

**ALASKA STATE LEGISLATURE  
HOUSE SPECIAL COMMITTEE ON OIL AND GAS**

February 3, 2005

5:03 p.m.

**MEMBERS PRESENT**

Representative Vic Kohring, Chair  
Representative Nancy Dahlstrom  
Representative Ralph Samuels  
Representative Berta Gardner  
Representative Lesil McGuire

**MEMBERS ABSENT**

Representative Norman Rokeberg  
Representative Beth Kerttula

**OTHER LEGISLATORS PRESENT**

Representative Jay Ramras

**COMMITTEE CALENDAR**

OVERVIEW: DEPARTMENT OF REVENUE

- HEARD

OVERVIEW: DEPARTMENT OF NATURAL RESOURCES

- HEARD

**PREVIOUS COMMITTEE ACTION**

No previous action to report

**WITNESS REGISTER**

DAN DICKINSON, Director  
Tax Division  
Department of Revenue  
Juneau, Alaska

POSITION STATEMENT: Presented an overview of the Economic Limit Factor

BILL VAN DYKE, Permitting/Unit Administrator  
Division of Oil and Gas  
Department of Natural Resources

Juneau, Alaska

POSITION STATEMENT: Presented a briefing titled "Field Development: What Drives Exploration and Development Decisions?"

### **ACTION NARRATIVE**

**CHAIR VIC KOHRING** called the House Special Committee on Oil and Gas meeting to order at [5:03:25 PM](#). Representatives Kohring, Dahlstrom, Gardner, and Samuels were present at the call to order. Representative McGuire arrived as the meeting was in progress.

### OVERVIEW - DEPARTMENT OF REVENUE

[5:04:54 PM](#)

DAN DICKINSON, Director, Tax Division, Department of Revenue, said that last year, the state's general fund (GF) brought in \$2.4 billion, of which \$1.1 billion were from royalties, and about \$1 billion from taxes. Of the taxes, about \$700 million were from the production tax and the other \$300 million were from property taxes and income taxes. He noted that there are about \$300 million in state revenues that are not associated with oil and gas. Focusing on the production tax, he explained that it is calculated by multiplying four values: the wellhead value of oil, the nonroyalty barrels, 15 percent, and the Economic Limit Factor (ELF). He clarified that the ELF is a number between zero and one; therefore if the ELF is zero the whole calculation becomes zero, and if the ELF is one the company pays the full 15 percent. He said that the ELF was placed in the equation because [the state government] did not want the production tax to be the incremental cost that shut a well in. The effect has been that if a field has high costs the ELF goes to zero; if a field is producing more barrels than are needed to cover costs, the ELF is greater than zero and there is a tax.

[5:09:22 PM](#)

MR. DICKINSON stated that the ELF is really a proxy for the production that the company needed to cover its costs, including transportation costs, tariffs, and the wellhead value. The company is allowed to deduct all of those downstream costs but not any of the costs at the production field, where investors may have invested tens of billions of dollars. At the fields the companies use the ELF to have the oil [production] tax free if the production is below the ELF.

[5:10:31 PM](#)

MR. DICKINSON said:

It's only the production above the economic limit that bears a tax, and the more barrels you have above the economic limit, the higher the tax on you.... So the notion of the ELF was, it was a proxy and it was going to shield the volume of oil that was required to cover the direct operating costs....

MR. DICKINSON mentioned that in 1989, a second exponent was added to ELF to take into account field size so that a large field like Prudhoe Bay, which was producing about 1.6 million barrels a day (b/d), would bear a high tax, and a small field would bear little or no tax. He stated that after this change, the taxes on Prudhoe Bay and Kuparuk went up, and taxes on all the other fields went down.

[5:12:21 PM](#)

MR. DICKINSON said that in 2005 there were only three fields that were paying significant production tax: Prudhoe Bay, Alpine and North Star each had ELFs of about 0.8. The next highest ELF is Kuparuk with an ELF of about 0.1, which is considerably lower than 0.8. He explained, "What can happen with exponentials is small changes in the inputs make huge changes in the result."

MR. DICKINSON remarked that 2005 was the first year in which about half of the [oil] production on the North Slope was below the economic limit. "In other words," he said, "half the production on the North Slope was needed to cover the cost on the North Slope." He stated that according to the prediction made by Department of Revenue (DOR), as much as 80 percent of the oil on the North Slope will not have a production tax by the year 2020.

