Alaska Oil and Gas Report November 2009

Alaska Department of
NATURAL RESOURCES
DIVISION OF OIL & GAS

STATE OF ALASKA
Governor Sean Parnell

ALASKA DEPARTMENT OF NATURAL RESOURCES
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Foreword

This updated version of the 2009 Oil and Gas Report, originally released November 2009 and updated May 2010, includes production information through December 31, 2009, and contains the most recent Division of Oil and Gas production forecasts by field, as well as reserve estimates.

Please note that while production information is updated through the end of 2009, royalty information only covers the time period of the originally released report, through December 31, 2009.

The division did not release an annual report in 2008. Reports are available on the Division of Oil and Gas Website at www.dog.dnr.state.ak.us/oil.

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Section One: Historic and Forecast Production

Introduction

This section enumerates historic and projected oil and gas production for all North Slope and Cook Inlet producing areas, unit participating areas, and lease pools.

Forecast production volumes are based on original oil and gas in-place estimates and expected recovery factors. "Original in-place" means total volume of oil and gas in-place in a three-dimensional reservoir container, regardless of recoverability. "Recoverable" means the physical limitations of the reservoir and limits of existing technology, and considering economic factors, like price, volume, and rate of return on capital. Original and recoverable estimates are revised with new data and information on recovery and characteristics of the reservoir. Revised estimates, when available, are used to calculate remaining reserves.

"Remaining Reserves" are reserves of oil or gas that are economically and technically feasible to produce, and expected to produce revenue in the foreseeable future. Total North Slope and Cook Inlet oil and gas reserves are the sum of forecasted production from year end 2007 to 2036 based on year-end 2006 reporting. Most remaining reserves of oil and gas generate royalty and other revenue to the state.

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Historic information is based on data from the Alaska Oil and Gas Conservation Commission (AOGCC) and the Division of Oil and Gas (CO&G) Royalty Accounting Section. The oil forecasts for North Slope are based primarily on estimates prepared by the Alaska Department of Revenue. Forecast gas production is based on DO&G material balance reserve estimates and assumptions about anticipated production on a field-by-field basis. These are enumerated in footnotes to the following tables and charts.

Table I.I Oil and Gas Reserves, North Slope

Unit or Area	Oil Reserves (MMBO)[1]	Gas Reserves (Bcf)[1]	Royalty Percent**	Royalty Oil (MMBO)	Royalty Gas (Bcf)
Badami[2]	-	0.0	14.5%	-	-
Barrow					
East Barrow		5.0	0.0%	-	-
South Barrow		4.0	0.0%	-	-
Walakpa		25.0	0.0%	-	-
TOTAL Barrow		34.0	0.0%	-	-
Colville River Unit[3]	419.8	400.0	9.5-12.5%	46.0	43.8
Duck Island Unit	102.1	843.0	14.7%	15.0	123.9
Kuparuk River Unit					
Kuparuk IPA	570.9	600.0	12.5%	71.4	75.0
Kuparuk Satellites[4]	419.1	-	12.5%	52.4	
Total KRU	990.0	600.0		123.7	75.0
Milne Point Unit5	209.9	-	12.5-13.85-%	28.8	
Northstar	63.87	450.00	20.00-27.5%	17.57	123.75
Prudhoe Bay Unit					
Prudhoe Bay IPAs[6]	2,037.9	23,000.0	12.5%	254.7	2875.0
Prudhoe Bay Satellites[7]	249.2	-	12.5%	31.2	
Point McIntyre PA	103.3	500.0	13.7%	14.2	68.5
Other GPMA[8]	59.40	1000.00	12.5%	7.43	125.00
TOTAL PBU	2,449.8	24,500.0		307.5	3068.5
Oooguruk	**73.0**	**-**	**5.00%**	**3.6**	**-**
Nikaitchuq	**186.7**	**-**	**12.50%**	**23.3**	**-**
Liberty[9]	**113.6**	**-**	**3.38%**	**3.8**	**-**
Point Thomson[10]	416.6	8,000.0	?		
NPRA[11]	140.3	-	-	-	
Total North Slope	**5,165.6**	**34,793.0**		**569.4**	**3,435.0**

[1] Remaining recoverable oil reserves based on the sum of Alaska Department Revenue forecasted production from 2010 through 2050. Gas reserves estimates from DNR. MMBO = Million Barrels of Oil; Bcf = Billion Cubic Feet.
[2] The Badami field was put in warm shut-in in September, 2007.
[3] Includes Alpine, Fiord-Kuparuk, Fiord Nechelik, Nanuq-Kuparuk, Nanuq-Nanuq, Qannik, Alpine West - State, Fiord West
[4] Includes West Sak (current with future North-East West Sak), Tarn, Meltwater, Tabasco
[5] Includes Kuparuk, Schrader, and Sag River PAs
[6] Prudhoe Bay Initial Participating Area includes Prudhoe Oil Pool oil, gas and gas liquids and Put River
[7] Includes Aurora, Borealis, Midnight Sun, Orion and Polaris.
[8] Includes Lisburne, Niakuk, Raven, and West Beach
[9] State's share is 27% of the 12.5 % royalty of MMS leases
[10]) Includes Point Thomson Satellites. Royalty reserves excluded for Point Thomson
[11]) Includes NPRA (non-State) Alpine West

Table I.2 Oil and Gas Reserves, Cook Inlet

Field	Oil Reserves (MMBO)[1]	Gas Reserves (Bcf)[2]
Albert Kaloa		
Beaver Creek	1	-
Beluga River		23
Deep Creek		377
Granite Pt.	8	5
Ivan River		7
Kasilof		4
Kenai		-
Kenai C.L.U.		90
Kustatan		27
Lewis River		0
Lone Creek		1
McArthur River	10	-
Middle Ground Shoal	12	113
Moquawkie		2
Nicolai Creek		0
Ninilchik		1
North Cook Inlet		62
Pretty Creek		145
Redoubt Shoal		-
Sterling		0
Stump lake		1
Swanson River	1	-
Three Mile Creek		1
Trading Bay	1	0
W. Foreland		1
W. Fork		1
W. McArthur River	1	-
Wolf Lake		0
Probable [3]		279
Possible [4]		353
Total	34	1,495

[1] *Forecast oil production is based on DOR Fall 2009 Production Forecast, 2010-2050.*

[2] *Forecast gas is based on geologic and engineering analysis of Cook Inlet Basin gas field as documented in: Preliminary engineering and geological evaluation of remaining Cook Inlet gas reserves: Alaska Division of Oil and Gas report, 37 p., available online at: http://www.dog.dnr.state.ak.us/oil/*

[3] *Based on Material balance estimates referenced above.*

[4] *Based on geologic analyses in Beluga River, North Cook Inlet, McArthur River and Ninilchik fields. Referenced above.*

Table I.3 North Slope Historic Oil Production

Historic Oil Production (Million Barrels per Year)																	
NORTH SLOPE																	
UNIT	BADAMI UNIT	COLVILLE RIVER UNIT						DUCK ISLAND UNIT									
POOL	Badami	Alpine[1]	Fiord	Nanuq	Nechekik	Qannik	Total Colville River Unit	Eider	Endicott				Ivishak[2]			Sag/ Ivishak Undf	Total Duck Island Unit
year	oil	oil	oil	oil	oil	oil		oil	oil	ngl	oil inj	net	oil	ngl	net	oil	
1969							-										-
1970							-										-
1971							-										-
1972							-										-
1973							-										-
1974							-										-
1975							-										-
1976							-										-
1977							-										-
1978							-										-
1979							-										-
1980							-										-
1981							-										-
1982							-										-
1983							-										-
1984							-										-
1985							-										-
1986							-		0.011		0.007	0.004					0.004
1987							-		8.796	0.003	0.014	8.784					8.784
1988							-		37.441	0.492		37.933					37.933
1989							-		35.746	0.839		36.584	0.349	0.005	0.354		36.938
1990							-		36.181	0.845		37.027	1.542	0.028	1.569		38.596
1991							-		38.996	1.170		40.165	2.309	0.048	2.356		42.522
1992							-		40.603	1.468		42.071	1.002	0.011	1.013		43.084
1993							-		38.433	1.551		39.985	0.761	0.007	0.768		40.752
1994							-		33.916	1.481		35.397	0.368	0.003	0.372		35.769
1995							-		32.998	1.203		34.201	0.235	0.001	0.236		34.437
1996							-		26.450	1.013		27.463	0.199	0.001	0.200		27.663
1997							-		21.121	1.550		22.672	0.255	0.002	0.257		22.929
1998	0.731						-	0.395	16.775	1.265		18.040	0.193	0.001	0.194		18.629
1999	1.150						-	0.605	13.529	1.371		14.900	0.179	0.001	0.180		15.685
2000	0.930	2.231					2.231	0.248	11.622	1.436		13.058	0.148	0.001	0.149		13.455
2001	0.675	31.933		0.021			31.954	0.660	9.637	1.324		10.961	0.142	0.001	0.143		11.764
2002	0.579	35.041		0.000			35.041	0.422	8.509	1.202		9.711	0.145	0.001	0.146		10.280
2003	0.282	35.582		0.000			35.582	0.242	9.104	1.189		10.293	0.092	0.001	0.092		10.627
2004	0.000	36.095		0.000			36.095	0.115	7.368	0.971		8.339	0.030	0.000	0.030		8.484
2005	0.152	43.797	0.016	0.000			43.813	0.032	6.398	0.979		7.377	0.043	0.000	0.043		7.451
2006	0.480	42.403	1.784	0.005		0.055	44.247	0.035	5.082	0.773		5.856	0.063	0.000	0.063		5.954
2007	0.219	39.747	5.564	0.156			45.468	0.000	4.603	0.793		5.396	0.012	0.000	0.012		5.408
2008	0.000	32.669	6.667	0.193		0.255	39.784	0.000	4.648	0.745		5.393	0.085	0.000	0.086		5.479
2009	0.000	27.823	8.435	0.166	0.005	0.975	37.404	0.000	3.929	0.474		4.404	0.051	0.000	0.051	0.230	4.684
TOTAL	5.198	327.322	22.466	0.543	0.005	1.284	351.620	2.754	451.896	24.140	0.021	476.016	8.202	0.113	8.315	0.230	487.314

Notes:
[1] AOGCC Conservation Order 443B effectively combined the Nanuq-Kuparuk Oil Pool with the Alpine Oil Pool and the production from both are combined in this table.
[2] The Endicott Ivishak Pool was formerly known as Sag Delta North. The Endicott Eider Pool also produces oil from the Ivishak sandstone

Source: Alaska Oil and Gas Conservation Commission, "Alaska Production Summary by Field and Pool" (Monthly Reports through Dec. 2009)

Table I.3 North Slope Historic Oil Production

Historic Oil Production (Million Barrels per Year)									
NORTH SLOPE									
UNIT	KUPARUK RIVER UNIT								
POOL	Kuparuk River			Meltwater	Tabasco	Tarn	Ugnu Undef	West Sak	Total Kuparuk River Unit
year	oil	ngl	net	oil	oil	oil	oil	oil	
1969			-						-
1970	0.006		0.006						0.006
1971			-						-
1972			-						-
1973			-						-
1974			-						-
1975			-						-
1976			-						-
1977			-						-
1978			-						-
1979			-						-
1980			-						-
1981	1.092		1.092						1.092
1982	32.406		32.406						32.406
1983	39.876		39.876					0.006	39.882
1984	46.084		46.084					0.124	46.208
1985	78.926	0.761	79.687					0.326	80.013
1986	93.900	1.072	94.972					0.300	95.272
1987	102.448	1.257	103.705						103.705
1988	110.891	0.256	111.146						111.146
1989	109.770	0.000	109.770						109.770
1990	107.206	0.000	107.206						107.206
1991	113.571	0.000	113.571						113.571
1992	118.506	0.000	118.506						118.506
1993	115.166	0.000	115.166						115.166
1994	111.795	0.000	111.795						111.795
1995	106.999	0.000	106.999						106.999
1996	99.443	0.000	99.443						99.443
1997	95.978	0.000	95.978					0.001	95.979
1998	91.700		91.700		0.483	3.534		0.564	96.281
1999	82.393		82.393		1.920	9.541		1.187	95.041
2000	74.133		74.133		1.911	8.767		1.520	86.330
2001	68.265		68.265	0.149	1.318	8.052		1.998	79.782
2002	58.903		58.903	2.902	1.089	12.011		2.472	77.378
2003	58.529		58.529	2.126	1.543	12.352		2.848	77.399
2004	53.215		53.215	2.478	1.471	10.337		4.281	71.781
2005	50.442		50.442	2.103	1.531	8.085	0.002	4.175	66.338
2006	45.503		45.503	1.390	1.418	7.555	0.000	6.617	62.482
2007	43.044		43.044	1.091	1.063	5.796	0.001	6.415	57.411
2008	39.264		39.264	0.857	1.155	5.560	0.000	6.166	53.002
2009	38.013		38.013	0.991	0.711	5.133	0.000	6.886	51.734
TOTAL	2187.467	3.346	2,190.813	14.087	15.612	96.725	0.003	45.883	2,363.124

Table I.3 North Slope Historic Oil Production

Historic Oil Production (Million Barrels per Year)											
UNIT	MILNE POINT UNIT					NORTHSTAR UNIT			OOOGURUK UNIT		
POOL	Kuparuk RIver	Sag River	Schrader Bluff	Ugnu Undef	Total Milne Point Unit	Kuparuk C Undef gas[4]	Northstar	Total Northstar Unit	Kuparuk	Nuiqsut	Total Oooguruk Unit
year	oil	oil	oil	oil		cond	oil	net	oil	oil	
1969					-						-
1970					-						-
1971					-						-
1972					-						-
1973					-						-
1974					-						-
1975					-						-
1976					-						-
1977					-						-
1978					-						-
1979					-						-
1980					-						-
1981					-						-
1982					-						-
1983					-						-
1984					-						-
1985	0.704				0.704						-
1986	4.709				4.709						-
1987	0.040				0.040						-
1988	0.000				-						-
1989	3.715		0.000		3.715						-
1990	6.624		0.004		6.628						-
1991	6.701		0.756		7.458						-
1992	5.812		1.135		6.946						-
1993	5.704		1.060		6.764						-
1994	5.648		1.030		6.677						-
1995	7.352	0.173	1.167		8.691						-
1996	12.665	0.346	1.090		14.100						-
1997	17.055	0.363	1.536		18.953						-
1998	18.314	0.162	1.943		20.419						-
1999	17.488	0.018	2.178		19.684						-
2000	16.572	0.000	2.498		19.069						-
2001	15.273	0.248	3.818	0.000	19.339		1.266	1.266			-
2002	13.314	0.130	5.219	0.000	18.663		17.903	17.903			-
2003	11.602	0.101	7.001	0.002	18.707		22.968	22.968		0.004	0.00
2004	10.996	0.048	7.693	0.015	18.751		25.078	25.078			-
2005	9.508	0.088	6.408	0.000	16.004		22.421	22.421			-
2006	8.496	0.102	4.685	0.000	13.284	0.004	18.877	18.881			-
2007	8.095	0.069	4.084	0.000	12.249	0.000	13.877	13.877			-
2008	7.352	0.066	4.377	0.001	11.796	0.000	11.440	11.440	0.655	0.017	0.67
2009	7.095	0.141	3.319	0.000	10.555	0.000	7.980	7.980	2.184	0.522	2.71
TOTAL	220.832	2.056	61.000	0.017	283.906	0.004	141.811	141.815	2.839	0.542	3.38

Notes:

[4] *Condensate from Northstar Kuparuk Undefined Gas is not included in oil production totals*

Table I.3 North Slope Historic Oil Production

Historic Oil Production (Million Barrels per Year)																						
NORTH SLOPE																						
UNIT	GREATER PT MCINTYRE (GPMA)																					
POOL	Lisburne			N. Prudhoe Bay			Niakuk			PM Undefined			Pt. McIntyre			Raven			W Beach			Total GPMA
year	oil	ngl	net	oil	ngl	net	oil	ngl	net	oil	ngl	net	oil	ngl	net	oil	ngl	net	oil	ngl	net	
1969			-						-			-			-			-			-	0.000
1970			-						-			-			-			-			-	0.000
1971			-						-			-			-			-			-	0.000
1972			-						-			-			-			-			-	0.000
1973			-						-			-			-			-			-	0.000
1974			-						-			-			-			-			-	0.000
1975			-						-			-			-			-			-	0.000
1976			-						-			-			-			-			-	0.000
1977			-						-			-			-			-			-	0.000
1978			-						-			-			-			-			-	0.000
1979			-						-			-			-			-			-	0.000
1980			-						-			-			-			-			-	0.000
1981	0.002		0.002						-			-			-			-			-	0.002
1982	0.208		0.208						-			-			-			-			-	0.208
1983	0.087		0.087						-			-			-			-			-	0.087
1984	0.294		0.294						-			-			-			-			-	0.294
1985	1.123		1.123						-			-			-			-			-	1.123
1986	3.594		3.594						-			-			-			-			-	3.594
1987	16.199	0.458	16.657						-			-			-			-			-	16.657
1988	15.095	1.008	16.103						-			-			-			-			-	16.103
1989	13.737	1.093	14.830						-			-			-			-			-	14.830
1990	14.669	1.204	15.873						-			-			-			-			-	15.873
1991	13.316	1.337	14.653						-			-			-			-			-	14.653
1992	12.517	1.464	13.981						-			-			-			-			-	13.981
1993	8.473	1.277	9.750	0.418	0.015	0.434			-			-	7.543	0.090	7.633			-	0.724	0.009	0.734	18.551
1994	6.846	0.939	7.785	0.727	0.031	0.759	3.383	0.028	3.411			-	37.684	0.548	38.232			-	0.512	0.012	0.524	50.710
1995	5.454	0.823	6.277	0.702	0.034	0.735	7.044	0.077	7.120			-	50.225	0.679	50.904			-	0.163	0.005	0.169	65.205
1996	4.465	0.674	5.138	0.126	0.003	0.129	10.937	0.108	11.045			-	57.926	0.825	58.751			-	0.474	0.025	0.499	75.562
1997	3.002	0.416	3.419	0.000	0.000	0.000	10.265	0.136	10.401	0.033	0.001	0.034	58.464	1.041	59.505			-	0.319	0.027	0.346	73.705
1998	2.468	0.331	2.800	0.001	0.000	0.001	10.356	0.128	10.484			-	47.553	1.009	48.562			-	0.096	0.006	0.102	61.949
1999	2.204	0.326	2.530	0.008	0.001	0.009	9.818	0.132	9.950			-	33.460	0.831	34.291			-	0.542	0.067	0.609	47.388
2000	3.203	0.601	3.804	0.003	0.001	0.003	7.336	0.101	7.437			-	23.737	0.675	24.413			-	0.401	0.053	0.454	36.111
2001	3.054	0.622	3.675	0.000	0.000	0.000	6.913	0.109	7.021			-	18.094	0.600	18.693	0.065		0.065	0.110	0.014	0.125	29.580
2002	3.065	0.484	3.549	0.000	0.000	0.000	5.814	0.055	5.868			-	14.744	0.472	15.216	0.000		0.000	0.004	0.000	0.004	24.638
2003	3.335	0.480	3.816	0.000	0.000	0.000	4.599	0.039	4.638			-	13.320	0.518	13.838			-	0.010	0.001	0.011	22.302
2004	3.300	0.373	3.673	0.000	0.000	0.000	3.803	0.044	3.848			-	13.322	0.744	14.066			-	0.005	0.000	0.005	21.592
2005	3.050	0.320	3.370	0.001	0.000	0.001	2.621	0.048	2.670			-	11.789	0.844	12.633	0.291		0.291	0.001	0.000	0.001	18.967
2006	3.224	0.469	3.693	0.000	0.000	0.000	1.677	0.040	1.717			-	7.735	0.364	8.100	0.626	0.040	0.666	0.000	0.000	-	14.176
2007	3.731	0.532	4.263	0.000	0.000	0.000	1.683	0.033	1.716			-	8.826	0.272	9.098	0.641	0.044	0.684	0.000	0.000	-	15.761
2008	2.747	0.313	3.060	0.000	0.000	0.000	1.567	0.030	1.597			-	9.468	0.425	9.893	0.387	0.029	0.416	0.003	0.000	0.003	14.969
2009	2.665	0.212	2.878	0.000	0.000	0.000	1.525	0.025	1.550			-	8.443	0.388	8.832	0.364	0.018	0.382	0.010	0.000	0.010	13.651
TOTAL	155.128	15.757	170.885	1.986	0.085	2.071	89.341	1.132	90.473	0.033	0.001	0.034	422.333	10.325	432.658	2.374	0.130	2.504	3.374	0.220	3.594	702.220

Table I.3 North Slope Historic Oil Production

Historic Oil Production (Million Barrels per Year)																
NORTH SLOPE																
UNIT	PRUDHOE BAY UNIT INITIAL PARTICIPATING AREAS (IPAs) AND SATELLITES												NORTH SLOPE			
POOL	Prudhoe IPA[3]				Aurora	Borealis	Midnight Sun	Orion	Polaris	Put River	Total PBU IPA + Satellites	Total Prudhoe Bay Unit	Total oil	Total ngl & condensate	Total oil inj	Total net.
year	oil	ngl	oil inj	net	oil	oil	oil	oil	oil	oil						
1969	0.277		0.217	0.060							0.060	0.060	0.277	-	0.217	0.060
1970	1.193		0.879	0.314							0.314	0.314	1.199	-	0.879	0.320
1971	1.157		0.833	0.323							0.323	0.323	1.157	-	0.833	0.323
1972	0.922		0.792	0.130							0.130	0.130	0.922	-	0.792	0.130
1973	0.944		0.817	0.127							0.127	0.127	0.944	-	0.817	0.127
1974	2.170		1.640	0.529							0.529	0.529	2.170	-	1.640	0.529
1975	2.870		2.147	0.722							0.722	0.722	2.870	-	2.147	0.722
1976	4.604		3.611	0.993							0.993	0.993	4.604	-	3.611	0.993
1977	115.258		2.075	113.183							113.183	113.183	115.258	-	2.075	113.183
1978	397.679			397.679							397.679	397.679	397.679	-	-	397.679
1979	468.412			468.412							468.412	468.412	468.412	-	-	468.412
1980	555.394	0.254		555.648							555.648	555.648	555.394	0.254	-	555.648
1981	555.170	0.450		555.620							555.620	555.623	556.264	0.450	-	556.714
1982	558.889	0.500		559.389							559.389	559.597	591.503	0.500	-	592.003
1983	560.837	0.311		561.148							561.148	561.235	600.806	0.311	-	601.117
1984	561.952	0.317		562.269							562.269	562.563	608.454	0.317	-	608.771
1985	568.534	0.056		568.590							568.590	569.713	649.613	0.817	-	650.430
1986	561.538	0.230		561.767							561.767	565.362	664.052	1.302	0.007	665.347
1987	572.045	14.610		586.655							586.655	603.311	699.527	16.328	0.014	715.841
1988	559.412	19.274		578.686							578.686	594.789	722.840	21.029	-	743.869
1989	505.940	16.928		522.869							522.869	537.699	669.258	18.864	-	688.123
1990	470.140	16.094		486.235							486.235	502.108	636.367	18.171	-	654.538
1991	465.399	21.307		486.706							486.706	501.359	641.048	23.861	-	664.909
1992	432.587	23.902		456.490							456.490	470.471	612.162	26.845	-	639.008
1993	385.811	23.879		409.690							409.690	428.241	564.093	26.830	-	590.923
1994	351.493	22.825		374.318							374.318	425.028	553.403	25.867	-	579.270
1995	313.629	26.810		340.439							340.439	405.644	526.139	29.632	-	555.771
1996	282.060	30.549		312.610							312.610	388.172	496.181	33.197	-	529.378
1997	252.421	31.580		284.001							284.001	357.706	460.814	34.753	-	495.567
1998	221.781	30.983		252.764			0.382				253.146	315.094	417.431	33.723	-	451.154
1999	194.338	29.423		223.761			1.696		0.027		225.484	272.872	372.281	32.152	-	404.433
2000	187.056	30.145		217.200	0.261		1.441		0.414		219.317	255.428	344.431	33.013	-	377.444
2001	166.718	27.526		194.244	1.738	1.346	1.305		0.419		199.052	228.632	343.216	30.195	-	373.411
2002	150.975	26.640		177.615	2.397	8.439	3.157	0.097	0.766		192.471	217.109	348.098	28.854	-	376.952
2003	141.302	24.972		166.274	3.782	11.791	1.719	0.368	0.918		184.852	207.154	345.524	27.200	-	372.724
2004	127.437	25.629		153.066	3.219	9.274	1.641	1.844	0.995	0.173	170.213	191.804	324.233	27.762	-	351.995
2005	118.481	21.420		139.900	3.452	7.077	2.132	2.897	1.248	0.072	156.778	175.745	308.312	23.612	-	331.924
2006	91.357	19.266		110.623	3.813	5.737	2.083	2.482	0.822	0.141	125.701	139.877	264.248	20.958	-	285.206
2007	95.480	20.705		116.185	3.461	4.644	1.054	3.686	0.919	0.143	130.093	145.854	258.108	22.379	-	280.487
2008	95.839	19.201		115.041	3.284	4.397	0.666	3.465	1.739	0.116	128.708	143.676	245.104	20.744	-	265.848
2009	91.245	18.423		109.668	2.537	5.031	0.651	3.519	1.407	0.760	123.575	137.226	232.749	19.541	-	252.290
TOTAL	11190.747	544.209	13.013	11,721.943	27.945	57.735	17.929	18.359	9.673	1.406	11,854.990	12557.210	15,607.142	599.461	13.034	16,193.570

[3] *Oil production for the Prudhoe Bay IPA includes condensate (oil and condensate are known as separator liquids), NGLs are sourced from the gas processed at the PBU Central Gas Facility and Field Fuel Gas Unit.*

Table I.4 Cook Inlet Historic Oil Production

Historic Oil Production (Million Barrels per Year)										
COOK INLET										
	Beaver Creek	Granite Point[1]	Hansen	Kenai[2]	Kenai Cannery Loop Unit[2,3]	McArthur River[4]			Middle Ground Shoal[5]	Redoubt Shoal
	oil	oil	oil	ngl	ngl	oil	ngl	net	oil	oil
1958	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-	-	-	-
1962	-	-	-	-	-	-	-	-	-	-
1963	-	-	-	-	-	-	-	-	-	-
1964	-	-	-	-	-	-	-	-	-	-
1965	-	0.002	-	-	-	0.001	-	0.001	0.027	-
1966	-	-	-	-	-	0.003	-	0.003	2.649	-
1967	-	7.052	-	-	-	0.749	-	0.749	7.404	-
1968	-	13.131	-	-	-	21.782	-	21.782	14.134	0.002
1969	-	9.183	-	0.002	-	31.301	-	31.301	10.467	-
1970	-	7.522	-	0.002	-	40.165	0.426	40.591	12.719	-
1971	-	5.577	-	0.001	-	40.537	0.593	41.130	11.304	-
1972	0.002	4.663	-	0.002	-	40.774	0.570	41.344	9.719	-
1973	0.416	4.767	-	0.001	-	38.884	0.661	39.545	10.239	-
1974	0.375	4.237	-	0.000	-	39.145	0.654	39.798	9.001	-
1975	0.322	4.361	-	0.001	-	40.876	0.644	41.520	8.670	-
1976	0.302	4.471	-	0.001	-	35.810	0.653	36.464	8.864	-
1977	0.276	4.711	-	0.000	-	33.235	0.733	33.968	7.617	-
1978	0.223	4.867	-	0.001	-	30.223	0.730	30.953	6.382	-
1979	0.211	4.613	-	0.000	-	25.440	0.541	25.981	5.545	-
1980	0.214	4.394	-	-	-	20.894	0.412	21.306	4.854	-
1981	0.180	3.975	-	-	-	18.022	0.484	18.506	4.291	-
1982	0.182	3.467	-	-	-	15.806	0.449	16.255	3.573	-
1983	0.170	3.550	-	-	-	13.564	0.332	13.896	3.381	-
1984	0.159	3.287	-	-	-	11.707	0.317	12.024	3.238	-
1985	0.146	3.052	-	-	-	7.454	0.194	7.648	3.098	-
1986	0.158	3.169	-	-	-	7.942	0.228	8.170	3.211	-
1987	0.185	2.803	-	-	-	7.375	0.196	7.571	2.834	-
1988	0.141	2.677	-	-	-	7.143	0.162	7.305	2.742	-
1989	0.227	2.275	-	-	-	6.955	-	6.955	2.769	-
1990	0.212	1.462	-	-	-	4.265	-	4.265	2.688	-
1991	0.179	2.064	-	-	-	7.247	-	7.247	2.670	-
1992	0.175	2.522	-	-	-	7.397	-	7.397	2.423	-
1993	0.153	2.488	-	-	-	6.636	-	6.636	2.160	-
1994	0.140	2.209	-	-	0.000	7.091	-	7.091	2.785	-
1995	0.132	2.580	-	-	0.000	6.622	-	6.622	2.823	-
1996	0.125	2.556	-	-	0.000	6.102	-	6.102	2.396	-
1997	0.119	2.432	-	-	-	5.082	-	5.082	2.223	-
1998	0.103	2.079	-	-	-	4.853	-	4.853	2.156	-
1999	0.100	1.786	-	-	-	4.729	-	4.729	1.967	-
2000	0.092	1.742	-	-	-	4.843	-	4.843	1.894	-
2001	0.085	1.620	-	-	-	5.372	-	5.372	2.032	0.001
2002	0.079	1.527	-	-	-	5.597	-	5.597	1.959	0.046
2003	0.076	1.444	-	-	-	4.323	-	4.323	1.514	0.911
2004	0.068	1.433	-	-	-	3.373	-	3.373	1.323	0.559
2005	0.061	1.263	-	-	-	2.895	-	2.895	1.318	0.312
2006	0.077	1.094	-	-	-	2.504	-	2.504	1.192	0.267
2007	0.066	1.055	0.003	-	-	2.228	-	2.228	1.115	0.154
2008	0.054	0.962	0.003	-	-	1.877	-	1.877	1.065	0.080
2009	0.054	0.425	-	-	-	0.885	-	0.885	0.999	0.021
TOTAL	6.037	146.552	0.006	0.012	0.000	629.708	8.979	638.687	197.434	2.354

Notes:

[1] Includes Middle Kenai and Undefined Hemlock pools.

[2] These gas fields temporarily produced NGLs, listed as condensate in AOGCC production table.

[3] Cannery Loop Unit is part of the Kenai Gas Field

[4] Includes Hemlock, Middle Kenai G, Undefined and West Foreland Pools.

[5] Includes A, BCD, and EFG pools. XTO Energy produces oil from ""A"" and ""C"" Platforms. Oil production is suspended at Platforms Baker (2003) and Dillon (2002) on the north and south flanks of the field."

