

ALASKA STATE LEGISLATURE
SENATE RESOURCES STANDING COMMITTEE

February 22, 2012

1:33 p.m.

MEMBERS PRESENT

Senator Joe Paskvan, Co-Chair
Senator Thomas Wagoner, Co-Chair
Senator Bill Wielechowski, Vice Chair
Senator Bert Stedman
Senator Lesil McGuire
Senator Hollis French
Senator Gary Stevens

MEMBERS ABSENT

All members present

OTHER LEGISLATORS PRESENT

Senator Cathy Giessel

COMMITTEE CALENDAR

SENATE BILL NO. 192

"An Act relating to the oil and gas production tax; and providing for an effective date."

- HEARD & HELD

PRESENTATION: ALASKA NORTH SLOPE PLANS OF DEVELOPMENT

- HEARD

PREVIOUS COMMITTEE ACTION

BILL: SB 192

SHORT TITLE: OIL AND GAS PRODUCTION TAX RATES

SPONSOR(s): RESOURCES

02/08/12	(S)	READ THE FIRST TIME - REFERRALS
02/08/12	(S)	RES, FIN
02/10/12	(S)	RES AT 3:30 PM BUTROVICH 205
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02/22/12	(S)	RES AT 1:30 PM BUTROVICH 205

WITNESS REGISTER

BILL BARRON, Director
 Division of Oil and Gas
 Department of Natural Resources (DNR)
 Juneau, AK

POSITION STATEMENT: Gave overview of North Slope plans of development (POD).

ACTION NARRATIVE

[1:33:16 PM](#)

CO-CHAIR JOE PASKVAN called the Senate Resources Standing Committee meeting to order at 1:33 p.m. Present at the call to order were Senators French, Stevens, Wielechowski, Co-Chair Wagoner, and Co-Chair Paskvan.

SB 192-OIL AND GAS PRODUCTION TAX RATES
ALASKA NORTH SLOPE PLANS OF DEVELOPMENT BY DNR

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CO-CHAIR PASKVAN announced that today the committee would hear more about plans of development from the Department of Natural Resources (DNR).

CO-CHAIR WAGONER said he was intrigued by what Mr. Barron said about the exploration currently taking place on the North Slope and what led to it. He was under the false assumption that it

was entirely related to credits, but the director said it was also related to the terms of the leases. He asked Mr. Barron to expand on that.

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BILL BARRON, Director, Division of Oil and Gas (DOG), Department of Natural Resources (DNR), said the discussion related to the apparent robust nature of the drilling program this year on the North Slope and while DNR believes that tax credits have a play in the dialog, the lion's share of the drilling was a direct result of lease terms expiring. These leases that were acquired 5, 7 or 10 years ago, are about to "term out" and if adequate work hasn't been done to prove moveable hydrocarbons and to form a unit, those leases will expire and be returned to the state.

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SENATOR MCGUIRE joined the committee.

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CO-CHAIR PASKVAN asked how much money the state had paid out under the 40 percent exploration credit.

MR. BARRON replied that he didn't know, but he could get that number for him.

CO-CHAIR PASKVAN said he was trying to figure out what the decision-making is if they don't know how much money has been paid out in credits and the director says the lion's share of the decisions are about lease terms.

MR. BARRON elaborated that while the tax credit is part of the internal fiscal decision process for a company, the risk of losing the land and access to it for exploration drives that decision in a much greater way. He explained that a company makes an internal decision at some point to drill, find and prove hydrocarbon; then they form a production unit and the land stays with them for another five year term until it's on full production. But once a company loses the land, it goes back up for lease sale.

CO-CHAIR PASKVAN asked if DNR analyzed the number of leases terming out over the last five years and then the next five.

MR. BARRON replied yes and that information is available.

CO-CHAIR PASKVAN asked him to provide that information to the committee.

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SENATOR STEDMAN joined the committee.

SENATOR STEVENS asked if any effort at all to drill stops the loss of a lease or if the department requires a certain level.

MR. BARRON said he had this information in the presentation and at the right time he could address that question within a more comprehensive context.

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SENATOR WIELECHOWSKI asked how long the lease terms were and if companies need that much time or did they wait until the last minute to do anything. Are the state's lease terms where they need to be and, if the lease terms are such a big driver, do the tax credits need to be as high as they are?