MR. DICKINSON said that in the early 1990s the ELF for Prudhoe Bay was close to one, but it has been slowly declining every year since then as production falls. This same trend applies to the ELFs for all the other North Slope oil fields, with a slight raise predicted in 2010 when the Point Thompson field is planned to come online. He said that every year there is less oil found in Prudhoe Bay and more oil found elsewhere; therefore the weighted average between the two leans more heavily towards the "elsewhere" category.

5:17:39 PM

MR. DICKINSON explained the concept of Best Well Produces, which is the production function that the [oil industry] uses to maximize the amount of oil that can be put into the Trans-Alaska Pipeline System (TAPS). He said, "[The oil companies] look at all the wells that they have [that] could be producing, or that are producing, and they try to find the one that's going to put the most ... oil in the line." Production facilities, which are needed to turn well fluid into quality oil, are presently constrained by the amount of gas they have to handle. Eight billion cubic feet per day (cfd) [of well fluid] goes into the central compression plant, he noted, "and the ability to handle that ... is what is the real constraint on the ability to produce gas on the North Slope." He said that the [oil industry] wants to shut in a well that is producing a lot of gas and not much oil, and bring on a fresh new well that will produce a lot of oil and not much gas.

5:20:01 PM

MR. DICKINSON pointed out that the amount of gas increases over time for any well and said:

When you start out you're getting a lot of oil, you take the gas off, you reinject it, you put it back in ... and what happens is you find the gas/oil ratios [GOR] go up, and they go up phenomenally. ... In general the wells that they're finding they want to shut in are the wells in Prudhoe Bay. ... Under the tax system [DOR decided that] if a well or a field or an entity is producing a lot of oil and it's strong, if it has a lot of production above the economic limit, then it has to pay a lot of tax. A robust field should be able to bear some tax. And those are the wells that [the oil companies] are saying, ... "These robust wells are the wells that we actually want to shut in." Then you go out to a satellite. These satellites are relatively fresh; they've been discovered in the last couple of years and by fresh I guess I just mean they have a low [GOR]. Now according to our tax system these wells might have a zero ELF or a very low ELF. Our tax system said [that] these wells are somehow disadvantaged... [and] need help from our tax system or otherwise they won't produce. That was the theory behind the ELF. And

[the oil companies] are saying, ... "Let's take a well that apparently under our tax system needs support - we're going to call it the Best Well and we're going to bring it on line and we're going to shut down one of these supposedly robust wells in the middle of Prudhoe Bay." And fundamentally that ... doesn't seem to be what was intended by the ELF.

5:21:38 PM

MR. DICKINSON summarized:

[The oil companies] are already treating all the wells that feed into the common production facilities at Prudhoe Bay, the satellites and the initial participating area, all those wells are being treated to a common production function and they are saying, "Some wells we don't think ought to be producing", but those are the wells that according to our tax system are the Best Wells, the wells that can afford the highest tax. And they're saying the wells they want to bring on are the wells that our tax system was saying needed encouragement. And that's why looking at it you say, "There's been a mismatch between the tax system and the way it's operated."

5:22:25 PM

MR. DICKINSON turned attention to the idea of giving incentives to the oil industry [in order to encourage them to explore and develop in Alaska]. He remarked that the state needs to have effective incentives that produce the desired results. He said, "It was [DORs] analysis looking at this that in fact that was not what was going on in Prudhoe Bay."

MR. DICKINSON described ELF as an imperfect proxy. He said that though it would have been more pertinent before the 1989 ELF changes, this notion is still useful. To apply this idea, a company would take the proxy for its costs, build it into a volumetric function, and then decide how good a proxy it is. He presented a simplified example of the use of ELF as a proxy: if a company is producing 600 barrels per day (b/d) that can be sold for \$10 per barrel, the total revenue would equal \$6,000. If the actual costs were \$3,000 then the profit would equal \$3,000. If the price doubled to \$20 per barrel, then the company would be making \$12,000, but most of the costs associated with producing a well are not tied to energy costs,

he explained. Therefore while the actual costs stay at \$3,000, the profits actually triple to \$9,000.

