

**ALASKA STATE LEGISLATURE
JOINT MEETING
SENATE RESOURCES STANDING COMMITTEE
HOUSE SPECIAL COMMITTEE ON FISHERIES**

March 19, 2010

3:38 p.m.

MEMBERS PRESENT

SENATE RESOURCES

Senator Bill Wielechowski, Co-Chair
Senator Hollis French
Senator Thomas Wagoner

HOUSE FISHERIES

Representative Bryce Edgmon, Chair
Representative Charisse Millett
Representative Cathy Engstrom Munoz
Representative Robert L. "Bob" Buch

MEMBERS ABSENT

SENATE RESOURCES

Senator Lesil McGuire, Co-Chair
Senator Charlie Huggins, Vice Chair
Senator Bert Stedman
Senator Gary Stevens

HOUSE FISHERIES

Representative Wes Keller, Vice Chair
Representative Craig Johnson
Representative Scott Kawasaki

OTHER LEGISLATORS PRESENT

Representative Austerman

COMMITTEE CALENDAR

PRELIMINARY REVIEW OF THE BOARD OF FISHERIES REQUEST FOR A COMPREHENSIVE EVALUATION OF LARGE-MINE PERMITTING AND STANDARDS FOR PROTECTION OF FISH AND GAME HABITAT IN THE BRISTOL BAY WATERSHED.

- HEARD

PREVIOUS COMMITTEE ACTION

No previous action to record

WITNESS REGISTER

ED FOGELS, director
Office of Project Management and Permitting
Department of Natural Resources (DNR)
Anchorage, AK

POSITION STATEMENT: Invited panelist.

DR. DAVID CHAMBERS, president
Center for Science in Public Participation (CSP2)
Bozeman, MT

POSITION STATEMENT: Invited panelist.

JOHN SHIVELY, CEO
Pebble Limited Partnership
POSITION STATEMENT: Invited panelist.

Senator Halford
Former Alaska Senate President Halford
Eagle River, AK
POSITION STATEMENT: Invited panelist.

ACTION NARRATIVE

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CO-CHAIR BILL WIELECHOWSKI called the joint meeting of the Senate Resources Standing Committee and the House Special Committee on Fisheries to order at 3:38 p.m. Present at the call to order were Representatives Millet, Munoz, Edgmon and Senators French, Wagoner and Wielechowski.

PRELIMINARY REVIEW OF THE BOARD OF FISHERIES REQUEST FOR A COMPREHENSIVE EVALUATION OF LARGE-MINE PERMITTING AND STANDARDS FOR PROTECTION OF FISH AND GAME HABITAT IN THE BRISTOL BAY WATERSHED.

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CO-CHAIR WIELECHOWSKI said the Alaska Board of Fisheries (BOF) heard a lot of concerns, particularly from residents of the

Bristol Bay region, that the standards guiding permitting agencies are not adequate to ensure that Pebble Mine will only be developed if fisheries can be protected. He read from a letter written by the BOF requesting that the Legislature:

Conduct a comprehensive evaluation of the permitting protections and standards, including regulations and statutes, which provide safeguards against environmental damage. After such evaluation, we further request that the legislature enact any additional safeguards which are considered prudent to provide strict protections to the fish and game habitat of the drainages to prevent any chance of environmental damage.

CO-CHAIR WIELECHOWSKI said he would like to hear from today's panelists on whether or not the Legislature should embark on such an analysis. He explained that four questions have been given to each panelist to help the Legislature get a preliminary sense of what to do in response to the BOF's request.

REPRESENTATIVE EDGMON said polls have repeatedly demonstrated that the Bristol Bay region is concerned about the Pebble Mine being in place right next to the last great sockeye salmon fishery in the world. The panelists will offer a well-rounded conversation about the existing system and whether or not, given Pebble's size and proximity to Bristol Bay, a third-party, multidisciplinary assessment of the mine is necessary to measure the cumulative environmental and socio-economic impacts.

