PUBLIC HEARING

WHITES POINT QUARRY AND MARINE TERMINAL PROJECT

JOINT REVIEW PANEL

V O L U M E 10

HELD BEFORE: Dr. Robert Fournier (Chair)
Dr. Jill Grant (Member)
Dr. Gunter Muecke (Member)

PLACE HEARD: Digby, Nova Scotia

DATE HEARD: Wednesday, June 27, 2007

PRESENTERS:
-Lobster Fishing Area 34 Management Board
Mr. Wayne Spinney
-Ms. Heather Jenkins
-Dr. Micheal Corbett
-Clean Annapolis River Project
Andy Sharpe/Judith Cabrita/Ann Goddart
-Ms. Marilyn Stanton
-Ms. Tina Little
-Mr. Ashraf Mahtab
-Ecology Action Centre
Ms. Jennifer Graham/Ms. Gretchen Fitzgerald
-Mr. Bob Morsches

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Per: Hélène Boudreau-Laforge, CCR

Digby, Nova Scotia

--- Upon resuming on Wednesday, June 27, 2007, at 1:00 p.m.

THE CHAIRPERSON: Okay. Ladies and gentlemen, we would like to begin the afternoon session please.

For those of you who are not familiar with us, let me introduce the Panel to you. On my left is Dr. Jill Grant, who is a professional planer; and on my right is Dr. Gunter Muecke, who is an earth scientist; and my name is Robert Fournier, I'm an oceanographer by training and I am the Chair of the Panel.

A couple of housekeeping items. For those of you who are regular attendees, I'm sorry it's repetitious but the acoustics in this room are not very good, and a number of people use headphones, which you can get at the back.

They are there originally for simultaneous translation, but they help you to hear better when the sound is bouncing around the room.

So if you're having trouble, please get yourself a set of headphones.

Also, those of you who are making presentations to us and are using PowerPoint or some computer assisted mechanism, please bring it to the attention of the Secretariat as soon as possible because

sometimes there are glitches, and we had to cancel a presentation last week because of that.

So if you've got a PowerPoint, bring it up so that we can kind of fit it into the process and give it a little test.

Okay. One other thing is I need to say a few words about undertakings.

Undertakings are requests for information that cannot be satisfied during the particular moment when the questioning is going on, and so a request is made to deliver that information at a later time. That is called an undertaking.

To date, we have generated 54 undertakings, and they're coming in day by day. Today, there are five that are due.

Number two, directed to Bilcon of Nova Scotia, to provide an updated version of the EIS, volume 3, map 2, showing the revised 800-metre setback location. To provide an updated version of the EIS, volume 3, map 2(a), the quarry property ownership.

So that is due today.

The next one is undertaking number three, also directed... All of these are directed to Bilcon, so undertaking number three is to provide volume calculations of quarriable stone inside and outside the

current 800-metre setback distance with and without the Whites Cove Road transecting the property.

Number four, to describe the worst case scenario of settling pond outflow, channel flow rates and effects on downstream vegetated channels.

Number five, to identify the dimensions of the grade required to define the Upper Flow/Middle Flow contact of basalt layers given the known topographical variation of over 7 metres over a lateral distance of 300 metres.

And the last one of this group is to provide a CV for anyone appearing on behalf of Bilcon whose CV is not included in appendix one of the EIS.

So all of those are due today, and they can come in at any time during the day.

Now there was another undertaking that was assigned yesterday, and it is number 54, and it was assigned to the Sierra Club of Canada, Atlantic Chapter, to provide references for publications relating to the implementation of full cost-accounting procedures, and that one is due on the 29th, which will be Friday.

In addition, there were several undertakings that arrived yesterday, and there was one which arrived a day or two before which we would like to...

Well, we would like to discuss three of

these which have arrived.

Number nine, I think it's number 10 and number 32, but we'll take them one by one.

The first one will be addressed by Dr. Muecke.

Dr. GUNTER MUECKE: Mr. Buxton, in reply to undertaking number nine, you submitted a letter from L.E. & W. Engineering Incorporated, and I would like perhaps to clarify some points raised in that letter.

For clarification, in the first bullet of that letter, the fines are defined as:

"...any material with a mesh size less than -200."

Is that right?

Mr. PAUL BUXTON: Yes, that is in fact correct from the letter.

Dr. GUNTER MUECKE: Okay. So we have a definition then of what constitutes fines, it's anything that has a diameter of less than 0.05 millimetres.

I think we have agreed on the conversion scale.

Mr. PAUL BUXTON: Yes, I'm not sure it was discussed, but I would say that's correct.

Dr. GUNTER MUECKE: So we are no longer talking about -140 as a fine size?

Mr. PAUL BUXTON: Yes, we're saying that that's part of the product, so the waste fines is -200.

Dr. GUNTER MUECKE: Well... A second point of clarification regarding the letter, it mentions that some of these fines, the sub-200 mesh are metred back into the product stream, is that correct?

Mr. PAUL BUXTON: I'm not sure that is really a correct interpretation, but let me consult with the Operations Manager.

--- Pause

Mr. PAUL BUXTON: I think a better description would be allowing it to stay in rather than feed it back in.

In other words, the specification for the product allows a certain amount of that product, that -200, to remain in the stone.

So while it's not deliberately fed back in, it is there and it's allowed to stay in.

In other words, if we did a quality control after the wash and found that the specification allowed one percent minus 200, you know, we would leave... And if our analysis says that we had 1 percent, then it's fine. It would just simply stay in it, it meets the product specification.

Dr. GUNTER MUECKE: Thank you. That

makes it clear to me.

Which brings us back to the stockpiles and my concerns about wind transport. So I'm given to understand now that a fine fraction is present in all stockpiles, not just the finer products?

Mr. PAUL BUXTON: That is correct.

Dr. GUNTER MUECKE: Thank you. And you may want to correct on this 0.05 millimetres. It's usually considered salt size, and in terms of wind transport, we are looking here at material which is very readily...

In high winds, it would be readily transported I should think. And you could correct me on that.

So I come back to the question about the state of the stockpiles during the operation.

Mr. PAUL BUXTON: Yes, in practice you're absolutely right in saying that there is a small fraction which will be in all stockpiles, and I think what I said before still applies, that when the material comes off the belt into the appropriate stockpile...

Because everything is stockpiled separately over the loading tunnel.

But it is a wet product, so it's come up the wash line, and certainly if we were to be in an extended period of dry weather, particularly with winds, there could

be some drying of the surface.

I think how far the heat and wind would penetrate depends upon the size of the aggregate, the size of the voids between the aggregate.

There would be some drying, I think that's been recognized, and if we got into a situation where there started to be some lift of the fines, then the stockpiles would be sprayed.

Dr. GUNTER MUECKE: Just a last follow-up on that perhaps to clarify the situation, when you talk about spraying here, are there going to be fixed spray structures in place or are you talking about somebody taking a hose and hosing it down?

Mr. PAUL BUXTON: No, this would be a piece of apparatus specifically designed for the job with a pump attachment, and really it is a part of the operational process because we have stockpiles of different quantities, quantities and qualities of rock, or size of rock.

So let's suppose that a ship is coming in which takes out let's say two stockpiles. The other stockpiles could be there for let's say then two weeks, and those then would require much greater monitoring than those that have just been assembled and are immediately shipped. So we would have a portable apparatus to spray whatever stockpile appears to be drying out.

Dr. GUNTER MUECKE: Thank you.

THE CHAIRPERSON: Mr. Buxton, I wanted to mention briefly that undertaking number 10, which was given to us on the 25th of this month, we asked for the production of greenhouse gases that would result from the shipping, and you returned us a number which was based on 50-year lifetime, and it came out to 1,107 kilo-tonnes, but all of the numbers we have been dealing with up until now have been on an annual basis, so what we did is...

I just want to make sure that this meets with our mutual agreement, but that is that we divided this 1,107 kilo-tonnes by 50 years, and that resulted in 22.1 kilotons per year resulting from shipping.

And then what we did is we added that to the annual output from the Project itself, which is 82, so the number we have been banding about in this room has been 82.

The question then was: "How much is the result of shipping?" You delivered it to us in 50 years, the lifetime of the Project.

We then brought that down to an annual level, which gives us a working number of 104.1 kilo-tonnes per year, okay?

So all I was trying to do was bring both numbers down to the same level, which was an annual level,

so that if anyone wants to talk about greenhouse gas production by the Project in a single year, the number we're talking about is 104.1, which is an average.

Mr. PAUL BUXTON: That sounds...

THE CHAIRPERSON: I mean, you can...

Mr. PAUL BUXTON: That sounds correct Mr. Chair. I note we did... It's in parentheses and a little hidden, but we did say 22.15 kilo-tonnes---

THE CHAIRPERSON: Yes.

Mr. PAUL BUXTON: ---per year, so...

THE CHAIRPERSON: Okay.

Mr. PAUL BUXTON: Yes, that was the intent.

THE CHAIRPERSON: So I guess what I was doing is looking for the agreement that adding those together was the annual production of greenhouse gases by the Project from the Project here, and as a result of shipping, the two together.

Mr. PAUL BUXTON: Yes, that is correct.

THE CHAIRPERSON: Thank you. I have one other question, or I would like some clarification on the undertaking which was a result of the request for quantities of explosives, which you sent us a table or a box with information in it.

We asked for it in metric units, and it

was delivered to us in metric units with the exception of tonnes, and what I wanted to know was, was the "ton", which was on this document you submitted to us, should that have read "tonne"?

Is that a ton or a metric tonne?

Mr. PAUL BUXTON: It is actually a metric tonne, and we debated whether to use the tonne.

THE CHAIRPERSON: Yeah.

Mr. PAUL BUXTON: But it is a metric tonne.

THE CHAIRPERSON: Okay.

Mr. PAUL BUXTON: Yes, I think we...

THE CHAIRPERSON: We thought it might be, but it wasn't clear. So it's a typo or a... Okay.

Now the second question I have for you is that the number here, let's see... Yes, the first response says:

"The amount of explosives applied per tonne of rock."

You have indicated or your group has indicated that that number is 0.23 kilograms per tonne, okay?

Mr. PAUL BUXTON: Mr. Chair, I'm sorry, could you give me the number of the undertakings so I can bring it up on the screen?

THE CHAIRPERSON: Sorry, 32.

Mr. PAUL BUXTON: Thank you.

THE CHAIRPERSON: Okay? Now the number that is indicated here is the amount of explosives applied per tonne of rock. To produce one tonne of fractured rock that you can work with requires 0.23 kilograms per tonne, okay?

Now we had a little difficulty with that because your blaster said it was 454 grams, or 0.454 kilograms.

Your blaster said one pound per tonne, and so... And he was using English units, so... So one pound per tonne, and one pound is 454 grams, so it would have been 0.454.

Also, when you go to the EIS, the EIS says, and I will read this. It says:

"The quantities of explosives handled will depend upon the size of the blast design, however it will be in the order of 0.4 kilograms per tonne blasted or approximately 7,500 kilograms for a 20,000-tonne blast."

So there are two places, your blaster and the EIS, which both say 0.4 kilograms. Your blaster says 0.454, this one says 0.4 and the document says 0.23,

which is half the amount.

So, I mean maybe you can reconcile that for us?

Mr. PAUL BUXTON: I'm not a blasting expert. Certainly, we asked our blasting expert who will design the blast specific to this Project. Having perhaps done a closer investigation of the site, the type of rock, all I can say is that this is his estimate.

This is the figures that he has given us to the best of his professional knowledge.

If you would like some background on that, I can certainly get it from him and bring it to you, but...

THE CHAIRPERSON: Well, I guess what I'm saying is that somewhere in the course of the EIS, that was the information you were using, 0.4 kilograms, and your blaster said it, and so all of a sudden the number has dropped, which is...

I don't know. If you could look into that inconsistency, we would appreciate that.

Mr. PAUL BUXTON: Yes, I suspect it was probably early on in the process. We were looking at industry standards, but I can't be specific about that.

But this was a specific question to a specific rock and a specific site, and that's the number

that I got.

As I said, if you would like some more information on it or why it has changed, I can try to provide that.

THE CHAIRPERSON: Yes, I think we would like that. It's an undertaking to be delivered by the end of the week, on the 29th.

An additional question I have is that according to the document you submitted to us, there will be 43 blast holes.

So once every two weeks, 43 holes will be drilled, and in those holes, you will put 17.69 tonnes of explosives. So almost 18 tonnes of explosives will be put into 43 holes and set off at one moment, and that works out to about 800 kilograms of explosive per hole.

Sorry. 400 kilograms per hole.

Now one of the questions we were wondering about was the test blast.

Maybe you could refresh our memory for the test blast. We have two recollections of the test blast. One is that DFO said the test blast would be one blast in one hole.

Then, the follow-up to that was that there would be more than that. Some other numbers we have here is:

"...the 56 separate four-inch diameter holes laid out in a nine foot by nine foot grid pattern parallel to the shoreline with relatively uniform depths between 27 and 29 feet, about 10 metres.

Each hole will be loaded with approximately 45 kilograms of ANFO explosives."

Now maybe you could tell us, what is the final view of the test blast, what it's going to be?

Mr. PAUL BUXTON: I think the test blast or blasts remains as we have discussed it over the past three years I think with DFO, and I think that my recollection is that there were 56 holes, but again I... I think that's what we had stated.

In terms of the large quantity of explosive per hole, this is somewhat a function of the diameter of the hole.

The bigger the diameter of the hole, the better the blast, the better the consumption of the ANFO.

The Panel discussed a consumption of ANFO as it pertained to the release of ammonia, I think it was last week, and one of the best methods to ensure the full consumption is a wide-diameter hole, and so obviously

if you've got a wide diameter hole, the amount of explosive goes up.

I think the other thing to consider here, and if there are specific questions, I would prefer to relay them to our blasting expert, but the whole point of setting up a blast with a series of holes is to provide a delay between each blast hole.

In fact, the delays are quite short periods of time, and I can best describe a blast as perhaps ripping up a noisy zipper very quickly.

It's very difficult if not impossible to detect each individual blast, but nonetheless a discrete period of time between the blasts.

The second thing is that... That is between the holes. The same thing is essentially done within a hole, and that is that the charges are decked, so there is a charge and then an interval, and then a charge, and then an interval.

And the same thing happens within a hole, very quickly, but nonetheless, they are discrete.

So you have got the charges going off discretely in a hole, and then between holes, and the charge that one is talking about here is in fact the individual charge between decking, and it's an attempt to keep each detonation small, so that you might in a long blast hole

have a whole series of decks in a blast hole, and then, accompanied with that, the blasts also, the individual holes on a blasting sequence.

Now the whole operation, we're talking very small intervals of time here, perhaps somewhere between half a second and perhaps 0.8 of a second for the whole thing, so certainly not possible to detect by ear, but certainly possible to detect with measuring instruments though.

Decking is one of the means that we can use reduce the amount of seismicity which gets into the ground, so...

THE CHAIRPERSON: Well, the reason I raise the undertaking, and then switch topics ever so slightly to the test blast is because in the test blast, based on what I just read to you, it's 56 holes with 45 kilos of ANFO in each hole. It works out to 2.5 tonnes of explosives.

The test blast, my understanding was, and correct me if I'm wrong, but my understanding was that the test blast, aside from the configuration that you just identified, was supposed to be a worst case scenario.

This is a situation in which we test the seismic waves that will be generated, and their impact, and measurement, and so forth.

So you've got 56 holes with 45 kilos representing two and a half tons of explosive for the test blast, and these holes would be drilled to about ten metres. The document that you submitted to us talks about the operational activities of the quarry, and the total amount of explosive is almost 18 tons, which is quite a bit larger than the test blast.

The hole numbers are roughly the same. I mean, 43 versus 56, and the amount of explosive inside the hole is an order of magnitude larger. The holes are also deeper, 20 metres deep.

So, in a sense, if the test blast is attempting to produce a worst-case scenario, what you've got in your operational situation is one blast that will be significantly more explosive, it will be significantly deeper, and one has to wonder how relevant the test blast is to the operational phase, since the operational phase is going to be significantly different, and greater.

Mr. PAUL BUXTON: Yes, thank you. The test blast could have been done, or... And it is really blasts, rather than blast. We don't see probably getting all the information that we require at a test blast.

But an initial sort of protocol was being, was worked through over a significant period of time with DFO, and this was based essentially on the Guidelines

for blasting, you know, near Canadian fisheries' waters. And in the back of that document, there is a table which refers to standoff distances, the type of rock, and the charges that are intended to be used.

And what we did was go to that table and try to initially sort of test the calculations that would come from the designs, which are set out in the Guidelines. Now it is a table in the Guidelines, but the Guidelines go on to actually give the formulae that are used in the coefficients that go into the formula.

And so we've used both. We've looked at the table, which is very clear. It sets out the amount of charge and the required setback distances. One of the things... One of the sort of the major mitigating factors is the distance from the shoreline, and we saw an opportunity in the construction of the Project.

And, again, I think if you can imagine we need to create a vertical face for the processing plant, and there are little toes of rock that come off there. We saw those as a very good opportunity to conduct testing in the water for noise and blast from those. And the initial blasts were really designed for those, for that specific area.

Now what we could have chosen to do is to go back, significantly further back on the site, and

perhaps use bigger charges further back from the site to try to create, you know, good test conditions. We thought, and as I say, this was really as a result of extensive discussions with DFO's people, that it would be better to go with this sort of limited charge in terms of total capacity, closer to the water, than a more extensive charge further back.

And I would also sort of say when we talk about test blasts, you know, this is to sort of establish to everybody's satisfaction that the parameters which are clearly set out in the Guidelines, like 100 kPa, are being easily met. The fact is that every blast on the site throughout the entire 50 years has to be monitored, so it's not as if you sort of set off a couple of blasts, and say that's great, this is...