Source: Alaska Oil and Gas Conservation Commission, "Alaska Production Summary by Field and Pool" (monthly reports) .

Table I.4 Cook Inlet Historic Oil Production

Historic Oil Production (Million Barrels per Year)											
								COOK INLET			
	Swanson River[6]			Trading Bay[7]			North Trading Bay Unit[8,9]	West McArthur River	TOTAL OIL	TOTAL NGL	TOTAL
	oil	ngl	net	oil	ngl	net	oil	oil			
1958	0.036	-	0.036	-	-	-	-	-	0.036	-	0.036
1959	0.187	-	0.187	-	-	-	-	-	0.187	-	0.187
1960	0.558	-	0.558	-	-	-	-	-	0.558	-	0.558
1961	6.327	-	6.327	-	-	-	-	-	6.327	-	6.327
1962	10.259	-	10.259	-	-	-	-	-	10.259	-	10.259
1963	10.740	-	10.740	-	-	-	-	-	10.740	-	10.740
1964	11.054	-	11.054	-	-	-	-	-	11.054	-	11.054
1965	11.099	-	11.099	0.002	-	0.002	-	-	11.131	-	11.131
1966	11.712	-	11.712	0.000	-	0.000	-	-	14.364	-	14.364
1967	12.980	-	12.980	0.729	-	0.729	-	-	28.913	-	28.913
1968	13.619	0.004	13.624	3.172	-	3.172	0.305	-	66.146	0.004	66.150
1969	13.151	0.070	13.221	4.972	-	4.972	4.964	-	74.038	0.073	74.111
1970	12.408	0.063	12.471	5.906	0.039	5.945	3.694	-	82.415	0.530	82.945
1971	11.466	0.077	11.543	6.392	0.039	6.431	2.352	-	77.628	0.710	78.338
1972	8.896	0.012	8.908	5.746	0.025	5.771	2.839	-	72.640	0.608	73.248
1973	10.064	0.098	10.163	5.537	0.051	5.588	2.288	-	72.196	0.812	73.007
1974	9.765	0.096	9.861	5.211	0.043	5.253	2.341	-	70.074	0.793	70.867
1975	8.754	0.089	8.843	4.417	0.031	4.448	1.711	-	69.111	0.765	69.876
1976	7.591	0.090	7.681	4.135	0.026	4.162	1.230	-	62.404	0.770	63.175
1977	5.981	0.086	6.066	3.196	0.044	3.240	1.081	-	56.095	0.863	56.958
1978	4.870	0.065	4.935	2.666	0.019	2.685	0.901	-	50.132	0.815	50.946
1979	4.344	0.080	4.424	2.187	0.014	2.201	0.705	-	43.045	0.635	43.680
1980	3.724	0.064	3.787	1.695	0.006	1.701	0.472	-	36.247	0.481	36.728
1981	2.938	0.048	2.986	1.342	0.005	1.348	0.327	-	31.075	0.538	31.613
1982	2.999	0.048	3.047	1.176	0.002	1.178	0.208	-	27.411	0.499	27.910
1983	3.017	0.045	3.062	0.885	0.004	0.889	0.195	-	24.763	0.381	25.144
1984	2.517	0.039	2.556	0.939	0.005	0.944	0.136	-	21.984	0.361	22.344
1985	2.165	0.026	2.191	0.843	0.004	0.847	0.185	-	16.944	0.223	17.167
1986	2.055	0.054	2.109	0.767	0.002	0.770	0.278	-	17.580	0.284	17.865
1987	2.059	0.030	2.089	0.635	0.001	0.635	0.300	-	16.191	0.227	16.418
1988	2.127	0.033	2.159	0.639	0.000	0.639	0.247	-	15.716	0.195	15.911
1989	1.875	0.024	1.899	1.031	-	1.031	0.233	-	15.366	0.024	15.390
1990	1.878	0.019	1.897	0.476	-	0.476	0.167	-	11.147	0.019	11.167
1991	1.962	0.023	1.985	0.991	-	0.991	0.225	0.002	15.340	0.023	15.363
1992	1.773	0.019	1.792	0.827	-	0.827	0.060	0.002	15.179	0.019	15.198
1993	1.576	0.018	1.593	0.742	-	0.742	-	0.098	13.853	0.018	13.871
1994	1.672	0.023	1.696	0.743	-	0.743	-	0.921	15.562	0.024	15.585
1995	1.712	0.017	1.729	0.722	-	0.722	-	0.922	15.514	0.017	15.531
1996	1.521	0.019	1.540	0.590	-	0.590	-	1.296	14.586	0.019	14.605
1997	1.065	0.012	1.077	0.578	-	0.578	-	0.645	12.143	0.012	12.155
1998	0.911	0.009	0.920	0.663	-	0.663	-	1.037	11.802	0.009	11.810
1999	0.793	-	0.793	0.628	-	0.628	-	0.914	10.918	-	10.918
2000	0.638	-	0.638	0.617	-	0.617	-	0.893	10.718	-	10.718
2001	0.609	-	0.609	0.556	-	0.556	-	1.222	11.497	-	11.497
2002	0.477	-	0.477	0.579	-	0.579	-	1.018	11.284	-	11.284
2003	0.426	-	0.426	0.536	-	0.536	-	0.849	10.079	-	10.079
2004	0.320	-	0.320	0.462	-	0.462	-	0.669	8.208	-	8.208
2005	0.294	-	0.294	0.414	-	0.414	-	0.517	7.075	-	7.075
2006	0.262	-	0.262	0.396	-	0.396	-	0.437	6.229	-	6.229
2007	0.207	-	0.207	0.274	-	0.274	-	0.384	5.487	-	5.487
2008	0.172	-	0.172	0.237	-	0.237	-	0.321	4.770	-	4.770
	0.147	-	0.147	0.144	-	0.144	-	0.067	2.741	-	2.741
TOTAL	229.754	1.399	231.153	75.396	0.360	75.756	27.444	12.213	1,326.900	10.750	1,337.649

Notes:

[6] Includes Hemlock and Undefined pools.

[7] Non-unitized portion of Trading Bay Field at Monopod Platform. Includes Hemlock, Undefined, Middle Kenai B, C, D, and E pools,W Foreland, and G-NE/ Hemlock-NE pools.

[8] North Trading Bay Unit (Unitized portion of Trading Bay Field). Consists of Spark and Spurr Platform oil production, which has been shut-in since 1992. Gas is still being produced from Spark platform.

[9] Includes Hemlock, Middle Kenai D, and E pools, W Foreland, and G-NE/Hemlock-NE pools.

Table I.5 North Slope Historic Gas Production

Historic Gas Production (Billion Cubic Feet per Year)																		
NORTH SLOPE																		
	BADAMI UNIT			BARROW			COLVILLE RIVER UNIT											
	Badami Oil			East Barrow Gas	South Barrow Gas	Walakpa Gas	Alpine Oil			Fiord Oil			Nanuq Oil			Nech-elik	Qannik Oil	Total Colville River Unit
	gas	inj	net gas	gas	gas	gas	gas	inj	net gas	gas	inj	net gas	gas	inj	net gas	gas	gas	net area gas
1949					0.033													-
1950					0.091													-
1951					0.135													-
1952					0.137													-
1953					0.075													-
1954					0.027													-
1955					0.115													-
1956					0.103													-
1957					0.114													-
1958					0.119													-
1959					0.132													-
1960					0.172													-
1961					0.172													-
1962					0.197													-
1963					0.211													-
1964					0.249													-
1965					0.389													-
1966					0.438													-
1967					0.475													-
1968					0.504													-
1969					0.582													-
1970					0.619													-
1971					0.627													-
1972					0.675													-
1973					0.707													-
1974					0.765													-
1975					0.799													-
1976					0.832													-
1977					0.879													-
1978					0.893													-
1979					0.913													-
1980					1.027													-
1981				0.037	1.009													-
1982				0.717	0.532													-
1983				0.689	0.541													-
1984				0.693	0.650													-
1985				0.632	0.678													-
1986				0.589	0.589													-
1987				0.590	0.622													-
1988				0.661	0.598													-
1989				0.475	0.758													-
1990				0.488	0.733													-
1991				0.583	0.662	-												-
1992				0.439	0.628	0.252												-
1993				0.259	0.441	0.585												-
1994				0.223	0.261	0.858												-
1995				0.099	0.052	1.109												-
1996				0.064	0.051	1.160												-
1997				0.114	0.041	1.126												-
1998	0.459	0.005	0.454	0.146	0.081	1.110												-
1999	1.693	1.719	(0.026)	0.123	0.055	1.281												-
2000	4.557	4.020	0.537	0.090	0.037	1.352	1.988	0.890	1.099									1.099
2001	5.312	4.786	0.526	0.086	0.042	1.348	32.660	28.953	3.707				0.296		0.296			4.003
2002	7.172	6.617	0.555	0.093	0.061	1.251	42.027	37.205	4.822				-		-			4.822
2003	3.698	3.363	0.335	0.093	0.089	1.235	40.079	34.816	5.263				-		-			5.263
2004	-		-	0.101	0.069	1.245	44.728	39.014	5.714				0.001		0.001			5.716
2005	1.120	0.959	0.161	0.080	0.053	1.255	49.433	43.112	6.321	-		-	-		-			6.321
2006	4.202	3.732	0.470	0.018	0.101	1.244	51.066	46.168	4.898	1.112		1.112	0.006		0.006		0.051	6.067
2007	0.412	0.119	0.293	0.033	0.140	1.160	48.996	45.125	3.871	3.419	1.149	2.270	0.345		0.345			6.486
2008	-		-	0.125	0.160	1.196	45.113	42.008	3.105	4.301	1.775	2.526	0.355		0.355		0.337	6.323
2009	-		-	0.106	0.157	1.386	38.126	32.944	5.182	6.409	6.291	0.117	0.350	0.011	0.339	0.004	0.988	6.630
TOTAL	28.625	25.320	3.305	8.445	23.094	20.152	394.217	350.235	43.982	15.240	9.215	6.025	1.353	0.011	1.342	0.004	1.376	52.729

Table I.5 North Slope Historic Gas Production

Historic Gas Production (Billion Cubic Feet per Year)

NORTH SLOPE

	DUCK ISLAND UNIT						
	Eider Oil	Endicott Oil			Ivishak Oil	Sag/Ivishak Undef	Total Duck Island Unit
	gas	gas	inj	net gas	gas	gas	net gas
1949							-
1950							-
1951							-
1952							-
1953							-
1954							-
1955							-
1956							-
1957							-
1958							-
1959							-
1960							-
1961							-
1962							-
1963							-
1964							-
1965							-
1966							-
1967							-
1968							-
1969							-
1970							-
1971							-
1972							-
1973							-
1974							-
1975							-
1976							-
1977							-
1978							-
1979							-
1980							-
1981							-
1982							-
1983							-
1984							-
1985							-
1986		0.195		0.195			0.195
1987		8.237	5.615	2.622			2.622
1988		34.834	28.023	6.812			6.812
1989		41.194	33.033	8.161	0.236		8.397
1990		42.490	35.523	6.967	1.416		8.383
1991		60.246	51.136	9.110	2.347		11.457
1992		97.047	85.082	11.964	0.703		12.667
1993		120.116	100.682	19.434	0.529		19.962
1994		116.810	102.534	14.276	0.259		14.536
1995		127.191	113.839	13.352	0.152		13.504
1996		123.968	111.638	12.330	0.099		12.429
1997		124.737	111.495	13.242	0.157		13.400
1998	2.122	119.981	109.440	10.541	0.122		12.784
1999	4.879	126.274	116.944	9.331	0.120		14.329
2000	2.428	140.704	128.599	12.105	0.095		14.628
2001	6.494	134.122	125.915	8.208	0.093		14.794
2002	3.658	134.693	124.402	10.291	0.096		14.044
2003	2.813	141.556	129.458	12.098	0.064		14.975
2004	0.930	130.206	117.797	12.410	0.020		13.359
2005	1.160	139.143	126.081	13.062	0.032		14.254
2006	2.003	121.004	110.356	10.647	0.046		12.696
2007	0.035	138.500	124.761	13.739	0.002		13.776
2008	-	136.522	123.159	13.363	0.087		13.449
2009	0.000	117.489	106.150	11.339	0.042	0.542	11.923
TOTAL	26.520	2,477.259	2,221.661	255.598	6.716	0.542	289.376

Notes:

[1] Liquids from the Greater Point McIntyre Area flows to both the Lisburne Production Center (LPC) and the Prudhoe Bay Field facilities. At the LPC gas from these liquids is returned and reinjected into the GPMA fields. Consequently, production and injection data may appear to be anomalous.

[2] Gas from Prudhoe Bay Field is imported to Northstar for injection

Source: Alaska Oil and Gas Conservation Commission, "Alaska Production Summary by Field and Pool" (Monthly Reports through Dec. 2009)

Table I.5 North Slope Historic Gas Production

Historic Gas Production (Billion Cubic Feet per Year)

NORTH SLOPE

KUPARUK RIVER UNIT															
	Kuparuk River Oil			Meltwater Oil			Tabasco Oil	Tarn Oil			Ugnu Undef Oil	West Sak Oil			Total Kuparuk River Oil
	gas	inj	net gas	gas	inj	net gas	gas	gas	inj	net gas	gas	gas	inj	net.gas	net area gas
1949			-			-				-				-	-
1950			-			-				-				-	-
1951			-			-				-				-	-
1952			-			-				-				-	-
1953			-			-				-				-	-
1954			-			-				-				-	-
1955			-			-				-				-	-
1956			-			-				-				-	-
1957			-			-				-				-	-
1958			-			-				-				-	-
1959			-			-				-				-	-
1960			-			-				-				-	-
1961			-			-				-				-	-
1962			-			-				-				-	-
1963			-			-				-				-	-
1964			-			-				-				-	-
1965			-			-				-				-	-
1966			-			-				-				-	-
1967			-			-				-				-	-
1968			-			-				-				-	-
1969			-			-				-				-	-
1970	0.002		0.002			-				-				-	0.002
1971			-			-				-				-	-
1972			-			-				-				-	-
1973			-			-				-				-	-
1974			-			-				-				-	-
1975			-			-				-				-	-
1976			-			-				-				-	-
1977			-			-				-				-	-
1978			-			-				-				-	-
1979			-			-				-				-	-
1980			-			-				-				-	-
1981	0.615		0.615			-				-				-	0.615
1982	22.989	17.822	5.166			-				-				-	5.166
1983	44.391	38.277	6.114			-				-		0.005		0.005	6.119
1984	57.389	47.930	9.459			-				-		0.079		0.079	9.538
1985	104.279	85.909	18.370			-				-		0.134		0.134	18.504
1986	114.889	90.449	24.440			-				-		0.108		0.108	24.548
1987	125.089	89.191	35.898			-				-				-	35.898
1988	119.883	87.906	31.977			-				-				-	31.977
1989	107.519	83.323	24.196			-				-				-	24.196
1990	116.579	91.273	25.306			-				-				-	25.306
1991	123.207	95.982	27.225			-				-				-	27.225
1992	122.767	96.625	26.141			-				-				-	26.141
1993	120.599	94.339	26.260			-				-				-	26.260
1994	120.273	93.288	26.986			-				-				-	26.986
1995	112.418	84.317	28.102			-				-				-	28.102
1996	107.805	83.632	24.173			-				-				-	24.173
1997	105.644	85.893	19.752			-				-		0.000		0.000	19.752
1998	117.525	103.604	13.920			-	0.112	4.476	1.195	3.282		0.205		0.205	17.518
1999	117.193	98.330	18.863			-	0.305	13.395	16.502	(3.107)		0.385		0.385	16.447
2000	109.638	97.762	11.875			-	0.203	17.777	16.552	1.225		0.399		0.399	13.703
2001	105.305	91.823	13.482	0.081		0.081	0.180	15.538	15.039	0.499		0.429		0.429	14.670
2002	100.938	81.157	19.782	4.145	6.345	(2.200)	0.159	13.101	16.755	(3.654)		0.635		0.635	14.721
2003	107.451	86.331	21.120	5.596	5.562	0.035	0.188	12.840	18.430	(5.590)		0.809	0.171	0.638	16.391
2004	101.523	78.363	23.160	7.322	11.596	(4.274)	0.183	14.284	17.357	(3.073)		2.069	0.121	1.948	17.944
2005	97.292	71.011	26.281	5.368	6.778	(1.410)	0.345	13.366	19.331	(5.965)	0.000	2.743	0.067	2.676	21.927
2006	90.407	73.013	17.394	4.278	4.108	0.170	0.335	12.286	16.086	(3.800)	-	5.079	0.088	4.990	19.090
2007	94.990	80.786	14.204	2.500	2.785	(0.285)	0.366	12.117	14.107	(1.990)	0.000	4.125		4.125	16.420
2008	92.527	70.843	21.685	1.375	2.245	(0.870)	0.119	11.237	16.268	(5.031)	-	2.531		2.531	18.433
2009	85.279	63.158	22.121	1.283	3.763	(2.480)	0.095	11.644	14.551	(2.907)	-	2.384	0.112	2.272	19.101
TOTAL	2,846.405	2,262.335	584.069	31.949	43.182	(11.233)	2.589	152.063	182.174	(30.111)	0.000	22.119	0.559	21.560	566.874

Table I.5 North Slope Historic Gas Production

Historic Gas Production (Billion Cubic Feet per Year)																			
NORTH SLOPE																			
	MILNE POINT UNIT											NORTHSTAR UNIT					OOOGURUK UNIT		
	Kuparuk River Oil			Sag River Oil			Schrader Bluff Oil			Ugnu Und	Total Milne PtUnit	Kuparuk C Und. gas	Northstar Oil[3]			Total Northstar Unit	Kuparuk Oil	Nuiqsut Oil	Total Oooguruk Unit
	gas	inj	net gas	gas	inj	net gas	gas	inj	net gas	gas		gas	gas	inj	net gas	net gas	gas	gas	net gas
1949			-			-			-		-				-	-			-
1950			-			-			-		-				-	-			-
1951			-			-			-		-				-	-			-
1952			-			-			-		-				-	-			-
1953			-			-			-		-				-	-			-
1954			-			-			-		-				-	-			-
1955			-			-			-		-				-	-			-
1956			-			-			-		-				-	-			-
1957			-			-			-		-				-	-			-
1958			-			-			-		-				-	-			-
1959			-			-			-		-				-	-			-
1960			-			-			-		-				-	-			-
1961			-			-			-		-				-	-			-
1962			-			-			-		-				-	-			-
1963			-			-			-		-				-	-			-
1964			-			-			-		-				-	-			-
1965			-			-			-		-				-	-			-
1966			-			-			-		-				-	-			-
1967			-			-			-		-				-	-			-
1968			-			-			-		-				-	-			-
1969			-			-			-		-				-	-			-
1970			-			-			-		-				-	-			-
1971			-			-			-		-				-	-			-
1972			-			-			-		-				-	-			-
1973			-			-			-		-				-	-			-
1974			-			-			-		-				-	-			-
1975			-			-			-		-				-	-			-
1976			-			-			-		-				-	-			-
1977			-			-			-		-				-	-			-
1978			-			-			-		-				-	-			-
1979			-			-			-		-				-	-			-
1980			-			-			-		-				-	-			-
1981			-			-			-		-				-	-			-
1982			-			-			-		-				-	-			-
1983			-			-			-		-				-	-			-
1984			-			-			-		-				-	-			-
1985	0.253		0.253			-			-		0.253				-	-			-
1986	1.644	0.197	1.447			-			-		1.447				-	-			-
1987	0.011		0.011			-			-		0.011				-	-			-
1988	-		-			-			-		-				-	-			-
1989	0.978	0.320	0.658			-	-		-		0.658				-	-			-
1990	2.718	1.401	1.318			-	-		-		1.318				-	-			-
1991	3.515	1.704	1.811			-	0.244		0.244		2.055				-	-			-
1992	3.015	1.632	1.383			-	0.536		0.536		1.919				-	-			-
1993	2.967	1.836	1.131			-	0.518		0.518		1.649				-	-			-
1994	3.524	2.305	1.219			-	0.515		0.515		1.734				-	-			-
1995	4.340	3.399	0.941	0.113		0.113	0.656		0.656		1.709				-	-			-
1996	6.120	4.307	1.813	0.299		0.299	0.464		0.464		2.577				-	-			-
1997	9.463	6.998	2.465	0.437		0.437	0.644		0.644		3.546				-	-			-
1998	8.949	6.351	2.599	0.180		0.180	1.008		1.008		3.786				-	-			-
1999	8.371	6.137	2.234	0.019		0.019	1.199		1.199		3.451				-	-			-
2000	8.207	6.195	2.012	-		-	1.480		1.480		3.492				-	-			-
2001	8.472	7.498	0.974	0.220		0.220	2.331		2.331	0.002	3.527		2.686	3.697	(1.011)	(1.011)			-
2002	7.054	8.697	(1.643)	0.179		0.179	3.117		3.117	-	1.653		47.616	64.396	(16.781)	(16.781)			-
2003	5.337	7.757	(2.420)	0.121	0.179	(0.058)	6.095		6.095	0.000	3.617		70.862	101.268	(30.407)	(30.407)		-	-
2004	6.554	7.964	(1.410)	0.028	0.069	(0.042)	5.108		5.108	0.001	3.657		104.383	131.501	(27.118)	(27.118)			-
2005	5.894	7.610	(1.717)	0.125	0.075	0.050	5.285		5.285	-	3.619		142.131	165.712	(23.581)	(23.581)			-
2006	6.168	5.671	0.496	0.107		0.107	2.942	0.061	2.881	-	3.484	0.104	142.193	164.066	(21.873)	(21.769)			-
2007	5.099	3.648	1.451	0.056		0.056	1.951	0.064	1.888	-	3.395	-	151.145	167.476	(16.331)	(16.331)			-
2008	4.975	3.739	1.236	0.046		0.046	2.443	0.077	2.365	-	3.647	-	175.958	185.797	(9.839)	(9.839)	0.372	0.013	0.384
2009	5.514	3.554	1.961	0.087		0.087	1.585		1.585	-	3.632	-	167.618	186.008	(18.389)	(18.389)	1.589	0.216	1.805
TOTAL	119.141	98.919	20.222	2.017	0.324	1.693	38.120	0.202	37.918	0.003	59.837	0.104	1,004.592	1,169.921	(165.330)	(165.226)	1.961	0.228	2.189

Table I.5 North Slope Historic Gas Production

Historic Gas Production (Billion Cubic Feet per Year)

NORTH SLOPE

	PRUDHOE BAY INITIAL OIL IPA			PRUDHOE IPA SATELLITES														
	Prudhoe Oil IPA[3]			Midnight Sun Oil	Put River Oil	Aurora Oil			Borealis Oil			Orion Schrader Bluff Oil			Polaris Oil			Total Prudhoe and Satellites
	gas	inj	net gas	gas	gas	gas	inj	net gas	gas	inj	net gas	gas	inj	net gas	gas	inj	net gas	net area gas
1949			-					-			-			-			-	-
1950			-					-			-			-			-	-
1951			-					-			-			-			-	-
1952			-					-			-			-			-	-
1953			-					-			-			-			-	-
1954			-					-			-			-			-	-
1955			-					-			-			-			-	-
1956			-					-			-			-			-	-
1957			-					-			-			-			-	-
1958			-					-			-			-			-	-
1959			-					-			-			-			-	-
1960			-					-			-			-			-	-
1961			-					-			-			-			-	-
1962			-					-			-			-			-	-
1963			-					-			-			-			-	-
1964			-					-			-			-			-	-
1965			-					-			-			-			-	-
1966			-					-			-			-			-	-
1967			-					-			-			-			-	-
1968			-					-			-			-			-	-
1969	0.243		0.243					-			-			-			-	0.243
1970	1.037		1.037					-			-			-			-	1.037
1971	0.889		0.889					-			-			-			-	0.889
1972	0.658		0.658					-			-			-			-	0.658
1973	0.699		0.699					-			-			-			-	0.699
1974	2.022		2.022					-			-			-			-	2.022
1975	3.046		3.046					-			-			-			-	3.046
1976	5.077		5.077					-			-			-			-	5.077
1977	94.936	68.080	26.856					-			-			-			-	26.856
1978	307.966	271.854	36.111					-			-			-			-	36.111
1979	432.475	390.136	42.339					-			-			-			-	42.339
1980	597.148	546.509	50.638					-			-			-			-	50.638
1981	647.768	595.106	52.662					-			-			-			-	52.662
1982	756.884	697.813	59.071					-			-			-			-	59.071
1983	818.993	754.044	64.950					-			-			-			-	64.950
1984	846.674	768.899	77.776					-			-			-			-	77.776
1985	936.613	846.786	89.827					-			-			-			-	89.827
1986	970.290	882.883	87.407					-			-			-			-	87.407
1987	1,228.527	1,105.023	123.503					-			-			-			-	123.503
1988	1,404.992	1,248.094	156.898					-			-			-			-	156.898
1989	1,412.853	1,244.284	168.569					-			-			-			-	168.569
1990	1,481.462	1,317.106	164.356					-			-			-			-	164.356
1991	1,768.837	1,583.472	185.365					-			-			-			-	185.365
1992	1,951.156	1,761.397	189.759					-			-			-			-	189.759
1993	2,116.808	1,921.633	195.175					-			-			-			-	195.175
1994	2,402.584	2,204.235	198.349					-			-			-			-	198.349
1995	2,716.959	2,497.702	219.258					-			-			-			-	219.258
1996	2,750.907	2,535.603	215.304					-			-			-			-	215.304
1997	2,794.723	2,577.617	217.106					-			-			-			-	217.106
1998	2,801.402	2,588.527	212.875	0.704				-			-			-			-	213.579
1999	2,772.147	2,572.248	199.899	3.781				-			-			-	0.012		0.012	203.692
2000	2,913.985	2,717.210	196.775	9.288		1.083		1.083			-			-	0.318		0.318	207.464
2001	2,757.974	2,577.430	180.544	6.750		12.052		12.052	0.936		0.936			-	0.581		0.581	200.863
2002	2,761.753	2,570.664	191.090	9.879		12.609		12.609	9.681		9.681	0.058		0.058	1.182		1.182	224.498
2003	2,840.910	2,617.161	223.749	3.500		11.971	0.357	11.614	9.466		9.466	0.312		0.312	1.000		1.000	249.640
2004	2,885.458	2,651.341	234.117	6.191	0.445	9.869	5.395	4.474	6.997	0.622	6.375	1.624		1.624	0.993		0.993	254.219
2005	2,823.411	2,602.692	220.719	5.759	0.103	8.663	3.007	5.656	5.610	2.342	3.268	3.703		3.703	1.280		1.280	240.487
2006	2,444.754	2,230.128	214.626	3.697	0.081	11.460	3.866	7.594	5.801	11.467	(5.666)	1.784	0.150	1.634	0.852	0.388	0.464	222.431
2007	2,703.932	2,501.481	202.450	4.014	0.024	10.323	4.692	5.630	5.623	7.054	(1.431)	3.247	1.853	1.395	0.943		0.943	213.025
2008	2,653.724	2,446.496	207.227	1.935	0.014	6.932	4.718	2.215	6.071	7.248	(1.177)	4.999	1.764	3.235	1.901		1.901	215.350
2009	2,613.672	2,378.493	235.179	1.493	0.165	6.397	4.231	2.166	10.895	10.850	0.045	3.182	2.389	0.793	0.957	0.032	0.925	240.766
TOTAL	61,426.347	56,272.146	5,154.202	56.991	0.831	91.357	26.266	65.092	61.079	39.582	21.496	18.910	6.156	12.754	10.018	0.419	9.599	5,320.965

Table I.5 North Slope Historic Gas Production

Historic Gas Production (Billion Cubic Feet per Year)

NORTH SLOPE

	GREATER PT MCINTYRE AREA (GPMA)[1]												TOTAL	TOTAL NS GAS		
	Lisburne Oil			Niakuk Oil[2]	N Prudhoe Bay Oil	PM Undef Oil	Pt McIntyre Oil			Raven Oil	WBeach Oil	Total GPMA	Prudhoe Bay Unit	NS gas	NS injection	NS net gas
	gas	inj	net.gas	gas	gas	gas	gas	inj	net.gas	gas	gas	net area gas	net area gas	gas	inj	net.gas
1949			-						-			-	-	0.033		0.033
1950			-						-			-	-	0.091		0.091
1951			-						-			-	-	0.135		0.135
1952			-						-			-	-	0.137		0.137
1953			-						-			-	-	0.075		0.075
1954			-						-			-	-	0.027		0.027
1955			-						-			-	-	0.115		0.115
1956			-						-			-	-	0.103		0.103
1957			-						-			-	-	0.114		0.114
1958			-						-			-	-	0.119		0.119
1959			-						-			-	-	0.132		0.132
1960			-						-			-	-	0.172		0.172
1961			-						-			-	-	0.172		0.172
1962			-						-			-	-	0.197		0.197
1963			-						-			-	-	0.211		0.211
1964			-						-			-	-	0.249		0.249
1965			-						-			-	-	0.389		0.389
1966			-						-			-	-	0.438		0.438
1967			-						-			-	-	0.475		0.475
1968			-						-			-	-	0.504		0.504
1969			-						-			-	0.243	0.825		0.825
1970			-						-			-	1.037	1.657		1.657
1971			-						-			-	0.889	1.516		1.516
1972			-						-			-	0.658	1.333		1.333
1973			-						-			-	0.699	1.406		1.406
1974			-						-			-	2.022	2.787		2.787
1975			-						-			-	3.046	3.845		3.845
1976			-						-			-	5.077	5.909		5.909
1977			-						-			-	26.856	95.814	68.080	27.734
1978			-						-			-	36.111	308.859	271.854	37.004
1979			-						-			-	42.339	433.388	390.136	43.252
1980			-						-			-	50.638	598.175	546.509	51.666
1981	0.003		0.003						-			0.003	52.665	649.431	595.106	54.325
1982	0.374		0.374						-			0.374	59.445	781.496	715.635	65.861
1983	0.154		0.154						-			0.154	65.104	864.775	792.321	72.454
1984	0.343		0.343						-			0.343	78.119	905.828	816.829	89.000
1985	1.902		1.902						-			1.902	91.729	1,044.491	932.695	111.796
1986	8.677		8.677						-			8.677	96.084	1,096.981	973.528	123.453
1987	64.906	56.741	8.164						-			8.164	131.668	1,427.982	1,256.570	171.411
1988	94.670	87.815	6.855						-			6.855	163.753	1,655.639	1,451.837	203.801
1989	104.746	102.248	2.498						-			2.498	171.067	1,668.758	1,463.208	205.550
1990	107.592	101.542	6.049						-			6.049	170.406	1,753.478	1,546.845	206.633
1991	124.360	112.457	11.903						-			11.903	197.269	2,084.001	1,844.751	239.250
1992	154.468	141.598	12.870						-			12.870	202.628	2,331.009	2,086.335	244.674
1993	130.882	122.991	7.891		1.103		5.392	3.979	1.413		0.592	10.998	206.173	2,500.789	2,245.459	255.330
1994	101.260	99.748	1.512	2.471	2.646		38.795	34.461	4.334		1.119	12.081	210.430	2,791.599	2,536.571	255.028
1995	80.866	104.272	(23.406)	7.241	2.482		46.637	21.687	24.950		0.446	11.712	230.969	3,100.760	2,825.216	275.544
1996	67.013	93.000	(25.987)	8.757	0.206		56.584	30.444	26.140		2.720	11.836	227.140	3,126.219	2,858.624	267.595
1997	39.999	75.249	(35.250)	10.523	-	0.030	69.979	35.945	34.034		2.739	12.076	229.182	3,160.357	2,893.196	267.161
1998	33.111	50.399	(17.288)	8.381	0.018		70.828	49.276	21.551		0.545	13.206	226.786	3,171.462	2,908.798	262.664
1999	33.214	52.187	(18.973)	8.469	0.114		62.586	41.672	20.915		4.452	14.976	218.669	3,160.067	2,905.738	254.329
2000	52.322	62.621	(10.299)	5.069	0.049		57.664	43.549	14.115		5.638	14.572	222.036	3,334.371	3,077.397	256.973
2001	57.490	55.529	1.961	5.836	-		56.251	49.861	6.390	0.504	1.453	16.145	217.008	3,215.525	2,960.532	254.993
2002	63.745	52.214	11.531	4.287	-		57.465	55.078	2.387	-	0.048	18.253	242.751	3,286.700	3,023.530	263.170
2003	66.748	52.165	14.583	3.386	-		51.777	64.363	(12.587)		0.201	5.584	255.224	3,388.197	3,121.382	266.815
2004	56.340	48.826	7.514	3.022	-		64.808	72.967	(8.159)		0.059	2.436	256.655	3,454.560	3,182.932	271.628
2005	57.695	42.929	14.765	2.481	0.035		76.821	74.727	2.095	1.015	0.017	20.409	260.896	3,451.417	3,166.434	284.983
2006	65.652	38.448	27.204	2.259	-		42.234	61.106	(18.872)	3.275	-	13.867	236.298	3,026.600	2,768.902	257.698
2007	78.084	50.630	27.454	2.064	-		52.979	50.216	2.763	3.331	-	35.612	248.637	3,329.954	3,055.944	274.010
2008	52.093	39.753	12.339	2.218	-		69.037	77.951	(8.915)	3.095	0.012	8.750	224.100	3,281.820	3,023.841	257.979
2009	41.171	41.675	(0.504)	2.105	-		67.182	70.701	(3.519)	1.747	-	(0.171)	240.595	3,191.858	2,924.913	266.946
TOTAL	1,739.879	1,685.037	54.841	78.569	6.651	0.030	947.018	837.983	109.035	12.969	20.041	282.136	5,603.101	71,695.523	65,231.647	6,463.875

