

ELF Legislation

& miscellaneous
memo's

Logsdon #1

DRAFT SEVERANCE TAX AMENDMENT

Option 1. Establish an \$0.80 floor in the severance tax to which the existing ELF does not apply. [N.B.: This draft does not include similar changes for gas production.]

* Section 1. AS 43.55.011(a) is amended to read:

Section 43.55.011(a). There is levied upon the producer of oil a tax for all oil produced from each lease or property in the state, less any oil the ownership or right to which is exempt from taxation. The tax is equal to either the percentage-of-value amount calculated under (b) of this section, multiplied by the economic limit factor determined for the oil production of the lease or property under AS 43.55.013 or the cents-per-barrel amount calculated under (c) of this section, whichever is greater[, MULTIPLIED BY THE ECONOMIC LIMIT FACTOR DETERMINED FOR THE OIL PRODUCTION OF THE LEASE OR PROPERTY UNDER AS 43.55.013]. If the amounts calculated under (b) and (c) of this section are equal, the amount calculated under (b) of this section shall be treated as if it were the greater for purposes of this section.

* Sec. 2. This Act takes effect immediately in accordance with AS 01.10.070(c).

NO. 105 Logsdan #

DRAFT SEVERANCE TAX AMENDMENT

Option 2. Establish an \$0.80 floor in the severance tax to which the existing ELF does not apply and change the ELF formula so that the PEL is set without discretion at 300 barrels, eliminating the exponent. [N.B.: This draft does not make similar changes for gas production.]

* Section 1. AS 43.55.011(a) is amended to read:

Section 43.55.011(a). There is levied upon the producer of oil a tax for all oil produced from each lease or property in the state, less any oil the ownership or right to which is exempt from taxation. The tax is equal to either the percentage-of-value amount calculated under (b) of this section, multiplied by the economic limit factor determined for the oil production of the lease or property under AS 43.55.013 or the cents-per-barrel amount calculated under (c) of this section, whichever is greater[, MULTIPLIED BY THE ECONOMIC LIMIT FACTOR DETERMINED FOR THE OIL PRODUCTION OF THE LEASE OR PROPERTY UNDER AS 43.55.013]. If the amounts calculated under (b) and (c) of this section are equal, the amount calculated under (b) of this section shall be treated as if it were the greater for purposes of this section.

* Sec. 2. AS 43.55.013(b)(1) is amended to read:

Section 43.55.013(b)(1). The economic limit factor for oil production of a lease or property shall be computed according to the following formula:

$$(1 - [PEL/TP]) \text{ [EXP - } \{ \frac{460 \times WD}{PEL} \}]$$

where: PEL = the monthly production rate at the economic limit;

TP = the total production during the month for which the tax is to be paid;

[WD = THE TOTAL NUMBER OF WELL DAYS IN THE MONTH FOR WHICH THE TAX IS TO BE PAID; AND

WHERE "EXP" INDICATES THAT THE EXPRESSION FOLLOWING IT IS AN EXPONENT].

* Sec. 3. AS 43.55.013(d) is amended to read:

Section AS 43.55.013(d) The monthly production rate at the economic limit for a lease or property is [PRESUMED TO BE] 300 barrels times the number of well days for the lease or property during the month for which the tax is to be paid. [THE TAXPAYER MAY REBUT THIS PRESUMPTION AT A FORMAL HEARING UNDER AS 43.05.240 BY PROVIDING CLEAR AND CONVINCING EVIDENCE OF A DIFFERENT MONTHLY PRODUCTION RATE AT THE ECONOMIC LIMIT FOR THE LEASE OR PROPERTY. THE HEARING SHALL BE HELD BEFORE FEBRUARY 15 OF THE YEAR OR WITHIN SIX MONTHS AFTER COMMENCEMENT OF OIL PRODUCTION FOR A LEASE OR PROPERTY. THE MONTHLY PRODUCTION RATE AT THE ECONOMIC LIMIT FOR THE LEASE OR PROPERTY BASED UPON THE CLEAR AND CONVINCING EVIDENCE OF THE TAXPAYER SHALL BE CALCULATED BY DIVIDING THE VALUE DETERMINED UNDER (f) OF THIS SECTION INTO THE AVERAGE MONTHLY DIRECT OPERATING COST DETERMINED UNDER (e) OF THIS SECTION AND SHALL BE USED FOR PURPOSES OF THIS SECTION FOR ALL OIL PRODUCTION DURING THAT CALENDAR YEAR FROM THE LEASE OR PROPERTY].

* Sec. 4. AS 43.55.013(e) and AS 43.55.013(f) are repealed.

* Sec. 5. This Act takes effect immediately in accordance with AS 01.10.070(c).

PEL 300 bbl rebuttal

L> Trigger w/ .4 ELF For Floor
on large field only

IF the econ limit factor calculated
for the lease or property under this
Presumption is less than 0.4,
then (then no rebuttal)

Use w/ ITF

rejected by
Cmfr

DRAFT SEVERANCE TAX AMENDMENT

Option 3. Establish a \$1.50 floor in the severance tax to which the existing ELF does not apply and add an inflation index to the floor. [N.B.: This draft does not make similar changes to the gas production tax.]

* Section 1. AS 43.55.011(a) is amended to read:

Section 43.55.011(a). There is levied upon the producer of oil a tax for all oil produced from each lease or property in the state, less any oil the ownership or right to which is exempt from taxation. The tax is equal to either the percentage-of-value amount calculated under (b) of this section, multiplied by the economic limit factor determined for the oil production of the lease or property under AS 43.55.013 or the cents-per-barrel amount calculated under (c) of this section, whichever is greater[, MULTIPLIED BY THE ECONOMIC LIMIT FACTOR DETERMINED FOR THE OIL PRODUCTION OF THE LEASE OR PROPERTY UNDER AS 43.55.013]. If the amounts calculated under (b) and (c) of this section are equal, the amount calculated under (b) of this section shall be treated as if it were the greater for purposes of this section.

* Sec. 2. AS 43.55.011(c) is amended to read:

(c) The cents-per-barrel amount equals [\$0.60 PER BARREL OF TAXABLE OLD CRUDE OIL PRODUCED FROM THE LEASE OR PROPERTY, AND] \$1.50 [\$0.80] per barrel for all [OTHER] taxable oil produced from the lease or property, [BOTH] as adjusted by AS 43.55.012.

* Sec. 3. AS 43.55.012 is amended by adding a new section to read:

Section 43.55.012(a) The cents-per-barrel amount set out in AS 43.55.011(c) shall be increased or decreased by a percentage equal to the percentage of change in the Gross National Product Deflator published by the Bureau of Economic Analysis of the United States Department of Commerce. Changes in tax rates will be computed based on changes in

the Gross National Product Deflator from that of the First Quarter 1987 Gross National Product Deflator. The department shall post the changes in the tax rates periodically and shall notify every person producing oil within the state of the changes.

* Sec. 4. This Act takes effect immediately in accordance with AS 01.10.070(c).

Revised

DRAFT SEVERANCE TAX AMENDMENT

Option 4. Eliminate the ELF on all fields. [N.B.: This draft removes the ELF for gas as well as oil].

* Section 1. AS 43.55.011(a) is amended to read:

Section 43.55.011(a). There is levied upon the producer of oil a tax for all oil produced from each lease or property in the state, less any oil the ownership or right to which is exempt from taxation. The tax is equal to either the percentage-of-value amount calculated under (b) of this section or the cents-per-barrel amount calculated under (c) of this section, whichever is greater[, MULTIPLIED BY THE ECONOMIC LIMIT FACTOR DETERMINED FOR THE OIL PRODUCTION OF THE LEASE OR PROPERTY UNDER AS 43.55.013]. If the amounts calculated under (b) and (c) of this section are equal, the amount calculated under (b) of this section shall be treated as if it were the greater for purposes of this section.

* Sec. 2. AS 43.55.016 (a) is amended to read:

Section 43.55.016(a). There is levied upon the producer of gas a tax for all gas produced from each lease or property in the state, less any gas the ownership or right to which is exempt from taxation. The tax is equal to either the percentage-of-value amount calculated under (b) of this section or the cent-per-Mcf amount calculated under (c) of this section, whichever is greater[, MULTIPLIED BY THE ECONOMIC LIMIT FACTOR DETERMINED FOR GAS PRODUCTION OF THE LEASE OR PROPERTY UNDER AS 43.55.013]. If the amounts calculated under (b) and (c) of this section are equal, the amount calculated under (b) of this section shall be treated as if it were the greater for purposes of this section.

* Sec. 3. AS 43.55.013 is repealed.

* Sec. 4. This Act takes effect immediately in accordance with AS 01.10.070(c).

Cogden #2

DRAFT SEVERANCE TAX AMENDMENT

Option 5. Establish an alternative ELF which measures total field productivity rather than individual well productivity. [N.B.: this draft does not make similar changes for gas production.]

* Section 1. AS 43.55.013(b)(1) is amended to read:

Sec. 43.55.013(b)(1) The economic limit factor for oil production of a lease or property shall be computed according to the following formula:

$$\frac{(1 - [PEL/TP]) \exp (45,500,000 \times WD) / (PEL \times TP / \text{Days})}{(1 - [PEL/TP]) \exp (460 \times WD / PEL)}$$

- New
- Delete

where: PEL = the monthly production rate at the economic limit;

TP = the total production during the month for which the tax is to be paid;

WD = the total number of well days in the month for which the tax is to be paid; [AND]

Days = the number of days in the month for which the tax is to be paid; and

where "exp" indicates that the expression following it is an exponent.

* Sec. 2. This Act takes effect immediately in accordance with AS 01.10.070(c).

Eliminated

DRAFT SEVERANCE TAX AMENDMENT

Option 6. Establish an alternative ELF (field-based applicability) and establish a severance tax floor to which the alternative ELF does not apply. [N.B.: This draft does not include similar changes for gas production.]

* Section 1. AS 43.55.011(a) is amended to read:

Section 43.55.011(a). There is levied upon the producer of oil a tax for all oil produced from each lease or property in the state, less any oil the ownership or right to which is exempt from taxation. The tax is equal to either the percentage-of-value amount calculated under (b) of this section, multiplied by the economic limit factor determined for the oil production of the lease or property under AS 43.55.013 or the cents-per-barrel amount calculated under (c) of this section, whichever is greater[, MULTIPLIED BY THE ECONOMIC LIMIT FACTOR DETERMINED FOR THE OIL PRODUCTION OF THE LEASE OR PROPERTY UNDER AS 43.55.013]. If the amounts calculated under (b) and (c) of this section are equal, the amount calculated under (b) of this section shall be treated as if it were the greater for purposes of this section.

* Sec. 2. AS 43.55.013(b)(1) is amended to read:

Sec. 43.55.013(b)(1) The economic limit factor for oil production of a lease or property shall be computed according to the following formula:

$$\frac{(1 - [\text{PEL}/\text{TP} \exp (45,500,000 \times \text{WD})]/(\text{PEL} \times \text{TP}/\text{Days}))}{[(1 - \text{PEL}/\text{TP}) \exp (460 \times \text{WD}/\text{PEL})]}$$

$$[(1 - \text{PEL}/\text{TP}) \exp (460 \times \text{WD}/\text{PEL})]$$

where: PEL = the monthly production rate at the economic limit;

TP = the total production during the month for which the tax is to be paid;

WD = the total number of well days in the month for which the tax is to be paid; [AND]

Days = the number of days in the month for which the tax is to be paid, and

where "exp" indicates that the expression following it is an exponent.

* Sec. 3. This Act takes effect immediately in accordance with AS 01.10.070(c).

NO Cogden Analysis

DRAFT SEVERANCE TAX AMENDMENT

Option 7. Postpone the scheduled application of the existing ELF to Prudhoe Bay only.