MR. BARRON said, again, that his presentation would address those questions. He commented that he was still on his first slide and he already had half a dozen questions. The request was to discuss plans of development (POD) and it's important to set the broader stage of how one gets to one. He first would walk them through area-wide lease sales and exploration licenses, the primary term for explorers to have access to the land. The primary focus of the exploration during that term is to do prudent exploration activities and demonstrate by drilling a well that it is a candidate for unitization.

Unitization is the next phase after proving moveable hydrocarbons and a company can reasonably estimate closure (capture area) that the hydrocarbons are based in. At this junction the state has a great deal of leverage in moving the needle in terms of establishing a work scope for development operations. Once a unit is on sustained production, a participating area (PA) is established and this is when a POD is required.

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He explained that the exploration license and/or area-wide lease sale can turn into lease issuance or primary exploration and to proving of moveable hydrocarbons. If the answer to that question is no or no work done, then the land is returned to the state so it can be put back into a lease sale. If a unit is formed, that is there for five years until sustained production is established and that holds the unit as long as there is production.

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The state has had varying lease terms over many years. They have been as short as five years and seven years (primarily North Slope). The Kenai Peninsula, appropriately, has its own shorter timeframes, because of its existing infrastructure and road systems allow easier access. Having longer lease terms of 10 years on the North Slope, for instance is appropriate where part of the requirement for exploration is that it be done in winter off of ice roads and ice pads. So by having a longer breadth of time, they gain enough land to have a reasonable critical mass of area to explore, are able to do seismic and analyze it, can find an appropriate target, can get the proper permits in place, secure a rig, build an ice pad and ice road to it and commence drilling.

He said that the North Slope experiment of five year leases was a detriment to both the state and the industry, because companies didn't have enough time to get the pre-work done to be able to establish where they should drill their first and maybe only exploration well.

MR. BARRON said the division interviewed many companies that were historic explorers on the North Slope and companies who were interested in becoming explorers there about the most advantageous lease terms under the pretext that it is advantageous to the state to do proper exploration as quickly as possible to find and then produce hydrocarbon and avoid the warehousing issue.

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He said the lease sale the division conducted in December ranks in the top six revenue-producers in history and had an interesting blend of terms. They went with the full 10 year term, and after year 7, the lease rates jumped from the current \$10 an acre to \$250 acre for years 8, 9 and 10. DOG was trying to say that 7 years is enough time to do primary exploration and some delineation and 10 years definitely, but if an operator isn't interested in moving forward with a project, they probably also know that by year 5, 6 and 7. If they are not interested in moving forward but want to retain the land, the DOG imposes the idea that basically you can keep the land for the 10 years but it's going to cost you the same amount of money that it would cost to drill a well. There is a choice and they are trying to encourage companies to make that choice and make it early. It's isn't a formula, but strong encouragement to make the right decision at the right time and for the state's benefit.

CO-CHAIR PASKVAN asked over the next five years how much additional exploration activity he anticipates due to the increased cost of holding a lease.

MR. BARRON replied that the additional cost will be in effect in seven years from the last lease sale, so none in the next five years.

CO-CHAIR PASKVAN said he knew Cook Inlet had some leases potentially for five years, but the primary focus of his question was on exploration on the Central North Slope connected to existing leases.

MR. BARRON said he would have to look at those numbers when the leases expire and get him that information.

SENATOR WIELECHOWSKI said a motivated company is capable of exploring quickly. Great Bear, for example, just took out its leases a year to two ago and is exploring a dozen or so wells this year. Royale just acquired shale leases there and will be exploring next winter, and Repsol just acquired leases from Pioneer that they are exploring. Did he agree with that or was something different about those cases that enable them to explore very rapidly?

MR. BARRON responded that while Great Bear picked up its leases two years ago, they have yet to do any exploration work. Hopefully, they will get a rig and be able to do so. He modified their lease terms to work off the road system so they can work year-round. Royale may or may not work as planned, either, but that's the nature of the industry. Repsol is a good example of a company that picked up leases that were about to expire and, with their partners, are very motivated to drill quickly, primarily because of lease exploration terms. They are moving quickly, because it's either "drill it or lose it."

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He presented an exhibit of how a unit works: Company A and B acquires land over time and have established two wells and an injector. The red box was the unit boundary. The PA was represented by the blue line and was established as close to the reservoir boundaries as possible; its primary purpose is to establish how much production and, therefore, value will be allocated to the different parties by tract. So all the players know how much they are going to get for the land that they own.

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SENATOR WIELECHOWSKI asked if the department had figured out how they are going to unitize shale oil.