Figure I.2 ANS Gas Production 1977-2008

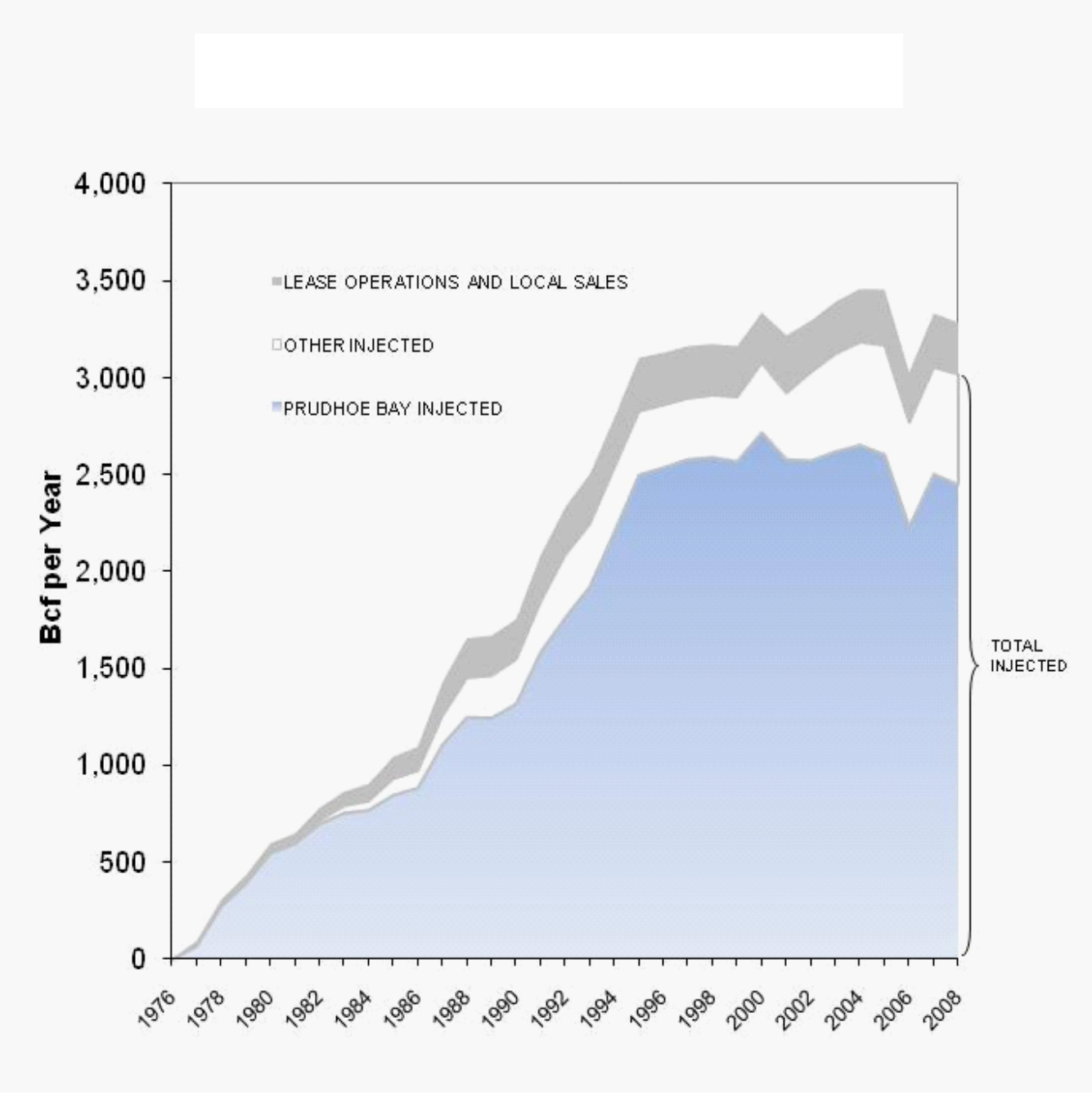


Table I.6 Cook Inlet Historic Gas Production

Historic Gas Production (Billion Cubic Feet per Year)

COOK INLET

	Albert Kaloa	Beaver Creek			Beluga River	Birch Hill	Deep Creek	Granite Point	Han-sen	Ivan River	Kasi-lof	Kenai[1]			Kenai Cannery Loop Unit[2]	Kus-tatan	Lewis River	Lone Creek	McArthur River (TBU)[3]	Middle Ground Shoal
	gas	gas	inj	net	gas	gas	gas	gas	gas	gas	gas	gas	stor-age	net	gas	gas	gas	gas	gas	gas
1958	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	0.017	-	0.017	-	-	-	-	-	-
1961	-	-	-	-	-	-	-	-	-	-	-	0.215	-	0.215	-	-	-	-	-	-
1962	-	-	-	-	-	-	-	-	-	-	-	1.460	-	1.460	-	-	-	-	-	-
1963	-	-	-	-	0.014	-	-	-	-	-	-	3.106	-	3.106	-	-	-	-	-	-
1964	-	-	-	-	0.137	-	-	-	-	-	-	4.493	-	4.493	-	-	-	-	-	-
1965	-	-	-	-	-	0.065	-	-	-	-	-	5.985	-	5.985	-	-	-	-	-	0.010
1966	-	-	-	-	-	-	-	-	-	-	-	33.375	-	33.375	-	-	-	-	-	1.200
1967	-	-	-	-	0.168	-	-	4.890	-	-	-	39.624	-	39.624	-	-	-	-	0.220	3.215
1968	-	-	-	-	2.018	-	-	10.036	-	-	-	46.014	-	46.014	-	-	-	-	6.155	6.654
1969	-	-	-	-	3.038	-	-	8.043	-	-	-	59.340	-	59.340	-	-	-	-	14.194	6.006
1970	0.095	-	-	-	3.571	-	-	9.211	-	-	-	80.612	-	80.612	-	-	-	-	19.688	6.137
1971	0.024	-	-	-	4.055	-	-	7.753	-	-	-	72.184	-	72.184	-	-	-	-	19.304	5.147
1972	-	0.000	-	0.000	4.142	-	-	5.773	-	-	-	76.007	-	76.007	-	-	-	-	19.722	4.075
1973	-	0.207	-	0.207	4.929	-	-	4.518	-	-	-	71.345	-	71.345	-	-	-	-	19.063	4.826
1974	-	0.150	0.019	0.131	5.596	-	-	3.265	-	-	-	68.485	-	68.485	-	-	-	-	19.599	4.260
1975	-	0.322	-	0.322	6.980	-	-	3.390	-	-	-	77.175	-	77.175	-	-	-	-	21.471	4.199
1976	-	0.261	0.091	0.170	11.211	-	-	3.205	-	-	-	79.467	-	79.467	-	-	-	-	19.027	4.347
1977	-	0.203	0.100	0.103	13.353	-	-	3.634	-	-	-	81.886	-	81.886	-	-	-	-	19.706	4.108
1978	-	0.329	0.144	0.185	14.253	-	-	3.860	-	-	-	97.290	-	97.290	-	-	-	-	18.585	3.290
1979	-	0.182	0.079	0.103	16.994	-	-	3.287	-	-	-	97.029	-	97.029	-	-	-	-	16.605	2.744
1980	-	0.180	0.029	0.151	17.002	-	-	3.233	-	-	-	98.846	-	98.846	-	-	-	-	15.590	2.628
1981	-	0.217	0.020	0.197	17.248	-	-	3.509	-	-	-	105.800	-	105.800	-	-	-	-	15.206	2.502
1982	-	0.396	0.037	0.359	18.653	-	-	2.780	-	-	-	115.913	-	115.913	-	-	-	-	16.240	2.374
1983	-	8.344	0.031	8.313	18.084	-	-	2.578	-	-	-	112.978	-	112.978	-	-	-	-	14.375	2.663
1984	-	9.335	-	9.335	19.833	-	-	2.340	-	-	-	110.109	-	110.109	-	-	0.696	-	15.076	2.726
1985	-	10.927	-	10.927	22.571	-	-	2.147	-	-	-	115.842	-	115.842	-	-	1.644	-	10.676	2.622
1986	-	17.773	-	17.773	25.357	-	-	2.415	-	-	-	82.470	-	82.470	-	-	1.338	-	13.560	1.593
1987	-	15.528	-	15.528	23.971	-	-	2.431	-	-	-	90.014	-	90.014	-	-	0.345	-	13.277	1.586
1988	-	14.346	-	14.346	25.586	-	-	2.543	-	-	-	76.299	-	76.299	9.400	-	0.045	-	16.722	1.635
1989	-	12.321	-	12.321	30.126	-	-	2.251	-	-	-	65.706	-	65.706	11.255	-	0.095	-	31.000	1.965
1990	-	12.474	-	12.474	39.512	-	-	1.431	-	0.676	-	38.393	-	38.393	12.502	-	1.485	-	51.456	2.579
1991	-	10.403	-	10.403	38.494	-	-	1.586	-	2.132	-	25.581	-	25.581	12.318	-	1.420	-	61.196	1.587
1992	-	7.368	-	7.368	36.534	-	-	2.246	-	1.774	-	24.187	-	24.187	10.635	-	0.706	-	70.502	2.377
1993	-	6.336	-	6.336	31.739	-	-	2.444	-	8.238	-	23.826	-	23.826	9.516	-	0.383	-	62.512	2.941
1994	-	1.304	-	1.304	34.212	-	-	2.077	-	15.996	-	18.853	-	18.853	6.361	-	0.244	-	50.024	3.047
1995	-	1.915	-	1.915	35.645	-	-	1.942	-	12.027	-	16.484	-	16.484	5.535	-	0.126	-	54.943	2.137
1996	-	3.042	-	3.042	36.930	-	-	2.251	-	6.605	-	13.294	-	13.294	2.072	-	0.114	-	67.276	0.852
1997	-	4.626	-	4.626	35.002	-	-	2.551	-	5.297	-	12.672	-	12.672	3.130	-	0.066	-	66.832	1.032
1998	-	3.743	-	3.743	33.391	-	-	2.635	-	4.532	-	9.736	-	9.736	3.021	-	0.102	-	73.821	1.882
1999	-	3.315	-	3.315	35.987	-	-	2.464	-	3.579	-	9.916	-	9.916	2.871	-	0.246	-	69.001	2.751
2000	-	4.819	-	4.819	38.750	-	-	2.209	-	2.620	-	12.833	-	12.833	4.692	-	0.134	-	65.048	1.485
2001	-	5.362	-	5.362	41.786	-	-	1.936	-	3.799	-	19.964	-	19.964	6.304	-	0.221	-	62.268	1.319
2002	-	8.548	-	8.548	44.039	-	-	1.658	-	4.303	-	22.154	-	22.154	5.016	-	0.898	-	51.543	0.918
2003	-	7.891	-	7.891	56.252	-	-	1.371	-	2.471	-	28.541	-	28.541	6.143	-	0.575	1.012	38.958	0.653
2004	0.439	8.339	-	8.339	57.618	-	0.299	1.315	-	1.670	-	24.217	-	24.217	13.640	-	0.369	1.783	34.402	0.415
2005	1.433	5.413	-	5.413	55.860	-	3.737	1.191	-	1.190	-	22.008	-	22.008	14.822	0.042	0.322	1.015	30.777	0.397
2006	0.716	5.499	-	5.499	55.364	-	2.813	0.989	-	1.154	0.865	22.342	1.529	20.813	11.517	0.233	0.017	1.388	25.392	0.306
2007	0.319	4.553	-	4.553	47.965	-	2.772	0.943	0.012	0.922	1.739	21.479	1.909	19.570	9.255	0.045	-	0.650	21.581	0.230
2008	0.144	4.969	-	4.969	42.852	-	2.262	0.853	0.012	0.480	0.513	19.428	3.725	15.703	6.948	0.013	0.252	0.984	23.089	0.233
2009	0.058	4.312	-	4.312	40.888	-	2.147	0.462	-	0.859	0.022	13.651	10.472	3.178	5.878	0.004	0.438	0.718	23.103	0.254
TOTAL	3.228	205.254	0.551	204.703	1,147.709	0.065	14.032	131.646	0.024	80.324	3.138	2,368.645	17.635	2,351.010	172.832	0.337	12.279	7.550	1,378.786	109.909

[1] 1 Kenai produced from Sterling Pools 3, 4, and 6; Tyonek gas pool; and Upper Tyonek-Beluga Pool.
[2] Cannery Loop includes CLU Beluga, CLU Upper Tyonek, CLU Tyonek D, and CLU Sterling Undefined in the Kenai formation.
[3] Includes dry gas from Middle Kenai Gas (Grayling Gas Sands), and casing gas from the Hemlock, W Foreland, and Mid Kenai G Oil Pools.
4 Ninilchik includes Falls Creek, Grassim Oskolk, Susan Dionne, and Paxton Pools.

Table I.6 Cook Inlet Historic Gas Production

Historic Gas Production (Billion Cubic Feet per Year)																			
COOK INLET																			
	Nicolai Creek	Ninilchik[4]	North Cook Inlet	North Fork	Pretty Creek			Redoubt	Sterling	Stump Lake	Swanson River[5]				Three Mile Creek	Trading Bay[6]	North Trading Bay Gas Sands[7]	West Fork	West Foreland
	gas	gas	gas	gas	gas	storage	net	gas	gas	gas	gas	inj	storage	net	gas	gas	gas	gas	gas
1958	-	-	-	-	-	-	-	-	-	-	0.006	-	-	0.006	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	0.027	-	-	0.027	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	0.119	-	-	0.119	-	-	-	-	-
1961	-	-	-	-	-	-	-	-	-	-	1.293	-	-	1.293	-	-	-	-	-
1962	-	-	-	-	-	-	-	-	0.025	-	2.071	0.259	-	1.813	-	-	-	-	-
1963	-	-	-	-	-	-	-	-	0.046	-	7.646	6.478	-	1.168	-	-	-	-	-
1964	-	-	-	-	-	-	-	-	0.058	-	7.176	5.620	-	1.556	-	-	-	-	-
1965	-	-	-	-	-	-	-	-	0.120	-	5.973	4.843	-	1.129	-	0.001	-	-	-
1966	-	0.019	-	0.105	-	-	-	-	0.157	-	6.363	28.770	-	(22.407)	-	0.000	-	-	-
1967	-	-	-	-	-	-	-	-	0.180	-	13.541	37.944	-	(24.403)	-	0.722	-	-	-
1968	0.026	-	-	-	-	-	-	0.000	0.198	-	25.434	58.316	-	(32.882)	-	2.893	0.045	-	-
1969	0.387	-	7.881	-	-	-	-	-	0.265	-	40.756	67.215	-	(26.459)	-	5.795	1.175	-	-
1970	0.202	-	40.947	-	-	-	-	-	0.265	-	50.396	73.139	-	(22.743)	-	6.328	0.725	-	-
1971	0.141	-	45.024	-	-	-	-	-	0.267	-	66.569	73.892	-	(7.323)	-	8.625	0.419	-	-
1972	0.066	-	41.580	-	-	-	-	-	0.172	-	67.441	76.133	-	(8.692)	-	4.973	0.635	-	-
1973	0.006	-	42.709	-	-	-	-	-	0.027	-	74.067	87.482	-	(13.415)	-	2.897	0.588	-	-
1974	0.011	-	44.238	-	-	-	-	-	0.032	-	80.869	86.793	-	(5.924)	-	2.666	0.600	-	-
1975	0.083	-	45.622	-	-	-	-	-	0.035	-	90.665	97.976	-	(7.311)	-	2.094	0.478	-	-
1976	0.108	-	45.091	-	-	-	-	-	0.035	-	101.427	113.279	-	(11.852)	-	2.119	0.318	-	-
1977	0.032	-	47.201	-	-	-	-	-	0.029	-	106.911	118.279	-	(11.368)	-	2.589	0.272	-	-
1978	-	-	46.757	-	-	-	-	-	0.024	-	106.934	114.557	-	(7.623)	-	2.190	0.217	0.052	-
1979	-	-	49.448	-	-	-	-	-	0.025	-	116.266	120.268	-	(4.002)	-	1.545	0.153	0.770	-
1980	-	-	41.540	-	-	-	-	-	0.026	-	118.855	120.636	-	(1.781)	-	1.326	0.197	0.476	-
1981	-	-	49.486	-	-	-	-	-	0.023	-	103.592	106.137	-	(2.545)	-	1.119	0.264	0.030	-
1982	-	-	45.368	-	-	-	-	-	0.024	-	105.654	113.023	-	(7.369)	-	1.154	0.445	0.086	-
1983	-	-	47.877	-	-	-	-	-	0.022	-	97.507	95.353	-	2.154	-	0.863	0.660	0.067	-
1984	-	-	46.981	-	-	-	-	-	0.018	-	96.710	93.687	-	3.023	-	0.891	0.649	0.037	-
1985	-	-	45.819	-	-	-	-	-	0.012	-	92.104	89.025	-	3.079	-	0.985	0.526	0.022	-
1986	-	-	43.838	-	0.067	-	0.067	-	0.002	-	95.083	93.602	-	1.481	-	0.832	0.513	-	-
1987	-	-	42.889	-	0.776	-	0.776	-	-	-	84.063	87.013	-	(2.949)	-	0.845	0.537	-	-
1988	-	-	44.989	-	0.871	-	0.871	-	-	-	102.537	99.734	-	2.804	-	0.997	0.270	-	-
1989	-	-	45.287	-	0.641	-	0.641	-	-	-	104.094	107.802	-	(3.709)	-	1.163	0.217	-	-
1990	-	-	45.014	-	0.607	-	0.607	-	-	0.528	104.395	106.031	-	(1.636)	-	0.379	0.060	-	-
1991	-	-	44.695	-	0.742	-	0.742	-	-	1.608	104.812	105.157	-	(0.344)	-	0.828	0.079	0.460	-
1992	-	-	44.411	-	0.762	-	0.762	-	-	1.504	103.997	104.289	-	(0.292)	-	0.673	0.013	1.364	-
1993	-	-	45.529	-	0.333	-	0.333	-	0.007	0.778	97.701	93.052	-	4.649	-	0.612	-	0.625	-
1994	-	-	52.689	-	0.203	-	0.203	-	0.224	0.454	124.419	97.148	-	27.272	-	0.640	-	0.206	-
1995	-	-	53.541	-	0.256	-	0.256	-	0.184	0.288	101.781	73.086	-	28.695	-	0.522	-	0.016	-
1996	-	-	55.976	-	0.301	-	0.301	-	0.037	0.185	76.159	42.820	-	33.338	-	0.377	0.023	-	-
1997	-	-	52.466	-	0.383	-	0.383	-	0.005	0.132	51.898	23.163	-	28.734	-	1.105	0.511	-	-
1998	-	-	53.964	-	0.435	-	0.435	-	0.000	0.080	36.917	11.089	-	25.828	-	0.828	0.695	-	-
1999	-	-	51.630	-	0.028	-	0.028	-	0.125	0.054	37.483	7.731	-	29.752	-	0.435	0.241	-	-
2000	-	-	52.841	-	-	-	-	-	0.329	0.032	32.366	2.738	-	29.628	-	0.458	0.152	-	-
2001	0.278	-	55.531	-	0.080	-	0.080	-	0.149	0.000	30.324	7.378	0.897	22.049	-	0.410	-	-	0.062
2002	0.605	-	54.574	-	1.359	-	1.359	0.011	0.552	-	14.687	0.959	0.951	12.777	-	0.414	-	-	0.059
2003	0.262	3.043	47.920	-	0.428	-	0.428	0.674	0.358	0.000	9.380	0.004	1.075	8.301	-	0.259	0.101	-	0.976
2004	0.983	12.367	41.012	-	0.658	-	0.658	0.138	0.300	-	6.714	-	0.753	5.961	-	0.200	0.027	-	1.025
2005	0.188	14.252	45.560	-	0.411	0.215	0.196	0.077	1.874	-	5.789	-	1.340	4.449	0.453	0.295	0.416	0.286	2.604
2006	0.537	17.655	38.155	-	0.017	0.798	(0.780)	0.065	2.204	-	3.503	-	2.888	0.615	0.626	0.360	0.012	0.639	3.350
2007	0.518	18.267	28.771	-	0.202	0.610	(0.408)	0.038	1.773	-	2.556	-	1.539	1.017	0.392	0.381	0.007	0.400	1.727
2008	0.250	19.112	23.179	-	0.513	0.366	0.147	0.021	1.541	-	3.346	-	1.601	1.745	0.247	0.335	-	0.251	0.563
2009	0.275	18.004	22.830	-	0.316	0.612	(0.296)	0.006	0.995	0.184	2.245	-	3.006	(0.762)	0.167	0.227	12.240	0.001	0.294
TOTAL	4.957	102.719	1,820.861	0.105	10.390	2.600	7.790	1.031	12.744	5.827	2,922.620	2,851.898	14.049	56.673	1.885	65.349	24.480	5.788	10.660

[4] *Ninilchik includes Falls Creek, Grassim Oskolk, Susan Dionne, and Paxton Pools.*
[5] *Swanson River gas is produced from Hemlock Oil Pool, Sterling Undefined Gas Pool, and Tyonek Undefined Pool. Gas from other fields was injected into the Swanson River Hemlock Oilfield to maintain reservoir pressure and enhance oil recovery until 2003. The very high gas injection volume for 1960 was an accounting adjustment. Gas has been injected into the Tyonek Formation for storage purposes since 2001. In all previous editions of the DOG Annual Report, Swanson River injection volumes included storage gas. As of this 2009 Annual Report, injection for storage purposes is reported separately.*
[6] *Includes only casing gas produced from the following oil pools: Hemlock, Middle Kenai B through E, and Undefined pools.*
[7] *Includes dry gas quantities from Trading Bay Undefined Gas sands initially produced from Spurr Platform; later from Spark Platform.*

Table I.6 Cook Inlet Historic Gas Production

Historic Gas Production (Billion Cubic Feet per Year)					
COOK INLET GAS PRODUCTION					
	West McArthur River	Wolf Lake Kustatan	TOTAL GAS	TOTAL INJECTED	TOTAL NET
	gas	gas			
1958	-	-	0.006	-	0.006
1959	-	-	0.027	-	0.027
1960	-	-	0.137	-	0.137
1961	-	-	1.508	-	1.508
1962	-	-	3.557	0.259	3.298
1963	-	-	10.810	6.478	4.333
1964	-	-	11.865	5.620	6.245
1965	-	-	12.155	4.843	7.311
1966	-	-	41.219	28.770	12.449
1967	-	-	62.593	37.944	24.649
1968	-	-	99.852	58.316	41.535
1969	-	-	147.543	67.215	80.328
1970	-	-	218.363	73.139	145.224
1971	-	-	229.566	73.892	155.674
1972	-	-	224.647	76.133	148.514
1973	-	-	225.236	87.482	137.754
1974	-	-	229.817	86.812	143.005
1975	-	-	252.554	97.976	154.578
1976	-	-	266.651	113.370	153.281
1977	-	-	279.955	118.380	161.575
1978	-	-	293.800	114.701	179.099
1979	-	-	305.063	120.347	184.716
1980	-	-	299.929	120.666	179.264
1981	-	-	299.038	106.157	192.881
1982	-	-	309.121	113.060	196.061
1983	-	-	306.051	95.384	210.667
1984	-	-	305.421	93.687	211.733
1985	-	-	305.919	89.025	216.893
1986	-	-	284.874	93.602	191.272
1987	-	-	276.314	87.013	189.302
1988	-	-	296.285	99.734	196.551
1989	-	-	306.173	107.802	198.370
1990	-	-	311.519	106.031	205.488
1991	-	-	307.980	105.157	202.823
1992	0.000	-	309.072	104.289	204.783
1993	0.031	-	293.558	93.052	200.506
1994	0.216	-	311.179	97.148	214.032
1995	0.231	-	287.577	73.086	214.491
1996	0.309	-	265.813	42.820	222.993
1997	0.152	-	237.872	23.163	214.709
1998	0.241	-	226.038	11.089	214.949
1999	0.212	-	220.346	7.731	212.615
2000	0.211	-	218.984	2.738	216.246
2001	0.288	0.114	230.200	7.378	222.822
2002	0.239	0.300	211.884	0.959	210.925
2003	0.200	0.240	207.717	0.004	207.712
2004	0.158	0.073	208.932	-	208.932
2005	0.125	0.093	211.567	-	211.567
2006	0.148	0.001	196.646	-	196.646
2007	0.123	0.001	168.067	-	168.067
2008	0.097	0.001	152.711	-	152.711
2009	0.019	-	138.592	-	138.592
TOTAL	3.000	0.823	10,622.301	2,852.449	7,769.852

inj = gas injected into the storage formation; wd = withdrawn gas (includes all gas withdrawn from the storage reservoir during the reporting period.)Negative net injections mean gas was drawn down from the reservoir's originally in place native or cushion gas volume."

[1] Does not include natural gas injected into the Hemlock Formation for secondary oil recovery. Injections into the Tyonek Formation for the purposes of storage began in June 2001.

[2] Gas Storage Injection into the nearly depleted Beluga Formation began in November 2005.

[3] Gas Storage Injection into the Sterling 6 Gas Pool began in May 2006.

Note: a negative net value means gas drawn from existing cushion gas.

Table I.6 Cook Inlet Historic Gas Production

Historic Gas Production (Billion Cubic Feet per Year)												
COOK INLET GAS STORAGE												
	Swanson River Tyonek[8,11]			Pretty Creek Beluga[9,11]			Kenai River Sterling Pool [6,10,11]			GAS STORAGE TOTALS		
	storage	wd	net	storage	wd	net	storage	wd	net	inj	wd	net
1958	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-	-	-	-	-	-
1962	-	-	-	-	-	-	-	-	-	-	-	-
1963	-	-	-	-	-	-	-	-	-	-	-	-
1964	-	-	-	-	-	-	-	-	-	-	-	-
1965	-	-	-	-	-	-	-	-	-	-	-	-
1966	-	-	-	-	-	-	-	-	-	-	-	-
1967	-	-	-	-	-	-	-	-	-	-	-	-
1968	-	-	-	-	-	-	-	-	-	-	-	-
1969	-	-	-	-	-	-	-	-	-	-	-	-
1970	-	-	-	-	-	-	-	-	-	-	-	-
1971	-	-	-	-	-	-	-	-	-	-	-	-
1972	-	-	-	-	-	-	-	-	-	-	-	-
1973	-	-	-	-	-	-	-	-	-	-	-	-
1974	-	-	-	-	-	-	-	-	-	-	-	-
1975	-	-	-	-	-	-	-	-	-	-	-	-
1976	-	-	-	-	-	-	-	-	-	-	-	-
1977	-	-	-	-	-	-	-	-	-	-	-	-
1978	-	-	-	-	-	-	-	-	-	-	-	-
1979	-	-	-	-	-	-	-	-	-	-	-	-
1980	-	-	-	-	-	-	-	-	-	-	-	-
1981	-	-	-	-	-	-	-	-	-	-	-	-
1982	-	-	-	-	-	-	-	-	-	-	-	-
1983	-	-	-	-	-	-	-	-	-	-	-	-
1984	-	-	-	-	-	-	-	-	-	-	-	-
1985	-	-	-	-	-	-	-	-	-	-	-	-
1986	-	-	-	-	-	-	-	-	-	-	-	-
1987	-	-	-	-	-	-	-	-	-	-	-	-
1988	-	-	-	-	-	-	-	-	-	-	-	-
1989	-	-	-	-	-	-	-	-	-	-	-	-
1990	-	-	-	-	-	-	-	-	-	-	-	-
1991	-	-	-	-	-	-	-	-	-	-	-	-
1992	-	-	-	-	-	-	-	-	-	-	-	-
1993	-	-	-	-	-	-	-	-	-	-	-	-
1994	-	-	-	-	-	-	-	-	-	-	-	-
1995	-	-	-	-	-	-	-	-	-	-	-	-
1996	-	-	-	-	-	-	-	-	-	-	-	-
1997	-	-	-	-	-	-	-	-	-	-	-	-
1998	-	-	-	-	-	-	-	-	-	-	-	-
1999	-	-	-	-	-	-	-	-	-	-	-	-
2000	-	-	-	-	-	-	-	-	-	-	-	-
2001	0.897	0.363	0.534	-	-	-	-	-	-	0.897	0.363	0.534
2002	0.951	1.025	(0.074)	-	-	-	-	-	-	0.951	1.025	(0.074)
2003	1.075	0.392	0.683	-	-	-	-	-	-	1.075	0.392	0.683
2004	0.753	0.448	0.305	-	-	-	-	-	-	0.753	0.448	0.305
2005	1.340	1.482	(0.143)	0.215	0.000	0.215	-	-	-	1.554	1.482	0.072
2006	2.888	1.785	1.103	0.798	0.008	0.789	1.529	0.249	1.280	5.215	2.043	3.172
2007	1.539	1.337	0.201	0.610	0.140	0.470	1.909	0.652	1.257	4.058	2.129	1.929
2008	1.601	2.612	(1.011)	0.366	0.484	(0.118)	3.725	0.603	3.122	5.691	3.698	1.993
2009	3.006	1.443	1.563	0.612	0.301	0.311	10.472	0.418	10.054	14.091	2.162	11.928
TOTAL	14.049	10.889	3.160	2.600	0.932	1.668	17.635	1.922	15.713	34.284	13.743	20.541

[8] Does not include natural gas injected into the Hemlock Formation for secondary oil recovery. Injections into the Tyonek Formation for the purposes of storage began in June 2001.
[9] Gas Storage Injection into the nearly depleted Beluga Formation began in November 2005.
[10] Gas Storage Injection into the Sterling 6 Gas Pool began in May 2006.
[11] Note: a negative net value means gas drawn from existing cushion gas.
Source: Alaska Oil and Gas Conservation Commission, Alaska Production Summary by Field and Pool" (monthly reports).

