

**Progressive Feature
March 5, 2006
Pedro van Meurs**

INTRODUCTION

The Governor requested me as part of the overall 20/20 package to look into a possible progressive feature that could complement this package.

Following are my suggestions.

STRUCTURE

I believe that a structure as proposed at one time by EM/BP based on a varying PPT rate is not workable.

In order for a system based on a varying PPT rates to be truly progressive with very high oil prices over \$ 100 per barrel, the rates would have to go up rather high, for instance to 40%.

It would make the carry forward credits of companies that are in the investment phase completely unreliable. If prices are high, the tax rate may be 40% and the total carry forward credit would be 60%. If prices are low the tax rate would be 20% and the total carry forward credit would be 40%. In other words the credits as a result of new investment would be based on actual prices that are unknown when the investment is being made. This would make investment decisions rather unpredictable and difficult.

Also, I doubt the wisdom of providing tax credit support of as much as 60% of the value of the investment. This would make the audit burden very difficult.

For these reasons, I have been looking for a different feature that would not have these negative side effect and would still be very price sensitive.

SUGGESTIONS

In order to avoid the problems identified above it is much better to turn the production tax in two components:

- The basic production tax, which would be price sensitive and would be calculated entirely on gross revenues after royalties (very much like the current Production Tax), **plus**
- The PPT based on the 20/20 proposal. The basic production tax would be a deduction for the calculation of the PPT.

The overall \$ 73 million tax free allowance would apply to the combination of the two components.

There is a very large variety of options to create a price sensitive production tax rate.

Two options were evaluated: a Trinidadian style SPT and a windfall profit style formula.

One could use a sliding scale of the basic production tax that is based on nominal prices (in other words un-escalated prices) or escalated prices.

The \$ 73 million allowance is defined on the basis of nominal prices. This would gradually “toughen up” the fiscal terms over time on the assumption that there would be modest inflation in the 1 – 3% range per year.

The same concept can be recommended for the progressive feature.

As was stated a number of times by various parties, it is always relatively easy to agree between a government and companies to lower fiscal terms voluntarily when conditions merit such a drop in government take. It is impossible in a fiscal stability arrangement to increase terms. Therefore, a system that has a built-in protection for the State of Alaska by gradually “toughening up” terms through a nominal \$ 73 million allowance and a nominal progressive feature would protect Alaska better than a system based on inflation adjusted values.

Option 1: SPT style feature

My suggested scale of the basic production tax rates would be as follows:

| WTI | Base | |
|----------------------------------|---------------|--|
| OIL PRICE: Production Tax | | |
| | Rate | |
| 50.000 | 1.00% | |
| 55.000 | 2.00% | |
| 60.000 | 3.00% | |
| 65.000 | 4.00% | |
| 70.000 | 5.00% | |
| 75.000 | 6.00% | |
| 80.000 | 7.00% | |
| 85.000 | 8.00% | |
| 90.000 | 9.00% | |
| 95.000 | 10.00% | |
| 100.000 | 11.00% | |
| 105.000 | 12.00% | |
| 110.000 | 13.00% | |
| 115.000 | 14.00% | |
| 120.000 | 15.00% | |
| 125.000 | 16.00% | |
| 130.000 | 17.00% | |
| 135.000 | 18.00% | |
| 140.000 | 19.00% | |
| 145.000 | 20.00% | |
| 150.000 | 21.00% | |
| 155.000 | 22.00% | |
| 160.000 | 23.00% | |
| 165.000 | 24.00% | |
| 170.000 | 25.00% | |
| 175.000 | 26.00% | |
| 180.000 | 27.00% | |
| 185.000 | 28.00% | |
| 190.000 | 29.00% | |
| 195.000 | 30.00% | |

In other words as long as the average WTI price for a month is between \$ 50 and \$ 55 per barrel the production tax rate would be 1%. If the price is between \$ 55 and \$ 60 the rate would be 2%, etc.

The rate would go up to as high as 50% based on the same scale.

Option 2 – Basic Production Tax based on a windfall profits style formula

After some analysis of alternative formula's, a simple windfall profits style formula seems the best.

The Basic Production Tax Rate would be based on the following formula:

$$\text{Basic Tax Rate} = (\text{WTI} - 50.00) * 0.25\%$$

A maximum rate of 50% is recommended. This would be reached for a WTI price of \$ 250.00.

As for the above SPT the WTI would be based on nominal prices. In other words if the WTI price is \$ 60.00 per barrel, the Basic Tax Rate would be $(60-50) * 0.25\%$ or 2.5%.

The PPT based on the 20/20 proposal would be in addition to this 2.5% rate. The Basic Production Tax would be a deduction for the calculation of the 20/20 PPT.

ECONOMIC ANALYSIS

The two scales result could be constructed to result in almost identical economics.

Following is a detailed economic analysis of the formula concept.

The graphs illustrate the economic effects of this feature – not considering the \$ 73 million tax free allowance.

The graphs are based on four scenarios:

- 25-20-0
- 20-20-0
- 40-20-0
- 20-20-with the above formula (“PF” means progressive feature)

Graphs are shown for the \$ 20 to \$ 110 range. However, as explained above the Basic Production Tax, the scale goes up to \$ 250 per barrel, where a maximum percentage of 50% basic production tax is being reached.