MR. BARRON answered no. It will be an interesting discussion, because he had just shown them a "conventional" reservoir; he explained that injector wells and producer wells interfere with each other, because you inject liquids to move the hydrocarbon to the producer wells. There is well-to-well connection, so you have tract factors to establish how much is granted to each tract by that production.

In a shale development, every well has no interference with the well next to it, because of the nature of the rock which is extraordinarily tight (very low permeability and porosity). The reason to form a unit is to protect all interested parties. In theory for shale, every well is its own unit.

MR. BARRON said he was working closely with the Department of Law (DOL) to figure out how best to unitize the shale prospects to protect the state. In a conventional play, a single well can hold the lease as long as it's producing. One shale well can hold an entire lease even though you may need 50 or more wells to fully drain the volume within that lease.

MR. BARRON said given that "hard nut to crack," they quarter-sectioned all the leases in the areas they deemed to be primarily shale development plays. So rather than having one lease of the normal size, they quartered it and sold each quarter as individual leases and tracts. At least now four wells have to be drilled to hold that same acreage.

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MR. BARRON explained that a PA is formed after unitization and after sustained production is happening. The reservoir has to be more fully defined, because going through the allocation process is very laborious and contentious. A separate PA is required for every producing horizon within a unit. When you are looking at a normal reservoir almost anywhere in the world, it's very rare to have a single horizon as a discovery, he explained. One column usually has many layers within it that are producible and a PA is formed for each one.

The approval of the PA includes an apportionment of the cost of revenue for the protection of all parties, including the state.

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Once a PA is formed, a Plan of Development (POD) is required for each one. It is issued by the operating company on an annual basis and is reviewed by the DOG. If it is deemed insufficient for approval, activities can't move forward. The division may propose modifications and if the operator agrees to them the project can move forward.

MR. BARRON listed POD requirements:

- must include a long range proposed development activities for the participating area;
- must describe the plans for exploration and delineation, plans of reservoir simulation and modeling;
- must include proposed plans of operations for at least one year
- must tell the division where the surface locations are and what kind of equipment, processing camps, road and additions will be put on the land, itself.

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MR. BARRON's next exhibit indicated that the North Slope has 18 existing producing units and 42 PAs. He said that a lot of activity is managed by the DNR and the operating companies on an annual basis and that every year the division looks at all of the plans. He said that a lot of data is required in a PA, because they are plans for the next 12 months.

He reviewed the POD approval process:

- annually submitted by the operating companies
- technical review of POD by the DOG
- DOG develops a series of questions and information requests involving many meetings with the operators
- DOG completes a POD matrix score sheet and attaches bubble maps and decline curves for internal use

MR. BARRON said if all of those things seem to fit and fall into place, they approve the POD and the operators proceed with them. If the DOG is not satisfied, they sit down with the operator and devise ways and means to get the state satisfied and come to a negotiated settlement with them. These plans are approved by both parties, but most of these companies have working interest owners and sometimes the plans change because of them.

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CO-CHAIR WAGONER asked if the state ever gets involved in disputes between a unit operator and its partners.

MR. BARRON answered yes. Typically unit agreements have stand-down clauses for parties that don't want to participate in

projects. In those cases, there is usually a rather significant (400-500 percent) penalty for them to ever "back into" that project. It is their own self-policing mechanism and part of an operating agreement that most companies don't want to go through.

SENATOR WIELECHOWSKI asked if the department performs any economic analysis when determining what the POD should look like.

MR. BARRON answered no; they look at the overall direction of whatever activities are taking place, not necessarily their economics.

SENATOR WIELECHOWSKI asked if performing an economic analysis wouldn't be helpful in terms of the state managing its resource and making sure it gets maximum benefit from it.

MR. BARRON replied that sometimes they have that dialogue with the operators, but the division can see whether a plan seems reasonable and would be profitable or not without doing a great deal of economic review. He pointed out that companies will not bring projects forward that aren't going to be profitable for them, and therefore, profitable for the state, too. And while having an economic model in conjunction with the POD might have some benefit, it doesn't sway the needle much at all in terms of the DOG's ability to encourage that development.

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SENATOR WIELECHOWSKI said if the state had an understanding of the economics of a field it would have a much stronger leg to stand on in terms of forcing a company to develop.