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REPRESENTATIVE EDGMON added that the Bristol Bay Native Corporation, after three years of debate, has reluctantly come out in opposition to Pebble Mine. Concern is warranted and he hopes the meeting will help determine if the Pebble project is more significant than most and an outside entity should study its ramifications.

CO-CHAIR WIELECHOWSKI asked the panelists to answer the four questions in sequential order in ten minutes and said ten additional minutes for questions will be allowed.

The questions provided to the panelists were:

1. You are very familiar with the environmental setting and value of fish and wildlife of Bristol Bay to Alaskans. You are also familiar with the ore body

size, the minerals to be mined, the water appropriations applied for, and the size of the tailings dams that have been discussed for the Pebble prospect. What are the biggest risks, in your opinion, of this mine in this setting?

2. How would you compare the Pebble prospect to the scale, character and setting of other sulfide ore body mines in the US and Alaska, and what are the key lessons learned from these other mines?

3. What areas of Alaska's statutes and regulations do you think are most important for an analysis to focus on, given the issues you see with the Pebble prospect and the possible impacts it could have on Bristol Bay's fisheries?

4. Do you support choosing the National Research Council [(NRC)] of the National Academy of Sciences [(NAS)] to conduct an evaluation of the adequacy of Alaska statutes, regulations, and permitting capacity to ensure the mine can be developed while protecting Bristol Bay's fisheries? Why shouldn't the legislature carry it out on its own? Why not an Alaskan research group such as the McDowell Group or the Institute of Social and Economic Research (ISER)?

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ED FOGELS, Director, Office of Project Management and Permitting, Department of Natural Resources (DNR), said his office is responsible for coordinating state permitting activities for large resource development projects, including mining. His office has no regulatory authority on its own but coordinates other agencies.

MR. FOGELS referred to Question 1 and said he is familiar with the ore deposit, the location, the setting, the value of Bristol Bay fisheries and the water appropriations permits that were submitted several years ago by the Pebble Partnership. He is not familiar with the details of the project, the size of the dams and the exact amount of water that will be used. Those details will be received when Pebble applies for the project; the state has not received permit applications. He feels the biggest risks are with water quality which is driven by the geochemistry of the tailings and waste rock facilities. Without those details, specific risk evaluation is difficult. The management of water must be understood: where it will be put and how it will be

treated. Monitoring systems around the project must also be understood. He reiterated that the risk is about water quality.

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MR. FOGELS moved on to Question 2 and said the Pebble prospect is one of the largest ore deposits in the world. The class of the ore deposit has been studied and mined in other parts of the world. Bristol Bay is a unique setting, one of the world's most valuable fisheries. Additional information about the deposit is needed before evaluating risks and reviewing permits. At the review stage, the focus will be on how the acid-generating waste material in the rock type will be watched, treated, characterized and stored appropriately.

Paying careful attention to the geochemistry of the rock type, as this drives water quality, is the biggest lesson learned from similar mines around the world. Another lesson is the need to tighten the monitoring net around a mine including ground and surface water monitoring and bio-monitoring. Alaska now does environmental audits on mines a minimum of every five years in which a third party checks the mines and the agencies.

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MR. FOGELS moved on to Question 3 and said federal statutes and regulations must be considered, not just Alaska's. For example, the Environmental Protection Agency (EPA) administers the Clean Water Act and issues permits limiting pollutant discharge. Any waste product deposited in a wetland needs a permit from the Army Corps of Engineers. Several state permits and regulations apply to water quality including those overseen by the Department of Environmental Conservation (DEC), the Integrated Waste Management Program, DNR and Alaska Department of Fish and Game (ADFG).