5:25:53 PM

MR. DICKINSON reiterated that when ELF is used as a proxy for costs, 50 percent of production, or 300 barrels, will cover costs while 300 barrels will be given back to the shareholder or will be used for further investment. In that case, he said that the company will get \$6,000 tax-free because it can sell 300 barrels to cover its cost. In summary, he said that as prices go up, the company is allowed a larger proxy cost for its actual cost even though the actual cost stays roughly the same. When prices halve the ELF drops lower and the company wouldn't be able to completely cover actual costs. However the barrels that the company could sell for its costs would cover \$1,500 worth of costs, or half of its costs, and the barrels that are sold for profit would also drop to \$1,500. He remarked that this is a much smaller effect, and that "when you're halving things you're going to end with a smaller effect than when you're doubling them."

MR. DICKINSON stated, "The statutes say that the DOR has the authority to aggregate or, if it's appropriate, to segregate, but basically to redefine ... the boundaries of what we'll use for calculating the ELF. In other words, we're supposed to find a ... production set ... that has an identifiable economic limit factor...." He referred to the statute AS 43.55.013(j) and said, "[The statute] specifically says that we can aggregate certain leases, properties, or portions of them." He explained that, effective February 1, 2005, [the administration] combined six satellite fields with the Prudhoe Bay initial participating area (IPA) for production tax purposes.

5:29:04 PM

MR. DICKINSON said there were three reasons why the department decided to exercise its discretion and ask the producers to aggregate. He said, "The first [reason] was essentially an argument which I'll just call Substance Over Form. We believe ... that the field is being operated as a single unit. If what you're driving at with the ELF is to try to isolate costs, ... if in fact the field has a single set of costs, then you ought to recognize that; it ought to be treated as a single unit for purposes of ELF. ... We believe that brought it more in line with the intent of the original legislative intent."

5:30:01 PM

MR. DICKINSON said that the second reason for the [Prudhoe Bay aggregation] change is due to measurement concerns. He explained that satellite fields that share production facilities do not have meters on the individual pipelines; the oil is only metered when leaving the facility. Therefore the companies must estimate the volume of oil coming from each individual area, and he stated, "If you can't figure out how much is coming from each then you ought to simply treat them as one."

5:33:56 PM

MR. DICKINSON explained that the third reason for the ELF change is the persistent high oil price. He said:

If you think back to the purpose of trying to say that production below the economic limit was tax-free and production above the economic limit should bear some tax, and in the ELF as it's now [constituted]..., there was no way to plug price in there.... It was just simply a proxy.

MR. DICKINSON referred to a graph on slide 11 of a handout titled, "Economic Limit Factor, AS 43.55" which demonstrates that oil prices have been higher than usual recently. He said that economists believe that "since 1999 we have been in a different world than the world that came before that." The average price since 1999 has been double the average price of oil from 1986-1999. He opined that this is an era of high prices and the standard for the economic limit ought to change.

MR. DICKINSON continued:

It ought to be reflective of the fact that the economic limit, the amount of oil you need to produce to cover your costs, is going to be lower when prices are high.... One of the things we've observed ... is that prices have been persistently high; they've stayed high for five years. We don't think this is a transient phenomenon.... As the [DOR] thought about this application and what we ought to do, price played a role and the persistent high prices were a part of that.

5:36:28 PM

MR. DICKINSON referred to slide 8 of the handout, which was a graph depicting volume of oil production over time. He explained that Prudhoe Bay was an extraordinary field that was substantially larger than the second largest field. He pointed out that in the early years the Alaskan tax system was designed and focused on Prudhoe Bay, but over time other fields have played a larger and larger part in oil production on the North Slope.

[5:38:04 PM](#)

MR. DICKINSON pointed out that the DOR has been tasked by the governor to determine how Alaska compares with other countries in competing for [oil industry investments]. He said that DOR has collected nine studies that rate Alaska's competitiveness, each completed within the past decade with different methodologies. He briefly reviewed the studies, pointing out that one study showed that Alaska was the least competitive area of eight areas studied while another study determined that 85 percent of the areas studied were less competitive than Alaska and 15 percent were more competitive. He said that generally, Alaska is in the mid to high range; there are more places that are uncompetitive compared to us than there are competitive places.

[5:40:22 PM](#)

MR. DICKINSON directed attention to data released in the Wood Mackenzie study titled "Global Oil and Gas Risks and Rewards 2004". He posited that the price of oil affected how the study rated Alaska's competitiveness. He pointed out that Alaska was the least competitive when the oil price was \$13 per barrel, and as the price went up, Alaska became more and more competitive. For example, at \$16 per barrel for oil, Alaska was 71 percent competitive; at \$22 per barrel, Alaska was 81 percent competitive.

