ALASKA STATE LEGISLATURE
SENATE RESOURCES STANDING COMMITTEE
April 25, 2012
9:02 a.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
Senator Joe Thomas
Senator Dennis Egan
Senator Linda Menard
Representative Berta Gardner

COMMITTEE CALENDAR

SENATE BILL NO. 3001
"An Act relating to adjustments to oil and gas production tax values based on a percentage of gross value at the point of production for oil and gas produced from leases or properties north of 68 degrees North latitude; relating to monthly installment payments of the oil and gas production tax; relating to the determinations of oil and gas production tax values; relating to oil and gas production tax credits including qualified capital credits for exploration, development, or production; making conforming amendments; and providing for an effective date."

- HEARD & HELD

PREVIOUS COMMITTEE ACTION

BILL: SB3001
SHORT TITLE: OIL AND GAS PRODUCTION TAX

SPONSOR(s): RULES BY REQUEST OF THE GOVERNOR

04/18/12	(S)	READ THE FIRST TIME - REFERRALS
04/18/12	(S)	RES, FIN
04/19/12	(S)	RES AT 3:30 PM SENATE FINANCE 532
04/19/12	(S)	Heard & Held
04/19/12	(S)	MINUTE(RES)
04/20/12	(S)	RES AT 10:00 AM SENATE FINANCE 532
04/20/12	(S)	Heard & Held
04/20/12	(S)	MINUTE(RES)
04/24/12	(S)	RES AT 9:00 AM SENATE FINANCE 532
04/24/12	(S)	Heard & Held
04/24/12	(S)	MINUTE(RES)
04/25/12	(S)	RES AT 9:00 AM SENATE FINANCE 532

WITNESS REGISTER

ED DUNCAN, CEO and President
Great Bear Petroleum, LLC
Anchorage, Alaska
POSITION STATEMENT: Testified during the discussion of SB 3001.

ACTION NARRATIVE

9:02:55 AM
CO-CHAIR JOE PASKVAN called the Senate Resources Standing Committee meeting to order at 9:02 a.m. Present at the call to order were Senators French, Stevens, Stedman, and Co-Chair Paskvan.

SB 3001-OIL AND GAS PRODUCTION TAX

CO-CHAIR PASKVAN announced the consideration of SB 3001. He noted that the committee would hear from Ed Duncan regarding the shale oil process in Alaska.

ED DUNCAN, CEO and President, Great Bear Petroleum, LLC, testified during the discussion of SB 3001. He said he would present an operational update on where Great Bear Petroleum is at today and take a look at where they might be next year. He noted that Great Bear Petroleum was the first mover of shale oil in Alaska.

9:04:24 AM
MR. DUNCAN hoped to provide information in order to help the legislature make the best possible decisions regarding oil issues at this time.

CO-CHAIR WAGONER joined the committee.

MR. DUNCAN referred to a map of regionally vested onshore lease holders that had been updated following the December 2011 lease sale. He noted that Royale Energy from San Diego entered the shale business in Alaska in December of 2011. The fairway for oil and gas shale development on Alaska state land is fundamentally leased at this time. He said he believes the solution for Alaska for production decline is new reserves within the legacy producers and within new entry participants, such as Great Bear.

He related that a year and a half ago, shale play was just getting started internationally. Shale play is driven by price and technology. The shale industry is supreme at technological innovation.

He showed a map of Great Bear leases and spoke of the importance of the James Dalton Highway (Haul Road) and the Trans Alaska Pipeline (TAPS) regarding early testing and proof of commercial viability of shale play.

9:07:27 AM
SENATOR WIELECHOWSKI joined the committee.

MR. DUNCAN referred to a map that showed Great Bear acreage and six well locations that have been permitted to begin drilling in May of 2012. The locations run north and south along the Haul Road and allow for year-round easy access. To prove the viability of an unconventional reservoir, a well that won't flow to the surface under natural conditions, Great Bear needs to be able to drill, fracture stimulate, and complete necessary tests.

9:09:11 AM
He listed the well locations that were ready to go: Alcor 1, Merak 1, Mizar 1, Megrez 1, Dubhe 1, and Alioth 1. The wells were named after stars in the constellation Ursa Major. The plan of operations is on file, well plans have been designed and redesigned, and the technical work program is as good as could be hoped for. An important step was to consummate the well agreement with Halliburton.

MR. DUNCAN said it was a very exciting time for Alaska as the commercial viability of shale oil is about to be tested. Next, Great Bear will move toward a pilot production test that will last about a year.