Table I.7 North Slope Historic and Projected Oil Production

Historic and Projected Oil Production (Million Barrels per Year)																		
NORTH SLOPE[1]																		
					Prudhoe Bay Unit				Kuparuk River Unit									
	Bada-mi	Colville River Unit[3]	Duck Island Unit[4]	North-star	Prudhoe Bay IPAs[5]	Prud-hoe Bay Satel-lites[6]	Greater Pt McIntyre Area[7]	PBU IPA+ Sat+ GPMA	Kuparuk IPA	Kuparuk Satel-lites[8]	KRU IPA+Sat	Milne Point Unit[9]	Oooguruk	Nikaitchuq	Liberty	Pt Thomson[10]	NPRA	TOTAL North Slope
1969		-	-	-	0.1	-	-	0.1	-	-	-	-				-	-	0.1
1970		-	-	-	0.3	-	-	0.3	0.0	-	0.0	-				-	-	0.3
1971		-	-	-	0.3	-	-	0.3	-	-	-	-				-	-	0.3
1972		-	-	-	0.1	-	-	0.1	-	-	-	-				-	-	0.1
1973		-	-	-	0.1	-	-	0.1	-	-	-	-				-	-	0.1
1974		-	-	-	0.5	-	-	0.5	-	-	-	-				-	-	0.5
1975		-	-	-	0.7	-	-	0.7	-	-	-	-				-	-	0.7
1976		-	-	-	1.0	-	-	1.0	-	-	-	-				-	-	1.0
1977		-	-	-	113.2	-	-	113.2	-	-	-	-				-	-	113.2
1978		-	-	-	397.7	-	-	397.7	-	-	-	-				-	-	397.7
1979		-	-	-	468.4	-	-	468.4	-	-	-	-				-	-	468.4
1980		-	-	-	555.6	-	-	555.6	-	-	-	-				-	-	555.6
1981		-	-	-	555.6	-	0.0	555.6	1.1	-	1.1	-				-	-	556.7
1982		-	-	-	559.4	-	0.2	559.6	32.4	-	32.4	-				-	-	592.0
1983		-	-	-	561.1	-	0.1	561.2	39.9	0.0	39.9	-				-	-	601.1
1984		-	-	-	562.3	-	0.3	562.6	46.1	0.1	46.2	-				-	-	608.8
1985		-	-	-	568.6	-	1.1	569.7	79.7	0.3	80.0	0.7				-	-	650.4
1986		-	0.0	-	561.8	-	3.6	565.4	95.0	0.3	95.3	4.7				-	-	665.3
1987		-	8.8	-	586.7	-	16.7	603.3	103.7	-	103.7	0.0				-	-	715.8
1988		-	37.9	-	578.7	-	16.1	594.8	111.1	-	111.1	-				-	-	743.9
1989		-	36.9	-	522.9	-	14.8	537.7	109.8	-	109.8	3.7				-	-	688.1
1990		-	38.6	-	486.2	-	15.9	502.1	107.2	-	107.2	6.6				-	-	654.5
1991		-	42.5	-	486.7	-	14.7	501.4	113.6	-	113.6	7.5				-	-	664.9
1992		-	43.1	-	456.5	-	14.0	470.5	118.5	-	118.5	6.9				-	-	639.0
1993		-	40.8	-	409.7	-	18.5	428.2	115.2	-	115.2	6.8				-	-	590.9
1994		-	35.8	-	374.3	-	50.6	425.0	111.8	-	111.8	6.7				-	-	579.2
1995		-	34.4	-	340.4	-	65.1	405.5	107.0	-	107.0	8.7				-	-	555.7
1996		-	27.7	-	312.6	-	75.6	388.2	99.5	-	99.5	14.1				-	-	529.4
1997		-	22.9	-	284.0	-	73.7	357.7	96.0	0.0	96.0	19.0				-	-	495.6
1998	0.7	-	18.6	-	252.8	0.1	61.9	314.8	91.7	4.6	96.3	20.4				-	-	450.8
1999	1.2	-	15.7	-	223.8	1.7	47.5	273.0	82.4	12.7	95.0	19.7				-	-	404.5
2000	0.9	2.2	13.5	-	217.2	2.1	36.1	255.4	74.1	12.2	86.3	19.1				-	-	377.4
2001	0.7	32.0	11.8	1.3	194.2	4.8	29.6	228.6	68.3	11.5	79.8	19.3				-	-	373.4
2002	0.6	35.0	10.3	17.9	177.6	14.9	24.6	217.1	58.9	18.5	77.4	18.7				-	-	377.0
2003	0.3	35.6	10.6	23.0	166.3	18.6	22.3	207.2	58.5	18.9	77.4	18.7	0.00			-	-	372.7
2004	-	36.1	8.5	25.1	153.2	17.0	21.6	191.8	53.2	18.6	71.8	18.7	-			-	-	352.0
2005	0.2	43.8	7.5	22.4	140.0	17.1	18.7	175.7	50.4	15.9	66.3	16.0	-			-	-	331.8
2006	0.5	44.2	6.0	18.9	110.8	15.6	13.5	139.8	45.5	17.0	62.5	13.3	-			-	-	285.2
2007	0.2	45.5	5.4	13.9	116.3	14.4	15.1	145.8	43.0	14.4	57.4	12.2	-			-	-	280.4
2008	-	39.8	5.5	11.4	115.2	14.6	14.6	144.3	39.3	13.7	53.0	11.8	0.67			-	-	265.8
2009	-	36.6	5.1	9.7	101.8	14.3	14.2	130.3	12.6	11.0	23.5	11.0	2.71			-	-	219.5
1999	1.2	-	-	15.7	223.8	1.723	47.5	273.0	82.4	12.7	95.0	19.7	-	-	404.5	0.036	225.5	
2000	0.9	2.2	-	13.5	217.2	2.117	36.1	255.4	74.1	12.2	86.3	19.1	-	-	377.4	0.036	219.3	
2001	0.7	32.0	1.3	11.8	194.2	4.808	29.6	228.6	68.3	11.5	79.8	19.3	-	-	373.4	0.036	199.1	
2002	0.6	35.0	17.9	10.3	177.6	14.856	24.6	217.1	58.9	18.5	77.4	18.7	-	-	377.0	0.036	192.5	
2003	0.3	35.6	23.0	10.6	166.3	18.582	22.3	207.2	58.5	18.9	77.4	18.7	-	-	372.7	0.036	184.9	
2004	-	36.1	25.1	8.5	153.2	16.973	21.6	191.8	53.2	18.6	71.8	18.7	-	-	352.0	0.036	170.2	
2005	0.0	43.8	22.4	7.5	140.0	17.1	18.7	175.7	50.4	15.9	66.3	16.0	-	-	331.8	0.036	157.1	
2006	0.5	44.2	18.9	6.0	110.8	15.6	13.5	139.8	45.5	17.0	62.5	13.3	-	-	285.2	0.036	126.3	
2007	0.2	45.5	13.9	5.4	116.3	14.4	15.1	145.8	43.0	14.4	57.4	12.2	-	-	280.4	0.036	130.7	
2008	-	39.8	11.4	5.5	115.2	14.6	14.6	144.3	39.3	13.7	53.0	11.8	-	-	265.8	0.036	129.8	
2009	-	36.6	5.1	9.7	101.8	14.3	14.2	130.3	12.6	11.0	23.5	11.0	2.71			-	-	219.5

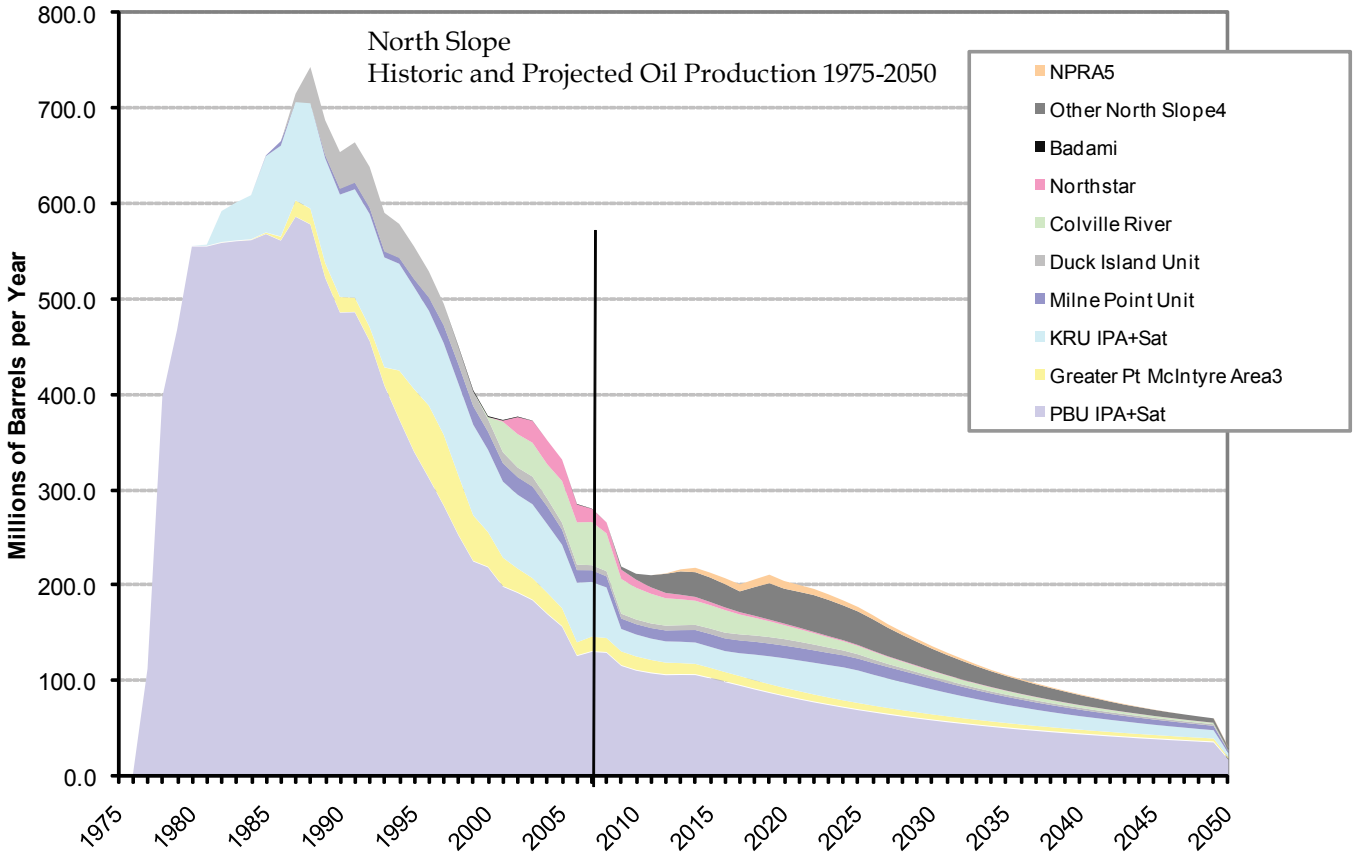
Historic and Projected Oil Production (Million Barrels per Year)

NORTH SLOPE[1]

					Prudhoe Bay Unit				Kuparuk River Unit									
	Bad-ami	Colville River Unit[3]	Duck Island Unit[4]	Northstar	Prudhoe Bay IPAs[5]	Prudhoe Bay Sat-ellites[6]	Greater Pt McIntyre Area[7]	PBU IPA+ Sat+ GPMA	Kuparuk IPA	Kuparuk Satel-lites[8]	KRU IPA+Sat	Milne Point Unit[9]	Oooguruk	Nikaitchuq	Liberty	Pt Thomson[10]	NPRA	TOTAL North Slope
2010		35.4	4.7	6.6	98.8	13.0	12.4	124.3	34.7	13.2	47.9	10.5	3.4	1.1	-	0.0	0.0	233.9
2011		33.0	4.3	5.4	93.0	14.4	11.1	118.5	32.9	12.1	45.0	10.5	3.9	3.8	1.6	0.0	0.2	226.2
2012		31.0	4.5	4.5	88.6	15.7	9.9	114.2	31.9	10.8	42.7	10.6	4.5	6.4	6.0	0.0	1.9	226.4
2013		29.8	5.2	3.9	86.7	15.5	9.0	111.2	30.3	9.8	40.1	10.6	5.1	8.4	10.7	0.3	4.5	229.7
2014		27.6	5.8	3.4	85.6	15.0	8.2	108.8	28.8	9.9	38.7	10.5	5.0	10.2	12.0	2.1	5.5	229.6
2015		25.8	6.2	3.0	82.7	14.1	7.5	104.3	27.3	10.2	37.5	10.0	4.6	11.8	10.5	3.6	6.6	224.0
2016		25.6	6.1	2.6	79.5	13.1	6.9	99.4	25.8	10.7	36.5	9.5	4.2	13.2	8.5	3.6	8.3	217.6
2017		24.4	5.6	2.4	76.5	11.9	6.3	94.7	24.5	11.0	35.5	8.9	3.8	14.0	7.1	3.6	9.6	209.7
2018		21.7	5.0	2.2	73.6	10.7	5.8	90.2	23.2	10.2	33.4	8.4	3.5	13.4	6.0	3.6	10.6	197.8
2019		18.8	4.6	2.0	70.9	9.7	5.4	86.1	22.1	9.5	31.6	7.8	3.1	11.9	5.1	3.6	9.9	184.5
2020		16.4	4.1	1.8	68.1	8.9	5.1	82.1	20.8	10.6	31.4	7.2	2.9	10.6	4.5	6.2	10.0	177.2
2021		14.4	3.7	1.7	65.4	8.1	4.7	78.3	19.5	16.0	35.5	6.7	2.6	9.4	3.9	13.9	10.8	180.9
2022		12.6	3.4	1.6	62.7	7.5	4.4	74.6	18.3	24.3	42.6	6.3	2.4	8.4	3.4	25.1	9.9	190.3
2023		11.1	3.1	1.5	60.0	6.9	4.2	71.1	17.3	29.9	47.1	5.9	2.2	7.4	3.1	33.0	8.3	193.6
2024		9.8	2.8	1.4	57.4	6.4	3.9	67.7	16.3	28.8	45.1	5.6	2.0	6.6	2.7	35.3	6.9	185.9
2025		8.7	2.6	1.3	54.8	6.0	3.7	64.5	15.1	24.4	39.5	5.3	1.8	5.9	2.5	35.5	5.7	173.3
2026		7.7	2.4	1.2	52.4	5.5	3.5	61.4	14.0	20.8	34.7	5.0	1.7	5.2	2.2	32.6	4.8	158.9
2027		6.9	2.2	1.1	50.1	5.2	3.3	58.6	13.0	17.8	30.8	4.7	1.5	4.6	2.0	28.0	4.0	144.4
2028		6.1	2.0	1.1	47.9	4.8	3.1	55.9	12.1	15.3	27.5	4.5	1.4	4.1	1.8	24.0	3.4	131.8
2029		5.5	1.9	1.0	45.9	4.5	3.0	53.4	11.3	13.3	24.6	4.2	1.3	3.7	1.7	20.7	2.8	120.8
2030		4.9	1.7	1.0	43.9	4.2	2.8	51.0	10.6	11.7	22.2	4.0	1.2	3.2	1.6	17.9	2.4	111.2
2031		4.4	1.6	0.9	41.9	4.0	2.7	48.5	9.9	10.3	20.2	3.8	1.1	2.9	1.4	15.6	2.0	102.6
2032		4.0	1.5	0.9	39.8	3.7	2.6	46.1	9.3	9.1	18.4	3.7	1.0	2.6	1.3	13.6	1.7	94.9
2033		3.6	1.4	0.9	38.0	3.5	2.5	44.0	8.7	8.2	16.9	3.5	0.9	2.3	1.2	11.9	1.5	88.1
2034		3.3	1.3	0.8	36.3	3.3	2.4	42.0	8.2	7.3	15.6	3.4	0.8	2.0	1.2	10.5	1.2	82.1
2035		3.0	1.3	0.8	34.8	3.1	2.3	40.2	7.7	6.7	14.4	3.2	0.8	1.8	1.1	9.3	1.1	76.8
2036		2.7	1.2	0.8	33.5	2.9	2.2	38.6	7.3	6.1	13.4	3.1	0.7	1.6	1.0	8.2	0.9	72.2
2037		2.5	1.1	0.7	32.2	2.7	2.1	37.1	6.9	5.6	12.4	3.0	0.7	1.4	0.9	7.3	0.8	67.9
2038		2.3	1.1	0.7	31.1	2.6	2.0	35.7	6.5	5.1	11.6	2.8	0.6	1.3	0.9	6.5	0.7	64.1
2039		2.1	1.0	0.7	30.0	2.4	1.9	34.4	6.2	4.7	10.9	2.7	0.6	1.1	0.8	5.8	0.6	60.7
2040		1.9	1.0	0.7	29.0	2.3	1.9	33.2	5.8	4.4	10.2	2.6	0.5	1.0	0.8	5.2	0.5	57.6
2041		1.8	0.9	0.6	28.0	2.2	1.8	32.0	5.5	4.1	9.6	2.5	0.5	0.9	0.7	4.6	0.5	54.7
2042		1.6	0.9	0.6	27.2	2.1	1.8	31.0	5.2	3.8	9.0	2.4	0.4	0.8	0.7	4.1	0.4	52.0
2043		1.5	0.8	0.6	26.3	1.9	1.7	30.0	5.0	3.6	8.6	2.3	0.4	0.7	0.7	3.7	0.4	49.7
2044		1.4	0.8	0.6	25.6	1.8	1.7	29.1	4.7	3.4	8.1	2.3	0.4	0.6	0.6	3.3	0.3	47.5
2045		1.3	0.8	0.6	24.9	1.7	1.6	28.2	4.5	3.2	7.7	2.2	0.3	0.6	0.6	3.0	0.3	45.5
2046		1.2	0.7	0.5	24.2	1.6	1.6	27.4	4.3	3.0	7.3	2.1	0.3	0.5	0.6	2.7	0.3	43.6
2047		1.1	0.7	0.5	23.6	1.6	1.5	26.6	4.1	2.8	6.9	2.0	0.3	0.4	0.5	2.4	0.2	41.9
2048		1.1	0.7	0.5	22.9	1.5	1.5	25.9	3.9	2.7	6.6	2.0	0.3	0.4	0.5	2.2	0.2	40.3
2049		1.0	0.7	0.5	22.3	1.4	1.4	25.1	3.7	2.5	6.2	1.8	0.2	0.3	0.5	2.0	0.2	38.6
2050		0.9	0.6	0.5	21.7	1.3	1.4	24.4	3.5	2.4	5.9	1.7	0.2	0.3	0.5	1.7	0.2	37.0
Remaining Reserves Thru 2050	-	419.8	102.1	63.9	2,037.9	249.2	162.7	2,449.7	570.9	419.1	990.0	209.9	73.0	186.7	113.6	416.6	140.3	5,165.6
EUR	5.2	770.6	589.9	207.4	13,752.6	384.3	863.3	15,000.1	2,736.3	588.6	3,324.9	494.2	76.4	186.7	113.6	416.6	140.3	21,325.9

[1] Forecast production is based on DOR Fall 2009 Production Forecast, 2010-2050.
[2] Historic production from AOGCC Monthly Production Reports through 2009. Figures include NGLs.
[3] IncludesAlpine, Fiord, Nanuq, Nechelik, Qannik, and Alpine-West .
[4] DIU includes Sag Delta and Eider
[5] Prudhoe IPA (formerly Oil Rim and Gas Cap PAs). Historic figures include natural gas liquids produced at Prudhoe Bay and surrounding fields.
[6] Prudhoe Bay Satelite production from Aurora, Borealis, Midnight Sun, Orion and Polaris PAs.
[7] Includes Lisburne, Niakuk, North Prudhoe Bay, Point MacIntyre, Raven, and West Beach PAs.
[8] Includes Meltwater, Tabasco, Tarn and West Sak
[9] Includes Sag River and Schrader Bluff.
[10] Includes Thomson Formation and Brookian Satellites
Sources: Alaska Oil and Gas Conservation Commission, "Alaska Production Summary by Field and Pool" (monthly reports)2009 and AK Dept. of Revenue Fall 2009 Foorecast.

Figures I.3A and 3B



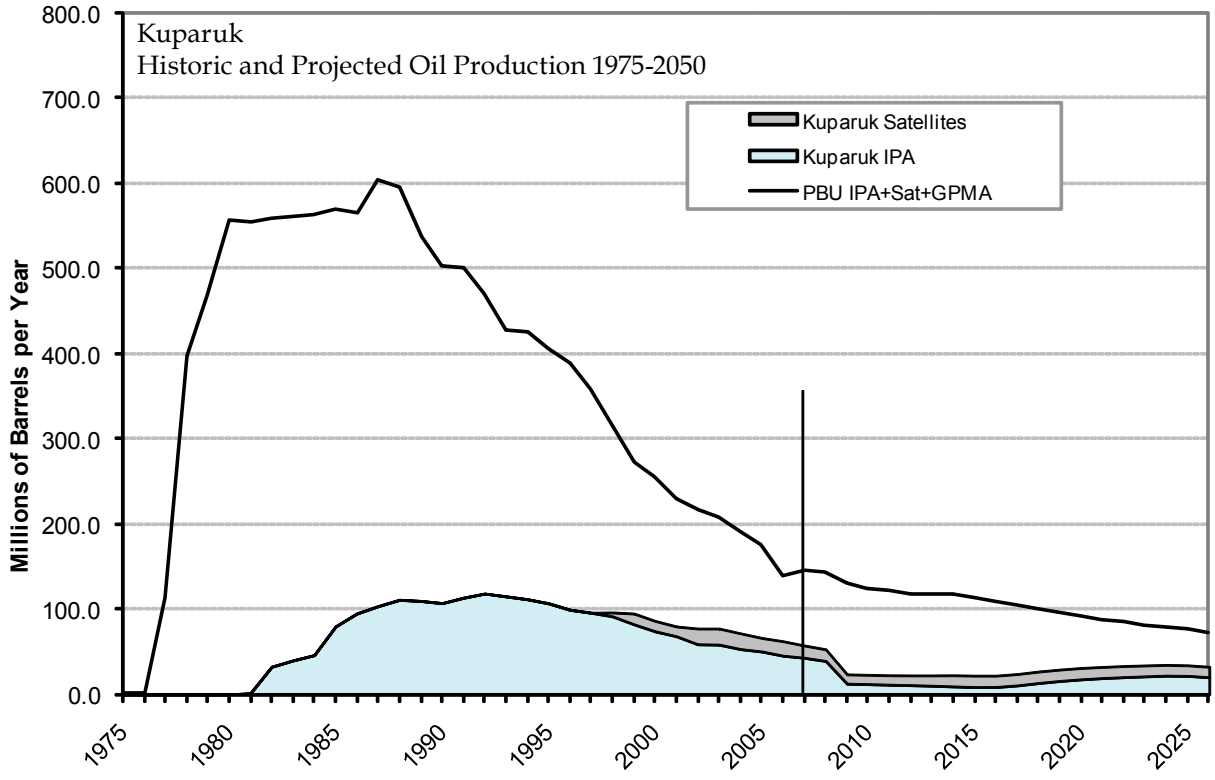


Table I.8 Cook Inlet Historic & Projected Oil Production

Historic and Projected Oil Production (Million Barrels per Year)											
COOK INLET[1]											
	Beaver Creek	Granite Point	McArthur River[3]	Middle Ground Shoal	Redoubt Shoal (Osprey Platform)	Swanson River[3]	Trading Bay[3]	North Trading Bay Unit[2]	West McArthur River	Miscellaneous NGL[4]	TOTAL OIL and NGL
1958	-	-	-	-	-	0.036	-	-	-	-	0.036
1959	-	-	-	-	-	0.187	-	-	-	-	0.187
1960	-	-	-	-	-	0.558	-	-	-	-	0.558
1961	-	-	-	-	-	6.327	-	-	-	-	6.327
1962	-	-	-	-	-	10.259	-	-	-	-	10.259
1963	-	-	-	-	-	10.740	-	-	-	-	10.740
1964	-	-	-	-	-	11.054	-	-	-	-	11.054
1965	-	0.002	0.001	0.027	-	11.099	0.002	-	-	-	11.131
1966	-	-	0.003	2.649	-	11.712	0.000	-	-	-	14.364
1967	-	7.052	0.749	7.404	-	12.980	0.729	-	-	-	28.913
1968	-	13.131	21.782	14.134	0.002	13.624	3.172	0.305	-	-	66.150
1969	-	9.183	31.301	10.467	-	13.221	4.972	4.966	-	0.002	74.113
1970	-	7.522	40.591	12.719	-	12.471	5.945	3.696	-	0.002	82.947
1971	-	5.577	41.130	11.304	-	11.543	6.431	2.353	-	0.001	78.339
1972	0.002	4.663	41.344	9.719	-	8.908	5.771	2.841	-	0.002	73.250
1973	0.416	4.767	39.545	10.239	-	10.163	5.588	2.290	-	0.001	73.009
1974	0.375	4.237	39.798	9.001	-	9.861	5.253	2.341	-	0.000	70.867
1975	0.322	4.361	41.520	8.670	-	8.843	4.448	1.712	-	0.001	69.876
1976	0.302	4.471	36.464	8.864	-	7.681	4.162	1.231	-	0.001	63.175
1977	0.276	4.711	33.968	7.617	-	6.066	3.240	1.081	-	0.000	56.959
1978	0.223	4.867	30.953	6.382	-	4.935	2.685	0.902	-	0.001	50.947
1979	0.211	4.613	25.981	5.545	-	4.424	2.201	0.706	-	0.000	43.680
1980	0.214	4.394	21.306	4.854	-	3.787	1.701	0.472	-	-	36.728
1981	0.180	3.975	18.506	4.291	-	2.986	1.348	0.327	-	-	31.613
1982	0.182	3.467	16.255	3.573	-	3.047	1.178	0.208	-	-	27.910
1983	0.170	3.550	13.896	3.381	-	3.062	0.889	0.195	-	-	25.144
1984	0.159	3.287	12.024	3.238	-	2.556	0.944	0.136	-	-	22.344
1985	0.146	3.052	7.648	3.098	-	2.191	0.847	0.185	-	-	17.167
1986	0.158	3.169	8.170	3.211	-	2.109	0.770	0.278	-	-	17.865
1987	0.185	2.803	7.571	2.834	-	2.089	0.635	0.300	-	-	16.418
1988	0.141	2.677	7.305	2.742	-	2.159	0.639	0.247	-	-	15.911
1989	0.227	2.275	6.955	2.769	-	1.899	1.031	0.233	-	-	15.390
1990	0.212	1.462	4.265	2.688	-	1.897	0.476	0.167	-	-	11.167
1991	0.179	2.064	7.247	2.670	-	1.985	0.991	0.225	0.002	-	15.363
1992	0.175	2.522	7.397	2.423	-	1.792	0.827	0.060	0.002	-	15.198
1993	0.153	2.488	6.636	2.160	-	1.593	0.742	-	0.098	-	13.871
1994	0.140	2.209	7.091	2.785	-	1.696	0.743	-	0.921	0.000	15.585
1995	0.132	2.580	6.622	2.823	-	1.729	0.722	-	0.922	0.000	15.531
1996	0.125	2.556	6.102	2.396	-	1.540	0.590	-	1.296	0.000	14.605
1997	0.119	2.432	5.082	2.223	-	1.077	0.578	-	0.645	-	12.155
1998	0.103	2.079	4.853	2.156	-	0.920	0.663	-	1.037	-	11.810
1999	0.100	1.786	4.729	1.967	-	0.793	0.628	-	0.914	-	10.918
2000	0.092	1.742	4.843	1.894	-	0.638	0.617	-	0.893	-	10.718
2001	0.085	1.620	5.372	2.032	0.001	0.609	0.556	-	1.222	-	11.497
2002	0.079	1.527	5.597	1.959	0.046	0.477	0.579	-	1.018	-	11.284
2003	0.076	1.444	4.323	1.514	0.911	0.426	0.536	-	0.849	-	10.079
2004	0.068	1.433	3.373	1.323	0.559	0.320	0.462	-	0.669	-	8.208
2005	0.061	1.263	2.895	1.318	0.312	0.294	0.414	-	0.517	-	7.075
2006	0.077	1.094	2.504	1.192	0.267	0.262	0.396	-	0.437	-	6.229
2007	0.066	1.055	2.228	1.115	0.154	0.207	0.274	-	0.384	-	5.483
2008	0.054	0.962	1.877	1.065	0.080	0.172	0.237	-	0.321	-	4.767
2009	0.054	0.425	0.885	0.999	0.021	0.147	0.144	-	0.067	-	2.741
2010	0.050	0.731	1.255	0.923	-	0.127	0.149	-	0.135	-	3.368
2011	0.047	0.663	1.100	0.863	-	0.110	0.131	-	0.106	-	3.020
2012	0.045	0.595	0.944	0.802	-	0.094	0.114	-	0.076	-	2.671
2013	0.042	0.539	0.816	0.748	-	0.081	0.101	-	0.057	-	2.384
2014	0.040	0.491	0.709	0.699	-	0.070	0.089	-	0.043	-	2.142
2015	0.038	0.450	0.620	0.654	-	0.061	0.079	-	0.033	-	1.936
2016	0.036	0.415	0.546	0.614	-	0.054	0.071	-	0.026	-	1.761
2017	0.034	0.384	0.483	0.577	-	0.047	0.064	-	0.021	-	1.610
2018	0.032	0.356	0.429	0.542	-	0.042	0.058	-	0.017	-	1.476
2019	0.031	0.332	0.383	0.510	-	0.037	0.052	-	0.014	-	1.358