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MR. FOGELS moved on to Question 4 and said Alaska has a good mine permitting process which is obvious from looking at operating mines. ADFG has been looking at fish populations downstream of each mine and all reports are on the web. He suggested the Legislature consider a few things if embarking on a study. If the state's large mine permitting process is going to be studied, what will happen while the study is going on? Will permitting have to be stopped? If a study is done for the Pebble Project, will a similar study be required for every other mining or resource development project in the state? He hopes that any study would help do the work.

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REPRESENTATIVE EDGMON asked if Mr. Fogels was saying that the permitting process in place is adequate to safeguard Bristol Bay fisheries in perpetuity.

MR. FOGELS replied that the permitting process can do a good job of permitting a project such as Pebble - going through the process and determining if Pebble should be permitted or not. He reiterated that decisions are made on many levels, including federal and state agencies. The Pebble project will take a lot more staff and resources to go through the documentation and permitting process.

REPRESENTATIVE EDGMON said the range in between "good enough" and 'no net loss' is where concern arises. Evidence is mounting about the sensitivity of salmon habitat and the homing instinct. Certainly some habitat will be destroyed with the development of the mine. The concern is that "good enough" is not "good enough". He noted that DNR has some reservations about an outside, multi-disciplinary review of the Pebble project if it could encumber the process for other large mines. Representative Edgmon felt enough difference exists between Pebble, next to Bristol Bay's watershed and fisheries, and other large mines, that DNR should think an outside study would have some merit.

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MR. FOGELS replied that he had explained DNR's reservations about a study but did not say a study would not have merit.

SENATOR FRENCH asked Mr. Fogels to elaborate on the concern about acid generating waste material.

MR. FOGELS responded that he does not have details on concentrations and volumes at Pebble. As rock is broken up and exposed to oxygen and water, water percolates through, becomes acidic and picks up heavy metals which can leach into the environment. Some mines have benign waste material while others have waste rock that is very prone to generating acidic water heavy in metals.

SENATOR FRENCH asked where, between benign and highly acidic, do the core samples of Pebble fall.

MR. FOGELS replied somewhere in the middle zone. There is no question that materials will have to be carefully handled and managed. How and where the materials are handled and disposed of is the big question.

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SENATOR WAGONER said some metals will be suspended in water and in processed material and will have to be disposed of; that's the reason for the dams and containment. He asked how long it takes for the chemicals and minerals to settle into a base that will solidify.

MR. FOGELS replied that those details are different for every mine and are unknown for the Pebble project. A classic way to dispose of tailings is behind a dam with a water cap which keeps the oxygen from getting into the tailings. Some mines need a water cap maintained in perpetuity, others neutralize. These details must be modeled in the application and addressed in the Environmental Impact Study (EIS).

REPRESENTATIVE MUÑOZ asked if DNR can require this type of study as a condition for the required permits.

MR. FOGELS asked if Representative Munoz meant an NAS study.

REPRESENTATIVE MUÑOZ replied yes.

MR. FOGELS replied that he is unsure if DNR would have the regulatory authority to require a study. DNR normally requires studies upfront to demonstrate appropriate evaluation of the materials. DNR almost always hires third party experts to look at the company's information. DNR could probably hire NAS to do that; it comes down to having the funding to do so.

REPRESENTATIVE MILLETT asked if DNR needs a plan of development with the geochemistry in order to go forward with the permitting process and evaluation. She asked how far along the process is at this point in time.

MR. FOGELS replied that DNR gets the geochemistry at same time as the permit applications. A lot of information comes in at once: a detailed design of the project, how they will mine, how they will access the mine, how the waste will be disposed of - all base and backup data collected over the last five years including geochemistry data.

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REPRESENTATIVE MILLETT asked what DNR is doing to prepare for that information and how long it will take to process it.

MR. FOGELS answered that DNR does not know when a company is going to submit applications. When Pebble applications are received, his division will assign a full-time coordinator position just to Pebble. Other divisions of DNR, ADFG and DEC will all have to ramp up and the company agrees to pay those costs. The problem is finding staff to fill positions at the right time. Theoretically, the funding is there to ramp up immediately and hire third party contractors.