You know, that's it, we now leave it alone. We've proven what we set out to do. Every blast has to be monitored.

THE CHAIRPERSON: Thank you, Mr. Buxton. I think we'll leave it there. We are leaving you with an undertaking to resolve the three different values which we have available to us; 0.4 kilograms, 0.454 kilograms, and 0.23 kilograms per ton of blasted rock.

Mr. PAUL BUXTON: Yes, thank you.

THE CHAIRPERSON: Thank you. That now

takes us to the first presentation of the afternoon. I believe that will be Wayne Spinney representing the Lobster Fishing Area 34 Management Board. Mr. Spinney?

Mr. Spinney, try and keep this about six inches or seven inches away from you, and please identify yourself; your name and your affiliation for the records.

PRESENTATION BY THE LOBSTER FISHING AREA 34 MANAGEMENT BOARD -- Mr. WAYNE SPINNEY

Mr. WAYNE SPINNEY: Good afternoon. My name is Wayne Spinney. I'm a representative of the Bay of Fundy Inshore Fishermen Association. I'm also an Executive of the LFA Area 34 Management Board, and I'm also on the Board of the Lobster Institute in Orono, Maine. I'm also a captain, and I'm also a lobster fisherman.

And I say good afternoon, Mr. Chairman, and whatever the, the rest of the Panel, and I guess the company over there.

I'd almost like to say that I speak on behalf of lobster. I don't know if anybody else has done that, but... Or in the manner of perhaps I'd wish to do so. But anyway, there will be parts of this presentation. I know I don't have time to deliver all of it, but there will be parts that I will miss, and I will keep you informed.

And, anyway, the outline of my presentation is who we are, and it's the LFA 34 Management

Board, and number two, the Ecosystem Management Areas, interconnectness(sic) of the region; the concerns; the impact of White Point Quarry on the lobster fishery; and the sediment, the chemical runoff, invasion of species, displacement of fish harvesters, blasting and environmental monitoring; a summary; and recommendations.

And Lobster Fishing Area 34 Management Board represents approximately 985 fish harvesters who hold a valid lobster license to fish in LFA 34.

In 2005, the LFA 34 landed a catch value of 16,000 metric tonnes, and it had a landed value of approximately a quarter million dollars; a quarter billion dollars, rather. Exporters of lobster products in 2002 and '03 had a record value for their products at nearly $1 billion. The lobster industry creates approximately 10,000 job, and this is fishery is notably the social, cultural and economic driving force of Southwestern Nova Scotia.

The coastal waters that border the proposed White Point Quarry lies within the LFA 34 fishing grounds. DFO identified Management Area and in ecosystem based management, it is necessary to consider what takes place in one area, and the influence on the overall ecosystem.

White Point Quarry lies within the Gulf

of Maine, which was announced to be one of Canada's proposed large ocean management areas, and in brackets (a "LOMA"), by Faith Scattalon who is now the Regional Director General of Fisheries of Scotia Fundy in Halifax.

As the 2004 Gulf of Maine Summit, Canadian/United States fish harvesters, scientists, DFO and U.S. Marine managers have held their fourth annual lobster Town Hall meeting to discuss research and management of their linked lobster fishery ecosystem.

In 1995... I'm having problems with my glasses. Bear with me, please. In '95, DFO designated lobster fishing areas LFA 34, 35, 36, 38 and that's all along this coast, including Grand Manan, and 41. That includes the waters of the Bay of Fundy, St. Mary's Bay to the Hague Line - that's the U.S./Canada ocean border - as lobster production Area 7 insured LPA.

It is very important that this Joint Panel review, acknowledge, and take into serious consideration the interconnectedness of the waters and marine life within the lobster production Area 7, and no condone the idea that the area of impact from this proposed quarry operation will be only seven and a half by two and a half mile radius of Fundy waters adjacent to the proposed quarry site.

Is somebody translating? Should I slow

down, or am I...

THE CHAIRPERSON: Doing just fine.

Mr. WAYNE SPINNEY: All right. Digby Neck and the Islands border the Bay of Fundy on one side, and St. Mary's Bay on the other. These two bodies of water are connected by two passages with strong tidal currents, and St. Mary's Bay opens into the Bay of Fundy.

Larvae-drift studies carried out in 2001 by Drink Water provided evidence for the importance of St. Mary's Bay as a lobster nursery and juvenile habitat. An example that illustrate the Fundy currents that are the driving force of the interconnectedness of this region, an aquacultural site broke free in Black's Harbour, New Brunswick, and washed ashore in Salmon River just below Cape St. Mary, in St. Mary's Bay. That's approximately 20 miles south of us.

And I'll skip the next paragraph.

The impact of sediment settlement. From mining and quarries on lobster nursery and juvenile grounds is the concern for lobster fish harvesters, scientists, DFO managers, the scientists working in collaboration with DFO. At the... Doug Pezzack, a DFO scientist, repeated his concern regarding the impending risks, suggesting that precautionary measures to protect the ecosystems and habitats should be a priority.

There are some serious concerns. Pezzack warns that if we are not willing to pay a high price later, we should begin addressing these concerns now. This was seven years ago, and still nothing has been done to protect ecosystems and habitat in the lobster fishing Area 34.

Peter Lawton, a DFO scientist, confirms the need for immediate action to protect critical lobster habitat in 34, when he stated:

"If the critical habitat of a species disappears, so does that species."

In 2001, the Cada Report confirms these Canadian and American scientists need to protect juvenile lobster habitat. The Cada Report confirms that juvenile lobster passes a significant phase in their pre-recruitment life in crevices, in cobble at the bottom, where they are protected from predation. Such cobbled-bottom areas are rare below tide marks, and are rather limited in extent.

If so, their limited area could be a bottleneck for the production of pre-recruits. The limit to recruitment could be the absence of crevices of suitable size.

The DFO Lobster Conservation Strategy in 2004 outlines the concern about abundance of pre-recruits and the fear that with the industry's dependence on new

recruits, that if a year class failure occurs, this would have an immediate effect on the landings, and on our future recruitment.

Drink Water suggests that there is a strong correlation between the abundance of lobster larvae settlement to recruitment. The Drink Water study in 2001 points out that St. Mary's Bay is an area where lobster settlement is high, and raises the question as to why this region has low lobster catches.

Evidence is clear that lobster settlement areas need to be protected. The Joint Review Panel must recommend that decision-makers err on the side of caution. The accumulation of sediment over 50-plus years pose a high risk to critical nurseries, juvenile lobster habitat, and too many marine species.

Adult lobsters will not return to an area which silt covers hiding places, and where there is no food. Lobster in the larval stage four, stage of settlement, will bypass an area where sediment accumulation covers cobbled or rocky habitat. The priority must be to protect St. Mary's Bay as a critical nursery and juvenile lobster habitat from any further influence from sediment settlement and chemical drifts.

It is unknown where the larvae of lobster that's spawned in St. Mary's Bay settle. It is a

known fact that lobster larvae drift distances in the ocean currents. Sediment and chemical drifts from the proposed Whites Point Quarry will have a far-reaching impact in the Bay of Fundy and St. Mary's Bay.

At the 2004 Lobster Science Workshop in Charlottetown, Fred Page, a Fisheries and Oceans Canada scientist, presented his findings on sediment drift from aquaculture sites that shocked the lobster industry. Pictures taken over a period of time from a helicopter showed an immense spread of sediment over great distances from an aquaculture site.

This study shows the importance for decision-makers to increase the area of impact for industrial development. It also shows that the impact of sediment drift and sediment accumulation that result from industrial development must be taken into serious consideration when determining the long-term impact on marine habitat.

Chemicals are used in the rock and mining quarry operations. The high risk of chemicals leaching into the water column either through controlled release, or as a result of inclement weather, or atmospheric storms have been pointed out at these Public Hearings. Chemical releases poses an unacceptable risk to the lobster industry and to other fisheries.

Studies by Susan Waddy warns that aquaculture pesticides causes egg-bearing females to abort, and in some cases, result in death of the animal. Sorry.

Last week on June the 20th, Chris Taggart presented his findings from a buoy drift study that showed that the White Point/Fundy current patterns. Taggart's study of tidal currents in the proposed quarry area looked at the direction and distance of current drift during low tides and high tides for a two-week period.

I'd like to add here that I'm sure that study was for something, but I'm not at all clear for two weeks. If you pick a two-week window of opportunity perhaps in the best time of the year, that's not what I'd call a good study without atmospheric storms, hurricanes and everything else that wasn't present. And that's what some of the causes and results are. Studies are done, but not during those type of conditions.

Other factors... I wrote something here, but I can't read it... That impact on the direction and distance sediment and chemical travel in current drift movement includes the movement of water currents below the surface. When tide heights, weather, implement, inclement it is important to note that at some point, this settlement will settle to the bottom of the Bay.

Taggart spoke to sediment drift, and its

disruption of phytoplankton and zooplankton that are critical food source for whales. It is also important to note that many more species than whales are dependent on plankton and zooplankton for food. Lobster larvae spend the first six to eight weeks of their life near the surface of the water, and their only source of food during these first three stages of life is plankton.

The lobster larvae drift with the Bay currents. If the sediment kills the plankton and the zooplankton, what is the impact on lobster larvae? Even if the larvae survive the drifting sediment, will there be any food, plankton, alive to sustain them? If some lobster larvae survive, these threats to their survival, will there be any cobble ground left to settle on.

In the DFO June 20th, 2007 presentations to this Joint Panel, it was stated that blasting changes the feeding and behavioural patterns of marine animals. DFO also stated that blasting does change the feeding and behavioural patterns of lobster.

Lobsters migrate to the near shore waters to moult, mate and spawn. Disruption of feeding and behavioural patterns most likely will impact on the life cycle of these lobsters. Females need nutrition prior to a moult, and after the moult.

Will changes in feeding patterns weaken

the female lobsters during the critical stage of their life cycle? Will the behavioural changes impact on the breeding rituals and practices? Will the behavioural changes impact on the male lobster and their role to fertilize the female, or as the protector of a female during the vulnerable stage during and after the moult?

Environmental and marine life, monitoring. DFO proposed to study the impact of the quarry operation on lobster, once the quarry becomes operational, and I think that's a sad statement. I think in order to do that, there should have been at least five years' study prior, if this operation goes ahead, not after the operation starts.

This approach is unacceptable. This does not take into consideration the ecosystem-based approach to ocean management, and does not include a precautionary approach.

This quarry Proposal has been on the table for some time. Why has DFO not moved forward to intervene on behalf of the ecosystem to ensure that a baseline study is completed before any industrial development?

It is well-known fact that the Department of Fisheries and Oceans Canada, Maritimes Region, does not have the financial or the human resources to carry

out necessary monitoring of the quarry impact on the marine environment.

Has DFO presented to the Joint Panel Review a plan on how they intend to monitor lobster or marine health, and marine habitat in this area, not just for the short term, but for the long haul? Who is going to monitor the impact on marine life and marine habitat? What Department is going to finance the monitoring?

A DFO representative's response to a question on who will monitor the impact of quarry operations on marine life and their ecosystems was that monitoring the quarry's impact is the responsibility of the Department of Environment. Are there clearer boundaries to determine how these Government Departments will work together, and share responsibilities to protect critical habitat and ecosystems?

We know... I've been a lobster fishermen since 1988 full time. I was a lobster fisherman prior to that. We know that any research that goes into lobster, it's done primarily aboard one of our boats. I have scientists and I have technicians aboard, sometimes three and four and five times a year.

Last year there wasn't any, because of either Workers' Compensation or the expense; they couldn't keep up with it. Now they'll go into a lobster pound where I land my lobsters and they will ask my permission first if

they can go through my lobsters, and all they do is sex and size.

And I have no problem with that, but that's the only, basically the only... Except for two traps that I also fish; that is a branch... I can't say a branch of DFO, but the Fishermen's Science Research Society has developed juvenile traps, and selected people throughout LFA 34 and around Nova Scotia, and the Maritimes; have two of these traps, and each time we haul them, we size and sex them.

And that's basically, except now, this time of year, there is science work being done in different locations of Yarmouth, the Argyles, Barrington and those places where they're going and taking the same, they're doing the same thing, size and sexing, but they're also taking a protein count, where the protein count isn't done these other times.

So I'm very worried as to if there's a development in the lobster of some sort. Shell disease; we have all kinds of shell diseases, especially over in Maine. In fact, Long Island Sound got wiped right out. Practically 100 percent of their fishery closed. There was no lobsters left, of a shell disease. What was the cause of it? Nobody's really sure, yet, to my knowledge, or at least I haven't been informed.

But anything coming out of these rocks is a runoff as from blasting, the dust. It can actuate some type of disease into the lobster, or other species.

The LFA 34 Management Board has concerns for the quarry's impact on other marine life. Herring in this area of the Fundy is a very significant component of the food chain in this area's ecosystem. It is unacceptable that this Panel accept the flippant remark by a DFO rep on June 20th, who claimed that herring in this area is not significant, and referred to the herring on George's, on German Banks as the main biomass.

The herring in this region is significant to those marine species that depend on them as their food, and to fishermen, the harvesters that harvested them for their livelihoods, or use herring for lobster bait, or groundfish bait. Herring is a significant source. It's a staple of the ecosystem of the oceans. (Laughs) Thank you.

There's also a horse mussel bed in the area of the Bay of Fundy that needs protection from this runoff and blasting. The sharks. The Bay of Fundy is known to be the home of a diversity of shark species. There are more species of sharks in the Bay of Fundy during the summer months than anywhere else in the world. Sharks are considered to be endangered species with 90 percent

depletion in the biomass of the world's sharks.

The important role of a shark in the food chain, their role in maintaining the healthy oceans, and their rate of depletion beg for a precautionary approach to industrial development in the Bay of Fundy.

So I've only got a minute left, and the invasive species, I spoke about this a year, a year and a half ago. We're very concerned of, and in fact, if I can find it here... Anyway I can't.

In summary, the accumulation of a sediment poses a high risk to smothering critical lobster nursery and juvenile habitat, and habitat for many other marine species. The long-term impact of rock mining is unacceptable if the result of sediment or chemical runoff brings about the destruction of marine habitat.

All sediments from the proposed quarry will sooner or later settle on some ground, and that ground is at risk of being changed to a point of habitat destruction.

Chris Taggart's presentation showed the killing impact of sediment drift on plankton and zooplankton, which are the foundation of the food chain. Others spoke to the influence of quarry lights on the herring population, which is another critical link in the marine food chain of this area.

Chemical drifts in the Bay currents pose a high risk of mortality for lobster larvae and egg-bearing females. Invasive species and an invasion of bacteria that causes shell disease pose a high risk not only to the lobster industry, but the social, cultural and economic foundation of Southwestern Nova Scotia.

St. Mary's Bay is one of the best lobster habitats in 34, and scientific studies prove that this area is prime juvenile lobster habitat. No baseline study of St. Mary's Bay has ever been carried out.

Recommendations; area of impact from this proposed industrial rock quarry must reflect the area that is determined by the Bay of Fundy currents, and must include St. Mary's Bay; that this Joint Review Panel recommend that the proposed quarry not go ahead at this time; that a baseline study be completed in the coastal waters of St. Mary's Bay and the Bay of Fundy, and the proposed quarry impact area; that all Intergovernmental Departments with responsibilities for the environment and ocean management collaborate to ensure; that technology required to prevent the high risk imposed by invasive species brought into the area by hitchhiking on seagoing vessels; that DFO present an appropriate plan for action to deal with the high risk to the lobster stocks that will result from this quarry, if it becomes operational.

And last, no fish harvesters should be displaced from their livelihood for the sake of a small number of quarry jobs. The region can survive without the quarry, but the economic sustainability of the area cannot be maintained without commercial fisheries. Thank you very much.

THE CHAIRPERSON: Thank you, Mr. Spinney.

PRESENTATION BY Mr. WAYNE SPINNEY - QUESTIONS FROM THE PANEL

THE CHAIRPERSON: Mr. Spinney, I have a question for you, is that you put a lot of emphasis on your presentation on St. Mary's Bay, but of course the proposed quarry is on the Fundy ---

Mr. WAYNE SPINNEY: North...

THE CHAIRPERSON: --- side, right?

Mr. WAYNE SPINNEY: North side.

THE CHAIRPERSON: And why would you emphasize St. Mary's Bay as strongly as you had, when the footprint from the quarry is relatively modest, and its impacts will be felt most severely, if there are any impacts, would be felt most severely on the Fundy side, and yet you seem to spend an inordinate amount of time worrying about the ecosystem in St. Mary's Bay.

Mr. WAYNE SPINNEY: Has it been proven where the drift is going? The sediment drift from this operation?

THE CHAIRPERSON: No.

Mr. WAYNE SPINNEY: You're right above the first gut passage, strong currents that go through there six, seven, eight, ten knots, depending on what time of the tide, and there's no end to that drift.

THE CHAIRPERSON: So the underlying concern is that sediment would be produced off the quarry into the coastal waters, and that could eventually make its way in some form back into St. Mary's Bay.

You can't rule it out, of course, but at the same time, the tidal currents there are very strong off the coast here, and we asked one lobster fisherman who said it was at least two to three knots, so that's going to suspend sediment, and there's a lot of turbulence, and it's going to be dispersed, so I mean...

I'm an oceanographer and I'm certainly not a geologist and not a specialist in these sediments, but my sense is, is that this probably would be widely dispersed, and probably unlikely that it would make it back through those passages.

It's only a guess, but you're convinced that that would be the case, is it?

Mr. WAYNE SPINNEY: A prime example is a freighter on George's lost a man overboard, and that body was found up here on Digby Neck from George's, with all the

dry rows on George's, and we went through all this with no rigs on George's. You know, the...