Historic Oil Production (Million Barrels per Year)

COOK INLET[1]

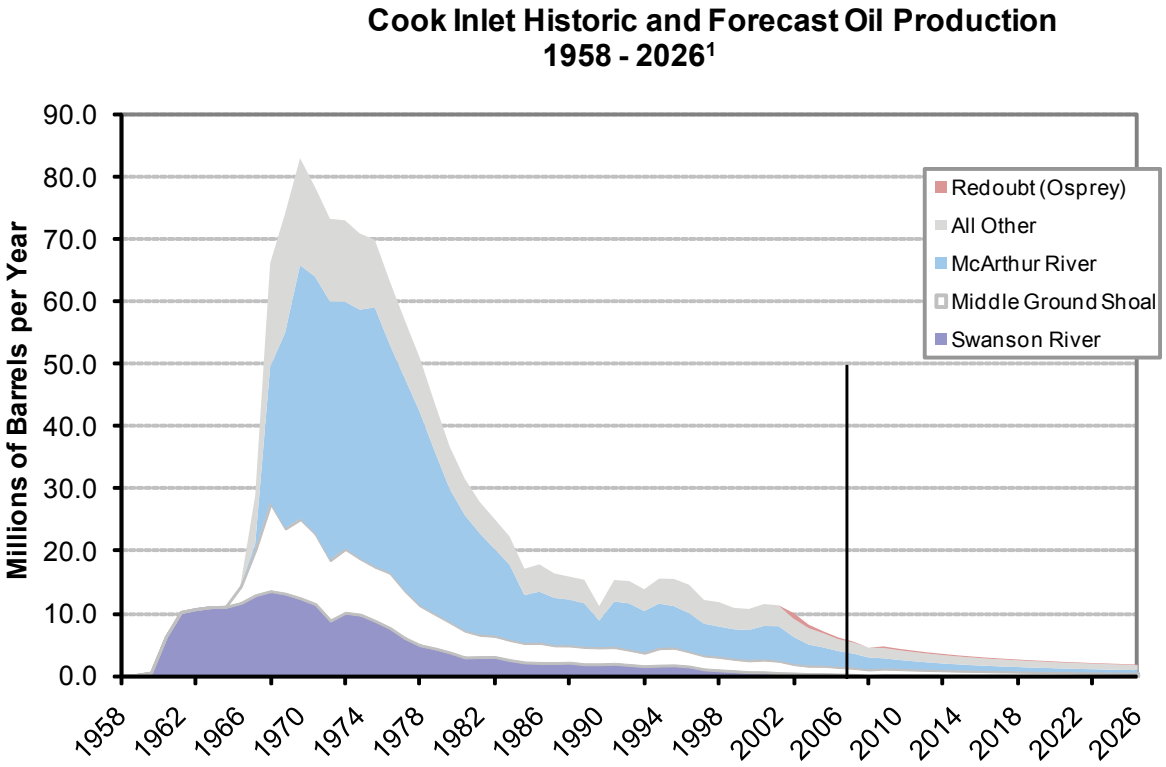
	Beaver Creek	Granite Point	McArthur River3	Middle Ground Shoal	Redoubt Shoal (Osprey Platform)	Swanson River[3]	Trading Bay[3]	North Trading Bay Unit[2]	West McArthur River	Misc NGL[4]	TOTAL OIL and NGL
2020	0.029	0.310	0.343	0.480	-	0.033	0.048	-	0.012	-	1.255
2021	0.028	0.290	0.310	0.453	-	0.029	0.044	-	0.010	-	1.164
2022	0.026	0.272	0.280	0.427	-	0.026	0.040	-	0.009	-	1.080
2023	0.025	0.256	0.254	0.403	-	0.024	0.037	-	0.008	-	1.006
2024	0.024	0.241	0.231	0.381	-	0.021	0.034	-	0.007	-	0.939
2025	0.023	0.228	0.212	0.360	-	0.019	0.031	-	0.006	-	0.879
2026	0.022	0.215	0.194	0.341	-	0.018	0.029	-	0.006	-	0.824
2027	0.021	0.203	0.178	0.322	-	0.016	0.027	-	0.005	-	0.773
2028	0.020	0.193	0.165	0.306	-	0.015	0.025	-	0.005	-	0.727
2029	0.019	0.183	0.153	0.290	-	0.013	0.023	-	0.004	-	0.686
2030	0.018	0.174	0.142	0.275	-	0.012	0.022	-	0.004	-	0.646
2031	0.017	0.165	0.132	0.260	-	0.011	0.020	-	0.004	-	0.610
2032	0.016	0.158	0.123	0.248	-	0.011	0.019	-	0.004	-	0.578
2033	0.016	0.150	0.115	0.235	-	0.010	0.018	-	0.003	-	0.548
2034	0.015	0.143	0.108	0.223	-	0.009	0.017	-	0.003	-	0.519
Remaining Reserves, MMBBL	0.711	8.135	10.224	11.936	-	0.992	1.343	-	0.617	-	33.959
Cumulative 2009, MMBBL	6.037	146.552	638.687	197.434	2.354	231.153	75.756	27.456	12.213	0.012	1,337.655
Estimated Ultimate Recovery 2034, MMBBL	6.749	154.687	648.912	209.371	2.354	232.144	77.099	27.456	12.831	0.012	1,371.614

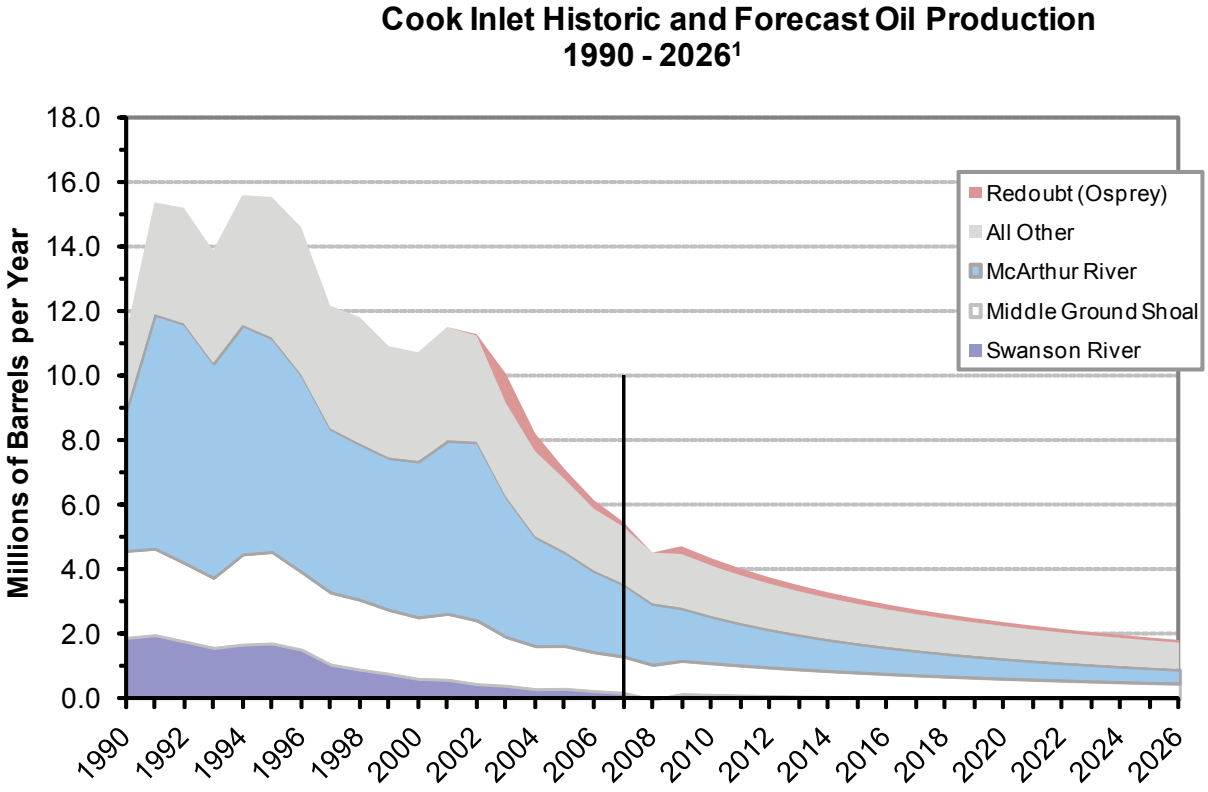
Notes

[1] Forecast 2010-2034 is based on Alaska Department of Revenue forecast for the Fall 09 Revenue Sources Book.
[2] North Trading Bay Unit is part of the Trading Bay Field and consists of Platforms Spark and Spurr
[3] Includes NGLs.
[4] NGLs from Kenai and Cannery Loop Unit.

Figures I.4A and 4B

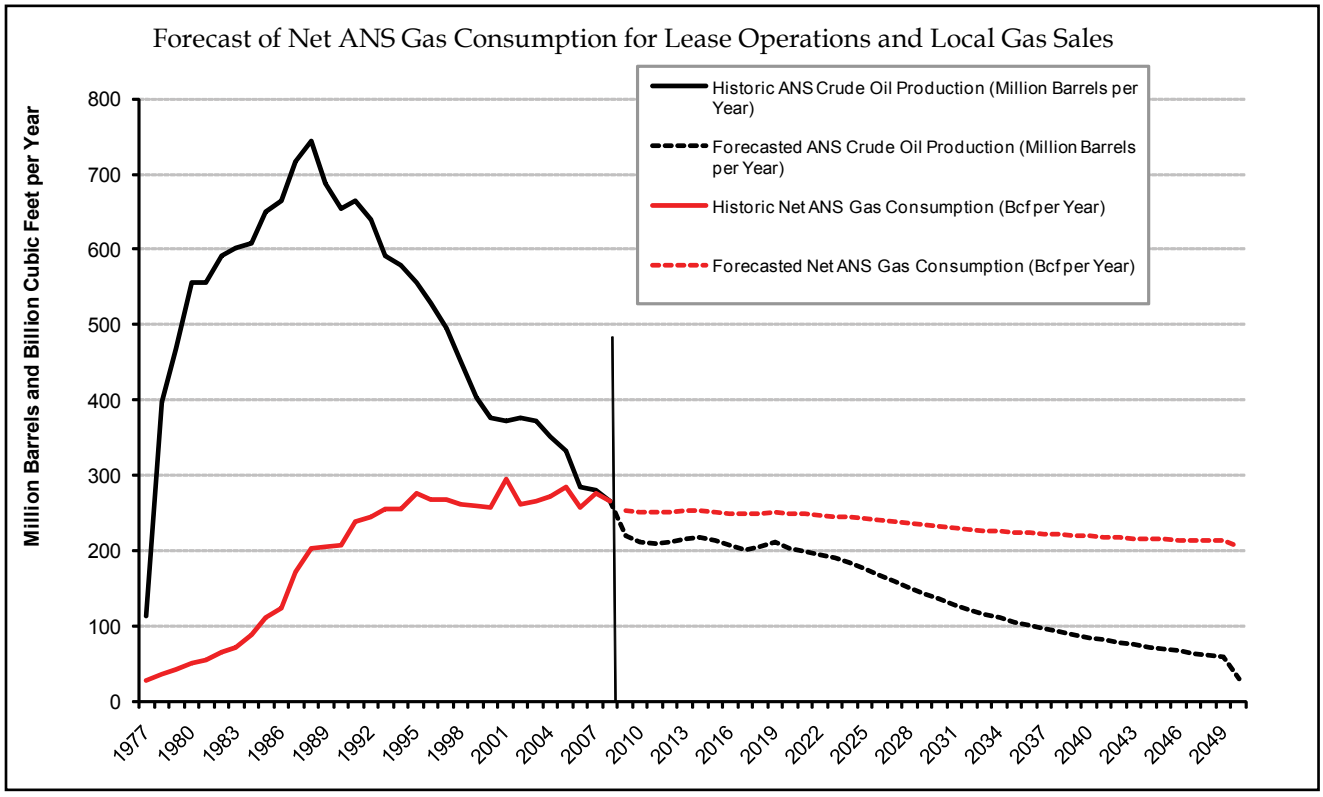
Oil Production Forecast Cook Inlet





Gas Consumption Forecast Figure I.5

Gas Consumption Forecast



Net Gas Consumption on the North Slope

Year	bcf	Year	bcf	Year	bcf	Year	bcf
2009	253.3	2019	251.1	2029	234.0	2039	220.3
2010	251.4	2020	249.4	2030	232.2	2040	219.4
2011	251.0	2021	248.4	2031	230.4	2041	218.5
2012	251.4	2022	247.3	2032	228.8	2042	217.6
2013	252.5	2023	245.9	2033	227.3	2043	216.8
2014	253.0	2024	244.3	2034	225.8	2044	216.0
2015	251.7	2025	242.5	2035	224.6	2045	215.3
2016	250.2	2026	240.3	2036	223.4	2046	214.7
2017	248.5	2027	238.0	2037	222.3	2047	214.1
2018	249.9	2028	235.9	2038	221.3	2048	213.5

Net ANS Gas consumption refers to gas produced for lease operations and for local sales to North Slope utilities and pipelines. Most gas produced is re-injected into the field for enhanced oil recovery and recycling. Historic quantities of injected gas are shown in Table I.5. Gas injection is expected to remain fairly constant at about 8 Bcf per day for the foreseeable future. Many factors influence the quantity of gas used for lease operations, including demand for power, oil field compression and pipeline pump stations. New field and satellite development will, to some extent, offset the decline in gas used for lease operations and pipelines in mature fields. Also, many North Slope fields are "gas constrained" meaning that oil production is limited by gas handling capacity. The forecast of net ANS gas consumption is based on an ordinary least squares regression of the historic relationship between net ANS gas consumption and ANS crude oil production, taking into account major additions to gas handling capacity in 1990 (GHX1), 1995 (GHX2), and 2001 (MIX). Detailed estimation results are available on request.

Figure I.6
Schematic Gas Production Forecast, Cook Inlet

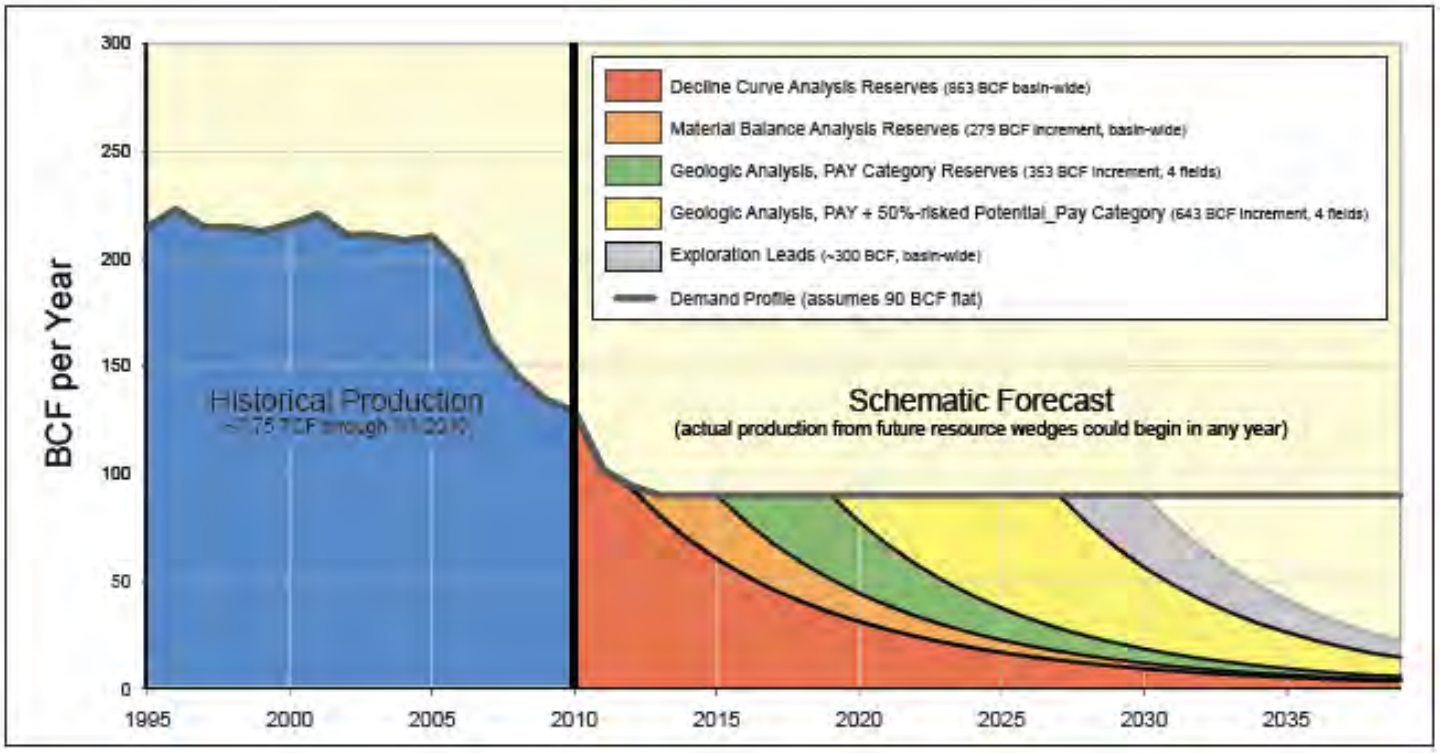


Figure I.6 was first published in the report referred to below as part of a preliminary engineering and geological evaluation of remaining Cook Inlet Gas Reserves. For full context of this graph, please refer to the full report.

Hypothetical production forecast for the Cook Inlet basin showing increments of reserves and resources identified by engineering and geological analyses discussed in text. This schematic diagram assumes that near-term production will come from gas volumes documented by the most conservative estimation techniques. Successive wedges are introduced with progressively lower certainty regarding commerciality, volume, and timing of first production. Production from future resource wedges could begin in any year, resulting in a more complex forecast, and extending the production lifespan of previous wedges. On the other hand, we are unable to predict the commercial thresholds at which volumes from future wedges become economic to recover. Wedges show gas volume increments from basin-wide decline curve analyses (red), basin-wide material balance analyses (orange), deterministic geologic mapping of PAY (green), and 50 percent-risked Potential_Pay (yellow) in four large gas fields (Beluga River, North Cook Inlet, Ninilchik, and McArthur River Grayling gas sands). The last wedge (gray) is a more speculative estimate of aggregated gas volumes that may be recoverable from the exploration leads discussed in text. See text for additional discussion.

Source: Hartz, J.D., Kremer, M.C., Krouskop, D.L., Silliphant, L.J., Houle, J.A., Anderson P.C., and LePain, D.L., 2009, Decker, P.L., ed., Preliminary engineering and geological evaluation of remaining Cook Inlet gas reserves: Alaska Division of Oil and Gas report, 37 p., available online at: http://www.dog.dnr.state.ak.us/oil/

Section Two: Royalty Production and Revenue

Introduction

The state of Alaska receives a royalty of approximately 12.5 percent of the oil and gas produced from its leases. The state may take its share of oil production "in-kind" or "in-value." When the state takes its royalty share in-kind (RIK), it assumes possession of the oil or gas. The commissioner of Natural Resources may sell the RIK oil or gas in a competitive auction or through a noncompetitive sale negotiated with a single buyer. When the state takes its royalty in-value (RIV), the state's lessees who produce the oil or gas market the state's share along with their own share of production. The lessees remit cash payments on a monthly basis for the state's RIV share.

Over the last 30 years the state has taken about one-half of its royalty oil as RIK. The state has sold nearly 800 million barrels of RIK oil during this time, nearly all of it in-state. Pricing terms have been targeted to provide the state at least as great a price as would have been received had the royalty been taken in value. Volumes to be delivered are typically cast as targets within a defined range, rather than precise specifications of barrels. Lease terms require that when the state elects to take RIK it must provide 90-180 days notice (depending upon the lease) of a percentage of royalty to be taken in kind, rather than a specific number of barrels to be taken in kind; the uncertainty as to future production volumes makes a precise specification of RIK deliveries impossible."

These in-state sales have provided an important supply security, thereby stimulating Alaska's refining industry by providing long-term supplies of oil to each of the state's four refineries. Over the years, state RIK sales fueled many controversies and policy debates over the appropriate use of the state's natural resources.

Cook Inlet

In 1969 the commissioner of Natural Resources negotiated a sale of 100 percent of the state's royalty from Cook Inlet to the Alaska Oil and Refining Company. Within months of signing the contract, Alaska Oil and Refining Company merged with the Tesoro Petroleum Company. Tesoro subsequently built a new refinery in Nikiski on the Kenai Peninsula next to Chevron's refinery, built in 1964. Between 1969 and 1985 the state sold all of its Cook Inlet royalty oil to the Tesoro refinery. By 1980, the production decline in Cook Inlet prompted Tesoro to negotiate the first of several sales contracts with the state for supplies of RIK oil from the North Slope. By the end of 1985 Tesoro had replaced its Cook Inlet RIK volumes with supplies of RIK from the North Slope.

In 1987 the state began to export Cook Inlet RIK oil to the Chinese Petroleum Company. These volumes were produced from fields on the west side of the Cook Inlet after the federal government exempted Cook Inlet production from export administration regulations. The state sold 97 percent of the royalty production from the McArthur River, Trading Bay, North Trading Bay, and Granite Point fields in a series of one-year competitive auctions. In 1991 deliveries under the last Chinese Petroleum contract were halted under force majeure following the December 1989 eruption of the Mount Redoubt volcano. There have been no Cook Inlet RIK sales since (See Table IV.8.).

North Slope

Over the past 25 years, the state has held nine RIK sales involving portions of its Alaska North Slope (ANS) royalty oil production. These sales are summarized in Table IV.7 and Figure IV.3. In 1976, the state signed a six-year contract with Golden Valley Electric Association (GVEA), the electric utility in Fairbanks, to sell approximately 3,300 barrels of ANS crude oil per day as turbine fuel. GVEA did not exercise its option to take RIK until 1981 and it traded these volumes with Mapco (now Williams Alaska) in exchange for refined fuel. The state subsequently sold RIK ANS to GVEA in two other contracts until 1992. As in the first contract, GVEA traded these volumes with Mapco.

In 1978 the state contracted with Earth Resources Company of Alaska, predecessor to Mapco Alaska and Williams Alaska Petroleum Company, to supply 15 percent of Prudhoe Bay RIK oil production less the quantity dedicated to GVEA. This 25-year contract expired in December 2003. Williams received a maximum of 35,000 barrels per day of RIK

oil produced from the Prudhoe Bay Unit under this contract and supplemented this supply with new agreements for another 28,000 barrels per day.

In September 2003, the state negotiated a temporary contract with Williams for the period January 1, 2004, through March 31, 2004. The state also negotiated a new 10-year contract with Flint Hills Resources Alaska, LLC (FHR), signed by the Governor on March 9, 2004, enabling FHR to take over the Williams' North Pole refinery on March 31. Deliveries of royalty oil under the new RIK contract began April 1, 2004. The state sold approximately 57,537 barrels per day to FHR, or more than 64 percent of the total royalty oil produced on the North Slope for the period January 1 through December 31, 2008.

The contract contained special conditions which serve as additional consideration for FHR's purchase of the state's royalty oil. FHR will maintain gasoline wholesale rack price parity between Anchorage and Fairbanks. FHR has invested approximately $100 million to install clean fuels processing equipment and facilities in the North Pole Refinery and/or elsewhere in Alaska. It has fulfilled and enhanced the previous commitments made by Williams to the Government Hill Community Council in Anchorage to address concerns about gasoline storage tanks near Government Hill and has undertaken additional projects to improve the Anchorage Tank Farm Facility. FHR will also continue to ship refined products to Anchorage via the Alaska Railroad, (FHR shipments represented 41 percent of the total freight loadings for the Alaska Railroad for 2008).

In Fairbanks, FHR has studied the use and viability of the hydrant fueling system at the Fairbanks International airport (FIA), concentrating on promoting FIA to cargo carriers, evaluating and upgrading FIA fuel distribution facilities, and charging a jet fuel customer in Fairbanks the same or lower price as FHR charges that same customer in Anchorage. FHR met all of these conditions for 2008 and has performed upgrades of their fueling facilities at FIA, primarily related to environmental remediation and compliance on their lease lot.

Tesoro has been an important North Slope RIK customer. Tesoro negotiated and bid for several contracts that supplied it with RIK supplies from 1980 to 1998. Chevron was another big purchaser of North Slope RIK for oil supplied to its Nikiski refinery from 1980 through 1991, when it finally shut down its Nikiski refinery. Petro Star Inc. purchased North Slope RIK from 1986 through 1991 for its new refinery at North Pole. In 1992 Petro Star negotiated a 10-year contract with the state for a supply of RIK from the Kuparuk River Unit. With this contract in hand, Petro Star was able to build the state's newest refinery in Valdez. As it happened, Petro Star elected to take no oil under this contract and the contract expired automatically nine months after it had been signed.

The state also held competitive auctions of RIK oil during the early 1980s as part of a program to routinely offer RIK short-term contracts. Winners of these sales included in-state refineries but also several refineries located outside the state. Many of these buyers were also ANS producers. About 46 million barrels of Alaska North Slope RIK crude oil were sold in these auctions but the program was interrupted after the general collapse of oil prices in the mid-1980s. In January 2000, the Division of Oil and Gas published a Notice of Interest in Sale of State Royalty Oil. The response to this notice by prospective RIK purchasers prompted the division to plan for a competitive bid auction for volumes of RIK oil produced from several North Slope fields. The sale was subsequently held in August 2000 but no bids were offered.

Royalty-in-Kind Policy

The earliest RIK sales, notably Tesoro's first Cook Inlet contract, the first GVEA contract, and the Alpetco contract, generated controversy and debate in the state. Several issues arose as the RIK program evolved. Is the state better off negotiating sales one-on-one or auctioning RIK through competitive tenders? How much public input should be encouraged? Should the state subsidize the local refining industry through price breaks? What kind of oversight should be required? The debates of these questions led to the present program as set out in statutes and regulations.

When disposing royalty oil or gas, the commissioner is bound by AS 38.05.182 and AS 38.05.183. Further, the Legislature established the Alaska Royalty Oil and Gas Development Board (Royalty Board) under AS 38.06 to oversee the department's RIK program. Regulations under Title 11, Chapters 3 and 26 govern the actual disposition of royalty and the sale of RIK. (See http://www.legis.state.ak.us/folhome.htm for more information).

The rules that govern the sale of RIK may be reduced to a few principles:

- Any disposition of the state's royalty must be in the state's best interest. The state should sell its royalty rather than take it in-value as long as the best interests of the state are served.

- The state must receive a price for its RIK that is at least as much as it receives when the state takes its royalty in-value.
- Under certain circumstances, the state may sell its oil in a negotiated sale, but competitive sales are preferred.
- Although the price of RIK must equal or exceed the price of RIV, a review of each sale must consider economic, social, and environmental effects. In this way, benefits may be attributed to the sale of RIK to local refineries that would not be generated by sales to outside purchases.
- The public is a part of the process. Depending on the terms of the sale, the commissioner will publish best interest findings and solicit comments on the sale from the public.
- The Royalty Board must be notified of any disposition of RIK. For supply contracts of more than one year, the Royalty Board must evaluate the economic, social, and environmental effects of the sale, convene a public hearing, and recommend approval of the sale to the Legislature.
- The Legislature approves long-term contracts by enacting legislation
- The near-universal practice of the Department is to make its sales at or near the location of production. The RIK buyers take title upstream of necessary transportation infrastructure, and must arrange for transportation themselves. In this way, transportation risks are borne by the purchaser, and the state minimizes its need for staffing to administer RIK sales.

Table II.1 Recent Royalty Oil Production & Revenues

	Lease Operation	Badami Unit RIV	Badami Unit RIK	TOTAL Badami Unit	Colville River Unit RIV	Colville River Unit RIK	TOTAL Colville River Unit	Duck Island Unit RIV	"Duck Island Unit RIK"	"TOTAL Duck Island Unit"	"Kuparuk River Unit RIV "	"Kuparuk River Unit RIK"	"TOTAL Kuparuk River Unit"
Production (Thousands of Barrels)													
1997	-	-	-	-	-	-	-	3,324.4	-	3,324.4	10,978.3	-	10,978.3
1998	-	106.1	-	106.1	-	-	-	2,692.5	-	2,692.5	10,886.2	-	10,886.2
1999	-	179.2	-	179.2	1.3	-	1.3	2,263.3	-	2,263.3	10,822.0	-	10,822.0
2000	-	144.6	-	144.6	196.6	-	196.6	1,943.1	-	1,943.1	9,897.9	-	9,897.9
2001	-	104.0	-	104.0	2,785.5	-	2,785.5	1,696.9	-	1,696.9	9,076.4	-	9,076.4
2002	-	87.0	-	87.0	3,403.4	-	3,403.4	1,483.5	-	1,483.5	8,921.6	-	8,921.6
2003	0.6	42.1	-	42.1	3,777.1	-	3,777.1	1,535.1	-	1,535.1	8,905.8	-	8,905.8
2004	-	-	-	-	3,642.3	-	3,642.3	834.3	390.2	1,224.5	7,976.8	305.3	8,282.1
2005	2.1	22.2	-	22.2	4,262.4	-	4,262.4	51.2	1,026.3	1,077.5	4,498.6	3,138.0	7,636.6
2006	-	56.3	15.9	72.2	3,273.9	404.6	3,678.5	43.8	819.3	863.1	2,120.3	5,080.6	7,200.8
2007	-	33.7	-	33.7	3,469.1	936.4	4,405.5	27.1	752.1	779.3	918.0	5,693.7	6,611.7
2008	-	-	-	-	2,320.5	1,587.3	3,907.8	29.1	761.9	790.9	402.0	5,695.7	6,097.7
Revenues (Thousands of Dollars)													
1997	-	-	-	-	-	-	-	$42,866	-	$42,866	$150,137	-	$150,137
1998	-	$572	-	$572	-	-	-	$18,147	-	$18,147	$82,772	-	$82,772
1999	-	$1,992	-	$1,992	$57	-	$57	$26,461	-	$26,461	$136,802	-	$136,802
2000	-	$2,612	-	$2,612	$4,539	-	$4,539	$42,350	-	$42,350	$220,539	-	$220,539
2001	-	$1,051	-	$1,051	$47,972	-	$47,972	$31,796	-	$31,796	$160,694	-	$160,694
2002	-	$108	-	$108	$62,818	-	$62,818	$27,128	-	$27,128	$173,379	-	$173,379
2003	$15	$46	-	$46	$89,684	-	$89,684	$35,753	-	$35,753	$211,369	-	$211,369
2004	-	-$0	-	-$0	$122,667	-	$122,667	$24,455	$14,219	$38,674	$255,120	$11,578	$266,699
2005	$85	$876	-	$876	$201,866	-	$201,866	$6,831	$47,365	$54,197	$186,238	$159,863	$346,101
2006	-	$2,070	$484	$2,554	$193,449	$21,825	$215,274	-$2,937	$46,279	$43,343	$109,198	$295,880	$405,078
2007	$25	$899	-	$899	$248,989	$72,853	$321,843	$1,451	$48,036	$49,486	$56,131	$373,458	$429,589
2008	-	$273	$1	$274	$207,408	$155,372	$362,779	$7,161	$71,112	$78,273	$47,425	$515,948	$563,372

Revenues include interest from revisions and settlements in the year received.