He showed a map that represents a three-dimensional seismic program that will be important for designing the orientation of laterals and identifying major fracture networks and faulting. He stressed the importance of drilling the wells in an efficient and timely manner.

9:13:00 AM
MR. DUNCAN addressed the plan of development timeline, which he said has been modified slightly from early days, partly by Great Bear and partly by external forces. The timeline is designed to get shale play to the point of discussing commercial viability. He detailed the three phases of the plan. Phase one is termed "proof of concept" and consists of data collection and play tests.

CO-CHAIR PASKVAN requested an explanation of drilling, especially the term "cored through all three main shales."

MR. DUNCAN explained that the North Slope Basin is the most prolific oil field in North America. Three world class oil prone source rocks exist regionally across the North Slope. HRZ (GRZ) is the shallowest, a lower cretaceous aged rock unit with very high organic carbon content. Based on known information, these rocks are mature for oil across the entire lease hold.

CO-CHAIR PASKVAN asked him to explain thermal maturity and why it is important.

MR. DUNCAN explained that thermal maturity is related to the process of natural heating of buried rocks containing organic carbon, such as plant or animal material that lies within the depositional system at the time when rocks were originally deposited. That material is heated and transformed into oil and gas in the subsurface. The process of heating is called "thermally maturing," generally increasing with depth of burial, so shallow rocks in the North Alaska Basin are the least mature. At the deepest level, the rocks mature past oil generation to gas generation. The first phase of hydrocarbon generation is oil; the next phase is gas, and then the rocks are spent. Much of the world is full of spent rock.

9:18:37 AM
CO-CHAIR PASKVAN asked how many meters deep the three source rock layers are.

MR. DUNCAN replied that the HRZ source rock will occur at 2,500 meters below ground level or 7,500 feet and will be between 400 and 600 feet thick. He noted that HRZ will be selectively cored.

He explained that the second layer of source rock is basal Kingak, a Jurassic Age shale. Nearly all of the oil in the Alpine Field is from basal Kingak, an important discovery in that it initiated Great Bear's interest in shale oil from basal Kingak.

He related that sitting beneath basal Kingak is source rock called Shublik, a Triassic Age rock. Shublik is the primary source rock for the North Slope and occurs in outcrops all across the Brooks Range. He continued to explain that Shublik rock is responsible for 60 percent of oil reserves known to exist on the North Slope. It is a rich organic carbonate black limestone and is very brittle so it fractures well in outcrop. He noted that Great Bear has data from about 20 tests of naturally fractured Shublik in the Prudhoe Bay/Kuparuk field areas.

He summarized that there are three source rocks, co-located and regionally present, in a section 600 to 800 feet thick. Great Bear will initially focus on Shublik, but also will collect data on other source rocks in order to determine if they can be produced as well.

9:22:21 AM
SENATOR FRENCH asked how thick Shublik is.

MR. DUNCAN said Shublik ranges in thickness between 100 feet in the northeast, to over 250 feet in the southwest of the lease hold.

SENATOR FRENCH pointed out that Great Bear is waiting to drill its first oil well, which is exciting. On the other hand, there could be a downside where oil cannot be produced. He asked what the upside potential was.

MR. DUNCAN answered that the upside could involve a commercially viable development of all three zones. If they all "frack and flow," the ultimate volumetric outcome is beyond game changing because of the thickness and regional extent of the target zone.

SENATOR WIELECHOWSKI asked how Great Bear's lease holdings compare to Bakken or Eagle Ford or other world class shale plays.

MR. DUNCAN replied that Great Bear is confident that Shublik rock can be fractured and stimulated to yield flow. He asserted that Shublik is similar in quality, thickness, and regional extent to both Eagle Ford and Bakken.

9:26:31 AM
CO-CHAIR PASKVAN requested that Mr. Duncan share his work history in Alaska and his involvement with the shale industry.

MR. DUNCAN related that he started his large-company career in 1982 in Alaska. He said he had been living in San Francisco working for a regional exploration office whose primary focus was the North Slope and Alaska's Outer Continental Shelf (OCS). He shared his experience with the Mukluk lease, the Camden Bay area, and everything east of the Colville River to the Mackenzie Delta. The focus was on surveying and permitting in the Arctic National Wildlife Refuge (ANWR) for drilling the Kick Well site. He said he then worked another year in Alaska as an exploration supervisor and then as a basin specialist for British Petroleum. He shared his involvement in regional source rock evaluation.