REPRESENTATIVE MILLETT asked if the level of expertise needed is readily available in the industry right now.

MR. FOGELS replied that finding qualified people to work for the state is not easy. A mining coordinator must have good working knowledge of the industry and state and federal government. Those people are making triple the money in the private sector.

REPRESENTATIVE BUCH joined the meeting.

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DR. DAVID CHAMBERS, President, Center for Science in Public Participation (CSP2) said that CSP2 is a non-profit providing technical advice to public interest groups and tribal governments on the environmental impacts of mining. He spent 15 years working as an exploration geophysicist in the industry.

DR. CHAMBERS responded to Question 1 and said mines have a triple bottom line: economic considerations, environmental and social considerations. Consideration of the economics shows almost entirely benefits; a mine like Pebble has hundreds of billions of dollars of revenue. The environmental consideration is almost always a risk analysis with very few environmental benefits. Social considerations can go either way with both benefits and risks. Environmental risks, with a mine like Pebble, center on water and aquatic organisms which are sensitive to metals. Key considerations are acid mine drainage and hydrology, or where does the mine sit and where are contaminants liable to move. Pebble's location poses significant and unique issues.

DR. CHAMBERS moved on to Question 2 and said the scale of this mine makes risk analysis more complicated. He showed a pie chart depicting the total tons of ore available from all the hard rock mines in Alaska, including Pebble. He added that the Bingham Canyon mine, the largest mine in North America, is one-third the size of Pebble based on the amount of ore. To give a sense of the scale of Pebble, he showed a slide with the outline of

Pebble, as it was in the 2006 water rights permit applications and again in press releases of February 2010, superimposed over the city of Anchorage.

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He said the tailings dams have to be designed for perpetuity. To illustrate the large scale of a dam, as proposed by Pebble Partnership, he showed a slide of the dam superimposed over Elliot Bay in Seattle. Since the mid-1970's, 75 percent of cases involving mines like Pebble (close to ground and surface water, with sulfite mineralization), incorrectly predicted whether metals would be generated and could be controlled through mitigation. He agreed with Mr. Fogels that significant gains have been made in predicting impacts and how to mitigate them, but we are still not doing well and still have a lot to learn.

DR. CHAMBERS moved on to Question 3 and said Alaska's statutes and regulations leave room for improvement. Access to information is lacking; the company has not released significant information since 2004.

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Data collection and analysis is better done in an open and peer review environment than by an interested party. Having DNR driving the permit review process is a conflict of interest: DNR is charged with responsibly developing mineral resources but how does that balance against fisheries or subsistence resources? He said it is fundamental problem that mining is exempted from a Best Interest finding that officials must issue to some natural resource developments in Alaska.

DR. CHAMBERS referred to Question 4 and said using NAS to evaluate the process is a good idea. NAS can bring expertise to the table and does not "have a dog in this fight". He would also welcome a similar review by somebody like ISER because some aspects are unique to the state. He suggested two studies could be done. He suggested that the mine, due to its magnitude, be looked at in addition to the regulatory process.

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REPRESENTATIVE BUCH said that some specific hydrology testing was going on. Scientists told him they had specific water wells, took samples during certain times of the year at specific depths and sent them off to a party in Seattle and one in Oregon to obtain third party verification of analysis. He asked if Mr. Chambers could comment on empirical protocol.

DR. CHAMBERS replied that testing samples from those wells is standard. His concern is not about present water quality about where and how fast the water moves. Predicting what will happen when a tailings pond is built in the area requires, for a start, log information about material that has been drilled through and information about flows. Pebble will be mining rocks that are potentially acid generating. Lining the tailings pond, which is very big and would be expensive, is not going to be done. That presents more problems.