	"Milne Point Unit RIV"	"Milne Point Unit RIK"	"TOTAL Milne Point Unit"	Northstar Unit RIV	Northstar Unit RIK	TOTAL Northstar Unit	"Prudhoe Bay Unit RIV"	"Prudhoe Bay Unit RIK"	"TOTAL Prudhoe Bay Unit"	"TOTAL North Slope"
Production (Thousands of Barrels)										
1997	2,657.0	-	2,657.0	-	-	-	18,399.6	26,139.6	44,539.2	61,498.8
1998	2,833.4	-	2,833.4	-	-	-	11,810.5	27,981.6	39,792.1	56,310.2
1999	2,699.2	-	2,699.2	-	-	-	15,508.5	19,070.7	34,579.2	50,544.1
2000	2,613.9	-	2,613.9	-	-	-	13,053.5	19,290.3	32,343.8	47,140.0
2001	2,687.9	-	2,687.9	212.9	-	212.9	13,643.5	15,187.0	28,830.6	45,394.3
2002	2,570.7	-	2,570.7	4,009.3	-	4,009.3	11,794.8	15,509.5	27,304.4	47,779.8
2003	2,569.7	-	2,569.7	5,236.7	-	5,236.7	5,489.2	20,630.5	26,119.8	48,186.9
2004	1,534.2	1,039.7	2,573.9	2,661.6	3,004.6	5,666.2	5,641.0	18,478.1	24,119.2	45,508.2
2005	111.5	2,088.1	2,199.7	5,065.9	-	5,065.9	5,547.1	16,545.2	22,092.3	42,358.7
2006	193.4	1,635.8	1,829.2	1,235.8	3,030.4	4,266.2	6,467.6	11,287.2	17,754.8	35,665.0
2007	527.4	1,158.0	1,685.3	1,786.3	1,349.1	3,135.4	345,910.4	846,510.8	18,286.2	34,937.2
2008	58.7	1,563.1	1,621.7	2,325.1	-	2,325.1	568,727.7	1,054,475.7	18,025.0	32,800.3
Revenues (Thousands of Dollars)										
1997	$33,777	-	$33,777	-	-	-	$242,341	$383,701	$626,042	$852,822
1998	$18,608	-	$18,608	-	-	-	$73,462	$227,032	$296,313	$416,413
1999	$31,596	-	$31,596	-	-	-	$170,204	$259,246	$429,450	$626,358
2000	$56,730	-	$56,730	-	-	-	$275,928	$461,464	$737,392	$1,064,162
2001	$47,356	-	$47,356	$1,584	-	$1,584	$236,464	$279,804	$516,268	$806,722
2002	$48,818	-	$48,818	$75,797	-	$75,797	$201,726	$320,378	$522,104	$910,151
2003	$61,255	-	$61,255	$123,753	-	$123,753	$114,558	$507,952	$622,509	$1,144,385
2004	$44,971	$37,287	$82,258	87,502	109,196	196,698	$172,637	$631,864	$804,501	$1,511,495
2005	$4,786	$94,638	$99,424	243,095	104	243,199	$239,535	$805,939	$1,045,474	$1,991,222
2006	$9,858	$92,003	$101,860	73,483	183,156	256,639	$369,888	$651,728	$1,021,616	$2,046,364
2007	$35,921	$69,239	$105,160	148,025	88,623	236,647	$345,910	$846,511	$1,192,421	$2,336,071
2008	$12,494	$142,604	$155,098	221,582	2,184	223,767	$568,728	$1,054,476	$1,623,203	$3,008,793

Table II.1 Recent Royalty Oil Production & Revenues

	"Granite Point Field"	"South Granite Point Unit"	"North Middle Ground Shoal"	"Middle Ground Shoal"	"South Middle Ground Shoal"	"Trading Bay Field"	"Trading Bay Unit"	"West McArthur Unit"	Redoubt Unit	Cosmopoli-tan Unit	"TOTAL Cook Inlet"	TOTAL STATE
Production (Thousands of Barrels)												
1997	303.5	-	42.0	150.6	26.8	75.1	632.4	80.6	-	-	1,311.0	62,809.8
1998	259.8	-	44.7	196.0	28.8	87.1	602.4	116.2	-	-	1,335.0	57,645.2
1999	172.4	51.0	38.2	181.9	24.6	82.7	587.2	114.3	-	-	1,252.2	51,796.3
2000	119.2	98.5	43.5	170.5	22.8	79.6	602.8	111.6	-	-	1,248.6	48,388.5
2001	109.3	92.9	39.7	194.4	19.8	72.3	671.1	152.9	-	-	1,352.4	46,746.7
2002	105.2	85.8	27.1	197.1	20.8	74.6	697.0	127.3	2.3	-	1,337.2	49,117.1
2003	98.8	80.0	11.8	177.4	-	68.7	538.6	106.1	45.5	1.0	1,127.9	49,314.8
2004	84.0	77.4	-	165.3	-	58.0	424.6	83.7	28.0	-	920.8	46,429.0
2005	75.2	67.5	-	164.7	-	51.8	340.3	64.6	15.6	-	779.7	43,138.4
2006	73.7	46.9	-	148.9	-	49.1	284.0	54.6	13.4	-	670.6	36,335.5
2007	64.1	48.6	-	114.0	-	34.4	230.5	48.1	7.7	-	547.3	35,484.5
2008	61.3	44.9	-	109.2	-	19.9	174.7	39.6	4.7	-	454.4	33,254.7
Revenues (Thousands of Dollars)												
1997	$5,175	-	$764	$3,655	$490	$1,192	$10,561	$1,795	-	-	$23,633	$876,456
1998	$2,813	-	$544	$2,244	$346	$853	$5,902	$1,107	-	-	$13,809	$430,222
1999	$2,090	$1,388	$662	$3,073	$406	$1,261	$8,917	$1,583	-	-	$19,380	$645,738
2000	$4,201	$3,840	$1,491	$4,647	$821	$2,632	$17,073	$2,790	-	-	$37,495	$1,101,657
2001	$2,515	$2,051	$959	$4,338	$476	$1,522	$13,908	$2,941	-	-	$28,710	$835,432
2002	$2,337	$1,850	$619	$5,428	$494	$1,609	$14,992	$2,680	$54	-	$30,062	$940,214
2003	$2,633	$2,249	$349	$5,103	$2	$1,876	$14,693	$2,736	$1,140	$19	$30,801	$1,175,186
2004	$3,066	$2,764	-	$11,544	-	$2,021	$14,732	$2,807	$900	-	$37,835	$1,549,330
2005	$3,712	$3,354	-	$8,710	-	$2,509	$16,641	$3,089	$802	-	$38,819	$2,030,041
2006	$4,287	$2,855	-	$9,328	-	$2,905	$17,020	$3,299	$754	-	$40,449	$2,086,813
2007	$4,591	$3,259	-	$8,028	-	$1,632	$15,851	$3,098	$485	-	$36,944	$2,373,015
2008	$5,974	$4,485	-	$10,880	-	$2,104	$17,483	$3,929	$521	-	$45,406	$3,054,199

Revenues include interest from revisions and settlements in the year received.

Table II.2 Recent Royalty Oil Production by Lessee

NORTH SLOPE

Production (Thousands of Barrels)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Amerada Hess	-	-	-	-	-	-	-	-	-	-	-	-
Amoco	297	237	199	119	-	-	-	-	-	-	-	-
Anadarko	-	-	$0	43	613	749	831	801	938	720	763	511
Arco	11,120	9,522	10,729	-	-	-	-	-	-	-	-	-
Armstrong	-	-	-	-	-	-	<1	<1	1	-	-	-
BPAmerica Prod Co.	-	-	-	-	-	95	165	-	-	-	-	-
BP Exploration	16,683	13,595	14,233	11,869	11,075	14,451	13,898	9,555	8,527	4,109	4,282	4,409
Chevron	99	64	91	77	81	116	66	60	59	66	52	69
CIRI	30	1	-	-	-	-	-	-	-	-	-	-
ConocoPhillips AK	-	-	-	-	-	11,225	9,250	9,145	7,912	6,269	5,363	4,571
DOYON	6	5	4	4	3	3	3	1	<1	<1	<1	$0
ENI Petroleum US LLC											<1	$10
Exxon	5,571	3,563	4,815	-	-	-	-	-	-	-	-	-
ExxonMobil	-	-	-	4,596	5,287	4,284	-	-	-	-	-	-
ExxonMobil AK Production	-	-	-	-	-	-	1,926	1,899	1,886	2,118	1,649	2,192
Forest Oil	5	3	4	2	2	2	1	1	1	1	-	-
Kerr McGee	-	-	-	-	-	-	-	1	1	-	5	1
Mapco 1978 Contract	12,652	11,148	12,442	12,718	12,522	12,167	12,583	-	-	-	-	-
Mapco 1997 Contract	466	4,451	-	-	-	-	-	-	-	-	-	-
Marathon	-	-	-	-	-	-	-	-	-	-	-	-
Mobil	237	155	195	-	-	-	-	-	-	-	-	-
NANA	18	14	12	11	8	8	8	4	<1	<1	<1	$0
Oxy	208	224	212	189	-	-	-	-	-	-	-	-
Petrofina	-	32	54	43	31	-	-	-	-	-	-	-
Phuntllc	190	113	151	10,201	12,482	-	-	-	-	<1	<1	$0
Phillips	-	-	-	-	-	-	-	-	-	-	-	-
Phillips Alpine Alaska	-	-	-	-	-	749	831	352	-	-	-	-
Pioneer	-	-	-	-	-	-	<1	-	-	-	-	-
Tesoro	13,022	11,498	-	-	-	-	-	-	-	-	-	-
Texaco	52	31	41	35	38	18	-	-	-	-	-	-
TotalFina ELF	-	-	-	-	-	-	-	-	-	-	-	-
Union Texas Petroleum	-	-	-	-	-	-	-	-	-	-	-	-
Unocal	842	771	732	659	587	570	576	468	227	108	85	23
Williams 98 Contract	-	884	6,628	6,572	2,665	3,342	8,056	5,582	-	-	-	-
Flint Hills Resources AK, LLC	-	-	-	-	-	-	-	17,632	22,797	22,274	22,775	20,993
XTOE	-	-	-	-	-	-	-	2	-	-		
North Slope TOTAL	61,499	56,312	50,544	47,140	45,394	47,780	48,194	45,505	42,349	35,665	34,974	32,778

COOK INLET

Production (Thousands of Barrels)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Conoco Phillips AK	-	-	-	-	-	-	1	-	-	-	-	-
Cross Timbers/XTO	-	-	182	170	194	197	177	165	165	149	114	109
Devon	-	-	-	-	-	-	<1	-	-	-	-	-
Forcenergy/Forest Oil	377	436	425	428	495	491	436	337	264	224	180	-
Marathon	-	-	-	-	-	-	-	-	-	-	-	-
Mobil/Exxon Mobil AK Prod	110	91	76	74	70	64	60	58	51	35	36	34
Pacific Energy AK	-	-	-	-	-	-	-	-	-	-	-	142
Pioneer	-	-	-	-	-	-	-	-	-	-	-	<1
Shell	151	196	-	-	-	-	-	-	-	-	-	-
Stewart	30	-	-	-	-	-	-	-	-	-	-	-
Unocal	643	612	569	576	593	585	454	360	301	263	217	169
XTOE	-	-	-	-	-	-	-	-	-	-	-	-
Cook Inlet TOTAL	1,311	1,335	1,252	1,249	1,352	1,337	1,128	921	780	671	547	454

Table II.3 Recent Royalty Oil Revenues by Lessee

NORTH SLOPE

Revenues (Thousands of Dollars)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Amerada Hess	$34	-	-	-	-	-	-	-	-	-	-	-
Amoco	$3,674	$1,556	$2,404	$2,562	-$0	-	-	-	-	-	-	-
Anadarko	-	-	$12	$982	$10,374	$14,180	$20,057	$27,427	$45,375	$43,352	$44,825	$44,803
Arco	$155,281	$72,786	$135,879	-	-	-	-	-	-	-	-	-
Armstrong	-	-	-	-	-	-	$4	-	$26	-	-	-
BPAmerica Prod Co.	-	-	-	-	-	-	$3,934	-	-	-	-$266	$399
BP Exploration	$216,022	$85,263	$158,955	$249,682	$208,250	$267,287	$325,241	$301,848	$391,141	$318,659	$295,849	$463,851
Chevron	$1,274	$368	$1,044	$1,608	$1,422	$2,070	$1,437	$1,745	$2,650	$10,694	$2,834	$6,452
CIRI	$423	$12	-	-	-	$160	-	-	-	-	-	-
ConocoPhillips AK	-	-	-	-	-	$211,239	$214,806	$297,445	$353,413	$337,580	$329,594	$414,119
DOYON	$83	$41	$39	$82	$54	$44	$64	$40	$4	$125	$3	$5
ENI Petroleum US LLC											$8	$516
Exxon	$71,707	$19,733	$52,342	-	-	-	-	-	-	-	$7	$34
ExxonMobil	-	-	-	$98,415	$83,945	-	-	-	-	-	$5,312	-$1,899
ExxonMobil AK Production	-	-	-	-	-	$69,780	$37,737	$54,093	$81,549	$130,038	$86,726	$200,463
Forest Oil	$63	$17	$43	$50	$38	$37	$18	$29	$43	$19,759	-	-
Kerr McGee	-	-	-	-	-	-	-	$22	$60	-	$372	$46
Mapco 1978 Contract	$185,000	$90,752	$166,427	$304,389	$223,123	$247,246	$310,960	-$179	-	-	-	-
Mapco 1997 Contract	$6,032	$38,590	-$60	$90	$1,075	-	-	-	-	-	-	-
Marathon	$1	-	-	-	-	-	-	-	-	-	-	-
Mobil	$3,026	$851	$2,166	-	-	-	-	-	-	-	-	-
NANA	$255	$122	$120	$220	$163	$131	$221	$121	$12	$455	$78	$14
Oxy	$2,778	$1,533	$2,626	$4,290	-	-	-	-	-	-	-	-
Petrofina	-	$185	$616	$807	$284	-	-	-	-	-		
Phuntllc	$2,377	$752	$1,379	$228,306	$211,865	-	-	-	-	$97	$7	$11
Phillips	-	-	-	-	-	-	-	-	-	-		
Phillips Alpine Alaska	-	-	-	-	-	$13,718	$19,638	$10,244	-	-	$4,274	-
Pioneer	-$5	-	-	-	-	-	$10	-	-	-	-	$1,231
Tesoro	$192,669	$92,288	$191	-$623	$1,632	$887	-	-	-	-	-	-
Texaco	$664	$149	$398	$842	$653	$270	-	-	-	-	$7	$38
TotalFina ELF	-	-	-	-	-	-	-	-	-	-	-	-
Union Texas Petroleum	-	-	$12	-	-	-	-	-	-	-	-	-
Unocal	$11,463	$6,013	$9,078	$14,851	$9,868	$10,858	$13,265	$14,250	$8,962	$5,897	$4,694	$2,509
Williams 98 Contract	-	$5,402	$92,688	$157,608	$53,975	$72,245	$196,991	$162,716	-	-	$15,012	$21,895
Flint Hills Resources AK, LLC	-	-	-	-	-	-	-	$641,607	$1,107,909	$1,179,502	$1,483,777	$1,933,190
XTOE	-	-	-	-	-	-	-	$87	$78	$205	$6	-
North Slope TOTAL	$852,822	$416,412	$626,358	$1,064,162	$806,721	$910,151	$1,144,385	$1,511,495	$1,991,222	$2,046,364	$2,273,118	$3,087,678

COOK INLET

Revenues (Thousands of Dollars)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2007
Conoco Phillips AK	-	-	-	-	-	-	$13	-	-	-	-	-
Cross Timbers/XTO	-	-	$3,073	$4,647	$4,338	$5,428	$5,103	$6,406	$8,710	$8,695	-	-
Devon	-	-	-	-	-	-	$1	-	-	-	-	-
Forcenergy/Forest Oil	$6,166	$4,209	$6,296	$10,950	$9,831	$10,522	$11,521	$11,509	$12,867	$13,696	$7,318	$767
Marathon	-$7	-	-	-	-	-	-	-	-	-	-	-
Mobil/Exxon Mobil AK Prod	$1,882	$1,094	$1,165	$1,824	$1,525	$1,348	$1,692	$2,068	$2,511	$2,253	$2,361	$3,542
Pacific Energy AK	-	-	-	-	-	-	-	-	-	-	$4,685	$14,565
Pioneer	-	-	-	-	-	-	-	-	-	-	-	<1
Shell	$3,655	$2,244	-	-	-	-	-	$5,138	-	-	-	-
Stewart	$1,104	-	-	-	-	-	-	-	-	-	-	-
Unocal	$10,834	$6,262	$8,846	$20,074	$13,016	$12,764	$12,471	$12,714	$14,731	$15,805	$13,933	$17,637
XTOE	-	-	-	-	-	-	-	-	-	-	$7,879	$11,370
Cook Inlet TOTAL	$23,633	$13,809	$19,380	$37,495	$28,710	$30,062	$30,801	$37,835	$38,819	$40,449	$36,177	$47,880

Revenues include principal and interest from revisions and settlements in the year received.

Table II.4 Recent Royalty Gas Production and Revenues

NORTH SLOPE

	Duck Island Unit	Colville River Unit	Kuparuk River Unit	Milne Point Unit	Prudhoe Bay Unit	TOTAL North Slope
Production (Thousand Cubic Feet)						
1997	35,605	-	90,487	26,034	1,337,301	1,489,427
1998	36,255	-	79,552	27,156	1,178,761	1,321,724
1999	168,919	-	78,783	27,611	1,092,217	1,367,530
2000	31,785	-	135,929	27,436	1,061,761	1,256,911
2001	30,780	-	98,806	28,978	1,341,442	1,500,006
2002	32,108	-	82,610	29,718	3,711,424	3,855,861
2003	33,192	-	79,039	28,845	5,572,705	5,713,781
2004	29,424	-	76,746	29,639	5,260,659	5,396,467
2005	36,975	-	70,082	29,362	4,872,422	5,008,840
2006	33,750	56,501	56,033	28,612	4,509,689	4,684,585
2007	45,234	53,053	57,481	28,273	3,854,182	4,038,223
2008	35,722	58,797	74,246	29,664	3,011,092	3,209,521
Revenues (Thousands of Dollars)						
1997	$31	-	$63	$28	$1,155	$1,278
1998	$28	-	$32	$24	$950	$1,033
1999	$150	-	$51	$26	$938	$1,165
2000	$40	-	$161	$34	$1,156	$1,390
2001	$33	-	$119	$32	$1,114	$1,298
2002	$37	-	$79	$34	$3,592	$3,742
2003	$45	-	$91	$40	$6,508	$6,685
2004	$57	-	$123	$54	$8,296	$8,529
2005	$87	-	$163	$72	$10,801	$11,123
2006	$104	$33	$154	$84	$11,943	$12,318
2007	$127	$102	$184	$95	$11,395	$11,903
2008	$162	$78	$343	$132	$12,110	$12,825

Revenues include principal and interest from revisions and settlements in the year received.

Table II.4 Recent Royalty Gas Production and Revenues

COOK INLET

	Beluga River Unit	Cannery Loop Unit	South Granite Point Unit	Granite Point Field	Ivan River Unit	Kenai Unit	Lewis River Unit	Nicolai Creek Unit	Kasilof Unit	North Middle Ground Shoal Unit	North Cook Inlet Unit	Pretty Creek Unit
Production (Thousand Cubic Feet)												
1997	2,628,297	186,477	-	141,763	935,228	140,655	7,057	-	-	17,965	6,490,318	53,928
1998	2,508,785	163,775	1,127	162,690	800,046	111,751	11,959	-	-	131,092	6,665,243	61,640
1999	2,704,980	167,759	28,102	67,573	631,597	111,459	29,916	-	-	246,030	6,372,036	3,982
2000	2,913,658	236,492	55,787	73,754	461,437	149,187	16,232	-	-	72,167	6,548,758	-
2001	3,143,083	318,033	5,491	59,671	667,307	234,786	26,852	32,297	-	52,739	6,732,002	11,471
2002	3,313,302	286,118	3,859	34,936	756,028	233,375	111,535	28,957	-	14,404	6,537,260	193,370
2003	4,236,014	395,810	2,042	10,580	432,649	321,372	71,284	9,601	-	11,688	5,773,799	60,292
2004	4,339,085	745,310	169	15,573	289,865	191,573	45,255	29,235	-	-	5,012,401	93,122
2005	4,206,401	767,320	-	5,717	206,552	170,820	39,710	5,369	-	-	5,457,333	57,945
2006	4,167,893	593,894	-	4,374	191,634	136,643	5,227	15,193	107,898	-	4,566,013	1,311
2007	3,573,844	455,194	-	753	157,080	105,502	-	17,367	217,101	-	3,457,438	8,643
2008	3,181,489	323,424	-	-	80,285	40,391	28,718	7,102	63,813	-	2,776,690	3,737
Revenues (Thousands of Dollars)												
1997	$4,598	$325	-	$192	$1,319	$249	$10	-	-	$24	$12,054	$76
1998	$4,265	$232	$1	$221	$1,071	$157	$16	-	-	$160	$8,874	$82
1999	$3,783	$272	$30	$82	$758	$294	$36	-	-	$301	$8,914	$5
2000	$4,657	$483	$58	$215	$5,339	$298	$508	-	-	$808	$14,058	$678
2001	$6,947	$1,216	$6	$82	$933	$476	$38	$62	-	$89	$14,301	$18
2002	$7,586	$748	$4	$50	$1,057	$454	$160	$18	-	$21	$12,562	$276
2003	$9,479	$836	$6	$179	$2,904	$701	$335	$17	-	$60	$12,159	$379
2004	$11,706	$1,984	$1	$44	$814	$460	$126	$38	-	-	$11,600	$263
2005	$15,257	$2,837	<1	$20	$742	$534	$139	$35	-	-	$14,987	$196
2006	$15,275	$3,139	-	$19	$1,171	$502	$18	$60	$463	-	$14,546	$13
2007	$14,892	$1,991	-	$4	$1,249	$467	-	$105	$877	-	$8,601	$158
2008	$14,263	$1,609	-	-$0	$618	$197	$221	$42	$129	-	$13,564	$29

	Spark Platform	Sterling Unit	North Trad-ing Bay Unit	Stump Lake Unit	Trading Bay Field	Trading Bay Unit	Redoubt Unit	Ninilchik Unit	West Mcar-thur River Unit	Deep Creek Unit	Three Mile Creek Unit	TOTAL Cook Inlet	TOTAL State
Production													
1997	62,872	81	-	30,942	19,031	6,982,452	-	-	-	-	-	17,697,067	19,186,494
1998	85,882	4	-	18,332	-	7,841,950	-	-	-	-	-	18,564,277	19,886,001
1999	28,044	15	-	11,978	-	7,333,019	-	-	-	-	-	17,736,489	19,104,019
2000	-	4,384	18,632	6,839	-	6,802,700	-	-	-	-	-	17,360,027	18,616,938
2001	-	8,820	-	56	-	6,509,275	-	-	-	-	-	17,801,883	19,301,889
2002	-	11,655	-	-	-	5,198,621	-	-	2,655	-	-	16,726,074	20,581,934
2003	-	7,195	11,954	69	-	4,016,601	12,954	287,241	19,673	-	-	15,680,818	21,394,599
2004	-	6,921	2,130	-	-	3,360,804	-	1,094,310	22,119	4,191	-	15,252,063	20,648,530
2005	-	60,491	50,616	-	-	3,155,258	5,299	1,225,767	38,432	54,600	48,533	15,556,163	20,565,004
2006	-	71,748	210	-	-	2,500,006	29,082	1,701,051	58,436	48,568	67,010	14,266,190	18,950,775
2007	-	56,191	92	-	-	2,116,402	5,664	1,877,107	34,700	42,572	33,253	12,158,901	16,197,125
2008	-	41,873	-	-	-	2,112,878	1,600	1,841,946	15,785	34,557	28,275	10,582,563	13,792,084
Revenues													
1997	$94	$0	-	-	$23	$10,148	-	-	-	-	-	29,112	$30,390
1998	$118	$8	-	$0	-	$10,769	-	-	-	-	-	25,974	$27,007
1999	$32	$0	-	$13	-	$8,918	-	-	-	-	-	23,436	$24,601
2000	-	$7	$26	$1,254	$2	$10,743	-	-	-	-	-	39,134	$40,524
2001	-	$16	$6	$0	-	$12,636	-	-	-	-	-	36,826	$38,124
2002	-	$26	-	-	-	$9,632	-	-	-	-	-	32,595	$36,337
2003	-	$16	$28	$5	-	$14,806	$16	$681	-	-	-	42,606	$49,290
2004	-	$19	$5	-	-	$9,042	-	$3,165	$90	$17	-	39,373	$47,903
2005	-	$209	$161	-	-	$10,787	$19	$4,302	$117	$235	$143	50,721	$61,844
2006	-	$337	$4	-	-	$10,761	$128	$8,014	$247	$240	$221	55,157	$67,475
2007	-	$304	$0	-	-	$10,808	$31	$10,833	$188	$313	$233	51,055	$62,958
2008	-	-$288	-	-	-	$12,105	$9	$8,528	$144	$211	$113	51,492	$64,316

Revenues include principal and interest from revisions and settlements in the year received.

Table II.5 Recent Royalty Gas Production by Lessee

NORTH SLOPE

Revenue (Thousands of Dollars)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Anadarko	-	-	-	-	-	-	-	-	-	$7	$15	$17
Arco	$325	$297	$344	-	-	-	-	-	-	-	-	-
BP Am Prod. Co	-	-	-	-	-	-	$3	-	-	-	-	-
BPXA	$543	$451	$540	$539	$593	$3,054	$5,844	$7,527	$9,750	$10,835	$9,868	$11,225
Chevron	$33	$7	-	-	<1	<1	<1	<1	-	-	-	-
ConocoPhillips AK	-	-	-	-	-	$446	$538	$643	$865	$983	$1,187	$1,679
Exxon	$207	$183	$185	-	-	-	-	-	-	-	-	-
ExxonMobil	-	-	-	$318	$265	$242	$300	$360	$508	$493	$526	$704
Forest Oil	-	-	-	-	-	-	-	-	-	-	-	-
Kerr-McGee											$1	$1
Mobil	$128	$80	$87	-	-	-	-	-	-	-	-	-
NANA	$23	-	-	-	-	-	-	-	-	-	-	-
Oxy	$2	$2	$2	$2	-	-	-	-	-	-	-	-
PetroHunt										<1	-	-
Phillips	$15	$13	$7	$531	$440	-	-	-	-	-	-	-
Unocal	-	-	-	-	-	-	<1	<1	<1	<1	-	-
North Slope TOTAL	$1,278	$1,033	$1,165	$1,390	$1,298	$3,742	$6,685	$8,529	$11,123	$12,318	$11,596	$13,625

COOK INLET

Revenue (Thousands of Dollars)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Arco	$1,411	$1,262	$1,170	-	-	-	-	-	-	-	-	-
Aurora Power	-	-	-	-	$62	$18	$17	$38	$135	$222	$289	$113
Chevron	$1,551	$1,560	$1,605	$1,698	$3,136	$3,740	$4,373	$5,020	$6,293	$5,516	$6,725	$4,354
ConocoPhillips AK	-	-	-	-	-	$2,530	$3,747	$4,562	$6,766	$6,491	$5,070	$5,318
Conoco Phillips Co.			-	-	-	-	$12,159	$11,600	$14,987	$14,546	$8,870	$12,926
Forest Oil	-	-	-	-	-	-	$16	$90	$179	$433	$219	$39
Marathon	$6,061	$5,737	$5,557	$6,795	$10,429	$7,433	$6,777	$8,761	$12,113	$14,982	$14,708	$11,104
ExxonMobil	$47	$55	$22	-$0	$4	$3	$2	$0	-	-	-	-
Anchorage M, L & P	-	$1,443	$1,008	$1,082	$1,416	$1,316	$1,358	$2,022	$2,198	$3,268	$3,251	$4,398
Pacific Energy AK											$80	$157
Phillips	$12,054	$8,874	$8,914	$15,934	$16,697	$12,562	-	-	-	-	-	-
Shell	$1,636	-	-	-	-	-	-	$103	-		-	-
Unocal	$6,351	$7,035	$5,161	$13,624	$5,083	$4,993	$14,157	$7,178	$8,050	$9,699	$12,412	$12,599
Cook Inlet TOTAL	$29,112	$25,966	$23,436	$39,134	$36,826	$32,595	$42,606	$39,373	$50,721	$55,157	$51,622	$51,008

Revenues include principal and interest from revisions and settlements in the year received.