9:30:21 AM
MR. DUNCAN related his work experience with unconventional resource development in Oklahoma and California. Simultaneous with Eagle Ford and Bakken coming on, he reported that he set out to find the next big emerging resource play in the world. He said he discovered, and was stunned at, the potential of the Brookian Foredeep in the Brooks Range in 2009.

He continued to say that at the same time, the USGS and Schlumberger and Stanford researchers were working on a three dimensional fluid-flow model-based review of petroleum kitchens and a charge history of the North Slope fields. It remains a seminal piece of work by Ken Peters. He stated that the paper captured all of the data he could have wished for to evaluate unconventional oil potential in Alaska. The intent of the model was to explain the charge history of Prudhoe Bay, Kuparuk, and Alpine.

9:34:19 AM
SENATOR FRENCH asked for an explanation of "charge history."

MR. DUNCAN explained that "charge history" refers to a time when hydrocarbons were generated in thermally mature areas and then migrated vertically or laterally into the reservoirs they are found in today.

CO-CHAIR PASKVAN stated that approximately 16 billion barrels have been pumped through the TAPS system. He asked if there was any correlation between the quantities of oil that comes out of Prudhoe Bay, Kuparuk, and Alpine, and what might still be in the source rock.

MR. DUNCAN referred to Ken Peters' paper that was published in 2006, which deals with the material balance of hydrocarbons generated regionally and those captured in known accumulations in North Alaska. He said it is fair to say that the residual hydrocarbons, or retained hydrocarbons in the source rock, are significant and in excess of hydrocarbons contained in known tracts. The question is how to recover the retained hydrocarbons because of the relative newness of technology and unconventional oil. The amount of oil recovered is improving every year. A few years ago the recovery rate in the Eagle Ford was about 3 or 4 percent; now it is over 6 or 7 percent and improving.

He explained that there is about 100 billion barrels of oil in conventional traps between Point Thomson and Alpine. That is a fraction of the oil generated, which is closer to 4 trillion barrels. He emphasized that he was not suggesting that was the oil resource base in North Alaska; however, it speaks to the quality, scale, and thickness of the petroleum source kitchens in that specific basin.

9:38:52 AM
CO-CHAIR WAGONER asked how many lateral feet on a shale play can be fractured.

MR. DUNCAN answered that the data Great Bear is collecting will provide information on how best to develop the shale resource. Very thick sections can't be developed laterally. He said he expects to see very precise, targeted lateral drilling and precise, well-managed calibrated stimulation programs in Shublik.

9:42:13 AM
SENATOR WIELECHOWSKI asked how it is possible shale play could have been missed by producers already on the North Slope.

MR. DUNCAN explained that these plays are very new - October of 2010 - and the companies that discovered the plays were not the major producers. Their context was different from Great Bear's and other companies that led the unconventional revolution.

9:44:34 AM
SENATOR STEVENS asked what Great Bear's relationship with the majors is, considering that the major companies own TAPS.

MR. DUNCAN related that he could answer the question better if Great Bear was in production. He said he believed Great Bear has a good relationship with the majors. He pointed out that he was previously employed by BP. He expected to produce pipeline quality oil by the end of the year, but said there is a lot of work to do first.

9:46:52 AM
CO-CHAIR PASKVAN asked if there is a chemical fingerprint that shows the location and history of the source rock on the North Slope.

MR. DUNCAN answered yes. He referred again to the geochemically oriented publications by Ken Peters that deals with the "mixing of the various source oils" in North Slope fields. One article showed that Alpine was sourced by Kingak, a critical piece of data. The articles showed the percentage of each source rock in each area. The oil can be geochemically traced to the rocks from which they came.

SENATOR FRENCH asked if Great Bear's oil will come out south of pump station one, south of Deadhorse. He also inquired about the pump station tie-in referred to in phase 2 of Great Bear's development plan.

MR. DUNCAN explained that the early stage development planning is geared toward a trucking operation.

9:52:41 AM
SENATOR FRENCH summarized that the oil would flow back to surface tanks and be trucked to the North Slope to be put into production facilities there.

MR. DUNCAN said that was exactly right. There would be a modular processing system on the pad with the wells, a tank system to hold produced oil, and a trucking operation to deliver oil to TAPS.

MR. DUNCAN discussed the importance of Great Bear's position along the Haul Road. If the results from 2012 are positive, in 2013 the construction of the pilot development pad will begin. It will be a self-contained, multi-wellhead modular processing system trucking operation located a few hundred yards away from

the existing Haul Road. If the pilot pad provides encouraging results, the Haul Road will define the first development corridor, a chain of production pads that are linked to the Haul Road.