MR. BARRON responded that it's not a question of agreeing or not; the process they are trying to encourage is prudent economic development in a field and not encourage waste. The North Slope has 42 PAs, primarily driven by three main companies. They are doing allocation of resources internal to their companies including asset allocation throughout the rest of their portfolios. For the state to look at a single project and say it is economic, go do it, the company could agree, but it could also say that it doesn't meet their threshold for investment at this time and that they are going to do a development somewhere else in Prudhoe Bay. These companies are trying to do reservoir management, long-term field management and portfolio analysis all at the same time, not for just the fields in this state but in other areas, too.

CO-CHAIR PASKVAN asked if all three owners must agree in order for a development to proceed.

MR. BARRON replied that he didn't know of specific examples, but the approval of the POD is the DOG's responsibility and the operator presents them their plans. In theory, the operator has had those discussions with their co-owners prior to submitting the POD. But things change from one project to another within a plan, and that change might require the plan to change and not move forward on some part of it at all. It's possible that one partner might want to rethink it.

CO-CHAIR PASKVAN asked if that was another way of saying unless there is agreement with all three working interest owners, the state would not receive the POD.

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MR. BARRON answered no. The DOG still receives the POD on an annual basis per the lease terms. Once the POD is approved, the operator has approval to proceed with those plans. But in a risk business, anywhere in that 12-month timeframe things can change. The DOG would be advised of the change and then the next year upon the new POD, they would have that dialogue about what happened. The companies don't have to get working interest owner approval to present the plan; they have to get that working interest approval to progress the plan after it is approved.

He said the division has a process by which it keeps track of historic PODs, what has been approved and what they said they were going to do. Their "bubble map" gives staff a quick visual of which wells are producers and which are injectors and the relative size of the bubble indicates how much water has been put in or how much oil has been extracted.

MR. BARRON said he would talk about three primary case studies: ConocoPhillips' Kuparuk Unit (discovered in 1969 and has recovered 2.4 billion barrels of oil), BP's Milne Point (recovered over 300 million barrels), BP's Prudhoe Bay (discovered in 1967 and recovered 12.2 billion barrels of oil), satellites and all of the associated PAs so they could get a sense of some of the dialogue and activities they work through.

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ConocoPhillips' PAs include Kuparuk, Tarn, West Sak and News. POD topics reviewed are: development of West Sak and Kuparuk, their infield drilling program, their side track opportunities,

the coil tubing drilling, the impacts to the operation relative to surface casing corrosion, subsidence, pipeline integrity, flow line integrity and general facility maintenance. They talk about gas management and the impact of production on their overall gas management and reservoir management of gas wells.

MR. BARRON said a Matrix Breakthrough Event (MBE) is when an injection well is tied to a producing well and the injectant breaks through into the producer very rapidly; and "It's not a good thing." Part of the problem is that you have an entire POD laid out for a water flood, for instance, and a MBE can completely change the direction of where you are going to put liquid and the entire pattern.

SENATOR FRENCH asked how one well can hold a lease when more than one reservoir is under the lease; Kuparuk was a good example with Melt Water and Tobasco.

MR. BARRON answered that happens and it is referred to as stacking of PAs. A single well holds the whole surface unit and, therefore, it holds everything in that column.

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He showed a bubble map (slides 13, 14), a "beautiful presentation" of picture perfect ConocoPhillips' Kuparuk water flood profile: the green bubbles are oil producers and the blue ones are water. You can see development scenarios of water being pushed to the producers making them produce more oil as the water front moves out along with areas that didn't have a lot of work done in them. In looking for opportunities for additional drilling and expansion, the state builds a rapport and trust with the operator and it takes place over many years. "Sharks Tooth" in the lower left hand corner of the unit was one of those, and he said that ConocoPhillips was moving forward and drilling it right now.

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Moving to BP's Milne Point Unit, he noted that it had a Kuparuk PA, a Schrader Bluff PA and an Ugnu Pilot program. Slide 15 showed the typical discussion they have with the operator looking back on the last several PODs and looking forward, looking at their enhanced oil recovery (EOR) treatments and projects, their low-saline injection treatment and their water alternating gas treatments. They also talk about drilling rig activity, availability and mobilization. How to get all the work done with the limitation of rigs on the North Slope has become quite a healthy dialogue. So even if the project is robustly

economically viable on paper, if there is no rig to drill it, it really doesn't matter.

MR. BARRON said they talk to BP and ConocoPhillips relative to mechanical issues: gas injection, corrosion and work over plan issues. In a very mature oil field like Kuparuk, Prudhoe Bay and Milne Point, work-overs become a great deal of the activity. They talk about the electrical submersible pump (ESP) failure rate at Schrader Bluff and what kind of new technologies they are working on with the service companies in terms of reducing that failure rate - in trying to understand how to encourage the continuation of those operations.