MR. DICKINSON explained that at high oil prices Alaska is one of the best places to do business, and at low prices it is one of the worst places to do business. He said that Alaska has a regressive system: at low prices Alaska takes a very high percentage and at high prices it takes a very low percentage. He opined that this was a conscious aspect of the design to ensure cash flow to the state regardless of oil price.

[5:44:35 PM](#)

CHAIR KOHRING asked why the oil companies aren't developing more than they are since the oil prices are currently high. He commented, "I'm not seeing a major upsurge in their investment in the state here, so it suggests to me that maybe ... the picture is not as rosy as it's being pointed out by these studies and by your analysis."

MR. DICKINSON replied that perhaps projects are not being evaluated at these high prices; they're being evaluated at stress prices, a lower price, so companies are enjoying the "windfall" but nobody is planning on this kind of price level continuing. He said that [DOR] believes that there will be a higher than normal price in the future. He admitted that he too is mystified as to why there hasn't been more development recently; he expected more investment at this point.

[5:46:23 PM](#)

CHAIR KOHRING raised the issue of costs associated with developing a field before it actually comes online. He said that when companies are exploring they aren't necessarily going to find oil; they're going to have a few dry wells and so there are potentially a lot of costs that have to be considered.

MR. DICKINSON agreed and stated his belief that two years ago the governor and the legislature made the decision to pay for 40 percent of the costs of certain kinds of exploration, and 20 percent for other kinds. He stated that industry representatives have suggested that the state cut back on restrictions and make this incentive apply to any kind of drilling or exploration. He opined that intervening at the exploration end can have a more profound effect than intervening as the ELF does, during the production end.

[5:48:26 PM](#)

REPRESENTATIVE GARDNER asked what the tax structure is in other places and how it compares to Alaska's.

MR. DICKINSON said that tax structures can be categorized in many ways. He gave the examples of regressive versus progressive systems, and project deals where rates are set on a project-by-project basis. He said that some areas tax profits that are being expatriated; if the company is willing to invest money in the country [it can keep all the money], but if the company intends to take the money out of the country, the

country places a high tax on it. He opined that [tax structures] are fairly fluid and changing.

[5:52:11 PM](#)

REPRESENTATIVE MCGUIRE remarked that when the ELF was conceived the idea was to encourage companies to continue investing in Alaska and to use the resources as efficiently as possible. She asked if [DOR] has completed any analysis regarding what will happen in future development.

MR. DICKINSON responded:

Every year ... there is [an] ... ever-increasing amount of new oil in there so we have to be very sensitive to the fact that we still believe that our forecast has events that we think are going to occur ... and the future developments on the line will occur. So yes, we are doing that analysis. ... It's not a single dimension, it's not as if you can say ... "High tax - no development, low tax - lots of development." It's how you craft it, how you look at it. We made a technical decision based on what were the facts in front of us that we thought was the appropriate way to tax this field.

[5:54:36 PM](#)

MR. DICKINSON mentioned that the president of ConocoPhillips Alaska, Inc. sent a letter to the governor asking for [ELF] rulings on the satellite fields at Alpine so that they can "do their economics".

MR. DICKINSON stated that most of the oil companies are capital constrained, but will invest capital where they think they'll get the best return over time. He opined that the companies will want to have a portfolio, and perhaps they will "invest some in places that have a lot of upside and then some in other places where they expect not to get a huge upside but ... where the take will not be so great during the low prices."

[5:56:08 PM](#)

REPRESENTATIVE MCGUIRE stated that very often [the legislators] don't understand the full implications of their policy decisions. She noted that in 1989 a change was made to ELF to encourage development of some marginal fields. She said, "Here

we are analyzing a very important, profound policy decision that you've made on the administrative level that could have implications that we won't see until 20 years from now." She stated that she would have expected oil companies to have invested more in Alaska in recent years with prices being high, since at the high end companies make more money in Alaska. She then asked if the [DOR] considered creating other incentives to encourage more investments in Alaska.