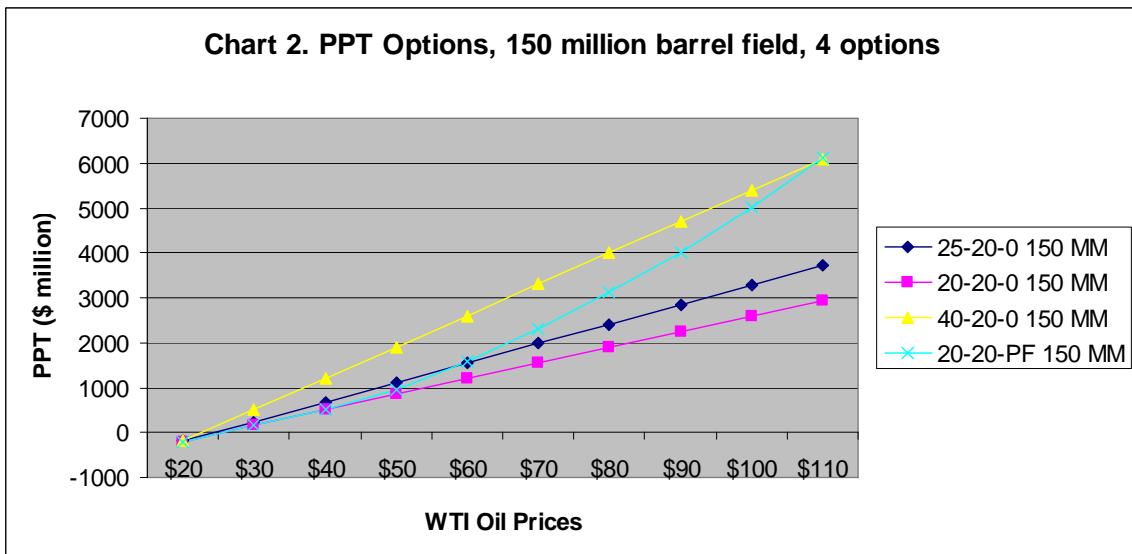
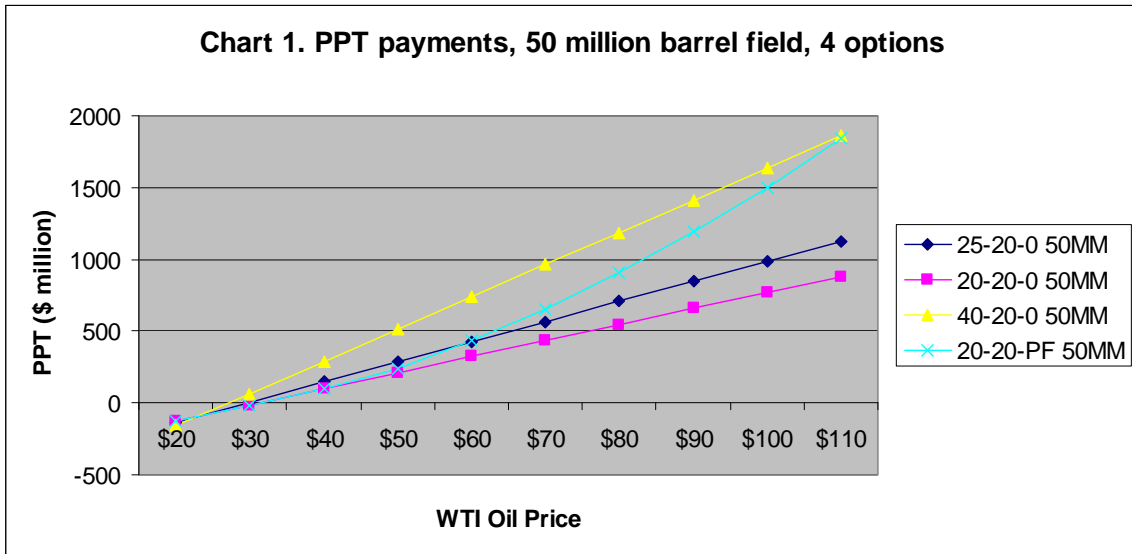
The 20% tax rate is the proposed legislation. The 25% tax rate was my original recommendation. The 40% tax scenario is included as a reference point.

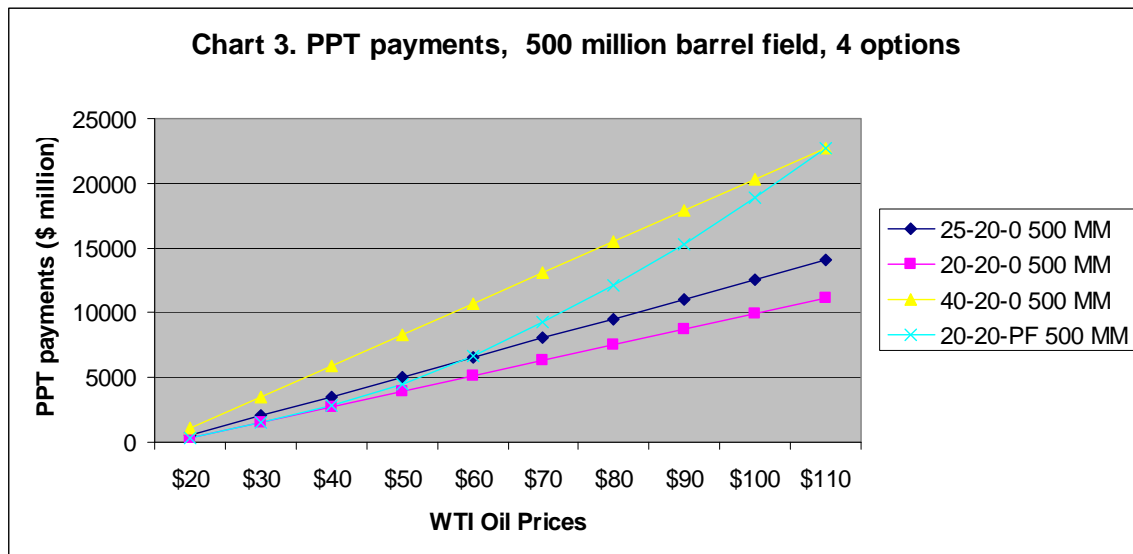
The analysis is done on the basis of the same fields as were used in my previous PPT study.

The WTI prices on the graphs are constant dollar prices, escalated by 2%.

Total Production Tax

The following three charts display the total production tax payments (basic production tax plus the PPT) for the 50 million, 150 million and 500 million barrel fields used earlier in my PPT report.





It can be seen how in all three cases, the total petroleum production tax would equal the 25/20 proposal at \$ 60 per barrel (constant 2006 dollars).

Also at about \$ 85 per barrel the total production tax would cross a 30/20 concept and at \$ 110 per barrel a 40/20 concept.

Undiscounted Government Take

The following three charts show the undiscounted government take. As can be expected the high costs fields are uneconomic at low prices and this explains the sudden drops and increases at this price level for the 50 and 150 million barrel fields (the government take becomes meaningless at this price level).