In terms of Ugnu, the DOG is talking to them about CHOPS and the five-year pilot program there. Field activity is an offshoot of that entire discussion. They talk about the reprocessing of 4D seismic (on the POD) and securing potentially another one or two rigs. In fact, he said they are trying to secure a special rig just for CHOPS. They talk about well programs for the four wells that are planned and continue talks about MBEs.

SENATOR FRENCH said the last time he got an update on CHOPS was in the Petroleum News and it was very positive. He asked if Mr. Barron had heard anything more recent about it. Do you see monthly updates or production totals from that project?

MR. BARRON replied that he keeps tabs on CHOPS, because it is a technically fascinating project. Right now, they are still trying to figure how the pump at their last well created a hole in the tubing through its rotation and are working with the pipe manufacturer to come up with a different type of seal and "centerizing" tools to keep the pump from wobbling inside the tubing. There is no production; so they are basically shut in waiting for a new design.

SENATOR FRENCH asked if it's the same original well, because he saw a production report indicating a well with lengthy production.

MR. BARRON answered yes. The expectations of that well far exceeded anyone's imagination. He said CHOPS heavy oil has to be done in concert with lighter production, because its diluent is needed to produce it.

He said as they talk about these PODs, the division can't look at any one project in isolation. They must look at the broad picture of what is going on in a field to make sure that a

project like CHOPS is developed in a simultaneous sort of dance with the other fields so that they have that diluent available to flow the heavy oil into the pipeline. They try to help orchestrate all of those activities throughout all of the PAs.

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CO-CHAIR PASKVAN said last year at a "Lunch and Learn," Erik West from BP talked about the blending process and how it holds great promise for Alaska to potentially increase throughput.

MR. BARRON emphatically agreed.

SENATOR FRENCH asked what the plan is if they have just one well and it's shut in, because the POD calls for four wells.

MR. BARRON answered that he didn't have that available, but would get that part of the plan for him.

SENATOR WIELECHOWSKI asked if slide 16 indicated dry holes.

MR. BARRON replied this type of exhibit is over the Milne Point area and it didn't include any production or injection numbers. A dry hole would show up as a black dot with no resource tied to it on the rest of them.

SENATOR WIELECHOWSKI asked for the rough percentage of dry holes on the North Slope.

MR. BARRON replied that he didn't have that figure, but that it does happen and it is amazingly frustrating. Beaver Creek on the Kenai Peninsula is a textbook example where one well was drilled between two robust oil producers; everyone was certain it would be a good producer, too, but it was dry. You just sit there and scratch your head. He added that these are incredibly well-managed reservoirs by any stretch of the imagination; it's very high activity in a very mature basin.

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MR. BARRON said PODs were submitted for the previous two case studies he talked about; the DOG had lengthy dialogue and made modifications made to each one. Then the PODs were approved.

The Borealis and Orion PAs were sent to the division in November or December of last year for their annual review and they are still in very healthy negotiations with BP over them. The IPA PA is due in March; I-pad is part of that and was first proposed in the 2006 POD. The activity was sanctioned and it moved forward

on some civil work. It has paused on shallow ice lenses issues and has been on the POD ever since but with no activity. DOG has been in very deep negotiations with BP over it as well as the gas partial pressure issue over the last three months to understand their plans and their intent.

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CO-CHAIR PASKVAN said in reviewing the 2010 POD for Orion PA it says "gas partial processing plant (GPP) is midway through the execute engineering for the plant design and installation." He asked what that meant. And then it continues: "Gravel has been installed on Z-pad. Long lead times have been procured and the turbine compressor has been constructed." What are long lead times and what is a "turbine compressor" and where is it?

MR. BARRON answered that he had no clue where the compressor is right now. This project is in the final design and final engineering stage; the long lead time items would be the compressor or the turbine. This project is designed to take some gas, process it and then compress and use it for gas lift to augment the overall recovery of that area. This is a very typical project plan as generated by a project manager. The civil work they are talking about at Z-pad is just the work that is done to move gravel and level and compact it in preparation for the physical installation of the equipment. That equipment has not been installed, yet.

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CO-CHAIR PASKVAN said his understanding of the gas partial processing plant is that it is to divert the gas from the GHX 2 treatment facility so it can produce more oil. His overall understanding was that there would be about 40,000 more barrels of oil per day of output if the GPP were operating.