[5:58:11 PM](#)

MR. DICKINSON stated that these are issues that DOR has been trying to figure out for years. He reminded the committee that the legislature passed an exploration incentive recently, plus House Bill 61 which "put additional credits behind a development in Cook Inlet". He said,

There are small things, ... we'll have to wait some years to figure out how successful they were, but there are things that can be done, [the legislature has] done some, we've thought of them, they're strictly within the sense of what we could propose to the legislature. It's [DOR's] belief that the investments that are [on the North Slope] are not going to be negatively impacted as a consequence of this. ... We believe, if folks are continuing to bring on wells of this natural, they will continue to do that, particularly at the current price regime. ... I would not necessarily say that ... the folks who designed the ELF in 1989 ... got what they expected. ... A lot of the focus was on stand-alone ... production facilities. What has happened over time is, when you share costs, when you can bring on production and then take production facilities that already exist on the North Slope and put that production into them, that that's not what folks contemplated.

[6:01:20 PM](#)

CHAIR KOHRING remarked that there are other major fields up on the North Slope such as Kuparuk and Alpine, and they have satellite fields around them too that are like smaller versions of Prudhoe Bay. He expressed concern that perhaps [the administration's decision to aggregate Prudhoe Bay with its satellites] will set a precedent and be extended to the other areas. He asked for further explanation as to why the

administration decided to make a change to the Prudhoe Bay satellites.

MR. DICKINSON answered:

In our regulations there's a process set forth that says a taxpayer who is concerned about the future development can apply to us and get an advanced letter ruling ... that says 'We will not aggregate this field ...,' essentially giving them some certainty about at least that aspect of their production of the taxes.

MR. DICKINSON made the general observation that those letters generally do apply to a great deal of production in fields such as Milne Point and Kuparuk. He stated, "[DOR was] very careful that when we took this step, ... we did not overturn ... deny ... any of the applications that we had ... taken and agreed to not aggregate with."

[6:03:27 PM](#)

CHAIR KOHRING opined that a stable tax policy was important to give the oil industry a chance to predict the future with some certainty. He commented that he thinks other oil companies are concerned about whether this change will be applied to their fields and satellite fields as well.

MR. DICKINSON agreed with Chair Kohring, but argued that if facts and situations change, a tax policy shouldn't be static or frozen. He commented that he thought the people who wrote the ELF gave the DOR certain discretion to [make changes if needed]. Having said that, he noted that having a consistent policy is important.

[6:05:18 PM](#)

REPRESENTATIVE SAMUELS asked if the ruling not to aggregate Kuparuk had been made recently.

MR. DICKINSON answered that when requests have been made under a taxpayer confidential expectation, DNR has kept them confidential. He stated, "A series of ... fields have been added, so ... there have been a series of decisions; ... West Sak and Tabasco are older, Tarn and Meltwater over the last couple of years."

REPRESENTATIVE SAMUELS asked why Kuparuk was not aggregated while Prudhoe Bay was aggregated.

MR. DICKINSON stated that Kuparuk's satellite wells are six to ten miles apart, whereas Prudhoe Bay has numerous wells on the same gravel pad, with each well going down to a different field. He remarked that the producers might say that the wells are still thousands of feet apart underground, but he said:

Nonetheless, if you're focusing on the superficial, ... what's on the surface, on the economics of putting together the systems, I think you'll see that that's a very different situation. ... In Kuparuk there is a slight difference in ownership. It's not huge, but there's a slight difference in ownership between the satellites and the mother field. So anytime ... they want to go use a production facility they've got to deal with the fact that these are slightly different. ... One of the things that we saw happening in Prudhoe is, up until 2000, the satellites were owned at very different percentages than the mother field, and that ... impeded a lot of the development. One of the reasons that the producers got together and created what's called an equity redetermination and rearranged everything so that everybody owned the same percentage of everything, was to stop those kind of fights and make sure that ... everyone was aligned.

[6:08:40 PM](#)

REPRESENTATIVE MCGUIRE asked, "Is it also possible that this administration feared that ConocoPhillips and others had acted in reliance on letters that you issued to make business decisions?"

MR. DICKINSON stated that the DOR has never rescinded or altered letters that it previously issued. He asked for clarification of the question.

REPRESENTATIVE MCGUIRE remarked, "I just wondered if it was a case of that company getting ... to you first ... and asking the question in advance, where maybe BP and Exxon today kind of wish they would've asked the question about Prudhoe Bay and gotten it in writing as well."