THE CHAIRPERSON: Yeah.

Mr. WAYNE SPINNEY: The gas going on there?

THE CHAIRPERSON: Yeah.

Mr. WAYNE SPINNEY: And the people used to say that that could never happen. What's on George's stays on George's. It does not stay on George's with all the dry rolls, and I mean, with all the good oceanography that's going on, there's no predictability, there's a leakage in the system always.

THE CHAIRPERSON: So, I mean, the basis for your concern is that you're looking for some reasonable assurance, some quantitative information, some information that would be long term, that would give you some comfort. That's really at the heart of what you're saying, is it?

Mr. WAYNE SPINNEY: Once you cover that bottom with dust, and it smothers everything, if that can occur, then we have to stop it before it can occur.

And is there going to be monitoring? None of these grounds out here have been monitored to the stage that they're at right now. We've asked DFO a thousand times before they allow a scallop industry into a certain area, hey, let's go, let's take some pictures down here.

Let's monitor, let's see what's down there. We know what a scallop drag does on the bottom of the ocean floor. It's just like a tractor plowing up a garden.

But the people need a job, but at the same time, they're destroying the whole habitat, and it has to stop.

If you take this dust, if it's going to happen, and it smothers the bottom, then we've got dead bottom. Nothing will survive there. And year class of lobster. And when they talk about the ship leaving here and going through the gear and it's only going to affect five people or five boats, that's hogwash. That's terrible, to have that type of mentality.

Because if you take a lobster fisherman that made $200,000 gross, it sounds like an awful lot of money. It is. And you take out all the expenses, the man at the end of the year can't make mortgage payments for the summer months that he's not fishing.

But if you take that $200,000 and divide it into the 375 traps, that's the income from each trap; that's what it averages. Then that's the loss, plus the gear and everything else that go with it. It's not just the matter of fact of losing a trap or 10 or 15 or 20 traps and getting them replaced the next day. That's not how it works. There's some fishermen that can't afford to replace

those 20 or 30 traps two or three times a year, or once.

THE CHAIRPERSON: Thank you, Mr. Spinney.

Mr. WAYNE SPINNEY: You're welcome.

Dr. GUNTER MUECKE: Could I just ask a few questions about your organization, for context purposes?

Mr. WAYNE SPINNEY: Yes.

Dr. GUNTER MUECKE: The position that you have, just outlined, and the paper that you have presented us, am I right in assuming that is the position taken, and that was discussed by your Board...

Mr. WAYNE SPINNEY: It was not discussed by the Board. It was discussed with the local fishermen up here that are on the Board. The Board is the... The members of the Board, in each port cluster, what is called a cluster, a port cluster like in Meteghan includes Cape Saint Mary, Meteghan, Saulnierville, Comeauville, and Weymouth. That's a port cluster.

There's a representative from each Port Cluster, and there's approximately sixteen port clusters in all by 34.

Below Yarmouth, these people were not involved in this document. Some of those above Yarmouth were involved, but no, it did not pass the Board's approval, and they do not have a copy of it yet.

Dr. GUNTER MUECKE: I understand that a

bit better now. So it is the cluster that's of immediate concern here, and I guess my question is how many lobster fishermen would that include, and could you give me perhaps an estimate on how many have voiced opinions about this that are included in this document?

Mr. WAYNE SPINNEY: It would affect approximately, I would say roughly maybe 200 that fish... Now, that's not counting the Bay of Fundy side and LFA 35.

Dr. GUNTER MUECKE: Mm-hm.

Mr. WAYNE SPINNEY: Okay? We're in LFA 34. LFA 35, I'm not aware of.

Dr. GUNTER MUECKE: Thank you, that clarifies it for me.

And I have one other question to you which actually didn't come up in your presentation, but it came up yesterday. And it was stated by somebody supporting the project that the motivation for lobster boat captains to oppose the development is because they may lose people who are crewing their boats due to the jobs that are created by the quarry. How would you respond to that?

Mr. WAYNE SPINNEY: We're losing crew members to much higher-paying jobs, and that's in Alberta. So to the quarry, I don't know. I'm not worried about losing crew to the quarry.

And by the way, I'm not here to say jobs

shouldn't be developed in sou'west Nova Scotia, or the quarry, or anywhere else. You know? I'm more concerned about the runoff and the blasting. If that can be proven that it's not going to affect a large area of the ocean bottom, then there's no argument. And I'm not here to close it down because it's...

I'm here to close it down right now because DFO has not done the science work required to allow it to go ahead. That's basically why I'm here. And after it gets started, you're not going to close it down. That's our opinion. If we find that lobsters all of a sudden have a shell disease, well, they're going to say, well, maybe it was there before the quarry got started. We don't know that. No tests have been done.

Dr. GUNTER MUECKE: Thank you very much.

Mr. WAYNE SPINNEY: You're welcome.

Dr. JILL GRANT: Can I ask you a question, another point that's come up a few times from people who have spoken to us is the suggestion that the lobster fishery is in decline; that there aren't enough jobs in the industry, and that if this region is going to move ahead the economy needs to diversify.

I wonder if you could comment on those concerns?

Mr. WAYNE SPINNEY: Well, from personal

experience, yes, the lobster industry has declined the last two years. The reason? I myself don't believe that there's an absence of lobster population. Now, if it's environmental impacts, colder water, we know that divers have gone down and there's all kinds of lobster. You put a lobster trap there, and you're not going to trap any.

We know gill netters have caught flounder but had to move their nets because there was too many lobster. Fishermen have put traps there and there's no lobster go in them.

We know down off of Wedgeport Nova Scotia Power runs a cable across to some of the islands. They went down to check it last year, and there was lobsters galore, and they were not trapping.

Now, maybe we've got to come up with new bait, but no, I don't believe the lobster industry is in a precarious state. I do believe perhaps we're going to have to make changes, but I don't believe it's because there's no lobsters there, that that's why it's on a decline. I just believe it's environmental or cold water and stuff like this. Everything impacts it.

Dr. JILL GRANT: And a question about diversifying the economy. What's your view on the need to diversify the economy in the region?

Mr. WAYNE SPINNEY: The lobster industry

is the staple of our communities in sou'west Nova Scotia. It's the blood line. You go into any store and any car dealership or any where along anywhere in sou'west Nova Scotia and they will tell you it's hurting. Everything is hurting. There is no money coming in. There is nobody spending money, 'cause there was no money earned.

And can we just... There's no other licenses that we can put on our boat and go fishing. That's been mismanaged also. And that's DFO's responsibility, and that's why we're here today. We don't think this is going to be managed properly.

THE CHAIRPERSON: Mr. Buxton.

Mr. PAUL BUXTON: Thank you, Mr. Chair. I don't have any questions.

THE CHAIRPERSON: Are there any questions from the floor? Yes?

PRESENTATION BY Mr. WAYNE SPINNEY - QUESTIONS FROM THE PUBLIC

Ms. LINDA GRAHAM: I have a question for Mr. Spinney. My name is Linda Graham. Mr. Spinney, you've mentioned St. Mary's Bay, and I know that's not the issue here, but as you've said, it sort of is.

Have you ever been to the head of St. Mary's Bay at low tide?

Mr. WAYNE SPINNEY: [Inaudible - no

microphone]

Ms. LINDA GRAHAM: You can't do it in a boat because it's low tide; you can't get a boat there. It's all mud.

Mr. WAYNE SPINNEY: Well, no, but you can come up as far as the water allows.

Ms. LINDA GRAHAM: That's correct.

Mr. WAYNE SPINNEY: Yeah. Yeah.

Ms. LINDA GRAHAM: And it's all mud?

Mr. WAYNE SPINNEY: Yes.

Ms. LINDA GRAHAM: And they clam fish there?

Mr. WAYNE SPINNEY: Yes.

Ms. LINDA GRAHAM: And in Sandy Cove?

Mr. WAYNE SPINNEY: Yes.

Ms. LINDA GRAHAM: At low tide, it's all mud. And have you seen St. Mary's Bay in a high wind?

Mr. WAYNE SPINNEY: Very much so.

Ms. LINDA GRAHAM: And it's all brown?

Mr. WAYNE SPINNEY: Is it brown because of fresh water rain or the mud?

Ms. LINDA GRAHAM: I'm not sure, but I mean, there's lots of silt runoff, whatever, so it's there, and the lobsters are thriving. That's my point.

Mr. WAYNE SPINNEY: Well, lobsters have a

tendency to go in the mud, too. Even in deep water. There's traps set, we set in mud, and they bury themselves.

THE CHAIRPERSON: Mr. Theriault.

Mr. WAYNE SPINNEY: Oh, it's time to leave.

Mr. HAROLD THERIAULT: Harold Theriault, MLA for the area.

I would just like to make a comment, and then I would like to ask Mr. Spinney a question.

I have to report something that was reported to me as an MLA. Last summer, after the piece of land was stripped at Whites Cove Point, there, there came some heavy rains, and I'm getting to the point of this silt movement out of that area.

THE CHAIRPERSON: Mr. Theriault, are you going to ask a question? Is this a statement or a question?

Mr. HAROLD THERIAULT: Statement and question.

THE CHAIRPERSON: No, no. Statements aren't, we're not encouraging statements, because they can't... Well, for various reasons. So you're there to ask a question of Mr. Spinney, not a statement, please.

Mr. HAROLD THERIAULT: The question is, Mr. Spinney, what is the lobster industry worth to western and sou'west Nova Scotia of this province, and what, two

questions, and what would happen if something did happen to the lobster fishery?

Mr. WAYNE SPINNEY: In my document, we said back in I think it was the year 2002 that the industry was worth a quarter billion dollars. I've taken part in many studies about the lobster industry and its economic effects on the coastal communities, and we will have Canso and Lockeport, those ghost towns, we'll have it all along this coast if this lobster industry collapses.

THE CHAIRPERSON: Any additional questions? Yes, Sister Barbara?

SISTER BARBARA: Yes, thank you Mr. Chair. I have a question for Mr. John Wall, the quarry manager. In my presentation I, too, was concerned about the environment, and last week Mr. Buxton also reprimanded Diane Theriault for not attending CLC meetings.

I must admit, I have not attended any CLC meetings. I wasn't aware of any, and (b), I also mentioned in my presentation that another quarry as talked about on the other side of St. Mary's Bay back in the '90s.

And I mentioned to Mr. Wall, when he visited me at my community outreach centre that it's nothing to do with jobs. If there were 340 jobs in the quarry, I would still oppose the quarry.

My question to Mr. John Wall, quarry

manager, have quarries become environmentally friend since the 1990s, whereby they do no harm to animals, fish, birds, plants, or human habitat? If no, given my views on the subject, would it serve any purpose for me or any others who may share my views to attend future CLC meetings?

THE CHAIRPERSON: That question is directed to?

SISTER BARBARA: John Wall, quarry manager.

Mr. PAUL BUXTON: I'm not sure that Mr. Wall is qualified to answer all the sections of that question, Mr. Chair, unless perhaps we had notice of the question.

THE CHAIRPERSON: Would you care to try some of it?

Mr. PAUL BUXTON: I'm not sure. I caught the first part of the question. There was a comment with respect to the CLC meetings, and I don't think, although I certainly stand to be corrected by the minutes, that I'd reprimanded Mrs. Theriault for not attending the meetings.

I think essentially what I said was the meetings were open to the public, and anybody could go, and if you didn't go then Bilcon could hardly be blamed for them not attending.

The second part of the question, I

think, was a question about whether quarries had become more environmentally friendly since the early '90s. I think probably they're much more regulated than they were in the early '90s. I think regulations have tightened up considerably, and I would say, as a general comment, they're required to be more environmentally friendly than periods in past history. But without a specific quarry to refer to, I'm not sure I can go any further than that, Mr. Chair.

THE CHAIRPERSON: That'll have to do for the moment, Sister Barbara.

SISTER BARBARA: Thank you.

THE CHAIRPERSON: Mr. Stanton?

Mr. KEMP STANTON: Kemp Stanton.

Mr. Spinney, would you kind of describe to us what it entails representing the fishermen for you and how many hours you spend at meetings and how much more time you would have to spare to go to CLC meetings and the such?

Mr. WAYNE SPINNEY: Well, that's a loaded question, Mr. Stanton. I've practically donated my life, representing the lobster fishermen in the industry. Especially since about 1992.

I'm here today for no compensation. I didn't get paid mileage, I didn't get paid a meal. I did it out of the goodness of my heart and what my soul tells me. And it means a lot to me to attend meetings and get... I

couldn't attend these meetings... It's over an hour's drive for me, back and forth, and I can't afford motels to stay here. And on top of that, I don't get paid to do that.

Our organization does not pay anybody to go anywhere, and I've been to Maine and British Columbia, and I've been to Ottawa, and usually those places, it's paid for by an organization or some other.

And I think it's critical that our lobster fishermen attend meetings, but a lot of people are not cut out for meetings, to set here day in and day out and either take minutes or participate and what have you.

But thanks, Mr. Stanton, for the question. It brings back reflection that perhaps I shouldn't have done as much as I've been doing.

I want to make comment on the lady that asked me if I'd been up to the head of St. Mary's Bay, and what colour the mud is, and what colour the water is after a storm. That same beach that's there at low tide, how far does it extend out in the ocean. I don't remember it, but a friend of mine in Meteghan was telling me that they were taking rocks off of the beach in Belliveau's Cove, for whatever job it was back in the '70s. And DFO stopped it because there were juvenile lobsters in those rocks above the low water mark.

So it is critical that... We don't know

enough about our lobster industry and about the habitat in the bottom of these oceans around us, and when you, Mr. Fournier, said in my presentation that I dwelled a lot on St. Mary's Bay, yeah, that's primarily where I fish, and there's a lot of fishermen that fish in that area.

I'm very concerned of the habitat ground here where the wharf and everything is going to be loading on in this particular area. And all that is of major importance to the industry.

Mr. KEMP STANTON: Thank you.

Ms. CHERYL DENTON: My name is Cheryl Denton, and my question is, in Little River, from St. Mary's Bay to the Bay of Fundy, it's only a mile and a half wide. Would blasting also have effects on species and habitat in St. Mary's Bay, just as much as it would have in the Bay of Fundy, where we're such a short distance?

THE CHAIRPERSON: I don't know who you're asking that question to. I don't think Mr. Spinney can answer it, and certainly I'm not able to answer it.

Ms. CHERYL DENTON: Perhaps the Proponent?

THE CHAIRPERSON: You're welcome to try.

Ms. CHERYL DENTON: Can you?

Mr. PAUL BUXTON: I'm sorry, could you repeat the question?

Ms. CHERYL DENTON: In Little River, from St. Mary's Bay to the Bay of Fundy it is only a mile and a half wide. Would blasting also have the same effect on species and habitats just as much or almost as much as it would have in the Bay of Fundy?

Mr. PAUL BUXTON: As much effect in St. Mary's Bay?

Ms. CHERYL DENTON: Yes.

Mr. PAUL BUXTON: I would believe not. Certainly the data which has been developed by DFO concerning blasting in or near Canadian fisheries' waters is very largely predicated on distance from the source of the blast, and just maybe I can use a comparison.

In the waters, we are not permitted, nor is anybody else permitted, to create an over-pressure in fish bladders of 100 kilopascals or 100 kPa. Our blasting model suggests that with the test blast we would produce an effective 25 kPa; i.e., a quarter of that amount.

That blast was to take place 130 metres from the water column, so St. Mary's Bay I think you said was a mile and a half away, so I can only say that certainly the evidence is not there that in fact it would be scarcely measurable, I think, in St. Mary's Bay.

Ms. CHERYL DENTON: Perhaps it's something that should be looked into?

Mr. PAUL BUXTON: I would certainly say that if DFO felt that that were something that needed to be looked into, they would insist that we do so.

THE CHAIRPERSON: Thank you. One final question over there, and then we have one more here.

Ms. JAN ALBRIGHT: Good afternoon. I have a question for this gentleman. My name is Jan Albright.

I understand that St. Mary's Bay and the Bay of Fundy is a great body of water that flushes in and out. The mud in St. Mary's Bay was mentioned.

Do you know, and would it be safe to say that that mud is primeval mud; that nothing has changed there? Is there any industry or anything that has been placed along that shore, say even from Meteghan up to the head of the river, around the edge of the cost, up as far as Digby, that would have changed any mud or any sediment, or is it a fact that that mud is original mud that's been there, undisturbed, except for clam diggers, for over 200 years?

Meaning is there any industrial waste, any plants, any chemicals, any businesses, anything that would've been introduced into that habitat that is any different now than what it was 100 years ago?

Mr. WAYNE SPINNEY: The only thing that

I'm aware of is the fish plants that have popped up around the coastline. But as far as industrial, I can't answer your question.

Ms. JAN ALBRIGHT: There would be nothing that would have stirred up or changed or added more sediment in any way, though, is that correct?

Mr. WAYNE SPINNEY: I don't believe. I really can't answer that question.

THE CHAIRPERSON: I'm sorry, Ms. Albright. You're allowed one question and one follow-up.

Ms. JAN ALBRIGHT: Thank you.

THE CHAIRPERSON: You've exhausted both, thank you.

Dr. GUNTER MUECKE: Mr. Spinney, could I ask you, in terms of the Management Board, has Bilcon consulted with your Board?

Mr. WAYNE SPINNEY: Yes.

Dr. GUNTER MUECKE: And what form has that consultation taken?

Mr. WAYNE SPINNEY: We received, I believe, one letter. I believe that's what it was. Yes. One letter. I don't have it with me, I'm sorry.

Dr. GUNTER MUECKE: Well, could you perhaps characterize its content and what developed from that one letter?

Mr. WAYNE SPINNEY: Perhaps Mary can lend some light on it.