* Section 1. AS 43.55.013(b)(2) is amended to read:

Section 43.55.013(b)(2) If, for any month during the first 15 [10] years following the commencement of commercial oil production of a lease or property, the economic limit factor for oil production of that lease or property computed under (1) of this subsection is 0.7 or less, then that factor shall be applied.

* Sec. 2. AS 43.55.013(b)(3) is amended to read:

Section 43.55.013(b)(3) If, for any month during the first 15 [10] years following the commencement of commercial oil production of a lease or property, the economic limit factor for oil production of that lease or property computed under (1) of this subsection is greater than 0.7, then the economic limit factor is one.

* Sec. 3. AS 43.55.013(b)(4) is amended to read:

AS 43.55.013(b)(4) The economic limit factor for oil production of a lease or property after the first 15 [10] years following the commencement of commercial oil production shall be computed and applied under (1) of this subsection.

* Sec. 4. This Act takes effect immediately in accordance with AS 01.10.070(c).

MEMORANDUM

Division of Strategic Planning
Office of Management and Budget
465-3568 MS 0164

TO: File DATE: Nov. 10, 1986
FROM: R.A. Fineberg, Policy Analyst, OMB
SUBJECT: Measuring ELF Gains

I. Summary

The ELF (Economic Limit Factor; AS 43.55.013) is a formula that lowers the severance tax rate as productivity of wells in a field declines. Data presented in DOR's "Analysis of ELF Alternatives" (Oct. 14, 1986) indicates that any of the proposed ELF changes will increase average expected taxes. OMB estimates of gains due to modification of the ELF are presented for the September 30% and Mean case forecast levels.¹

II. Background

The Alternative ELF (OMB proposal) has the following effects:

== The ELF, currently scheduled to become effective at Prudhoe Bay in June 1987, stays in place at Prudhoe Bay;

== The ELF is modified so that the effective tax rate on large, productive fields (Prudhoe and Kuparuk) is increased, while the effective tax rate on small, marginal fields is reduced.

According to the DOR report:

"[M]odifying the ELF to reflect total field productivity (the OMB alternative ELF) is the most efficient alternative in terms of dollars gained for every barrel foregone . . . because . . . the negative effect on average expected production is mitigated."

Because the ELF still operates to increase marginal production, the OMB ELF does not have a serious effect on North Slope productivity. According to the DOR report, the OMB proposal gains approximate \$70 in severance revenue for every barrel foregone due to reduced production. (By comparison, a barrel presently nets the State less than \$2 per barrel.)

¹ These numbers are lower than those used by DOR; at this time we do not know the reason(s) for the difference.

The report uses the DOR forecasting model to examine effects of four possible changes to the ELF over a broad range of price and transportation cost assumptions.

Enacted in 1977, the ELF was modified in 1981 to set Prudhoe Bay at 1.0 (no severance reduction) for 10 years; at the arbitrary expiration, the ELF was to be re-assessed. The ELF therefore goes into effect at Prudhoe June 17, 1987; the effect can be seen immediately in State revenue forecast. The alternative ELF would make the ELF less effective on high-production wells at Prudhoe Bay at the same time that it becomes more effective (beneficial to the producer) for higher-cost wells in smaller fields.

According to DOR, after the ELF becomes applicable at Prudhoe Bay there is a 50% chance the State will lose \$140 million in FY 88, compared to what severance would have been if the ELF did not kick in. What about the 30% case? \$10 oil? \$20 oil? The DOR data do not give a clue. The DOR numbers show greater effects from the alternative ELF than OMB's; we have been unable to learn the reasons for the difference.

III. Effects of Alternative ELF at Sept. 30% and Mean Case Forecast Levels

The OMB field model, derived from DOR data, indicates the severance gains to the State due to the Alternative ELF are:

	- - - - (\$ Millions; nominal) - - - -			
	<u>\$10 oil</u>	<u>30% case</u>	<u>Mean case</u>	<u>\$20 oil</u>
FY 88	\$54.7	\$66.8	\$85.3	\$125.7
FY 89	52.4	74.0	99.7	138.1
FY 90	51.4	n.a.	111.8	150.7
FY 91	47.0	n.a.	106.2	140.3
FY 92	41.1	n.a.	100.8	131.6
FY 93	44.5	n.a.	104.4	134.4
FY 94	41.3	n.a.	94.3	118.2
FY 95	38.2	n.a.	85.9	104.5

The DOR paper describing ELF proposals is attached; the interim Tax Policy Committee has this and other materials on the ELF on file; additionally, Dr. Tom Chester at OMB is familiar with ELF mechanics.

IV. Politics/Alternatives:

1. Repealing ELF gives greatest fiscal benefit to the State but may send a harsh message to the industry.

2. De-coupling (removing the ELF from the floor) affects marginal fields and doesn't generate enough revenue to be worthwhile.

3. The alternative ELF is more complicated than alternatives 1. and 2. encourages marginal fields and eliminates the inappropriate break to Prudhoe Bay (never less than 55% of the all-field gain from ELF modification).

Table G

Revenue Impact of OMB-Altered Exponent
(Millions \$)

Year	Prudhoe	Kuparuk	Milne	Endicott	Lisburne	West Sak	Pt. Thomson	Seal Island	Total North Slope
1986	0	0	0	0	0	0	0	0	0
1987	5.94	29.29	-.35	0	-3.35	0	0	0	31.53
1988	93.33	37.48	-.25	-1.4	-5.81	0	0	0	123.35 91
1989	102.28 ⁹⁶	47.59 ²⁴	.83 - 4	5.62 - 1	-4.51 - 4	0	0	0	151.81 110
1990	111.56 ¹⁰⁷	54.78 ²⁸	1.01 - 5	6.36 - 1.6	-5.1 - 5	1.61	.06	0	170.28
1991	112.91	39.58	.25	6.73	-1.3	2.46	-1.66	0	158.97
1992	114.39	21.09	.29	7.51	-1.42	7.12	-1.97	0	147.01
1993	112.22	26.61	.24	8.6	7.63	8.44	-2.36	0	161.38
1994	112.29	22.06	-.46	2.38	4.61	9.54	-2.7	0	147.72
1995	109.54	18.28	-.46	3.46	3.68	13.57	-3.47	0	144.60
1996	102.5	4.94	-.88	-.21	3.81	14.69	-4.46	0	120.39
1997	104.25	.79	-.81	-1.89	3.99	17.3	-3.15	.51	120.99
1998	104.09	-3.39	-.44	-1.95	-3.87	19.8	-5.42	3.22	112.04
1999	103.71	-6.23	.01	-.85	-10.17	15.09	-5.89	3.8	99.47
2000	101.55	-8.5	.5	.23	-13.2	8.19	-5.93	4.22	87.06
2001	95.09	-8.06	.65	1.03	-12.31	4.97	-6.23	4.48	79.62
2002	87.3	-5.01	.79	1.31	-8.92	3.04	-6.18	4.61	76.94
2003	75.5	-2.77	.62	1.31	-5.31	1.13	-5.04	5.4	70.84
2004	69.23	-1.79	.2	.94	-2.43	.95	-4.01	6.97	70.06
2005	58.11	-1.37	-.01	.52	-1.18	3.32	-2.75	7.23	63.87
Total Revenue									
Nominal	1775.79	286.37	1.73	39.7	-55.16	131.22	-61.16	40.44	2137.93
10% disc	701.22	174.46	.62	20.28	-18.23	44.12	-17.15	8.18	913.48
8% disc	825.43	189.53	.71	22.95	-21.76	54.08	-21.69	11.08	1060.33

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Alaska North Slope Oil Revenue

Fiscal Years

1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010

PRICE/OUTPUT ASSUMPTIONS

World Oil Price (Sept. 06)	15.73	15.97	16.95	17.05	18.07	19.42	20.23	21.34	22.42	23.83	24.85	25	25.5	26.49
Avg. Rate of Inflation (Sept. 06)	2.9	2.83	4.23	4.23	4.23	4.23	4.23	4.09	4.09	4.09	4.09	4.09	4.09	4.09
Compound Inflation Factor	1.029	1.029121	1.102079	1.149831	1.190156	1.240038	1.291664	1.345313	1.402079	1.462080	1.525461	1.592504	1.663300	1.737900
World/Avg. Oil & NGLs (June 06)	8.735	8.811	2.47	2.500	2.71	2.804	2.866	2.920	2.976	3.034	3.093	3.153	3.214	3.275
Trans-Alaska Pipeline Tariff (Sept. 06)	4.764	4.834	4.832	4.832	4.832	4.832	4.832	4.832	4.832	4.832	4.832	4.832	4.832	4.832
Successful Offshore BBL Price (1995)	8.231	8.285	10.148	11.154	11.554	12.084	12.634	13.204	13.794	14.404	15.034	15.684	16.354	17.044
Success Ratio (Sept. 06)	.9013333	.9013333	.9013333	.9013333	.9013333	.9013333	.9013333	.9013333	.9013333	.9013333	.9013333	.9013333	.9013333	.9013333
ANM Methanol Price \$/Bbl (0/01)	6.114600	6.444373	9.968571	11.33633	11.77011	12.61229	13.94538	15.19095	16.48876	17.6382	18.96137	20.45043	21.94795	23.47316