MR. DICKINSON answered,

To go to your last hypothetical, they probably did but I don't want to go to the first part and say that therefore that first part follows. ... Clearly if you read the regulation ... it was contemplated that these would be issued beforehand, in other words, if it's going to be a factor in the decision to invest then you have the opportunity to get it before and to insist on getting the letter before you make your investment.

[6:11:02 PM](#)

MR. DICKINSON encouraged the committee members to examine the table on slide 16 of the handout that included information such as field name, daily production, number of oil wells, ELF, production per well, and taxable daily production. Looking at the slide, he pointed out that Kuparuk, which is producing about 155,000 b/d through 450 wells, has an ELF of about 0.17. He compared this data to Alpine, which produces about 100,000 b/d, and to Northstar, which produces about 65,000 b/d. He commented that Alpine and Northstar, which have a total of 46 wells, together produce about as much oil as Kuparuk, which has 450 wells. Because Alpine and Northstar are producing such high volume of oil out of so few wells they have high ELFs.

[6:13:40 PM](#)

CHAIR KOHRING commented that he disagrees with the DOR, and said that he hoped [the committee] can figure out a way to help the industry with incentives. He remarked that there must be some way "we can stabilize the whole situation and make them feel like they're welcome here to do business; they're not going to be subject to unstable tax policies."

OVERVIEW - DEPARTMENT OF NATURAL RESOURCES

[6:14:49 PM](#)

BILL VAN DYKE, Permitting/Unit Administrator, Division of Oil and Gas, Department of Natural Resources, referred to a handout titled, "Field Development--What Drives Exploration and Development Decisions?". He pointed out that slide 1 was a geological slide depicting multiple oil pools, some shallow, some deep, in a given area. He remarked that in Prudhoe Bay there is one very large oil pool in addition to the smaller ones. He explained that if there was only one small oil pool in an area, perhaps no one would develop that area; but if there

were four pools it would be more likely that a company would drill in that area. He said, "The smaller pools at the top, they're more or less icing on the cake because, as in Prudhoe Bay, the big oil pool supported the initial development. ... The smaller pools ... can be supported by the previously installed infrastructure."

MR. VAN DYKE explained that a company can access multiple oil pools from a single drill site. He said, "Some of these real high tech wells these days [can] reach out long distances and access relatively small pockets of oil."

[6:19:22 PM](#)

CHAIR KOHRING asked if the technology exists to drill from outside of the Arctic National Wildlife Refuge (ANWR) into the area and not disturb the surface at all.

MR. VAN DYKE stated that there are some places where wells have been drilled five miles horizontally, but such wells are very expensive.

CHAIR KOHRING remarked, "That might dispel the whole argument as far as the environmentalists are concerned, as far as destruction of wildlife and potential spills if we just drilled on this side of the border and just ran directional wells five or ten miles into ANWR."

[6:20:06 PM](#)

MR. VAN DYKE stated that at the western end of the Prudhoe Bay unit there are drill sites that access multiple oils pools. He turned to the slide 3 of the handout to show a generalized geological cross-section of the central North Slope. The fifth slide was a map of the Prudhoe Bay field, which he said covers about 248,000 acres and has over 100 individual oil and gas leases in it. He remarked that the map shows that the main Prudhoe Bay oil pool covers almost the whole unit. The satellite pools are much smaller than the main pool and are scattered around the unit area.

MR. VAN DYKE then turned to slide 6 of the handout which depicted a map of the Prudhoe Bay unit surface facilities. He commented that Prudhoe Bay is a small city, or industrial complex. Slide 7 is another map of the Prudhoe Bay unit depicting the shared facilities, which include gathering

centers, flow stations, power plants, and a gas-handling complex.

[6:25:06 PM](#)

CHAIR KOHRING asked if there is a danger of losing gas in the process of reinjecting it and if the gas will be easily accessible in the future.

MR. VAN DYKE responded that the gas is reinjected back into the Prudhoe Bay gas cap where there has been a gas accumulation already in place for millions of years.

[6:26:33 PM](#)

MR. VAN DYKE pointed out that in 1977 there were multiple leases [in Prudhoe Bay] owned by different companies or combinations of companies. He reminded the committee that the large main oil pool spreads underneath all of the leases, so all lessees own a piece of the main pool and they each got their fair share of production from their leases. However this approach didn't work for development of the smaller satellite pools. He pointed out that a company that discovered a small pool but didn't have interest in the surface facilities was in a bind because the companies that do own the surface facilities don't really have a reason to help the small company.

