.619	99.957	242.815	311.820
Taxable	103.163	113.006	126.190	130.074	152.558	332.409	274.760	299.494
Marine Gas	11.766	7.714	8.296	7.598	7.602	7.878	8.568	8.955
Exempt	5.707	0.554	0.292	0.025	0.085	0.032	0.052	0.120
Taxable	6.059	7.160	8.004	7.573	7.517	7.846	8.516	8.835
Marine Diesel	38.613	51.985	59.492	67.711	72.282	99.443	147.569	124.416
Exempt	6.396	10.116	6.325	5.370	5.153	30.443	75.395	50.874
Taxable	32.217	41.869	53.167	62.341	67.129	69.000	72.174	73.542
Other Gas	186.213	187.359	181.329	177.353	186.446	210.644	197.968	223.178
Exempt	5.094	8.290	7.527	8.162	9.084	12.809	10.887	11.028
Taxable	181.119	179.069	173.802	169.191	177.362	197.835	187.081	212.150
Other Diesel	165.752	184.876	269.377	302.647	326.440	411.125	420.279	436.308
Exempt	46.160	54.050	120.960	120.939	117.074	187.856	178.494	190.891
Taxable	119.592	130.826	148.417	181.708	209.366	223.269	241.785	245.113
TOTAL	748.858	811.371	950.583	988.405	1,011.701	1,178.052	1,307.203	1,421.570

	1985	1986	1987	1988	1989	1990	1991 Est.
FUEL SALES							
Aviation Gas	17.997	17.815	18.492	19.314	19.309	20.807	20.943
Exempt	0.515	0.858	0.384	0.743	0.816	1.019	0.732
Taxable	17.482	16.957	18.108	18.571	18.493	19.788	20.211
Aviation Jet	518.092	592.620	644.477	684.910	682.239	873.336	720.589
Exempt	223.635	280.654	318.349	333.703	311.805	423.583	347.448
Taxable	294.457	311.966	326.128	351.207	370.434	449.753	373.141
Marine Gas	14.664	10.464	11.510	10.554	10.202	10.477	12.084
Exempt	0.251	0.291	0.183	0.075	0.194	0.239	0.722
Taxable	14.413	10.173	11.327	10.479	10.008	10.238	11.362
Marine Diesel	98.675	105.218	171.769	159.027	176.361	198.301	212.738
Exempt	9.724	10.097	83.120	43.828	28.636	15.701	16.636
Taxable	88.951	95.121	88.649	115.199	147.725	182.600	196.102
Other Gas	235.081	234.482	221.259	222.162	215.462	244.488	218.883
Exempt	15.353	21.558	17.541	15.040	15.445	9.331	7.810
Taxable	219.728	212.924	203.718	207.122	200.017	235.157	211.073
Other Diesel	643.430	897.970	843.045	858.228	956.127	843.652	777.813
Exempt	369.279	559.413	583.305	576.131	674.692	570.569	485 739
Taxable	274.151	338.557	259.740	282.097	281.435	273.083	29 .074
TOTAL	1,527.939	1,858.569	1,910.552	1,954.195	2,059.700	2,191.061	1,9(3.050

Source: Alaska Department of Revenue, "Report of Motor Fuel Sold or Distributed in Alaska."
2/12/92

FUEL SOLD OR DISTRIBUTED IN ALASKA, 1991 TABLE 5.2

GALLONS

	Aviation Gas	Aviation Jet	Marine Gas	Marine Diesel	Other Gas	Other Diesel
EXEMPT						
Sold for heating use	---	---	---	---	234,867	110,652,512
Federal government	488,286	83,406,502	507,606	2,456,430	2,259,387	15,645,641
State/local government	159,919	297,530	91,452	5,747,697	2,732,033	15,028,250
Charitable institution	1,007	0	2,510	0	60,469	1,086,484
Pub. util./non-profit power assoc.	---	---	---	---	---	28,909,079
Exempt power plant	---	---	---	---	73,497	9,640,846
Jet fuel-foreign flights	---	257,622,632	---	---	---	---
Bonded jet fuel	---	0	---	---	---	---
Consigned to foreign countries	0	0	0	0	0	0
Exported as cargo	21,078	63,000	4,943	6,535,637	2,400,451	289,382,079
Gasohol	0	0	0	0	0	0
Actual losses	0	3,083	0	0	0	0
Other	0	834,981	81	0	22,776	706,735
TOTAL EXEMPT	673,290	342,261,884	606,592	14,852,376	7,811,036	471,045,626
TOTAL TAXABLE	18,887,207	374,474,826	9,661,589	178,341,530	209,227,656	285,625,196
TOTAL EXEMPT + TAXABLE	19,560,497	716,736,710	10,268,181	193,193,906	217,038,692	756,670,822

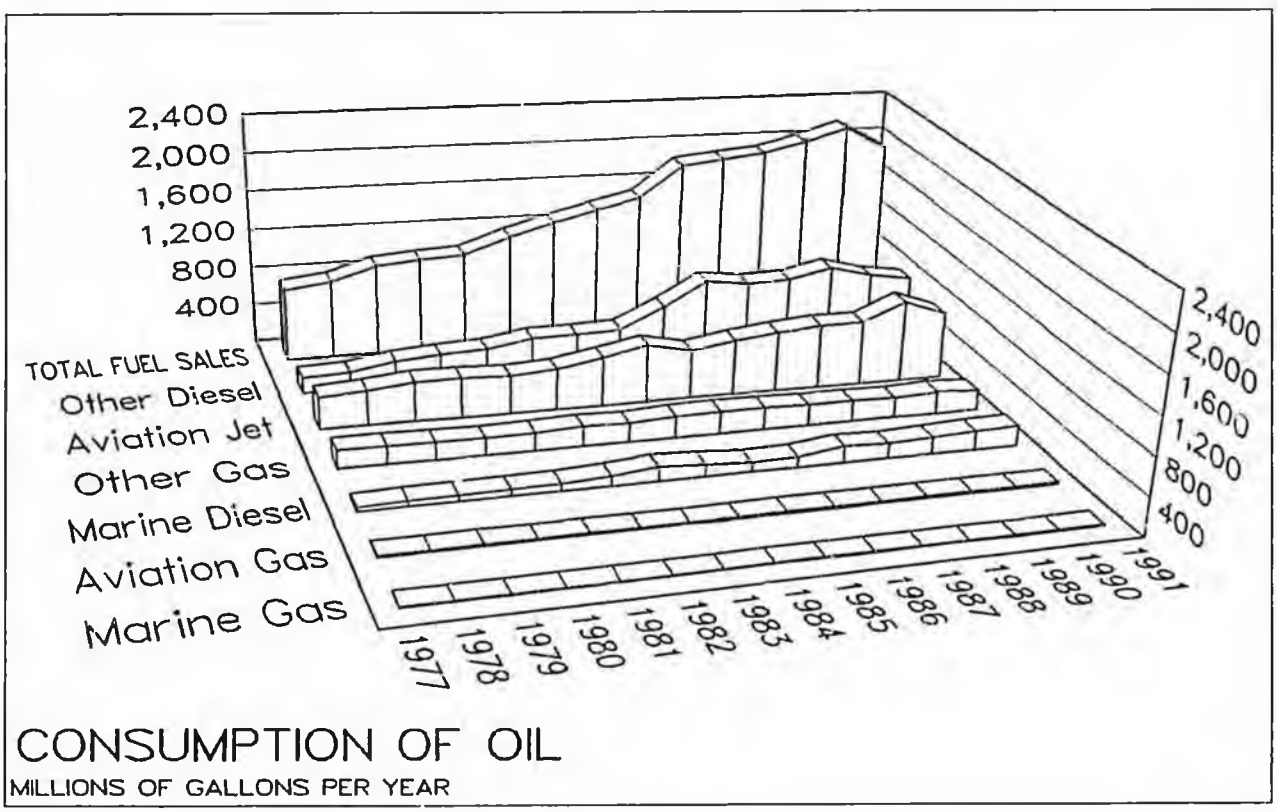

Figure 5

SECTION 6
HISTORICAL CONSUMPTION OF NATURAL GAS

In 1991 Alaska consumed 551 billion cubic feet of natural gas. Table 6, Fig. 6A, and Fig. 6B list the major end users of natural gas from 1971 to 1991.

NORTH SLOPE

At present, the only market for North Slope gas is as fuel for oil production plants and equipment. Consequently, 88% of the extracted gas is injected back into the fields to maintain reservoir pressure. Of 210 billion cubic feet consumed in 1990, 82% went to field operations, 7% to TAPS, and 7% was reported to the AOGCC as NGL. The volume of gas consumed on the North Slope to produce oil is as large as the combined Anchorage and Kenai domestic, commercial and industrial markets.

COOK INLET

Anchorage and Kenai markets consume nearly all the gas extracted from Cook Inlet fields. Of 206 billion cubic feet consumed in 1990, 30% went to LNG production, 26% to ammonia/urea production, 21% to power generation, 12% to utility gas, and 7% to field operations.

HISTORICAL GAS CONSUMPTION

BILLIONS OF CUBIC FEET PER YEAR

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
NORTH SLOPE											
Field Operations [1]	ND	ND	ND	2.650	2.808	3.856	24.444	29.231	33.763	39.697	41.607
Vented and Flared	ND	ND	ND	1.076	1.061	1.254	10.882	2.313	1.840	1.801	2.485
Used on Lease	ND	ND	ND	1.556	1.747	2.602	13.562	18.826	23.559	28.967	29.642
Shrinkage	ND	ND	ND	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Other	ND	ND	ND	0.018	0.000	0.000	0.000	8.092	8.364	8.929	9.480
Sold [1]	ND	ND	ND	0.136	1.037	2.054	3.347	7.802	9.512	12.007	12.791
Power generation [3	ND	ND	ND	ND	ND	ND	ND	0.219	0.235	0.235	0.315
Gas Utilities [3]	ND	ND	ND	ND	ND	ND	ND	0.291	0.317	0.400	0.435
TAPS [7]	0.00	0.00	0.00	0.000	0.000	0.000	1.754	6.949	8.648	10.686	11.106
NGL [8]	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.215	0.381
Other [9]	ND	ND	ND	ND	ND	ND	ND	0.343	0.312	0.471	0.554
TOTAL	ND	ND	ND	2.786	3.845	5.910	27.791	37.033	43.275	51.704	54.398
COOK INLET											
Field Operations [1]	45.25	36.56	20.90	49.834	28.830	24.467	24.416	25.949	24.101	22.304	20.559
Vented and Flared	33.18	20.98	6.93	7.978	9.496	5.421	4.848	3.870	2.710	3.045	3.175
Used on Leases	10.96	14.86	12.42	39.845	16.215	15.822	16.404	16.228	14.564	14.608	14.950
Shrinkage	1.11	0.72	1.55	2.011	3.119	3.224	3.145	3.426	2.847	2.438	2.434
Other	0.00	0.00	0.00	0.000	0.000	0.000	0.019	2.425	3.980	2.213	0.000
Sold [1]	121.72	123.72	130.94	130.509	140.717	143.710	152.437	164.300	168.106	162.201	178.082
Power generation	14.69	15.38	16.70	17.448	25.461	27.613	28.590	29.718	33.141	33.520	33.632
Public [2]	8.14	8.91	10.63	11.764	19.619	22.189	23.590	24.592	28.155	28.757	29.071
Military [2]	6.55	6.47	6.07	5.684	5.842	5.424	5.000	5.126	4.986	4.763	4.561
Gas Utilities	10.24	13.10	14.76	15.128	12.092	12.551	12.683	13.454	14.045	15.521	15.778
Residential [2]	5.44	6.03	6.52	6.717	5.548	5.916	6.010	6.536	6.911	7.773	7.950
Commercial [2]	4.80	7.07	8.24	8.411	6.544	6.635	6.673	6.918	7.134	7.748	7.828
LNG [4]	63.24	59.87	60.99	61.870	64.777	63.509	66.912	60.874	64.111	54.844	68.823
Amonia-Urea [5]	19.49	20.58	20.64	22.100	23.888	24.257	28.620	48.879	51.657	54.699	53.836
Rental Gas [6]	ND	13.400	12.590	10.410	12.477	11.588	6.703	10.523	6.958	5.190	5.601
Other [9]	14.058	1.389	5.260	3.553	2.022	4.192	8.929	0.852	-1.806	-1.573	0.412
TOTAL	166.97	160.28	151.84	180.343	169.547	168.177	176.853	190.249	192.207	184.505	198.641
STATE											
Field Operations [1]	45.25	36.56	20.90	52.484	31.639	28.322	48.859	55.180	57.865	62.001	62.166
Vented and Flared	33.18	20.98	6.93	9.054	10.557	6.674	15.729	6.183	4.551	4.846	5.660
Used on Leases	10.96	14.86	12.42	41.401	17.963	18.424	29.966	35.055	38.123	43.575	44.592
Shrinkage	1.11	0.72	1.55	2.011	3.119	3.224	3.145	3.426	2.847	2.438	2.434
Other	0.00	0.00	0.00	0.018	0.000	0.000	0.019	10.516	12.344	11.142	9.480
Sold [1]	121.72	123.72	130.94	130.645	141.754	145.763	155.785	172.101	177.616	174.208	190.873
Power generation	14.69	15.38	16.70	17.448	25.461	27.613	28.590	29.937	33.376	33.755	33.947
Public [2][3]	8.14	8.91	10.63	11.764	19.619	22.189	23.590	24.811	28.390	28.992	29.386
Military [2]	6.55	6.47	6.07	5.684	5.842	5.424	5.000	5.126	4.986	4.763	4.561
Gas Utilities	10.24	13.10	14.76	15.128	12.092	12.551	12.683	13.745	14.362	15.921	16.213
Residential [2][3]	5.44	6.03	6.52	6.717	5.548	5.916	6.010	6.827	7.228	8.173	8.385
Commercial [2]	4.80	7.07	8.24	8.411	6.544	6.635	6.673	6.918	7.134	7.748	7.828
LNG [4]	63.24	59.87	60.99	61.870	64.777	63.509	66.912	60.874	64.111	54.844	68.823
Amonia-Urea [5]	19.49	20.58	20.64	22.100	23.888	24.257	28.620	48.879	51.657	54.699	53.836
Rental Gas [6]	ND	13.40	12.59	10.414	12.477	11.588	6.703	10.523	6.958	5.190	5.601
TAPS [7]	0.00	0.00	0.00	0.000	0.000	0.000	1.754	6.949	8.648	10.686	11.106
NGL [8]	0.00	0.00	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.215	0.381
Other [9]	ND	1.39	5.26	3.69	3.06	6.25	10.52	1.19	-1.50	-1.10	0.97
TOTAL	166.97	160.28	151.84	183.129	173.393	174.085	204.644	227.281	235.481	236.209	253.039

[1] Alaska Oil and Gas Conservation Commission, "Report of Gas Disposition," monthly reports.
[2] Sum of sales from Beluga gas field in: Alaska Oil and Gas Conservation Commission, "Report of Gas Disposition" and
1971-82: Annual reports from Alaska Pipeline Co., ENSTAR and Kenai Utility Service Co. to Alaska Public Utilities Commission
1983-91: Enstar Natural Gas Co., personal communication.
[3] Barrow Utilities and Electric Cooperative Inc..
[4] 1971-74: Stanford Research Institute, "Natural Gas Demand and Supply to the Year 2000 in the Cook Inlet Basin of South Central Alaska," Nov. 1977.
1975-79: Sum of 1) production from Kenai and Beaver Creek gas fields in: Alaska Oil and Gas Conservation Commission, "Report of Gas Disposition," and 2) sales from North Cook Inlet gas field in Alaska Oil and Gas Conservaton Commission, "Kenai Gas Sales."
1980-88: Royalty reports from producers to Division of Oil and Gas.
1989-91: Phillips Petroleum Co., personal communication.
[5] 1971-74: Stanford Research Institute, "Natural Gas Demand and Supply to the Year 2000 in the Cook Inlet Basin of South Central Alaska," Nov. 1977.
1975-79: Sum of 1) sales from Kenai and Beaver Creek gas fields to Collier Chomical in: Alaska Oil and Gas Conservation Commission, "Kenai Gas Sales," and 2) sales from McArthur River gas field in: Alaska Oil and Gas Conservation Commission, "Monthly Report of Gas Disposition."
1980-88: Royalty reports from producers to Division of Oil and Gas.
1989-91: Unocal Corp., personal communication.
[6] Royalty reports from Unocal to Division of Oil and Gas, Item: Swanson River Rental Gas.
[7] Royalty reports from Arco to Division of Oil and Gas, sales to TAPS from Prudhoe Bay and Kuparuk fields.
[8] Alaska Oil and Gas Conservation Commission, "Alaska Production Summary by Field and Pool", monthly reports.
[9] Calculated difference between "Sold" and sum of listed "Sold" items.
03/27/92

TABLE 6

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
NORTH SLOPE										
Field Operations [1]	51.921	58.210	74.732	91.388	101.722	138.581	192.846	172.625	169.343	298.597
Vented and Flared	3.490	2.524	5.814	3.437	5.802	12.952	5.747	6.792	8.753	6.795
Used on Lease	37.864	44.837	53.884	70.683	71.338	109.127	132.245	136.576	137.981	154.038
Shrinkage	0.000	0.000	0.000	0.000	0.000	0.000	40.759	9.678	1.099	118.153
Other	10.567	10.849	15.034	17.268	24.582	16.502	14.095	19.579	21.510	19.611
Sold [1]	14.000	14.589	15.088	20.089	20.001	42.719	48.267	39.546	37.067	45.475
Power generation [3	0.404	0.482	0.480	0.486	0.559	0.544	0.620	0.620	0.644	0.667
Gas Utilities [3]	0.539	0.407	0.508	0.453	0.486	0.493	0.519	0.484	0.495	0.486
TAPS [7]	11.952	13.277	12.856	14.381	15.166	16.624	17.855	16.147	14.543	15.349
NGL [8]	0.424	0.264	0.269	0.693	1.103	13.837	17.821	15.987	15.399	20.221
Other [9]	0.681	0.159	0.975	4.076	2.687	11.221	11.472	6.308	5.986	8.752
TOTAL	65.921	72.799	89.820	111.477	121.723	181.300	241.133	212.171	206.410	344.072
COOK INLET										
Field Operations [1]	20.957	19.380	22.468	18.637	18.408	18.529	19.143	19.353	15.570	20.256
Vented and Flared	3.494	2.560	3.260	2.893	3.095	2.746	3.244	2.940	2.214	3.900
Used on Leases	14.861	14.056	14.597	13.971	13.845	14.651	14.636	14.317	12.260	14.476
Shrinkage	2.602	2.726	2.657	1.773	1.468	1.130	1.263	2.096	1.064	1.843
Other	0.000	0.038	1.954	0.000	0.000	0.002	0.000	0.000	0.032	0.037
Sold [1]	185.913	192.578	192.752	199.311	174.563	177.660	177.471	185.767	194.877	186.366
Power generation	35.818	36.169	36.520	40.851	44.208	40.698	42.100	44.936	38.860	35.340
Public [2]	30.988	31.573	32.182	36.321	39.677	36.041	37.284	39.920	33.920	30.640
Military [2]	4.830	4.596	4.338	4.530	4.531	4.657	4.816	5.016	4.940	4.700
Gas Utilities	19.025	19.111	20.903	24.419	23.235	23.063	23.249	25.238	25.892	24.700
Residential [2]	9.981	10.202	10.999	12.445	11.935	12.027	12.292	13.564	13.968	13.440
Commercial [2]	9.044	8.909	9.904	11.974	11.300	11.036	10.957	11.674	11.924	11.260
LNG [4]	64.438	67.729	65.882	65.177	61.906	60.879	63.325	64.354	63.916	65.494
Amonia-Urea [5]	55.220	50.338	50.083	50.688	35.733	45.230	41.882	54.495	54.495	54.750
Rental Gas [6]	11.383	12.698	18.362	21.532	14.785	16.733	8.722	6.705	3.182	3.683
Other [9]	0.029	6.533	1.002	-3.356	-5.304	-8.943	-1.807	-9.961	-6.010	2.399
TOTAL	206.870	211.958	215.220	217.948	192.971	196.189	196.614	205.120	210.447	206.622
STATE										
Field Operations [1]	72.876	77.590	95.249	110.025	120.130	157.110	211.989	191.978	184.913	318.853
Vented and Flared	6.983	5.084	9.075	6.330	8.897	15.698	8.991	9.732	10.787	10.695
Used on Leases	52.724	58.893	68.481	84.654	85.183	123.778	146.881	150.893	150.241	168.514
Shrinkage	2.602	2.726	2.657	1.773	1.468	1.130	42.022	11.774	2.163	119.996
Other	10.567	10.887	15.036	17.268	24.582	16.504	14.095	19.579	21.542	19.648
Sold [1]	199.914	207.167	207.840	219.400	194.653	220.379	225.758	225.313	231.944	231.841
Power generation	36.222	36.651	37.000	41.337	44.767	41.242	42.720	45.556	54.046	36.007
Public [2][3]	31.392	32.055	32.662	36.807	40.236	36.585	37.904	40.540	49.109	31.307
Military [2]	4.830	4.596	4.338	4.530	4.531	4.657	4.816	5.016	4.937	4.700
Gas Utilities	19.564	19.518	20.911	24.872	23.721	23.556	23.768	25.722	26.387	25.186
Residential [2][3]	10.520	10.609	11.507	12.898	12.421	12.520	12.811	14.048	14.463	13.926
Commercial [2]	9.044	8.909	9.404	11.974	11.300	11.036	10.957	11.674	11.924	11.260
LNG [4]	64.438	67.729	65.892	65.177	61.906	60.879	63.325	64.354	63.916	65.494
Amonia-Urea [5]	55.220	50.338	50.083	50.688	35.733	45.230	41.882	54.495	54.495	54.750
Rental Gas [6]	11.383	12.698	18.362	21.532	14.785	16.733	8.722	6.705	3.182	3.683
TAPS [7]	11.952	13.277	12.856	14.381	15.166	16.624	17.855	16.147	14.543	15.349
NGL [8]	0.424	0.264	0.269	0.646	1.103	13.825	17.447	15.272	15.414	20.221
Other [9]	0.711	6.692	2.467	0.767	-2.528	2.290	10.039	-2.938	-0.039	11.151
TOTAL	272.790	284.757	303.089	329.425	314.783	377.489	437.747	417.291	416.857	550.694