Prudhoe Bay Prod. (MMbbl/yr)	535	467	435	412	373	334	355	309	260	296	264	219	180	164
Prudhoe Bay Price (\$/bbl)	6.114600	6.444373	9.968571	11.33633	11.77011	12.61229	13.94538	15.19095	16.48876	17.6382	18.96137	20.45043	21.94795	23.47316
Wells (Sept. 06)	519	519	490	493	480	464	445	418	391	371	352	331	311	292
TOTAL DAILY OUTPUT	1465733	1334247	1191781	1120767	1021018	915060.3	972622.7	846575.3	734246.6	810998.9	698090.4	600000	515048.3	448315.1
TOTAL MONTHLY OUTPUT	4405333	4005333	3576000	3363333	3063333	2753333	2918333	2535000	2233333	2466667	2116667	1800000	1556667	1366667
TOTAL DAILY OUTPUT PER WELL	2824.108	2570.083	2553.124	2289.588	2094.894	1972.138	2185.424	2025.300	1877.068	2185.873	1976.961	1812.609	1656.109	1536.750
PER	4671000	4671000	4682000	4637000	4392000	4176000	4005000	3762000	3519000	3339000	3160000	2970000	2790000	2620000
WELL DAYS	15370	15370	14940	14640	13350	12540	11730	10540	9130	11130	9540	8230	7330	6760
ALTERNATE ELF	.9041203	.9031886	.9797212	.9727996	.9676691	.9727101	.9660751	.9577187	.9473642	.9378148	.9283344	.9188148	.9093148	.8998148
PRODUCED ELF	.8418140	.8267417	.8143409	.8004613	.7889244	.7764494	.7641112	.7528640	.7417333	.7307114	.7197914	.7089714	.6982514	.6876314
NOMINAL TAX RATE	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15
EFFECTIVE TAX RATE CURRENT ELF	.15	.1240113	.1221511	.1209392	.1193307	.1164674	.1196117	.1173096	.1140630	.1196190	.1165457	.1130611	.1104110	.1075661
EFF. TAX CUR. ELF NO 10 YEAR LIMIT	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15
EFFECTIVE TAX RATE ALTERNATIVE ELF	.15	.1474783	.1469982	.1464363	.1459199	.1451904	.1450665	.1449113	.1436370	.1451046	.1436721	.1419002	.1397623	.1373739
ROYALTY PERCENTAGE	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125
SEVERANCE TAX CURRENT ELF	429	446	463	494	455	436	519	482	443	546	492	445	399	362
SEVERANCE TAX PER BARREL CUR. LAW	1	1	1	1	1	1	2	2	2	2	2	2	2	3
SEVERANCE TAX NO ELF	429	446	463	494	455	436	519	482	443	546	492	445	399	362
CUR. SERV. TAX NO ELF ON CENTS/BBL	429	446	463	494	455	436	519	482	443	546	492	445	399	362
CUR. SERV. TAX NO 10 YEAR LIMIT	429	446	463	494	455	436	519	482	443	546	492	445	399	362
SEVERANCE TAX PER BARREL CUR. LAW	.9172032	1.047197	1.216441	1.371248	1.392059	1.492214	1.670420	1.702630	1.890903	2.100435	2.212197	2.324419	2.432395	2.536917
SEVERANCE TAX ALTERNATIVE ELF	429.3657	530.6790	557.0422	599.3709	560.5471	543.4997	632.9408	595.3830	554.4587	662.7670	606.6964	556.3830	504.6832	462.7301
SEV TAX ALT ELF NO ELF ON CENTS/BBL	429.3657	530.6790	557.0422	599.3709	560.5471	543.4997	632.9408	595.3830	554.4587	662.7670	606.6964	556.3830	504.6832	462.7301
CONSERVATION TAX	.5651563	.5326663	.4757013	.436425	.4076089	.3683125	.3379608	.3079608	.283125	.25275	.2276125	.2026313	.179375	.1579375
Gathering & Cleaning Charge	.72611	.7471672	.7663120	.8000116	.8366060	.8669932	.9067939	.9451513	.9913692	1.039047	1.090096	1.144631	1.199974	1.265252
Royalties if Taken In-Value	368.3612	468.5674	499.7293	542.6820	509.8642	490.5900	579.4736	530.4370	510.1577	614.0201	560.0200	520.5127	487.5775	455.2622
In-Kind Contracts Longterm														
NAFDC (10.6667% exhibit B 2003)	67.26754	67.46680	93.20129	101.3008	93.17403	93.07045	109.1686	102.7484	96.72294	114.6108	106.0322	90.65880	91.01463	84.90243
Tesoro (24.5333% in-v. 30 '95)	105.2422	130.5925	136.8475	147.8444	138.0641	134.3830	153.3081	146.0376	137.7328					
Tesoro (13.867% in-value + 0.35)	59.95065	74.23802	77.72849	83.47223	78.36245	76.20270	88.08927	83.26609	78.08418					
Chevron (9.6% in-value + 0.30)	41.10236	51.10212	53.54974	57.53980	54.02582	52.55405	60.77041	57.45897	53.89610					
QVRA (2.6667% in-value + 0.30)	11.43967	14.19521	14.07511	15.98330	15.00736	14.59833	16.88080	15.96102	14.97135					
In-Kind Contracts Shortterm														
One-year (26.67% bpica+.04)														
Six Months														
Total In-Kind Royalties	285.0824	357.5940	376.2021	405.3400	380.6346	370.7207	429.2092	406.2721	381.4074	114.6108	106.0322	90.65880	91.01463	84.90243
In-Value Royalties	110.5105	143.4937	153.2472	166.4221	156.3580	152.9000	177.7049	168.8003	158.9013	499.4093	461.9966	429.0540	394.5629	370.2798
TOTAL ROYALTIES	395.5929	501.2876	529.5293	571.7629	536.9926	523.6296	606.9141	575.0724	540.3088	614.0201	568.0200	520.5127	487.5775	455.2622
(Estimated In-Kind Premium 10%)	35.23173	32.72022	29.09002	29.00094	27.12036	25.03875	27.44044	24.63543	22.13113	0	0	0	-3.70-14	-3.70-14

Esperuk River Prod. (MMbbl/yr)	91	82	84	84	76	67	60	52	40	41	35	29	24	21
Esperuk River Price (\$/bbl)	5.294600	7.624373	9.138571	10.51033	10.95011	11.99229	13.14533	14.37595	15.63076	16.8152	18.16137	19.63043	21.12795	22.65316
Wells (Sept. 06)	254	259	270	270	275	275	253	253	219	220	196	177	150	142
TOTAL DAILY OUTPUT	249315.1	224657.5	230137.0	230137.0	200212.0	183561.6	164303.6	142465.8	131886.0	112330.0	98090.41	79452.05	65753.42	57534.25
TOTAL MONTHLY OUTPUT	7503333	6833333	7000000	7000000	6333333	5583333	5000000	4333333	4000000	3416667	2916667	2416667	2000000	1750000
TOTAL DAILY OUTPUT PER WELL	981.5554	867.4036	827.0309	827.0309	727.1606	667.4969	649.5734	563.1057	600.4079	510.5853	489.2360	440.8817	416.1609	405.1700
PER	2206000	2331000	2502000	2502000	2475000	2475000	2277000	2277000	1971000	1908000	1764000	1593000	1422000	1270000
WELL DAYS	7620	7770	8340	8340	8230	8230	7590	7590	6370	6600	5800	5310	4740	4260
ALTERNATE ELF	.7662029	.7692353	.7607990	.7607990	.6430262	.5541673	.5046350	.3790567	.3846708	.2400713	.1667803	.0815702	.0304230	.0147940
PRODUCED ELF	.5716097	.5216301	.5015515	.5015515	.4613367	.4006470	.3860403	.3113849	.3459095	.2571696	.2336669	.1641150	.1413275	.1264336
NOMINAL TAX RATE	.1363	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15
EFFECTIVE TAX RATE CURRENT ELF	.0779104	.0782645	.0752327	.0752327	.0696205	.0600762	.0500272	.0467076	.0518064	.0308754	.0349600	.0276173	.0211991	.0189650
EFFECTIVE TAX RATE ALTERNATIVE ELF	.1044444	.1063853	.1051200	.1051200	.0968739	.0831251	.0756593	.0569705	.0540107	.0380170	.0328355	.0261385	.0204636	.0182191
ROYALTY PERCENTAGE	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125
SEVERANCE TAX CURRENT ELF	36.41154	42.00256	50.53269	50.16219	50.39059	42.23221	36.04661	30.55170	34.08060	23.27045	19.44449	13.75677	9.405774	7.084234
SEVERANCE TAX PER BARREL CUR. LAW	.4372078	.5965654	.6073195	.7913222	.7577532	.7203774	.527807	.6714660	.6114395	.6406336	.6349221	.5421306	.4470940	.4296102
SEVERANCE TAX NO ELF	63.7	62.05732	106.7527	115.9645	109.2724	105.4572	103.5197	90.11584	90.52420	90.48600	83.42078	74.71032	66.55305	62.43778
CUR. SERV. TAX NO ELF ON CENTS/BBL	63.7	57.4	58.8	58.8	53.2	46.7	42	36.4	34.08060	20.7	24.5	20.3	16.8	14.7
SEVERANCE TAX ALTERNATIVE ELF	40.81222	50.19795	70.60750	81.26792	70.32344	58.44092	52.23965	37.26995	37.91909	21.72320	13.91420	6.094706	2.024797	.9237037
SEV TAX ALT ELF NO ELF ON CENTS/BBL	63.7	50.19795	70.60750	81.26792	70.32344	58.44092	52.23965	37.26995	37.91909	20.7	24.5	20.3	16.8	14.7
CONSERVATION TAX	.0995313	.0896075	.091875	.091875	.083125	.0732813	.063625	.056075	.0525	.0440430	.0382813	.0317108	.0265	.0229608
Gathering & Cleaning Charge	.4005	.4010006	.4015019	.4020038	.4025063	.4030094	.4035132	.4040175	.4045224	.4050282	.4055345	.4060414	.4065490	.4070572
ROYALTIES	55.67139	74.03957	91.73522	106.2214	100.2023	97.06021	93.56381	90.21754	91.01754	91.01754	91.01754	91.01754	91.01754	91.01754
TOTAL OIL PROD REVENUES	92.08293	116.0431	142.2719	164.3036	150.5928	139.2924	135.6102	121.3692	125.4059	107.3726	97.12626	83.44510	71.56990	66.29026

Fiscal Years

	1987.00	1988.00	1989.00	1990.00	1991.00	1992.00	1993.00	1994.00	1995.00	1996.00	1997.00	1998.00	1999.00	2000.00	
SEVERANCE TAX (current/yr)	640.42	590.36	575.89	569.37	542.72	500.00	521.00	459.32	410.04	425.66	376.04	322.27	274.79	231.07	
SEVERANCE TAX PRICE (\$/bbl)	6.00	5.31	5.70	11.11	11.50	12.52	13.09	14.91	16.15	17.36	18.08	20.13	21.42	23.15	
SEVERANCE TAX RATE	.15	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	
SEVERANCE TAX RATE	.14	.12	.11	.10	.10	.10	.10	.10	.09	.09	.09	.09	.09	.09	
SEV. TAX RATE PERCENTAGE	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	
SEVERANCE TAX	472.02	430.70	412.14	395.07	349.90	331.00	329.44	277.07	246.00	254.00	216.16	182.26	153.11	126.03	
SEVERANCE TAX - ALTERNATIVE SELF	472.02	430.70	412.14	395.07	349.90	331.00	329.44	277.07	246.00	254.00	216.16	182.26	153.11	126.03	
SEV TAX CUR LAW NO SELF ON CENTS/REL	472.02	430.70	412.14	395.07	349.90	331.00	329.44	277.07	246.00	254.00	216.16	182.26	153.11	126.03	
SEV TAX CUR LAW NO 10 YEAR LIM. P.D.	472.02	430.70	412.14	395.07	349.90	331.00	329.44	277.07	246.00	254.00	216.16	182.26	153.11	126.03	
CONSERVATION TAX	.70	.65	.63	.62	.59	.55	.57	.50	.45	.46	.41	.35	.30	.26	
ROYALTIES	464.19	409.34	406.10	394.73	375.29	339.30	339.30	282.41	246.56	252.30	216.35	182.45	153.17	126.94	
TOTAL OIL PROD REVENUES	937.77	1116.90	1230.87	1271.42	1325.02	1311.77	1519.16	1630.70	1773.41	1826.93	1826.93	1826.93	1826.93	1826.93	
TOTAL OIL PROD REV. ALT. SELF	943.70	1202.24	1330.50	1403.10	1432.06	1412.61	1623.82	1825.00	1959.30	1959.30	1959.30	1959.30	1959.30	1959.30	
REVENUE CHANGE FROM NO SELF	30.06	139.77	102.30	224.06	246.22	271.40	303.13	316.04	322.00	334.43	346.16	347.07	342.96	329.37	
Frudhoe Bay	.00	53.82	105.06	110.79	121.63	125.56	131.02	134.31	135.61	138.70	141.13	142.41	142.93	142.93	
Superuk	27.29	39.25	50.22	57.00	59.04	63.22	63.47	67.56	64.44	67.22	63.90	60.96	57.15	54.54	
Milne Point	2.25	3.09	4.06	5.49	6.97	7.57	7.17	6.00	6.19	5.07	5.46	5.29	4.63	3.94	
Endicott	.00	3.90	10.38	17.72	10.47	20.20	27.20	26.20	25.01	24.33	22.94	21.49	19.40	16.43	
Lisburne	.52	.00	6.40	10.70	10.70	22.40	31.31	34.04	36.00	39.52	42.54	40.96	38.45	35.71	
West Sak	.01	.01	.00	12.49	16.03	24.06	32.07	36.70	40.20	43.97	50.03	54.47	58.90	50.37	
Unspecified	.00	.00	.00	1.39	7.52	8.31	9.21	10.16	13.64	14.74	16.41	15.50	15.00	14.20	
Seal Island	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.66	5.01	6.42	7.02	
REVENUE CHANGE FROM ALT. SELF	6.01	55.26	59.71	111.75	100.54	100.54	104.36	94.29	85.09	86.70	81.90	70.42	70.49	70.45	
Frudhoe Bay	.00	53.82	105.06	110.79	121.63	125.56	131.02	134.31	135.61	138.70	141.13	142.41	142.93	142.93	
Superuk	12.40	15.39	20.07	23.11	19.93	16.21	12.19	6.72	3.04	-1.55	-5.53	-7.66	-7.50	-6.97	
Milne Point	-2.57	-4.25	-5.14	-5.65	-7.10	-7.79	-8.12	-8.19	-7.05	-5.10	-3.10	-3.10	-1.91	-1.16	
Endicott	.00	-3.21	-3.67	-4.09	-4.26	-4.40	-4.30	-4.99	-10.14	-9.33	-6.73	-3.80	-1.42	.00	
Lisburne	-3.02	-7.12	-5.79	-6.64	-5.37	-7.16	-3.92	-4.74	-5.30	-5.99	-6.63	-12.26	-14.09	-12.05	
West Sak	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
Unspecified	.00	.00	.00	.00	-2.04	-3.13	-3.56	-3.99	-5.30	-5.01	-8.46	-5.74	-3.05	-2.77	
Seal Island	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
SEV CHANGE FOR CUR SELF NO SELF ON CENTS/	30.06	10.00	10.29	17.66	24.23	26.23	19.00	23.41	16.18	21.67	23.90	27.69	30.69	27.44	
Frudhoe Bay	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
Superuk	27.29	14.00	0.27	.64	2.01	4.67	1.95	5.03	.00	5.43	5.06	6.94	7.39	6.01	
Milne Point	2.25	.97	.04	.19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.76	
Endicott	.00	3.10	7.02	5.01	5.16	3.60	.00	.00	.33	1.95	3.17	3.93	3.92	.00	
Lisburne	.52	.00	1.36	1.33	1.79	.00	.00	.00	.00	.00	.00	.00	.00	.00	
West Sak	.01	.01	.00	0.53	10.40	14.25	14.39	14.62	14.64	14.79	15.52	15.56	15.50	12.43	
Unspecified	.00	.00	.00	.00	0.973.90	4.015.35	3.717.72	3.380.47	2.980.20	1.527.20	1.106.20	0.955.01	324.33	1.722.94	1.431.49
Seal Island	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
SEV CHANGE FOR ALT SELF NO SELF ON CENTS/R	30.06	102.03	124.13	149.17	165.77	130.69	134.54	129.19	119.94	120.78	127.12	124.13	120.14	123.43	
Frudhoe Bay	.00	54.44	54.03	105.06	105.06	107.40	114.07	113.40	111.14	116.42	114.44	110.50	105.97	100.40	
Superuk	27.29	15.39	20.07	23.11	19.93	16.21	12.19	6.72	3.04	5.43	5.06	6.94	7.39	6.01	
Milne Point	2.25	.97	.04	.19	-1.36	-2.27	-3.00	-3.44	-4.02	-3.33	-2.20	-1.95	-0.04	.76	
Endicott	.00	3.10	7.02	5.01	5.16	3.60	-2.44	-3.33	-1.01	-3.35	1.95	3.17	3.93	3.92	
Lisburne	.52	-1.09	1.36	1.33	1.79	-4.21	-3.92	-4.74	-5.30	-5.99	-6.63	-11.54	-6.45	-2.33	
West Sak	.01	.01	.00	0.53	10.40	14.25	14.39	14.62	14.64	14.79	15.52	15.56	15.50	12.43	
Unspecified	.00	.00	.00	.00	4.01	3.71	3.34	2.94	1.54	1.10	-1.01	.37	1.73	1.43	
Seal Island	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
SEV CHANGE CUR SELF NO 10 YEAR LIMIT	.00	93.32	105.56	110.79	121.63	125.56	131.02	134.31	135.61	138.70	141.13	142.41	142.93	142.93	
Frudhoe Bay	.00	93.32	105.56	110.79	121.63	125.56	131.02	134.31	135.61	138.70	141.13	142.41	142.93	142.93	
Superuk	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
Milne Point	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
Endicott	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
Lisburne	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
West Sak	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
Unspecified	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
Seal Island	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	