Ms. MARY KENAELLY: Just the presentation today.

Mr. WAYNE SPINNEY: Just to notify us of the presentation today.

Dr. GUNTER MUECKE: No invitation to attend it, or was there... Sorry. I'll take that part back.

Did the Management Board at any time request any information from Bilcon?

Mr. WAYNE SPINNEY: I'm not sure. We don't know that, either. And I must add that the organization is registered with Joint Stocks. Okay? It's a bona fide organization. It has all of its bylaws and constitution and titles of managers, you know, the recording secretary and financial secretary and all this. It's not just a title that come out of the air just because of this debate here today. This was formed I'd say four years ago, roughly.

Dr. GUNTER MUECKE: Thank you.

Mr. WAYNE SPINNEY: You're welcome.

THE CHAIRPERSON: Is this a question you're going to ask?

Ms. MARY KENNAELLY: Wayne, is it your

intent to take your document to the Board of directors as soon as you finish here today and have more input and firm it up a bit before you email it to the Panel?

Mr. WAYNE SPINNEY: That's correct. There will be a follow-up from us.

THE CHAIRPERSON: Miss, ma'am, your name, please.

Ms. MARY KENNAELLY: Oh, sorry. Mary Kennaelly.

THE CHAIRPERSON: Thank you.

Mr. WAYNE SPINNEY: Our intent is to pass this on to the Board, and if there's additions or deletions, we will be passing that on to you.

THE CHAIRPERSON: Thank you, Mr. Spinney.

Thank you very much for your presentation.

Mr. WAYNE SPINNEY: Thank you, all.

THE CHAIRPERSON: I'd like to move to the next presentation now, to Heather Jenkins. Is there a Heather Jenkins here? Thank you.

--- Pause

THE CHAIRPERSON: Please identify yourself and then begin.

PRESENTATION BY Ms. HEATHER JENKINS

Ms. HEATHER JENKINS: My name is Heather

Jenkins. Good afternoon. Good afternoon.

My name is Heather Jenkins. I live in Digby and operate a small seasonal bed and breakfast there. Many of my guests drive out to the neck, either to whale watch, enjoy the trails, balancing rock, birds, seals, coastal vistas, or they just enjoy the clean, empty space. My European guests especially love the quiet, love the space.

You have a piece of heaven here. Do you realize what you have? A frequent typical comment.

Bilcon proposes to blast, extract, crush, and transport 40,000 tonnes of basalt rock a week from Whit Point Beach, Digby Neck. That is 120,000 tonnes of rock a year, times 50 years, is going to be blasted out of a 120-hectare quarry located on an approximate two-kilometre wide spit of land, and Mr. Buxton says that because there will be buffers of vegetation the tourists won't see anything.

For 50 years, tourists are not going to notice, as they drive by, that tonnes and tonnes of rock are being blasted, dug out, crushed, trucked over the land, and shipped over the water.

For 50 years, the residents of Digby Neck won't see anything because there will be buffers of vegetation, and they won't hear much because noise-reducing

materials will be used. The hoppers and the dump trucks are to be rubber lined.

Of course that will have a limited effect, once there is a layer of rock in a truck or in a hopper. Then rock will be falling on rock.

I am trying to visualize the size of a hole that 120,000 tonnes of rock times 50 years makes. I've tried to imagine standing on the edge, standing on the rim of this hole, because Mr. Buxton says that the site will be returned to its natural state at the end of the 50 years.

Cigarette manufacturers would still like us to believe that smoking has no influence on lung disease and lung cancer. For years, the owners of the coal mines assured the miners that their lung disease and emphysema had nothing to do with breathing in coal dust.

I am thinking back to years ago when I was a young single parent, living in a housing complex. There were lots of young, single mothers. A fellow jokingly said to me that a guy could do very well for himself cruising around in a fancy car on Friday night.

I feel like I did then; easily exploited, wary, and vulnerable.

This quarry has the potential to destroy all the attributes that make the neck a unique and desirable tourist destination, and a desirable and unique place to

live. It is very possible that an interpretive and/or discovery centre of some kind will be built somewhere on the Neck. It will be our area's Hopewell Rock, Peggy's Cove, Cabot Trail. It will put us on the map, and it will create family-sustaining jobs, without killing the very geography that provides the jobs.

My youngest daughter, Paula Fedirchuck, is in Seattle, Washington. I want to share with you some of her thoughts.

She is a senior environmental civil engineer with Herrera Environmental Consultants, 2200 6th Avenue, Suite 1100, Seattle Washington.

One of the hot issues with the quarries around Puget Sound is the widespread contamination to surface soils. I'm sure they, Bilcon, did an air model study, I don't know if one was done, to show where future dust will travel.

Think of that dust not only as a nuisance, but potentially contaminated. For certain, there will be dust, and rubber-lined dump trucks and hoppers won't stop it.

As a retired nurse, my concern with the dust is for the babies, children and elders, sufferers of asthma, bronchiolitis, COPD, congestive failure as well as a myriad other health concerns that will be exacerbated by 50

years of breathing dust-laden air.

Paula asked her colleagues for their input. My mom is very concerned about a proposed aggregate quarry near where she lives in Digby, Nova Scotia.

Her main concerns are the impact due to blasting, increased marine traffic and overall irreparable destruction of what is currently pristine coastal land.

Mark Eubank, also with Herrera, a principal engineer, highly respected, replied, "There was a big brouhaha over mining a deep pit adjacent to the shoreline for sand and gravel on a site on Moray Island here in our own backyard a few years ago. To my knowledge, the mining never went through due to the environmental impacts, some of which had to do with threatening the ground aquifer."

I looked up the Moray Island project that Mark refers to, and although the technical speak caused my eyes to glaze, I saw several remarkable similarities between Moray Island and the White Point Beach site.

The proponent proposed a deep gravel mine on Moray Island, a coastal site, as is White Point. Local groups were concerned that the project could contaminate the fresh water supply, would increase the threat to already threatened whales and salmon, and that it was a project contrary to Senate-legislated efforts to

restore the overall quality of the coastal region.

Digby Neck already has a good drinking water supply, whales and an inshore fishery, and a pristine shore that doesn't yet need legislation to restore it if we stop this quarry.

Last year I had a guest and his wife stay with me for several days. Their last morning, we were lingering over coffee and chatting, and he asked what I knew about this proposed quarry "because, you know", he said, "you all have to stop it."

He went on to explain many reasons why it was a bad thing, and that he was very sceptical about the jobs that Bilcon is promising.

Most of the work is very specialized, and he doubted those trades exist in this area and that the company probably doesn't have the time or the local resources to do the necessary on-site training.

He spoke for some time, very articulate, very passionate. I wish he could speak before this Panel.

Of all the things he said, the one that has stayed with me is about the blasting. He said that no matter how skilled the operator, blasting cannot always be predicted or controlled, that it can open underground fissures and cracks, and that these cracks and fissures in a coastal environment can allow salt water to mingle with and

contaminate the fresh groundwater.

This can never be fixed, never reversed. Mark Eubanks refers to the threat to the aquifer on Moray Island, one of the reasons that project was rejected.

This year an ecologist and his wife were one of my first guests. The three of us had a good chat over coffee, as becoming the norm.

Early visitors are a delight, as they are not in a rush. The conversation came around to the quarry and the "Stop the Quarry" signs he had seen.

I explained a little about the situation and was surprised when he stressed that there is always two sides to an argument and that the economic side should be considered.

He was not familiar with the White Point project and asked the purpose of the quarry. I explained it was to provide gravel which would eventually pave roads in New Jersey.

"Pave roads in New Jersey", he said. "I thought you were going to say the Space Arm or new medicine. No, no. It is not worth the risk to the environment to pave roads, and they are not even your own roads."

Thank you.

THE CHAIRPERSON: Thank you. To you Gunter.

PRESENTATION BY Ms. HEATHER JENKINS - QUESTIONS FROM THE PANEL

Ms. JILL GRANT: Ms. Jenkins, can you give us an idea of how far your business is from the quarry site?

Ms. HEATHER JENKINS: My business is in Digby, so it's quite far, and I've given a lot of thought before I've come today as to whether or not it would impact my business.

It would impact my business as a tourist business, but I personally would probably be okay because I have a beautiful home in a beautiful location, fortunately for me, nowhere near the quarry. So I could sell my property.

But it will impact my business. Tourism is predicted to really boom because of the baby boomers, but the baby boomers are a very specific tourist. They don't just go anywhere. They want to have experiential tourist destinations.

So they won't just come, no matter how beautiful my B&B is. They're going to come because there are things to do in the area, and they almost all go to the Neck.

THE CHAIRPERSON: Mr. Buxton?

Mr. PAUL BUXTON: Thank you, Mr. Chair.

I don't have any questions.

THE CHAIRPERSON: Any additional questions? Yes, Mr. Mullin.

PRESENTATION BY Ms. HEATHER JENKINS - QUESTIONS FROM THE PUBLIC

Mr. DON MULLIN: Don Mullin.

As a retired nurse, do you have any concerns over the fact that a baseline air quality study was not done at the Whites Point site against which you can evaluate future changes that might impact on health?

Ms. HEATHER JENKINS: Well, again, as a retired nurse, yes, because I have worked in the desert. I worked in Saudi Arabia, so I know the quality of air there is one of the major contributing factors to lung disease with the clientele in that country.

The air is never cleaned because sometimes for four years there's no rainfall, and many of the doctors that I have worked with have identified that as the number 1 issue for lung disease in that country.

So I can speak to it from that point of view, but I mean, certainly not as an expert.

THE CHAIRPERSON: It's a form of silicosis, is it?

Ms. HEATHER JENKINS: Yes, exactly. It's like breathing in sandpaper.

THE CHAIRPERSON: Thank you. Any additional questions? No?

Then thank you very much, Ms. Jenkins.

Ms. HEATHER JENKINS: You're welcome.

THE CHAIRPERSON: We now call Michael Corbett. Is Michael Corbett here?

--- Pause

PRESENTATION BY Dr. MICHAEL CORBETT Dr. MICHAEL CORBETT: I do have a PowerPoint, Dr. Fournier, so your eyes...

THE CHAIRPERSON: We'll move in just a moment.

Dr. MICHAEL CORBETT: Okay. It's ready to go.

THE CHAIRPERSON: Identify yourself, please. Spell your last name, and proceed.

Dr. MICHAEL CORBETT: Yeah. Okay. My name is Mike Corbett. I work at Acadia University in the School of Education, and my background is as a researcher, academic background. I'm an educational sociologist.

I hold a Ph.D. in Educational Sociology from UBC and Masters Degrees from Acadia and Mount St. Vincent.

Most importantly, I was a public school teacher in Digby Neck Consolidated Elementary School between 1990 and 2002, so I have worked in the community for some

considerable time and I suppose I've done a fair bit of research in my academic career in this particular community.

I guess the most recent bit is this book, which I'll leave with you. It's called "Learning to Leave, the Irony of Schooling a Coastal Community", in part.

I don't take royalties from this. The money goes to the school itself, so if Panel members would make a donation to the school, I would appreciate that.

I'll proceed.

In our last submission to the Panel, Tony Kelly and I critiqued the methodology of the socioeconomic analysis presented in the Bilcon EIS. We raised several concerns, none of which was addressed in any follow-up material from Bilcon that I've seen.

It's my hope that the Panel will take very seriously our critique of the social science methodology. I continue to believe that this material is deeply flawed.

Since this critique is already a matter of record, I would like, in this presentation, to present some data and analysis from my own surveys and from Census Canada microdata on Digby Neck.

The general nature of the socioeconomic argument in the Bilcon EIS is fairly simple to summarize. In fact, I can summarize it in one sentence. Digby Neck is

in permanent decline due to the collapse in the fishery.

There's no analysis of this phenomenon. It's simply presented as a fact of life.

The argument then continues with the claim that this basket case rural economy could be resuscitated by the Bilcon quarry project.

Then, finally, and this is the bulk of the EIS documentation, Bilcon argues that things will all be fine and the project will result in virtually no significant environmental damage that can't be mitigated, so nature will be protected, the plants, trees, animals, fish, groundwater, et cetera, et cetera, et cetera. It will all be just fine.

I want to begin by looking at demographic change on Digby Neck because one of the arguments is that everybody's going away, and I suppose writing a book entitled "Learning to Leave" I might be a bit responsible for that, so I want to clarify a bit here.

The demographic changes on Digby Neck are not quite as simple as Bilcon suggests in its EIS. The population of Digby Neck overall was relatively stable from the 19th century until the early 1980s, when it began to decline.

Slide 1 that I'm showing you here shows village level population change between 1951 and 1991, when Census Canada ceased publishing a bulletin detailing

population counts for small villages, unincorporated places.

The questions I asked in my research were who left, who stayed, why and where did they go when they left. And I expected to find that by the 1980s and '90s when the crisis in the fishery had become the big news story about coastal communities, a kind of panic around that, that most of the young people would be long gone.

Well, yes and no. What I found was that, from the early 1960s to the late 1990s, that while only about 30 percent of people who grew up on Digby Neck remained there, a little more than 60 percent overall remained living within 50 kilometres of where they were born on Digby Neck.

It is, indeed, a fact that Digby Neck, like many other parts of rural Canada, has undergone a radical transformation in the past half century.

Part of this change has been a change in the numbers and types of people found in the communities. A number of factors are in play here, including the list that is on the screen. And I'm not going to read through that. You can have a look at it. It's fairly obvious, I think.

These transformations have, indeed, had demographic implications. People no longer tend to live in the communities in which they were born. New people arrive from other places. Jobs are created and others are lost.

Each of the above forces has created new challenges and new opportunities. In some ways, there is nothing new here.

The Stirling County study found the same pattern in the early 1950s when out-migration was a principal concern for the people of Digby County.

It's still the case today, and it's interesting the interviews that I've done with fishing families recently sound very much like some of the material that Alex Leighton and his team did.

This economy works just fine for those who are currently in it, but the future is bleak and, well, here we are now.

There are still people fishing, as you just heard from Wayne Spinney.

To connect my analysis to these historical transformations, I separated 36 graduating classes I studied into three age cohorts, so I interviewed people who came of age, I call it, turned 18 between 1963 and 1998.

These cohorts represent three distinct periods of the modern socioeconomic history of the community from the point of view of local people.

The cohorts reflect the transition from a primarily small boat fishery, early '60s through early

'70s, through the industrialization of the fishery, mid '70s to the late '80s, through a period of decline in the ground fishery in the late '80s and '90s.

What I found is that through the period, a cadre of survivors remained on Digby Neck. In terms of raw demographics, I have found this group to be a minority, but an important and resilient one.

Surprisingly, the size of this group actually grew from 26 percent in Cohort 1, the people who grew up in the '60s and '70s, to 33 percent in Cohort 3.

This core group has been augmented by another group, obviously, with which the Panel has become acquainted. These people are known locally as summer people, but some of them have bought houses and become full-time residents of Digby Neck.

Like the resilient 30 percent, this group of people defends the way of life, natural beauty, peace, quiet and all of that stuff that drew them to Digby Neck in the first place.

There's a third group representing 30 percent of the population that I studied. These are people who no longer live on Digby Neck proper, but who remain living within 50 kilometres of the Neck.

Combined with the 30 percent core, approximately 60 percent of the total group I studied still

lives within 50 kilometres of where they were born, mostly in and around the Town of Digby.

In fact, the youngest cohorts of the '80s and '90s, who grew up in the '80s and '90s, these people are now between 27, 28 and 40, is actually less likely to migrate further than 50 kilometres than the older cohort.

In the youngest cohort I studied, those who reached high school graduation between '87 and '98, more than three-quarters of the males were still living in and around.

I re-surveyed this group again in 2005 just to make sure that this wasn't an anomaly caused by people who'd just gotten out of school. The youngest people in that cohort were 20 when I first started this, so they were at least 25 when I re-surveyed them in 2005.

I found that 74 percent of the males were still in this area.

So while there is out-migration, much less of it, much of it's been quite localized, particularly in recent years.

To me, this does not suggest a broken economy but, rather, one which has transformed spatially from highly localized village-centric fishery to a more dispersed regional economy.

Parts of this economy have grown in parallel with the expansion of government and private sector services, health care workers, teachers, social service people, insurance people, accountants and others whose work is concentrated in the regional service centre. Digby had been part of this demographic.

In terms of actual population, Census Canada provides the most complete picture available.

Before sharing Census Canada micro-data, I want to show you how these data are constructed, and I hope you can see that map. It breaks out the smallest areas that Census Canada uses.

The smallest demographic unit available is what is known as the Census Dissemination Area. It used to be called Enumeration Areas in '96.

I want to issue a caution here because the Dissemination Area I call western Digby Neck, which is the one you can see taking the bottom part of Digby Neck and part of Long Island, also includes, obviously, part of Long Island.

You can see the actual boundaries there on the map. In this area, it's difficult to separate Digby Neck from Long Island.

In the case of Digby Neck, Census Canada micro-data provide a picture of the community that is

declining in terms of population like most rural Nova Scotia communities, rural communities.

This should be expected. Family size has decreased and the number of people employed in the fishery has declined.

As I pointed out above, due to the transformation of the local economy, many services and jobs have now migrated to Digby, and three-quarters of the men in the youngest cohort, 55 percent of the women, remain within 50 kilometres.

Actual population in the villages adjacent to the quarry is really a matter of speculation, at least from the point of view of the data I've been able to gather, so let's assume that half the population of what I'm calling western Digby Neck is living on Long Island between Tiverton and Central Grove. The other half is living on Digby Neck between Mink Cove and East Ferry.

My guess is that more people actually live on Digby Neck side, given that there were 467 people living in the villages of Mink Cove, Little River, Tidville, Whale Cove and East Ferry in '91 when Census Canada actually gathered unincorporated places' data.