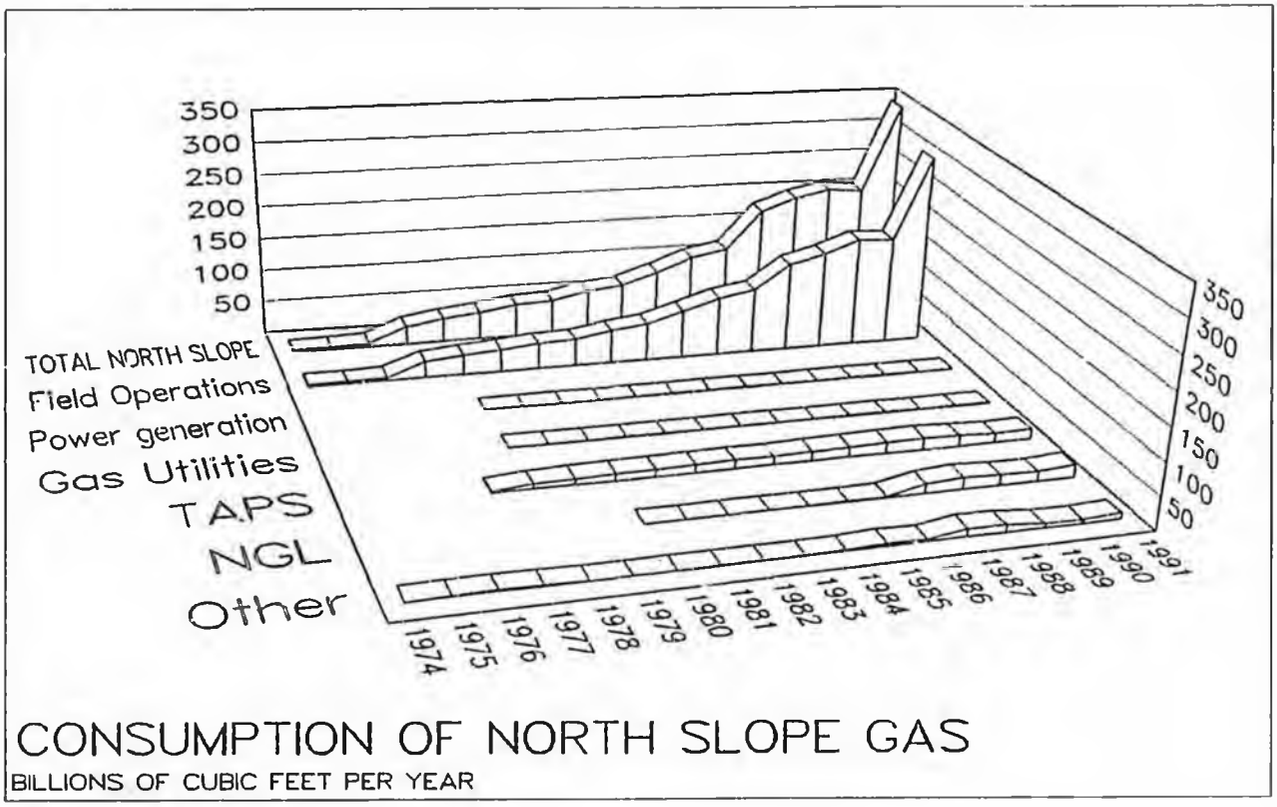

Figure 6A

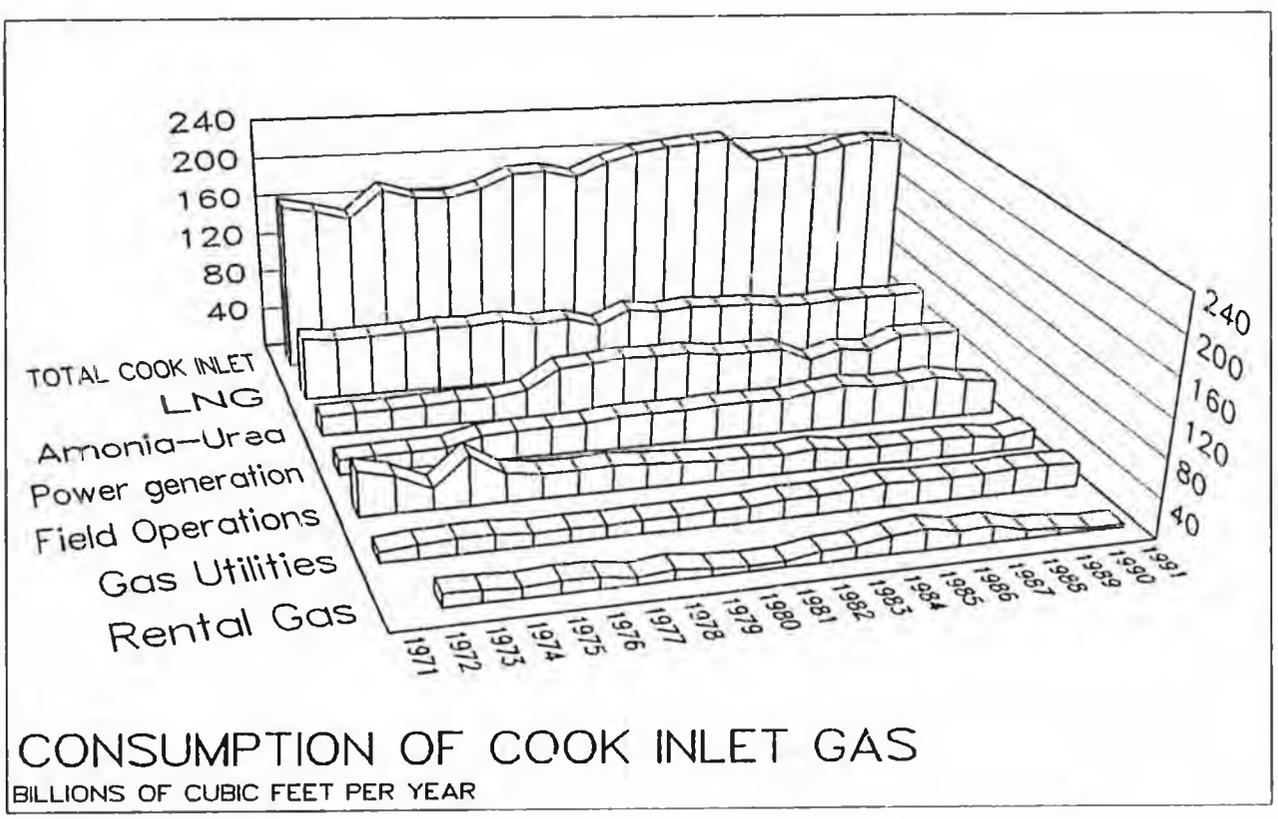

Figure 6B

SECTION 7
PROJECTED CONSUMPTION OF OIL AND NATURAL GAS

The Institute of Social and Economic Research (ISER) prepared a forecast of statewide energy demand for the January 1987 edition of the "Historical and Projected Oil and Gas Consumption" report. This forecast was developed using the Energy Demand Model (ENDMOD), a computer spreadsheet that portrayed future oil and gas demand in Alaska for various end-uses. Future oil and gas demand was determined as a function of population and the availability of alternative energy sources. In subsequent editions, this forecast was updated by DO&G staff by adjusting first-year predicted consumption rates to actual observed data. These later forecasts presupposed that trends that were anticipated in 1986 were still valid. This year staff have more thoroughly recalibrated the model using a new ISER forecast of state and local population, new data on electrical generation and vehicle fuel use, and new assumptions about petroleum industry trends. The forecast period has also been extended to 2010. While the basic structure of this year's model remains the same as its predecessor, our forecast of oil and gas demand is significantly different.

Future consumption of oil and gas will not increase as fast as population because increased consumption for utility generation will be offset by reduced consumption by the oil and gas industry.

LIQUID PETROLEUM

Total consumption of liquid petroleum products will see a average annual growth of only 2 percent rising from 2.3 billion gallons in 1991 to 3.1 billion gallons in 2010. Requirements for electrical generation, barring any significant changes in hydroelectric or coal-based generation capacity, will grow 4 percent a year. The oil industry itself consumed 2.3 million barrels in 1991, largely for fuel requirements for TAPS. As TAPS throughput declines, consumption will fall to nearly 310 thousand barrels of product by 2010.

Transportation fuel consumption (excluding pipelines) will grow moderately in future years, increasing from 2 million gallons in 1992 to 2.8 million in 2010. Marine and highway diesel is the largest component of transportation fuel consumption, about 48 percent of the total, but jet fuel consumption will grow most rapidly (3 percent annually) as predicted in earlier forecasts.

Total consumption for petroleum liquids projected over the 18 year period from 1992 to 2010 is 49 billion gallons or approximately 1.2 billion barrels.

NATURAL GAS

Consumption of natural gas is expected to remain flat throughout the forecast period. Although growth may be expected in utilities to meet the modest growth in population, use of gas by the petroleum industry will decline offsetting gains in other sectors. Utility generation will increase from 38.1 billion cubic feet in 1992 to 56.3 billion cubic feet by 2010, an increase of just 2 percent per year on average. Petroleum industry demand for natural gas will fall by an average of 2 percent per year. The most dramatic decline in energy consumption by the oil and gas industry is predicted for pipeline fuel (dominated by TAPS) that parallels the decline in North Slope oil production and transportation. Pipeline fuel demand will drop by 8 percent per year, roughly the same decline predicted for TAPS throughput. Consumption of gas for field operations will increase through 1993 as the gas-handling expansion project for the Prudhoe Bay field comes on-line but then will decline at 2 percent per year thereafter.

We assume that ammonia-urea production will continue at current levels, 54.5 billion cubic feet per year. Exports of LNG from the Kenai Peninsula and potential future sales of North Slope gas are not included as a component of statewide demand. At the current level of 64 billion cubic feet per year approximately 832 billion cubic feet will be required to sustain LNG exports from the Kenai facility over the next 18 years.

Total in-state requirements for natural gas over the next 18 years will total 6.7 trillion cubic feet.

PROJECTED DEMAND FOR OIL

MILLIONS OF GALLONS PER YEAR

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
RAILBELT											
Vehicle Transportation	1,264	1,295	1,318	1,339	1,372	1,411	1,447	1,467	1,487	1,507	1,527
Jet Fuel	612	631	647	663	683	706	729	745	762	779	797
Civilian Domestic	322	338	352	365	382	402	421	436	450	465	479
Military and International	290	293	296	298	301	304	307	310	312	315	318
Gasoline	189	192	193	193	196	199	202	202	201	201	200
Aviation	17	18	18	18	18	19	19	19	19	19	19
Highway	164	167	167	168	170	172	175	175	174	174	173
Marine	7	7	7	7	8	8	8	8	8	8	8
Diesel	462	472	478	483	493	505	516	520	523	526	529
Highway	309	314	317	320	325	332	338	339	340	341	342
Marine	153	158	161	164	168	173	178	181	183	185	187
Space Heat	63	64	64	65	66	68	69	69	70	70	70
Utility Generation	9	9	9	9	9	9	9	9	9	9	9
Industry	0	0	0	0	0	0	0	0	0	0	0
TOTAL	1,335	1,367	1,392	1,413	1,447	1,487	1,525	1,545	1,565	1,585	1,606
NON-RAILBELT											
Vehicle Transportation	413	424	431	440	451	463	474	484	492	499	505
Jet Fuel	135	139	144	149	154	158	163	169	175	180	185
Civilian Domestic	74	78	81	85	89	94	98	103	107	111	115
Military and International	61	62	62	63	64	65	65	67	68	69	70
Gasoline	69	70	71	71	72	73	74	75	75	75	75
Aviation	4	4	4	4	4	4	4	5	5	5	5
Highway	60	61	61	62	63	63	64	65	65	65	65
Marine	5	5	5	5	5	5	5	6	6	6	6
Diesel	334	341	345	350	357	365	371	376	380	382	384
Highway	265	270	273	276	281	286	291	294	296	298	299
Marine	69	70	72	74	76	78	80	82	83	85	86
Space Heat	117	119	120	122	124	127	129	131	132	133	134
Utility Generation	41	43	44	46	49	52	55	58	60	62	64
Southeast	8	9	9	10	11	13	14	15	15	15	16
Rest of State	33	34	35	37	38	40	41	43	45	46	48
Industry	90	83	77	71	66	62	57	53	50	47	43
TOTAL	544	549	553	558	567	577	587	595	602	607	612
STATE											
Vehicle Transportation	1,802	1,845	1,877	1,909	1,954	2,006	2,055	2,087	2,117	2,144	2,172
Jet Fuel	748	770	791	811	837	864	892	915	937	960	982
Civilian Domestic	397	416	433	450	471	495	519	539	557	576	595
Military and International	351	354	358	362	365	369	373	376	380	384	388
Gasoline	258	262	263	265	268	272	276	277	277	276	276
Aviation	22	22	22	22	23	23	24	24	24	24	24
Highway	225	227	229	230	232	236	239	239	239	239	238
Marine	12	12	13	13	13	13	13	13	14	14	14
Diesel	796	813	823	833	850	870	887	896	903	908	913
Highway	574	584	590	596	606	618	629	634	637	639	640
Marine	222	228	233	237	244	251	258	263	266	270	273
Space Heat	179	183	185	187	191	194	198	200	202	203	204
Utility Generation	50	52	53	55	58	61	64	67	69	71	72
Industry	90	83	77	71	66	62	57	53	50	47	43
Pipeline Fuel	70	63	58	52	48	43	40	36	33	30	27
Electricity Generation	20	20	19	19	19	18	18	17	17	17	16
TOTAL	2,120	2,162	2,192	2,222	2,269	2,323	2,374	2,408	2,437	2,464	2,491

03/27/92

TABLE 7.1

	2003	2004	2005	2006	2007	2008	2009	2010	TOTAL	ANNUAL GROWTH
RAILBELT										
Vehicle Transportation	1,549	1,577	1,609	1,643	1,680	1,719	1,763	1,812	30,009	2%
Jet Fuel	816	838	862	887	914	943	974	1,008	15,589	3%
Civilian Domestic	496	514	534	556	579	604	631	661	9,291	4%
Military and International	321	324	328	331	335	339	343	347	6,298	1%
Gasoline	200	201	202	203	204	206	208	211	3,988	1%
Aviation	19	20	20	20	20	20	21	21	383	1%
Highway	173	173	174	175	176	177	179	181	3,447	1%
Marine	8	8	8	8	8	8	9	9	158	1%
Diesel	533	538	545	553	561	570	581	593	10,432	1%
Highway	343	345	348	352	356	360	366	372	6,759	1%
Marine	190	193	197	201	205	210	215	221	3,672	2%
Space Heat	70	71	72	72	73	74	75	77	1,383	1%
Utility Generation	9	9	9	9	9	9	9	9	176	0%
Industry	0	0	0	0	0	0	0	0	0	0%
TOTAL	1,629	1,656	1,689	1,724	1,762	1,802	1,847	1,897	31,568	2%
NON-RAILBELT										
Vehicle Transportation	512	519	527	535	545	555	566	578	9,813	2%
Jet Fuel	190	195	199	204	209	215	220	226	3,540	3%
Civilian Domestic	119	123	128	132	137	142	147	153	2,187	4%
Military and International	71	71	72	72	72	73	73	73	1,352	1%
Gasoline	75	75	76	76	76	76	77	77	1,477	1%
Aviation	5	5	5	5	5	5	5	5	90	1%
Highway	65	65	65	65	65	66	66	66	1,277	1%
Marine	6	6	6	6	6	6	6	6	110	1%
Diesel	387	390	393	397	402	407	413	419	7,515	1%
Highway	300	302	304	306	309	312	316	320	5,855	1%
Marine	87	88	90	91	93	95	97	99	1,660	2%
Space Heat	135	135	136	137	139	140	141	143	2,607	1%
Utility Generation	65	67	69	71	73	76	78	81	1,193	4%
Southeast	16	17	18	19	19	20	22	23	294	8%
Rest of State	49	50	51	53	54	55	57	58	899	3%
Industry	41	38	36	34	32	30	28	27	1,061	-6%
TOTAL	618	624	632	640	650	661	673	686	12,067	1%
STATE										
Vehicle Transportation	2,202	2,237	2,277	2,320	2,368	2,418	2,473	2,534	42,541	2%
Jet Fuel	1,006	1,032	1,061	1,091	1,124	1,158	1,194	1,234	19,129	3%
Civilian Domestic	615	637	662	688	716	746	779	814	11,479	4%
Military and International	392	395	399	403	407	411	416	420	7,650	1%
Gasoline	276	276	277	279	280	282	285	288	5,465	1%
Aviation	24	24	24	25	25	25	26	26	473	1%
Highway	238	238	239	240	241	243	245	247	4,723	1%
Marine	14	14	14	14	14	14	15	15	268	1%
Diesel	920	928	939	950	964	978	994	1,012	17,947	1%
Highway	643	646	652	658	665	673	682	692	12,615	1%
Marine	277	282	287	292	298	305	312	320	5,332	2%
Space Heat	205	206	208	210	212	214	217	220	3,990	1%
Utility Generation	74	76	78	80	82	85	87	90	1,369	4%
Industry	41	38	36	34	32	30	28	27	1,061	-6%
Pipeline Fuel	25	22	20	19	17	15	14	13	721	-8%
Electricity Generation	16	16	15	15	15	15	14	14	340	-2%
TOTAL	2,522	2,557	2,598	2,643	2,694	2,747	2,805	2,870	48,961	2%

PROJECTED DEMAND FOR GAS

TABLE 7.2

BILLION CUBIC FEET PER YEAR

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
RAILBELT											
Vehicle Transportation	0	0	0	0	0	0	0	0	0	0	0
Space Heat	27	27	27	27	27	27	27	27	27	27	27
Utility Generation	37	38	39	40	41	43	44	45	46	46	47
Industry	76	75	74	74	73	72	72	71	71	70	69
Ammonia-Urea Production	55	55	55	55	55	55	55	55	55	55	55
Military Power Generation	5	5	5	5	5	5	5	5	5	5	5
Petroleum Production	17	16	15	14	14	13	12	12	11	10	10
Pipeline Fuel	0	0	0	0	0	0	0	0	0	0	0
Miscellaneous	17	16	15	14	14	13	12	12	11	10	10
TOTAL	140	141	140	141	141	142	143	143	143	143	143
NON-RAILBELT											
Vehicle Transportation	0	0	0	0	0	0	0	0	0	0	0
Space Heat	1	1	1	1	1	1	1	1	1	1	1
Utility Generation	1	1	1	1	1	1	1	1	1	1	1
Industry	189	197	192	188	183	179	175	171	167	164	160
Pipeline Fuel	12	11	10	9	8	7	7	6	6	5	5
Other Petroleum	177	186	182	179	175	172	168	165	162	158	155
TOTAL	191	199	194	189	185	181	177	173	169	165	162
STATE											
Vehicle Transportation	0	0	0	0	0	0	0	0	0	0	0
Space Heat	28	27	27	27	28	28	28	28	28	28	28
Utility Generation	38	39	40	41	42	44	45	46	47	47	48
Industry	329	336	331	326	320	316	311	306	302	297	293
Ammonia-Urea Production	55	55	55	55	55	55	55	55	55	55	55
Military Power Generation	5	5	5	5	5	5	5	5	5	5	5
Petroleum Production	206	213	207	202	197	192	187	183	178	174	170
Pipeline Fuel	12	11	10	9	8	7	7	6	6	5	5
Miscellaneous	194	202	197	193	189	185	180	177	173	169	165
TOTAL	395	403	398	394	390	387	384	380	376	372	369

	2003	2004	2005	2006	2007	2008	2009	2010	TOTAL	ANNUAL GROWTH
RAILBELT										
Vehicle Transportation	0	0	0	0	0	0	0	0	0	0%
Space Heat	27	27	27	27	27	27	28	28	542	0%
Utility Generation	47	48	49	50	51	52	53	55	911	2%
Industry	69	68	68	68	67	67	66	66	1,414	-1%
Ammonia-Urea Production	55	55	55	55	55	55	55	55	1,090	0%
Military Power Generation	5	5	5	5	5	5	5	5	100	0%
Petroleum Production	9	9	9	8	8	7	7	7	224	-5%
Pipeline Fuel	0	0	0	0	0	0	0	0	0	0%
Miscellaneous	9	9	9	8	8	7	7	7	224	-5%
TOTAL	143	143	144	145	146	146	147	149	2,867	0%
NON-RAILBELT										
Vehicle Transportation	0	0	0	0	0	0	0	0	0	0%
Space Heat	1	1	1	1	1	1	1	1	12	2%
Utility Generation	1	1	1	1	1	1	1	1	23	3%
Industry	156	153	150	146	143	140	137	134	3,309	-1%
Pipeline Fuel	4	4	4	3	3	3	2	2	124	-8%
Other Petroleum	152	149	146	143	140	138	135	132	3,184	-1%
TOTAL	158	155	152	148	145	142	139	136	3,343	-1%
STATE										
Vehicle Transportation	0	0	0	0	0	0	0	0	0	0%
Space Heat	28	28	28	28	28	28	28	28	554	0%
Utility Generation	48	49	50	51	52	53	55	56	933	2%
Industry	289	285	282	278	274	271	268	264	6,003	-1%
Ammonia-Urea Production	55	55	55	55	55	55	55	55	1,090	0%
Military Power Generation	5	5	5	5	5	5	5	5	100	0%
Petroleum Production	166	162	158	154	151	147	144	141	3,533	-2%
Pipeline Fuel	4	4	4	3	3	3	2	2	124	-8%
Miscellaneous	162	158	155	151	148	145	142	139	3,408	-1%
TOTAL	365	362	360	357	355	353	351	349	7,490	-1%

[1] Includes industrial,military, and government use. Excludes pipeline fuel.
03/27/92

APPENDIX A
OIL AND GAS FIELD DATA

ALBERT KALOA (Gas)
Location Cook Inlet, west side; onshore
Operator CIRI
Production suspended
State of Alaska has no leases in this field

BEAVER CREEK (Oil and Gas)
Location Cook Inlet, east side; onshore
Operator Marathon
Production began 1973
State of Alaska has no leases in this field

BELUGA RIVER (Gas)
Location Cook Inlet, west side; onshore
Operator Arco
Production began 1968

BIRCH HILL (Gas)
Location Cook Inlet, east side; onshore
Operator Arco
Production shut-in 1965
State of Alaska has no leases in this field

CANNERY LOOP (Gas)
Location Cook Inlet, east side; onshore
Operator Unocal
Production began 1988

EAST BARROW (Gas)
Location North Slope; onshore
Operator North Slope Borough
Production began 1981
State of Alaska has no leases in this field.

EAST UMIAT (Gas)
Location North Slope, onshore
Operator UMC Petroleum
Production shut-in, no production

ENDICOTT (Oil and Gas)
Location North Slope; offshore
Operator BP
Production began 1987

FALLS CREEK (Gas)
Location Cook Inlet, east side; onshore
Operator Arco
Production shut-in 1981

GRANITE POINT (Oil and Gas)
Location Cook Inlet, west side; offshore
Operator Unocal
Production began 1967

GWYDYR BAY (Oil)
Location North Slope; onshore and offshore
Operator Arco
Production field delineation underway

HEMI SPRINGS (Oil)
Location North Slope; onshore
Operator Arco
Production field delineation underway

KATALLA (Oil)
Location Gulf of Alaska
Production abandoned 1933

KAVIK (Gas)
Location North Slope; onshore
Operator Arco
Production shut-in

KEMIK (Gas)
Location North Slope; onshore
Operator BP
Production shut-in 1972

KENAI (Gas)
Location Cook Inlet, east side; onshore
Operator Unocal
Production began 1961

KUPARUK (Oil and Gas)
Location North Slope; onshore
Operator Arco
Production began 1981

LEWIS RIVER (Gas)
Location Cook Inlet, west side; onshore
Operator Unocal
Production began 1984

LISBURNE (Oil and Gas)
Location North Slope; onshore
Operator Arco
Production began 1986

MCARTHUR RIVER (Oil and Gas)
Location Cook Inlet, west side; offshore
Operator Unocal
Production began 1967
Platforms Grayling, King Salmon, Dolly Vardon, Steelhead

MIDDLE GROUND SHOAL (Oil and Gas)
Location Cook Inlet, east side; offshore
Operator A and C platforms: Shell
Baker and Dillon platforms: Unocal
Production began 1967
Platforms A, Baker, C, Dillon,

MILNE POINT (Oil)
Location North Slope; onshore
Operator Conoco
Production began 1985, suspended 1/88 – 2/89

MOQUAWKIE (Gas)
Location Cook Inlet, west side; onshore
Operator CIRI
Production shut-in 1979

NIAKUK (Oil)
Location North Slope; offshore; Prudhoe Bay Unit
Operator BP
Production startup in 1995

NICOLAI CREEK (Gas)
Location Cook Inlet, west side; onshore and offshore
Operator Unocal
Production began 1968, now shut-in

NORTH COOK INLET (Gas)
Location Cook Inlet, mid channel; offshore
Operator Phillips
Production began 1970
Platform Phillips A

NORTH FORK (Gas)
Location Cook Inlet, east side; onshore
Operator Unocal
Production shut-in 1965

NORTH MIDDLE GROUND SHOAL (Gas)
Location Cook Inlet; offshore
Operator Shell and Unocal, one well each
Production abandoned

POINT McINTYRE (Oil)
Location North Slope; offshore; Prudhoe Bay Unit
Operator Arco
Production startup in 1994

POINT THOMSON AND FLAXMAN ISLAND (Oil and Gas)
Location North Slope; onshore and offshore
Operator Exxon
Production shut-in

PRETTY CREEK (Gas)
Location Cook Inlet, west side; onshore
Operator Unocal
Production began 1986

PRUDHOE BAY (Oil and Gas)
Location North Slope; onshore
Operator Western Operating Area: BP
Eastern Operating Area: Arco
Production began 1977

REDOUBT SHOAL (Oil)
Location Cook Inlet, west side; offshore
Operator unleased
Production abandoned

SAG DELTA (Oil)
Location North Slope; offshore; Duck Island Unit
Operator BP
Production began 1639

SCHRADER BLUFF (Oil)
Location North Slope; onshore; Milne Point Unit
Operator Conoco
Production began 1991

SIMPSON LAGOON (Oil)
Operator US Navy
Production shut-in

SOUTH BARROW (Gas)
Operator North Slope Borough
Production began 1950
State of Alaska has no leases in this field.