Mean case

PRESENT VALUE OF CHANGES IN NET REVENUE
RESULTING FROM CHANGES IN THE SEVERANCE TAX
1988 THROUGH 2000
IN MILLIONS OF DOLLARS

NO SELF	1067.30
ALTERNATE SELF	670.01
ALTERNATE SELF - NO SELF ON CENTS/REL	911.99
CURRENT SELF - NO SELF ON CENTS/REL	134.73
CURRENT SELF - NO 10 YEAR LIMIT	879.26

MEMORANDUM

Division of Strategic Planning
Office of Management and Budget
MS 0164

TO: Mary Halloran
Office of the Speaker

DATE: 17 Sept. 1986

FROM: Gregg Erickson
Senior Economist

SUBJECT: Joint Special Committee On Tax Policy

You asked for my thoughts on further matters that the Committee may wish to cover in regard to the severance tax, and especially the ELF. It seems to me that the members keep returning to questions about the profitability of oil activities. By and large, they haven't received authoritative answers.

For example, at the last meeting Rep. Terry Martin asked if the ELF might not be a disincentive to expanding production. "After all," he noted, "the more oil you produce per well, the higher your tax rate." My answer was that the ELF could indeed be such a disincentive, but only if the tax increases faster than profitability when output per well is increased. Has this condition ever happened in any of the fields in Alaska? Could it conceivably happen in the future under our current severance tax and with lower oil prices? The answers require credible data on field profitability, both historically and currently.

At another point in the meeting George Nelsor suggested that higher taxes on the Prudhoe Bay field could reduce the capital available for future development in Alaska. "We need the profits from Prudhoe to keep investing elsewhere," he said, or something very close to that. His statement raises an important question that really hasn't been addressed yet: How does the cash flow generated by the oil industry in Alaska compare with the flow of investment for exploration and the development? Are the amounts nearly in balance, or -- as some suggest -- is Prudhoe Bay and the pipeline generating far more profits and cash than is being reinvested here?

Conoco, in their Sept 4 letter to the Senator Ferguson, indicated that any changes in the ELF could force them "to shut-in during times of unprofitability." Is this such a time? If so, for what fields? And under what conditions of price? According to Conoco, "A production tax [of 80 cents per barrel] could contribute to the shut-in of the Milne Point Unit." Of course it could, the question is, *Would it?* Conoco isn't telling publicly, and as far as I am aware, the committee hasn't attempted to find out for itself.

My guess is that before making major changes in oil taxes the new administration and many legislators will want authoritative answers to these and similar questions. The best way to get those answers is with established experts from outside the state.

I have enclosed a somewhat out-of-date draft RFP for a study on relative "shares," along with an associated draft "Compass"

article. The RFP would need to be modified for your purposes, but that shouldn't be too difficult. In addition to the historical data, it should ~~up~~ focus on current profitability in light of falling oil prices and the TAPS settlement; it should look at cash flow as well as profitability; it should give you some data pertaining to individual fields, not just data on Alaska oil profits in the aggregate; and the study should analyse the effects of suggested ELF changes on profitability. Still, the principle is the same: Contract with a petroleum oriented accounting professor from a prestigious oil state university to give you the unbiased, unvarnished answers on whatever profitability and cash flow questions your members think are relevant.

Your accounting expert can tell you the profitability and cash flow effects of any tax proposal, but won't venture into how those profit changes will effect future exploration and investment. For that you will need an economist. Here again, for maximum credibility it is desirable to have someone with a solid reputation earned outside the state, with no local axes to grind one way or the other. Some months ago Louann Cutler and I discussed how such a study might proceed, and who might be able to help. She even had some contacts with possible consultants.

Let us know if we may be of further assistance.

Enclosures

cc: Gordon Harrison
Louann Cutler
Mike Scott

Imp Don

DRAFT SEVERANCE TAX AMENDMENT

Option 1. Establish an \$0.80 floor in the severance tax to which the existing ELF does not apply. [N.B.: This draft does not include similar changes for gas production.]

* Section 1. AS 43.55.011(a) is amended to read:

Section 43.55.011(a). There is levied upon the producer of oil a tax for all oil produced from each lease or property in the state, less any oil the ownership or right to which is exempt from taxation. The tax is equal to either the percentage-of-value amount calculated under (b) of this section, multiplied by the economic limit factor determined for the oil production of the lease or property under AS 43.55.013 or the cents-per-barrel amount calculated under (c) of this section, whichever is greater[, MULTIPLIED BY THE ECONOMIC LIMIT FACTOR DETERMINED FOR THE OIL PRODUCTION OF THE LEASE OR PROPERTY UNDER AS 43.55.013]. If the amounts calculated under (b) and (c) of this section are equal, the amount calculated under (b) of this section shall be treated as if it were the greater for purposes of this section.

* Sec. 2. This Act takes effect immediately in accordance with AS 01.10.070(c).

option of floor on large field

cost not analyzed

DRAFT SEVERANCE TAX AMENDMENT

Option 2. Establish an \$0.80 floor in the severance tax to which the existing ELF does not apply and change the ELF formula so that the PEL is set without discretion at 300 barrels, eliminating the exponent. [N.B.: This draft does not make similar changes for gas production.]

* Section 1. AS 43.55.011(a) is amended to read:

Section 43.55.011(a). There is levied upon the producer of oil a tax for all oil produced from each lease or property in the state, less any oil the ownership or right to which is exempt from taxation. The tax is equal to either the percentage-of-value amount calculated under (b) of this section, multiplied by the economic limit factor determined for the oil production of the lease or property under AS 43.55.013 or the cents-per-barrel amount calculated under (c) of this section, whichever is greater[, MULTIPLIED BY THE ECONOMIC LIMIT FACTOR DETERMINED FOR THE OIL PRODUCTION OF THE LEASE OR PROPERTY UNDER AS 43.55.013]. If the amounts calculated under (b) and (c) of this section are equal, the amount calculated under (b) of this section shall be treated as if it were the greater for purposes of this section.

* Sec. 2. AS 43.55.013(b)(1) is amended to read:

Section 43.55.013(b)(1). The economic limit factor for oil production of a lease or property shall be computed according to the following formula:

$$(1 - [PEL/TP])^{[EXP ([460 \times WD]/PEL)]}$$

where: PEL = the monthly production rate at the economic limit;

TP = the total production during the month for which the tax is to be paid;

[WD = THE TOTAL NUMBER OF WELL DAYS IN THE MONTH FOR WHICH THE TAX IS TO BE PAID; AND

WHERE "EXP" INDICATES THAT THE EXPRESSION FOLLOWING IT IS AN EXPONENT].

- * Sec. 3. AS 43.55.013(d) is amended to read:

Section AS 43.55.013(d) The monthly production rate at the economic limit for a lease or property is [PRESUMED TO BE] 300 barrels times the number of well days for the lease or property during the month for which the tax is to be paid. [THE TAXPAYER MAY REBUT THIS PRESUMPTION AT A FORMAL HEARING UNDER AS 43.05.240 BY PROVIDING CLEAR AND CONVINCING EVIDENCE OF A DIFFERENT MONTHLY PRODUCTION RATE AT THE ECONOMIC LIMIT FOR THE LEASE OR PROPERTY. THE HEARING SHALL BE HELD BEFORE FEBRUARY 15 OF THE YEAR OR WITHIN SIX MONTHS AFTER COMMENCEMENT OF OIL PRODUCTION FOR A LEASE OR PROPERTY. THE MONTHLY PRODUCTION RATE AT THE ECONOMIC LIMIT FOR THE LEASE OR PROPERTY BASED UPON THE CLEAR AND CONVINCING EVIDENCE OF THE TAXPAYER SHALL BE CALCULATED BY DIVIDING THE VALUE DETERMINED UNDER (f) OF THIS SECTION INTO THE AVERAGE MONTHLY DIRECT OPERATING COST DETERMINED UNDER (e) OF THIS SECTION AND SHALL BE USED FOR PURPOSES OF THIS SECTION FOR ALL OIL PRODUCTION DURING THAT CALENDAR YEAR FROM THE LEASE OR PROPERTY].

- * Sec. 4. AS 43.55.013(e) and AS 43.55.013(f) are repealed.