All three charts show the same overall information as Charts 1 through 3. Furthermore, the charts show that for all three fields the overall government take at \$ 110 per barrel is about 69%. This is still well below a Norwegian style government take. Therefore, the progressive feature would not place Alaska “off the map” at such prices.

Chart 4. Overall Government Take for a 50 million barrel field with low well productivities, high costs, 4 options

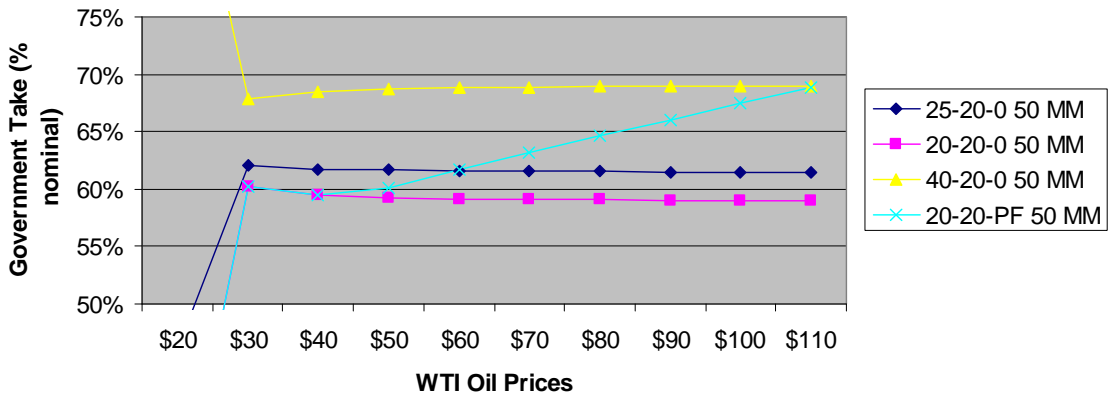
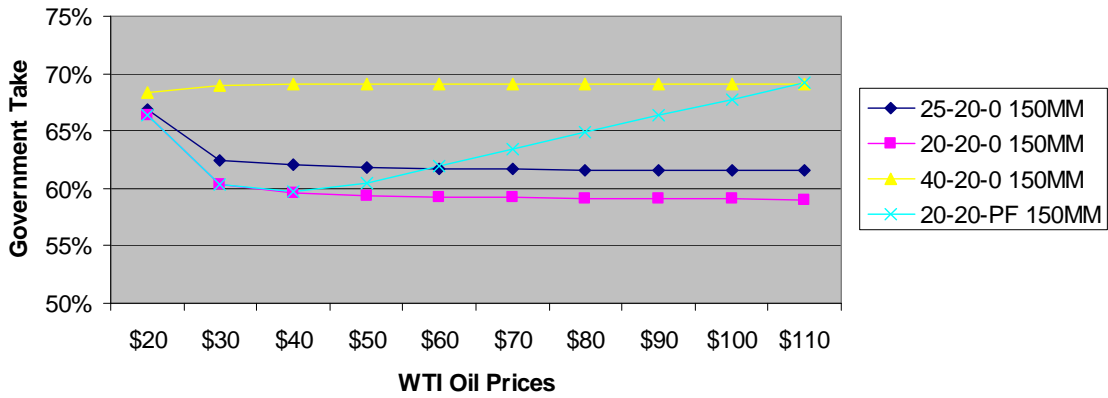
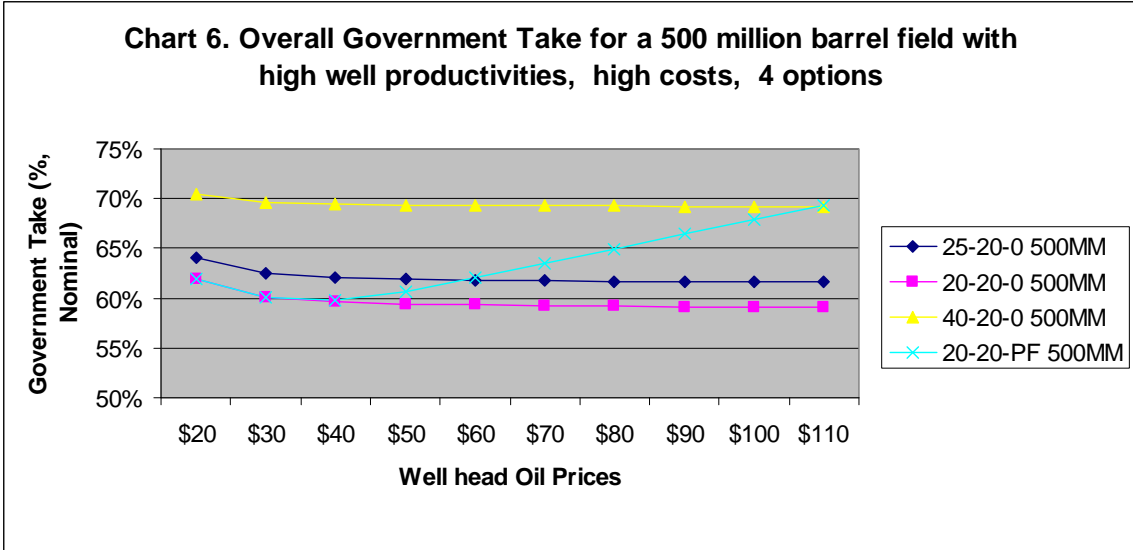


Chart 5. Overall Government Take for a 150 million barrel field, low well productivities, high costs, 4 options





Discounted Government Take

The three following charts show that the discounted government take and undiscounted government take provide very similar results. The reason is that with the tax credits that can be traded, the government participates in the negative as well as positive cash flows and therefore discount rates do not impact much on government take.

This illustrates that with this proposal Alaska has placed itself in a group of nations that are “neutral” with respect to the timing of the government take. The system is no longer front end loaded. Nor is it on an overall basis back end loaded.