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REPRESENTATIVE BUCH said this seems to him to be the most enhanced base-line study conducted in Alaska. He asked if Mr. Chambers considered it to be an adequate baseline study.

DR. CHAMBERS replied he suspects it is the most extensive but could not answer whether or not it is adequate. The results have not been seen; until then, preliminary feedback and suggestions can't be made for further information or studies.

REPRESENTATIVE BUCH asked if it is standard for all compiled data to come in at the onset of the EIS. A department will be overwhelmed if an assessment done over four or six years comes in at once. His concern is that adequate opportunity is given for discovery during the process.

DR. CHAMBERS said he agrees and would like to see data flowing when collected. Sometimes mines will release information voluntarily but regulatory agencies cannot require it. He said he just finished an analysis of a mine in Minnesota for which a huge amount of information had been made available by the company.

REPRESENTATIVE BUCH asked if statutes exist in other states that could be modeled if changes are made in Alaska statute.

DR. CHAMBERS said he is not aware of any state that has that specific authority but said he could research Minnesota and other states that do analysis more progressively.

CO-CHAIR WIELECHOWSKI asked about the track record of sulfite mines around the world in terms of meeting water and air quality standards.

DR. CHAMBERS replied that Pebble is in a class of mine that has sulfidic ore in the ore body and is near ground and surface

water. About 75 percent of the time, these mines exceed their permit limits for water discharges; that is concerning.

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CO-CHAIR WIELECHOWSKI asked what the impact would be to the fishery and environment if there were to be a [permit] breach at Pebble.

DR. CHAMBERS replied that quantifying the impact is difficult or impossible. It boils down to how much risk you want to take and what is at risk. He said this is the last big, healthy salmon fishery in North America. Salmonids are very sensitive to metals in general and copper in particular. Pebble could fall in the 25 percent of these mines that are ok but no one can know that.

SENATOR WAGONER said the containment dam is many people's biggest fear. People don't understand that water is only the cap, not the whole volume behind the dam. He asked how many projects in the world are contained this way and how many have had a problem with a containment dam rupturing.

DR. CHAMBERS replied that tailings dams are very common in most places in the world. The type of construction proposed for the tailings dam at Pebble uses the most fundamentally sound engineering. The tailings are largely solid behind the dam; unlike water, the reservoir cannot be drained if a problem with the dam develops. The dam must be maintained in perpetuity; conservative assumptions must be made about earthquakes and other factors. Worldwide, a tailings dam fails once every 18 months.

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SENATOR FRENCH asked how much risk would be mitigated if the mine were not an open pit mine.

DR. CHAMBERS said he has as much concern for the proposed underground mine as for the open pit mine. A technique called block caving, which structurally destroys the rock, is used to mine a low-grade ore body underground. The process fractures material that is mined and material all the way to the surface. The rubble contains sulfide minerals and hydrology is still important.

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JOHN SHIVELY, CEO, Pebble Limited Partnership, started with Question 1. He said water quality is the first issue. The mine needs to have a water handling system that works, a tailing

facility that holds back the tailings and the water and that other water around the prospect must be managed. The real danger to the fish is water quality. Pebble is not done engineering the tailings facility and some questions cannot be answered yet.

MR. SHIVELY moved on to Question 2 and said Pebble is a big prospect and the current resource could be mined for 80 to 100 years. Pebble's intent is not to permit the entire resource, however, but 25 to 40 years. Red Dog is smaller but its mineralization is 25 percent, meaning 25 percent of what comes out of the ground is potentially acid generating. Pebble has a lot more ore but it ranges from .2 percent to 3 percent. Acid drainage will have to be dealt with but Pebble does not have as much sulfite.

MR. SHIVELY referred to Question 3 and said permitting and resource development in Alaska is a much broader issue than just Pebble. He said the economy must be considered and he referred to Red Dog being shut down, Conoco being turned down for an [Alpine West CD5 404 permit] and Shell facing permitting problems. He said any study should consider not just the statutes but the process. Whether Pebble is permitted or not, things in the economy do not bode well for the future with both state and federal issues.