- * Sec. 5. This Act takes effect immediately in accordance with AS 01.10.070(c).

DRAFT SEVERANCE TAX AMENDMENT

Option 3. Establish a \$1.50 floor in the severance tax to which the existing ELF does not apply and add an inflation index to the floor. [N.B.: This draft does not make similar changes to the gas production tax.]

* Section 1. AS 43.55.011(a) is amended to read:

Section 43.55.011(a). There is levied upon the producer of oil a tax for all oil produced from each lease or property in the state, less any oil the ownership or right to which is exempt from taxation. The tax is equal to either the percentage-of-value amount calculated under (b) of this section, multiplied by the economic limit factor determined for the oil production of the lease or property under AS 43.55.013 or the cents-per-barrel amount calculated under (c) of this section, whichever is greater[, MULTIPLIED BY THE ECONOMIC LIMIT FACTOR DETERMINED FOR THE OIL PRODUCTION OF THE LEASE OR PROPERTY UNDER AS 43.55.013]. If the amounts calculated under (b) and (c) of this section are equal, the amount calculated under (b) of this section shall be treated as if it were the greater for purposes of this section.

* Sec. 2. AS 43.55.011(c) is amended to read:

(c) The cents-per-barrel amount equals [\$0.60 PER BARREL OF TAXABLE OLD CRUDE OIL PRODUCED FROM THE LEASE OR PROPERTY, AND] \$1.50 [\$0.80] per barrel for all [OTHER] taxable oil produced from the lease or property, [BOTH] as adjusted by AS 43.55.012.

* Sec. 3. AS 43.55.012 is amended by adding a new section to read:

Section 43.55.012(a) The cents-per-barrel amount set out in AS 43.55.011(c) shall be increased or decreased by a percentage equal to the percentage of change in the Gross National Product Deflator published by the Bureau of Economic Analysis of the United States Department of Commerce. Changes in tax rates will be computed based on changes in

the Gross National Product Deflator from that of the First Quarter 1987 Gross National Product Deflator. The department shall post the changes in the tax rates periodically and shall notify every person producing oil within the state of the changes.

* Sec. 4. This Act takes effect immediately in accordance with AS 01.10.070(c).

DRAFT SEVERANCE TAX AMENDMENT

Option 4. Eliminate the ELF on all fields. [N.B.: This draft removes the ELF for gas as well as oil].

* Section 1. AS 43.55.011(a) is amended to read:

Section 43.55.011(a). There is levied upon the producer of oil a tax for all oil produced from each lease or property in the state, less any oil the ownership or right to which is exempt from taxation. The tax is equal to either the percentage-of-value amount calculated under (b) of this section or the cents-per-barrel amount calculated under (c) of this section, whichever is greater[, MULTIPLIED BY THE ECONOMIC LIMIT FACTOR DETERMINED FOR THE OIL PRODUCTION OF THE LEASE OR PROPERTY UNDER AS 43.55.013]. If the amounts calculated under (b) and (c) of this section are equal, the amount calculated under (b) of this section shall be treated as if it were the greater for purposes of this section.

* Sec. 2. AS 43.55.016 (a) is amended to read:

Section 43.55.016(a). There is levied upon the producer of gas a tax for all gas produced from each lease or property in the state, less any gas the ownership or right to which is exempt from taxation. The tax is equal to either the percentage-of-value amount calculated under (b) of this section or the cent-per-Mcf amount calculated under (c) of this section, whichever is greater[, MULTIPLIED BY THE ECONOMIC LIMIT FACTOR DETERMINED FOR GAS PRODUCTION OF THE LEASE OR PROPERTY UNDER AS 43.55.013]. If the amounts calculated under (b) and (c) of this section are equal, the amount calculated under (b) of this section shall be treated as if it were the greater for purposes of this section.

* Sec. 3. AS 43.55.013 is repealed.

* Sec. 4. This Act takes effect immediately in accordance with AS 01.10.070(c).

*What does it mean?
unit -
field* *field productivity
in addition to*
DRAFT SEVERANCE TAX AMENDMENT

Option 5. Establish an alternative ELF which measures total field productivity rather than individual well productivity. [N.B.: this draft does not make similar changes for gas production.]

* Section 1. AS 43.55.013(b)(1) is amended to read:

Sec. 43.55.013(b)(1) The economic limit factor for oil production of a lease or property shall be computed according to the following formula:

$$\frac{(1 - [PEL/TP] \exp (45,500,000 \times WD) / (PEL \times TP / \text{Days}))}{[(1 - PEL/TP) \exp (460 \times WD/PEL)]}$$

where: PEL = the monthly production rate at the economic limit;

TP = the total production during the month for which the tax is to be paid;

WD = the total number of well days in the month for which the tax is to be paid; [AND]

Days = the number of days in the month for which the tax is to be paid; and

where "exp" indicates that the expression following it is an exponent.

* Sec. 2. This Act takes effect immediately in accordance with AS 01.10.070(c).

DRAFT SEVERANCE TAX AMENDMENT

Option 7. Postpone the scheduled application of the existing ELF to Prudhoe Bay only.

* Section 1. AS 43.55.013(b)(2) is amended to read:

Section 43.55.013(b)(2) If, for any month during the first 15 [10] years following the commencement of commercial oil production of a lease or property, the economic limit factor for oil production of that lease or property computed under (1) of this subsection is 0.7 or less, then that factor shall be applied.

* Sec. 2. AS 43.55.013(b)(3) is amended to read:

Section 43.55.013(b)(3) If, for any month during the first 15 [10] years following the commencement of commercial oil production of a lease or property, the economic limit factor for oil production of that lease or property computed under (1) of this subsection is greater than 0.7, then the economic limit factor is one.

* Sec. 3. AS 43.55.013(b)(4) is amended to read:

AS 43.55.013(b)(4) The economic limit factor for oil production of a lease or property after the first 15 [10] years following the commencement of commercial oil production shall be computed and applied under (1) of this subsection.

* Sec. 4. This Act takes effect immediately in accordance with AS 01.10.070(c).

Schis → 50,000 in 1988
alone

DRAFT SEVERANCE TAX AMENDMENT

Option 6. Establish an alternative ELF (field-based applicability) and establish a severance tax floor to which the alternative ELF does not apply. [N.B.: This draft does not include similar changes for gas production.]

* Section 1. AS 43.55.011(a) is amended to read:

Section 43.55.011(a). There is levied upon the producer of oil a tax for all oil produced from each lease or property in the state, less any oil the ownership or right to which is exempt from taxation. The tax is equal to either the percentage-of-value amount calculated under (b) of this section, multiplied by the economic limit factor determined for the oil production of the lease or property under AS 43.55.013 or the cents-per-barrel amount calculated under (c) of this section, whichever is greater[, MULTIPLIED BY THE ECONOMIC LIMIT FACTOR DETERMINED FOR THE OIL PRODUCTION OF THE LEASE OR PROPERTY UNDER AS 43.55.013]. If the amounts calculated under (b) and (c) of this section are equal, the amount calculated under (b) of this section shall be treated as if it were the greater for purposes of this section.

* Sec. 2. AS 43.55.013(b)(1) is amended to read:

Sec. 43.55.013(b)(1) The economic limit factor for oil production of a lease or property shall be computed according to the following formula:

$$\frac{(1 - [\text{PEL}/\text{TP} \exp (45,500,000 \times \text{WD}) / (\text{PEL} \times \text{TP}/\text{Days})])}{[(1 - \text{PEL}/\text{TP}) \exp (460 \times \text{WD}/\text{PEL})]}$$

where: PEL = the monthly production rate at the economic limit;

TP = the total production during the month for which the tax is to be paid;

WD = the total number of well days in the month for which the tax is to be paid; [AND]

Days = the number of days in the month for which the tax is to be paid; and

where "exp" indicates that the expression following it is an exponent.

* Sec. 3. This Act takes effect immediately in accordance with AS 01.10.070(c).

Following is a two-part discussion of the ELF:

I. What is the ELF and why is it important?

II. Should the ELF be changed?

I. WHAT IS THE ELF AND WHY IS IS IMPORTANT?

The ELF, or economic limit factor, is an adjustment to the state's severance tax. It is a formula* that gradually reduces the amount of severance tax owed on an oil field as production declines. Its goal is to promote production where the average output per well is low (and presumably where there is little profit). As the cost of producing the oil gets closer to the value of the oil -- the economic limit -- the ELF reduces the tax that is owed. When a field reaches its economic limit the ELF will have reduced the severance tax to 0. (There is also an ELF adjustment to gas severance taxes, but this discussion is limited to oil taxes.)

In practical terms, the ELF dramatically reduces the state's base severance tax rate (currently 12.25% or 15%) on all fields but Prudhoe Bay. Furthermore, fields with substantial output and correspondingly high profit rates,

such as Prudhoe, do not require the production incentive that the ELF provides.

The ELF is of immediate significance to the state because beginning in FY 88 it will be applied to Prudhoe Bay. According to a recent OMB analysis, the loss in state revenues that year on Prudhoe Bay alone is estimated at \$156 million; total revenues (on all fields) lost that year due to the ELF will be \$409 million.

The economic limit factor came into being as the result of production tax legislation passed in 1977. In that legislation, the severance tax was increased to 12.25%. Previously a "stair-stepped" production tax had existed, based on the average daily production per well, with graduated rates from 5% to 8%.

In its exhaustive Feb. 1977 study of oil and gas taxes, the Dept. of Revenue recommended the ELF as a way to fine-tune the existing severance tax. It was thought that the ELF would be a fair way to set severance taxes on both the lower yield Cook Inlet fields as well as the high-cost, high-yield North Slope fields. There was also some concern that the 12.25% rate tax was too high, and thus would discourage development.

The major oil legislation that passed in 1978, instituting separate accounting, did not alter the severance tax or the ELF. In 1981, however, when separate accounting was overturned and modified apportionment accounting put in

its place, some changes were made to the severance tax and ELF.

The 1981 legislation (SB 524) increased the severance tax, on producing fields, to 15%. However, for fields coming into production after June 30, 1981 (i.e., fields other than Prudhoe), the severance was set at 12.25% for the first five years, and then at 15% afterward. The severance tax was increased to compensate for the expected loss in oil revenues that would result from switching to modified apportionment from separate accounting. (Critics of the bill noted the shift in emphasis from income tax to a production tax, and thus expressed concern that the higher severance tax rate would inhibit development of marginal fields.)

Another significant feature of the 1981 law is that it instituted a 10-year limit, effectively keeping the ELF from being applied for the first 10 years of Prudhoe Bay's production. This means that in FY 88, the ELF will be activated, with an immediate corresponding drop in revenues.

The law requires that the ELF be kept at 1 (or 100% of the 15% severance tax) for the first 10 years of a field's production if the ELF is above .7. For fields with value at or below .7, the actual economic limit factor is used. After 10 years the actual economic limit factor is used in all cases.

For example, in FY 85, the ELF value on Prudhoe Bay was .864. Since this is more than .7, the 1 figure is used. Thus

the full 15% severance tax is owed. For FY 85, this comes to \$1,252.5 million.

In FY 88, however, the 10-year limit will no longer be in effect for Prudhoe (production began in late 1977 or FY 78) and the actual economic limit factor of .82 will be used. This means the amount of severance tax owed will be 82% of 15%, or an effective tax rate of 12.5%. The amount to be paid to the state will be \$714 million. If the ELF were repealed, the state would receive the full 15% severance tax of \$870 million.

Another example of the ELF can be shown using the Kuparuk River field. Currently (FY 86) the ELF is .5. Because this is less than 70%, the actual ELF is used. This brings the effective severance tax rate down to 6%. In this case, the ELF means a loss in state revenues of \$58.5 million.