STERLING (Gas)
Location Cook Inlet, east side; onshore
Operator Unocal
Production began 1962, shut-in 1986
State of Alaska has no leases in this field.

STUMP LAKE (Gas)
Location Cook Inlet, west side; onshore
Operator Unocal
Production began 1990

SWANSON RIVER (Oil and Gas)
Location Cook Inlet, east side; onshore
Operator Arco
Production began 1958
State of Alaska has no leases in this field

TRADING BAY (Oil and Gas)
Location Cook Inlet, west side; offshore
Operator Marathon: Spur and Spark, Unocal: Monopod
Production began 1967
Platforms Spur, Spark, Monopod

UGNU (Oil)
Location North Slope, onshore
Operator Standard
Production abandoned

UMIAT (Oil)
Location North Slope, onshore
Operator US Dpt. of Interior
Production shut-in

WEST FORELANDS (Gas)
Location Cook Inlet, west side; onshore and offshore
Operator Phillips
Production shut-in 1962

WEST SAK (Oil)
Location North Slope; onshore
Operator Arco
Production Pilot study, 1984 – 1986

01/30/92

APPENDIX B
LEASE DATA

This table lists only state oil and gas leases that produced hydrocarbons as of January 31, 1992.

LEASE TRACT	PARTICIPATING AREA OIL %	PARTICIPATING AREA GAS %	ROYALTY %	OWNER	%	OWNER	%	OWNER	%
BELUGA									
17592	100.0000000	8.0024000	0.00000	ARCO	33.3333333	CHEVRON	33.3333333	SHELL	33.3333334
17599	0.0000000	5.0210000	0.00000	ARCO	33.3333333	CHEVRON	33.3333333	SHELL	33.3333334
17658	0.0000000	12.7251000	0.00000	L PART.	33.3333333	CHEVRON	33.3333333	SHELL	33.3333334
21126	0.0000000	0.7855000	0.00000	MARATHON	33.3333333	CHEVRON	33.3333333	SHELL	33.3333334
21127	0.0000000	9.4019000	0.00000	CHEVRON	33.3333333	CHEVRON	33.3333333	SHELL	33.3333334
21128	0.0000000	14.5560000	0.00000	PHILLIPS	33.3333333	CHEVRON	33.3333333	SHELL	33.3333334
21129	0.0000000	0.5803000	0.00000	ARCO	33.3333333	CHEVRON	33.3333333	SHELL	33.3333334
58815 8	0.0000000	0.0162000	0.00000	ARCO	33.3333333	CHEVRON	33.3333333	SHELL	33.3333334
58820 9	0.0000000	1.5889000	0.00000	ARCO	33.3333333	CHEVRON	33.3333333	SHELL	33.3333334
58831 0	0.0000000	7.7629000	0.00000	ARCO	33.3333333	CHEVRON	33.3333333	SHELL	33.3333334
CANNERY LOOP									
BELUGA									
002397 A	0.0000000	5.4332000	0.00000	CIRI	6.2500000	MARATHON	50.0000000	UNION	43.7500000
324602 A	0.0000000	17.0829500	0.00000	CIRI	9.3750000	MARATHON	25.0000000	UNION	65.6250000
324604 B	0.0000000	0.1541300	0.00000	CALL	100.0000000				
359153	0.0000000	6.6835800	0.00000	CIRI	33.3330000	MARATHON	33.3330000	UNION	33.3340000
364595 C	0.0000000	1.9844900	0.00000	CIRI	33.3330000	MARATHON	33.3330000	UNION	33.3340000
365454	0.0000000	0.4591900	0.00000	CIRI	33.3330000	MARATHON	33.3330000	UNION	33.3340000
TYONEK DEEP									
002397 A	0.0000000	5.4125000	0.00000	CIRI	6.2500000	MARATHON	50.0000000	UNION	43.7500000
324602 A	0.0000000	29.2068900	0.00000	CIRI	9.3750000	MARATHON	25.0000000	UNION	65.6250000
359153 7	0.0000000	13.5137500	0.00000	CIRI	33.3330000	MARATHON	33.3330000	UNION	33.3340000
UPPER TYONEK									
002397 A	0.0000000	7.3449200	0.00000	CIRI	6.2500000	MARATHON	50.0000000	UNION	43.7500000
324602 A	0.0000000	29.8726200	0.00000	CIRI	9.3750000	MARATHON	25.0000000	UNION	65.6250000
359153 7	0.0000000	13.5705700	0.00000	CIRI	33.3330000	MARATHON	33.3330000	UNION	33.3340000
365454 2	0.0000000	1.3091500	0.00000	CIRI	33.3330000	MARATHON	33.3330000	UNION	33.3340000
DUCK ISLAND UNIT									
ENDICOTT									
34633 3	26.7609000	26.7609000	12.50000	BP	100.0000000				
34634 2	0.0675000	0.0675000	12.50000	BP	100.0000000				
34636 4	5.2911000	5.2911000	12.50000	BP	100.0000000				
47502 1	22.3357000	22.3357000	12.50000	AMOCO	25.0000000	EXXON	50.0000000	UNION	25.0000000
47503 2	19.6233000	19.6233000	12.50000	AMOCO	25.0000000	EXXON	50.0000000	UNION	25.0000000
47504 3	0.0036000	0.0036000	12.50000	EXXON	100.0000000				
47505 4	0.0140000	0.0140000	12.50000	EXXON	100.0000000				
47506 5	0.0084000	0.0084000	12.50000	AMOCO	50.0000000	UNION	50.0000000		
312828 5 [1]	25.8252000	25.8252000	20.00000	BP	95.5000000	CIRI	2.5000000	DOYON	0.5000000
				NANA	1.5000000				
312834 6 [2]	0.0703000	0.0703000	20.00000	ARCO	33.3400000	EXXON	33.3300000	UNION	33.3300000
SAG DELTA									
34633 3	25.0000000	6.6356000	12.50000	BP	100.0000000				
312828 5	75.0000000	93.3644000	20.00000	BP	95.5000000	CIRI	2.5000000	DOYON	0.5000000
GRANITE POINT									
GRANITE POINT 1									
18761	100.0000000	100.0000000	12.50000	MOBIL	75.0000000	UNION	25.0000000		
GRANITE POINT 2									
17586	100.0000000	100.0000000	12.50000	AMOCO	62.5000000	CHEVRON	12.5000000	TEXACO	25.0000000
17587	100.0000000	100.0000000	12.50000	CHEVRON	12.5000000	TEXACO	25.0000000	UNION	62.5000000
18742	100.0000000	100.0000000	12.50000	CHEVRON	12.5000000	TEXACO	25.0000000	UNION	62.5000000
GRANITE POINT II GAS FIELD									
17586	0.0000000	2.1040000	0.00000	AMOCO	25.0000000	ARCO	12.5000000	CHEVRON	12.5000000

					GETTY	25.0000000	PHILLIPS	25.0000000		
17587		0.0000000	1.2430000	0.00000	AMOCO	25.0000000	ARCO	12.5000000	CHEVRON	12.5000000
					GETTY	25.0000000	PHILLIPS	25.0000000		
18742		0.0000000	98.6530000	0.00000	AMOCO	25.0000000	ARCO	12.5000000	CHEVRON	12.5000000
					GETTY	25.0000000	PHILLIPS	25.0000000		
IVAN RIVER										
17600	1	0.0000000	6.5064900	0.00000	ARCO	44.9690000	SHELL	4.0250000	UNION	51.0060000
302282	6	0.0000000	3.4922500	0.00000	ARCO	100.0000000				
302284	5	0.0000000	18.7468100	0.00000	UNION	100.0000000				
326058	7	0.0000000	10.4767400	0.00000	ARCO	26.8200500	UNION	73.1799500		
32930	2	0.0000000	25.8428100	0.00000	ARCO	29.3300000	UNION	70.6700000		
32930	A	0.0000000	7.9348200	0.00000	ARCO	29.3300000	UNION	70.6700000		
32930	B	0.0000000	13.1103200	0.00000	ARCO	29.3300000	UNION	70.6700000		
33637	3	0.0000000	8.4686900	0.00000	ARCO	12.5000000	UNION	87.5000000		
33727	4	0.0000000	5.4212700	0.00000	ARCO	50.0000000	UNION	50.0000000		
KENAI										
STERLING										
588	5	0.0000000	6.7607000	0.00000	MARATHON	50.0000000	UNION	50.0000000		
593	6	0.0000000	7.4430000	0.00000	MARATHON	50.0000000	UNION	50.0000000		
594	7	0.0000000	0.6717000	0.00000	MARATHON	50.0000000	UNION	50.0000000		
2411	8	0.0000000	0.7608000	0.00000	MARATHON	50.0000000	UNION	50.0000000		
308223	6	0.0000000	0.0083000	0.00000	MARATHON	50.0000000	UNION	50.0000000		
324598	4	0.0000000	0.9065000	0.00000	MARATHON	50.0000000	UNION	50.0000000		
KUPARUK RIVER										
25512	2	1.6551400	1.6551400	12.50000	ARCO	50.0000000	BP	50.0000000		
25513	3	1.7152640	1.7152640	12.50000	ARCO	50.0000000	BP	50.0000000		
25519	4	1.3457100	1.3457100	12.50000	ARCO	50.0000000	BP	50.0000000		
25520	5	1.6672300	1.6672300	12.50000	ARCO	50.0000000	BP	50.0000000		
25521	6	1.5143720	1.5143720	12.50000	ARCO	50.0000000	BP	50.0000000		
25522	1	0.5234520	0.5234520	12.50000	ARCO	50.0000000	BP	50.0000000		
25523	7	1.4024420	1.4024420	12.50000	ARCO	50.0000000	BP	50.0000000		
25524	8	0.4135480	0.4135480	12.50000	ARCO	50.0000000	BP	50.0000000		
25531	1	1.2773760	1.2773760	12.50000	ARCO	33.3300000	BP	33.3400000	UNION	33.3300000
25547	4	1.3601070	1.3601070	12.50000	ARCO	33.3300000	BP	33.3400000	UNION	33.3300000
25548	9	0.8598570	0.8598570	12.50000	ARCO	33.3300000	BP	33.3400000	UNION	33.3300000
25568	5	0.4582890	0.4582890	12.50000	ARCO	33.3300000	BP	33.3400000	UNION	33.3300000
25569	4	1.4250720	1.4250720	12.50000	ARCO	33.3300000	BP	33.3400000	UNION	33.3300000
25570	0	2.1593850	2.1593850	12.50000	ARCO	33.3300000	BP	33.3400000	UNION	33.3300000
25571	9	0.9853950	0.9853950	12.50000	ARCO	33.3300000	BP	33.3400000	UNION	33.3300000
25585	9	0.1109790	0.1109790	12.50000	ARCO	33.3300000	BP	33.3400000	UNION	33.3300000
25586	8	1.0958670	1.0958670	12.50000	ARCO	33.3300000	BP	33.3400000	UNION	33.3300000
25587	7	1.4997570	1.4997570	12.50000	ARCO	33.3300000	BP	33.3400000	UNION	33.3300000
25588	6	1.3118010	1.3118010	12.50000	ARCO	33.3300000	BP	33.3400000	UNION	33.3300000
25589	5	0.9666180	0.9666180	12.50000	ARCO	33.3300000	BP	33.3400000	UNION	33.3300000
25590	4	0.3544680	0.3544680	12.50000	ARCO	33.3300000	BP	33.3400000	UNION	33.3300000
25603	0	0.0724380	0.0724380	12.50000	ARCO	33.3300000	BP	33.3400000	UNION	33.3300000
25604	9	0.3536130	0.3536130	12.50000	ARCO	33.3300000	BP	33.3400000	UNION	33.3300000
25605	8	0.3154080	0.3154080	12.50000	ARCO	33.3300000	BP	33.3400000	UNION	33.3300000
25627	6	0.1302260	0.1302260	12.50000	ARCO	50.0000000	BP	50.0000000		
25628	5	0.8958480	0.8958480	12.50000	ARCO	50.0000000	BP	50.0000000		
25629	4	1.7086340	1.7086340	12.50000	ARCO	50.0000000	BP	50.0000000		
25630	3	1.8849320	1.8849320	12.50000	ARCO	50.0000000	BP	50.0000000		
25631	2	1.4012720	1.4012720	12.50000	ARCO	50.0000000	BP	50.0000000		
25632	3	2.8707800	2.8707800	12.50000	ARCO	50.0000000	BP	50.0000000		
25633	2	2.3583440	2.3583440	12.50000	ARCO	50.0000000	BP	50.0000000		
25634	1	1.9633840	1.9633840	12.50000	ARCO	50.0000000	BP	50.0000000		
25635	0	1.7273580	1.7273580	12.50000	ARCO	50.0000000	BP	50.0000000		
25636	9	0.3740640	0.3740640	12.50000	ARCO	50.0000000	BP	50.0000000		
25637	8	0.0438520	0.0438520	12.50000	ARCO	50.0000000	BP	50.0000000		
25638	5	0.3165730	0.3165730	12.50000	ARCO	100.0000000				
25639	4	1.4173980	1.4173980	12.50000	ARCO	100.0000000				
25640	3	2.9779340	2.9779340	12.50000	ARCO	50.0000000	BP	50.0000000		
25641	2	3.5857240	3.5857240	12.50000	ARCO	50.0000000	BP	50.0000000		
25642	1	3.6870000	3.6870000	12.50000	ARCO	50.0000000	BP	50.0000000		
25643	0	2.4034580	2.4034580	12.50000	ARCO	50.0000000	BP	50.0000000		
25644	3	2.4954600	2.4954600	12.50000	ARCO	50.0000000	BP	50.0000000		

25645	2		3.9018940	3.9018940	12.50000	ARCO	50.0000000	BP	50.0000000		
25646	1		4.2658220	4.2658220	12.50000	ARCO	50.0000000	BP	50.0000000		
25647	0		3.5252980	3.5252980	12.50000	ARCO	100.0000000				
25648	9		1.8731170	1.8731170	12.50000	ARCO	100.0000000				
25649	8		1.2069380	1.2069380	12.50000	ARCO	100.0000000				
25650	6		1.4300340	1.4300340	12.50000	ARCO	100.0000000				
25651	5		3.0223280	3.0223280	12.50000	ARCO	100.0000000				
25652	4		2.6442780	2.6442780	12.50000	ARCO	50.0000000	BP	50.0000000		
25653	3		2.8414500	2.8414500	12.50000	ARCO	50.0000000	BP	50.0000000		
25654	2		2.2721880	2.2721880	12.50000	ARCO	50.0000000	BP	50.0000000		
25655	1		2.7833600	2.7833600	12.50000	ARCO	50.0000000	BP	50.0000000		
25656	6		1.8244560	1.8244560	12.50000	ARCO	50.0000000	BP	50.0000000		
25657	5		2.1913520	2.1913520	12.50000	ARCO	50.0000000	BP	50.0000000		
25658	4		1.8263800	1.8263800	12.50000	ARCO	50.0000000	BP	50.0000000		
25659	3		1.2902640	1.2902640	12.50000	ARCO	50.0000000	BP	50.0000000		
25660	2		1.0760830	1.0760830	12.50000	ARCO	100.0000000				
25661	1		0.6854630	0.6854630	12.50000	ARCO	100.0000000				
25664	0		0.0481210	0.0481210	12.50000	ARCO	100.0000000				
25665	9		0.1792340	0.1792340	12.50000	ARCO	50.0000000	BP	50.0000000		
25666	8		0.3953800	0.3953800	12.50000	ARCO	50.0000000	BP	50.0000000		
25667	7		1.1418280	1.1418280	12.50000	ARCO	50.0000000	BP	50.0000000		
25668	7		0.0049340	0.0049340	12.50000	ARCO	50.0000000	BP	50.0000000		
28242	7		0.4346000	0.4346000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28243	7		0.5124000	0.5124000	12.50000	ARCO	32.9672400	BP	17.0327600	MOBIL	50.0000000
355023	2	[3]	0.8266180	0.8266180	12.50000	ARCO	100.0000000				
355024	3	[3]	0.1087260	0.1087260	12.50000	ARCO	100.0000000				
355030	4	[3]	0.0021490	0.0021490	12.50000	ARCO	100.0000000				
355032	5	[3]	0.1329500	0.1329500	12.50000	ARCO	100.0000000				
355501	6		0.0039560	0.0039560	12.50000	ARCO	100.0000000				
47449	6		0.2172000	0.2172000	12.50000	CHEVRON	50.0000000	MOBIL	50.0000000		

LEWIS RIVER

PARTICIPATING AREA 1

58798	0.0000000	16.6670000	0.00000	L PARTNER	100.0000000	
58801	0.0000000	61.1110000	0.00000	L PARTNER	100.0000000	
58802	0.0000000	22.2220000	0.00000	L PARTNER	100.0000000	

PARTICIPATING AREA 2

58798	0.0000000	76.1905000	0.00000	L PARTNER	100.0000000	
58801	0.0000000	14.2857000	0.00000	L PARTNER	100.0000000	
58802	0.0000000	9.5238000	0.00000	L PARTNER	100.0000000	

LISBURNE

28277	5		0.0170000	0.0000000	12.50000	BP	100.0000000				
28280	4		0.0380000	0.0000000	12.50000	BP	100.0000000				
28285	9		0.0300000	0.0000000	12.50000	BP	100.0000000				
28299	6		0.1870000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28300	7		1.7170000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28301	8		2.4440000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28302	1		5.4180000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28303	2		2.2490000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28304	3		0.5380000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28305	0		0.1450000	0.0000000	12.50000	BP	100.0000000				
28306	1		0.9190000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28307	2		3.5270000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28308	3		0.2460000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28309	4		0.0890000	0.0000000	12.50000	BP	100.0000000				
28320	8		6.7190000	0.0000000	12.50000	BP	100.0000000				
28321	3		8.5540000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28322	4		10.0680000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28323	5		11.0800000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28324	0		4.3250000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28325	1		3.7180000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28326	**		1.9750000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28327	3		0.0400000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28328	2		0.0260000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28329	1		0.0190000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28337	6		0.6590000	0.0000000	12.50000	BP	100.0000000				
28338	7		0.8960000	0.0000000	12.50000	BP	100.0000000				
28339	6		3.1550000	0.0000000	12.50000	BP	100.0000000				
28339	A		1.0830000	0.0000000	12.50000	BP	100.0000000				

28340	7	0.0300000	0.0000000	12.50000	BP	100.0000000				
28340	A	0.2000000	0.0000000	12.50000	BP	100.0000000				
28342	4	0.5690000	0.0000000	12.50000	BP	100.0000000				
28343	9	2.4130000	0.0000000	12.50000	BP	100.0000000				
28343	A	1.1160000	0.0000000	12.50000	BP	100.0000000				
28344	5	0.0250000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28345	4	0.1170000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
34628	9	3.3300000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
34629	0	3.5260000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
34630	1	1.3770000	0.0000000	12.50000	BP	100.0000000				
34631	9	8.6100000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
34632	0	7.3420000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
34634	3	0.6490000	0.0000000	12.50000	BP	100.0000000				
34635	**	0.8150000	0.0000000	12.50000	BP	100.0000000				

MCARTHUR RIVER

HEMLOCK

17579		12.9480000	12.9480000	12.50000	ARCO	100.0000000				
17594		28.6480000	28.6480000	12.50000	MARATHON	50.0000000	UNION	50.0000000		
17602		3.7000000	3.7000000	12.50000	ARCO	100.0000000				
18716		2.6730000	2.6730000	12.50000	ARCO	100.0000000				
18729		17.8330000	17.8330000	12.50000	MARATHON	50.0000000	UNION	50.0000000		
18730		16.6480000	16.6480000	12.50000	MARATHON	50.0000000	UNION	50.0000000		
18758		2.7750000	2.7750000	12.50000	ARCO	100.0000000				
18772		9.2490000	9.2490000	12.50000	ARCO	100.0000000				
18777		4.6010000	4.6010000	12.50000	ARCO	100.0000000				
21068		0.9250000	0.9250000	12.50000	ARCO	100.0000000				

MIDDLE KENAI

17594		26.6700000	26.6700000	12.50000	MARATHON	51.0000000	UNION	49.0000000		
18729		34.8100000	34.8100000	12.50000	MARATHON	51.0000000	UNION	49.0000000		
18730		32.5900000	32.5900000	12.50000	MARATHON	51.0000000	UNION	49.0000000		
18772		5.9300000	5.9300000	12.50000	MARATHON	51.0000000	UNION	49.0000000		

STEELHEAD

17594	3	0.0000000	38.5542200	0.00000	MARATHON	50.0000000	UNION	50.0000000		
18729	0	0.0000000	27.7108400	0.00000	MARATHON	50.0000000	UNION	50.0000000		
18730	1	0.0000000	33.7349400	0.00000	MARATHON	50.0000000	UNION	50.0000000		

WEST FORELAND

17594		30.2500000	30.2500000	12.50000	MARATHON	51.0000000	UNION	49.0000000		
18729		29.4100000	29.4100000	12.50000	MARATHON	51.0000000	UNION	49.0000000		
18730		33.6200000	33.6200000	12.50000	MARATHON	51.0000000	UNION	49.0000000		
18772		6.7200000	6.7200000	12.50000	MARATHON	51.0000000	UNION	49.0000000		

MIDDLE GROUND SHOAL

17595		100.0000000	100.0000000	12.50000	AMOCO	62.5000000	CHEVRON	12.5000000	TEXACO	25.0000000
18754		100.0000000	100.0000000	12.50000	SHELL	100.0000000				
18756		100.0000000	100.0000000	12.50000	SHELL	100.0000000				

MILNE POINT

KUPARUK PARTICIPATING AREA

25509	0	8.8209200	0.0000000	12.50000	CHEVRON	100.0000000				
25516	4	2.7859000	0.0000000	12.50000	CHEVRON	100.0000000				
25518	9	4.2759500	0.0000000	12.50000	CHEVRON	100.0000000				
28231	8	4.2328300	0.0000000	12.50000	CONOCO	100.0000000				
315848	A	1.4907500	0.0000000	12.50000	CHEVRON	100.0000000				
47433	2	8.3527700	0.0000000	20.00000	CONOCO	86.0000000				
47434	3	28.4553300	0.0000000	20.00000	CONOCO	87.7500000	OXY	12.2500000		
47437	5	32.7923500	0.0000000	20.00000	CONOCO	86.0000000	OXY	14.0000000		
47438	6	8.7932000	0.0000000	20.00000	CONOCO	86.0000000	OXY	14.0000000		

SCHRADER BLUFF

25509	**	1.0053900	0.0000000	12.50000	CHEVRON	100.0000000				
25514	**	4.9181500	0.0000000	12.50000	CHEVRON	100.0000000				
25512	**	10.3360400	0.0000000	12.50000	CONOCO	100.0000000				
25516	4	6.3159600	0.0000000	12.50000	CHEVRON	100.0000000				
25518	9	19.0431900	0.0000000	12.50000	CHEVRON	100.0000000				
25906	**	25.6086200	0.0000000	12.50000	CONOCO	100.0000000				
28231	8	5.0879600	0.0000000	12.50000	CONOCO	100.0000000				
315848	A	6.3159600	0.0000000	12.50000	CHEVRON	100.0000000				
47432	1	0.0099100	0.0000000	20.00000	CONOCO	86.0000000	OXY	14.0000000		
47433	2	1.3448800	0.0000000	20.00000	CONOCO	86.0000000	OXY	14.0000000		