MR. SHIVELY moved onto Question 4 and said the National Science Foundation is well respected and would do a good job. Focusing on what you want to study is important, then bringing in experts.

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He said he is a former commissioner of DNR and thinks the state has a strong permitting process that is looked at independently on a regular basis.

REPRESENTATIVE EDGMON said tributaries feed off into the major salmon producing areas of the Bristol Bay salmon fishery which was worth about \$5 billion in the last 20 years. He asked if Pebble can really understand those water flows, under and above ground, enough to tell someone down river that they will be protected in perpetuity.

MR. SHIVELY replied yes, Pebble's water monitoring studies are extensive, go beyond the project itself and will be available. Over \$100 million has been spent getting information and a fair amount of that is already available to the public. Until a mine is planned, interpreting the meaning of all the information is

difficult. Any problem will be close to the mine and has to be dealt with there.

REPRESENTATIVE EDGMON said he hears that Pebble is a proposal with unknown size and impacts, but "there has got to be a plan somewhere". The Legislature doesn't know what is going on behind the scenes. He asked Mr. Shively how close he is to the permitting process at this point.

MR. SHIVELY replied that Pebble has ideas and concepts but not a plan sitting in London. Multiple pieces must be considered and are all related: hydrology, tailings dam design, economics, size, an 82 mile road, a port and power.

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In 2008, Pebble Partnership said it would be in the permitting process at the end of 2008; now it might be in early 2011. Pebble is not driven by a date but by putting a project together that meets the high environmental standards and is economic.

SENATOR FRENCH said Pebble will be transporting fuel over the next year to drive equipment. Recently a well-publicized diesel spill occurred on the way to the site. He asked Mr. Shively for the degree of responsibility that Pebble is going to assume for that fuel transport.

MR. SHIVELY replied, "That was not our fuel spill and that fuel actually wasn't necessarily designed for the project". Some fuel might have gone to the project and some was being delivered to the villages. A partner of Pebble's, Iliamna Development Corporation was transporting the fuel. Their idea was to bring fuel in over the Pile Bay road then by barge to communities around the lake, substantially lowering the cost. The spill was unfortunate but not particularly environmentally damaging.

SENATOR FRENCH asked Mr. Shively to talk about the fuel Pebble is going to transport and how safe, environmentally sensitive transport will be ensured.

MR. SHIVELY asked if Senator French is asking about transporting fuel now or if there is a mine.

SENATOR FRENCH replied now.

MR. SHIVELY answered that Iliamna Development Corporation currently brings fuel for Pebble into Iliamna where they have a fuel storage area. Helicopters are fueled there. Fuel for

drilling is flown out in a fixed-wing plane to fuel storage and then flown again in double-hulled containers to the drilling rigs.

SENATOR FRENCH asked how Mr. Shively sees Pebble's involvement in fuel transportation and if he is prepared to avoid spilling fuel into Lake Iliamna.

MR. SHIVELY replied that if diesel is used, a pipeline will probably go out of the port and along the road. Fuel will not be transported across Lake Iliamna.

SENATOR FRENCH asked about construction to widen the road before a pipeline can be put in. He said he is concerned about a lot of work being done there, with heavy equipment, already having had a diesel spill. He asked at what level will Pebble step in and assume responsibility for the handling of diesel in a sensitive area.

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MR. SHIVELY said Pebble requires that fuel carriers have insurance and reviews their safety. It is part of Pebble's responsibility to make sure transport is safe. Who will transport fuel has not been decided.

REPRESENTATIVE BUCH said he is not concerned about a lack of information but is concerned that if information is presented all at once it will overwhelm an agency.