It is worth noting that the economic limit factor will drastically reduce the severance tax rates on most of the fields that have yet to begin producing. For example, in FY 90 the effective severance tax rate for Lisburne will be 3% and for Endicott it will be 4%. These examples show that the ELF is actually providing these marginal fields with an unforeseen advantage -- reducing severance tax rates at field start-up. The ELF's original goal was to extend the life of fields, and thus extend revenue to the state. Studies show that the ELF actually only prolongs a field's life for one or two years, thus its advantage to the state is not very

significant. However, the ELF does appear to provide an incentive to developers of marginal fields.

Interestingly, Milne Point is a marginal field yet it will have a much higher effective severance tax rate of almost 9% when it begins production in FY 87. This is because the ELF formula is based on output per well (rather than output per field) and Milne has high production per well but a few number of wells and low production compared to Prudhoe.

II. SHOULD THE ELF BE CHANGED?

Ideally, legislation should not focus on just one element of a tax code, such as severance tax, but address a state's entire structure (including such elements as lease payments, royalties, and income tax). However, what's ideal and what's politically feasible are different matters.

In FY 85 the severance tax made up 42% of the state's unrestricted revenue. In the same year severance taxes from Prudhoe and Kuparuk amounted to \$1.325 billion. Thus any changes to the severance tax will have a significant effect on state revenues.

Presuming for the moment that the legislature doesn't want to change the current nominal rate for oil production (which is 12.25% or 15%), and does want to make a change to the severance tax, the ELF is a logical vehicle for such change.

It is assumed here that any changes would have these three basic goals: 1) provide an incentive for exploration and development and reduce the tax burden on marginal fields; 2) make Prudhoe Bay pay a tax reflecting its extraordinary profitability; and, 3) an overall increase in revenues.

Here are several options involving the ELF which address these goals: 1) repeal the ELF; 2) repeal the ELF on Prudhoe

only; 3) modify the ELF formula; 4) return to separate accounting and adopt HB 353; and, 5) maintain the status quo.

Repealing the ELF

Recent OBM figures show that repealing the ELF would bring an additional \$2,498 million to the state from FY 85 through FY 94 with almost half of this coming from Prudhoe Bay. This figure is deceiving, however, because repealing the ELF may mean that some marginal fields won't be economically feasible to develop. Prudhoe doesn't need the development incentive offered by the ELF, so is not likely to be affected by its repeal. However, the unpredictable effect of ELF repeal on marginal fields makes it difficult to estimate total revenues from such an action.

Certainly from a political perspective, it would be hard to justify raising the tax rate on marginal fields, and repealing the ELF would do just this.

According to UA economist Matthew Berman, if the ELF were repealed, then Milne Point and Endicott would not be feasible. Berman also concludes that repealing the ELF is a poor alternative because it makes the severance tax a flat tax which is inequitable for smaller fields.

Repealing the ELF for Prudhoe only

Repealing the ELF on Prudhoe only would bring in an additional \$156 million in FY 88 and a total of \$1,152 from FY 85 through FY 94, according to OMB estimates. The ELF gives an unnecessary break to Prudhoe because the ELF reduces the tax rate rapidly, faster, in fact, than production rates

decline. In the case of Prudhoe, the ELF reduces the severance tax rate long before there is any threat of closing down the field. Thus repealing the ELF on Prudhoe doesn't appear to adversely affect Prudhoe production. Moreover, repealing the ELF on Prudhoe doesn't adversely affect other fields.

Here are a couple of ways this could be accomplished:

a) Have legislation simply repealing the ELF for Prudhoe.

b) Extend the current 10-year limit on large fields (i.e., Prudhoe) to 20 years. The 10-year limit expires in FY 88, meaning that in that year the ELF will go into effect and reduce the amount of severance tax owed on Prudhoe. Current projections show the ELF on Prudhoe reaching .7 in FY 95, so any change in the number of years would only be in effect until FY 95. This means the severance tax would be reduced by the ELF beginning in FY 95.

c) You could also change the ELF "trigger," that is, change the .7 to .5, for example (in conjunction with extending the year limit). This would mean both Prudhoe and Kuparuk would pay the full severance tax rate until their ELF's fell below .5. Kuparuk's ELF falls below .5 in FY 91.

Modifying the ELF formula

It is possible to modify the ELF formula to raise the ELF on Prudhoe and Kuparuk and drop it for the marginal fields. The higher the ELF, the higher the severance tax

will be (up to the maximum amount). This would be a definite incentive for marginal fields. Currently the way the ELF formula is designed, revenues fall faster than production, in other words, the ELF formula doesn't correspond exactly to declining production. The ELF formula now has production declining rapidly as production reaches 300 barrels per well per day (see chart).

For example, this sort of formula could keep the ELF at about .9 or an effective tax rate of 13.5% for Prudhoe and drop it to a rate of 2% for a small field like Milne Point. (By way of comparison, in FY 78, the ELF of .82 will be used for Prudhoe. This will reduce the effective severance tax rate to 12.5%).

This formula would actually help marginal fields, especially one like Milne Point. The current ELF formula is based on production per well, which penalizes Milne Point because it has a small number of wells with high production. This formula change bases production on a per field basis and will drop the severance tax on every field but Prudhoe and Kuparuk.

Incidentally, this would also drop the severance tax rate for severely declining fields like Cook Inlet to practically zero, but the difference in revenues would be more than made up by Prudhoe and Kuparuk.

Return to Separate Accounting and adopt HB 353

HB 353 lowers the severance tax rate to 12.25% and puts a greater emphasis on taxation of profits, or income tax,

rather than on "flat" taxes such as production taxes and royalties. Many economists believe this is a preferable form of taxation for marginal fields because they won't be taxed until they make a profit. The House Research Agency is currently studying how HB 353 would affect exploration and development on marginal fields.

Status Quo

If nothing is done, then the ELF will go into effect on Prudhoe Bay with an immediate drop in revenues to the state in FY 88 of \$156 million.

*THE ELF FORMULA

The economic limit factor for oil production of a lease or property is computed according to this formula:

$$ELF = 1 - \frac{PEL}{TP} \exp \frac{460 \times WD}{PEL}$$

PEL = the monthly production at the economic limit
(this is 300 bbls. x number of well days in the month)

TP = the total production (number of barrels) during
the month for which the tax is to be paid

WD = the total number of well days in the month for
which the tax is to be paid

exp = means that the expression following it is an exponent

Example for computing severance tax owed:

Assume: --value of production at well head is \$875,000
--the property operated 70 well days (WD)
--total production for month is 40,000 bbls (TP)
--production at economic limit is
300 bbl/day x 70 well days = 21,000 (PEL)
--87.5% of production is subject to tax (what's
left after royalty taken out)

$$ELF = \left(1 - \frac{21,000}{40,000}\right) \exp \frac{460 \times 70}{21,000}$$

$$ELF = \left(1 - \frac{21,000}{40,000}\right)^{1.53}$$

$$ELF = (1 - .48)^{1.53}$$

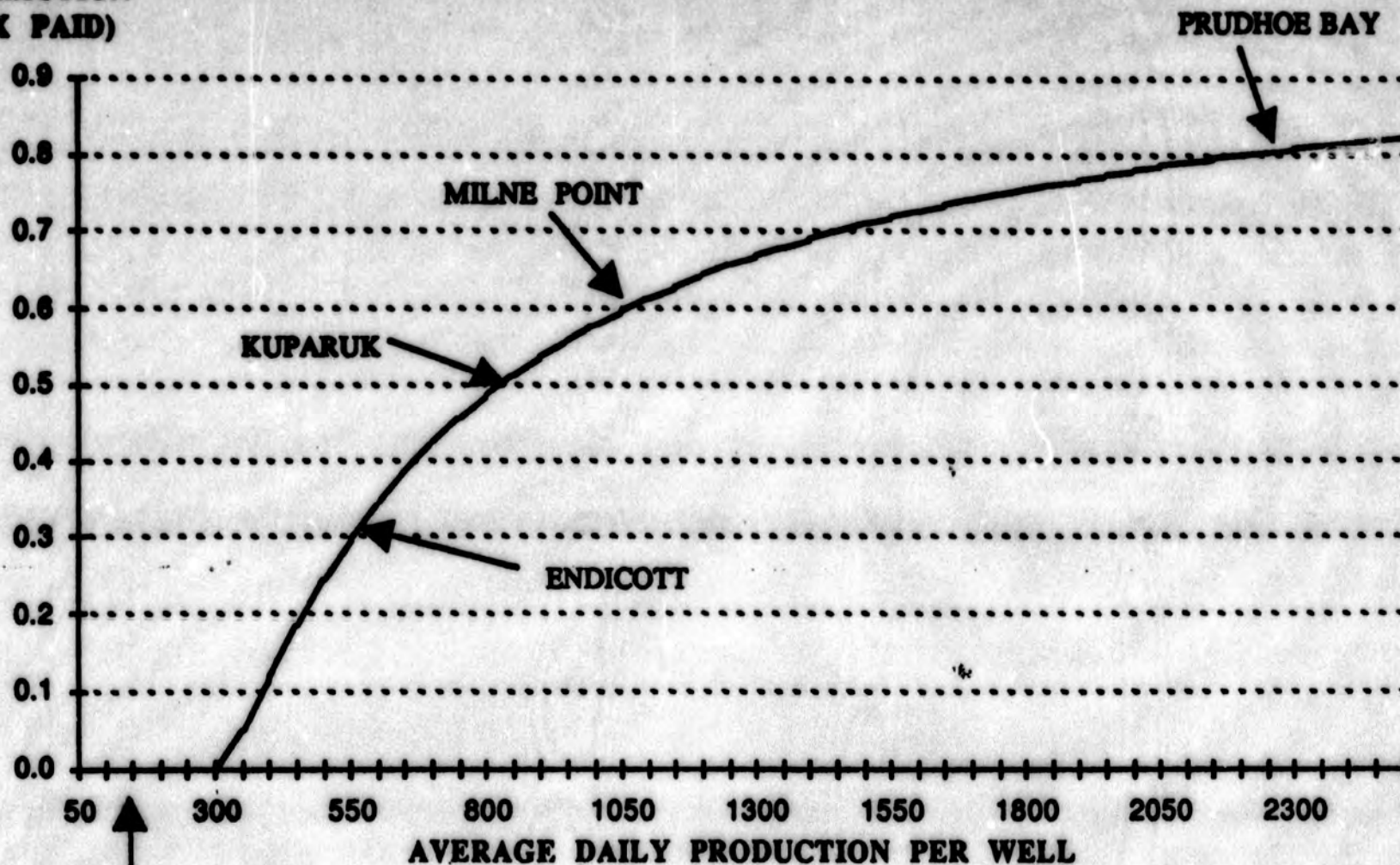
$$ELF = 1 - .68$$

$$ELF = .32$$

\$875,000	x	87.5%	x	15%	x	.32	=	\$36,675
value of		taxable		tax		ELF		tax amount
production		production		rate				due state