47434	3	3.2386800	0.0000000	20.00000	CONOCO	87.7500000	OXY	12.2500000		
47437	5	13.3041900	0.0000000	20.00000	CONOCO	86.0000000	OXY	14.0000000		
47438	6	3.4210700	0.0000000	20.00000	CONOCO	86.0000000	OXY	14.0000000		
NORTH TRADING BAY										
17597		50.0000000	50.0000000	12.50000	MARATHON	50.0000000	UNION	50.0000000		
18776		28.5700000	28.5700000	12.50000	MARATHON	100.0000000				
35431		21.4300000	21.4300000	12.50000	MARATHON	100.0000000				
NORTH COOK INLET										
17589	2	0.0000000	44.7324000	0.00000	PHILLIPS	100.0000000				
17590	3	0.0000000	6.5430000	0.00000	PHILLIPS	100.0000000				
18740	7	0.0000000	8.1787000	0.00000	PHILLIPS	100.0000000				
18741	8	0.0000000	6.5429000	0.00000	PHILLIPS	100.0000000				
37831	1	0.0000000	34.0030000	0.00000	PHILLIPS	100.0000000				
PT. McINTYRE										
28297		100.0000000	0.0000000	12.50000	ARCO	100.0000000				
PRETTY CREEK										
58810	2	0.0000000	23.8984800	0.00000	TEXACO	11.0000000	UNION	89.0000000		
58813	4	0.0000000	20.8695700	0.00000	TEXACO	11.0000000	UNION	89.0000000		
58814	5	0.0000000	10.4347800	0.00000	TEXACO	11.0000000	UNION	89.0000000		
63047	0	0.0000000	6.0869600	0.00000	TEXACO	11.0000000	UNION	89.0000000		
63048	1	0.0000000	27.8260800	0.00000	TEXACO	11.0000000	UNION	89.0000000		
63049	2	0.0000000	10.4347800	0.00000	TEXACO	11.0000000	UNION	89.0000000		
PRUDHOE BAY										
OIL RIM										
25637	6	0.0046309	0.0046309	12.50000	ARCO	50.0000000	BP	50.0000000		
28238	9	0.0163822	0.0163822	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28239	8	0.0614364	0.0614364	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28240	0	0.0913318	0.0913318	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28241	1	0.0486990	0.0486990	12.50000	MOBIL	50.0000000	PHILLIPS	50.0000000		
28244	2	0.0000124	0.0000124	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28245	3	0.1486696	0.1486696	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28246	2	0.0007026	0.0007026	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28257	2	1.7767068	1.7767068	12.50000	MOBIL	50.0000000	PHILLIPS	50.0000000		
28258	1	0.4599204	0.4599204	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28259	0	0.0076616	0.0076616	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28260	7	1.4815529	1.4815529	12.50000	BP	100.0000000				
28261	8	0.0888936	0.0888936	12.50000	MOBIL	50.0000000	PHILLIPS	50.0000000		
28262	4	0.2968897	0.2968897	12.50000	CHEVRON	100.0000000				
28262	A	0.0772452	0.0772452	12.50000	CHEVRON	33.3333333	MOBIL	33.3333334	PHILLIPS	33.3333333
28263	5	0.1338160	0.1338160	12.50000	MOBIL	50.0000000	PHILLIPS	50.0000000		
28263	A	0.2071833	0.2071833	12.50000	CHEVRON	33.3333333	MOBIL	33.3333334	PHILLIPS	33.3333333
28264	9	0.1174944	0.1174944	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28265	4	0.0364292	0.0364292	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28275	2	0.0133022	0.0133022	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28276	3	0.0000864	0.0000864	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28277	5	0.8421396	0.8421396	12.50000	BP	100.0000000				
28278	4	1.0400165	1.0400165	12.50000	BP	100.0000000				
28279	3	1.2989359	1.2989359	12.50000	BP	100.0000000				
28280	4	3.8981682	3.8981682	12.50000	BP	100.0000000				
28281	5	3.3705436	3.3705436	12.50000	BP	100.0000000				
28282	6	3.0429668	3.0429668	12.50000	BP	100.0000000				
28283	7	1.5634829	1.5634829	12.50000	BP	100.0000000				
28284	8	3.3026290	3.3026290	12.50000	BP	100.0000000				
28285	9	3.9964449	3.9964449	12.50000	BP	100.0000000				
28286	6	2.6691922	2.6691922	12.50000	BP	100.0000000				
28287	7	1.2578240	1.2578240	12.50000	BP	100.0000000				
28288	8	0.3601455	0.3601455	12.50000	MOBIL	50.0000000	PHILLIPS	50.0000000		
28289	5	0.1312435	0.1312435	12.50000	MOBIL	50.0000000	PHILLIPS	50.0000000		
28290	5	0.0024590	0.0024590	12.50000	MOBIL	50.0000000	PHILLIPS	50.0000000		
28299	6	0.9307902	0.9307902	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28300	7	1.0365258	1.0365258	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28302	1	0.3106250	0.3106250	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28303	2	1.9447402	1.9447402	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28304	3	3.2449752	3.2449752	12.50000	ARCO	50.0000000	EXXON	50.0000000		

28305	0	3.6765194	3.6765194	12.50000	BP	100.0000000					
28306	1	2.9343182	2.9343182	12.50000	ARCO	50.0000000	EXXON	50.0000000			
28307	2	1.8596860	1.8596860	12.50000	ARCO	50.0000000	EXXON	50.0000000			
28308	3	3.9394274	3.9394274	12.50000	ARCO	50.0000000	EXXON	50.0000000			
28309	4	3.8650657	3.8650657	12.50000	BP	100.0000000					
28310	5	3.9334322	3.9334322	12.50000	BP	100.0000000					
28311	0	3.6619111	3.6619111	12.50000	BP	100.0000000					
28312	9	2.8963363	2.8963363	12.50000	BP	100.0000000					
28313	B	1.5538656	1.5538656	12.50000	ARCO	50.0000000	EXXON	50.0000000			
28314	2	0.4588814	0.4588814	12.50000	MOBIL	50.0000000	PHILLIPS	50.0000000			
28315	1	1.2192336	1.2192336	12.50000	BP	100.0000000					
28316	A	0.0565330	0.0565330	12.50000	CHEVRON	33.3333333	MOBIL	33.3333334	PHILLIPS	33.3333333	
28316	7	0.0088125	0.0088125	12.50000	CHEVRON	100.0000000					
28320	8	0.3566016	0.3566616	12.50000	BP	100.0000000					
28321	3	1.1125780	1.1125780	12.50000	ARCO	50.0000000	EXXON	50.0000000			
28322	4	1.0995790	1.0995790	12.50000	ARCO	50.0000000	EXXON	50.0000000			
28323	5	0.7714806	0.7714806	12.50000	ARCO	50.0000000	EXXON	50.0000000			
28324	0	2.0837850	2.0837850	12.50000	ARCO	50.0000000	EXXON	50.0000000			
28325	1	2.7773702	2.7773702	12.50000	ARCO	50.0000000	EXXON	50.0000000			
28326	2	3.1133992	3.1133992	12.50000	ARCO	50.0000000	EXXON	50.0000000			
28327	3	2.7730980	2.7730980	12.50000	ARCO	50.0000000	EXXON	50.0000000			
28328	2	4.0900128	4.0900128	12.50000	ARCO	50.0000000	EXXON	50.0000000			
28329	1	4.1555298	4.1555298	12.50000	ARCO	50.0000000	EXXON	50.0000000			
28330	0	1.4812197	1.4812197	12.50000	BP	100.0000000					
28331	9	1.5486835	1.5486835	12.50000	BP	100.0000000					
28332	8	1.6240684	1.6240684	12.50000	ARCO	50.0000000	EXXON	50.0000000			
28333	0	0.0691187	0.0691187	12.50000	BP	100.0000000					
28334	A	0.1303563	0.1303563	12.50000	CHEVRON	33.3333333	MOBIL	33.3333334	PHILLIPS	33.3333333	
28334	9	0.0179622	0.0179622	12.50000	MOBIL	50.0000000	PHILLIPS	50.0000000			
28335	8	0.0667905	0.0667905	12.50000	BP	100.0000000					
28339	6	0.0001956	0.0001956	12.50000	BP	100.0000000					
28343	9	0.1342393	0.1342393	12.50000	BP	100.0000000					
28345	4	0.5812244	0.5812244	12.50000	ARCO	50.0000000	EXXON	50.0000000			
28346	7	0.2982834	0.2982834	12.50000	ARCO	50.0000000	EXXON	50.0000000			
28349	1	0.0092138	0.0092138	12.50000	BP	100.0000000					
34631	9	0.2490770	0.2490770	12.50000	ARCO	50.0000000	EXXON	50.0000000			
34632	0	0.1146214	0.1146214	12.50000	ARCO	50.0000000	EXXON	50.0000000			
47446	5	0.0099777	0.0099777	12.50000	CHEVRON	50.0000000	MOBIL	50.0000000			
47447	4	0.0049708	0.0049708	12.50000	CHEVRON	50.0000000	MOBIL	50.0000000			
47448	0	0.0010848	0.0010848	12.50000	MOBIL	66.6666667	PHILLIPS	33.3333333			
47449	7	0.0064355	0.0064355	12.50000	CHEVRON	50.0000000	MOBIL	50.0000000			
47450	9	0.0468606	0.0468606	12.50000	CHEVRON	33.3333333	MOBIL	33.3333334	PHILLIPS	33.3333333	
47451	6	0.1902328	0.1902328	12.50000	CHEVRON	33.3333333	MOBIL	33.3333334	PHILLIPS	33.3333333	
47452	0	0.2232645	0.2232645	12.50000	CHEVRON	33.3333333	MOBIL	33.3333334	PHILLIPS	33.3333333	
47453	1	0.1144260	0.1144260	12.50000	CHEVRON	33.3333333	MOBIL	33.3333334	PHILLIPS	33.3333333	
47454	3	0.0200389	0.0200389	12.50000	CHEVRON	33.3333333	MOBIL	33.3333334	PHILLIPS	33.3333333	
47469	9	0.0307565	0.0307565	12.50000	MOBIL	50.0000000	PHILLIPS	50.0000000			
47471	6	0.3000685	0.3000685	12.50000	AMERADA	27.0000000	L L & E	13.2500000	SHELL	29.2500000	
					TEXACO	30.5000000					
47472	7	0.8139925	0.8139925	12.50000	AMERADA	50.0000000	TEXACO	50.0000000			
47475	3	0.1996175	0.1996175	12.50000	AMERADA	25.0000000	MARATHON	25.0000000	SHELL	25.0000000	
					TEXACO	25.0000000					
47476	4	0.0028061	0.0028061	12.50000	ARCO	50.0000000	EXXON	50.0000000			
80595	6	0.0000019	0.0000019	12.50000	ARCO	50.0000000	EXXON	50.0000000			
GAS CAP											
25637	6	0.0003024	0.0003024	12.50000	ARCO	50.0000000	BP	50.0000000			
28238	9	0.0061712	0.0061712	12.50000	ARCO	50.0000000	EXXON	50.0000000			
28239	8	0.0913424	0.0913424	12.50000	ARCO	50.0000000	EXXON	50.0000000			
28240	0	0.0496376	0.0496376	12.50000	ARCO	50.0000000	EXXON	50.0000000			
28241	1	0.0399457	0.0399457	12.50000	MOBIL	50.0000000	PHILLIPS	50.0000000			
28244	2	0.0000110	0.0000110	12.50000	ARCO	50.0000000	EXXON	50.0000000			
28245	3	0.1805920	0.1805920	12.50000	ARCO	50.0000000	EXXON	50.0000000			
28246	2	0.0003490	0.0003490	12.50000	ARCO	50.0000000	EXXON	50.0000000			
28257	2	0.1101259	0.1101259	12.50000	MOBIL	50.0000000	PHILLIPS	50.0000000			
28258	1	0.0000012	0.0000012	12.50000	ARCO	50.0000000	EXXON	50.0000000			
28259	0	0.0000000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000			
28260	7	0.0777251	0.0777251	12.50000	BP	100.0000000					
28261	8	0.0005248	0.0005248	12.50000	MOBIL	50.0000000	PHILLIPS	50.0000000			
28262	4	0.2995913	0.2995913	12.50000	CHEVRON	100.0000000					
28262	A	0.1111367	0.1111367	12.50000	CHEVRON	33.3333334	MOBIL	33.3333333	PHILLIPS	33.3333333	

28263	5	0.0511793	0.0511793	12.50000	MOBIL	50.0000000	PHILLIPS	50.0000000		
28263	A	0.1539450	0.1539450	12.50000	CHEVRON	33.3333333	MOBIL	33.3333334	PHILLIPS	33.3333333
28264	9	0.0120620	0.0120620	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28265	4	0.0003882	0.0003882	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28275	2	0.0000000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28276	3	0.0000000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28277	5	0.1111558	0.1111558	12.50000	BP	100.0000000				
28278	4	0.0331538	0.0331538	12.50000	BP	100.0000000				
28279	3	0.0190207	0.0190207	12.50000	BP	100.0000000				
28280	4	1.7631780	1.7631780	12.50000	BP	100.0000000				
28281	5	1.1061331	1.1061331	12.50000	BP	100.0000000				
28282	6	0.4341463	0.4341463	12.50000	BP	100.0000000				
28283	7	0.1013091	0.1013091	12.50000	BP	100.0000000				
28234	8	0.6687738	0.6687738	12.50000	BP	100.0000000				
28285	9	1.8633126	1.8633126	12.50000	BP	100.0000000				
28286	6	0.2432039	0.2432039	12.50000	BP	100.0000000				
28287	7	0.0132529	0.0132529	12.50000	BP	100.0000000				
28288	8	0.0000000	0.0000000	12.50000	MOBIL	50.0000000	PHILLIPS	50.0000000		
28289	5	0.0000000	0.0000000	12.50000	MOBIL	50.0000000	PHILLIPS	50.0000000		
28290	5	0.0000000	0.0000000	12.50000	MOBIL	50.0000000	PHILLIPS	50.0000000		
28299	6	0.0668830	0.0668830	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28300	7	2.7462020	2.7462020	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28301	8	5.4070880	5.4070880	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28302	1	8.5730840	8.5730840	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28303	2	6.1308134	6.1308134	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28304	3	2.9898184	2.9898184	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28305	0	3.1854789	3.1854789	12.50000	BP	100.0000000				
28306	1	5.4649446	5.4649446	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28307	2	7.4776622	7.4776622	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28308	3	4.1071874	4.1071874	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28309	4	2.2068838	2.2068838	12.50000	BP	100.0000000				
28310	5	1.1675071	1.1675071	12.50000	BP	100.0000000				
28311	0	0.3709048	0.3709048	12.50000	BP	100.0000000				
28312	9	0.1007911	0.1007911	12.50000	BP	100.0000000				
28313	8	0.0066790	0.0066790	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28314	2	0.0000000	0.0000000	12.50000	MOBIL	50.0000000	PHILLIPS	50.0000000		
28315	1	0.0000000	0.0000000	12.50000	BP	100.0000000				
28316	A	0.0000000	0.0000000	12.50000	CHEVRON	33.3333334	MOBIL	33.3333333	PHILLIPS	33.3333333
28316	7	0.0000000	0.0000000	12.50000	CHEVRON	100.0000000				
28320	8	0.3216998	0.3216998	12.50000	BP	100.0000000				
28321	3	7.2610510	7.2610510	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28322	4	4.2486128	4.2486128	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28323	5	0.4529448	0.4529448	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28324	0	0.3609044	0.3609044	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28325	1	3.3036918	3.3036918	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28326	2	5.0566434	5.0566434	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28327	3	0.0132526	0.0132526	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28328	2	0.7489948	0.7489948	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28329	1	0.7143628	0.7143628	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28330	0	0.0000000	0.0000000	12.50000	BP	100.0000000				
28331	9	0.0000000	0.0000000	12.50000	BP	100.0000000				
28332	8	0.0000000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28333	0	0.0000000	0.0000000	12.50000	BP	100.0000000				
28334	A	0.0000000	0.0000000	12.50000	CHEVRON	33.3333333	MOBIL	33.3333334	PHILLIPS	33.3333333
28334	9	0.0000000	0.0000000	12.50000	MOBIL	50.0000000	PHILLIPS	50.0000000		
28335	8	0.0000000	0.0000000	12.50000	BP	100.0000000				
28339	6	0.0000000	0.0000000	12.50000	BP	100.0000000				
28343	9	0.0000000	0.0000000	12.50000	BP	100.0000000				
28345	4	0.0000000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28346	7	0.0000000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
28349	1	0.0000000	0.0000000	12.50000	BP	100.0000000				
34628	9	4.9026960	4.9026960	12.50000	ARCO	50.0000000	EXXON	50.0000000		
34629	0	2.3763262	2.3763262	12.50000	ARCO	50.0000000	EXXON	50.0000000		
34630	1	0.0521132	0.0521132	12.50000	BP	100.0000000				
34631	9	4.4211250	4.4211250	12.50000	ARCO	50.0000000	EXXON	50.0000000		
34632	0	7.9580580	7.9580580	12.50000	ARCO	50.0000000	EXXON	50.0000000		
47446	5	0.0211926	0.0211926	12.50000	CHEVRON	50.0000000	MOBIL	50.0000000		
47447	4	0.0011970	0.0011970	12.50000	CHEVRON	50.0000000	MOBIL	50.0000000		
47448	0	0.0000000	0.0000000	12.50000	MOBIL	66.6666667	PHILLIPS	33.3333333		
47449	7	0.0204696	0.0204696	12.50000	CHEVRON	50.0000000	MOBIL	50.0000000		

47450	9	0.0193851	0.0193851	12.50000	CHEVRON	33.3333333	MOBIL	33.3333334	PHILLIPS	33.3333333
47451	6	0.0042712	0.0042712	12.50000	CHEVRON	33.3333333	MOBIL	33.3333334	PHILLIPS	33.3333333
47452	0	0.1575467	0.1575467	12.50000	CHEVRON	33.3333333	MOBIL	33.3333334	PHILLIPS	33.3333333
47453	1	0.0384943	0.0384943	12.50000	CHEVRON	33.3333333	MOBIL	33.3333334	PHILLIPS	33.3333333
47454	3	0.0013684	0.0013684	12.50000	CHEVRON	33.3333333	MOBIL	33.3333334	PHILLIPS	33.3333333
47469	9	0.0000000	0.0000000	12.50000	MOBIL	50.0000000	PHILLIPS	50.0000000		
47471	6	0.0000000	0.0000000	12.50000	AMERADA	27.0000000	L L & E	13.2500000	SHELL	29.2500000
					TEXACO	30.5000000				
47472	7	0.0000000	0.0000000	12.50000	AMERADA	50.0000000	TEXACO	50.0000000		
47475	3	0.0000000	0.0000000	12.50000	AMERADA	25.0000000	MARATHON	25.0000000	SHELL	25.0000000
					TEXACO	25.0000000				
47476	4	0.0000000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		
80595	6	0.0000000	0.0000000	12.50000	ARCO	50.0000000	EXXON	50.0000000		

SOUTH MIDDLE GROUND SHOALS

SMG 1

18744	6.8965520	6.8965520	12.50000	AMOCO	62.5000000	CHEVRON	12.5000000	TEXACO	25.0000000
18746	93.1034480	93.1034480	12.50000	AMOCO	62.5000000	CHEVRON	12.5000000	TEXACO	25.0000000

SMG 2

18746	100.0000000	100.0000000	12.50000	AMOCO	62.5000000	CHEVRON	12.5000000	TEXACO	25.0000000

STUMP LAKE

17600	1	0.0000000	2.4424100	0.00000	SHELL	40.0000000	UNION	60.0000000		
326059	A	0.0000000	8.1967200	0.00000	TGX	4.5226100	UNION	95.4773900		
326060	B	0.0000000	15.5737800	0.00000	TGX	4.5226100	UNION	95.4773900		
58789	1	0.0000000	11.4754100	0.00000	OXY	60.0000000	TGX	3.6000000	UNION	36.4000000
58789	A	0.0000000	9.8360700	0.00000	OXY	100.0000000				
58790	2	0.0000000	22.6442700	0.00000	TGX	3.6000000	UNION	96.4000000		
58791	3	0.0000000	18.8524600	0.00000	OXY	10.0000000	TGX	1.8000000	UNION	88.2000000
58792	4	0.0000000	3.2786800	0.00000	UNION	100.0000000				
58794	5	0.0000000	4.0983600	0.00000	UNION	100.0000000				
58795	6	0.0000000	3.6018400	0.00000	OXY	10.0000000	TGX	1.8000000	UNION	88.2000000

TRADING BAY

MONOPOD A-5

18731	100.0000000	100.0000000	12.50000	MARATHON	50.0000000	UNION	50.0000000

MONOPOD A-6

18731	100.0000000	100.0000000	12.50000	MARATHON	50.0000000	UNION	50.0000000

MONOPOD NON-POOL

18731	100.0000000	100.0000000	12.50000	MARATHON	50.0000000	UNION	50.0000000

[1] Net Profit Share Lease percentage: 79.5935000.
[2] Net Profit Share Lease percentage: 48.8703100.
[3] Net Profit Share Lease percentage: 30.0000000

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APPENDIX C
CRUDE OIL ANALYSES

COOK INLET

	DRIFT RIVER	NIKISKI
CRUDE		
Gravity, °API @ 6	35.3	34.6
Spec.Grav. @ 60	0.8483	0.8519
Kin.Vis. @ 65 °F	6.94	7.34
@ 90 °F	6.77	7.17
@122 °F	3.39	3.55
Sulfur, wt%	0.09	0.10
Nitrogen wt%	0.13	0.14
Carbon wt%	86.83	87.09
Hydrogen wt%	12.81	12.80
Oxygen wt%	0.09	0.15
Sed. and water, v	0.05	0.1
Water, by dist., vo	Nil	0.05
RVP, psi	7.5	7.85
Pour Pt, °F	0	-5
Flash Pt., PMCC,	<0	<0
BADGER DISTILATION		
C5 AND LIGHTER		
Yield, vol%	0.4	0.7
Composition		
Methane	0.02	Traces
Ethane	11.07	7.75
Propane	61.74	59.81
Iso-Butane	11.72	12.46
Normal Butane	13.00	16.83
Iso-Pentane	1.52	2.03
Normal Pentane	0.93	1.12
IBP - 120 °F		
Yield vol%	1.3	2.0
Gravity, API @ 60	X	X
120 - 374 °F		
Yield vol%	31.4	29.5
Gravity, API @ 60	59.3	57.2
374 - 440 °F		
Yield vol%	6.0	6.5
Gravity, API @ 60	40.9	40.6
440 - 610 °F		
Yield vol%	17.6	15.7
Gravity, API @ 60	35.3	35.5
610 + Resid		
Yield vol%	41.3	43.9
Gravity, API @ 60	18.1	18.2
DISTILATION CURVE, VOL, %		
IBP	86	84
2%	131	120
4%	134	130
6%	140	145
8%	150	165
10%	163	195
12%	192	213
14%	211	219
16%	220	239
18%	240	254
20%	257	272
22%	273	292
24%	292	307
26%	309	324
28%	325	341
30%	340	361
32%	361	390
34%	395	420
36%	420	430
38%	430	440
40%	440	460
42%	455	475
44%	475	490
46%	495	510
48%	510	525
50%	525	540
52%	545	555
54%	601	X
56%	607	X

NORTH SLOPE (at VALDES)

	Nominal	Recalc.
API Gravity	27.40	27.48
Sp. Gravity	0.8905	0.8905
Wt.% S	1.1600	1.1600
LIGHT ENDS AND BTX ANALYSIS		
	L.V.%	Wt.%
C1	0.0000	0.0000
C2	0.0200	0.0080
C3	0.2000	0.1140
IC4	0.2500	0.1531
NC4	0.1500	0.7547
TOTAL	1.6200	1.0348
IC5	0.1165	0.2923
NC5	0.9299	0.6592
C5 & Ltr.	2.9665	1.9842
IC6	0.5000	
NC6	1.3400	
C6 Olefins	0.0000	
MCP	0.5004	
Cyclo-Hexane	0.5400	
Benzene	0.0360	