MR. VAN DYKE explained:

People realized early on at Prudhoe Bay that there were lots of these satellite pools. It's not that they've just been discovered in the last five years; people drilled through these satellites over the years, since the discovery of Prudhoe Bay, literally. And so they realized early on that there has to be a better way to do business. And there were a lot of negotiations over the year and finally in the year 2000 there was a successful conclusion to those negotiations and it was a common equity agreement. And what that means is that ... every company owns the same interest in every lease. They figured out ... what interest was fair for each company to own in each lease instead of owning separate leases. And now the companies don't care where the satellites are, they don't care where the gas cap is for Prudhoe Bay, where the oil rim is for Prudhoe Bay, they own the same interest in everything and they also own the same

interest in the facilities on the surface. So now ... it's fine for the best satellite to produce first because everyone owns a common interest in everything. And there are a few exceptions ... there are a few facilities in Prudhoe Bay that the common equity agreement does not cover, but they are ... in the minority.... With this common equity agreement at Prudhoe Bay ... the companies really have aggregated their interests; they've taken all of their lease interests and merged them into one big pot. Everybody owns the same interest in everything. And it really changed the way business is done at Prudhoe Bay; I don't think it's any coincidence that, starting in the year 2000 after this common equity agreement, that you just see the satellite production blossom at Prudhoe Bay, because before that there was a lot of commercial negotiation that went back and forth ... really on access to surface facilities. The people that owned the satellite interests could drill them; they had the right to drill their leases, they've always had that right and they'll continue to have that right, but they didn't have the right to use the ... surface facilities. And now that is ... not an issue.

[6:30:59 PM](#)

MR. VAN DYKE remarked that the common equity agreement has become "kind of the way to do business on the North Slope these days," and now similar agreements have been made at other units. He opined that the agreements really help business.

[6:31:33 PM](#)

MR. VAN DYKE turned attention to slide 10, which contained information on ownership percentages.

MR. VAN DYKE, in response to a query from Representative Gardner, explained that the PA on the slide stands for "participating area", which is how the Department of Natural Resources (DNR) describes the separate pools. He stated:

It is important from a lease standpoint which leases are included in which pools because they may have different royalty rates; they may have net profit share provisions on some and not the other. Even though the owners have a common equity across ... Prudhoe Bay, there still may be different royalty

provisions for the different pools and the participating areas are the way we identify the pools.

[6:33:10 PM](#)

MR. VAN DYKE commented that slide 12 contains a stratigraphic column depicting the types of geology at different depths of the North Slope. In response to Chair Kohring, he confirmed that the heavy oil is mostly found in sandstone.

MR. VAN DYKE said that slide 13 contains a map of satellite fields in the Prudhoe Bay unit. He pointed out that the satellites are at the west end of the unit and they overlie each other, so the same drills sites can be used to drill multiple wells. He remarked that the sharing of facilities is very important.

MR. VAN DYKE explained that slide 14 titled, "Multilateral Wellbore Completions", depicts a "fancy multilateral well" with several arms that could be reaching the same area in a given oil pool or different pools entirely. He commented that this type of well is expensive to drill, but it produces a lot more oil than a conventional well.

[6:36:02 PM](#)

MR. VAN DYKE said:

Slide 15 ... shows the different satellite pools within Prudhoe Bay unit ... from a map view or location surface view. Most of the satellites are out there at the west end and production goes into Gathering Center 2 along with a lot of the production from the main pool at Prudhoe Bay. Then the gas is all sent over to the ... central gas facility in the central compression plant.

[6:36:40 PM](#)

MR. VAN DYKE returned to the beginning of the handout and stated:

I tried to jot down some ideas on what drives investment ... up on the North Slope ... and I don't think there's any doubt about it that it's the chance to make a profit, at least under the system we have here in Alaska. ... [The State of Alaska leases] ...

land out to third parties and ... to for-profit companies, and they're up there to make some money. ... It's no different than WalMart or Alaska Airlines. They're accountable to their shareholders. ... What's different in their business model is that they have to go in assuming that there are going to be a lot of failures, at least in the exploration stage ... and a few successes. But if that ... is built into your business model to start with, you can still be quite successful; you just have to plan that you're going to drill some dry holes. That's just part of the business.