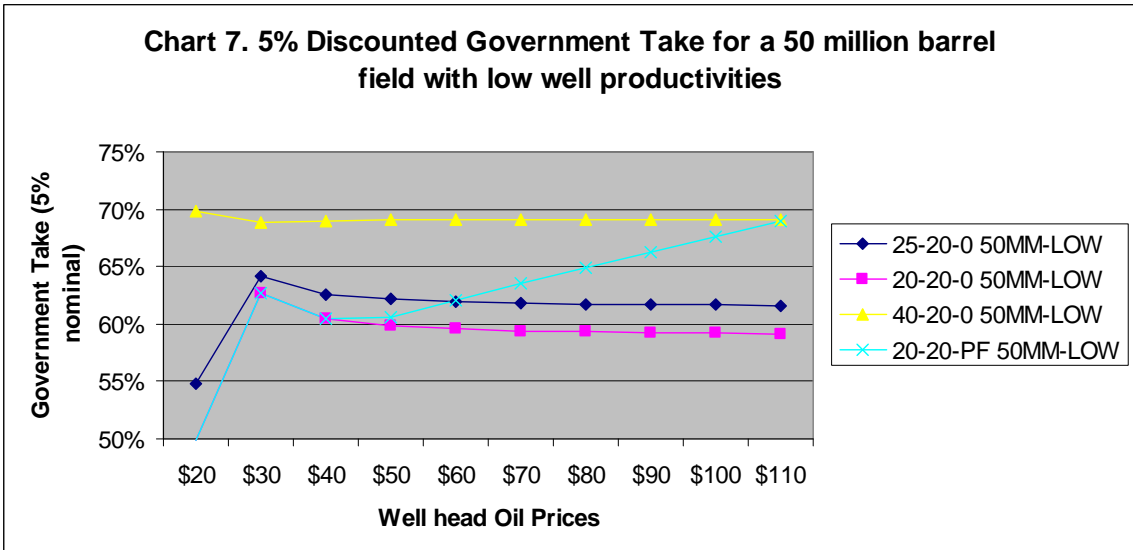


Chart 8. 5% Discounted Government Take of a 150 million barrel field, low well productivity, high costs, 4 options

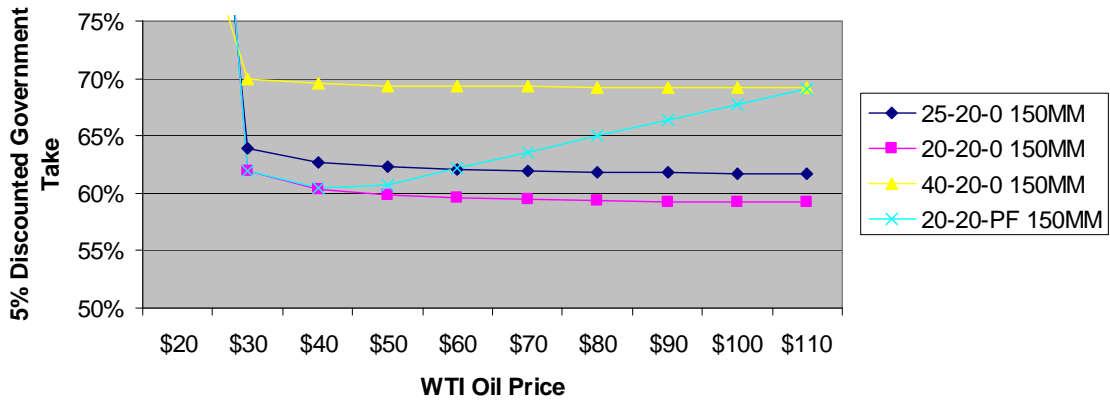
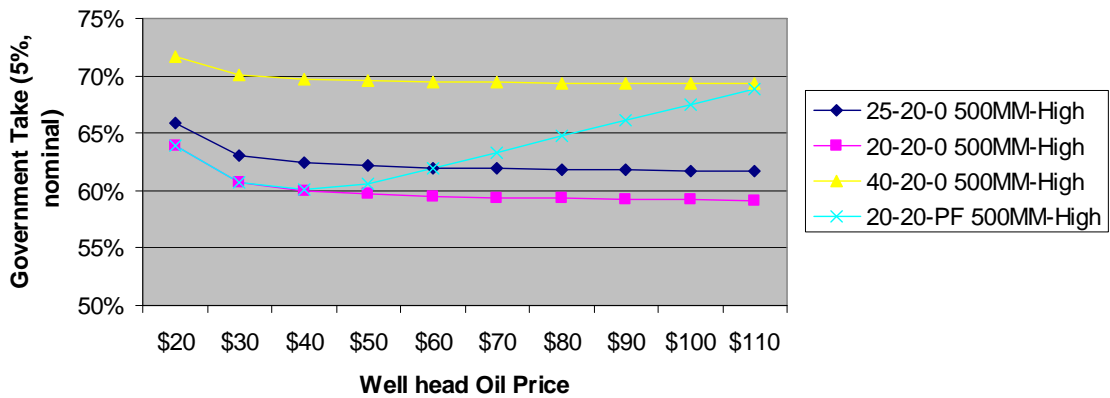


Chart 9. 5% Discounted Government take for a 500 million barrel field with high well productivities.



Economic impact on investors: 50 million barrel field

The economic impact analysis of a 50 million barrel field (without the 73 million tax free allowance) is important since this is a typical North Slope target field. Chart 10 indicates how the progressive feature does not have a relevant impact on the IRR. It only impacts the IRR slightly when the IRR is clearly well over levels that are typically considered above minimum requirements.

Petroleum companies have at this time “upside price scenarios” for project evaluation in addition to their average or conservative scenarios. It is unlikely, however, that petroleum companies have “upside scenarios” much over \$ 60 per barrel or that they would attribute much probability to such scenarios. It is therefore important to evaluate how a progressive feature would impact on a \$ 60 scenario.

At \$ 60 per barrel, the drop in IRR from 38.8% for the 20/20 case to 37.7% for the 20/20-PF case is irrelevant from an economic perspective.