	Paraffins	Olefins	Naphthenes	Aromatics
C7	1.5800	0.0000	1.5900	0.6300
C8	1.5600	0.0000	0.9970	0.6000
C9+	1.2875	0.0000	1.3544	0.1285

MOTOR FUEL BLENDING DATA

	Yield L.V.%	RON Clear	MON Clear	RVP PSI
NAPTHA, C5-200	6.5	69.3	68.3	7.5
NAPTHA, C5-400	21.9	62.2	58.7	2.9

Continued on next page

NORTH SLOPE (at VALDES), Continued

RESIDUUM

Range, IVT-FVT, °F	0-82	82-200	200-300	300-350	350-400	400-500	500-550
L.V.% of Crude	1.62	6.50	7.49	3.88	4.04	8.71	4.76
Wt.% of Crude	1.03	5.04	6.44	3.45	3.69	8.25	4.63
Spec.Gravity	0.5688	0.6903	0.7656	0.7924	0.8116	0.8430	0.8648
API Gravity	117.26	73.49	53.32	47.07	42.85	36.36	32.13
Sulpher, Wt.%	0.0000	0.0011	0.0025	0.0110	0.0178	0.1704	0.4256
Paraffins, L.V.%		69.62	41.26	35.99	38.26	60.09	62.40
Olefins, L.V.%		0	0	0	0	0	0
Naphthenes, L.V.%		27.35	42.76	44.02	41.84	27.00	20.92
Aromatics, L.V.%		3.03	15.98	19.99	19.89	12.91	16.68
N+2A, L.V.%		33.41	74.72	84.00	81.63	52.81	
Pour Point, °F		-219.3	162.7	-117.1	-101.9	-50.5	-16.7
Cloud Point, °F		207.8	-162.6	-115.5	-105.7	-44.6	12.0
Kin. Visc., 100 °F		0.30	0.45	0.80	1.21	1.81	3.07
Kin. Visc., 122 °F		0.24	0.35	0.67	1.09	1.48	2.38
Smoke Point, MM				16.44	15.60	14.23	13.00
Cetane Index			10.64	28.40	35.10	40.02	44.04
Carbon Resedue							
Rams, Wt.%							
Con, Wt.%							
Nitrogen							
Total Nitrogen, PPM						4.99	33.17
Basic Nitrogen, PPM							
Calc. Refractive Index		1.3868	1.4290	1.4437	1.4544	1.4721	1.4842
Aniline Point, °F				115.57	122.25	133.35	142.09
UOPK Factor		12.22	11.65	11.64	11.60	11.49	11.50
Neut. Number						0.03	0.04
Mercaptan Sulpher, PPM			6.8	4.9	4.1	3.6	2.8
Freeze Point, °F				-212.9	-168.5	-139.7	-88.9
Flash Point, °F						70.00	106.00
RON Clear				69.3	62.6	57.6	54.4
MON Clear				68.3	59.1	52.5	48.4
RVP, PSI				7.5	0.8	0.1	0.0
Iron							
Nickel							
Vanadium							

Range, IVT-FVT, °F	550-650	650-700	700-800	800-900	900-1050	650+	1050+
L.V.% of Crude	10.03	4.63	8.72	8.20	11.30	52.96	24.12
Wt.% of Crude	9.94	4.68	8.97	8.57	12.11	57.56	23.21
Spec.Gravity	0.8825	0.9005	0.9158	0.9307	0.9549	0.9674	1.0271
API Gravity	28.84	25.63	23.00	20.53	16.68	14.77	6.26
Sulpher, Wt.%	0.7481	1.0024	1.1974	1.3409	1.5883	1.8295	2.5467
Paraffins, L.V.%	45.31						
Olefins, L.V.%	0	0					
Naphthenes, L.V.%	22.45						
Aromatics, L.V.%	32.24						
N+2A, L.V.%							
Pour Point, °F	19.7	38.4	63.9	87.8	108.6		
Cloud Point, °F	12.1	50.1	69.6				
Kin. Visc., 100 °F	5.84	13.89	33.26	92.81	618.74	1503.14	11647220
Kin. Visc., 122 °F	4.27	9.18	19.74	48.28	253.29	556.10	1820244
Smoke Point, MM	11.82						
Cetane Index	44.95	42.07	35.77	22.15			
Carbon Resedue							
Rams, Wt.%		0.09	0.13	0.33	0.69	7.92	19.08
Con, Wt.%		0.05	0.03	0.33	0.86	7.93	19.16
Nitrogen							
Total Nitrogen, PPM	104.32	606.21	953.56	1121.11	1813.78	2977.06	5529.00
Basic Nitrogen, PPM	51.37	175.73	291.05	453.23	666.56		
Calc. Refractive Index	1.4940	1.5040	1.5124	1.5204	1.5339	1.5411	1.5764
Aniline Point, °F	150.45	160.28	167.48	174.98	181.21		
UOPK Factor	11.55	11.58	11.63	11.76	11.81	11.81	11.60
Neut. Number	0.06	0.07	0.07	0.12	0.32		
Mercaptan Sulpher, PP	3.8	7.5					
Freeze Point, °F	-49.7	-19.5	17.9	45.5	64.7		
Flash Point, °F	160.00	202.00	268.00	348.00	376.00	443.00	524.00
RON Clear							
MON Clear							
RVP, PSI							
Iron		0.00	0.00	0.00	0.00	0.00	0.01
Nickel		0.00	0.00	0.00	0.00	0.04	0.08
Vanadium		0.00	0.00	0.00	0.00	0.18	0.38

APPENDIX D
ALASKA REFINERIES AND PROCESSING PLANTS

Unit	Capacity		Products	Market Area
OIL REFINERIES				
ARCO, Kuparuk				
Distillaton	12,000	Bbl/d	Arctic Heating Fuel/Diesel #2	Kuparuk
ARCO, Prudhoe Bay				
Distillaton	13,700	Bbl/d	Arctic Heating Fuel/Diesel #2	Prudhoe Bay
MAPCO, North Pole 1977				
Two crude units	116,000	Bbl/d	Gasoline, leaded	Alaska
			Gasoline, unleaded	Alaska
			JP 4	Alaska
			Jet A	Alaska
			Diesel #1	Alaska
			Diesel #2	Alaska
			Diesel #4	Alaska
			Asphalt	Alaska
TESORO, Nikiski 1969				
Crude	80,000	Bbl/d	Propane	Alaska
Hydrocracker	9,000	Bbl/d	Gasoline, leaded	Alaska
PowerFormer	12,000	Bbl/d	Gasoline, unleaded	Alaska
PRIP	4,000	Bbl/d	Gasoline, unleaded premium	Alaska
LPG	2,800	Bbl/d	JP 4	Alaska
Hydrogen	12,800	MMcf/d	Jet A	Alaska
Sulfur	15	T/d	Diesel #2	Alaska
			Fuel Oil #6	export
			Sulfur	lower 48
PETRO STAR, North Pole 1985				
Crude	7,000	Bbl/d	Kerosine Heating/Diesel #2	Alaska
GAS PROCESSING PLANTS				
PHILLIPS-MARATHON LNG PLANT, Nikiski 1969				
LNG	230,000	Mcf/d	LNG	Japan 440,000/Bbl/10 days
UNOCAL CHEMICAL PLANT, Nikiski 1969				
Two Ammoni units	1,300,000	T/yr	Anhydrous Ammonia	half of ammonia prod is used to produce ur other half is exported.
Urea	1,200,000	T/yr	Urea prills and granules	West Coast and exported

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SURVEY OF OPERATING REFINERIES IN THE U.S.

	No. Plants	Crude	Charge Capacity				
			Vacuum Distil.	Thermal Ops.	Cat Cracking	Cat Re-forming	Cat Hydro-cracking
		(bbl/cd)	(bbl/sd)	(bbl/sd)	(bbl/sd)	(bbl/sd)	(bbl/sd)
Alabama	4	154,250	49,000	12,000	---	32,500	---
Alaska	5	224,500	6,000	29,500	---	12,000	9,000
ARCO, Kuparuk		12,000	---	12,000	---	---	---
ARCO, Prudhoe Bay		17,500	---	17,500	---	---	---
Mapco, North Pole		115,000	6,000	---	---	---	---
Petro Star,North Pole		8,000	---	---	---	---	---
Tesoro, Kenai		72,000	---	---	---	12,000	9,000
Arizona	2	14,210	8,000	---	---	---	---
Arkansas	3	60,470	30,700	---	18,500	9,000	---
California	30	2,150,555	1,267,630	538,300	660,000	547,600	435,000
Colorado	3	91,200	41,100	4,200	27,500	22,900	5,000
Delaware	1	140,000	95,000	45,000	67,000	52,000	18,000
Georga	2	35,500	---	---	---	---	---
Hawaii	2	143,050	71,250	13,000	20,000	13,000	18,000
Illinois	7	948,500	391,000	125,400	377,000	302,300	66,500
Indiana	4	428,900	233,200	28,000	172,000	104,500	---
Kansas	8	353,225	129,650	52,000	129,500	100,800	3,190
Kentucky	2	218,900	92,000	57,600	100,000	46,000	---
Louisiana	19	2,299,241	918,900	441,700	782,500	499,300	172,000
Michigan	4	125,200	38,000	---	46,500	33,500	---
Minnesota	2	285,600	192,000	58,000	78,000	55,500	---
Mississippi	5	358,600	275,000	83,000	82,000	95,800	68,000
Montana	4	138,900	54,800	7,700	54,400	37,700	4,900
Nevada	1	4,500	2,500	---	---	---	---
New Jersey	6	499,250	256,200	31,000	256,000	78,500	---
New Mexico	4	76,650	13,900	---	34,000	19,300	---
New York	1	39,900	25,000	---	---	---	---
North Dakota	1	58,000	---	---	26,000	12,100	---
Ohio	4	454,150	153,000	33,000	174,000	162,600	87,200
Oklahoma	7	409,500	146,500	20,500	146,000	101,500	5,000
Oregon	1	---	16,000	---	---	---	---
Pennsylvania	7	741,300	317,500	---	261,000	181,620	51,000
Tennessee	1	75,000	12,000	---	38,000	14,000	---
Texas	31	3,882,200	1,760,500	333,200	1,686,500	1,186,000	316,000
Utah	6	154,500	48,100	8,500	55,400	31,100	---
Virginia	1	53,000	29,000	14,000	27,500	10,200	---
Washington	7	523,225	263,100	74 500	121,500	134,500	52,000
West Virginia	2	29,680	10,850	---	---	4,900	4,500
Wisconsin	1	32,000	20,500	---	11,000	8,000	---
Wyoming	4	122,900	58,600	8,000	52,500	29,850	---
TOTAL	192	15,326,556	7,026,480	2,018,100	5,504,300	3,938.570	1,315,290

Source: Thrash, Lou Ann, "Worldwide Refining," Oil & Gas Journal, December 23, 1991, p. 42.
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	Charge Capacity		Production Capacity					
	Cat Hydro-refining (bbl/sd)	Cat Hydro-treating (bbl/sd)	Alky. Poly. (bbl/sd)	Aromatic Isomer-ization (bbl/sd)	Lubes (bbl/sd)	Asphalt (bbl/sd)	Hydrogen (MMcf/d)	Coke (t/d)
Alabama	14,800	18,500	---	7,000	---	19,500	6.0	---
Alaska	---	12,000	---	7,000	---	2,000	12.8	---
ARCO, Kuparuk	---	---	---	---	---	---	---	---
ARCO, Prudhoe Bay	---	---	---	---	---	---	---	---
Mapco, North Pole	---	---	---	3,000	---	2,000	---	---
Petro Star,North Pole	---	---	---	---	---	---	---	---
Tesoro, Kenai	---	12,000	---	4,000	---	---	12.8	---
Arizona	---	---	---	---	---	4,660	---	---
Arkansas	---	20,600	4,800	3,000	3,600	9,700	0.4	---
California	587,500	917,000	132,400	17,900	29,400	90,800	1,070.4	21,022
Colorado	---	35,700	3,800	---	---	5,000	6.0	200
Delaware	---	123,000	17,100	1,870	---	---	40.0	2,000
Georga	---	---	---	---	---	26,500	---	---
Hawaii	---	14,500	5,625	1,500	---	2,300	22.5	---
Illinois	29,000	584,300	96,500	33,400	4,600	44,100	66.8	6,240
Indiana	94,000	184,100	36,500	39,000	6,400	51,000	---	1,550
Kansas	44,000	177,800	39,100	41,000	---	7,000	---	2,100
Kentucky	40,400	137,800	13,000	22,200	8,500	30,000	---	---
Louisiana	277,000	1,043,100	212,900	130,900	37,600	54,000	167.1	16,025
Michigan	17,000	46,800	9,000	8,000	---	18,000	---	---
Minnesota	86,500	127,000	19,200	23,300	---	49,000	20.0	2,800
Mississippi	192,800	59,800	19,700	5,500	3,600	40,600	217.5	4,250
Montana	14,000	101,500	13,100	6,450	---	26,700	21.0	435
Nevada	---	---	---	---	---	---	---	---
New Jersey	65,000	244,200	36,000	36,300	8,500	73,000	11.0	1,100
New Mexico	---	30,300	6,400	4,000	---	3,200	---	---
New York	---	---	---	---	---	---	---	---
North Dakota	---	19,100	4,400	5,100	---	---	---	---
Ohio	23,000	170,500	29,900	63,900	---	19,000	72.0	1,475
Oklahoma	26,000	155,000	36,100	39,900	8,000	18,100	10.0	1,260
Oregon	---	---	---	---	---	11,500	---	---
Pennsylvania	42,000	417,800	53,500	18,950	8,750	47,000	49.5	---
Tennessee	---	35,000	6,000	4,000	---	3,500	---	---
Texas	823,700	2,341,650	340,600	310,485	91,200	67,400	623.0	11,734
Utah	7,600	34,100	14,500	8,400	---	1,700	---	350
Virginia	---	26,500	---	---	---	---	---	750
Washington	25,500	201,000	33,000	4,250	---	13,000	80.0	3,900
West Virginia	---	3,900	---	---	6,440	---	2.7	---
Wisconsin	5,800	9,000	1,300	2,000	---	13,500	---	---
Wyoming	21,000	56,450	8,440	2,500	---	16,000	---	---
TOTAL	2,436,600	7,348,000	1,192,865	847,805	216,590	769,760	2,499	77,191

APPENDIX E
CONVERSION FACTORS

ABBREVIATIONS

acre	ac	kilolitre	kl
barrel	bbl	kilometer	km
British thermal unit	btu	litre	l
billion cubic feet	bcf	meter	m
calendar day	cd	mile	mi
callory	cal	million cubic feet	MMcf
cube (e.g. cu m)	cu	nautical mile	naut mi
exception: cubic foot	cf	pound	lb
day	d	stream day	sd
foot	ft	square (e.g. sq ft)	sq
gallon, U.S.	gal US	thousand cubic feet	Mcf
gallon, Imperial	gal Imp	ton, U.S.	t U.S.
nectar	ha	ton, Imperial	t Imp
inch	in	tonne	tn
kilogram	kg	trillion cubic feet	Tcf

ACRONYMS

AOGCC	Alaska Oil and Gas Conservation Commission
API	American Petroleum Institute
DNR	Alaska Department of Natural Resources
DO&G	Division of Oil and Gas
DOR	Alaska Department of Revenue
ISER	Institute of Social and Economic Research
LNG	liquid natural gas
LPG	liquid propane gas
NGL	natural gas liquids
TAPS	Trans Alaska Pipeline System

LENGTH

		ft	mi	naut mi	m	km
1 ft	=	1	0.0001894	0.000164	0.3048	0.003048
1 mi	=	5280	1	0.8684	1609.34	1.60934
1 naut m	=	6076.12	1.1516	1	1852	1.852
1 m	=	3.2808	0.000621	0.000539	1	1000
1 km	=	3280.8	0.621371	0.5396	0.001	1

AREA

		sq ft	ac	sq mi	sq m	ha	sq km
1 sq ft	=	1	0.000023		0.092903		
1 ac	=	43560	1	0.0016	4046.86	0.404686	0.004047
1 sq mi	=	27878400	640	1	2589990	258.999	2.58999
1 sq m	=	10.7639	0.000247		1	0.0001	0.000001
1 ha	=	107636	2.47105	0.003861	10000	1	0.01
1 sq km	=	10763649	247.105	0.386102	1000000	100	1

VOLUME

		cu ft	gal US	gal Imp	bbl	cu m
1 cu ft	=	1	7.48052	6.22883	0.17811	0.028317
1 gal US	=	0.133681	1	0.832674	0.02381	0.0037854
1 gal Im	=	0.160544	1.20095	1	0.028594	0.0045460
1 bbl	=	5.6146	42	34.9726	1	0.158987
1 cu m	=	35.3147	264.172	219.969	6.28981	1

WEIGHT

		lb	short t	long t	kg	tn
1 lb	=	1	0.0005	0.000367	0.453592	0.000453
1 short t	=	2000	1	0.892857	907.1848	0.907185
1 long t	=	2240	1.12	1	1016.05	1.01605
1 kg	=	2.20462	0.001102	0.000984	1	0.001
1 tn	=	2204.62	1.10231	0.984207	1000	1

short ton: used in U.S.
long ton: used in U.K.
tonne: metric ton

CRUDE OIL WEIGHT

Based on average Arabian Light, 33.5 API.

	gal US	gal Imp	short t	long t	tn	bbl
1 gal US =	1	0.833		0.00319	0.00325	0.0238
1 gal Im =	1.201	1		0.00383	0.00391	0.0286
1 short t =			1			
1 long t =				1		
1 tn =	0.000308	0.000256			1	7.31
1 bbl =	42	35		0.134	0.136	1

WEIGHT EQIVALENTS OF PETROLEUM AND PETROLEUM PRODUCTS

	Average Gravity @60 °F	gal/lb	lb/gal	lb/bbl	bbl/ short t	bbl/ long t	bbl/ tn
crude oil, foreign	25.6	0.13333	7.500	315	6.349	7.111	6.998
crude oil, domestic	36.0	0.14217	7.034	295	6.770	7.582	7.463
gasolin and naptha	59.5	0.16215	6.167	259	7.721	8.648	8.511
kerosine	43.0	0.14812	6.751	284	7.053	7.900	7.775
fuel oil, distillate	31.3	0.13817	7.237	304	6.580	7.369	7.253
fuel oil, residual	18.0	0.12687	7.882	331	6.041	6.766	6.660
asphalt	5.6	0.11634	8.596	361	5.540	6.205	6.106
liquid petroleum gas	-	0.22104	4.524	190	10.526	11.789	11.603

APPROXIMATE HEAT CONTENTS OF FUELS AND PETROLEUM PRODUCTS

Approximate Million Btu per Barrel

asphalt	6.6
aviation gasoline	5.0
crude oil	5.8
fuel oil, distillate	5.8
fuel oil, residual	6.3
jet fuel, kerosene type	5.7
jet fuel, naptha type	5.4
kerosene	5.7
ethane	3.1
butane	4.3
propane	3.8
pentanes plus	4.6

VOLUME CONVERSIONS FOR LIQUID NATURAL GAS AND NATURAL GAS

LNG @ -260 °F	Natural Gas cu ft
1 lb	21.082
1 gal	79.814
1 cu ft	597.0
1 bbl	3,352
1 cu m	21,085
1 tn	46,477

APPENDIX F
DEMAND PROJECTION METHODOLOGY AND ASSUMPTIONS

PRODUCTION METHODOLOGY

Demand for oil and gas is best calculated by dividing total demand into use categories. Because the factors affecting the level and growth rate of demand for each use are similar and because oil and gas often compete with one another in different markets, total demand may otherwise be distorted. The use categories in this study are transportation, electricity, space heat (including cooking, water heating and clothes drying), and industrial. A simple model, ENergy Demand MODel (ENDMOD) has been constructed for calculating future energy demands in Alaska.

The factors most important in projecting future demand will vary by use category. In general, the most important are population (or households) and relative fuel prices. The household is the basic consuming unit for the residential sector and population is a good proxy for demand in the commercial sector. In the industrial sector fuel prices are the primary determinate of the total quantity of energy consumed. In the residential and commercial sectors, fuel prices are more important in determining the type of fuel used.

TRANSPORTATION

Forecasting the demand for oil for transportation fuels in ENDMOD requires the use of per capita consumption coefficients. In each case current levels are assumed to represent a reasonable initial value in our forecast.

Gasoline

HIGHWAY. This is the largest category of gasoline consumption in Alaska. Demand is related to population, personal income, and the fuel efficiency of the automobile fleet. Growth in the first two factors will tend to offset the effect of increased efficiency in future years resulting in relatively constant use of this fuel. In Alaska, per capita consumption of highway gasoline peaked in 1975 at 502 gallons per capita and has declined to 388 gallons per capita in 1991. We assume that this coefficient will continue to decline by 1/2 percent per year.

AVIATION GASOLINE. In the past, use has remained at levels that are approximately 10 percent of highway gasoline use. Per capita consumption fell in the early 1980s but has grown slightly since then to its present level of 37 gallons per capita in 1991. We assume that this level will remain constant through the forecast period.

MARINE GASOLINE. For the past several years, use has been roughly half of the aviation consumption level. We assume that the 1991 level of 21 gallons per capita will remain constant over the forecast period.

Jet Fuel

Consumption consists of domestic commercial operations, international commercial operations, and military operations. Domestic commercial operations are a function of the size of the Alaskan population and health of the economy. Jet fuel consumption over the last decade has mirrored the changes in the Alaska economy. For purposes of this forecast, we assume that the per capita consumption of jet fuel of 643 gallons will rise by 3 percent per year. International commercial operations have undergone a significant change since 1986 as international passenger flights have all but disappeared. In spite of this circumstance, fuel consumed by cargo flights contributed to a 24 percent increase in exempt jet fuel sales between 1986 and 1991. In this same period the average annual consumption of fuel for international commercial operations has been 344 million gallons. Since the changes experienced in the last few years have essentially played out, we assume that the annual consumption will grow at about one percent per year.

Diesel

The consumption of diesel for highway transportation was 1,377 gallons per capita in 1992. This rate is held constant over the forecast period. The total consumption of diesel was at a six-year low in 1992.

Marine diesel use has steadily risen over the last six years. We assume that the current level of 374 gallons per capita grow a one percent per year.

ELECTRIC UTILITIES

Electric utility use of oil and gas is a derived demand based upon the demand for electricity and the methods used to generate it. We project this use of liquid fuels and natural gas by first

estimating electricity demand for space heating and non-space heating uses, then determining the proportion generated by fuel oil and natural gas, and then finally determining demand based upon the efficiency of generation (heat rate). Since the electricity generation alternatives vary by region in Alaska, we project fuel use by three major regions on the state: Railbelt, Southeast, and the rest of the state.

Railbelt

CONSUMPTION OF ELECTRICITY PER CUSTOMER. The total electricity demand is split into the demand for residential space heat and for all other uses. The space heating consumption rates are based on estimates developed for the 1983 Railbelt Electricity Demand (RED) model (Battelle Northwest Laboratories, June 1983). In ISER's original version of ENDMOD, these consumption rates were forecasted to rise slowly both due to increased electricity consumption for space heat in the new additions to the housing stock and due to the aging of the existing stock. These parameters were incorporated in this year's version of ENDMOD.

The number of households using electric space heat depends upon the total number of households and the proportion of housing units which use electric space heat. We assume that currently over 16 percent of the households in the railbelt use electric space heat. This number will fall to 15 percent.

The demand for electricity net of residential space heating uses is calculated on a per household basis projected in the RED model. This includes both residential and commercial consumption. Growth is modest due to expected real price increases.