MR. BARRON replied that he didn't know the specific numbers, but that is where he understand the process was heading and it was in the right direction.

SENATOR WIELECHOWSKI asked if I-pad and GPP had been promised by the producers if oil taxes were rolled back.

MR. BARRON replied that he didn't know; the tax question is best answered by the operator.

SENATOR WIELECHOWSKI asked if I-pad was included in the last POD that was approved.

MR. BARRON answered yes.

SENATOR WIELECHOWSKI asked when the producers had promised to undertake that project.

MR. BARRON replied that the plans are plans; they are not promises or commitments. It's a scenario that is presented in terms of their planning purposes and for the state's planning purposes.

SENATOR WIELECHOWSKI asked when that plan was submitted.

MR. BARRON answered that the I-pad Orion/Borealis plan was submitted last year and I-pad had been on the PODs for the last four or five years.

SENATOR WIELECHOWSKI asked the rationale he is getting for them not going forward with the plan since it has been on the books for four years.

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MR. BARRON used slides 18 and 19 to explain the problematic issues; slide 18 showed a cross section of the Prudhoe Bay Unit and how things are stacked and how they can be retained in acreage - roughly to scale. Orion and Borealis were on the upper left hand side of the top two layers of the exhibit. Slide 19 was a bubble map of Orion and Borealis PAs showing that a great deal of work had been done in the center section and to the lower right, primarily in Borealis and to a lesser degree in Orion. The little square in the upper left hand side was a rough estimated location of I-pad (very far western pad put in place to try and capture the resource within the PA).

CO-CHAIR PASKVAN asked if he was referencing Orion or Borealis.

MR. BARRON replied in both; they are on top of each other. That is why he showed them the stacked exhibit first. He took them to the next bubble map of IPA (slide 20) that was "the telling story" of why some of these things are moved around in time. It is the large oil reservoir within the greater Prudhoe Bay area. It indicated a tremendous amount of activity in the main part of the field and some gas activity to the east. The western development will continue being challenging with not only costs and remoteness but also activities associated with the primary function of greater Prudhoe Bay - asset allocation, reservoir management, gas processing, oil processing and water processing. While the activities associated with Orion and Borealis are

important (now they are talking about value), the companies have to decide if they are going to get more oil out of those or out of continued efforts in the IPA, and they have continuing dialogues with the state about it. For every dollar the companies spend, the division wants them to maximize value to state. But they want to maximize value to the corporation. Whether it has been pushed back or delayed, the answer is this question: for the money you are spending are you bringing the greatest value to the state? And the answer is a blend of those three bubble maps.

SENATOR WIELECHOWSKI asked if he had been told the reason I-pad hasn't gone forward is economic or technical.

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MR. BARRON answered he had been told technical reasons.

He summarized that the state is in negotiations over Orion and Borealis. He had asked for a lot more technical data, detailed scoping plans, milestones and deliverables. As sloppy as this approach may seem, he said this POD process has generated a tremendous reserve base for the state. Slide 22 indicated BP's PODs that showed the original recoverable reserves and everything that has been proven and developed above and beyond the original forecast; it was driven by the entire process, of continuing "artful" dialogue and negotiation, of "prodding" the companies to continue to do work and continue to push the envelope on a lot of these activities. Continuation of production, the extension of field life and the absolute higher recovery factors in the field is the end result that you want from a robust plan of development and as messy as the process is, it has yielded tremendous value to the state, he stated.

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In summary, Mr. Barron said that lease utilization is critical to the state; formations of PAs are required once they have producible hydrocarbons and sustained flow; PODs follow immediately after that on an annual basis. There are detailed technical reviews by the DOG and sometimes outside consultants are hired for support. Stacked PAs in one unit is very complex and it gets back to the value assessment. All developments have to be conducted under the terms of an approved POD.

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CO-CHAIR PASKVAN said on page 22 it appears that somewhere in 2009 an event caused an increased delineation of proven reserves and asked where that came from.

MR. BARRON answered that he didn't know, but BP might.

CO-CHAIR PASKVAN asked if it could coincide with proven reserves transferred to booked reserves.

MR. BARRON replied that this is nothing about booked reserves; this is cumulative recovery (production that has been put through the line).

CO-CHAIR PASKVAN thanked the participants and held SB 192 in committee.

[2:45:41 PM](#)

CO-CHAIR PASKVAN recessed the Senate Resources Standing Committee meeting until 3:30 p.m.