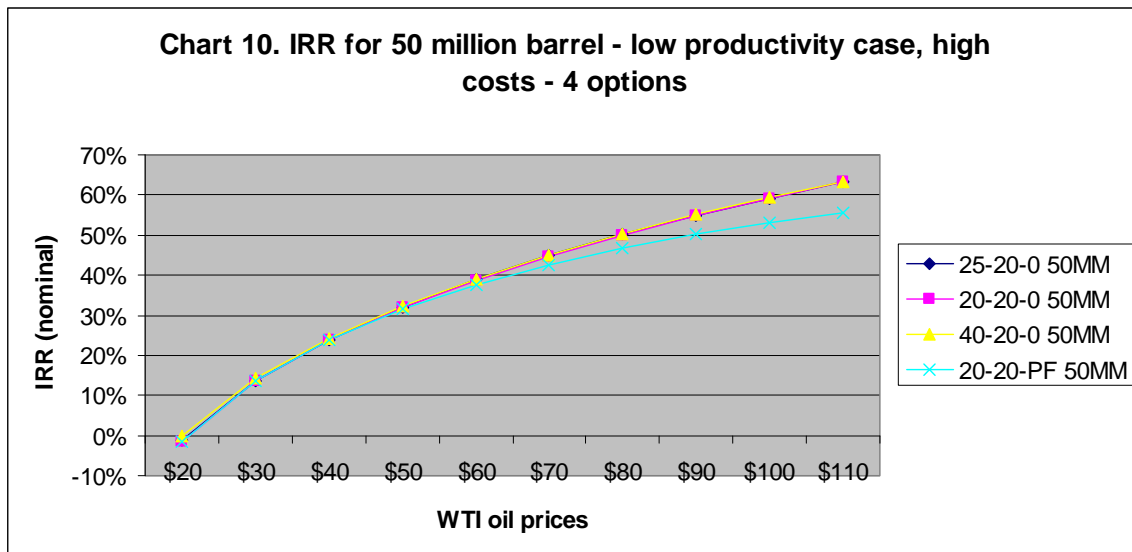
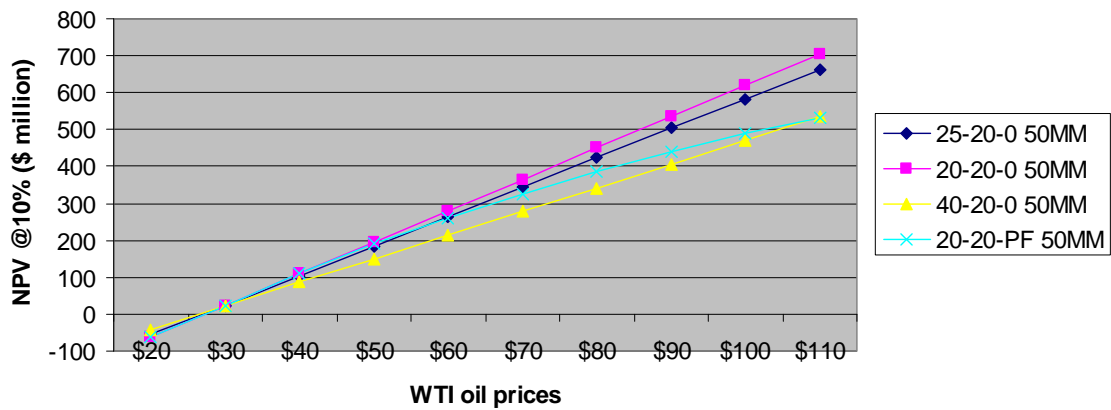


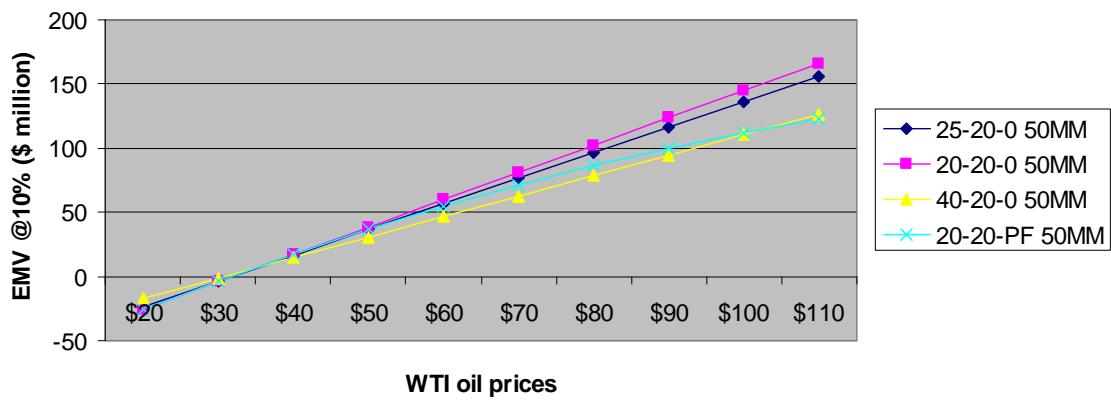
Chart 11 indicates how the NPV@10% drops from about \$ 280 to \$ 260 million as a result of the progressive feature at \$ 60 per barrel. By international standards this is a small and relatively irrelevant drop. This would be a drop from \$ 5.60 to \$ 5.20 per barrel. The international range at \$ 60 a barrel for competing projects is in the \$ 3 to \$ 6 per barrel range. Therefore, either way, a high cost 50 million barrel opportunity on the North Slope would rate favourably by international standards when compared at \$ 60 per barrel under a potential corporate upside scenario.

Chart 11. NPV @10% for a 50 million barrel field - low well productivity, high costs, 4 options



A similar immaterial change can be observed for the EMV@10% as can be seen from the following chart.