So given my assumption, this would mean that about 956 people are now living on Digby Neck, about 10 percent fewer than the 1,055 that lived there in 1991.

While this is significant decline, it's not a precipitous one for an isolated rural community in Nova Scotia.

It's one thing to say that people have survived, but how well have they survived? The Panel has heard conflicting testimony about this.

Some of this testimony fits with the general discourse of rural decline. Much of it is unsupported. We just simply believe rural communities are going into the toilet, and that's what we believe.

This is very familiar in the media.

I think most of the testimony you've heard comes from people who seem to feel as though things are not totally desperate on Digby Neck.

This slide illustrates average incomes for men in western Digby Neck are well above those of the Town of Digby and the West Nova Federal riding, which encompasses everything from Argyle on the South Shore to Waterville in the Annapolis Valley.

Women's income's a little bit different, isn't it? And so if Bilcon wants to create work, perhaps that's the demographic they ought to be looking at. And I don't see anything in the EIS about creating work for women.

Bilcon's analysis of these data agree. In the EIS they find, using the same kinds of data, that

Digby Neck's unemployment rate is at or below the provincial average.

In their attitude surveys, they find the overwhelming majority of people on Digby Neck are, in the main, highly satisfied with the lives they live and with the environment they live in and where they live.

So it's difficult for me to connect the dots between these data and the analytical conclusion of communities in crisis.

The socioeconomic argument is all about jobs in the context of trust. The people of Digby Neck should trust Bilcon because of its track record of community service, which amounts, as near as I can see, to spreading money around to strategically placed community groups in the communities where it operates.

We ought to trust that Bilcon's research and analysis is objective and thorough.

But I think there's more than trust Bilcon at play here. They have made promises, many of which may or may not be true.

When the ground fish fully industrialized, few people could have predicted the ultimate outcome and the eventual decimation of the Grand Banks' cod stocks.

Will Bilcon's promise that everything

will be just fine turn out to be any more true than any of the other promises made by industrial resource extraction proponents historically in this community?

I'm thinking about promises like the ones that the ocean would never run out of fish or that the woods will never be ruined by invasive industrial harvesting.

Can you really trust the quarry people and their experts, who are rather obviously going to tell you that everything is going to be just fine? And what is the community's historical experience with this kind of promise?

A generation ago, fishermen were encouraged to think big, to industrialize, to capitalize, to go out and make the industry more "professional" and productive. They were chided for being backward and inefficient, for working only seasonally.

Well, many listened, capitalized their operations, took the low interest or no interest government loans, increased their fishing effort. Some fortunes were made.

But did the whole process result in more jobs and population increases? No. Just the opposite.

In fact, there's very good reason to suspect that the proposed quarry might well worsen the

economic situation in Digby Neck and possibly further afield.

As the editorial in The Courier last week very wisely pointed out, there are a number of industries established and emerging in the Digby area that do not jeopardize the environment and will fit very well with the lifestyle, the peace and the quiet that attract tourists and cause locals to love the place.

I also want to say a few words about the traditional knowledge segment of the EIS.

The kind of traditional knowledge I've found in my own work in this community was a very clear analysis of the way that some people were seduced by an industrial model of the fishery that led to endangered stocks and jeopardized certain features of the community and certainly changed it.

There was nothing inevitable about this process. It was a matter of policy, and it was a matter of the wrong choices made by too many people with the active support of the federal state.

Because my research was focussed on education, I also found compelling accounts of the way that people had managed to survive through the fluctuations in the economy through this period.

They did this by working together in

families, by sharing and trading goods and skills, by making do and figuring things out in ways that they could never have learned in school.

As the data I've shown illustrate, many have survived relatively well in the process. Nested in the local Digby Neck sense of what counts as learning is the idea that bureaucrats, politicians, big corporations are all lined up to take advantage of rural people by tricking and manipulating them, this is what people told me, with fancy language, promises, legal games, complicated processes, I suppose like this one.

I encountered fear and, in many cases, a sense of hopelessness that common sense could ever win in the face of the relentlessness of the big players.

In the case of this quarry, some people believe that Bilcon will eventually win, not through its rational arguments or its science, but through the sheer force of its economic power.

This power hires dozens of experts who produce thousands of pages of technical justification. This power buys land and property from people who need or want money. This power makes lots of promises, particularly to vulnerable people.

This power is persistent because it knows there's an enormous pot of gold waiting for it.

Finally, on the subject of traditional knowledge, I also found a deep love for what one person called, and I'm quoting, "the physicality of the Neck, the trees, the ocean, the air."

I found people who could talk about the bottom of the ocean in St. Mary's Bay and in the Fundy, describing the landscape down there as clearly as I could describe the features of this room. I won't go into this any further. You've heard this ad nauseam, I'm sure.

As an educator, something that concerns me in the EIS is I see no educational plan. What will Bilcon do to educate the local workforce it claims to be willing to hire?

What educational levels and skills, training will be required for various jobs associated with this project? In what ways will it liaise with secondary and post-secondary educational institutions to ensure that people are adequately prepared for these opportunities?

As far as I can see on these questions, the EIS is silent.

For the past three years, I've been conducting nearly 60 interviews with young people about educational and career trajectories, youth from Digby Neck currently in secondary school. In only one instance has a young person ever mentioned the proposed quarry as a

potential source of employment.

This indicates to me that Bilcon has not done much in the way of educating and informing youth or working with educational institutions to ensure that local youth have opportunities in this project.

One rather obvious fear is that Bilcon will actually import its skilled labour force.

Finally, I'd like to say that I've been interviewing people on Digby Neck for some years now. I taught in Sandy Cove in the elementary school at the beginning of this quarry process.

In fact, it was some of my students, I think, who spotted the survey stakes and alerted the community about what was happening in Whale Cove back in the early part of this decade.

I know that things have gotten a lot more complicated recently. I can hear it. I read the news. But I've yet, personally, to have a conversation with anyone from Digby Neck who favours this project. And I know somebody's going to get up in five minutes or two minutes and I'll have that conversation.

I think the Panel must observe this from the sheer volume of testimonials already received, and I'm not sure how you sort that out.

In conclusion, it wasn't really until I

went fishing out of Whale Cove as part of my research that I really understood the immediacy of this problem.

From early December, the stretch of water on the Fundy Shore east of Whale Cove is thick with lobster buoys, some of which are as near as a few hundred metres from shore.

I spotted at least half a dozen boats fishing close to the shore east of Whale Cove that day.

When I asked the person who took me out where the quarry would be located, he pointed through the mist at a white cross that was erected at that time on the rocks.

"That's right up against where you fish", I said. "Yep", he replied. So I asked him, "What do you think blasting and other quarry activity will do to the fishery?" He said, "I don't know."

Well, I don't know, either. I wonder if anybody knows, including the Proponent.

And that's all I have to say.

PRESENTATION BY Dr. MICHAEL CORBETT - QUESTIONS FROM THE PANEL

Dr. JILL GRANT: Thank you, Mr. Corbett.

You spoke quite a bit about interviewing young people and their hopes and aspirations, and we've heard from some of them in interventions here.

So can you give us a better sense of what it is young people are looking for in terms of the job market and how a project like this appeals to a segment of the young people in the region?

Mr. MICHAEL CORBETT: Sure. The young people that I've been interviewing are young people in high school at the moment.

I began interviewing them three years ago when the cohorts that I'm looking at were in Grade 8, 9 and 10, so I finished this set of data collection in May, June of this year, so students are now Grade 10, 11, and 12. It's a three-year longitudinal study.

My main interest was in how young people see their future rolling out and what their educational aspirations are.

Most of the young people that I have interviewed, the vast majority imagine themselves leaving this community, the ones that I have interviewed.

They imagine themselves, for the most part, going on to do some post-secondary training, some at the Community College, some at the University, and some just going out and finding work, wherever they can find it.

The one young person who did mention to me that they saw the quarry as a potential job for them, it was a young person, he was on his way to the Community

College, and going into heavy equipment operation I think, and he simply mentioned that the quarry might be a possible place where he might find work.

Now I wasn't asking people specifically about the quarry, I was just simply asking them to talk about how their education is going, where they see themselves headed, and what occupational future they imagine for themselves.

So I asked no direction questions about the quarry. What I simply said in my presentation is that only one young person mentioned the quarry in the context of thinking about where he was heading, in his future.

Dr. JILL GRANT: And can you give us an idea of the studies that you've done with these cohorts, some of whom have stayed here and some who have gone through the years, about...

What do they see as the overall quality of life in the region, what it is that keeps them here and what it is they see as the future of the economy of the region, in terms of its ability to keep future generations here?

Mr. MICHAEL CORBETT: I think there's a lot of trepidation, you know, in terms of the future. Again, I go back to the study that Alexander Leighton and his team did.

They did a massive study in Digby County in the 1950s, and I heard much the same thing. "I am a fisherman, we're a fishing family, we love it here, we love the beauty of this area, but we're very concerned that it's not going to be a sustainable life for our kids."

That's exactly the same thing that was said in 1950, in Alex Leighton's interviews.

What impresses me about all of this is that as time rolls out, it seems to me that a fairly stable population of people figure out how to make it in the fishery, how to move to other species, how to combine different kinds of employment, to make life work.

I guess my general sense is Digby Neckers are tough, they're survivors, they're resilient, they're intelligent, they're educated in ways that the formal education system doesn't really recognize or value.

So while on the one hand there is this sense of fear for the future...

And I found it very hard to understand for a long, long time. How is it that a lobster fisherman whose rig is worth a million box on the open market and is making pretty decent money landing this product, how is it that this person can say that kind of thing, that: "I'm afraid. Well, it's a natural resource industry. I suppose anything can happen in the future."

I think part of it, there's a real fear that the fishery is going to be quarrelled by a combination of state policy and corporatisation and drive small boat fishing people out of the business.

So there's this sense that there are large forces at play that influence the lives of small players, and many of the people that I interviewed, this is a cloud that hangs over their lives.

Be it somebody like the Minister of Fisheries that has a dream and fisheries policy changes the next day, and people are put out of work, or be it somebody from New Jersey who decides: "We want to come in here and blow the whole of the mountain."

Who knows what is going to happen to the fishery after that? Does that make sense?

Dr. GUNTER MUECKE: Yes. Could I just ask you, have you.. In terms of people leaving that you have interviewed, young people, how many indicate that they see their leaving as a temporary measure rather than a permanent one?

And have you got... In terms of rates of people leaving and people returning eventually, have you got any comments on that?

Mr. MICHAEL CORBETT: I think returning is a dream for a lot of people. Amongst the folks, I really

don't know. I haven't taken a longitudinal look at that. I guess you would have to go back and re-interview some of those people that I talked to back in the original study to really answer that in a definitive way.

When I did talk to people who were living away from Digby Neck, there is a great nostalgia, you know?

People would love to move back, but for various personal reasons can't or don't.

I found very little movement back and forth, and it seemed to me as though the decision to strike out and move kind of beyond Halifax was a very significant life decision which for most people was not easy to turn back.

Now that having been said, this study was done in the late '90s. The main data for this was gathered late '90s, 2000.

Alberta wasn't booming at that point, and obviously things are different today. People have different kinds of opportunities in Ontario and Alberta, and they can perhaps more easily move back and forth.

But what I did find from the folks that I talked to, particularly people in the youngest cohort, was that it was becoming through time more and more difficult to actually establish a life in a place like Alberta for two

reasons; one was because the education requirements for most jobs in Alberta and Ontario, the traditional labour-catchments markets had gone up, so you had to be fairly well educated in order to make a living.

Secondly, living costs had gone through the roof, so where a guy or a woman in the '60s and '70s could leave a place like Digby Neck, go to Toronto, get a job with a grade 10 education and make a pretty good living, raise a family and so forth, that possibility was simply not there by the 1980s and '90s.

So the traditional Nova Scotia migrant labour force wasn't in the same position by the 1980s, 1990s, that it was in the '60s and '70s.

Now that may be changing a little bit. It will be interesting for me in the next project, if I... It would be fascinating to me to take a look at these young people who are now graduating in a different kind of economic environment where you have Alberta booming and a number of different factors in play.

Dr. GUNTER MUECKE: Thank you.

THE CHAIRPERSON: Mr. Corbett, if you were to move your research from Digby County to one of the other counties in Nova Scotia, we were told a couple of days ago that there were only four counties in the entire province which have an influx of people.

Mr. MICHAEL CORBETT: H'm.

THE CHAIRPERSON: So if you were to move your research to some of those local schools and some of those other counties, the Guysborough County for example, or Queens County, or wherever, don't you think that the message would be more or less the same, or would you expect it to be the same?

In other words, out-migration of counties not only in Nova Scotia but in many rural areas in this country and in North America in general, it's going on. There's a very definite migration to cities.

Mr. MICHAEL CORBETT: Yes.

THE CHAIRPERSON: So I wonder if the findings that you have are generic rather than specific to Digby?

Mr. MICHEAL CORBETT: I...

THE CHAIRPERSON: Can you comment on that?

Mr. MICHEAL CORBETT: Sure, yeah. I think obviously, rural Canada, statistically, has been depopulating for a long, long time, for generations.

I guess what really motivated me in this project at the very beginning was that in living on Digby Neck, I had the sense that there was obviously a whole lot of media hype around migration, but I had a sense that

people were actually not going that far.

I actually found that there was some truth to that. And when you look at that youngest cohort who grew up in the late '80s and '90s, 75 percent of the males, the men, are still within 50 kilometres of where they were born.

That's not massive out-migration.

So it seemed to me that Digby Neck might actually be kind of an anomaly to this outpour of the depopulation phenomena, this phenomena of the depopulation of rural communities in the Canadian West.

I think I actually found that there's a certain amount of truth to that. When you have... At least in the way that I looked at this.

I found a level of resilience and a level of sticking around that I didn't expect to find. I talked about this issue with people who have also studied rural Newfoundland, you know?

And they say: "This is incredible. You know, our communities, if you took a look and did that kind of a study in most Newfoundland communities, you'd find that just about everybody is done."

Well, I didn't find that here and how replicable this is. I think in certain kinds of communities, rural communities, there is a kind of

resilience, and what has kept people here, I suppose it's the strength of the lobster fishery, it's the...

Mr. Spinney was just talking about that, $250,000. The value of fish landed in Nova Scotia has been pretty much steadily rising from the '70s. I'm sure you've heard that one as well.

So there's something here that is actually keeping people.

Kevin Gidney I heard speak the other day said that, you know, there are a number of boats that actually fish there. And you asked the question: "Why do they fish right here in Whites Cove, is it particularly a rich area?"

Well, those people aren't laying out lines of lobster traps along that shore because there are no lobsters there, it's obviously a rich area.

That's I think what keeps a certain level of stability of this place.

THE CHAIRPERSON: Thank you Mr. Corbett. Gunter?

Dr. GUNTER MUECKE: I had a question, but I think you just answered it basically, whether there are comparable studies.

If I understood you correctly, people have looked at the distance that the out-migration occurs

over in other fishing communities such as Newfoundland, is that correct?

Mr. MICHAEL CORBETT: Yeah, not so much distance, but magnitude about migration.

Dr. GUNTER MUECKE: Well, you showed us that... Well, it's not really a pie chart, but you showed us distances over which that 75 percent of the people, males, were retained---

Mr. MICHAEL CORBETT: Right.

Dr. GUNTER MUECKE: ---within a certain circumference.

Mr. MICHAEL CORBETT: Right.

Dr. GUNTER MUECKE: So I guess what I was asking, are there similar studies, not necessarily involving the same distance obviously, that show that a large proportion are actually localized, or is that unique to Digby County?

Mr. MICHAEL CORBETT: I don't know of any studies. You know, I want to start a school of this kind of analysis. Actually, there is a follow-up study or a study that's based on mine being undertaken right now on Vancouver Island. Not Vancouver Island, Bella Coola, in a First Nations community.

I've had a fair bit of interest from First Nations communities who are interested in tracking

their populations and figuring out where people end up.

As far as I know, nobody has done this kind of analysis. You know, I couldn't have done this without the help of dozens of contacts that I made as a teacher here for a dozen years.

People helped me enormously to get this done, and I owe a great debt of gratitude to those folks.

So to have that level of integration in a community I think for an academic is pretty unusual.

THE CHAIRPERSON: Mr. Buxton?

Mr. PAUL BUXTON: Thank you Mr. Chair.

PRESENTATION BY Mr. MICHAEL CORBETT - QUESTIONS FROM THE PROPONENT

Mr. PAUL BUXTON: I can't really comment on the presentation, because we haven't seen that one yet, but just a couple of comments with respect to the promoting of women in the workforce.

It is specifically in the EIS, and I refer you to a newsletter dated October 2006, which specifically says:

"Hiring preference will be given to women."

So that was well covered, and again with respect to talking to youth, I think this has come up before, but just as a reminder that Bilcon held two specific

meetings with the youth around the Little River area.

The first one I think was 23, 24 in attendance, and the second one was 43 in attendance, and those meetings were actually requested by the youth of the area.

And I can also say that I made a presentation... Actually, it was a bit of a debate, but with a grade class, I think it was grade 11 or grade 12 in Digby High School, within the last year.

So I think there has been some contact with youth.

Thank you Mr. Chair.

THE CHAIRPERSON: Any additional questions?

PRESENTATION BY Mr. MICHAEL CORBETT - QUESTIONS FROM THE PUBLIC

Ms. LINDA GRAHAM: My name is Linda Graham, and you spoke about the children at the school and that they were not speaking about a future with the quarry, okay?

Is it not true that Mr. Kelley and the teaching staff at the school were very against the quarry? As a matter of fact, Mr. Kelley is very vocal with the "Stop the quarry" group.