SENATOR FRENCH referred to an article in Petroleum News, April 8, 2012, regarding shale oil development. The article points out how rapidly shale developments can come on line. He requested more information about the advantages of a 2-year play, as compared to a 10-year play.

MR. DUNCAN said he did not know where the "first oil in ten years" comment came from. He noted it did not apply to Great Bear's model. He clarified that the expectation is to begin producing in 2014 with the goal of getting oil to market. In 2015 the plan is to build a development corridor along the Haul Road.

SENATOR FRENCH noted that the article says a shale oil well may initially produce oil at a high rate of about 1,000 barrels per day, but production tends to decline rapidly, stabilizing at a more long-term rate of 100 to 200 barrels per day. In the Bakken play in North Dakota, total production is currently running at about 488,000 barrels per day from 6,000 wells, indicating an average daily well production of just 80 barrels. He asked how many wells would need to be drilled for commercialization.

9:55:23 AM
MR. DUNCAN expected that the well spacing in North Alaska will ultimately be around 160 acres per well. This program will support 200 wells per year through the course of a very long drill out. If the rocks allow for regional production, under this model the play will be drilled out at a very high rate for at least 10 to 15 years. Great Bear has a goal to reduce the surface footprint, unlike Bakken.

CO-CHAIR WAGONER asked if there had been any discussion with the North Slope Borough or indigenous people in the area regarding the possible density of development.

MR. DUNCAN said Great Bear has tried very hard to keep the North Slope Borough and the villages up to date on their development plans.

SENATOR WIELECHOWSKI inquired if the expected production profile is about 1,000 barrels per day for the 200 wells.

MR. DUNCAN reported that it was a good number to use. He noted that the wells decline at a rapid rate. He expected about 1,000 barrels a day for initial production, followed by an average production in the first year of 500 to 600 barrels a day, and ending up with about 250 to 300 barrels a day. The decline rate slows in years 2 and 3 and beyond. The fact that these wells decline rapidly portends continuous operations.

SENATOR WIELECHOWSKI asked how many barrels would be produced under full field development in year 5 and year 10.

MR. DUNCAN said it depends on how many wells are drilled and completed. He maintained that 200 wells a year is achievable; that is 8 development pads per year and will require a complete overhaul of the rig market. He added that there is also a substantial workforce challenge. With 200 wells a year, after five years there would be 1,000 producing wells.

10:03:50 AM
CO-CHAIR PASKVAN asked Mr. Duncan to comment on the geologic risks of conventional and unconventional oil.

MR. DUNCAN related that conventional reservoirs will flow without stimulation to the surface. Unconventional reservoirs needs stimulus to flow to the surface and require technology to become commercial. The challenge now is the use of terminology when discussing shale oil and unconventional oil. In Alaska, HRZ, GRZ, basal Kingak, and Shublik are considered technically unconventional. HRZ, GRZ, and basal Kingak are shale plays. Shublik is technically not a shale play.

10:06:36 AM
MR. DUNCAN continued to explain Great Bear's plan of development. He maintained that by the end of the year the geological risks will have been addressed. He listed some of those risks, such as the rocks could be too ductile or clay rich to frack a well.

10:09:09 AM
MR. DUNCAN turned to a slide entitled, "North Alaska Shale Resource Play Realization: Challenges and Business Development Opportunities." He noted the list of key challenges for unconventional resource development in North Alaska and how Great Bear means to address those challenges. He stated that access to gravel for infrastructure support, water for drinking and fracking, and silica rich sand or propping, were among the largest challenges.

SENATOR WIELECHOWSKI asked how Great Bear will assure fracking won't be a problem in Alaska. He also asked if propane would be used for fracking.

MR. DUNCAN said that Alaska has a number of gifts from Mother Nature. There are no fresh water aquifers that are not frozen as permafrost on the North Slope. Water sources potentially available are subsurface up to a depth of about 5,000 feet, and there are thick sandstone aquifers that contain brackish water not fit for human consumption or agricultural use, but are chemically very suitable for fracking.

He noted there is very active research related to providing sea water as an allowable component for fracking. The operation of fracking involves capturing and cleaning the flow back water, necessitating future recycling techniques. Halliburton is very active in water recycling research using reverse osmosis filtering.

He stated that access to gravel is one challenge Great Bear will need help with.