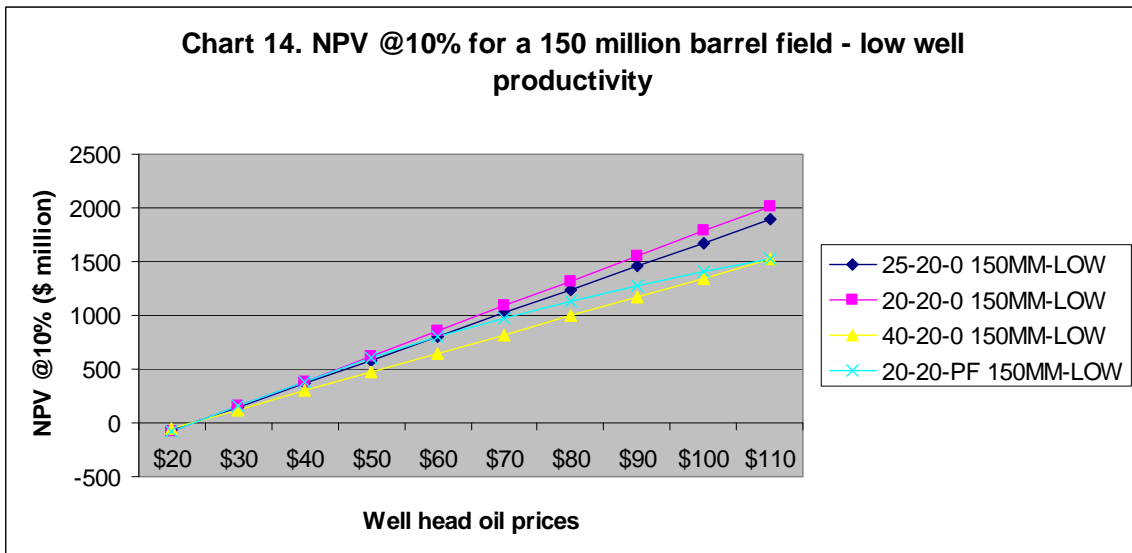
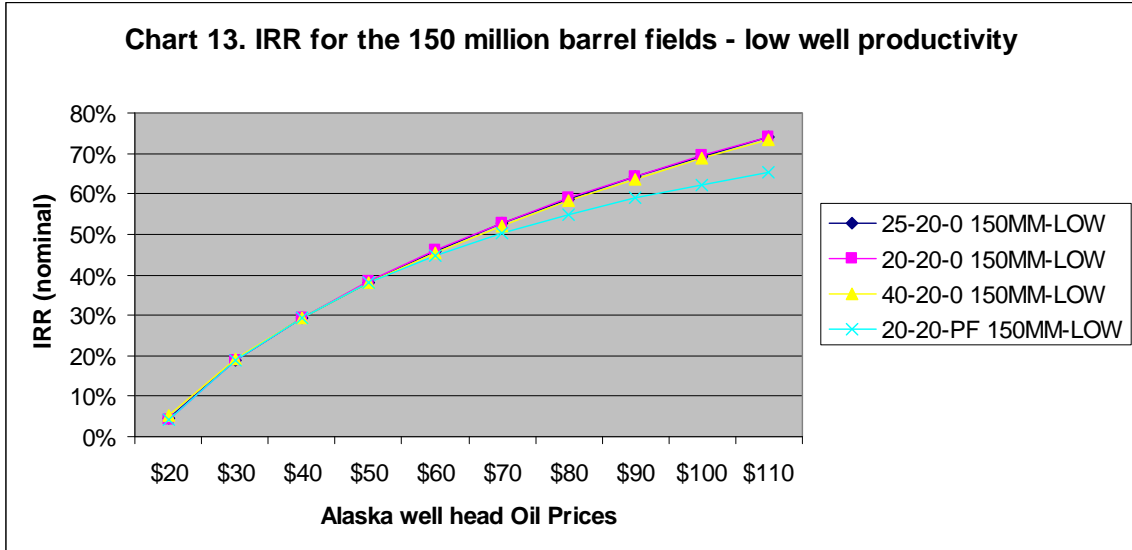
Chart 12. EMV @10% for a 50 million barrel field - low well productivity, high costs, 4 options

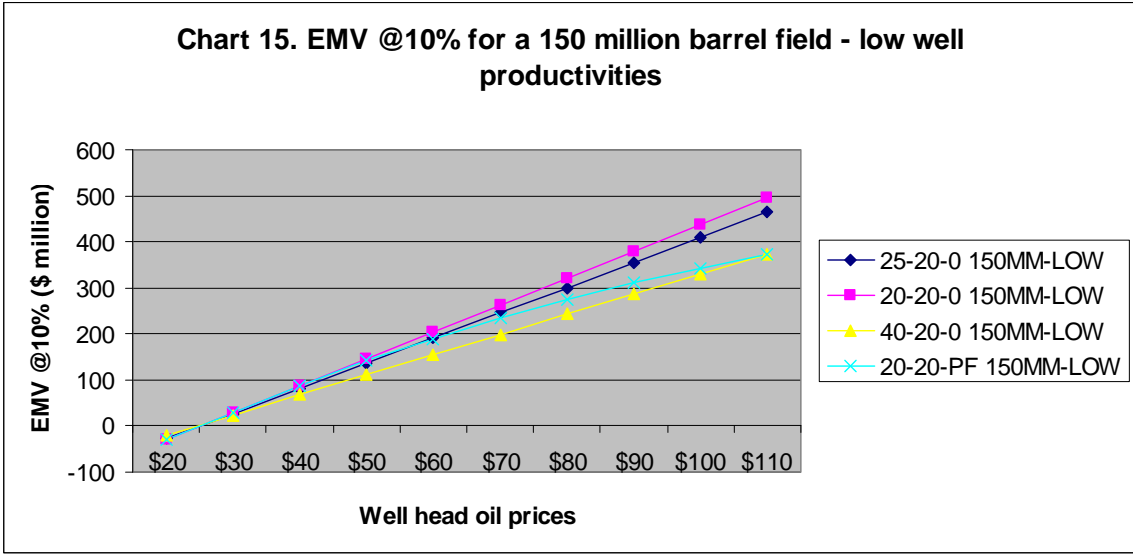


Economic impact on investors: 150 million barrel field

Charts 13 through 15 show how for a 150 million high cost opportunity on the North Slope, the progressive feature has even less impact on a \$ 60 per barrel upside scenario.