If that is said that much in the school,

are the children going to admit or are their parents going to speak in front of the children who will be intimidated at the school from the other children or from the teaching staff?

Mr. MICHAEL CORBETT: The interviews I did weren't at the elementary school, they were at the Digby Regional High School.

Ms. LINDA GRAHAM: No, but Digby Neck consolidated.

Mr. MICHAEL CORBETT: Right. The students I interviewed were at the Regional High School. I didn't interview...

Ms. LINDA GRAHAM: I'm sorry, I thought it was Digby Neck.

Mr. MICHAEL CORBETT: No, no, no.

Ms. LINDA GRAHAM: Sorry.

Mr. MICHAEL CORBETT: No, I didn't interview the children at the elementary.

THE CHAIRPERSON: Additional questions? Yes, please. Are there others? If there are, maybe you can come forward.

Ms. McCarthy?

Ms. MARY McCARTHY: Mr. Chair, my question is for...

THE CHAIRPERSON: Identify yourself

please.

Ms. MARY McCARTHY: I'm Mary McCarthy. My question for Dr. Corbett is if he has given any consideration in his studies to the advantage for younger people moving out of the community for education, for job experience, for business experience...

I suppose this question comes from being with a background of one third of my life in Europe, another one third in South East Asia, and coming close to a third of North America.

People nowadays, young people, are very mobile and this is the age of globalization, and that is very, very obvious, the mobility of the young people in Southeast Asia.

I was recently in Singapore, and I met people from India all over, and that is their aim, to move around and see what's going on.

THE CHAIRPERSON: Ms. McCarthy...

Ms. MARY McCARTHY: Thank you.

THE CHAIRPERSON: Yes, this is interesting but I don't know how germane it is to the subject at hand. Perhaps you could...

Mr. Corbett, do you have an answer or... Perhaps you could make it brief?

Mr. MICHAEL CORBETT: Well, mobility is

sort of the new capital, and everybody wants to move. And I think, I guess, the sociology side read around this one or argue that mobility has now become a specific kind of capital that some people acquire and other people don't, so you've got this global elite that move all over the place, fly in aeroplanes and so forth, and you have another group of people who don't move around very much and are in fact localized.

Ms. MARY McCARTHY: Yes, thank you. I just wanted this to be given some consideration. Thank you.

THE CHAIRPERSON: Thank you. Okay. I think we will thank Mr. Corbett and we'll take a 15-minute break.

--- Recess at 3:19 p.m.

--- Upon resuming at 3:32 p.m.

THE CHAIRPERSON: Ladies and gentlemen, we would like to begin please.

We have two presentations for the rest of this afternoon. The first is by the Clean Annapolis River Project. Andy Sharpe will be presenting.

And I gather that... The other names I have here are Judith Cabrita and Ann Goddard. Are they all going to be presenting? All three? Or just you?

Mr. ANDY SHARPE: They are separate

presentations.

PRESENTATION BY THE CLEAN ANNAPOLIS RIVER PROJECT - Mr. ANDY SHARPE

Mr. ANDY SHARPE: Good afternoon. I'd like to begin by taking this opportunity to acknowledge and than the Canadian Environmental Assessment Agency in its participant funding program, the support which has made it possible for Clean Annapolis River Project to participate in these hearings.

I've also prepared a written submission to complement this presentation, and the written submission, which I think is being distributed to you, contains additional details on new material I'll be introducing today, notes on the methodology that I have used, as well as references.

Some of the guidance that I have made use of in this presentation includes the Agency guidance on significance, as well as the analysis matrix that was used in the ORCA Sand and Gravel Project.

This analysis I think provides quite a good tool for consideration of the issues around significance.

I think it's important to state upfront that I believe it's fully the responsibility of the Review Panel to determine whether or not particular impacts are

significant.

Through this presentation, I'm seeking to introduce some new material, and hopefully some new tools that will assist the Panel in this task.

I'd like to begin by considering the visual impacts of the Bay of Fundy.

The Proponent has indicated that mitigation will be used, including the 30-metre environmental preservation zone, and the incremental disturbance of around 2.5 hectares per year.

Now through the past week or so of hearings, it has become apparent that the environmental preservation zone begins at the high tide line.

Along much of the site, at least along this high tide line, the vegetation consists of grasses and shrubs, providing little if any screening from the Bay of Fundy.

When one examines the revised project description and the snapshots of the Project through its lifespan, at any time approximately 30 hectares of the site is actively being quarried with the crushing area, et cetera.

When we look at the potential visual receptors for the impacts, we see that operators along the Digby Neck carry in the order of 900 visitors per year, for

local whale watching.

Last year, the port of Saint John was scheduled to receive 33 cruise ships carrying in excess of 90,000 visitors.

As well, I think it's important to note that the Town of Digby has had long-standing aspirations to host cruise ships, another potential large pool of visual receptors.

Just to throw in here as well a comparison, the Glensanda Aggregate Quarry, which is in the Scottish Islands, the visual impact assessment for that project noted that visual impacts were observable up to 20 kilometres away from that site.

So when we put this information into the matrix that was used in the ORCA Sand and Gravel project, we see we have a large number of receptors, a scope across the Bay of Fundy, a duration for the life of the Project with some uncertainty over the reversibility of the visual effect, whether it will be possible to attract new visitors if present ones are turned off by the impact.

Continuing with tourism, when questions were raised in the past with the potential impact of the Project on tourism, the perception of tourists of this area as a destination resort, it's a topic that is really not addressed that much in the EIS.

There's no mitigation proposed to address this specific question of perception of the area. In the EIS, the Gardner Pinfold Study really consulted two individuals, one in Cape Breton at the tourism information centre, and a Sechelt tourism consultant, on whether they felt projects in those areas had an adverse effect.

This was based on the assumption that Digby Neck, Cape Breton and Sechelt tourism markets were comparable.

There was no direct examination or consultation with visitors who come here, why they come here and why they may not chose to come back in the future if the situation was different.

So we have a medium perhaps magnitude, a scope across the southern end of the province with some unknowns.

We don't... You know, it's difficult for example to use this matrix in all situation, because some of these questions it's hard to pin down.

I turn to ducks, Harlequin Ducks, endangered provincially, red-listed, species of concern.

They haven't really been discussed as one of the species at risk to a great extent in these hearings, but I think it's worthwhile bringing up some of the issues concerning them.

Bilcon commissioned Dr. George Alliston to investigate the potential impacts on the Harlequin Ducks. The map was taken from his study, and he began with the premise that the ducks were in here and up here, on the two areas on the Digby Neck with the quarry in the middle.

So the central question that he set out to answer would be or was do wintering Harlequin Ducks pass by the Whites Point Quarry site. That's what his research sought to answer.

This research was based on this premise that the ducks were confined to two areas on the Neck.

His research method involved simultaneously observing the two sites, and the reason for this was that he hypothesised that if the ducks were in two areas, if we would watch both areas, when the ducks leave one area, they should arrive a short time later at the other area flying along the coast.

So for example, leaving here, flying along and a short time later would be observed arriving at the second location.

This was complemented by observations at the Whites Point Quarry site, whether the ducks were seen passing by and also observations from a Canadian Wildlife Service field survey.

So what did he find?

Well, his principal conclusions or sorry, one of his observations was that the ducks were not confined to the two locations.

The observations... When they simultaneously monitored these two wintering aggregations, ducks were arriving and leaving, but they didn't arrive and leave corresponding at the other site.

What this meant is that the ducks were not confined to the two aggregation areas, and this really questioned the central premise of his research method.

On the question of whether the ducks could be observed by an individual at the Whites Point site passing by, Dr. Alliston in his report said:

"This task is a difficult one with a very real risk of failure."

Because of the difficulty in seeing ducks move back and forth across the site.

And then, we should look at the duration of the survey. The simultaneous observations. The two aggregations occurred over two days. The observation at the Whites Point site one day, and one day with the Canada Wildlife Service boat survey. It's a very narrow sample window.

And from this, the EIS concludes no adverse effects.

But when we think about this a bit further, we know that the literature indicates that Harlequin Ducks, particularly on their wintering grounds, are vulnerable to shipping or oiling.

That chronic disturbance can displace them.

These questions were not addressed in the EIS. The Alliston study really focussed on: "Do they move up and down the coast?"

And as I have just showed, there's certainly some uncertainties about the conclusions drawn in that study.

So when we slot this into our matrix, again some unknowns.

Turning now to rare plants. These have been discussed several times in the hearings. The Proponent proposes that the mitigation for these would be to contain them with an environmental preservation zone.

DNR has recommended that this zone be increased to 100 metres.

But the EIS provides little consideration of the changes in micro-climate, dust, hydrology or pollinators to these populations.

And when a Panel member asked the company expert last week about whether the mitigation would

work or not, the response was: "I'm not sure I can answer with a great deal of certainty."

You know, that doesn't really provide me with a great deal of confidence when this is the only known location for this plant community in the province.

So high magnitude, given this is the only known location for this plant in the province, with again ongoing duration, ongoing frequency.

Turning to blasting, the impacts on whales, fish and lobster.

The Proponent has suggested a significant number of setbacks and restrictions.

DFO though in their presentation indicated that they were "uncertain", and I think that was the language they used, on the impacts on whales, but there was the potential for non-lethal affects on lobsters, that the Proponent's suggestion of detection of whales out to 2,500 metres was questionable.

DFO's predictions were based on a relatively small number of 45-kilogram charges, with the Proponent estimating... It's now becoming apparent that they will be in the order of 400 of 45-kilogram charges.

And at the bottom, another way of looking at this would be if each of those 400 charges was instantaneous and there was an 8 millisecond delay between

each one, we would be looking at somewhere in the order of 3 seconds of sustained detonation.

That's quite different from one or two or ten in small instantaneous charges, and I think it really raises some questions about the viability of the DFO predictions.

So again, we have some uncertainties here when we slot this into the matrix.

Invasive species now. The Proponent has indicated that they will be implementing the Canadian ballast water regulations.

Now DFO again indicated that the regulations can reduce but not eliminate the risk of invasive species introduction.

It was discussed how there would be situations, due to safety and other reasons, where ballast water exchange may not occur.

The risk, one particular risk for introduction, is the parasitic lobster disease. I have a figure here of $10 million. Mr. Spinney indicated earlier $250 million, in terms of landing value that may be jeopardized.

And again, this issue... Once an introduction occurs, there may be very little opportunity for control.

I now take a quote from DFO from last week:

"It only takes one successful colonization to result in regional impacts. Monitoring may detect a possible invasive species in the early stages of colonization, however depending on the species, the eliminating or controlling the introduced species after it has been detected can be difficult or impossible."

I'd like to touch now on the issues around nitrates and ammonium.

The Proponent has indicated that blasting residues will be minimal, zero I think or next to zero.

There are some literature figures though that give some different values.

Bill Crowson is a retired mining engineer who suggested 5 to 10 percent under good practice working conditions, real-life experiences.

But from a larger examination of the literature, it seems it's very difficult to predict in advance what blasting residues might be due to the many

site-specific conditions: rock hardness, the drilling patterns, the number of wet holes, fractured ground, bench heights, et cetera.

One interesting thing that I pulled from Kelleher is that explosive residues will decrease as both the charge size and velocity of detonation increases.

I think there's an important implication here.

The Proponent is minimizing their charge size to 45 kilograms to minimize the peak pressure and impacts on marine life.

Now this restriction on the charge size may well introduce some inefficiency in the explosive event, and result in at least a minimum of explosive residue occurring.

The Proponent has indicated a large number of conditions when blasting will not occur throughout these hearings and in the EIS.

Now setting aside the question of whether it's possible to economically run a quarry with this number of restrictions and meet the stated production targets, I think these restrictions have a number of important implications.

Given the number of holes, the large number of blast holes that will have to be prepared, there

may well be times when the holes are partly or fully filled, and then conditions change, fog, overcast, someone walks down Whites Cove Road, a boat pulls up.

So there's certainly the strong potential that the blast may be ready or partly ready, and a delay may occur, a delay of hours or a delay exceeding perhaps into the span of several days.

Now when we combine this with the evidence from Dr. Nastev, he indicated the site consisted of fractured basalt, vertical and sub-horizontal fractures, and that the fractures served as a principal means for groundwater movement.

So when we combine this from the previous slide, there's a strong potential that a blast hole may intersect a water-bearing fracture.

We know that ANFO dissolves immediately in water, so during the delayed blast, hours, days, there's the likelihood that ANFO could be dissolving.

Now because of the nature of those fractures, if we recall the diagram that Dr. Nastev used, the fractures may mean that this ANFO contaminated water may well exist the site, but not through the sediment ponds. It may well not come back to surface within the confines of the site.

As well, the final point here, the wet

or damp holes may present less than ideal conditions for the Proponent.

And so I guess to put this one together, even though the Proponent will be using blasting best practice, as I have discussed, there are a number of factors inherent with the site that may well indicate that ANFO losses and blast residues may well be inevitable.

It's not my intention here to go through all the potential significant effects. There are clearly others, they have been discussed by other people.

But I think it's important to note that there are some of them here.

I'd like to now turn to talk about sustainability.

Dr. Gibson in his presentation yesterday mentioned... And I think Dr. Muecke mentioned it as well, but this paper by Anthony Hodge on the "Seven Questions for Mining and Sustainability".

I think that provides a very effective road map of how mining companies could address sustainability.

I think I've tried to incorporate some of the elements here.

I'm going to look at sustainability from the aspects of the Project that enhance sustainability and

the aspects that may well reduce sustainability.

My time frame is two to three human generations that I will be considering here, and my justification is that the definition of sustainable development includes a multi-generational approach.

And so I think it's reasonable to consider two to three human generations in the time horizon here.

So beginning with the Project. As indicated, there will be federal and provincial tax revenues.

Now due to the corporate nature of Bilcon of Nova Scotia and Bilcon of Delaware, it's not a certain thing that the company here will make a profit. If it doesn't make a profit, then it will pay far less corporate taxes.

So the tax revenues indicated in the EIS are certainly not confirmed.

As it was noted the other day, these also may be offset by employment insurance payments during the off season.

I think Mr. Buxton indicated that some of the trades would be retained through the winter.

Well, I think from looking at the EIS, somewhere in the order of 29 individuals may well be laid

off in the winter months, who then would be eligible for employment insurance.

An important comment as well, that federal tax revenues would not be year-marked, would not be set aside for the long-term sustainability of the Project.

At the end of 50 years, 75 years, those revenues will be gone and won't be available to offset any negative sustainability components.

Municipal tax revenues. There's certainly some disagreement over these given the comments from the Warden of Digby that they may well be significantly less than what was indicated in the EIS.

Again, the municipal tax revenues will not be year-marked, will not be set aside, and so will have limited effects on sustainability at the 50 or 70-year time frame.

And finally, jobs. While the Proponent has indicated that preferential hiring locally will be acted upon, there's no guaranteed percentage set down as to what is the minimum local hire, nor is there any indication of the percentage of new versus replacement jobs, and again in the sustainability analysis, jobs created equals jobs lost.

And so we probably could, if we delved further, add a few more here to the enhancement column, and

one might be training, but as the previous speaker noted, the EIS contains no hard numbers in terms of number of certificates offered or number of graduates trained, number of college years completed.

There's no firm arrangements in terms of partnerships with community colleges or schools.

So I haven't included training here because there is no quantification of it in the EIS.

On the other side of the equation, we know we're going to have extraction of a non-renewable resource, and we know that that resource is going to another area, New Jersey, for road construction and which may well contribute to urban sprawl and greenhouse emissions, greenhouse gas emissions.

Finally, we add the potential significant adverse effects. Some of the them are listed here. I believe there may well be others.

So while this is an admittedly very first approximation to try and assess the pros and the cons and the enhancements versus the reductions to sustainability, I think it begins to paint a fairly clear picture on what the Project may contribute down the road.

In conclusion, I urge the Panel to look beyond the deficiencies in the Environmental Impact Statement, acknowledging that there are many.

I urge you to consider the very real possibility of significant adverse environmental effects should the Project proceed.

And finally, I ask you to take the long view, to consider whether or not the Whites Point Quarry and Marine Terminal Project will contribute to the long-term sustainability of Digby Neck and Islands.

Thank you.

THE CHAIRPERSON: Mr. Sharpe, what is your definition of a significant adverse environmental effect?

Mr. ANDY SHARPE: Drawn on the CEAA guidance for example, large scope, magnitude, not reversible. In the sense of the ecological context, frequent duration, repeatability.

THE CHAIRPERSON: Okay.

Dr. JILL GRANT: Just a clarification. You put up on your list of benefits jobs, but you didn't quantify them or add very much detail in terms of your sustainability analysis, so...

And on the other side, you had jobs lost, but again you don't have any kind of quantification, so can you help clarify for us what your view is on how jobs feature into a sustainability assessment?

Mr. ANDY SHARPE: I think for jobs to

factor into a sustainability assessment, there must be some long view. For a resource project, it's difficult. It begins, it ends.

I think the example was brought up yesterday with Voisey's Bay where through a signed agreement that was done between the Proponent and the local First Nations, there was deliberate actions to seek bridging, bridging beyond the end of the Project.

So how can we do something now that will ensure there are jobs after the Project?

And I think those jobs after have a greater impact in terms of when we look at the long term, the durable contribution of a project.

THE CHAIRPERSON: What would you suggest then?

Mr. ANDY SHARPE: In terms of this Project?

THE CHAIRPERSON: Well, the sustainability issue.

I mean in a sense, I'm asking a continuation of the discussion that went on yesterday.

Dr. Gibson was advocating this, but we asked him the same question, where do you go with this? How do you do this?

Do you have any suggestions?

Mr. ANDY SHARPE: Well, I think the article by Hodge that was mentioned yesterday, "The Seven Questions to Sustainability", that does layout...