MR. SHIVELY responded that Pebble will pay for the review which will be done by more than just state employees. The state will bring in others on contract, such as environmental consulting firms. Information needs to be quality checked and put into a readable format called the Environmental Baseline Document (EBD). Pebble is producing that document now; it will have 53 chapters and will be available to the public. If needed, the state will ask for more money to get more people or more time.

REPRESENTATIVE MILLETT thanked Mr. Shively for his company's investment in the region so far. She said she has fished for 20 years in Bristol Bay and understands its dynamics and what is at risk. She imagined that Mr. Shively understood the value of that region, as a former DNR commissioner, and asked if he takes that into the board room. She asked if Pebble understands what is at risk and what conversations are like in the boardroom.

MR. SHIVELY replied that it is a big part of discussions and the drive behind the engineering. He took the job because he felt an Alaskan perspective was needed. He has friends in Bristol Bay who oppose the project and others who see the potential economic advantages. Everybody realizes it is about the fish. If Pebble cannot show that the fish will be protected, it will go nowhere.

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CO-CHAIR WIELECHOWSKI said he heard the power needs for the project are enormous: 400 -500 megawatts, which is about half of the peak load of the Railbelt. He asked how Mr. Shively expects to generate power in that area.

MR. SHIVELY replied that about 250 - 300 megawatts will be needed. Natural gas would be the choice but it is not readily available. A spur or bullet line would need industrial users to make the price of gas reasonable without a large state subsidy and Pebble could help. Without a huge find in Cook Inlet, the Nikiski LNG plant will likely shut down and could be flipped to a receiving plant, allowing gas to be brought in for Pebble and others. Pebble would ship that gas across the inlet. Another option is LNG barges that now have regasification capacity on the barge.

He noted that if Pebble gets reasonably priced energy to the mine, it would cooperate with the state to take that energy to the western part of the region.

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Senator Halford [former Alaska Senate President Halford] said Pebble is different than other mines he's dealt with, flown for, advocated for or worked on legislation for. He can't think of a place that would be more challenging to develop sulfite mine. Pebble would have incredible value and incredible risk. He said it is located in a saddle at about 1000 feet and the deposit goes to about 3000 feet below sea level. He felt Mr. Shively's comment about not wanting to negatively impact other Alaska mines by what you do in Bristol Bay was valid; Pebble's size, type and location are different.

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He showed a slide of Frying Pan Lake which is "ground zero" by the Northern Dynasty plans and would be about 700 feet under tailings. He showed another slide looking from Cook Inlet toward the Pile Bay end of the Pile Bay road and said the full transportation route is about 100 miles long. Another slide looked back towards William's Port and one showed the road from

William's Port toward Pile Bay which can barely accommodate loads that are 14 feet wide.

He said the size of the Pebble project is beyond imagination: the largest mine in North America would only fill it about one-third full. The level of the review should be commensurate with the size, risk and duration of the transaction. The size is astronomical, the risk is very high and the term is forever. The Legislature should have as much information as it can.

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The review by NRC or NAS is only one piece of what the Legislature should be doing. It should be go back to the commissioners of DNR, ADFG and DEC and ask them for a capitol project to beef up their information gathering ability. What is done with this issue will be specific to Pebble and Bristol Bay. He noted that a major dam failure is not the only way that toxins can end up back in the water column.

He felt that no multi-national company is going to mine any less than all the mineable ore. The application might be for a portion of the ore, but the project and Legislature should be driven by the size and scope of what is there to be mined. The amount of sulfur in the ore body, which is potentially damaging, outweighs the benefits. A bulk mining method will have to be used. As a low-grade, high volume operation, the project does not have the financial capacity to carry some of the environmental necessities.

In conclusion, Senator Halford encouraged the Legislature to look at NAS and the rest of the Legislature's authority to get as much information as possible and to empower the administration with the needed funding.

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He pointed out that Mr. Fogels said "assuming adequate resources" and talked about a flexible process. In this case, the maximum protection should be flexed and that is expensive.