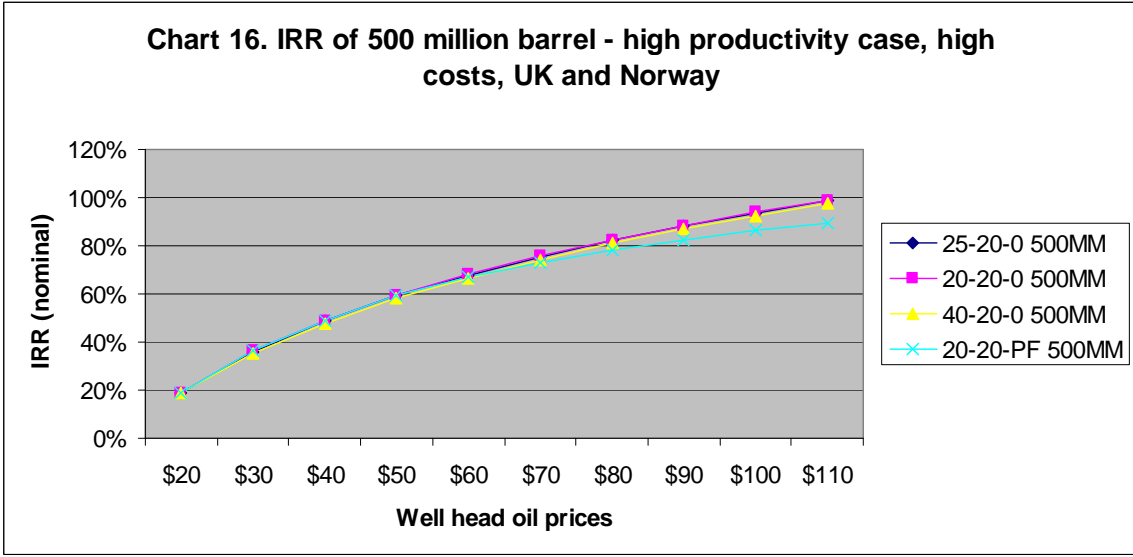
Investors running economics on conservative long term forecast and high price scenarios will not see much difference between the fiscal packages with and without progressive feature.

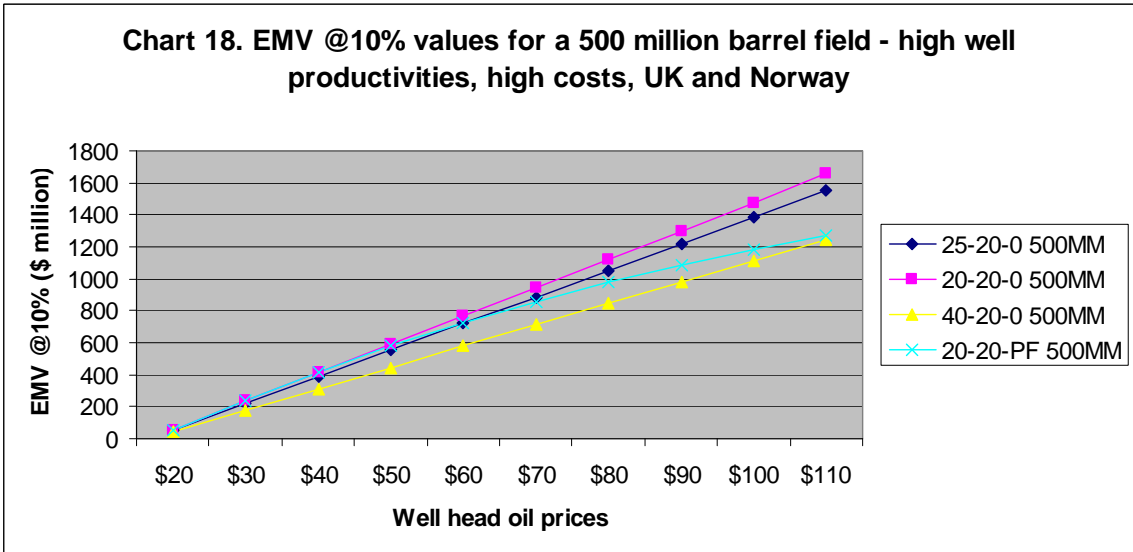
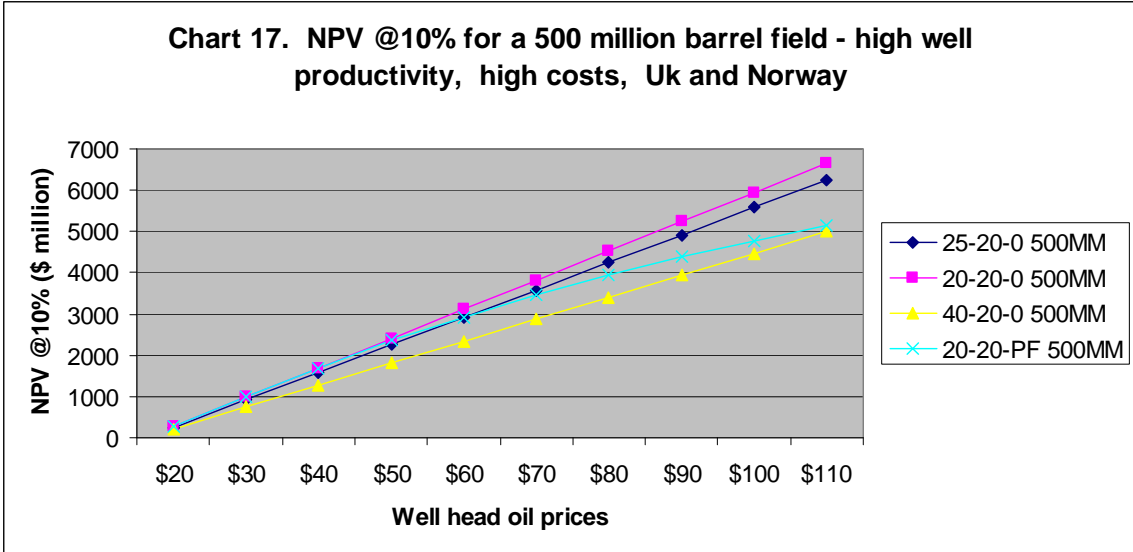




Economic impact on investors: 500 million barrel field

Charts 16 through 18 show that the impact of a progressive feature on a low cost 500 million barrel opportunity is immaterial under a \$ 60 per barrel upside price scenario.