[6:37:45 PM](#)

CHAIR KOHRING commented, "Let's hope they continue to achieve good profits but let's make it win-win so we can get some money as well for our treasury."

MR. VAN DYKE gave a brief overview of the oil and gas lifecycle: exploration, delineation, development, and then production.

MR. VAN DYKE, in response to Chair Kohring, stated that he was not sure when wells began to be drilled on the North Slope, but he said that the drilling started south of Prudhoe Bay. He said that [the explorers] got their leads in the Brooks Range and then followed them north.

MR. VAN DYKE returned to the topic of the oil and gas life cycle and said:

This life cycle ... is repeated over and over and you build on your existing infrastructure and you build on your added knowledge. You gain information over time and in some cases you gain a competitive position, ... if you have better contracts with drilling contractors, or you brought your own drilling rig up there, maybe you can do business a little better than the guy next door. ... And this is what we're trying to foster: getting more people involved in this cycle and ... keeping it continuing.... The facts change, conditions change. ... We have a lot of people that buy leases; most of those leases don't get drilled. If you look at the statistics, ... most leases at the end of their primary term ... expire; they come back to the state and we lease them again. And then some of them do get drilled and they're dry holes, and they

get turned back in to the state. Some projects progress towards development, but just don't ever quite get there. And then some projects go into development and they get shut in because something happened, because of the risk involved and production just wasn't quite what folks thought. ... Opportunities change, business practices change, and economics change. I don't think it's something that you want to fault the Alaska system for, it's just part of the normal business practice.

6:40:43 PM

MR. VAN DYKE then turned to the topic of risk on the North Slope. He remarked that during the exploration phase there is a lot more risk because, regardless of predictions, a company doesn't really know if there is oil until it drills a well. He stated that for people in the oil and gas business, risk is a part of everyday life, and companies are constantly benchmarking and revisiting their operations because conditions change over time. He said:

An enhanced oil recovery project that didn't look profitable a few years ago maybe does look profitable now. Or in-field drilling opportunities. Or these Prudhoe Bay satellites. ... It's not that the oil wasn't there; ... there wasn't a commercial way to get it produced and use the surface facilities at the time. There is today and those satellites are producing ... close to 50,000 barrels a day.

6:42:29 PM

MR. VAN DYKE continued discussing the topics outlined in the handout. He remarked:

What's going to separate the winners from the losers? Certainly there is no simple answer to that. But again I think, under the system we have today, [oil and gas companies] are going to have to make a profit. If they're going to move forward on a project or expand a project they're going to do it because they can make a profit. ... Different companies measure profit differently. There's all sorts of indicators.... When [the companies] are looking at a project, whether it's a satellite pool or an exploration well, ... they're going to look at ... the

size of the oil accumulation, because that's going to affect their total cash flow. They're going to look at the flow rates from the wells, because ... that affects the timing of the cash flow.... They're also going to look at the ... location [relative] to existing infrastructure and access to existing infrastructure. ... Things on the North Slope have changed in that regard recently too, because there are these facility-sharing agreements now, there are common equity agreements. The infrastructure is available now, and there are ... commercial contracts out there where third parties can understand what it will take to access that infrastructure.

[6:43:49 PM](#)

MR. VAN DYKE remarked that there are some big oilfields on the North Slope that have not been developed; they are offshore of ANWR in relatively deep water in the federal Outer Continental Shelf (OCS) area. He opined that the fields are big but very remote and therefore will be expensive to develop, "and so today they just sit there." Additionally there is some very viscous oil in the Ugnu formation around Kuparuk, Prudhoe Bay, and Milne Point, but he said that it's not economic to develop today. Returning to the topic of wells offshore of ANWR, he said, "Those accumulations, probably even if they had a zero tax and a zero royalty ... those fields are probably uneconomic to develop today. ... There's not a whole lot the government can do other than to pay someone to produce them."

[6:45:34 PM](#)

MR. VAN DYKE opined that oil and gas companies need to have a good cash flow model that incorporates risk, and they need to evaluate the risks properly. He commented that the companies also need to make a profit, but profit is different for each company. He said that the companies all forecast price differently and evaluate the risks differently.

#### **ADJOURNMENT**

There being no further business before the committee, the House Special Committee on Oil and Gas meeting was adjourned at [6:47:58 PM](#).