You know, this was developed with the mining sector. It does layout what steps might a sustainable mining project look like or what steps might it entail.

I guess from being involved in this process for several years, I guess I see... I feel if Bilcon of Nova Scotia had taken these questions, these principles onboard four or five years ago and then implemented them with care and thoughtfulness, I think we would have been having a very different conversation during the course of these hearings.

I think the steps though also provide the Panel with an example of what might a sustainable aggregate project look like.

THE CHAIRPERSON: Mr. Buxton please.

PRESENTATION BY THE CLEAN ANNAPOLIS RIVER PROJECT - QUESTIONS FROM THE PROPONENT

Mr. PAUL BUXTON: Thank you Mr. Chair. I just want to, if I can, just make a comment on blasting, since it's been of interest of the Panel in the last few days.

I think one of the slides indicated that

there was a requirement for an 8-millisecond delay, and there will be 400 charges, and I'm not sure where the 400 came from, but in any event it was multiplied out to produce a 3.2 second blast, and this points very clearly to one of the difficulties with thresholds.

The 8 milliseconds is suggested in the guidelines for blasting in or near the Canadian fisheries' borders.

We have discussed these at some length with DFO and in fact the people that wrote the guidelines, and at some point in their deliberations, in attempting to provide guidelines for blasters by Canadian fisheries' waters. There was clearly an effort to reduce beaming.

And we talked a little bit about this where one blast affects the size of the adjacent blast.

Typically, one might expect a millisecond or two milliseconds or some sort of separation, you know?

In an attempt to sort of be more conservative, they suggested: "Well, let's go with 8 milliseconds."

The problem with this is that it can't be done because what happens is that if you even visualize a blast stepping back from a face, what happens is that if the delays have too long a gap between the detonation, what

happens is that you will start to fetch down the second row of blast before it has gone off, and now we have a tangle of rock at the bottom of the slope filled with unexploded ANFO, and so you can't just simply take these figures and blindly multiple them.

As a matter of fact, no blasting would be permitted in the Province of Nova Scotia with an 8-millisecond delay, because it is unsafe.

So, you know, one has to sort of go back to the root as to why that was suggested, with very reason; to sort of put some precaution into the effect of beaming. But then what you end up with is both a physical safety to people. There's nothing worse than trying to clear that kind of mess out, and of course, the danger then of releasing ANFO into the environment.

So as I pointed out I think earlier this morning, a typical length of blast could be characterized as perhaps half a second; maximum a second. Otherwise you're going to have this terrific mess at the bottom of the slope.

THE CHAIRPERSON: The half a second or second would be the total duration within which individual charges would go off?

Mr. PAUL BUXTON: That's correct, the whole charge in that time period. Yes.

THE CHAIRPERSON: Thank you.

Mr. ANDY SHARPE: Thank you for the clarification.

THE CHAIRPERSON: Beg your pardon?

Mr. ANDY SHARPE: I was just thanking Mr. Buxton for the clarification.

THE CHAIRPERSON: Are there any questions? Mr. Lang, are you coming forward? Any other questions? Maybe you could line up behind Mr. Lang, if there are.

PRESENTATION BY THE CLEAN ANNAPOLIS RIVER PROJECT - QUESTIONS FROM THE AUDIENCE

Mr. WILLIAM LANG: William Lang, Green Party of Nova Scotia. I'd just like to begin by saying to the representatives from Bilcon that littering is a crime in Nova Scotia, and the Pines provides ashtrays for your cigarette butts outside, so if you could please stop throwing them on the ground.

But my question would be to Mr. Sharpe. A couple of days ago we learned that all the materials for the Project will be brought in by ship, bringing new ships to the Marine Terminal, and I was just wondering if, in his reading of the EIS, is there any information on if they're bringing the ammonium nitrate in on a ship?

Mr. ANDY SHARPE: From a clarification that Mr. Buxton made a few days ago, I understand large

equipment for the Marine Terminal is coming in by ship. I understand that the ANFO is coming by road, but Mr. Buxton would be a better place to respond to that, I feel.

Mr. PAUL BUXTON: It will not come by ship, Mr. Chair.

Mr. WILLIAM LANG: And just a quick follow-up to that; these new ships that will be coming to the Marine Terminal, do you know if the Proponent has included those ships in their greenhouse gas emissions?

Mr. ANDY SHARPE: I believe that that was the discussion with an undertaking earlier today that the initial numbers did not, but the subsequent numbers that are being discussed today in the undertaking did include the greenhouse gas emissions.

Mr. WILLIAM LANG: Okay. Pardon me. I did not hear that.

Mr. ANDY SHARPE: Sorry.

Mr. WILLIAM LANG: Thank you.

THE CHAIRPERSON: No additional questions, then? Thank you, Mr. Sharpe. We now move onto to Marilyn Stanton. Not the others?

--- Pause

THE CHAIRPERSON: Okay, we have a clarification here; is that the next presentation is by Judith Cabrita and Ann Goddard, and they will be talking

about tourism. Tourism within the context of the Clean Annapolis River Project. Is that correct?

Ms. JUDITH CABRITA: [Inaudible].

THE CHAIRPERSON: Give it to the Secretariat, please. God, what a mess.

--- Pause, video shown

PRESENTATION BY Ms. JUDITH CABRITA AND Ms. ANN GODDARD

Ms. JUDITH CABRITA: This is our brand; A Seacoast Destination.

THE CHAIRPERSON: Excuse me.

Ms. JUDITH CABRITA: Pardon.

THE CHAIRPERSON: Excuse me, ladies. Could you identify yourself and your affiliations.

Ms. JUDITH CABRITA: It's further down.

THE CHAIRPERSON: I beg your pardon.

Ms. JUDITH CABRITA: Yes. I'm Judith Cabrita, Tourism Specialist, and I'm here today with Ann Goddard.

THE CHAIRPERSON: Tourism Specialist with?

Ms. JUDITH CABRITA: With TSEA, my own company.

THE CHAIRPERSON: TSEA.

Ms. JUDITH CABRITA: Formerly with the Tourism Industry Association of Nova Scotia.

THE CHAIRPERSON: Thank you.

Ms. JUDITH CABRITA: And with Ann Goddard, owner/operator of the Mountain Gap Inn, a prestigious resort of 92 years old, situated in Smith's Cove.

THE CHAIRPERSON: Yeah.

Ms. JUDITH CABRITA: So we are a seacoast destination, our culture, our heritage nurtured and cherished and ready to share. It's a special place, and this is what tourism is all about; building pride of place, celebrating our nature and sharing it with visitors.

This rich asset is owned by only coastal province or state in North America that does not have a coastal strategy, or a coastal management plan. If we had that plan in place, all of this exercise here today and for the last few weeks would not be taking place, because we would have already declared Digby Neck, this rural fishing community nestled in the arm of the land surrounded by the sea a very special place, with a fragile environment, and an excellent opportunity for experiential tourism activity.

We appreciate the opportunity to present our views on the business of tourism and the damaging effect that a quarry in this location will have on a viable, growing, existing industry, on the fragile landscape and on the quality of life; the important mosaic that tourism

depends on.

I'm definitely not against development, as long as it is sustainable and responsible, and that it doesn't just replace one industry, or in this case, several industry sectors with another.

Bilcon is promising 34 jobs. What revenues does that bring to Nova Scotia? Royalties? Guaranteed Nova Scotia purchases? And when you consider and compare that to 100 fishing vessels that presently support over 300 local families, and strong communities benefitting from nature bounty, a quick estimate of those benefits is 400 jobs and revenues of $50 million plus, purchasing community products and services, keeping the economy thriving and the dollar working within Nova Scotia.

Tourism and fishing are very similar industries, depending on our natural resources. They are inter-dependent and each needs to be strong and vibrant. Tourism is a network industry, and when you consider and compare over 1,000 tourism jobs in Digby County that provide more purchasing power in the region, tourism is an economic engine with the dollars earned turning over, and over, and over within the community and beyond.

60 percent of the $38-million annual tourism revenue generated in Digby County is export revenue; new money coming into the economy on its first level of

circulation.

Additionally, tourism-related ventures in Digby County will contribute $10 million in taxes that support socio-economic programs like health care and education.

Tourism is the fastest-growing industry in the world. Our tourism industry in Nova Scotia is in its infant stage, however, with outstanding potential. We were only discovered in the '20s by the Mass Travel guru, Arthur Tauck, bringing the first bus tour to reach our shores.

The industry is fragile, susceptible to repercussions of perceptions and reality, however we do have what the world's travellers are looking for. The tourism industry is on the cusp of exponential growth, if we plan for its sustainability through protection of our natural and built assets; our marketing niche.

We call ourselves Canada's Ocean Playground, Canada's Seacoast, and we invite visitors to experience. Our brand is unique. The promise we make is that Nova Scotia is nature's Eden, a premiere coastal and nature-based tourism destination. We must fiercely ensure delivery of the promises made, if tourism is to survive.

We promise they will see whales. Can we allow whales to become more endangered by the noise, the disturbance of their habitat, or food, or killed by the

foreign parasite that may be imported in the New Jersey ballast waters?

We promise them a clean, nature-based experience. What effect will noise and dust and the visual reality have on the potential for a prosperous, community-based tourism industry in this region?

We promise them the best of birding destinations. For how long?

The proposed quarry is like a forestry clear cut, ugly and a monstrosity to the eye, a rape of the coastline, just as unforgivable and indefensible by the sea as it is on the land. It will have the same effect as clear cuts on our visitors, some of whom will turn around and go home telling the unpleasant story.

The quarry may not be seen from the road, but it be seen from sea, and the scars left will be seen from the air.

Whale-watching and boat excursions are the precursors and partners in the new market of marine tourism, ready to flourish and be the experiential product the world is seeking. The new opportunities are in diving, tall ship tours, kayaking, and combining these land excursions to see and feel the culture of Nova Scotia. Walking, birding, visiting small fishing villages, archeology, sociology, learning the way of life in Nova

Scotia, enjoying our festivals, wines and cuisine. It is all coming together, marrying the sea and the land to experience the real Nova Scotia.

We have a unique opportunity with rural tourism, marine tourism, adventure tourism, and the seacoast is the important component, and we never want to have to say this is what it used to be. If we have a true vision for Nova Scotia, we will not allow a quarry on this coastline, with a marine terminal that will terminally effect the quality of our life and, sorry, greatly hinder the tourism growth.

And we will also consider the compatible opportunity, retirement communities; another growing industry led by lifestyle and potentially posed for huge growth, yet not explored here. There is a good future here, a good way of life that begs the world come to life.

Ms. ANN GODDARD: Good afternoon to all. My name is Ann Goddard, and we, the Goddard family, have had Mountain Gap for more years than we want to remember, like 38 years. It's the oldest privately owned tourist establishment of its kind in Nova Scotia, having begun in 1915.

We're located on 45 acres of pristine land that borders on the Annapolis Basin. We are comprised of 107 rental units, cottages, houses, et cetera, and have a

staff complement of between 40 and 60 seasonally employed and minimal winter staffing. We cater to families who focus and appreciate our seaside location, our gardens and our way of life which centers on the preservation of the natural setting we enjoy, and on eco-tourism.

Over the last 15 years, our marketing has relied heavily upon packaging this product that we have, which relies heavily upon eco-tourism.

The Digby Neck and Islands are a haven for the visitors from afar who come to watch the whales, to explore the bird life and the indigenous plants of this special, and I emphasize "special" part of Nova Scotia.

I have great concern that these special interests are in jeopardy. This marketing of whale-watching, of wild birds, plant life is not only a mainstay of my tourism business, and I'm located in Smith's Cove, some distance from the proposed site, but tourist operators eastward up the Annapolis Valley who rely on this same marketing strategy. Hence the potential negative impact of the Proponent's plan is of concern well beyond Digby Neck and Islands.

I was unable to find any information in my readings that were supplied from Bilcon, other than to state that there would be no impact upon tourism on Digby Neck, which isn't good enough for me.

The mention that the proposed site would not be visible from the highway, and it would be infrequent that there would be viewers to these waters presents a question. To this statement, I must add that many of our whale-watchers are on tours, and they do have a very clear view of the coastline, and in particular, the coastline we're talking about, as they travel on their boats, and not their boats, necessarily, but the whale-watching excursion boars.

We cannot prove, and by "we", people like myself, my family who rely heavily on this eco-tourism opportunity, we cannot prove that the whales will leave these waters. I mean, that's very difficult, but on the other hand, can Bilcon say, "Sure, Ann Goddard, there'll be whales there long after you're gone". Forget it.

So whether that whale population will continue to frequent the waters, the special waters leaves a great question in my mind.

Another issue came up, and it came, I think, with Andy Sharpe when he said the perception of the tourist. And another market that we serve is - and Judith, you alluded to it - experiential education, and for the past 18 years we have hosted at Mountain Gap the international program called "Elder Hostel" that some of you and many of you maybe are aware of.

These people are all 55 years of age and over. Mostly they are retired professionals and come in groups to us of between 20 and 40 people. They have a week-long program that we provide with academic support from the professional community, from St. Anne's University, from Acadia, and other places. And their program, the five-day program has to have... As many of you know, it has to have 21 hours of serious but fun study that is of an academic quality.

Now it sounds easy, but they're not just tourists. There are people in there with a great appreciation of our area, but they want something to take away other than a few pictures. And over the last two years, there has been serious questions from many of these groups of highly educated world travellers.

And last year, in particular, one couple came to me, after having just completed a two-week Elder Hostel in New Zealand, and had just had our bus excursion down the neck, and onto Brier Island, where they did a lot of things. You know, looking for endangered species, et cetera, and the plant life. And after our bus excursion, one couple came over to me and they were the ones who had just come back from New Zealand, and they had concern over the quarry. And they likened our area to parts of New Zealand, and they expressed shock. "What do you mean? What

are you doing about this?"

I must admit, at that point, I probably wasn't on any chopping block, screaming, but they said that, you know, this was equivalent to the rape of the land and it would not happen in New Zealand; it would not happen anywhere unless you got into a place like Nova Scotia, where as Judith has said, no coastal protection laws are in place.

Oh, two minutes remaining. Okay. Almost the end. We cannot... Sorry. How easily you can get thrown off focus here.

Anyway, my last point, and one that is really outside the realm of tourism is that my husband, Peter, my partner in life and Mountain Gap ownership is a practicing medical physician who cares for patients in the Greater Digby area, including Digby Neck and the Islands. He has expressed concern regarding the amount of dust and the direction of the prevailing winds.

Now I was not in here on all the sessions, and maybe prevailing winds has come up, and been an issue, but it's very definitely a prevailing wind from the west. So his concern regarding the amount of dust and the direction of this wind, as it sweeps up off the water of the Fundy, and the dust from blasting under the most controlled circumstances, and given the prevailing winds is an issue posing various medical conditions; COPD, emphysema,

and it would seem that now when we are hopefully just educating our population about the health problems that arise with tobacco, and suddenly we just give them something else to get lung cancer from.

Upon these points I rest my submission, and recommend that the Project is unsupportable by our family, and that we should not proceed as presented. Thank you.

PRESENTATION BY Ms. JUDITH CABRITA AND Ms. ANN GODDARD - QUESTIONS FROM THE PANEL

THE CHAIRPERSON: Thank you, ladies. Ms. Cabrita, you mentioned... I should say I think you lamented the fact that there is no coastal strategy, coastal development process, no coastal management plan in place, despite the fact that Nova Scotia is essentially an island, and it depends on its coasts.

What has the tourist industry done about advancing that particular cause? Maybe you can give me some insight into that?

Ms. JUDITH CABRITA: Working very diligently. In the tourism industry, we say the coast is the major asset that we have, as I've said, and we have been meeting with Government, and working on this for a very long time.

The tourism industry recently did a

coastal strategy; presented that to Government. There is now a Coastal Coalition of which I am the Co-Chair of organizations throughout Nova Scotia that are meeting. We've recently met with the Deputies.

The problem is very complex for the Province, because of the fact that municipal... There are... You know, half of the Municipalities do not have any strategy, and I think there's a fear of sort of top down, and we just can't understand why this Province does not have a coastal strategy.

THE CHAIRPERSON: They've been talking about it for 15 years?

Ms. JUDITH CABRITA: Mm-hm. Yes.

THE CHAIRPERSON: If it was in place, how would it affect you, or how would it change things, do you think?

Ms. JUDITH CABRITA: Well, I remember in 1992, and I think we talked about this a long time ago, in 1992, British Columbia GIS'ed their coastline and, you know, decided where development could take place, and there are many places probably in Nova Scotia where development of this nature would fit right in, and where the fragile areas were, where the ferry boats could go in B.C., et cetera, and this is what we need to do.

We need to decide where are the fragile

areas? Where are the wetlands that we need to protect? Where are the areas that could have any kind of development? And we aren't doing that. We have all kinds of incidences all over the Province of aberrations that, as far as wetlands are concerned recently in Queens, and it's unexplainable. It's unexplainable.

THE CHAIRPERSON: Are you making any progress?

Ms. JUDITH CABRITA: Yes, we think we are making progress. In fact, the Government has... And although I don't know whether their Federal funding is coming through again for next year; that's probably the problem, but there is a Federal/Provincial group of various DNRs that are working together, and they've formed this group called "PONS".

We think they should be making an announcement to say that this group is there, and that they're working upon it, but they're not. They're silent and it's very unfortunate.

THE CHAIRPERSON: Okay. Hope springs eternal.

Ms. JUDITH CABRITA: Well, it's a passion of mine, for sure.

THE CHAIRPERSON: Jill?