Economic impact on investors: conclusion

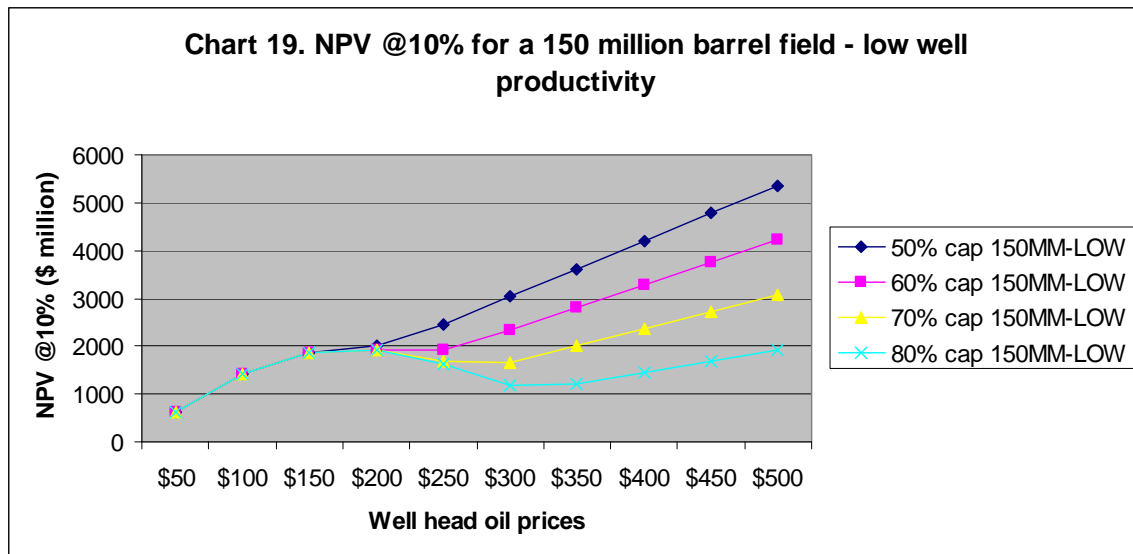
The proposed progressive feature has very little impact on the comparative economics of the North Slope project. The feature “clicks in” well at the upper end of possible upside price scenarios that companies are currently considering. It is therefore a highly modest progressive feature that is truly a “wind fall profit” collector which clicks in when profits are made that are significantly over levels that can be reasonably expected.

SENSITIVITY ANALYSIS OF MAXIMUM RATE

The 50% maximum rate was selected based on a sensitivity analysis under very high price scenarios.

Of course, based on the above formula, at \$ 450 per barrel the State of Alaska would take 100% of the remaining revenues after the royalty. This makes no sense. Therefore, a maximum rate is required.

Chart 19 shows the impact on the NPV@10% at prices ranging from \$ 50 to \$ 500 per barrel for different maximum rates between 50% and 80% for a 150 million barrel field.



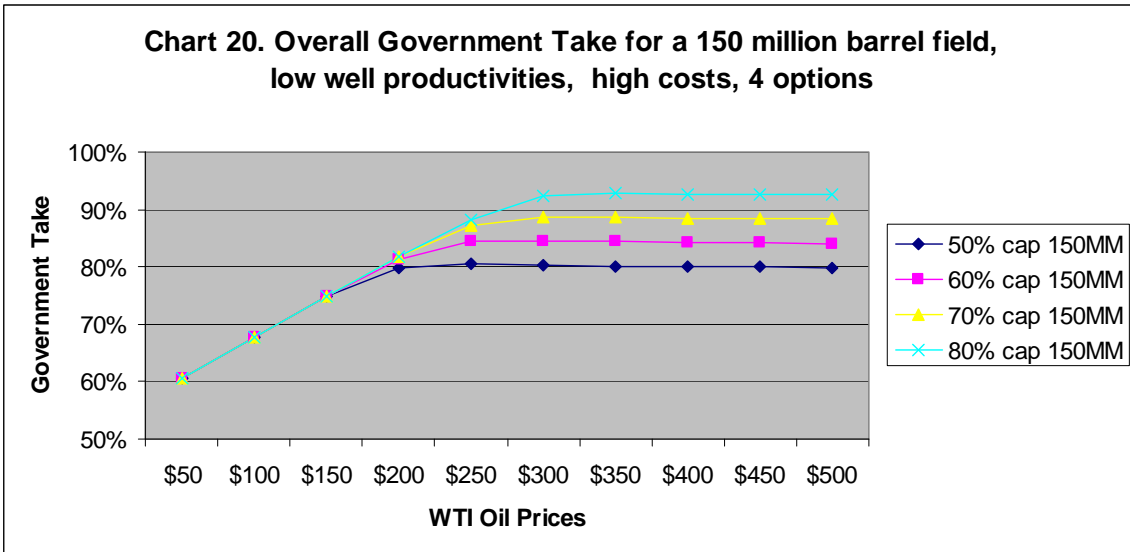
The graph indicates how a 70% and 80% cap would result in lower NPV@10% values for prices over \$ 200 per barrel. At 60% the NPV is flat between \$ 150 and \$ 250 per barrel.

At a 50% maximum rate the NPV@10% keeps improving with higher prices. Usually it is a good practice to ensure that producers always have an interest in higher prices. Therefore the 50% maximum rate is rational from this perspective.

Chart 20 shows the undiscounted government take which is associated with the different maximum rates.

It can be seen how a 50% maximum rate results at very high prices in a flat 80% overall government take. From an international perspective this is a rational government take and would compare well with Norway or other high government take jurisdictions. Therefore, such a maximum rate would not “disconnect” Alaska from the world.

Chart 20. Overall Government Take for a 150 million barrel field, low well productivities, high costs, 4 options



RISK ASSESSMENT

It should be noted that from an overall risk assessment point of view, the 20/20 package plus the progressive feature would be a better package than a simple 25/20 package. The reason is that Alaska would earn the same income under \$ 60 per barrel and a higher income under higher prices. However, under low price conditions, the overall tax credits are 40% rather than 45%. This means somewhat less risk exposure to Alaska.

CONCLUSION

A more in depth analysis of a progressive feature indicates that the suggested numbers work very well.

The proposed formula would be a true wind fall profit feature which enhances government take under unexpected high prices.

The feature does not materially impact on investment decisions of oil companies.

Therefore, this feature will not lower the interest in investing in Alaska. It would, however, protect a reasonable share of the divisible income for Alaska under very high prices.

Overall, the 20/20 package with the progressive feature is a better package for Alaska than a simple 25/20 package.