GENERATION MODE SPLIT. Except as noted below, future additions to capacity within the projection period are all gas-fired turbines. Incremental generation in Anchorage is entirely natural gas. Incremental generation in Fairbanks will depend upon the cheaper cost of purchased electricity from Anchorage generated by natural gas and the marginal cost of locally produced electricity generated by fuel oil. We assume that electricity moves in both directions in the line at different times. Fairbanks excess capacity provides reserves to Anchorage, and cheap Anchorage generation provides off-peak electricity to Fairbanks. Incremental generation in Fairbanks comes from Anchorage-produced electricity. The following assumptions specifically determine mode split:

-Coal-fired generation in Fairbanks remains constant at 316 thousand megawatt hours annually.

-Eklutna and Cooper lake hydroelectric facilities continue to provide railbelt power.

-Bradley Lake came on-line in September 1991 and produces 330 thousand MPH annually.

Heat rates are projected to remain at current levels as assumed in the original ENDMOD.

Sourheast

CONSUMPTION OF ELECTRICITY PER CAPITA. The growth rate in consumption per capita in Southeast is assumed to be the same rate as in the Railbelt. These growth rates are applied to the 1990 consumption of 9,705 kwh per capita.

GENERATION MODE SPLIT. The oil-generated power is assumed to supply about 6 percent of the total electric requirements for the Southeast region. Juneau, Ketchikan, and Wrangell/Petersburg consume 44, 21, and 9 percent respectively of the total electricity generated in the region.

Rest of State

Growth in per capita electricity demand in the rest of the state is assumed to occur at twice the rate projected for the Railbelt. This growth rate is applied to the 1990 per capita rate of 5,691 kwh per capita. Except for power generated from natural gas in Barrow and the Terror Lake and Solomon Gulch hydro plants, this region depends on fuel oil.

SPACE HEATING

In the Anchorage area, natural gas is the most economical fuel for space heating. Elsewhere, fuel oil is the least expensive alternative except where electricity generated by natural gas is available. In projecting future demand, we use different procedures for gas and fuel oil because of differences in data availability. Natural gas use is based upon a projection of the current level of consumption. Fuel oil demand is estimated upon the proportion of the population assumed to heat with fuel oil and estimates of mean household fuel oil consumption. This approach is necessary because there is no reliable direct estimate of the current fuel oil consumption for space heating.

Railbelt

Natural gas for space heating (and a small amount of related uses for gas purchased from utilities) is projected to grow as a function of population. Growth has historically occurred at a rate in excess of population due to gas retrofitting and expansion of the commercial sector. This trend is projected to exceed population by 2 percent annually.

The gas market in the Matanuska/Susitna Valleys will reach a 50 percent saturation by 1995 as more households are hooked-up. Residential natural gas consumption is approximately 200 thousand cubic feet per household. Per capita commercial consumption is 55 thousand cubic feet.

Fuel oil use for space heating is generally preferred only where gas or gas-fired electricity is not available. We assume that the proportion of households using fuel oil for space heat remains at about 19 percent. Per-household residential and per-capita commercial fuel oil consumption are based on gas consumption figures converted to fuel oil on the basis of thermal equivalency.

Non-Railbelt
Outside the Railbelt, space heating is almost entirely provided by fuel oil, with the exception of Barrow. Fuel oil consumption is calculated using the share of households with fuel oil space heat and the same per capita coefficient of fuel oil use for space heating as applied to the railbelt population. For natural gas consumption in Barrow, a growth rate which exceeds population growth by 2 percent is applied to a base of current consumption.

INDUSTRY
Industrial consumption is not a function of population, but rather of the availability of supplies and market opportunities, Since the major industrial users of petroleum fuels are small in number, there are best projected on a case-by-case basis.

Ammonia-Urea Production
Ammonia-urea production using natural gas is assumed to continue at a constant level.

Petroleum Production
OIL USED FOR PRODUCTION. A small quantity of fuel oil used in oil production is included in the miscellaneous industrial category.

OIL USED FOR TRANSPORTATION. Fuel oil fuels the pumps for most of TAPS. Annual consumption will fall with throughput.

GAS USED FOR PRODUCTION. Petroleum production uses Cook Inlet and North Slope natural gas for space heating, electricity generation, pump fuel, etc. Consumption is difficult to predict because of its many uses, but is primarily dependent upon petroleum production and employment levels. We assume the level declines in the Cook Inlet. On the North Slope, it grows through 1993 and then declines.

GAS USED FOR TRANSPORTATION. Assumed to fall at nearly the same rate as TAPS throughput.

Miscellaneous
Some fuel oil is used in electricity generation for industrial self-supplied power. Data on the consumption comes form the Alaska Energy Authority , and it is projected to decline at 2 percent per year.

Military
The military uses natural gas for electricity generation and space heating in the Anchorage area and fuel oil elsewhere. Military transportation use of fuel oil is counted in the transportation sector. Military natural gas use is projected to remain constant.

Injection
Gas is injected into petroleum reservoirs to enhance recovery. Because this is only a temporary use of gas, it is not counted a part of final consumption.

LNG
LNG is defined as export of gas for the purposes of this report.

PROJECTION ASSUMPTIONS

Economic projections for estimating future petroleum demands were developed for this year's "Historical and Projected Oil and Gas Consumption" report by ISER. Population and household projections were provided for use in ENDMOD from a Man-in-the-Arctic Program (MAP) model run completed in September 1991 for the 1991 Southern Railbelt Utility Study. The MAP model is a large-scale simulation of the Alaskan economy that characterizes the interaction of exogenous, basic-sector industries (oil and gas, mining, fishing, tourism, the federal government, forestry, etc.), the local support sectors, and the state government. The model produces forecasts of employment, population, demographics, and state government revenues and expenditures.

The September 1991 version of the MAP model predicts a growth in statewide population of about 5 percent per year. Railbelt population will grow only slightly faster. The assumptions underlying this forecast are presented below.

PETROLEUM PRICE ASSUMPTIONS

AVERAGE EXPECTED OPEC PRICE. Alaska Department of Revenue, Spring 1991 Mid-Scenario.

INDUSTRY ASSUMPTIONS

TRANS-ALASKA PIPELINE. Operating employment remains constant through 2010. Source: personal communication with Alyeska Pipeline Company.

PIPELINE CORROSION. Corrosion-related repairs and maintenance results in construction employment peaking at 800 in 1991 and falling to zero in 1994.

OIL SPILL. The Exxon Valdez oil spill generated direct employment of 2,650 in 1989 and $700 million in additional personal income to Alaskans.

NORTH SLOPE PETROLEUM DEVELOPMENT AND PRODUCTION. Employment increases 50 percent during the 1990s from a base of 3,000 and subsequently remains constant.

ANWR. Exploration but no development in ANWR.

OCS. None.

UPPER COOK INLET - PETROLEUM PRODUCTION. Employment in exploration and development of oil and gas in Upper Cook Inlet area declines gradually (1 percent annually) as the major oil fields are depleted.

OIL INDUSTRY HEADQUARTERS. Headquarters employment associated with additional development of North Slope fields increases 2 percent annually.

TAGS PIPELINE. None.

BELUGA COAL PRODUCTION. None.

U.S. BORAX. None.

GREENS CREEK MINE. Production from the Greens Creek Mine on Admiralty Island begins at the end of 1988. Employment is constant at 250 through 2010. Source: personal communication, Greens Creek Mining Company.

RED DOG MINE. The Red Dog Mine in the Western Brooks Range begins operation in 1990 with production employment of 350.

WISHBONE HILL. This coal mine in the Matanuska-Susitna Valley begins operation in mid-1994, employing 250 in the extraction and export of coal to Japan.

AJ MINE. Echo Bay Mining Company begins production from this gold mine in Juneau in mid-1993. Operations employment is 450.

KENSINGTON MINE. Echo Bay Mining Company begins production from this mine north of Juneau in mid-1993. Operations employment is 340.

OTHER SE MINING. None.

FORT KNOX. Production from this mine near Fairbanks begins in 1995, employing 100.

OTHER MINING ACTIVITY. Mining employment net of specifically identified projects increases from 650 in 1989 by 3 percent annually.

AGRICULTURE. Employment in agriculture is constant at 1989 level of 525.

LOGGING AND SAWMILLS. Logging and milling employment in the Southeast declines in the 1990s by 800 as the Native corp. harvest falls to a sustainable level. Employment growth in Southcentral (Seward, Valdez, Mat-Su, and Kenai) reflects new activities.

PULP MILLS. After 1991 employment declines at a rate of 1 percent per year because of productivity gains.

COMMERCIAL FISH HARVESTING, NONBOTTOMFISH. Employment levels in traditional fisheries harvest remain constant at 8,200.

COMMERCIAL FISH PROCESSING, NONBOTTOMFISH. Employment in processing of traditional fisheries harvest increases from 7,200 in 1988 to 7,500 in 1991 and thereafter remains constant.

FINFISH FARMING. None.

COMMERCIAL FISHING, BOTTOMFISH. The total U.S. bottomfish catch expands to allowable catch. Onshore processing is centered in the Aleutians and Kodiak with additional activity in Anchorage, Kenai Peninsula, and Bristol Bay.

FEDERAL MILITARY EMPLOYMENT. Strength level constant after complete deployment of Light Infantry Division in 1991 in Anchorage and Fairbanks and Air Force buildup in Anchorage.

NAVY CRUISER HOMEPORTING. None.

FEDERAL CIVILIAN EMPLOYMENT. Employment rises at 0.5 percent annual rate consistent with the Long-term trend since 1960.

TOURISM. Index of tourist visitor days to Alaska increases by 3 percent per year from 1990.

STATE ELECTRIC PROJECTS (SEE ALSO SPECIAL STATE APPROPRIATIONS). Construction employment from Alaska Power Authority projects includes Bradley Lake.

Fiscal Assumptions

SEVERANCE TAXES. No changes from current tax structure.

ROYALTIES. Current royalty structure continues. These revenues are distributed between the General Fund and Permanent Fund.

BONUSES. Based on projections published by Alaska Department of Revenue. No change in regulations.

PROPERTY TAXES. Based on projections published by Alaska Department of Revenue. Augmented by taxes on onshore facilities related to OCS development. (See OCS case.)

PETROLEUM CORPORATE INCOME TAX. Based on projections published by Alaska Department of Revenue. No change in tax regulations.

RENTS. Constant at $9 million annually.

MISCELLANEOUS PETROLEUM SETTLEMENT REVENUES. Alaska receives $2 billion (1990$) over the period FY 1991 to 2000 in settlement of disputed offshore leases in the Beaufort Sea and in settlement of lawsuits and tax disputes regarding the valuation of North Slope oil. These revenues are evenly distributed between the General Fund and the Permanent Fund.

FEDERAL-STATE PETROLEUM-RELATED SHARED REVENUES. Increasing $1 million annually from 1990 level of $13 million.

PERSONAL INCOME TAX. Reimposed at previous level when state appropriations fall below the FY 1988 level in real terms. Income tax is reimposed prior to elimination of the dividend and at the same time that Permanent Fund earnings have been appropriated to the General Fund.

LARGE PROJECT CORPORATE INCOME TAXES. Zero.

MISCELLANEOUS LOCAL REVENUE SOURCES. Miscellaneous state-local transfers, large project property taxes, new petroleum-related federal transfers all set to zero.

NEW FEDERAL-STATE SHARED REVENUES. Zero.

AGGREGATE APPROPREATIONS. Annual appropriation equals current revenues plus 50 percent of General Fund balance available for appropriations.

CAPITAL/OPERATIONS SPLIT. 90 percent operations; 10 percent capital.

GENERAL OBLIGATIONS BONDS. Bond sales for capital expenditures occur at a rate which maintains annual debt service payments at a level no more than 5 percent of current state revenues.

FEDERAL GRANTS-IN-AID FOR CAPITAL EXPENDITURES. Increasing at 6 percent annually.

STATE LOAN PROGRAMS. Appropriations from the General Fund for program capitalization terminated after FY 1987. Programs continue functioning on existing capitalization including AHFC and APA revenue bond expenditures.

MUNICIPAL CAPITAL GRANTS. Funding terminated after FY 1987.

STATE-LOCAL REVENUE SHARING. Continuation proportional to total state expenditures.

STATE-LOCAL MUNICIPAL ASSISTANCE. Continuation proportional to total state expenditures.

PERMINENT FUND/OTHERSPECIAL APPROPRIATIONS INEXCESS OF SPENDING LIMIT. $100 million in unspecified capital expenditures from the Intertie Reserve Account.

PERMINENT FUND PRINCIPAL. Deposits from petroleum revenues continue at current rates; inflation-proofing eliminated when complete withdrawal of nominal earnings commences.

PERMINENT FUND DIVIDEND. Continued at the rate of 50 percent of earnings averaged over the previous 5 years until revenues from all other sources are insufficient to maintain state appropriations at real 1988 level. When that milestone is reached, the dividend is phased out.

PERMINENT FUND EARNINGS. After payment of the dividend, the remaining fund earnings are added to the corpus of the Permanent Fund --

inflation proofing and undistributed income. When state appropriations begin to fall below the real 1988 level, earnings are diverted at an increasing rate to the General Fund to maintain the 1988 level.

REAL RATE OF RETURN. 3.3 percent.

STATE-LOCAL WAGE RATES. Wage rate growth falls below inflation rate for 2 years in mid-1990s, resulting in approximate 10 percent real reduction in average wage.

LOCAL PROPERTY TAX RATE. Trends upward over time from 1.1 to 1.3 mills based on full value.

NATIONAL VARIABLE ASSUMPTIONS

U.S. INFLATION RATE. Consumer prices rise at an annual rate of approximately 5 percent.

REAL AVERAGE WEEKLY EARNINGS. Growth in real average weekly earnings averages 0.5 percent annually.

REAL PER CAPITA INCOME. Growth in real per capita income averages 1 percent annually in excess of average weekly earnings.

UNEMPLOYMENT RATE. Long-run rate averages 6.5 percent.

REGIONAL ASSUMPTIONS

POPULATION. Regional population growth allocated on the basis of existing population and employment growth.

EMPLOYMENT. No significant shifts in the location of support industries.

DEMOGRAPHIC ASSUMPTIONS

LABOR FORCE PARTICIPATION RATE. Constant at 71 percent.

ACKNOWLEDGEMENTS

This document was prepared by staff of the State of Alaska, Department of Natural Resources, Division of Oil and Gas:

Bill VanDyke, Petroleum Manager

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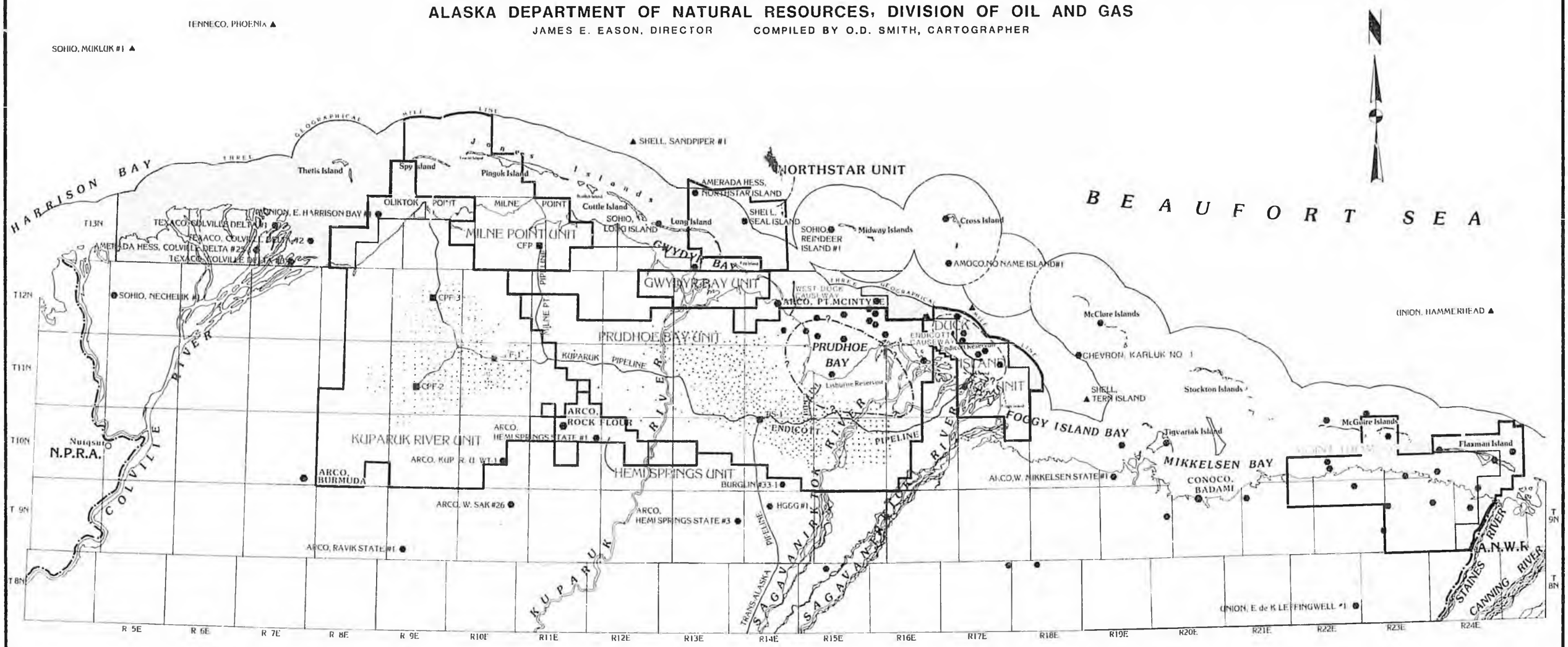
Dan Smith, Cartographer

Tom Rauba, Programmer

NORTH SLOPE UNIT MAP

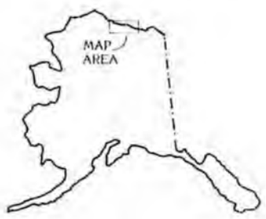
ALASKA DEPARTMENT OF NATURAL RESOURCES, DIVISION OF OIL AND GAS

JAMES E. EASON, DIRECTOR COMPILED BY O.D. SMITH, CARTOGRAPHER



EXPLANATION

Pump Station #1	PS-1	Net Profit Share Leases	
Central Production Facility	CPF	Central Facilities Pad	CFP
Selected State Exploratory Wells	●	Selected Federal Exploratory Wells	▲
Approximate limits of the Endicott Reservoir	– – ? – – – ? – –	Approximate limits of the Lisburne Reservoir	– –?–·–·–·–?–·–
Development Oil Wells		Oil and Gas Unit Boundaries	



SCALE 1:500,000 One inch equals eight miles approx.

5 0 5 10 15 20 25 MILES

BASE MAP : Transposed From U.T.M. Projection By U.S.G.S., Original Scale 1:250,000, All Townships - Umiat Meridian.

FEBRUARY 1992

COOK INLET DEVELOPMENT MAP

State of Alaska
Department of Natural Resources
Division of Oil and Gas
James E. Eason, Director

Explanation

- Lease Unit boundaries
- Oil field (Approximate limits)
- Gas field (Approximate limits)
- Production platforms
- Pipeline routes

Base map from U.S. Geological Survey Anchorage (1962), Kenai (1959), Seldovia (1963), and Tyonek (1958) Quadrangles, Alaska.

Scale 1:500,000 One inch equals eight miles approx.

5 0 5 10 15 20 Miles

5 0 5 10 15 20 25 30 Kilometers

Map Location

Inset Map
Port Nikiski

Compilation by M.E. Pritchard, Cartographer, February 1988.
Rev. March 1988, Rev. December 1988, Rev. December 1989
Rev. April 1991 Revised February 1992

ALASKA DEPARTMENT OF NATURAL RESOURCES

THE FOLLOWING DOCUMENT
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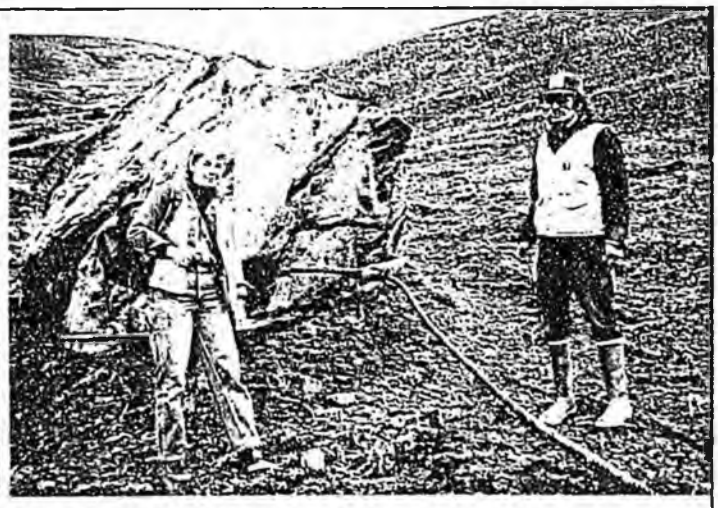
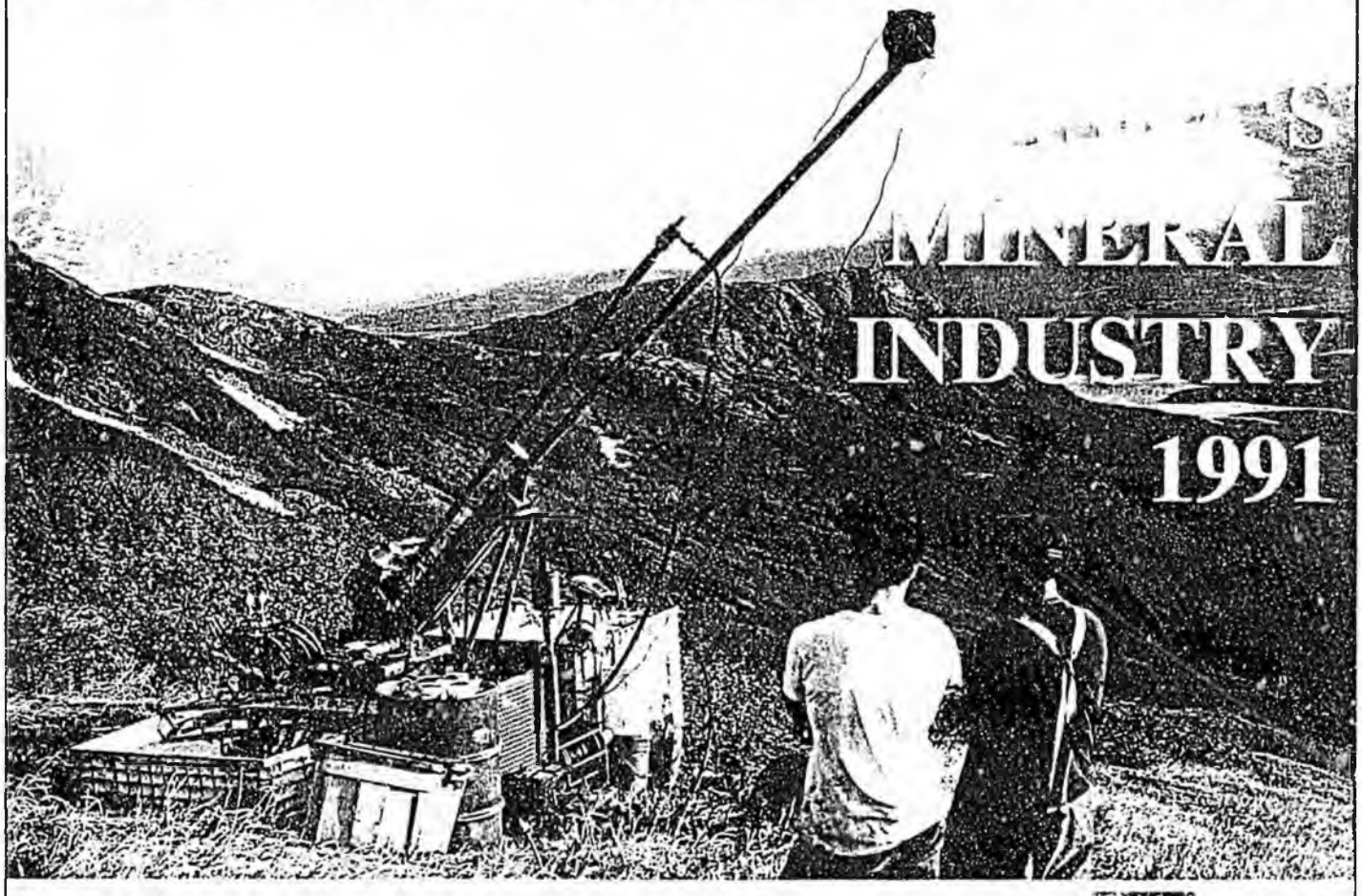
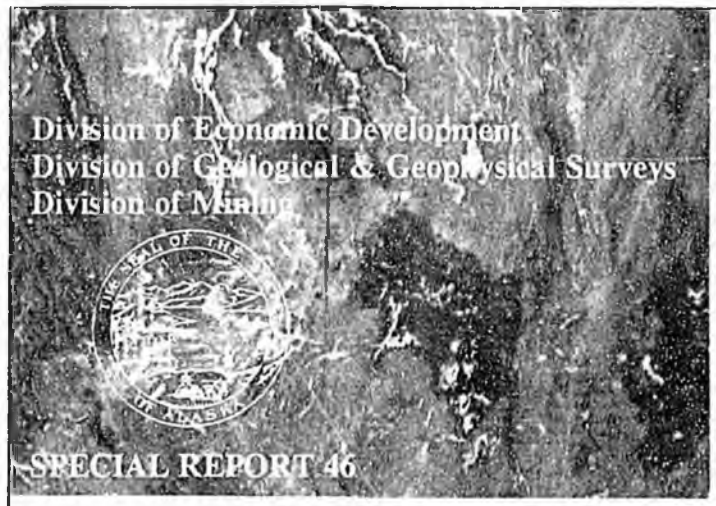
Division of Economic Development
Division of Geological & Geophysical Surveys
Division of Mining