**FRACTION OF NOMINAL SEVERANCE TAX PAID IN FY
88 AS A RESULT OF THE ECONOMIC LIMIT FACTOR
(ELF)**

**ELF (FRACTION
OF TAX PAID)**



**LISBURNE
WEST SAK
SEAL ISLAND**

Based on data from the
Alaska Dept. of Revenue
April 85 estimates

ALASKA NORTH SLOPE OIL AND GAS REVENUES

Alaska North Slope Oil Revenue

	Fiscal Years									
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
June 1985 Pot. Rev. Assumptions										
World Oil Price	26.37	24.01	22.41	22.206	22.733	23.464	24.362	25.565	26.934	28.379
Average Rate of Inflation	4.03	3.92	4.01	4.76	4.76	4.76	4.76	4.76	5.104	5.104
ANS/World Qual. & Marketing Adjust	3.293	2.532	2.663	2.639	2.386	2.447	2.475	2.520	2.507	2.612
TransAlaska Pipeline Tariff	6.007	6.007	6.007	6.007	6.007	6.007	6.007	6.007	6.007	6.007
ANS Netback Price P801 (\$/bbl)	17.11	15.471	13.74	13.56	14.34	15.01	15.00	17.03	18.34	19.76
Prudhoe Bay Prod. (MMbbl/d)	1.520	1.517	1.500	1.34	1.100	1.03	.074	.015	.753	.641
Prudhoe Bay Price (\$/bbl)	17.11	15.471	13.74	13.56	14.34	15.01	15.00	17.03	18.34	19.76
Wells	460.25	509.6	527.1	540.6	524.05	505.15	489.9	466.45	447.65	420.65
ELP	.0640307	.0496946	.0437062	.0205200	.0041141	.7034653	.7540433	.7491265	.7399201	.7145022
Nominal Tax Rate	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15
Effective Tax Rate	.15	.15	.15	.1230793	.1206171	.1175190	.1131065	.1123690	.1109092	.1071753
Royalty Percentage	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125
SEVERANCE TAX (ELP)	1252.465	1124.336	992.6137	714.2504	656.2593	900.2696	501.3609	490.1035	409.5263	433.5515
SEVERANCE TAX (NO ELP)	1252.465	1124.336	992.6137	870.4757	816.1270	740.6450	664.0966	664.9124	561.5063	606.7002
CONSERVATION TAX	.0100063	.0056140	.0020219	.0349531	.4742719	.4111953	.3409172	.3253633	.3006117	.2550992
Gathering & Cleaning Charge	.7	.72021	.7567550	.7071017	.0245670	.0630172	.9045340	.9400090	.9931351	1.044619
ROYALTIES	1144.023	1020.395	893.2797	700.9031	732.5702	664.7022	597.1494	597.9900	595.9624	547.3410
TOTAL OIL PROD REVENUES	2396.400	2144.731	1805.893	1495.153	1300.029	1245.052	1090.510	1096.102	1005.409	900.0945
Kuparuk River Prod. (MMbbl/d)	.167	.2	.219	.239	.239	.239	.21	.107	.162	.143
Kuparuk River Price (\$/bbl)	16.29	14.651	12.92	12.74	13.52	14.19	15.06	16.21	17.52	18.94
Wells	154.5	240.5	284	205.25	205.25	205.25	276.5	276.5	254	254
ELP	.69	.4091136	.4697705	.5067930	.5067930	.5067930	.4627634	.4070192	.3773622	.3112742
Nominal Tax Rate	.1225	.1225	.1363	.15	.15	.15	.15	.15	.15	.15
Effective Tax Rate	.004525	.0599164	.0640297	.0760191	.0760191	.0760191	.0694145	.0610529	.0566043	.0466911
Royalty Percentage	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125
SEVERANCE TAX (ELP)	73.43040	56.07173	57.06143	73.92490	70.45092	82.33065	70.11249	59.10602	51.30973	40.30790
SEVERANCE TAX (NO ELP)	106.4326	114.6395	123.1696	145.0670	154.7905	162.4697	151.5003	145.2160	135.9694	129.7502
CONSERVATION TAX	.0666695	.0790430	.0874209	.0954133	.0954133	.0954133	.0830359	.0746539	.0646734	.0570003
Gathering & Cleaning Charge	.4	.4005	.4010006	.4015019	.4020038	.4025063	.4030094	.4035132	.4040175	.4045226
ROYALTIES	121.0719	130.0350	125.0003	134.5436	143.0436	150.3440	140.4323	134.0590	126.5005	120.9324
TOTAL OIL PROD REVENUES	194.5103	106.1075	102.9497	200.4605	221.4945	232.6027	210.5440	193.9650	177.0102	161.3203
Milne Point Prod. (MMbbl/d)	0	0	.000	.023	.023	.023	.023	.023	.010	.016
Milne Point Price (\$/bbl)	17.40	15.041	14.11	13.93	14.71	15.30	16.5	17.4	18.71	20.13
Wells	1	1	21.15	21.15	21.15	21.15	21.15	19.6	17.1	15.6
ELP	0	0	.0092001	.6096111	.6096111	.6096111	.6096111	.6359020	.5970649	.5002759
Nominal Tax Rate	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15
Effective Tax Rate	0	0	.0133920	.0914417	.0914417	.0914417	.0914417	.0953053	.0896797	.0802414
Royalty Percentage	.1625	.1625	.1625	.1625	.1625	.1625	.1625	.1625	.1625	.1625
SEVERANCE TAX (ELP)	0	0	.4621040	0.955726	9.457195	9.007944	10.44720	11.66907	9.232479	0.607079
SEVERANCE TAX (NO ELP)	0	0	9.175901	14.69000	15.51349	16.22000	17.13761	18.35042	15.44242	14.76037

TABLE 1

ROYALTIES	0	0	0	0	0	0	0	0	0	0
TOTAL OIL PROD REVENUES	0	0	0	0	0	0	0	0	0	0
Endicott Prod. (MMbbl/d)	0	0	0	0	0	0	0	0	0	0
Endicott Price (\$/bbl)	10.00	14.351	12.02	12.44	13.32	13.09	14.76	15.91	17.22	18.64
Wells	1	1	1	1	1	1	1	1	1	1
ELP	0	0	0	0	0	0	0	0	0	0
Nominal Tax Rate	0	0	0	0	0	0	0	0	0	0
Effective Tax Rate	0	0	0	0	0	0	0	0	0	0
Royalty Percentage	.1430	.1430	.1430	.1430	.1430	.1430	.1430	.1430	.1430	.1430
SEVERANCE TAX (ELP)	0	0	0	0	0	0	0	0	0	0
SEVERANCE TAX (NO ELP)	0	0	0	0	0	0	0	0	0	0
CONSERVATION TAX	0	0	0	0	0	0	0	0	0	0
Gathering & Cleaning Charge	0	0	0	0	0	0	0	0	0	0
ROYALTIES	0	0	0	0	0	0	0	0	0	0
TOTAL OIL PROD REVENUES	0	0	0	0	0	0	0	0	0	0
Lisburne Prod. (MMbbl/d)	0	0	0	0	0	0	0	0	0	0
Lisburne Price (\$/bbl)	10.04	15.201	13.47	13.29	14.07	14.74	15.61	16.76	18.07	19.49
Wells	1	1	1	1	1	1	1	1	1	1
ELP	0	0	0	0	0	0	0	0	0	0
Nominal Tax Rate	0	.1225	.1225	.1225	.1225	.1225	.1225	.1225	.1225	.1225
Effective Tax Rate	0	0	0	0	0	0	0	0	0	0
Royalty Percentage	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125
SEVERANCE TAX (ELP)	0	0	0	0	0	0	0	0	0	0
SEVERANCE TAX (NO ELP)	0	0	0	0	0	0	0	0	0	0
CONSERVATION TAX	0	0	0	0	0	0	0	0	0	0
Gathering & Cleaning Charge	0	0	0	0	0	0	0	0	0	0
ROYALTIES	0	0	0	0	0	0	0	0	0	0
TOTAL OIL PROD REVENUES	0	0	0	0	0	0	0	0	0	0
West Sak Sands Prod. (MMbbl/d)	0	0	0	0	0	0	0	0	0	0
West Sak Sands Price (\$/bbl)	15.33	13.691	11.96	11.70	12.56	13.23	14.1	15.25	16.56	17.90
Wells	1	1	1	1	1	1	1	1	1	1
ELP	0	0	0	0	0	0	0	0	0	0
Nominal Tax Rate	0	0	0	0	0	0	0	0	0	0
Effective Tax Rate	0	0	0	0	0	0	0	0	0	0
Royalty Percentage	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125
SEVERANCE TAX (ELP)	0	0	0	0	0	0	0	0	0	0
SEVERANCE TAX (NO ELP)	0	0	0	0	0	0	0	0	0	0
CONSERVATION TAX	0	0	0	0	0	0	0	0	0	0
Gathering & Cleaning Charge	0	0	0	0	0	0	0	0	0	0
ROYALTIES	0	0	0	0	0	0	0	0	0	0
TOTAL OIL PROD REVENUES	0	0	0	0	0	0	0	0	0	0
Unspecified Onshore Prod. (MMbbl/d)	0	0	0	0	0	0	0	0	0	0
Unspecified Onshore Price (\$/bbl)	15.19	13.551	11.02	11.64	12.42	13.09	13.96	15.11	16.42	17.84
Wells	1	1	1	1	1	1	1	1	1	1
ELP	0	0	0	0	0	0	0	0	0	0
Nominal Tax Rate	0	0	0	0	0	0	0	0	0	0
Effective Tax Rate	0	0	0	0	0	0	0	0	0	0
Royalty Percentage	.125	.125	.125	.125	.125	.125	.125	.125	.125	.125
SEVERANCE TAX (ELP)	0	0	0	0	0	0	0	0	0	0
SEVERANCE TAX (NO ELP)	0	0	0	0	0	0	0	0	0	0
CONSERVATION TAX	0	0	0	0	0	0	0	0	0	0
Gathering & Cleaning Charge	0	0	0	0	0	0	0	0	0	0
ROYALTIES	0	0	0	0	0	0	0	0	0	0
TOTAL OIL PROD REVENUES	0	0	0	0	0	0	0	0	0	0
Seal Island Prod. (MMbbl/d)	0	0	0	0	0	0	0	0	0	0
Seal Island Price (\$/bbl)	15.54	13.901	12.17	11.99	12.77	13.44	14.31	15.46	16.77	18.19
Wells	1	1	1	1	1	1	1	1	1	1
ELP	0	0	0	0	0	0	0	0	0	0
Nominal Tax Rate	0	0	0	0	0	0	0	0	0	0
Effective Tax Rate	0	0	0	0	0	0	0	0	0	0

SEVERANCE TAX (MILL)
 SEVERANCE TAX (MILL)
 CONSERVATION TAX
 Gathering & Cleaning Charge
 ROYALTIES
 TOTAL OIL PROD REVENUES

NORTH SLOPE Prod. (MMbbl/d)
 AVG. NORTH SLOPE PRICE (\$/bbl)

AVG. NOMINAL TAX RATE
 AVG. EFFECTIVE TAX RATE
 AVG. ROYALTY PERCENTAGE
 SEVERANCE TAX
 CONSERVATION TAX
 ROYALTIES
 TOTAL OIL PROD REVENUES

1.695 1.717 1.744 1.66 1.504 1.40 1.33 1.337 1.17 1.031
 17.2521 15.3754 13.6373 13.4070 14.1364 14.7467 15.3737 16.7000 18.0050 19.3053
 .147206 .146797 .146137 .146013 .145815 .145619 .146192 .146552 .146215 .147572
 .143491 .139869 .137037 .111551 .103690 .090620 .093409 .091210 .092272 .083013
 .125 .125 .125 .125 .125 .125 .125 .125 .125 .125
 1325.903 1100.400 1050.937 797.1311 746.6525 693.3015 623.0119 617.2010 605.4633 540.1976
 .676798 .685486 .696100 .662106 .631420 .589927 .529927 .500326 .466175 .410040
 1365.093 1150.430 1030.354 968.9079 902.9965 861.8279 916.9057 932.5029 936.9056 890.8760
 2891.674 2331.524 2002.320 1766.701 1730.190 1655.799 1501.240 1550.366 1542.839 1431.404
 14.38491 13.95069 13.70037 11.15651 10.36090 9.882054 9.349006 9.121049 8.922717 8.301360

FISCAL IMPACT OF ELP REPEAL ON SEVERANCE TAX INCOME ALL NORTH SLOPE FIELDS

SEVERANCE TAX (MILLIONS OF \$)

NO ELP
 WITH ELP
 REVENUES RESULTING FROM
 REPEAL OF ELP
 CUMULATIVE TOTAL

1350.097 1230.976 1125.702 1039.074 1023.750 1011.050 971.7900 903.0472 903.7061 941.9207
 1325.903 1100.400 1050.937 797.1311 746.6525 693.3015 623.0119 617.2010 605.4633 540.1976
 32.99410 80.56776 74.76406 342.7425 277.0974 310.4690 347.0070 365.7653 370.2420 401.7311
 32.99410 91.56106 166.3267 409.0693 606.1667 1004.636 1352.623 1710.300 2096.631 2490.362

PRUDHOE BAY ONLY

SEVERANCE TAX (MILLIONS OF \$)

NO ELP
 WITH ELP
 REVENUES RESULTING FROM
 REPEAL OF ELP
 CUMULATIVE TOTAL

1292.465 1124.336 992.6137 870.4757 816.1270 740.6450 664.0966 664.9124 661.5063 606.7002
 1232.465 1124.336 992.6137 714.2504 696.2593 500.2696 501.3609 490.1035 409.5203 433.5515
 0 0 0 156.2253 159.0670 160.3754 163.5357 166.0009 172.0600 173.2367
 0 0 0 156.2253 316.0931 476.4605 640.0042 806.0131 970.0730 1152.110

April 18, 1986

POTENTIAL "ELF" PROBLEM

Alaska's petroleum severance tax is a major source of the state's revenues, an estimated \$770.5 million of the \$2077.6 million projected for FY 87. North Slope producers currently pay the full 15 percent nominal severance tax rate, with a downward adjustment scheduled to begin in 1987 on the Prudhoe Bay field.