Table II.6 Recent Royalty Gas Revenues by Lessee

NORTH SLOPE

Revenue (Thousands of Dollars)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Anadarko	-	-	-	-	-	-	-	-	-	$7	$15	$17
Arco	$325	$297	$344	-	-	-	-	-	-	-	-	-
BP Am Prod. Co	-	-	-	-	-	-	$3	-	-	-	-	-
BPXA	$543	$451	$540	$539	$593	$3,054	$5,844	$7,527	$9,750	$10,835	$9,868	$11,225
Chevron	$33	$7	-	-	<1	<1	<1	<1	-	-	-	-
ConocoPhillips AK	-	-	-	-	-	$446	$538	$643	$865	$983	$1,187	$1,679
Exxon	$207	$183	$185	-	-	-	-	-	-	-	-	-
ExxonMobil	-	-	-	$318	$265	$242	$300	$360	$508	$493	$526	$704
Forest Oil	-	-	-	-	-	-	-	-	-	-	-	-
Kerr-McGee											$1	$1
Mobil	$128	$80	$87	-	-	-	-	-	-	-	-	-
NANA	$23	-	-	-	-	-	-	-	-	-	-	-
Oxy	$2	$2	$2	$2	-	-	-	-	-	-	-	-
PetroHunt										<1	-	-
Phillips	$15	$13	$7	$531	$440	-	-	-	-	-	-	-
Unocal	-	-	-	-	-	-	<1	<1	<1	<1	-	-
North Slope TOTAL	$1,278	$1,033	$1,165	$1,390	$1,298	$3,742	$6,685		$11,123	$12,318	$11,596	$13,625

COOK INLET

Revenue (Thousands of Dollars)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Arco	$1,411	$1,262	$1,170	-	-	-	-	-	-	-	-	-
Aurora Power	-	-	-	-	$62	$18	$17	$38	$135	$222	$289	$113
Chevron	$1,551	$1,560	$1,605	$1,698	$3,136	$3,740	$4,373	$5,020	$6,293	$5,516	$6,725	$4,354
ConocoPhillips AK	-	-	-	-	-	$2,530	$3,747	$4,562	$6,766	$6,491	$5,070	$5,318
Conoco Phillips Co.			-	-	-	-	$12,159	$11,600	$14,987	$14,546	$8,870	$12,926
Forest Oil	-	-	-	-	-	-	$16	$90	$179	$433	$219	$39
Marathon	$6,061	$5,737	$5,557	$6,795	$10,429	$7,433	$6,777	$8,761	$12,113	$14,982	$14,708	$11,104
ExxonMobil	$47	$55	$22	-$0	$4	$3	$2	$0	-	-	-	-
Anchorage M, L & P	-	$1,443	$1,008	$1,082	$1,416	$1,316	$1,358	$2,022	$2,198	$3,268	$3,251	$4,398
Pacific Energy AK											$80	$157
Phillips	$12,054	$8,874	$8,914	$15,934	$16,697	$12,562	-	-	-	-	-	-
Shell	$1,636	-	-	-	-	-	-	$103	-		-	-
Unocal	$6,351	$7,035	$5,161	$13,624	$5,083	$4,993	$14,157	$7,178	$8,050	$9,699	$12,412	$12,599
Cook Inlet TOTAL	$29,112	$25,966	$23,436	$39,134	$36,826	$32,595	$42,606	$39,373	$50,721	$55,157	$51,622	$51,008

Revenues include principal and interest from revisions and settlements in the year received.

Table II.7 North Slope Royalty-in-Kind Sales

	Alpetco	Chevron	Total GVEA	Total Williams (Mapco)	Flint Hills Resources, (FHR)	Tesoro	PetroStar	1st Competitive Sale	2nd Competitive Sale	Quasi-Competitive Sale	Total ANS RIK by year
1979	0	0	0	446,996	0	0	0	0	0	0	446,996
1980	12,020,950	882,414	0	5,976,024	0	3,427,388	0	0	0	0	22,306,777
1981	26,046,878	859,928	398,051	8,808,400	0	1,661,385	0	14,046,953	0	0	51,821,595
1982	898,714	0	764,762	9,632,099	0	36,841	0	1,432,108	0	0	12,764,524
1983	0	11,674,998	1,208,406	11,723,755	0	5,793,973	0	0	0	0	30,401,132
1984	0	14,053,279	1,870,505	13,093,397	0	7,531,155	0	0	0	0	36,548,337
1985	0	7,804,392	1,928,544	13,260,754	0	17,218,912	0	0	22,511,409	1,716,754	64,440,765
1986	0	6,934,482	1,881,232	13,168,483	0	23,538,192	52,667	0	4,686,801	1,862,051	52,123,908
1987	0	9,330,563	2,013,539	14,094,537	0	18,404,806	539,575	0	0	0	44,383,020
1988	0	9,315,264	1,981,998	13,814,522	0	18,307,014	590,833	0	0	0	44,009,631
1989	0	8,611,606	1,784,782	12,529,175	0	16,387,093	607,467	0	0	0	39,920,122
1990	0	8,099,292	1,670,494	12,735,412	0	15,368,565	621,220	0	0	0	38,494,983
1991	0	6,290,546	1,670,699	11,183,462	0	15,336,301	618,247	0	0	0	35,099,255
1992	0	0	803,407	6,285,005	0	14,412,460	0	0	0	0	21,500,872
1993	0	0	0	9,086,282	0	9,812,084	0	0	0	0	18,898,367
1994	0	0	0	11,986,495	0	10,452,726	0	0	0	0	22,439,220
1995	0	0	0	12,680,470	0	13,703,946	0	0	0	0	26,384,415
1996	0	0	0	13,027,646	0	14,345,621	0	0	0	0	27,373,267
1997	0	0	0	13,117,503	0	13,021,628	0	0	0	0	26,139,130
1998	0	0	0	16,483,695	0	11,497,629	0	0	0	0	27,981,324
1999	0	0	0	19,070,664	0	0	0	0	0	0	19,070,664
2000	0	0	0	19,290,297	0	0	0	0	0	0	19,290,297
2001	0	0	0	15,187,012	0	0	0	0	0	0	15,187,012
2002	0	0	0	15,509,591	0	0	0	0	0	0	15,509,591
2003	0	0	0	22,749,221	0	0	0	0	0	0	22,749,221
2004	0	0	0	5,582,299	17,639,276	0	0	0	0	0	23,221,574
2005	0	0	0	0	22,803,644	0	0	0	0	0	22,803,644
2006	0	0	0	0	22,186,071	0	0	0	0	0	22,186,071
2007	0	0	0	0	22,779,999	0	0	0	0	0	22,779,999
2008					21,001,166						21,001,166
Cumulative	38,966,543	83,856,765	17,976,419	320,523,196	106,410,155	230,257,719	3,030,009	15,479,061	27,198,210	3,578,805	847,276,881

Figure II.1 ANS Royalty-in-Kind Contract Volumes

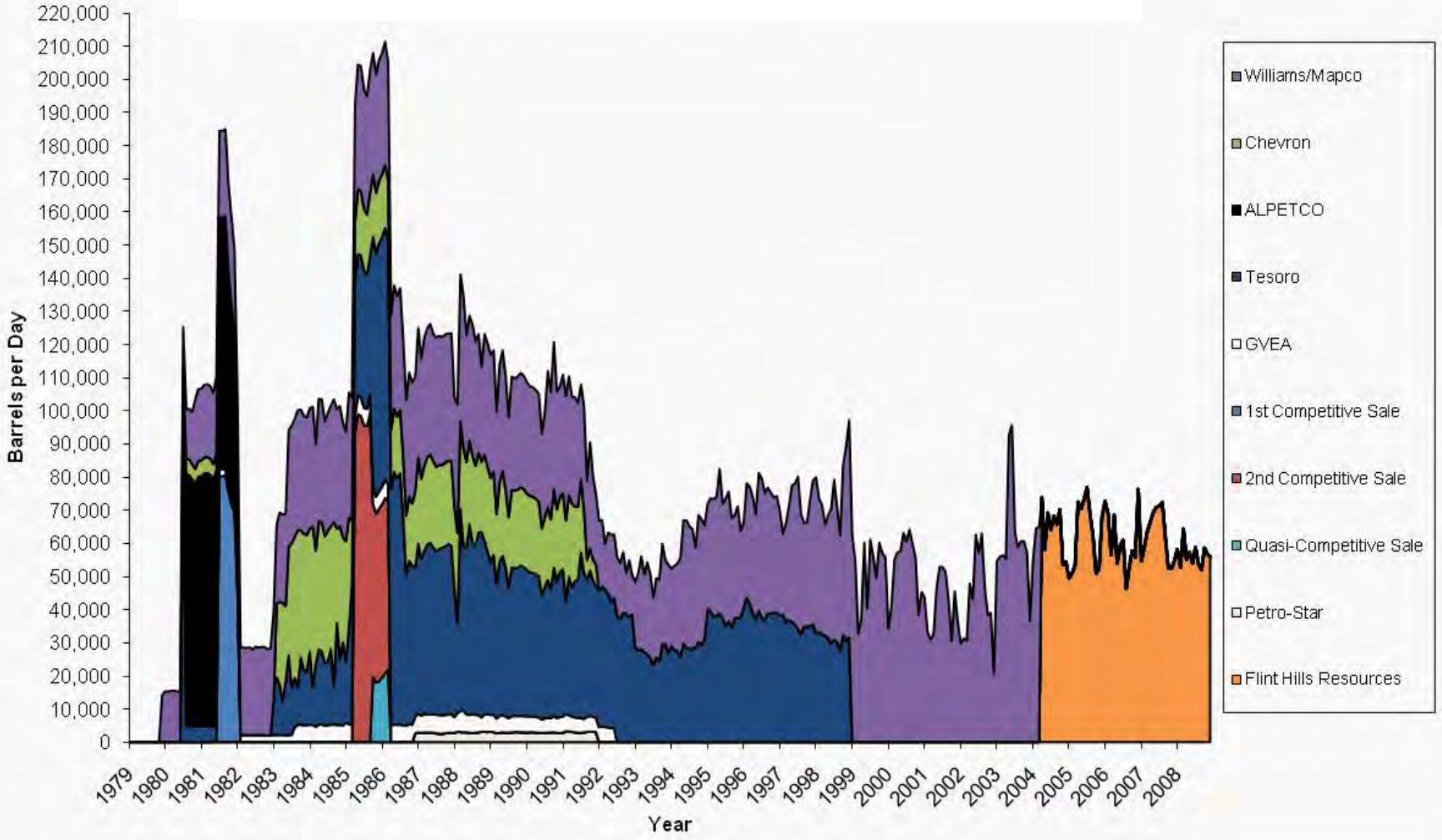


Figure II.2 State of Alaska Royalty Contract Volumes

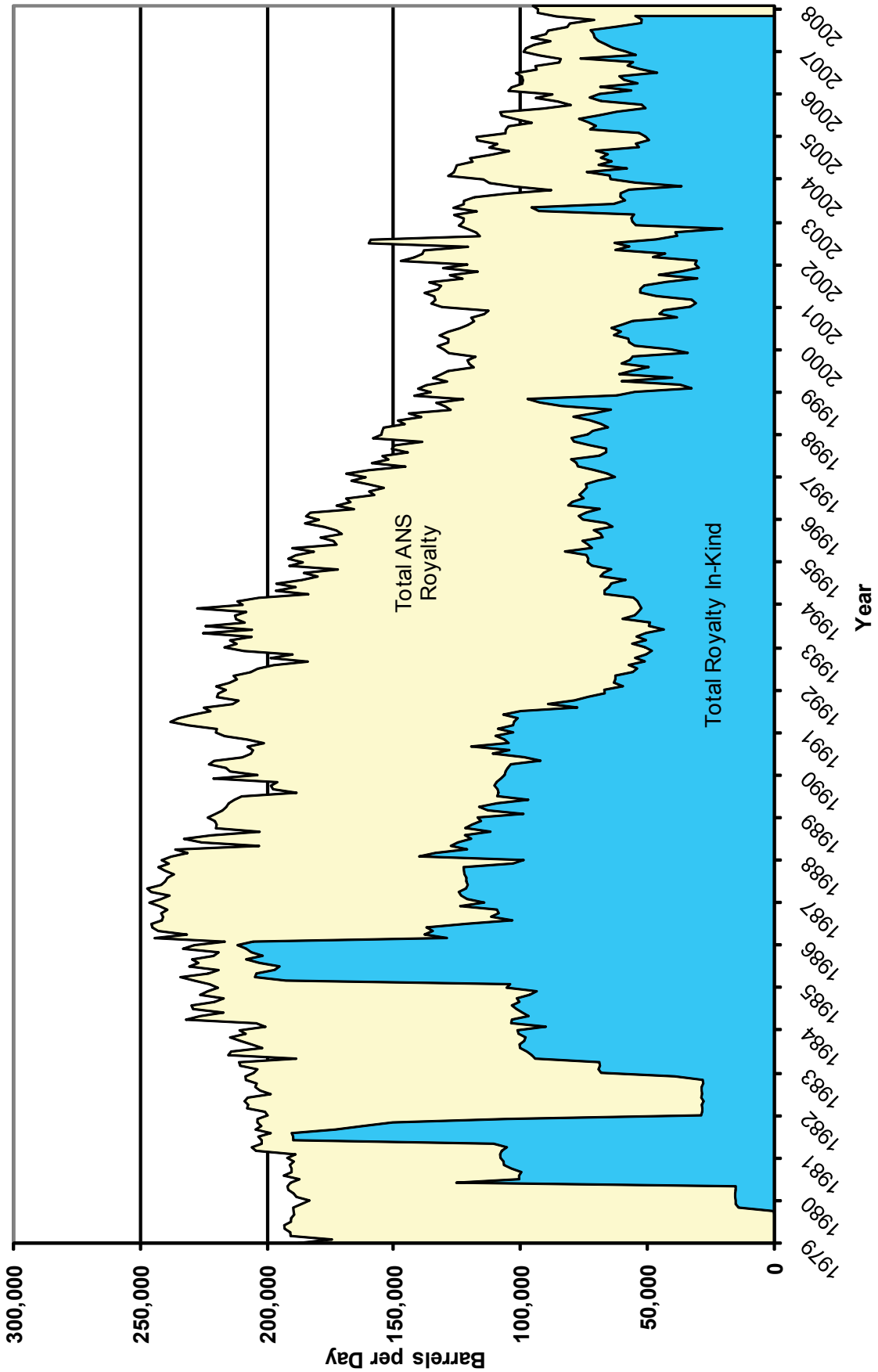


Table II.8 Cook Inlet & Statewide Royalty-in-Kind Sales

	COOK INLET					STATEWIDE		
	Tesoro[1]	Chinese Petroleum[2]	Cook Inlet RIK	Cook Inlet RIV	Cook Inlet Total Royalty Volume	ALASKA RIK	ALASKA RIV	ALASKA Total Royalty Volume
1979	4,849,631	-	4,849,631	-	4,849,631	5,296,627	10,584,481	15,881,108
1980	4,094,229	-	4,094,229	-	4,094,229	26,401,006	47,047,583	73,448,589
1981	3,560,736	-	3,560,736	-	3,560,736	55,382,331	17,666,128	73,048,459
1982	3,065,159	-	3,065,159	-	3,065,159	15,829,683	61,136,212	76,965,895
1983	2,719,044	-	2,719,044	-	2,719,044	33,120,176	44,599,235	77,719,411
1984	2,431,987	-	2,431,987	-	2,431,987	38,980,324	39,396,031	78,376,356
1985	1,382,740	-	1,382,740	462,245	1,844,985	65,823,504	17,095,491	82,918,995
1986	-	-	-	1,922,101	1,922,101	52,123,907	32,184,762	84,308,669
1987	-	615,305	615,305	1,113,805	1,729,110	44,998,325	45,013,116	90,011,441
1988	-	799,938	799,938	917,208	1,717,146	44,809,569	44,986,179	89,795,748
1989	-	1,274,479	1,274,479	392,313	1,666,792	41,194,601	41,225,959	82,420,561
1990	-	566,825	566,825	522,456	1,089,282	39,061,808	37,764,947	76,826,755
1991	-	330,540	330,540	1,357,687	1,688,227	35,429,795	43,895,049	79,324,844
1992	-	-	-	1,661,526	1,661,526	21,500,871	54,415,748	75,916,620
1993	-	-	-	1,514,651	1,514,651	18,898,364	50,783,693	69,682,057
1994	-	-	-	1,717,758	1,717,758	22,439,221	52,375,662	74,814,882
1995	-	-	-	1,718,805	1,718,805	26,384,415	45,383,358	71,767,773
1996	-	-	-	1,618,157	1,618,157	27,373,267	41,014,672	68,387,940
1997	-	-	-	1,369,478	1,369,478	26,139,130	36,729,326	62,868,456
1998	-	-	-	1,335,030	1,335,030	27,981,324	29,651,924	57,633,248
1999	-	-	-	1,252,231	1,252,231	19,070,664	32,725,432	51,796,096
2000	-	-	-	1,248,564	1,248,564	19,290,298	29,098,368	48,388,666
2001	-	-	-	1,273,518	1,273,518	15,187,012	31,480,769	46,667,780
2002	-	-	-	1,320,281	1,320,281	15,509,592	33,607,528	49,117,120
2003	-	-	-	1,127,749	1,127,749	22,749,221	26,464,082	49,213,303
2004	-	-	-	920,535	920,535	23,221,574	23,180,685	46,402,259
2005	-	-	-	779,749	779,749	22,803,644	20,332,163	43,135,806
2006	-	-	-	669,212	669,212	22,186,071	13,938,500	36,124,570
2007	-	-	-	551,302	551,302	22,779,999	12,719,397	35,499,396
2008	-	-	-	454,367	454,367	21,001,166	12,260,768	33,261,934
	22,103,526	3,587,088	25,690,614	27,220,729	52,911,342	872,967,491	1,028,757,247	1,901,724,738

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Figure II.2A Composition of Total North Slope Royalty Dispositions 1979-2008

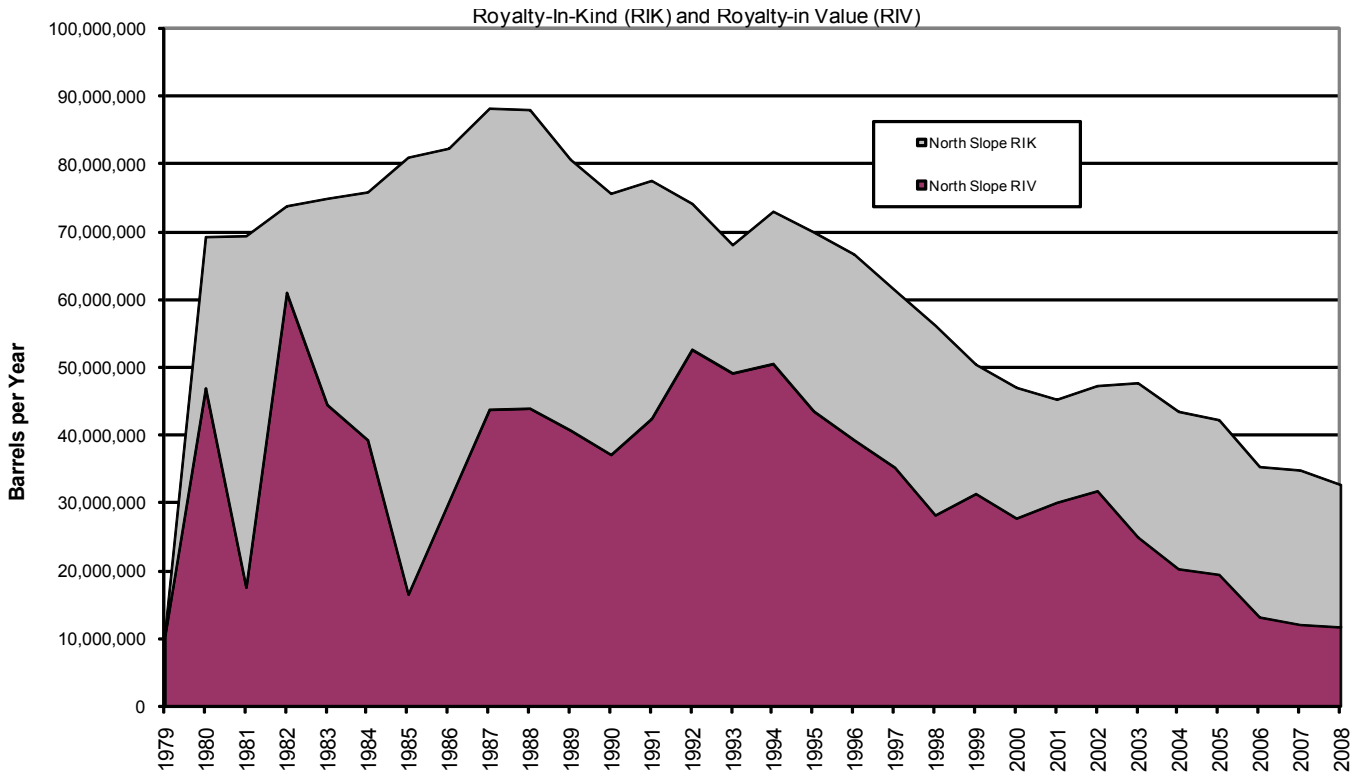
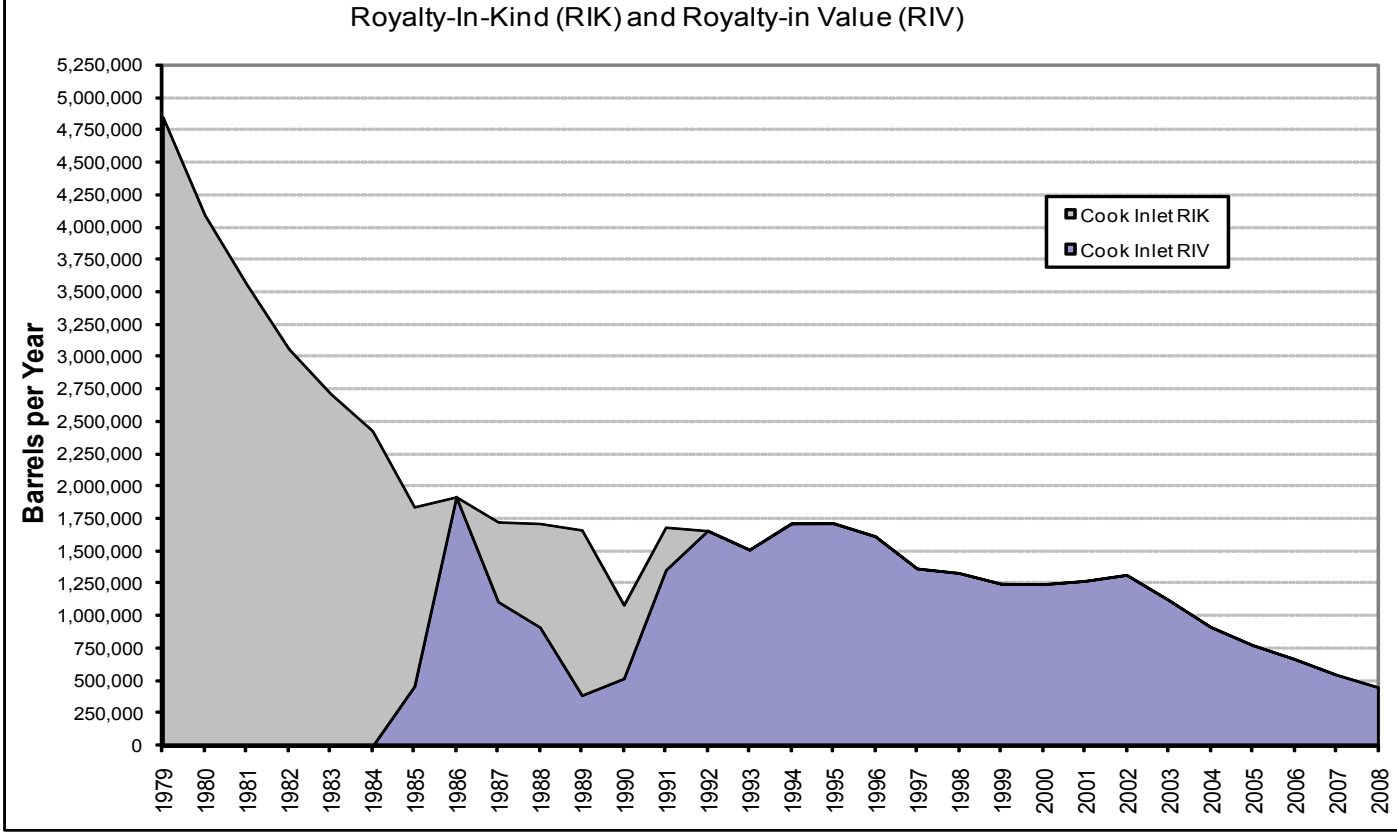


Figure II.2B Composition of Total Cook Inlet Royalty Dispositions 1979-2008



Section Three: Alaska Refining Sales and Consumption

Alaska Refineries

Alaska is the second-ranked oil-producing State after Texas, when output from the Federal Outer Continental Shelf (OCS) is excluded from the State totals, according to the U.S. Department of Energy, Energy Information Administration. Alaska Facts from EIA

Prudhoe Bay on Alaska's North Slope is the highest yielding oil field in the United States, producing approximately 400,000 barrels per day. The trans-Alaska oil pipeline system (TAPS) throughput peaked at 2.1 million barrels of crude oil per day in 1988. In 2008, North Slope production had dropped to 670,000 barrels per day. From Valdez, North Slope crude is shipped primarily to refineries in Washington and California.

The state's six refineries currently have a combined crude distillation capacity of about 377,480 barrels per day. Five of the six facilities are "topping" plants. These which only remove the lighter, higher valued components from the crude oil stream, leaving degraded value stream in the downstream pipelines.

As shown in Table V.1, two small refineries, owned by the Prudhoe Bay Unit and the Kuparuk River Unit, are located on the North Slope. The remaining four refineries are located in North Pole near Fairbanks, Nikiski on the Kenai Peninsula, and at Valdez near the TAPS marine terminal. These refineries serve a variety of residential, commercial, industrial, and transportation sectors across the state.

Table V.1 Alaska Refineries and Service Stations

Refinery	Location	**Distillation Capacity** as of 1/1/09 (Barrels Per Day)
Flint Hills Resources AK LLC (FHR)	North Pole	210,000
Tesoro Petroleum Corp.	Nikiski (Kenai)	72,000
Petro Star Inc.	Valdez	48,000
Petro Star Inc.	North Pole	19,700
ConocoPhillips AK, Inc.	Kuparuk	15,000
BP Exploration (Alaska) Inc.	Prudhoe Bay	12,780
Total Distillation Capacity		377,480
2008 Gasoline Service Stations	Statewide	442 Outlets

Alaska North Slope (ANS) oil comes from several fields. The quality of the crude produced from each field is somewhat different. To properly account for the difference in quality and value of the streams coming from the different units, each unit is assigned a quality bank value. The quality bank is the method of making monetary adjustments among shippers of ANS oil which either compensates or charges a shipper for the difference in quality between the crude oil tendered by that shipper at the unit LACT meter and the crude oil received by that shipper at the destination point. Through the quality bank process, the total payments paid by shippers equal the total payments received by shippers. The current methodology values the tendered crude oil on the value of the components of the oil. Similarly, the refineries in North Pole and Valdez take oil out of TAPS, extract the valuable components of the oil in manufacturing petroleum products, and inject into the pipeline a mixture of lower-valued components. The return streams from the refineries bear a quality bank payment to each of the shippers of the passing TAPS stream.

Flint Hills Resources Alaska (FHR) acquired its North Pole refinery – Alaska's largest – from Williams Alaska Petroleum, Inc., in 2004. FHR also owns a 700,000-barrel fuel terminal in Anchorage, and a 20,000-barrel jet fuel terminal in Fairbanks. The North Pole refinery, expanded in 1998, receives North Slope crude via TAPS and has a crude oil capacity of about 226,500 barrels per day; however, only about 44,000 barrels per day was refined into products for sale and the rest was consumed as refinery fuel or injected back into TAPS. FHR processes North Slope crude and supplies gasoline, jet fuel, heating oil, diesel, gas oil, and asphalt to local and international markets. About 60 percent of the refinery's pro-

duction goes to the aviation market. The company also owns and operates products terminals in North Pole and Anchorage that store and distribute asphalt, diesel, jet fuel, and gasoline produced at the North Pole refinery.

Constructed in 1965, the FHR Anchorage Terminal receives products from the North Pole Refinery via tank cars delivered by the Alaska Railroad. In 2008, more than 24,948 tank cars were delivered and offloaded. Each tank car holds approximately 540 barrels of product. Product from the FHR Anchorage terminal is distributed via pipeline, truck and rail racks locally and to locations throughout Alaska. The FHR Anchorage terminal facility can store more than 700,000 barrels of refined products. A pipeline system extends from the terminal one-half mile away to the Port of Anchorage and enables bulk fuel transfers to and from other terminals and vessels berthed at the Port of Anchorage municipal docks. The terminal loads an average of 30 to 50 vessels annually with refined product. The Fairbanks Terminal stores, in bulk, jet fuel that is delivered by tanker truck from the refinery. The company produces low-sulfur gasoline at the North Pole Refinery and purchases ultra-low-sulfur diesel from other sources to meet local demand. FHR has also retrofitted its fuel terminals in North Pole and Anchorage to handle low-sulfur fuels.

Flint Hills North Pole refinery production by volume

Jet Fuel/#1 Fuel Oil	80.82%
Gasoline & Naphtha	11.47
#2 Diesel	5.61
Gas Oil	1.26
Asphalt	0.84
Total	100%

FHR transported about 1.48 million gallons per day of jet fuel in 2008, and about 23,869 gallons per day of gasoline by rail to South Central Alaska. The North Pole refinery accounts for more than half of Anchorage jet fuel consumption. FHR purchases between 56,000 and 77,000 barrels per day of Alaska royalty oil per its state royalty contract.[1]

Tesoro Corporation operates Alaska's first oil refinery, which opened in Nikiski in 1969 and currently has a throughput capacity of 72,000 barrels per day. The refinery processes all of the oil produced in Cook Inlet and supplements this supply primarily with Alaska North Slope and foreign crudes. The Nikiski refinery produces an average of approximately 55,000 barrels per day of petroleum products to serve Tesoro-branded retail stations and other customers across the state. Process units at the refinery include a hydrocracker that is used to maximize the production of jet fuel for sale at Ted Stevens Anchorage International Airport. The refinery serves about 40 percent of the total monthly jet fuel demand of the airport. The Airport's tank farm is directly connected to the Nikiski refinery. A 75-mile, 10-inch, multi-product pipeline traverses Cook Inlet from Nikiski to Tesoro's terminal facility located at the Port of Anchorage, and a short spur completes the journey.

Asphalt produced at Nikiski is sold in Alaska. Nearly all of the remaining residual product from the refining process, for which there is no local market, is exported to other states. Tesoro sells all of its summer gasoline production in the state, but ships gasoline and diesel to markets in the Pacific Northwest during the winter season owing to lack of sufficient in-state demand. As an example of the synergies, Tesoro capitalizes on its refineries by shipping heavy vacuum gas oil to its Anacortes, Wash., refinery where it is used as a feedstock to produce gasoline. The refinery added a Diesel Desulfurization Unit (DDU) in May of 2007 and all the diesel they now make is ultra low sulfur.