He said that propane flaring was not part of Great Bear's planned operations.

CO-CHAIR PASKVAN noted the arrival of Senator McGuire.

10:16:45 AM
MR. DUNCAN pointed out that a big challenge for Great Bear and the entire petroleum industry has to do with how all players will need to cooperate to make the best outcome for Alaska. A huge challenge will be training, hiring, and retaining a critical mass of workforce. At 50 wells a year, Great Bear will require a significant rebuild of a skilled workforce. He referred to slide 8 which showed the large number of workers needed in Pennsylvania, 44,000, and South Texas, 68,000, to sustain the production in those locations.

CO-CHAIR PASKVAN asked if the Alaska jobs would last for a generation or more.

MR. DUNCAN said he believed they would.

CO-CHAIR PASKVAN inquired whether jobs in unconventional plays, such as Great Bear's, are measurable in tens of thousands.

MR. DUNCAN said that was an accurate estimation based on what has happened in Eagle Ford and in Bakken.

10:22:50 AM
CO-CHAIR PASKVAN asked if the uptick in production, as depicted in the chart entitled "Historical Oil Production," was from unconventional plays or conventional plays.

MR. DUNCAN replied that he didn't have the input data for the slide, but based on knowledge, asserted that the uptick was from unconventional oil that was technologically and price driven, particularly in North Dakota, Texas, and Alberta where there is heavy oil.

CO-CHAIR PASKVAN summarized that the two driving factors for increased production are technology and oil price.

MR. DUNCAN said those factors were certainly driving Eagle Ford, Bakkan and other unconventional plays.

10:25:25 AM
SENATOR FRENCH asked what advantages a partnership with Halliburton provides.

MR. DUNCAN replied that Halliburton is a recognized global leader in fracking with a highly trained workforce, and has made a significant commitment to research and development. Halliburton is a leader in oil recovery technology and the commitment to address unforeseen challenges.

SENATOR FRENCH asked if the addition of another company, Royale, competing in the North Slope for shale oil development, validates Great Bear's venture.

MR. DUNCAN replied that he does not look at Royale as a competing company because the play is so large that it requires additional companies. He shared that the lead technical driver at Royale is a personal friend whom he worked with in the 80's.

CO-CHAIR FRENCH asked if he was the engineer that analyzed the Mukluk failure.

MR. DUNCAN said that Dr. Mohamed Abdel-Rahman is a very good geologist from Sheffield University in the United Kingdom. He stated he was pleased to see Royale and others in the play.

10:29:11 AM

CO-CHAIR PASKVAN asked what kind of play ConocoPhillips' lease in NPRA is.

MR. DUNCAN said he didn't know Conoco's lease strategy, but offered that the lease acreage lies in between two known fairways. He thought it was probably an unconventional play.

SENATOR MCGUIRE asked for advice in terms of training the necessary workforce.

MR. DUNCAN answered that Great Bear's program is not the only one in North Alaska that may lead to significant job growth, so the best thing to do would be to engage with the state in regards to future great demands on the workforce.

SENATOR MCGUIRE stressed the importance of training Alaskans for the jobs and of offering the right training programs.

10:34:08 AM
CO-CHAIR PASKVAN pointed out that the presentation documents are on BASIS. He noted that DOR presented chart 6 entitled "Historical Oil Production" to the House Resources Committee. The committee was told the Texas decline curve had been turned around from conventional oil. He wondered if that was accurate.

MR. DUNCAN asserted that it was not an accurate statement. He said he knows that oil production is increasing dramatically on the Eagle Ford play as well in other plays. The upturn in Texas is more substantial than what appears on chart 6 and there are very few active conventional oil plays in the state.

10:36:46 AM
CO-CHAIR PASKVAN asked if "co-located" was an accurate term for the layering of rock types.

MR. DUNCAN said yes. The Shublik formation is deposited regionally, the basil Kingak is similarly distributed, and the HRZ has less of a regional distribution, but covers the entirety of the central coastal plain area.

CO-CHAIR PASKVAN inquired if all rock layers can be accessed in one well.

MR. DUNCAN replied that it depends on how the bore hole is engineered. In the event that all three rock layers deserve commercial development, the nature of the bore holes can be

technically modified. In testing for commercial viability, the rocks dictate how to drill the well.

At ease from 10:40 a.m. to 10:48 a.m.