REPRESENTATIVE EDGMON asked about the similarities and differences between the Red Dog Mine, which has provided a lot of income and jobs, and Pebble Mine.

SENATOR HALFORD replied that the Pebble Project is the opposite in every way he can think of from the Red Dog Mine. The Red Dog deposit, rich in toxic elements, had already significantly hampered the water quality in its area through prospecting and

natural erosion. Red Dog had very few conflicting resources. The Red Dog mine was incredibly rich with about 20 percent zinc and 5 percent lead as opposed to 1 percent average at Pebble. Red Dog is also on native land which means it shares through all the native corporations across Alaska and allows for local hire provisions that are not enforceable otherwise. Red Dog was overwhelming supported by people of the area. Opposite conditions in Bristol Bay have resulted in overwhelming public opposition.

He said a decision should not be postponed while waiting for a plan; the size, location, ore type, and the necessity of a bulk mining method are known. An advocate for Pebble might not show a plan until he has worked through the process as much as possible and can get it approved. Waiting endangers the resources in conflict, the people of Western Alaska and the advocates for every other mining project.

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REPRESENTATIVE BUCH said Pebble is entirely on state land and asked Senator Halford to further touch on the issue of taxes.

SENATOR HALFORD replied that most mines in Alaska can't carry anywhere near the taxes that the oil industry, or others, can carry. Negotiations between native corporations and mineral interests show agreement on reasonably high royalties. The state system is based on profit after all expenses are taken out. A profits-based tax is a very small percentage of a net smelter royalty tax and would be somewhere in the range of 1 or 1.5 percent, not considering economic activity and local or property taxes.

SENATOR FRENCH asked Senator Halford what he would do if he were "on this side of the table".

SENATOR HALFORD replied that getting more information makes sense. He advised going to every source possible which can be difficult because "the other side is very, very well armed. They are very well paid, they are very well educated, they have life-long careers in the companies they work for." The state side is elected and appointed and usually have to hire experts from that other side of the table. He said he would not wait for somebody to bring science forth that has been bought and paid for.

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SENATOR WAGONER asked about the worst case scenario and what percentage of the Iliamna fishery could be affected.

SENATOR HALFORD responded that Iliamna is one-third of the entire fishery and is one of the five major drainages. He offered a sample scenario while just building the road: If a sectional tanker, with four trailers of 10,000 gallons each, came across the road and was lost in the middle of Lake Iliamna, four tankers could bubble for years, corrode and fail. If filled with separation chemicals, it would be even worse than petroleum products. He said numbers are beyond comprehension. He said he cannot answer Senator Wagoner's question.

CO-CHAIR WIELECHOWSKI closed the testimony.

REPRESENTATIVE EDGMON said he has constituents on both sides of the Pebble issue but surveys show the majority are extremely worried. He feels an independent, third-party review is necessary. The project is unique in size and proximity; it is a non-renewable project, with many unknowns, next to a renewable resource. He questioned if the state has the resources to monitor the project and the liability protections in place in perpetuity. He is unsatisfied with qualified responses and promises of protection and no net loss. The Legislature needs to pursue this study, support DNR, support the developer in their efforts and mostly support the Alaskans that live in the area as they are the ones who will experience the benefits or the risks.

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SENATOR WAGONER said he has been a commercial fisherman in Cook Inlet and said that salmon are tough creatures. He is in favor of pursuing the mine the safest way possible. Bristol Bay is the last bastion where a person can make a living fishing but Alaska won't pump oil forever and needs to look at other job sources.

CO-CHAIR WIELECHOWSKI said this is a situation where we cannot afford to be wrong and the more information the better. He would support additional information and research from instate and out of state. An independent, unbiased group would be a good thing for all parties, to make sure our statutes and regulations are good, strong and will protect the fishery and habitat.

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Seeing no further business to come before the committee, Co-Chair Wielechowski adjourned the meeting at 5:17 p.m.