Tesoro Nikiski refinery production by volume

Gasoline & Naphtha	28%
Jet Fuel	45-55
Ultra Low Sulfur Diesel	
Gas Oil	
Bottoms/Resid (Asphalt)	22
Total	100%

1 *Flint Hills Resources, LP; www.fhr.com/alaska/ and ADNR, Division of Oil and Gas http://www.dog.dnr.state.ak.us/oil/programs/royalty/rik_sale/flint_appx_a.pdf*

Petro Star Inc. (PSI) operates refineries in North Pole and Valdez and is owned by the Arctic Slope Regional Corp. Petro Star was founded in 1984 to process light fuels for heating homes and operating businesses in rural Alaska. Today, jet fuel production is the refinery's largest business sector.

PSI's smaller North Pole refinery has throughput capacity of 21,000 barrels per day; while the Valdez refinery processes 48,000 barrels per day. Both refineries are relatively small scale, located adjacent to TAPS and process ANS crude oil. Approximately 25 percent of the throughput is retained as product and refinery fuel with the balance returned to TAPS in a similar manner to the Flint Hills North Pole refinery.

Petro Star North Pole and Valdez refinery production by volume

Jet Fuel / # 1 Fuel Oil	68%
Diesel / # 2 Heating Oil	32
Total	100%

The BP-operated Prudhoe Bay Unit Crude Oil Topping Unit (COTU) provides arctic heating fuel (AHF) for the operation of North Slope equipment and drilling operations. The COTU currently receives crude oil for processing from the FS2 oil transit line (OTL 12). After the AHF is distilled from the crude, all remaining residual oil, naphtha and trace water are re-injected into the OTL. The supply and return volumes are metered and recorded.

The COTU consists of two parallel distillation plants that are very similar in equipment and operation. The incoming crude is split between the two plants. Each plant then heats the crude to approximately 530 degrees Fahrenheit and distills off the AHF in a simple distillation tower. This AHF is sent to their storage tanks and the remaining fluids are recombined and re-injected back into the OTL. Each plant is capable of processing approximately 7,000 to 8,000 Bbls per day of crude oil with a production of 1,200 to 1,400 Bbls per day of AHF. The production of Jet-A is done on a periodic batch basis and is the same operation with similar production figures. AHF and Jet-A are the only products the COTU produces for distribution. The COTU does not ship any AHF or Jet-A south of the Brooks Range for sale or distribution.

BP Prudhoe Bay Crude Oil Topping Unit production by volume

Arctic Heating Fuel (Diesel)	99.5%
3% Jet–A	0.5
Total	100%

The ConocoPhillips-operated Kuparuk Unit Topping Plant is designed to process pipeline-quality crude oil feedstock from Central Processing Facility #1 (CPF1) for support of drilling and production operations. This feedstock is sent through a distillation process to extract AHF. The AHF is extracted from the distillation tower and further processed to control the flashpoint of the fuel before being transferred to a storage facility where the various users can take delivery. The plant processes approximately 14,500 barrels per day of crude-oil feedstock, which yields 1,700 to 2,400 barrels per day of AHF, depending on specific end product requirements.

ConocoPhillips – Kuparuk Crude Oil Topping Unit production by volume:

Arctic Heating Fuel	100%

Statewide Total Fuel Consumption

In-state consumption of refined products includes in-state production and imports. Data on direct consumption are not publicly available, but sales volumes can serve as a reasonable proxy. The following table summarizes total annual fuel sales volumes. Total or gross annual fuel sales volume and price by major product type are summarized in Tables V.2.A and B. Annual gross fuel sales volumes increase over time for most products, except for No. 2 diesel fuel. Annual jet fuel sales volumes show a steady increase over the time period, despite slight declines in 2001 and 2003. The jet fuel decline in 2003 was probably related to a sharp nationwide decline in commercial aviation. Alaska's refineries supply approximately 88 percent of in-state jet fuel consumed.

Table V.2.A Prime Supplier Alaska Petroleum Sales Volumes, 1995 – 2008

(Thousands of Gallons per Day)								
Year	Total Gasoline	Aviation Gasoline	Kerosene Type Jet Fuel	Propane	No. 1 Distillate	No. 2 Fuel Oil	No. 2 Diesel Fuel	Total Fuel Sold
1995	691.9	49.9	1,714.7	W	243.2	280.2	W	2979.9
1996	698.8	46.4	1,935.3	40.2	219.6	277.1	W	3217.4
1997	694.6	47.4	2,193.2	W	255.0	421.7	W	3611.9
1998	771.4	57.6	2,285.2	W	254.8	357.4	427.7	4154.1
1999	784.4	58.7	2,434.4	W	276.6	295.9	467.2	4317.2
2000	744.8	58.7	2,502.9	W	216.7	287.6	396.5	4207.2
2001	761.2	61.2	2,461.9	W	233.6	227.4	462.5	4207.8
2002	755.2	55.3	2,777.1	W	233.9	W	512.8	4334.3
2003	784.0	W	2,627.4	W	185.9	W	551.8	4149.1
2004	826.8	W	2,970.9	W	162.8	263	361.9	4585.4
2005	838.0	W	3,201.9	32.3	W	300.7	298.9	4671.8
2006	779.0	W	3,080.9	30.9	W	274	W	4164.8
2007	733.0	W	2,890.8	W	W	263.6	NA	3887.4
2008	713.1	W	2409.1	W	W	221.4	W	3343.5

In the last 10 years, all product prices have nearly doubled. Propane sales volume data is limited, but a flattening consumption trend is evident since the mid-1990s. Alaska propane price data are not available.

Table V.2.B Prime Supplier Alaska Petroleum Product Prices, 1995 – 2008

(Dollars per Gallon – Taxes Excluded)						
Year	Total Gasoline	Aviation Gasoline	Kerosene Type Jet Fuel	No. 1 Distillate	No. 2 Fuel Oil	No. 2 Diesel Fuel
1995	1.13	W	0.61	0.75	0.83	0.82
1996	1.20	W	0.71	0.74	0.91	1.06
1997	1.18	W	0.67	0.67	0.97	1.08
1998	0.99	W	0.49	0.57	0.85	0.91
1999	1.00	W	0.61	0.81	0.97	0.81
2000	1.33	1.49	0.96	1.02	1.34	W
2001	1.38	W	0.81	0.83	1.38	1.26
2002	1.29	W	0.76	0.84	1.09	1.10
2003	1.48	W	0.90	W	1.24	1.29
2004	1.70	W	1.30	1.26	1.52	1.54
2005	2.09	W	1.77	W	2.06	2.04
2006	2.40	W	2.05	W	2.40	2.42
2007	2.54	W	2.21	W	2.52	2.54
2008	3.35	W	3.00	W	3.53	3.91

Table Notes:

a Includes regular, mid-grade, and premium blends of motor gasoline.

W Withheld to avoid disclosure of individual company data. Source: Energy Information Administration, U.S. DOE, Prime Supplier Sales in Alaska

Seasonal Taxable Aviation Gas, Jet Fuel, Motor Gas and Diesel Sales

Seasonal fuel sales shown in Figures V.3 through V.6 represent taxable sales only and are less than the total sold in any given month. The range (maximum and minimum values) of monthly sales over the six-year period 2001–2008 is presented as the shaded region in each of the four figures. Monthly sales during 2008 are shown with a black line within the shaded high-low range. Fuel taxes were suspended September 2008 so fuel sale data wasn't reported after this date. Aviation gas sales for 2008 were near the historic low for the eight-year period, whereas jet fuel sales in 2008 were average compared to previous years during the period. Motor gas sales tend to fluctuate between the upper and lower limits of its range while diesel sales tend to be at the peak range.

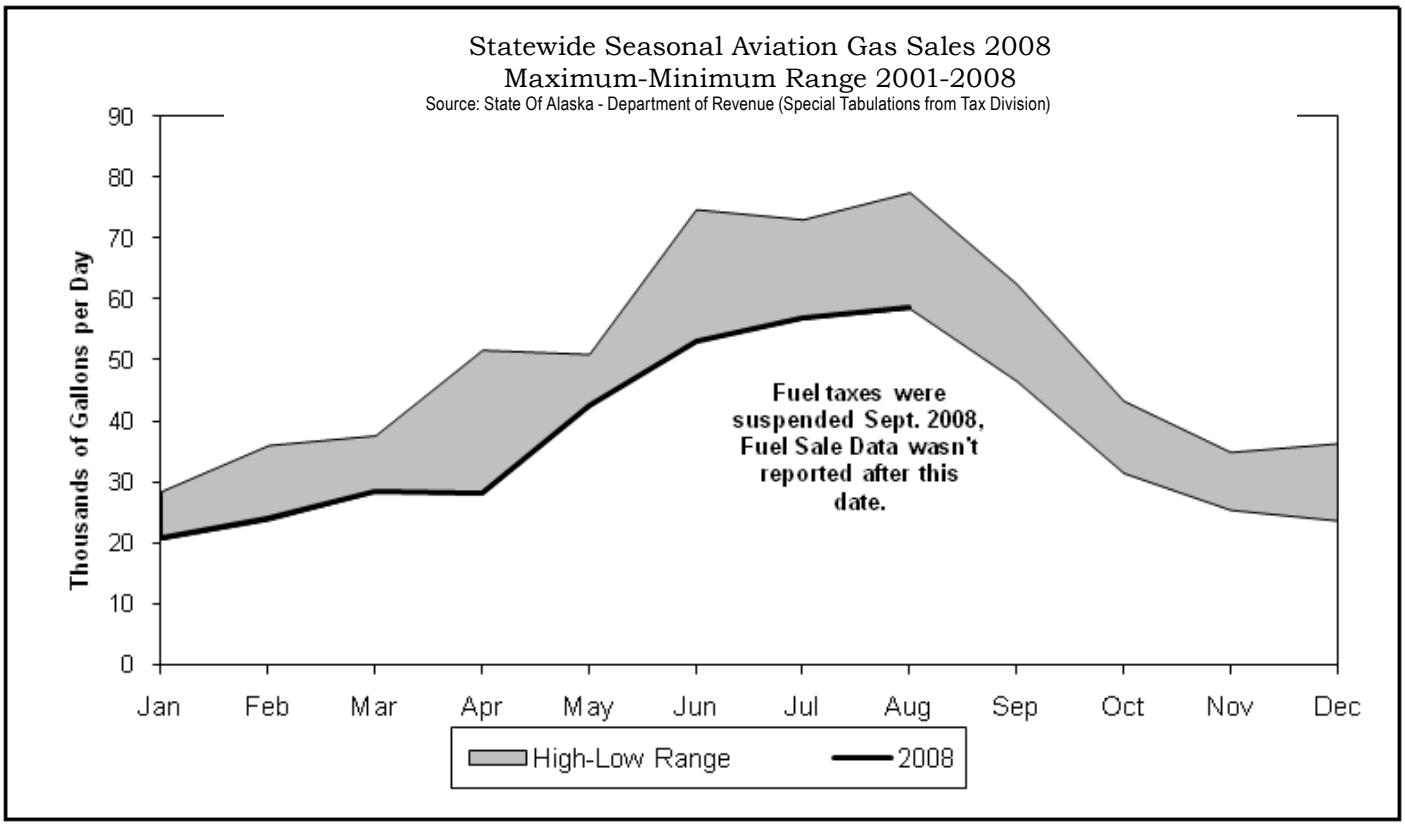
ADOR reported fuel sales totals do not match the monthly figures published by the EIA.[2] The primary reason for the difference is the ADOR totals represent taxable values, whereas the EIA prime supplier sales volumes are based on total sales volumes. The EIA reported prime supplier sales include firms that produce, import, or transport petroleum products across state boundaries and local marketing areas and sell the products to local distributors, local retailers, or end users. According to the EIA, prime supplier sales within a given state may serve as a proxy for consumption but may not equal actual consumption by the end-users in the state because a product may be sold by a prime supplier in one state and transported by local distributors to another state for final consumption. The largest discrepancy between EIA and ADOR data is in jet fuel, and is probably due to jet fuel used in commercial foreign flights.[3] ADOR data excludes jet fuel purchased in Alaska that is used in commercial flights that originated in a foreign country or where the next destination is a foreign country. For example, several international airlines refuel in Anchorage where the flight originated, say, in Korea or Hong Kong. Even if the flight is then destined for a U.S. city, the fuel is tax-exempt under AS 43.40.100(2)(B)(i). ADOR data includes only that fuel upon which the excise tax was due or collected. [4]

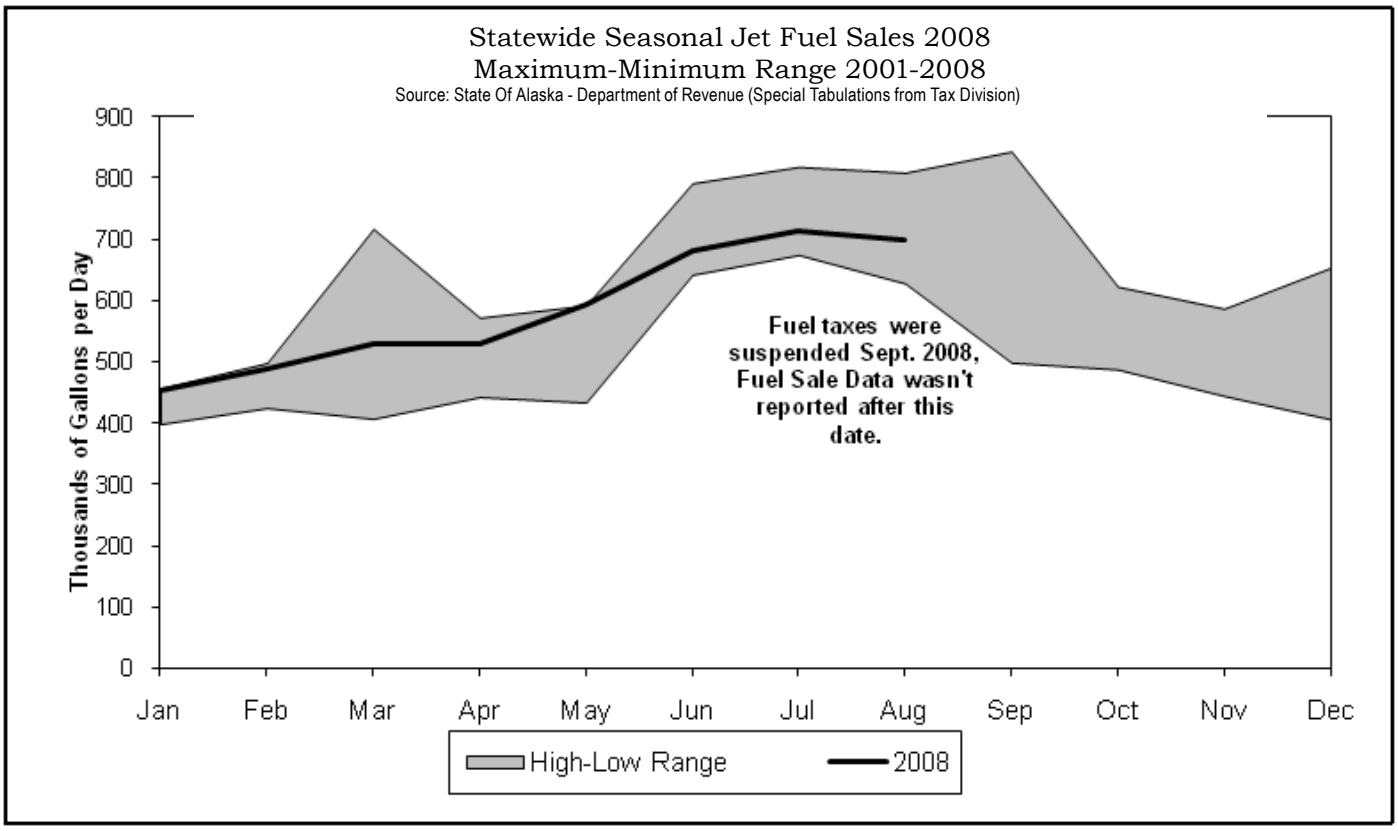
2 *The monthly EIA data contain numerous missing values, which limits its applicability.*

3 *The primary reason for the difference is ADOR totals only count taxable volume, whereas, the EIA, Prime Supplier Sales Volumes are based on total or gross statewide sales. For the period 2001 through 2006, the ADOR taxable portion averages approximately 80% of the EIA total for all products except Jet Fuel, which averages 20 percent of the EIA reported total.*

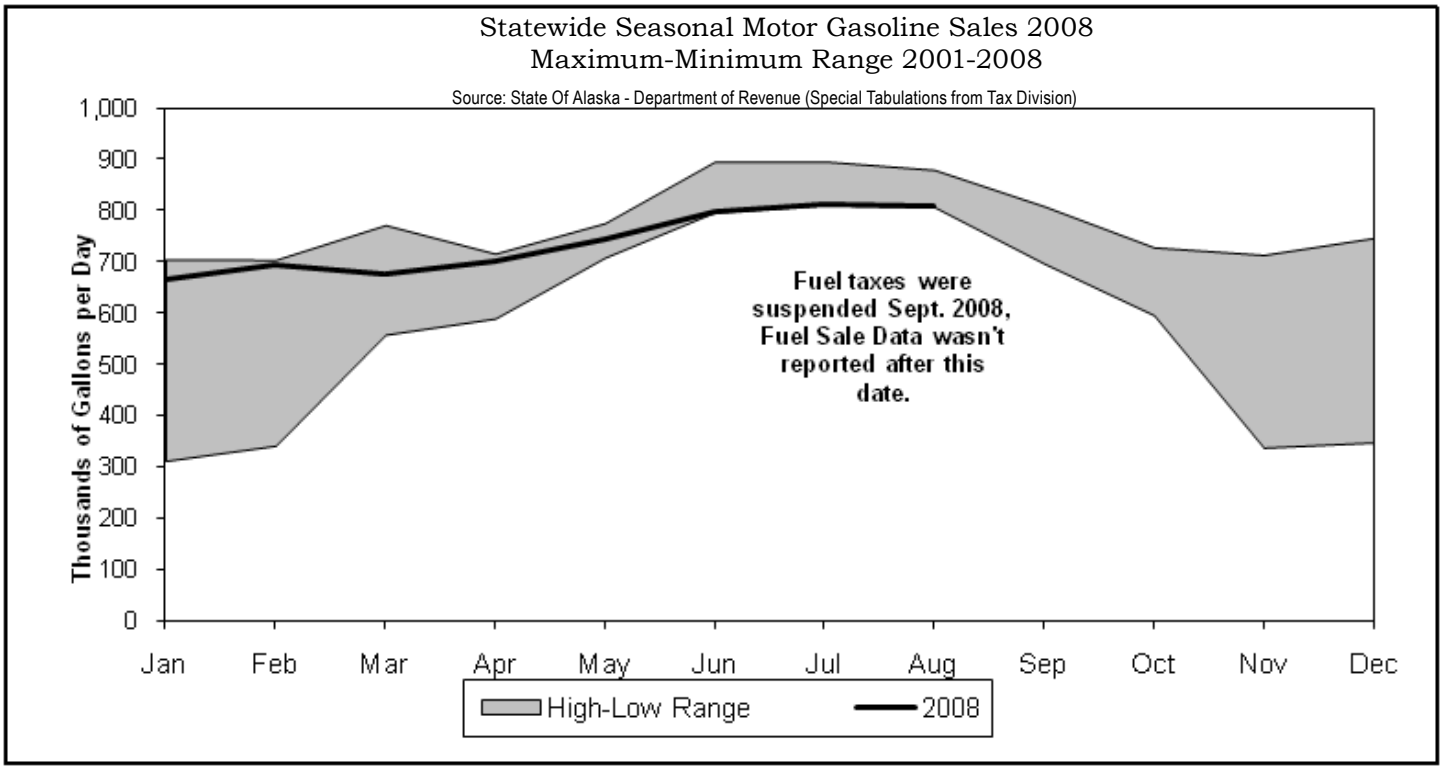
4 *Source: Energy Information Administration, U.S. DOE, Prime Supplier Sales in Alaska: http://tonto.eia.doe.gov/dnav/pet/pet_cons_prim_dcu_SAK_a.htm*

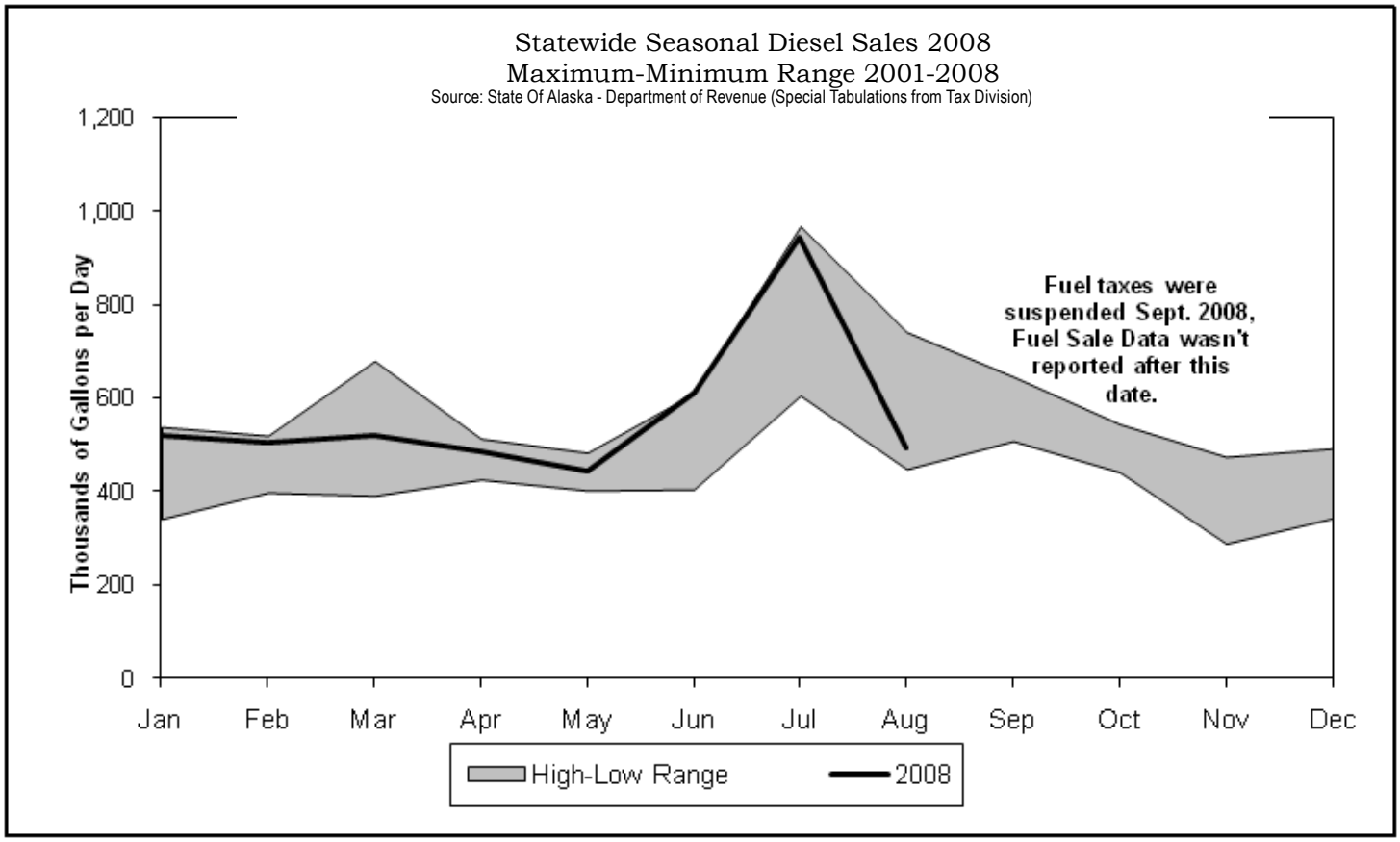
Figure III.3 and III.4 Seasonal Aviation Gas and Jet Fuel Sales





Figures III.5 and III.6 Seasonal Motor Gasoline Sales





Key Terms	Department of Energy Definitions*
Aviation Gasoline (Finished)	A complex mixture of relatively volatile hydrocarbons with or without small quantities of additives, blended to form a fuel suitable for use in aviation reciprocating engines. Fuel specifications are provided in ASTM Specification D 910 and Military Specification MIL-G-5572. *Note: Data on blending components are not counted in data on finished aviation gasoline.*
Catalytic Hydrocracking	A refining process that uses hydrogen and catalysts with relatively low temperatures and high pressures for converting middle boiling or residual material to high-octane gasoline, reformer charge stock, jet fuel, and/or high-grade fuel oil. The process uses one or more catalysts, depending upon product output, and can handle high sulfur feedstocks without prior desulfurization.
Gas Oil	European and Asian designation for No. 2 heating oil and No. 2 diesel fuel.
Kerosene-Type Jet Fuel	A kerosene-based product having a maximum distillation temperature of 400 degrees Fahrenheit at the 10 percent recovery point and a final maximum boiling point of 572 degrees Fahrenheit and meeting ASTM Specification D 1655 and Military Specifications MIL-T-5624P and MIL-T-83133D (Grades JP-5 and JP-8). It is used for commercial and military turbojet and turboprop aircraft engines.
Motor Gasoline	A complex mixture of relatively volatile hydrocarbons with or without small quantities of additives, blended to form a fuel suitable for use in spark-ignition engines. Motor gasoline, as defined in ASTM Specification D 4814 or Federal Specification VV-G-1690C, is characterized as having a boiling range of 122 to 158 degrees Fahrenheit at the 10 percent recovery point to 365 to 374 degrees Fahrenheit at the 90 percent recovery point. Motor Gasoline includes conventional gasoline; all types of oxygenated gasoline, including gasohol; and reformulated gasoline, but excludes aviation gasoline. Note: Volumetric data on blending components, such as oxygenates, are not counted in data on finished motor gasoline until the blending components are blended into the gasoline. Finished motor gasoline includes all ethanol blended gasoline (e.g. E10, E85).
No. 1 Distillate	A light petroleum distillate that can be used as either a diesel fuel (see No. 1 Diesel Fuel) or a fuel oil. No. 1 Diesel Fuel: A light distillate fuel oil that has distillation temperatures of 550 degrees Fahrenheit at the 90 percent point and meets the specifications defined in ASTM Specification D 975. It is used in high-speed diesel engines generally operated under frequent speed and load changes, such as those in city buses and similar vehicles. No. 1 Fuel Oil: A light distillate fuel oil that has distillation temperatures of 400 degrees Fahrenheit at the 10-percent recovery point and 550 degrees Fahrenheit at the 90 percent point and meets the specifications defined in ASTM Specification D 396. It is used primarily as fuel for portable outdoor stoves and portable outdoor heaters.
No. 2 Diesel Fuel	A fuel that has distillation temperatures of 500 degrees Fahrenheit at the 10 percent recovery point and 640 degrees Fahrenheit at the 90 percent recovery point and meets the specifications defined in ASTM Specification D 975. It is used in high-speed diesel engines that are generally operated under uniform speed and load conditions, such as those in railroad locomotives, trucks, and automobiles.
No. 2 Distillate	A petroleum distillate that can be used as either a diesel fuel (see No. 2 Diesel Fuel) or a fuel oil (see No. 2 Fuel Oil).
No. 2 Fuel Oil (Heating Oil)	A distillate fuel oil that has a distillation temperature of 640 degrees Fahrenheit at the 90 percent recovery point and meets the specifications defined in ASTM Specification D 396. It is used in atomizing type burners for domestic heating or for moderate capacity commercial/industrial burner units.
PADD	Petroleum Administration for Defense District PADD V (West Coast): Alaska (North Slope and Other Mainland), Arizona, California, Hawaii, Nevada, Oregon, Washington.

*Source for Terms and Definitions: United States Department of Energy, Energy Information Administration; www.eia.doe.gov/glossary/glossary_a.htm

Petroleum Products	Petroleum products are obtained from the processing of crude oil (including lease condensate), natural gas, and other hydrocarbon compounds. Petroleum products include unfinished oils, liquefied petroleum gases, pentanes plus, aviation gasoline, motor gasoline, naphtha-type jet fuel, kerosene-type jet fuel, kerosene, distillate fuel oil, residual fuel oil, petrochemical feedstocks, special naphthas, lubricants, waxes, petroleum coke, asphalt, road oil, still gas, and miscellaneous products.
Prime Supplier	A firm that produces, imports, or transports selected petroleum products across state boundaries and local marketing areas, and sells the product to local distributors, local retailers, or end users.
Propane (Consumer Grade)	A normally gaseous paraffinic compound (C3H8), which includes all products covered by Natural Gas Policy Act Specifications for commercial and HD-5 propane and ASTM Specification D 1835. It is a colorless paraffinic gas that boils at a temperature of -43.67 degrees Fahrenheit. It does not include the propane portion of any natural gas liquid mixes, i.e., butane-propane mix.
Refiner	A firm or the part of a firm that refines products or blends and substantially changes products, or refines liquid hydrocarbons from oil and gas field gases, or recovers liquefied petroleum gases incident to petroleum refining and sells those products to resellers, retailers, reseller/retailers or ultimate consumers. "Refiner" includes any owner of products that contracts to have those products refined and then sells the refined products to resellers, retailers, or ultimate consumers. For the purposes of this survey, gas plant operator data are included in this category.
Reformulated	Finished motor gasoline formulated for use in motor vehicles, the composition and properties of which meet the requirements of the reformulated gasoline regulations promulgated by the U.S. Environmental Protection Agency under Section 211(k) of the Clean Air Act. This category includes oxygenated fuels program reformulated gasoline (OPRG) but excludes reformulated gasoline blendstock for oxygenate blending (RBOB).
Regular	Gasoline having an antiknock index (average of the research octane rating and the motor octane number) greater than or equal to 85 and less than 88. Note: Octane requirements may vary by altitude.
Reseller	A firm (other than a refiner) that is engaged in a trade or business that buys refined petroleum products and then sells them to a purchaser who is not the ultimate consumer of those refined products.
Residual Fuel Oil	A general classification for the heavier oils, known as No. 5 and No. 6 fuel oils, that remain after the distillate fuel oils and lighter hydrocarbons are distilled away in refinery operations. It conforms to ASTM Specifications D 396 and D 975 and Federal Specification VV-F-815C. No. 5, a residual fuel oil of medium viscosity, is also known as Navy Special and is defined in Military Specification MIL-F-859E, including Amendment 2 (NATO Symbol F-770). It is used in steam-powered vessels in government service and inshore power plants. No. 6 fuel oil includes Bunker C fuel oil and is used for the production of electric power, space heating, vessel bunkering, and various industrial purposes.
Retailer	A firm (other than a refiner, reseller, or reseller/retailer) that carries on the trade or business of purchasing refined petroleum products and reselling them to ultimate consumers without substantially changing their form.
Topping Plant	Facilities that top off the lighter products from the crude stream that are used for internal refinery fuel use.

*Source for Terms and Definitions: United States Department of Energy, Energy Information Administration; www.eia.doe.gov/glossary/glossary_a.htm