10:48:19 AM
MR. DUNCAN discussed the challenge in Alaska of inspiring additional exploration and maintaining current oil production. He related that the petroleum basin in North Alaska is one of the greatest basins in North America and in the world. Prudhoe Bay is the 18th largest oil field ever found on the planet.

He pointed out that the perception remains that Alaska is a high-cost, high-risk, over-regulated place that has a series of layered fears, some that are real and some that are not. The challenge is how to create an operating environment in Alaska where the return is better than competing plays in the Lower 48. The challenge is shared by the state as well as by the oil companies.

He noted that Great Bear has the largest contiguous lease hold position in an unconditional play in North America. He suggested that everyone is trying to drive the costs of production down. He encouraged the industry to work with the state on this issue. He stated that Great Bear is happy to be working in Alaska and will soon have real data about the potential of their wells.

10:57:52 AM
CO-CHAIR WAGONER understood that the workforce was critical, but didn't know of housing opportunities on the North Slope. He asked if anybody has talked about building a camp.

MR. DUNCAN replied that Great Bear is very aware of the magnitude of the housing challenge. No one has a feeling for how big this project could become. He said the jobs are year-long and would involve families so housing and support is critical.

11:02:04 AM
CO-CHAIR PASKVAN reported that Great Bear has recently hired Pat Galvin, the former Commissioner of Revenue. He asked what Mr. Galvin's role will be.

MR. DUNCAN answered that Mr. Galvin is a valuable resource due to his understanding of the current fiscal regime, regulatory process, and permitting front. Pat's role will be to help with external and government affairs, dealing with expanding the operation, and close coordination with regulatory agencies to

minimize delays. He will be deputy general counsel to the corporation.

11:04:33 AM
CO-CHAIR PASKVAN requested more information about the move from "proof of concept into the pilot program." He wanted to know how the type of drilling rig needed would be determined and how many would be needed.

MR. DUNCAN replied he expects that Great Bear will design drilling hardware and pumping services specifically for this play. The number of the rigs needed is an unknown. He said he pictured a fleet of similar or identical rigs in order to reduce costs for training, maintenance, and deployment.

SENATOR FRENCH returned to slide 3 and asked if Alcor would be the first well.

MR. DUNCAN said yes.

SENATOR FRENCH inquired what day Great Bear intends to spud in.

MR. DUNCAN replied it would be as soon as Great Bear gets the rig and the site ready. The rig contract starts on May 15.

SENATOR FRENCH suggested there might be a whole lot of people watching. He wished Mr. Duncan good luck.

11:07:48 AM
SENATOR MCGUIRE asked what the range of cost per well would be and what type of credit incentive Mr. Duncan would prefer.

MR. DUNCAN explained that the best way to answer the "cost per well" question is to think about what the cost per well will be during core development. Data is being collected in the early wells which are more expensive than full field development wells.

He addressed the question about preferred credit incentives. He said he would have to consider what the state can do to reduce development costs in Alaska in order to compete with the Lower 48. He suggested the state and industry meet to solve that problem. He proposed meeting with the state after Great Bear's cost reduction task force meeting to identify major cost drivers.

CO-CHAIR WAGONER asked how many feet of core would be drilled in each exploration well.

MR. DUNCAN replied that there are plans for multi-hundred feet of core through all of the rock zones.

11:14:45 AM
CO-CHAIR WAGONER asked if other cuttings would be analyzed, also.

MR. DUNCAN said yes. Great Bear will finalize sampling scenarios with Halliburton tomorrow.

CO-CHAIR PASKVAN asked how the core is handled when it comes out of the earth.

MR. DUNCAN replied that geo-chemical and rock mechanic experts will dictate how the core is handled, but the number one rule is to not allow contamination. The core goes into isolation and is shipped off the North Slope to labs in Houston and Golden, Colorado within hours of coming out of the ground.

SENATOR WIELECHOWSKI asked if Halliburton is providing venture capital.

MR. DUNCAN explained that the participation agreement allows Halliburton to drill and complete a certain number of wells. A successful completion of their work program will earn them a 25 percent working interest position in a 125,000 acre subset of a half million acres. Great Bear will remain the operator. He concluded that it was a good way to align one of the world's leading technical service companies with Great Bear's challenge.

CO-CHAIR PASKVAN opined that Alaska is at a very important time in its history, but there are many challenges, also. He said he remains optimistic and hopeful after hearing the presentation.

[SB 3001 was held in committee.]

11:19:59 AM
There being no further business to come before the committee, Co-Chair Paskvan adjourned the Senate Resources Standing Committee at 11:19 a.m.