SPECIAL REPORT 46





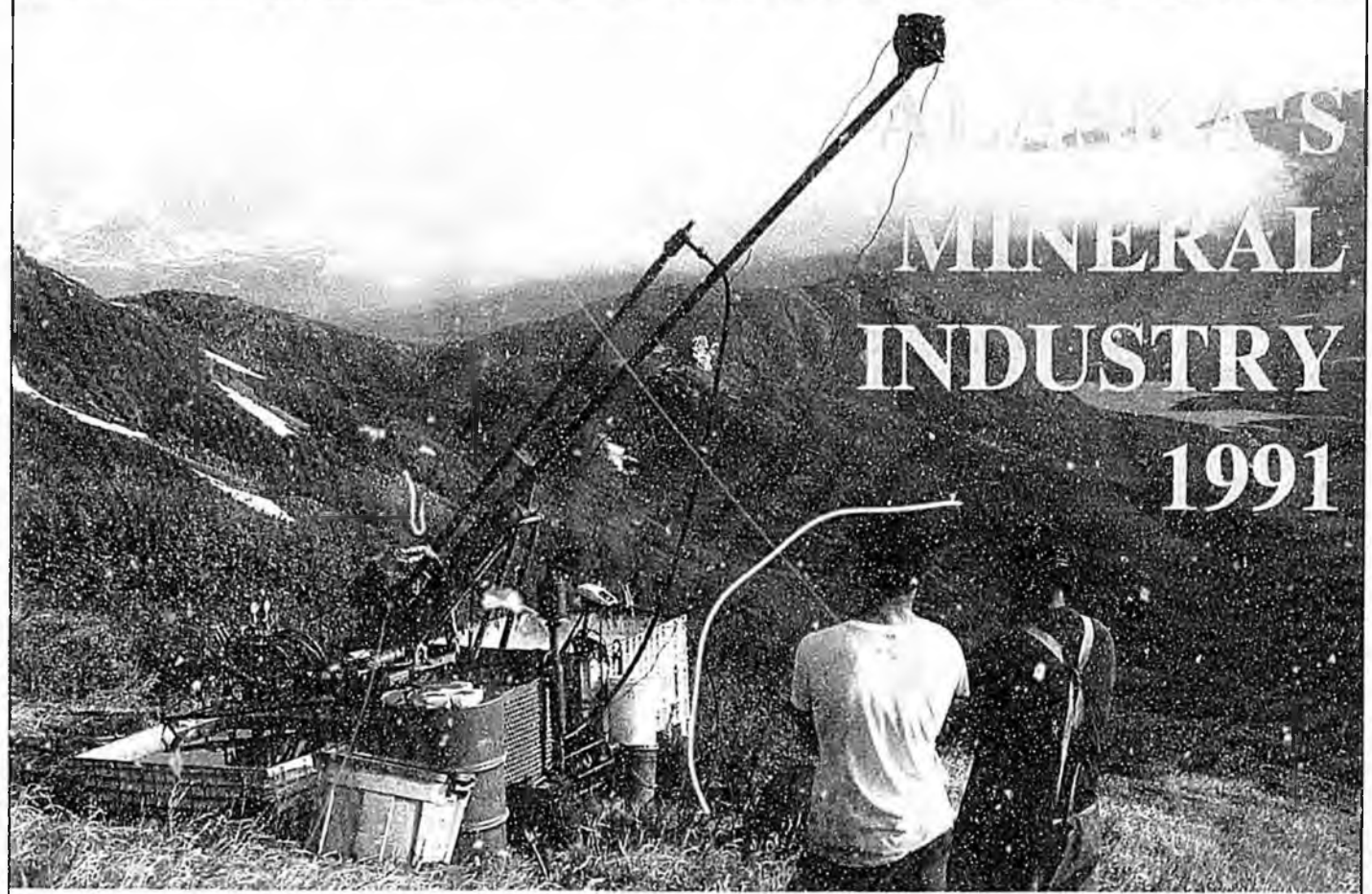
MINERAL INDUSTRY 1991



Division of Economic Development
Division of Geological & Geophysical Surveys
Division of Mining

SPECIAL REPORT 46

ALASKA'S MINERAL INDUSTRY 1991



Byrnes Photo

Hard rock is not just music for our children. The resource, with its development throughout Alaska's history, has been music to our ears and money in our pocket.

These reports, year after year, inventory the magnitude of this incomparable resource and project the priorities essential for their appropriate development. In an **Owner State**, where the government of the people holds most of its vast natural resources in common, as Governor Hickel explains, the state must **initiate** and **advocate** as well as **regulate**. Our department is charged with entering into partnerships with the private sector to help bring these resources to market for the maximum benefit of our people.

We are grateful for the dedication and work that has brought this splendid report to publication.

Glenn A. Olds, Commissioner
Department of Natural Resources

FRONT COVER PHOTOS

Top left. *Slab of nephrite jade from the Jade Mountains in the Kobuk River valley of northwestern Alaska. The jade is being cut and polished in the processing shop of Jade Mountain Products Inc. in Kotzebue. (Photo by NANA Regional Corporation)*

Top right. *NANA geologists Anita Williams and Rodney Hunnicutt prepare a jade boulder for transport from Jade Mountain. Photo by John Rense)*

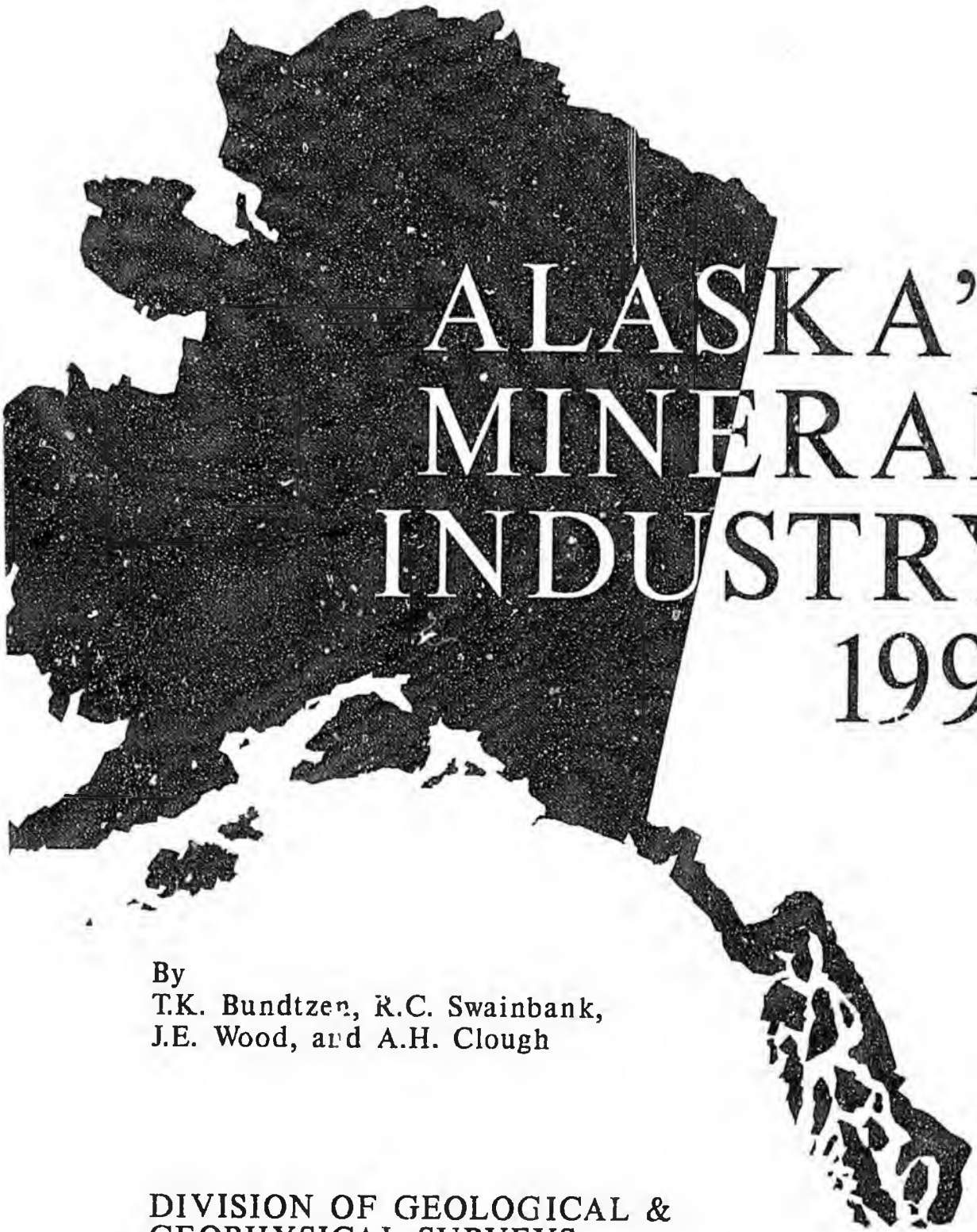
Center. *American Copper and Nickel Inc. drillers, using a diamond drill, explore a copper deposit south of Lake Iliamna in the Alaska Peninsula region. (Photo by T.K. Bundtzen)*

Bottom left. *Geologists from the Russian Far East examine Alaska Gold Company's Dredge 6. The dredge works a gold-bearing ancestral shoreline of Norton Sound west of the airport at Nome in western Alaska. Alaska Gold Company dredges provide about 75 jobs to residents of the Nome area. (Photo by T.K. Bundtzen)*

Bottom right. *Wiseman miner Paul Dionne holds a 22.75 oz nugget recovered from an underground drift mine in northern Alaska. Dionne mines underground with low-profile equipment during the winter months and stockpiles pay for summer sluicing. (Photo by Inside-Out Mining Company)*

BACK COVER PHOTOS

Aerial view of exploration and development work at the Fort Knox gold-bismuth deposit. Fairbanks, Alaska, 24 km (15 mi) southeast, can be seen top center in the photo. During 1991 Fairbanks Gold Ltd. began development of the deposit, and the company plans to begin operation in late fall, 1994. Projected annual output of about 10,855 kg (350,000 oz) will more than double current Alaska gold production and provide jobs for 250 Alaskans. The inset photos show an exploration trench at the Fort Knox deposit and its subsequent reclamation. Alaska law now requires reclamation of all mine activities on State, Federal, and private lands. (Photos by Fairbanks Gold Mining Inc.)



ALASKA'S MINERAL INDUSTRY 1991

By
T.K. Bundtzen, R.C. Swainbank,
J.E. Wood, and A.H. Clough

DIVISION OF GEOLOGICAL &
GEOPHYSICAL SURVEYS

SPECIAL REPORT 46

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This publication, released by the Division of Geological & Geophysical Surveys, was printed in Anchorage, Alaska, at a cost of $2 per copy. Publication of this report is required by Alaska Statute 41, "to determine the potential of Alaskan land for production of metals, minerals. . .[and to] advance knowledge of the geology of Alaska."

EXECUTIVE SUMMARY

Alaska's Mineral Industry 1991, Special Report 46, is the eleventh annual report produced by the Department of Natural Resources, Division of Geological & Geophysical Surveys, the Division of Mining, and the Division of Economic Development of the Department of Commerce and Economic Development.

The report is designed to provide current, accurate, and technically reliable information about Alaska's mineral industry. Its publication depends on the cooperation of individuals, private industry, and government agencies to provide information on their mining projects and activities.

Total expenditures for exploration and development and the value of production in 1991 was $611.9 million, about the same as the $610.6 million total for 1990. Value of 1991 mine production rose to $546.5 million, a 3% increase from the previous year. Exploration expenditures declined from $63.3 million in 1990 to about $39.9 million in 1991, down about one-third. Although development expenditures rose only modestly, to $25.6 million in 1991 from a 10-year low of $14.3 million in 1990, this increase reflects growing interest in developing new hardrock gold and coal mines in the State.

In 1991 Alaska produced about 57% of the total U.S. mine output of zinc, 16% of the silver, and 13% of the lead.

Gold production stabilized to 243,800 ounces, but fewer mines operated because of lower gold prices, exhaustion of reserves in some areas, and increasing demands of regulatory requirements.

Profits were down in all mines because of lower metal, coal, and industrial mineral demand caused by the international recessionary cycle.

The employment level remained stable at 3,650 jobs—good news that the Alaskan Mineral Industry held its own during difficult recessionary times.

With anticipated development of one or more large gold and coal mines in interior, southcentral, and southeastern Alaska, growth in mining during the next few years appears likely.

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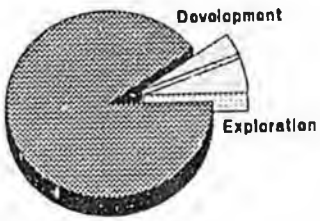

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Alaska's Mineral Industry 1991

By T.K. Bundtzen,[1] R.C. Swainbank,[2] J.E. Wood,[3] and A.H. Clough[4]

INTRODUCTION

Total value of the 1991 Alaska Mineral Industry as measured by the value of production and the sum of exploration and development expenditures was $612.0 million, close to the 1990 estimate of $610.6 million (fig. 1, table 1).

The final Alaska Department of Natural Resources' estimates of the value of Alaska's 1991 mineral production totaled $546.5 million. In spite of lower commodity price levels, production value increased over the 1990 total value of $533 million (fig. 2). During 1991 Alaska's mines produced about 57% of U.S. domestic mine output of zinc, about 16% of the silver, 13% of the lead, and 2.5% of the nation's gold. Red Dog and Greens Creek Mines were the main producers of the base metals and silver. Gold output from placer mines stabilized, but fewer mines operated due to low bullion prices, exhaustion of resources in some areas, and increasing regulatory requirements. Placer mining continues to be predominantly a small-business industry that provides many jobs in rural Alaska.

Mineral development expenditures grew from $14.3 million in 1990 to $25.6 million in 1991, an increase of

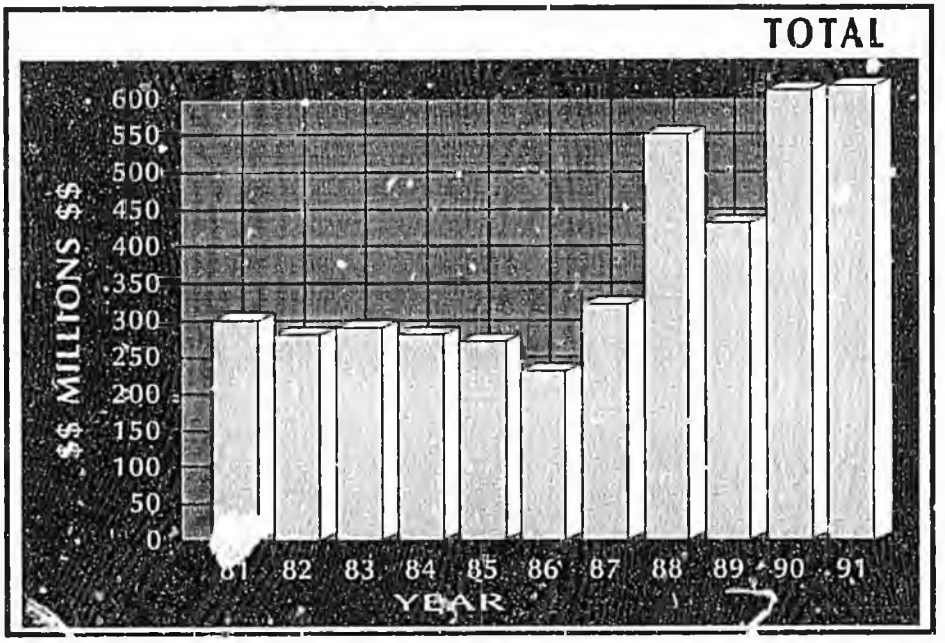

Figure 1. *Total exploration and development expenditures and value of production, 1980-91.*

79% (fig. 3). However, mineral exploration activities decreased 38% (fig. 4), with final 1991 values of $39.9 million, compared to a 1990 estimate of $63.3 million. Another contributing factor in the exploration decline was the delay of several large, advanced exploration projects that are still waiting for development decisions.

EMPLOYMENT

The mineral industry provided about 3,650 year-round-equivalent jobs during the 1991 calendar year (table 2). Employment levels increased slightly from the 3,585 jobs reported to us in 1990 mainly because there were more mineral development and placer mining jobs. But balancing these job increases were employment declines in exploration, base metal and hard-rock gold mining, and miscellaneous mine activities, including jade, soapstone, and tin extraction. In other sectors of the mineral industry, employment has remained at the same level during the last two years.

Placer mine employment again topped the list with 1,240 jobs (34%) followed by sand and gravel extraction (685; 19%), base metals (415; 11%), recreational mining (320; 9%), mineral exploration (268; 7%), lode gold production (235; 6%), building stone extraction (165; 4%), mineral development (133; 4%), coal mining (115; 3%), and all other categories (70; 3%) (table 2).

In 1991 emphasis shifted from advanced exploration to development of several key metal, lode, and coal

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[3]Alaska Division of Mining, 3700 Airport Way, Fairbanks, AK 99709.
[4]Alaska Division of Economic Development, 9th Floor, State Office Bldg., Juneau, AK 99811.

Table 1. *Total value of the Alaska mineral industry, 1989-91*

	1989	1990	1991
Exploration	$ 47,762,596	$ 63,255,594	$ 39,908,539
Development	134,272,350	14,326,500	25,574,350
Production	276,983,741	533,024,500	546,468,907
TOTAL	**$459,018,687**	**$610,606,594**	**$611,951,796**

projects. This shift could indicate that the industry should invest a substantial amount of new preproduction capital in Alaskan projects during the next several years. However, relatively weak metal and coal demand on the international market and a complicated permitting process could delay advanced exploration and development projects over the short term.

PRODUCTION

Production of metals accounted for nearly four-fifths of total mineral industry output for 1991, and production volume and value increased above the record 1990 calendar year to $546.5 million (tables 1 and 7; fig. 1). However, the international recession caused low commodity prices and, therefore, only modest increases in monetary values from the previous year. For example, from 1990 levels, the price of zinc dropped 28%, lead dropped 31%, silver 21%, and gold 6%. The result was lower profit margins for most Alaskan metal mines.

In northwestern Alaska, production continued to improve at the Red Dog Mine, which is owned by NANA Corporation and operated by Cominco Alaska Inc. During the 1991 shipping season, from mid-summer to October 8, 1991, Red Dog shipped 472,913 tonnes (521,404 tons) of zinc, lead, and ISF composite-metal concentrates from the port of Kivalina to various overseas markets and to the Cominco smelter at Trail, British Columbia. The 1991 mine output increased 62% from the 291,782 tonnes (321,700 tons) of concentrate shipped to market in 1990. Silver in concentrate form is produced as a byproduct from the smelter feeds, but in 1991 silver recovery declined from 1990 levels because of metallurgical problems. Zinc production from the Red Dog project accounted for more than half the U.S. mine output, making it one of the world's largest zinc producers.

For the third consecutive year Kennecott's Greens Creek Mining Company mined zinc, silver, lead, and gold ores at its Greens Creek Mine on Admiralty Island near Juneau. The mine produced about the same amount as in 1990: about 236,360 kg (7.6 million oz) of silver, 1,150 kg (37,000 oz) of gold, and 53,286 tonnes (58,750 tons) of combined lead and zinc contained in concentrates. Once again, Greens Creek was the nation's largest silver mine. To improve profitability and overall economic viability during difficult times, Kennecott has submitted a modified plan of operation to the U.S. Forest Service to upgrade the mill and improve the quality of the concentrate produced.

About 202 placer and two lode mines produced approximately 7,585 kg (243,880 oz) gold worth $88.2 million, a 5% increase in volume from 1990. Almost all increased production can be attributed to the resumption of full-scale production at Cambior Alaska's Valdez Creek Placer Mine east of Cantwell. Alaska Gold Company continued to operate two bucketline stacker dredges in the Nome district and employed 75 workers to strip overburden, thaw frozen ground, and operate the dredges. Other large placer mines statewide include Polar Mining near Fairbanks, NYAC Mining Company near Aniak, Taiga Mining at Hogatza, Alaska Placer Development at Livengood, Sphinx-America Inc. near Ruby, GHD Resources at Candle, and Shoreham Resources near Manley Hot Springs. Throughout Alaska, there was a net loss of 16 mine operations—most of them small or medium-sized placer firms. Lower prices, reserve-base exhaustion, and regulatory oversight continue to slow this industry, which functions at about the same economic level as rural farming or Alaska-based commercial fishing enterprises.

Usibelli Coal Mine Inc. produced approximately 1.40 million tonnes (1.54 million tons) of coal worth about

Table 2. *Alaska's mineral industry employment, 1989-91*

	1989	1990	1991
Mineral production			
Gold and silver mining			
Placer	1,316	1,151	1,240
Lode	161	265	235
Base Metals	407	425	415
Recreational	325	315	320
Sand and gravel	625	645	685
Building stone	148	160	165
Coal	120	115	115
Peat	--	--	45
Tin, jade, soapstone, ceramics, platinum	40	40	25
Mineral development[a]	785	95	133
Mineral exploration[a]	350	374	268
TOTAL	**4,277**	**3,585**	**3,646**

-- = Information not available.
[a]Calculated for 260-day workyear.

$38.5 million from its Poker Flats and Gold Run pits near Healy. Six interior Alaska power plants used about half the coal and Usibelli shipped most of the rest through the Port of Seward to the Korean Electric Power Company in South Korea. Arctic Slope Consulting Group, operator for Arctic Slope Regional Corporation, mined 454 tonnes (500 tons) of bituminous coals at its Aluaq Mine north of Kotzebue and conducted home heating and power plant tests of the coal.

The sand and gravel and building stone industries functioned at the same levels as in the past five years. About 12.8 million tonnes (14.2 million tons) of sand and gravel worth $45.5 million were produced by 42 companies on the North Slope, along the Rail Belt, in the southeastern Panhandle, and in various bush locations. Stone production totaling 2.7 million tonnes (3.0 million tons) followed similar production patterns established by the sand and gravel industry.