The formula for the adjustment of the nominal severance tax rate is called the economic limit factor, fondly known as the ELF. Under the ELF, actual severance tax paid equals [ELF X statutory tax rate]. The severance tax features an 80c/barrel minimum tax, supposedly an insulating barrier from low oil prices. But, the 80c/barrel minimum tax is also subject to the ELF under AS 43.55.011(a). The ELF is not operative until its calculated value is .7 or less, or until a field begins its eleventh year of production.

The ELF formula is:

$$[(460 \times WD)/PEL]$$

$$ELF = (1 - PEL/TP)$$

WD = wells Drilled
PEL = Production Economic Limit
TP = Total Production

This unwieldy formula can be simplified to the following:

1.533

$$\text{Current ELF} = (1 - 300/\text{well production})$$

(See Attachment A for further explanation of terms and detail).

The controlling factor of the ELF formula is the PEL. Put simply, PEL is the amount of production needed to cover direct operating costs. Under current statute, that amount is specified to be 300 barrels per day. But, as wellhead values decrease, PEL increases since it takes more barrels to cover actual operating costs. The producers can request a change in the official PEL, based on one month's market prices and four consecutive months' of operating costs. Given the predictions that prices will stay low, on average, for the next 18 months, then operating costs will be proportionately larger as a percentage of the total production than in the past. As the PEL increases, the value of ELF decreases, eventually becoming zero. A zero ELF means, of course, zero severance taxes.

Low wellhead prices make it conceivable that producers will request the necessary administrative hearing(s) to increase the PEL which will, in turn, decrease the ELF, which will, in turn, decrease the amount of severance tax received by the State. The Dept. of Revenue calculates that at today's prices the PEL is greater than 300 barrels/day at three North Slope fields - Kuparuk, Milne Point and Lisburne.

The ELF for Prudhoe Bay production becomes sensitive to price after wellhead prices go below \$2/barrel, or \$11/barrel on the West Coast and \$13.50 on the Gulf. The Prudhoe Bay wellhead value becomes zero at a West Coast market price of \$6.50 and a Gulf Coast price of \$9.00. Thus, it may be to the producers' economic advantage to ask for a new Prudhoe Bay PEL/ELF calculation if the price falls to \$11 West Coast and \$13.50 Gulf. Prudhoe Bay will provide between 83.7 and 86 percent of the expected FY87 production.

The ELFs for the Kuparuk, Milne Point and Lisburne fields are considerably more sensitive to probable oil prices than is Prudhoe Bay.

The ELF for Kuparuk becomes sensitive to prices when the wellhead price falls below \$3/bbl. The Kuparuk ELF reaches .7 at approximately \$12.50 West Coast and \$15.00 Gulf, and drops to zero at \$8.10 West Coast and \$10.60 Gulf. Kuparuk will provide between 11.8 and 12 percent of the expected FY87 production.

The ELF for Milne Point becomes sensitive to prices when the wellhead falls below \$5.00/bbl. The Milne Point ELF reaches .7 at approximately \$13.70 West Coast and \$16.20 Gulf, and drops to zero at \$10.30 West Coast and \$12.80 Gulf. Milne Point will provide between 1.6 and 2 percent of the expected FY87 production.

Production at Lisburne is still scheduled to begin in December 1986 or early 1987. The Lisburne ELF also becomes sensitive to prices when the wellhead drops below \$5.00/bbl. The Lisburne ELF reaches .7 at approximately \$10.60 West Coast and \$13.10 Gulf, and drops to zero at \$7.20 West Coast and \$9.50 Gulf. If Lisburne goes on line on schedule, it will provide about 2.7 percent of the expected FY87 production.

To trigger the re-evaluation of the value of the PEL/ELF, the producers must request an administrative hearing, either by February 15 of the affected year or within the first six months after commencement of a field's production. Once set, the ELF cannot be changed during that calendar year [AS 43.55.013(d)].

For Trudhoe Bay, the ELF kicks in automatically under current statute on June 17, 1987, although a change could take place as early as the beginning of 1987. A changed PEL/ELF could be established for Kuparuk, effective January 1, 1987, while different PEL/ELFs for both Milne Point and Lisburne fields could be established retroactive to the beginning of production as both fields are or will be in their respective first six months of production. Once the PEL/ELF is changed, its new valuation is set for the calendar year. Whether a change takes place depends on market prices and the producers' willingness to request the necessary administrative hearing this fall. Under the provisions of AS 43, the hearing would be confidential and action would proceed without any notification to the legislature.

Also, the statute does not provide the Dept. of Revenue with discretionary powers. The direct operating costs are tightly and narrowly defined in statute [AS 43.55.013(e)]. Thus, the request would be evaluated on mathematics -- does it now take more than 300 barrels per day to pay direct operating costs? At this time it appears that the actual PEL is more than 300 barrels/day in the Kuparuk, Milne Point, and Lisburne fields.

At risk is some portion of about \$38.5 million in FY 87 severance taxes from Milne Point, Lisburne, and Kuparuk production. The Dept. of Revenue and OMB expect the loss of at least \$12 to 14 million. The \$38.5 million equals about 5% of total severance taxes expected, or about 2% of total state revenues. Also at risk is some portion of about \$28.2 million in FY 88 severance taxes, or about 2% of total state revenues.

These calculations are based on the March 1986 revenue projections, including TAPS. For FY87, Milne Point and Lisburne are each expected to bring in \$7.7 million, while Kuparuk would bring in \$23.1 million for the period January 1, 1987 through June 30, 1987. For FY88, Milne Point, Lisburne, and Kuparuk should generate \$56.4 million in severance taxes. Half this amount, or \$28.2 million would be at risk because the new ELF's would remain in effect through the calendar year 1987.

A simple statutory change can provide a fundamental protection for the State's severance tax income so that it is never calculated on less than the 80c/bbl floor set out in AS 43.55.011(c).

The necessary language would be as follows:

* Section 1. AS 43.55.011(a) is amended to read:

Sec. 43.55.011. OIL PRODUCTION TAX. (a) There is levied upon the producer of oil a tax for all oil produced from each lease or property in the state, less any oil the ownership or right to which is exempt from taxation. The tax is equal to either the percentage-of-value amount calculated under (b) of this section, multiplied by the economic limit factor determined for the oil production of the lease or property under AS 43.55.013, or the cents-per-barrel amount calculated under (c) of this section, whichever is greater[, MULTIPLIED BY THE ECONOMIC LIMIT FACTOR DETERMINED FOR THE OIL PRODUCTION OF THE LEASE OR PROPERTY UNDER AS 43.55.013]. If the amounts calculated under (b) and (c) of this section are equal, the amount calculated under (c) [(b)] shall be treated as if it were the greater for purposes of this section.

* Section 2. Section 1 of this Act takes effect immediately in accordance with AS 01.10.070(c).

This language does not attempt to solve another identified issue - inflation-proofing the cents-per-barrel floor. The 80c/bbl floor was originally established in 1977, and has not been revised since that time, despite the considerable effects of inflation during the past nine years. In today's dollars, the 80c of 1977 would be about \$1.25.

There also exist potential problems with royalty revenue. At zero wellhead value, the State receives no royalty revenue except from those sales contracts which specify a premium over "in value" price. Those contracts affect only about 25% of the royalty share, providing 30c to 35c/barrel premium. (The following royalty contracts currently provide premiums above the "in value" price: Tesoro- second contract, 13.876% of Prudhoe Bay royalty production; Chevron, 9.6% of Prudhoe Bay royalty production; GVEA, 2.667% of Prudhoe Bay royalty production; and Petrostar, 19.198% of Kuparuk royalty production).

Unfortunately, the economic interests of the producers and the State are not the same because of the TAPS tariff, shipping costs, and the producers' federal taxes. It is apparently in the producers' economic interests to maintain the flow of Prudhoe Bay oil until the market price drops to approximately \$3 on the West Coast and \$5.50 on the Gulf. Thus, the State could conceivably find itself in the situation where its royalty oil has little or no value in terms of state revenues yet the oil is pumped daily into TAPS. In fact, there is even the remote possibility of a 70c/bbl cleaning and dehydration charge on all royalty barrels being levied against the State by the producers even when the wellhead value is zero.

The possible actions necessary to protect the State's royalty revenue seem to be administrative in nature, and would involve cooperative negotiations with the producers. In contrast, the severance tax floor can be fixed only through legislative action.

NORTH SLOPE PRODUCTION AND THE ELF

FIELD	PRUDHOE BAY	KUPARUK	NILNE POINT	LISBURNE
Wellhead price at which field becomes sensitive to ELF	\$2.00 or less/bbl	\$3.61 or less/bbl PEL > 300 at 3.61 WH	\$5.00 or less/bbl PEL > 300 at \$4.85 WH	\$5.00 or less/bbl PEL > 300 at \$4.90 WH
Sales price/value at which ELF reaches .7 West Coast Gulf	Now above .7 7.15 WC 9.65 Gulf	Now below .7 Approx 12.50 WC 15.00 Gulf	Now below .7 Approx 13.70 WC 16.20 Gulf	Now below .7 Approx 10.60 WC 13.10 Gulf
Sales price/value at which ELF reaches 0 West Coast Gulf	6.50 WC 9.00 Gulf	> \$1.20 Wellhead 8.10 WC 10.60 Gulf	> \$1.50 Wellhead 10.30 WC 12.80 Gulf	> \$1.50 Wellhead 7.20 WC 9.50 Gulf
Time period for confidential hearing request	By Feb. 15, 1987	By Feb. 15, 1987	(1) Within first 6 months of production (by May 15, 1986) or (2) By Feb. 15, 1987	(1) Within first 6 months of production (Scheduled to begin Dec. 1986 or Jan 1987), or (2) Feb 15, 1987, whichever is latest
Time period when new ELF would apply	1987	1987	(1) Retroactive to beginning of production or (2) 1987, depending on timing of request	(1) Retroactive to beginning of production or (2) 1987
Basis for calculation of current direct operating costs (PEL)	300 bbls/day	300 bbls/day	300 bbls/day	300 bbls/day
Percentage of North Slope productions w/o Lisburne with Lisburne	86% 83.7%	12% 11.8%	2% 1.6%	N/A 2.7%
Percentage of expected severance tax for FY 87 (Based on March forecast) and dollar value	92% \$708.9 million	6% \$46.2 million	1% \$7.7 million	1% \$7.7 million
Percentage of expected severance tax for FY 88 (Based on March forecast) and dollar value	89.4% \$476.5 million	7.1% \$37.8 million	1.3% \$6.9 million	2.2% \$11.7 million