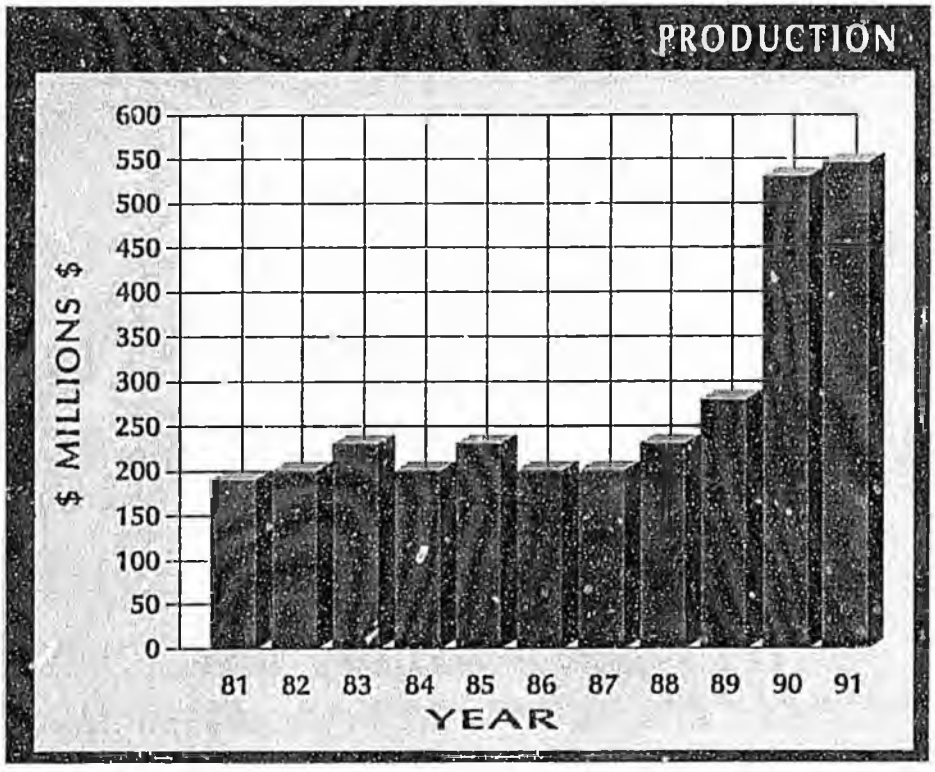


Figure 2. *Estimated production reported values, 1980-91.*

DEVELOPMENT

Alaska mineral development expenditures increased from $14.3 million in 1990 to $25 6 million in 1991, an increase of nearly 79% (table 1). The number of jobs generated by these activities increased from 95 to 133 (tables 1 and 2; fig. 3).

Work by Fairbanks Gold Ltd. at the Fort Knox deposit 24 km (15 miles) northeast of Fairbanks highlighted statewide mineral development. The development effort consisted mainly of "condemnation" drilling to ascertain where to locate mine infrastructure for a proposed large-scale mine. Late in the year Amax Gold Inc. purchased all assets of Fairbanks Gold in a stock transfer worth about $150 million. Amax plans to acquire permits and construct mine facilities by the fourth quarter of 1994.

Coal developments continued in northern, interior, and southcentral Alaska, despite weak international coal prices and complex political issues surrounding the Mental Health Lands dispute. Idemitsu Alaska Inc. continued a diligent effort to develop their Washbone

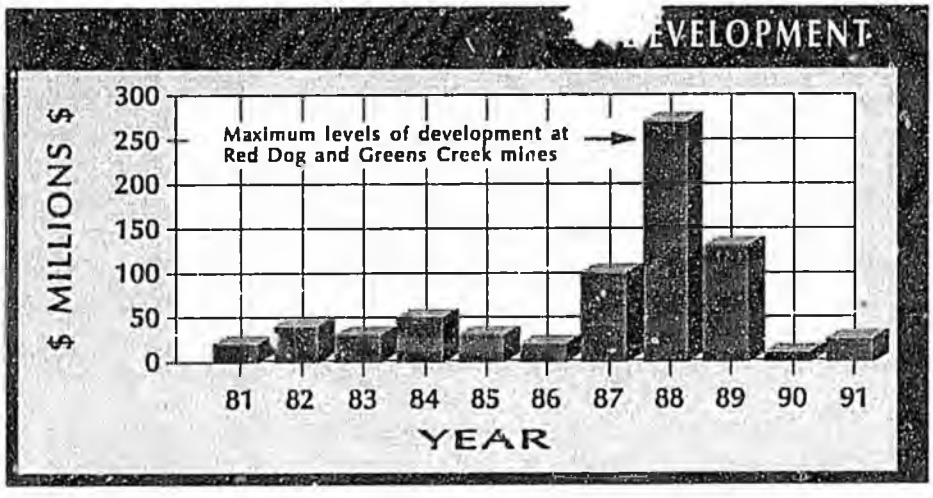


Figure 3. *Development expenditures reported, 1980-91.*

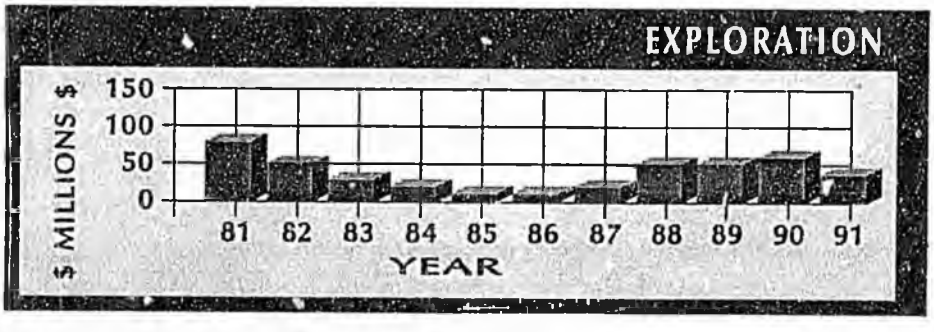


Figure 4. *Exploration expenditures reported, 1980-91.*

Hill bituminous coal deposit for a Far Eastern export market. Nearby Diamond Chuitna fulfilled ongoing permit requirements in the Beluga Coal Field; Hobbs Industries worked at the Evan Jones Coal Mine and collected bulk samples for testing; and Usibelli continued to plan for its participation in the Healy Clean Coal Project, which is designed to use state-of-the-art pollution control technologies in a 50-megawatt mine-mouth power plant.

EXPLORATION

Our estimates of 1991 Alaskan exploration expenditures show a decline from $63.3 million in 1990 to $39.9 million in 1991. This decline was caused in part by a shift from exploration drilling to mine planning at advanced exploration projects (table 1; fig. 4). Poor international commodity prices and mine profitability also influenced exploration investment in Alaska.

Eighty returned DGGS questionnaires described exploration projects in 1991. Responding companies include Cominco Alaska, Amax Gold, Battle Mountain Exploration Company, North Pacific Mining Company, American Copper and Nickel Company Inc., Placer Dome U.S. Inc., La Teko Resources, Lac Minerals (USA), Central Alaska Gold Company, Echo Bay Alaska Inc., Arctic Slope Consulting Group, NANA Corporation, BHP Utah International, Pulsar Resources, Kennecott Corporation, and ASA Inc.

GOVERNMENT ACTIONS

Regulations regarding rents and royalties were in effect for all of 1991, and the Alaska State reclamation statute became effective for all mines on October 15, 1991. The Alaska Division of Mining formed a bond pool that is available to operators on all classifications of land in Alaska.

The executive branch has worked diligently with plaintiffs of the 1985 Weiss vs. State of Alaska lawsuit, which demanded resolution of many complex issues surrounding the Alaska Mental Health Lands Trust. The Alaska Division of Lands has been the lead Department of Natural Resources agency that is attempting to satisfy provisions of the court order that demanded resolution and reconstitution of the Trust lands. The original one-million-acre territorial land grant enacted in 1956 was confirmed by the 1959 Alaska Statehood Act but was dissolved by the 1978 Alaska Legislature. Following the dissolution the State sold or otherwise relinquished about 55% of the Trust lands. The Hickel administration's preferred option, referred to as the Chapter 66 settlement, would reconstitute the remaining Trust lands, and add new hypothecated (pledged as security) lands that are judged to be of equal value to the original Trust lands that were sold or relinquished by the State. Another proposed solution to the problem would have reestablished remaining Trust lands (about 194,260 ha; 480,000 acres) and awarded the Trust a percentage of annual net State income.

Federal proposals to change the 1872 mining law received considerable attention during the year. The U.S. House of Representatives held a hearing on the Rahall Bill in Fairbanks during late May 1991, where extensive testimony opposing the changes dominated public input. About 24 million ha (50 million acres) or only 20% of Federal lands are currently open to claim staking under the 1872 mining law.

Proposals to tax in-place natural resources also received a good deal of attention during 1991. The Alaska legislature directed the Department of Community and Regional Affairs (DCRA) to study the in-place taxation issue and report findings back to the legislature by 1992. Municipal taxation of in-place resources, excluding petroleum, has been possible since statehood. Recent proposed legislation would provide the same exemption as that involving petroleum. DCRA recommended that in-place resources be permanently exempted from municipal taxation. This finding echoes conclusions from other State agencies (Departments of Commerce and Economic Development, Natural Resources, and Revenue), and the Alaska Municipal League. (Update: During the closing days of the 1992 session the State unanimously passed legislature SB 330, which provides a permanent exemption from municipal taxation of in-place mineral resources.)

ACKNOWLEDGMENTS

This report is designed, produced, and distributed by the Alaska Department of Natural Resources Division of Geological & Geophysical Surveys (DGGS), Division of Mining (DOM), and the Department of Commerce and Economic Development Division of Economic Development (DED). Since Statehood (1959), DGGS and predecessor agencies published annual summaries of mining activity in the agency's annual report series. Beginning in 1982, DGGS adopted a more comprehensive format to provide more in-depth coverage of the industry, thanks to a healthy funding boost provided by the newly created Office of Mineral Development (now DED), which became a permanent partner in the project. The Division of Mining joined the team in 1984. The current annual *Alaska's Mineral Industry Report* is published in the DGGS Special Report series, and is available from the three participating agencies.

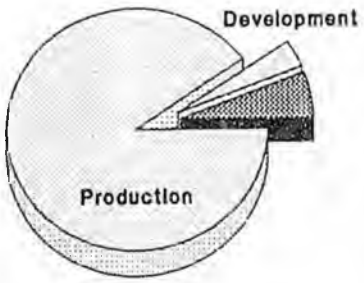
T.K. Bundtzen and E.E. Harris mailed 1,044 questionnaires on mining activity in Alaska to mineral exploration firms, Native corporations, mine production companies and partnerships, and government agencies involved in overseeing or regulating mining. Bundtzen and Harris received 177 completed forms. We thank all those who have given us information by phone and questionnaire. Such information is essential to the continuing usefulness and success of *Alaska's Mineral Industry Report.*

Bundtzen wrote the Introduction, Exploration, Production, Metal Recycling, and State Land Selection sections;

R.C. Swainbank wrote the Development and Drilling Activity summaries and part of the Exploration section; A.H. Clough provided much mineral activity data from southeast Alaska; J.E. Wood and Erik Hansen completed appendixes A, B, and C and wrote the Land Availability section, which includes calculated percentages of Alaskan lands open to mineral entry; Bundtzen and Swainbank updated appendixes D through G.

The production team included Ann-Lillian Schell for cover design, Greg Laird for graphics, Fran Tannian for editing, and Roberta Mann and Joni Robinson for desktop publishing.

In the fall of 1991 we asked our readers to tell us their preferences regarding the use of metric and English units of measurements in the text. Forty-six of our readers returned responses. Thirty-one (67%) prefer use of both metric and English conversions; nine (20%) want only English units; and six (13%) want only metric units of measure. Based on the results of this survey, we will continue to provide metric units and English conversions throughout the body of the report. We thank all those who responded.



EXPLORATION

Mineral industry exploration expenditures declined from 1990 levels to $39.9 million as several large exploration projects moved into development phases, concentrated on permit acquisition, or started mine design. Low commodity prices slowed the flow of investment dollars to Alaska exploration projects.

Mineral exploration declined in 1991 from the near record-breaking levels established in 1990. Eighty firms reported $39.9 million in expenditures, a reduction of 37% from the $63.6 million recorded in 1990 (tables 1, 3, and 4; fig. 4). We believe the reduction in exploration occurred for several reasons. First, the Fort Knox project near Fairbanks, which was previously one of the State's largest exploration ventures, converted completely to development. Second, in southeast Alaska at the Kensington and Alaska-Juneau Mines, Echo Bay Alaska Inc. redirected its exploration and development efforts. In 1990 the emphasis was on definition drilling and onsite construction. In 1991 the focus shifted to less capital-intensive phases such as permit acquisition, environmental monitoring, and economic analyses. In general, grass-roots explo-ration continued at a relatively healthy rate, despite poor commodity prices. See figure 5 for locations of selected Alaskan exploration projects. However, some investment dollars were curtailed because of the international recession.

The number of active State and Federal mining claims continued a steady decline that began in 1989. Active claims totaled 57,666 in 1991, compared with 62,528 in 1990, 67,528 in 1989, and 75,542 in 1988 (fig. 6). The number of active claims is traditionally used as an indicator of mining activity in the State. There are several reasons why the claim count dropped during a time period when exploration activity was relatively high. We believe the main reasons are the modifications to Alaska State regulations that were enacted in 1990, and increasing exploration expenditures on Native corporation lands which require no claim staking.

Assessment work continued on 52,976 State and Federal claims in 1991; 1,299 new Federal and 3,391 new State claims were staked during the year (fig. 7). The State billed claims on State land at the required $0.50/acre annual fee, with the typical claim bill being $20 for a 16 ha (40 acre) claim. Holders of 27,231 claims made payment by the November 30, 1991, deadline; 3,236 were deemed null and void because of nonpayment of fees. In January, 1991, there were 30,467 active State claims and 32,061 active Federal claims. At the close of 1991 there were 30,622 active State claims and 27,044 active Federal claims.

NORTHERN REGION

Exploration expenditures in the northern region, which includes the entire Brooks Range and Arctic coastal plain, totaled $955,900, a 17% decrease from the $1,152,000 reported for 1990 (table 4). Much of the area is included in several large, Federal conservation units that have been withdrawn from mineral entry. Additionally, the region is remote and lacks an integrated transportation system. Both factors limit the modern search for minerals. However, investigations continue in the world-class Noatak lead-zinc province, in the Ambler mineral belt, and in historic placer mining areas of the northern region.

Metals

NANA Regional Corporation explored for lead, zinc, silver, and gold in the Ambler district and in the Candle-Inmachuk districts of northeast Seward Peninsula. Their 1991 work included geochemical surveys and site-specific geological mapping at the prospect level.

Dodies Dream Association searched for placer gold on its Federal mining claims along the south fork of the Koyukuk River within the Alyeska pipeline corridor. Robert Pelky surveyed nearby placer sites on Ironside Bar and the south fork of the Koyukuk River near Wiseman.

Chandalar Development Corporation tested placer ground before mine operations started on Tobin Creek in the Chandalar Mining district of east central Brooks Range. Chandalar also began an evaluation of the hardrock

Table 3. *Reported exploration expenditures in Alaska by commodity, 1982-91*

	Base metals	Precious metals	Industrial minerals	Coal and peat	Other[a]	YEARS TOTAL
1982	$31,757,900	$ 10,944,100	$ --	$ 2,900,000	$ 15,300	$ 45,617,300
1983	9,758,760	20,897,555	2,068,300	1,338,454	70,000	34,133,069
1984	4,720,596	14,948,554	270,000	2,065,000	279,500	22,283,650
1985	2,397,600	6,482,400	--	270,000	--	9,150,000
1986	1,847,660	6,107,084	170,000	790,000	--	8,914,744
1987	2,523,350	11,743,711	286,000	1,150,000	31,000	15,734,061
1988	1,208,000	41,370,600	160,200	2,730,000	--	45,468,800
1989	3,503,000	43,205,300	125,000	924,296	5,000	47,762,596
1990	5,282,200	57,185,394	370,000	321,000	97,000	63,255,594
1991	4,789,500	34,422,039	92,000	603,000	2,000	39,908,539
TOTAL	$67,788,566	$247,306,737	$3,541,500	$13,091,750	$499,800	$332,228,353

-- = No expenditures reported.
[a]Jade, diamonds, and colored gemstones.

Table 4. *Reported exploration expenditures and employment in Alaska by region, 1991*

	Northern	Western	Eastern Interior	South-western	South-central	Alaska Peninsula	South-eastern	TOTAL
Exploration expenditures								
Base metals	$ 110,000	$ 815,000	$ 162,500	$ 14,000	$2,648,000	$ --	$ 1,040,000	$ 4,789,500
Precious metals								
Placer	365,900	189,000	156,048	115,000	314,500	--	2,200	1,142,648
Lode	--	1,373,941	5,092,400	1,740,000	3,079,050	327,000	21,667,000	33,279,391
Coal and peat	450,000	--	--	--	153,000	--	--	603,000
Industrial minerals	30,000	--	5,000	5,000	--	--	52,000	92,000
Other[a]	--	--	--	--	--	--	2,000	2,000
TOTAL	$955,900	$2,377,941	$5,415,948	$1,874,000	$6,194,550	$327,000	$22,763,200	$39,908,539
Exploration employment								
Employment								
Workdays	3,701	4,866	7,893	3,932	13,712	345	35,235	69,684
Workyears[b]	14	19	30	15	53	1	136	268
Number of companies reporting[c]	8	10	24	8	18	2	10	80

-- = No expenditures reported.
[a]Jade, platinum, diamonds, and colored gemstones.
[b]Based on a 260 day workyear.
[c]Some companies were active in several areas.

gold-silver potential of the previously productive Mikado Mine, a high-grade mother lode vein system in greenschist facies metamorphic rocks.

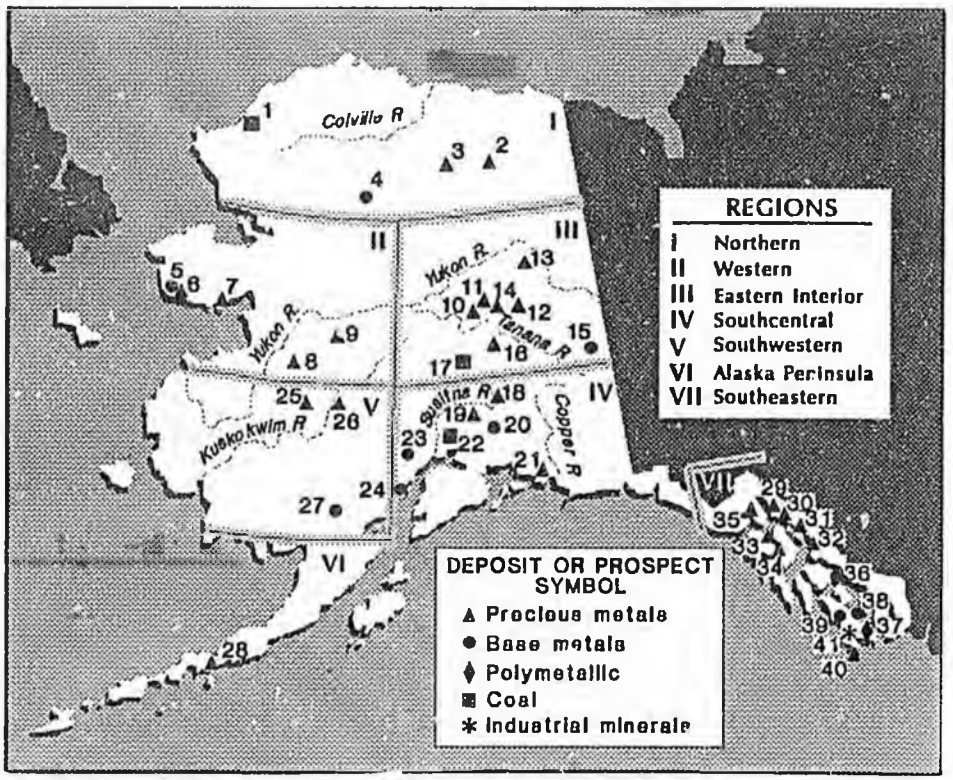
Paradise Valley Inc. completed 150 m (500 ft) of crosscuts while searching for gold, silver, zinc, and lead in the Flat Creek drainage east of Wild Lake in the central Brooks Range. The company also tested nearby limestone for potential agricultural and concrete production applications.

Coal

Arctic Slope Consulting Group (ASCG), operator for Arctic Slope Regional Corporation, continued an assessment of high quality coal resources in the Deadfall syncline area of northwest Alaska. Coal resources in this area are found in the Cretaceous Corwin Formation of the Nanushuk Group (Chapman and Sable, 1960). According to Callahan (1992), ASCG has focused on three exploration targets: (1) a 7-m-thick (23-ft) coal seam on the Kukpowruk River 48 km (30 mi) from Point Lay; (2) at Cape Beaufort in the inshore portion of a synclinal basin; and (3) in the Deadfall syncline northeast of Cape Beaufort. Most of the recent exploratory work has concentrated on the two Cape Beaufort areas.

A 1983 reconnaissance drilling program funded by the State of Alaska confirmed the presence of multiple, thick coal seams in the axial area of the Deadfall syncline. In 1984 Howard Gray and Associates continued the exploration work for ASCG and assessed potential for a small-scale mine operation.

In 1991 ASCG began an additional 610 m (2,000 ft) of exploratory drilling to confirm the presence of sufficient reserves for an export market. This work included infill drilling to delineate reserves in the thickest coal seams and deep drilling for stratigraphic studies. ASCG used a mobile D-60 reverse-circulation drill rig during the 1991 work. Further work by ASCG on the coal resources is described in the



I NORTHERN REGION
1. Arctic Slope Consulting Gr. (Deadfall syncline)
2. Chandalar Development Corp. (Tobin Creek)
3. Paradise Valley Inc. (Flat Creek-Wild Lake)
4. NANA Corp. (Ambler district)

II WESTERN REGION
5. Kennecott Exploration (Aurora Creek, Gold Hill)
6. Aspen Exploration (Sophie Gulch, Rock Creek)
7. Bering Straits Native Corp. (Bluff area)
8. North Pacific Mining Co. (Illinois Creek)
9. Flat Creek Mining Co. (Timber and Flat Creeks)

III EASTERN INTERIOR REGIOIN
10. Citigold/LaTeko Resources (Ryan Lode)
11. American Copper and Nickel Co. (Fairbanks district)
12. Tri Valley Mining (Richardson district)
13. BHP Utah (Circle district)
14. Freegold Recovery (Fairbanks district)
15. Lodestar Exploration (Taurus)
16. Amax Gold (Liberty Belle)
17. Usibelli Coal Mine Inc.

IV SOUTHCENTRAL REGION
18. Rowallan Mine Partnership (Valdez Creek)
19. Placer Dome U.S. Inc. (Deadman Mountain)
20. North Pacific Mining (Toklat)
21. Polaris Group (Cliff Mine)
22. Hobbs Industries (Evan Jones)
23. Cathedral Gold (Cook Inlet)
24. Hunt Ware & Proffett (Johnson River)

V SOUTHWESTERN REGION
25. Battle Mountain Exploration (Beaver Mountains)
26. Central Alaska/Placer Dome (Vinasale Mountain)
27. Cominco Alaska (Pebble Copper)

VI ALASKA PENINSULA REGION
28. Battle Mountain (Unga Island)

VII SOUTHEASTERN REGION
29. Ivanhoe Partners (Ivanhoe Prospect)
30. Echo Bay Alaska (Kensington Mine)
31. Placer Dome U.S. Inc. (Jualin Mine)
32. Echo Bay Alaska (Alaska-Juneau Mine)
33. Alaska-Dano Mines (Funter Bay)
34. Kennecott Greens Creek Mining Co. (Greens Creek)
35. Dale Henkins/Roger Eichman (Dream)
36. Kennecott Exploration (Wrangell)
37. Red Dodson (Bokan Mountain)
38. Salisbury and Associates/ACNC (Dolomi)
39. Cominco Alaska (Big Harbor-Trocadero)
40. Boomer & Company (Dall Island)
41. Ashgrove Cement West (View Cove)

Figure 5. *Regions of mineral activity a· selected mineral exploration, 1991.*