Dr. JILL GRANT: Ms. Cabrita, I wonder if

you could tell us a bit more about sea kayaking. This is the first that this has really come up for any kind of discussion, and you mentioned that that was happening. Is there very much in the way of sea kayaking going on, on the Digby---

Ms. JUDITH CABRITA: It's a developing area,---

Dr. JILL GRANT: ---Neck?

Ms. JUDITH CABRITA: ---and certainly in the Digby area, it's one of the markets that could be developed, along with the tall ship sailing. There's a number of operations that are developing in Nova Scotia to take advantage of this new look at marine tourism. So much of our tourism has been looking at the sea, and we're trying now to sort of develop from the sea into the land, and marry those two together.

So kayaking is one of those things, as is diving, scuba diving, and although there aren't very many wrecks on this particular coast, there's still some beautiful plants and fauna that could be explored just as we see for the Caribbean. We have beautiful deep clear water, so the diving is one of them, and certainly kayaking is an area that could be really developed in this region.

Dr. JILL GRANT: I wonder whether the coastal conditions, the high winds and strong currents and

so on, make this part of the coastline difficult for those kinds of activities.

Ms. JUDITH CABRITA: At times, but you know, you're going to be putting experienced people out there doing this, and there are some beautiful coves that can be looked at. There's the St. Mary's, there's... You know, but you have to have a holistic product there.

You just can't sort of put it here, and not have it there. It has to be planned so that it is sustainable, but certainly, you know, there are times when the Bay of Fundy is quite treacherous, but there are also sailboats out there that are doing very well.

Dr. GUNTER MUECKE: Ms. Cabrita, you mentioned that you envision exponential growth in tourism for this area. As a scientist, when somebody mentions exponential, I would envision a cause for such growth. Could you identify to me whether that is change of demographics, tourist expectations, or you know, what leads you to believe that it would be exponential?

Ms. JUDITH CABRITA: There's been a lot of research done. There's the Canadian Tourism Commission, our own research people here in Nova Scotia who have looked at why people travel, and worldwide, the product that we have in Nova Scotia, provided we protect it and sustain it, is exactly what the tourist today is looking for.

We have a lot of work to do in increasing air access, and all those kinds of things in order to make it happen, but it's there. As I said, our industry is really in a very infant stage. We have not nearly reached any sort of maturity for the product that we have.

And we just had the most wonderful product in the world, and it's very rare. We have these pristine areas where, you know, people who come, and matching it with the sea. You saw the beauty of that video. You know, when you get somebody from mid-west America that doesn't see the sea; they see a lake that doesn't move, and doesn't change, and they come to Nova Scotia. They get very excited, and they go home and they tell their friends, and they tell their friends, and you know, it's just the potential is phenomenal, if we plan it, if we sustain, if we are careful that we look after and preserve these beautiful assets that we have here.

We just can't ruin them. We just can't, 'cause you can never get them back.

Dr. GUNTER MUECKE: Where do you see greatest potential markets?

Ms. JUDITH CABRITA: Well, the growth... You know, the European Union has been looking at, you know, what Michael Corbett talked about, about the people moving

away from the coastal areas.

When the European union says that that is where the next, where all the potential is for growth is, you know, is from fishing and is from tourism, and they're looking at this major problem about how, in Ireland, they're losing their people in their coastal communities and in the coastal areas of Europe.

Well, we haven't got that far, and Michael Corbett said it, you know; the people are staying here.

So we have the human resources. We have the asset. We just have to put the two togther and develop them properly through planning; get coastal strategy.

Dr. GUNTER MUECKE: Thank you. Perhaps a quick one to Ms. Goddard. Could you tell me where your Mountain Gap Inn is located?

Ms. ANN GODDARD: It is on the Annapolis Basin. It's in Smith's Cove, which, if you're coming from Halifax, which presumably you did, you cross a bridge called the Bear River Bridge, and there's an exit 24, and there's an exit 25.

And those two just swing you in through Smith's Cove, which is a very old tourism community with places, not just my own. There's Harbourview, there's a couple of camping sites, there are other smaller tourist

accommodations, and that's it.

So every night, we look at a fabulous sky, except in the winter when we're closed, beautiful sunsets, and you look straight out the gut, so you see the ferry leaving for New Brunswick.

And you must come. You must come and see it.

Dr. GUNTER MUECKE: You mention that for Elderhostel you have bus tours out to the neck.

Ms. ANN GODDARD: Mm-hm.

Dr. GUNTER MUECKE: In terms of other tourists staying at your inn, could you give me an estimate of how many of them would go out to the Neck, would go whale watching?

Ms. ANN GODDARD: You know, I should have that figure, but you know, we have so many.

I mean, this morning, like this is the time of year when obviously occupancy is low and we keep hoping it's going to pump up, but this morning I had three people at 7:30 knocking for the boxed lunch; they were going now. Last night we only had seven rooms in the house. Three of them were going whale watching.

But, you know, probably every day when the weather is... I'm not talking in the right thing, am I?

Nobody heard me, okay. So every day

probably we would have upwards to ten groups, ten couples with their kids going out to watch.

Dr. GUNTER MUECKE: Thank you.

THE CHAIRPERSON: Mr. Buxton?

PRESENTATION BY Ms. JUDITH CABRITA AND Ms. ANN GODDARD - QUESTIONS FROM THE PROPONENT

Mr. PAUL BUXTON: Thank you, Mr. Chair. I don't have any questions for Ms. Goddard, except to say that she should be congratulated for keeping the Mountain Gap for 38 years, and if you haven't been there, you should go there. It is a beautiful piece of property.

I have a couple of comments which will lead to a question, Mr. Chair, to Mrs. Cabrita.

I'm not quite sure, I'm a little bit of an amateur tourism person in this area, as Mrs. Goddard knows, and certainly from my research tourism in fact was a its height in this area before the first World War, but we have nowhere ever approached the numbers that we have here.

And curiously enough, the sales image, what was the word. Somebody reminded me yesterday. The brand. The tourism brand at that time was "The Land of Evangeline", because Longfellow was at his height in popularity in the schools in the Northeastern United States, and people came here to see the Land of Evangeline.

And it's curious that the first line is,

"In the forest primeval", and of course the Land of Evangeline at that time was a meadow.

However, they came, and they came in very large numbers, and I think you would be absolutely astonished to see a brochure of Digby before the first World War, and the number of hotels and accommodations there were in this areas.

I was absolutely dumbstruck at the amount. Certainly three or four or five times the accommodation that there is today in this area. I myself live on a property that was a resort like Ann Goddard. It used to have 65 rooms. And there are no rooms today. The train used to stop at the bottom of the grounds and offload the passengers who were brought up to the hotel on a horse and buggy.

So we have changed very considerably, and to my certain knowledge tourism in this area has suffered a very significant decline in the last three or four years. It may not be totally apparent in some numbers, but in retail sales, for example, I can assure you it is a disaster. It has gone down probably 50 percent.

And I am getting to a question, Mr. Chair.

One of the difficulties that I have with tourism numbers, which are always bandied about in the value

of the tourism industry, is that much that is counted as tourism, in effect is business travel.

And I give you today or this week, the Panel I'm not sure would consider itself coming in here on vacation for two weeks, nor would my experts, nor would the Secretariat and other presenters who have come from out of town. They've all occupied considerable rooms in the Pines and the bed and breakfasts in Digby, and they will be counted as tourists.

But in fact this is purely business travel. When I go in to Halifax to consult with a Government agency, DFO, et cetera, and stay in a Halifax hotel, I am counted as a tourist. I am not. This is a business expenditure.

And I'd like you to comment on that, because we keep hearing about this, you know, exponential increase in tourism that's possible, I've been hearing it myself personally since 1978 when I became involved in the tourism industry in this area.

It hasn't happened. It's declined since 1978 in this area, both in numbers and expenditure.

So would you sort of comment on that? I mean, I have great difficulties in... I see the numbers of people employed in tourism go up every year, 38,000, I think it is this year in Nova Scotia, and I've got real problems

with these numbers. And as it relates to this area, I have the same sort of problem.

Could you comment, for the benefit of the Panel? You've been, you were with TIANS, you know about the numbers.

Ms. JUDITH CABRITA: Well, my discipline is tourism, I'm a Ryerson graduate.

But I don't know where to begin, Mr. Buxton. Maybe back at the beginning with your talking bout before the war. You know, we took up some of the railroad tracks, and our business was definitely, the whole tourism industry, developed in North America by the train travel.

And hotels, you know, like the Cornwallis in Kentville and the Digby Pines, all of these, developed around, the Banff Springs, they all developed from the train travel.

We're now in the age of air travel, and we haven't quite caught up in this province to match that. The demand is so great from Europe that when somebody cancels a reservation from a tour operator in Queen's County that I know, the phone rings. They're booked up in May with all of their tours because there are no flights from Germany that can take the rest of the people.

So if somebody cancels, their phone rings immediately to say: "I just got a flight and I'm

coming". So in the age of air travel, and Nova Scotia has a long way to sort of marry.

Business travel, well, you need to read the various text books, and when I went to school it was somebody who travelled 60 miles, in those day, and stayed overnight. Today it is if you are earning your wages in one community and you travel to another community and whether you buy gas or you stay overnight. Those are tourism dollars.

And business travel is considered tourism dollars, and it is very much, in fact business travel is a whole sector within itself that is very viable and growing. And when we have, you know, disasters like 911, I mean, tourism is the barometer of the economy. Whenever something happens in the economy, tourism is the first one to fall flat. It's the first one to pick up. And there's lots of scientific proof about that.

You know, when people start travelling again, you know the economy is getting stronger, because our industry is depending on that disposable income in the pocket, and when it isn't there, we suffer.

But business travel is a huge part of travel, and there are a lot of people, I remember a hotel manager in Halifax telling me that he wasn't in the tourism business because all of his customers were business travel.

He became the president of TIANS, and he certainly changed his tune.

So yes, we have... And the other thing about tourism is it is very cyclical. It has its peaks and its valleys just as any other industry has. But we are in our infant stage when it comes to developing what we have. What we were selling before was the railroad and travel on the railroad, and travel on the railroad was part of the experience.

What we're selling now is our environment, is our land, is our natural experience, and we're growing that gradually, and we have to make sure that we protect it and conserve it so that 50 years from now we have a tourism product, a hundred years from now, and I have a letter that the tourism industry started while it still under my watch, but it was finished after I left, that they wrote to you and asked you a great many questions, and I checked with them today and they still do not have an answer of all the questions that they asked you.

So I would implore you to perhaps look at the letter from TIANS, it was January the 21st, 2005, and perhaps help us in the industry to understand what you are trying to do.

Mr. PAUL BUXTON: I think I got the answer to my question, Mr. Chair, that business travel is,

in fact, counted as tourism travel, and I think that that's quite significant, and you can see the effect in this area today.

THE CHAIRPERSON: Questions? Ms. Little, Mr. Lang. Could you line up, please, for me?

PRESENTATION BY Ms. JUDITH CABRITA AND Ms. ANN GODDARD - QUESTIONS FROM THE PUBLIC

Ms. TINA LITTLE: I do travel quite a bit for business, and I always choose locations that I want to do business in to make it a point of travel, because I can deduct it from my taxes.

So if there was any way I could do business and count it for Nova Scotia, you'd better believe I would do it.

I have a question for you. Do you have any idea what statistics the travel would be compared to tourists for, say, Las Vegas?

Ms. JUDITH CABRITA: There's a tremendous amount of business travel in Las Vegas, just like you do. A lot of people travel on business. There's major conventions. In fact, there's a lady that works in Las Vegas that her job is make sure that there's an activity going on in Las Vegas every day, whether it's a convention, a ball team, you know, some sort of activity.

So it is huge, the business travel in

Las Vegas. And those numbers are counted. They're counted world-wide, they're counted by the World Travel and Tourism Council, by the WTO, by CTC, by Nova Scotia, and we know exactly how much is business travel and how much is leisure travel ---

Ms. TINA LITTLE: Thank you.

Ms. JUDITH CABRITA: --- and how much is visiting friends and relatives, et cetera.

Ms. TINA LITTLE: Thank you.

SISTER BARBARA: Yes, my name is Sister Barbara, and I'm from Rossway. Thank you for your presentation.

I have a question from, I guess of Bilcon. Gentlemen from the Green Party said that the ammonium nitrate would be transferred not by boat.

Would that be coming from car, or truck, rather?

THE CHAIRPERSON: That's my understanding.

SISTER BARBARA: And you said last week that in its raw state, it's not dangerous.

THE CHAIRPERSON: I'm no expert. You should direct that to Mr. Buxton.

Mr. PAUL BUXTON: It's [inaudible - mic glitch]

SISTER BARBARA: That's right. I used to shovel it when I had a horse many years ago. It's called fertilizer and it's not dangerous. But it will be coming by Highway 217 from where?

Mr. PAUL BUXTON: It will come from the Metro area, Halifax Metro area.

SISTER BARBARA: And is it enclosed in a bag, or I don't know... I'm not sure. Is it enclosed in a bag?

Mr. PAUL BUXTON: No. These are very specially-constructed vehicles that have to meet very strict codes and are licensed specifically for this purpose.

SISTER BARBARA: But are they in bags? I'm trying to figure, a fertilizer bag is, is that what the ammonium nitrate will be in?

Mr. PAUL BUXTON: It's generally in small containers. It's generally not bulk. But it is all contained in a purpose, design-specific vehicle for that purpose.

SISTER BARBARA: All right. Well, in its raw state it's not dangerous, but if a truck had an accident, would the spark from the gas ignite the nitrate, the ammonium nitrate, and we'd have an explosion?

Mr. PAUL BUXTON: No, it would not.

SISTER BARBARA: It would not. Good. Thank you very much.

THE CHAIRPERSON: Mr. Lang?

Mr. WILLIAM LANG: William Lang, Green Party of Nova Scotia.

My question is in reference to a comment Mr. Buxton made regarding a dramatic decline in tourism over the past three years in the area. I'm from a little tourist town myself of a town called Banff, Alberta; you mentioned one of our claims to fame, the Banff Springs Hotel.

And so, you know, I have a little understanding of the cycles of tourism, and I would say that, or I would pose the question to you, what do you think the rising Canadian dollar over the past year has... Do you think that has had an effect on the decline in tourism in the area? Because I know it has in Banff.

Ms. JUDITH CABRITA: Yes, it would in Banff because of the high Japanese market as well as the U.S. market, but the visitors that we get in Nova Scotia don't necessarily worry about that. You know, the price of gasoline, the price of liquor, and the U.S. dollar is always cited as the reasons, but there are bigger reasons than that.

You know, there is the fact that America is at war, it's the state of the economy in the U.S., it's

more than those factors.

Probably it does factor in perhaps a little bit with the business travel, but where a company, a huge corporation would say, well, we'll cut down on the conferences that we're going to do, or something like that.

So you know, again, the larger places, like Toronto and Halifax, would feel that. But certainly in an area like this, I wouldn't expect that the U.S. dollar would be a major factor. There's other things that are happening, and they're all, that's what tourism is. It's external factors that affect us.

Mr. WILLIAM LANG: Thank you very much.

THE CHAIRPERSON: I'll terminate the questioning now. Thank you, Ms. Cabrita and Ms. Goddard. Thank you very much.

Ms. JUDITH CABRITA: Thank you.

THE CHAIRPERSON: The last presentation of the day is by Marilyn Stanton.

PRESENTATION BY Ms. MARILYN STANTON

Ms. MARILYN STANTON: Good afternoon. My name is Marilyn Stanton. I was originally to be joined by a fellow presenter, Myrna Farnsworth, who has had a death in the immediate family and she's just not emotionally equipped.

So I'm going to do the presentation for

both of us.

Before I begin that presentation, I'd just like to... I've been requested to clarify a point that was raised yesterday, and that was that The Partnership was having a van come every day from Halifax to these hearings, through the whole 14 days.

Actually, the van did come for three days, and that was through participant funding, and since we asked for that, it was a requirement that we produce that van.

The second thing is, having mentioned The Partnership, I'd like to point out that I am no relation whatsoever to Kemp Stanton, delightful as that would be.

And then I want to just go on to say that Myrna and I are both members of that Partnership, but we present today as two senior community women. Although you will hear in my presentation that we continuously mention The Partnership, it's been our entire life for the last five years.

We are representatives of two different communities, and two different segments of these communities. Myrna is from Little River, and has lived on Digby Neck her entire life. And my husband and I left Sandy Cove 50 years ago, and returned to retire here eight years ago.

I had originally been planning to show three or four minutes of a DVD made in 1993 by Oakley Peck of Bear River, and it's called "Beautiful Digby Neck and Islands and French Shore Communities", and this shows a bird's eye view of the peninsula. It's a two-hour long video or DVD, but this is in the first 10 or 12 minutes, and I would really appreciate if the Panel had a chance to look at that. I have submitted copies, and I just didn't want to go through that this afternoon.

So I'd like to approach this by talking about several categories, and the first is how it feels to be member of a community that has been targetted by corporate America.

When I was preparing my presentation, it pained me to look back at the path we have climbed to arrive at where we are today. I acknowledge the early days, when everything was rumours but nothing could be proved, and politicians and bureaucrats hid behind policies and procedures.

We learned how vulnerable we were, as a concerned citizens group, when we gathered 2000 names on a petition, held a press conference at Province House, and delivered it to the Minister of the Environment.

We naively thought this would help them to see reason. It did not. We felt betrayed bout our

politicians.

A subsequent trip to the Legislature, where we met with our MLA and tried to have a meeting with the Environment Minister, was like running into a brick wall. These people were not interested in talking to us, and certainly did not listen to us. They merely kept repeating that the whole issue was out of their hands, and already in process.

At that time, this meant nothing to us, and we could not comprehend why everyone seemed willing to assist the Proponent and nobody wanted to deal with us, other than in an extremely superficial fashion.

We soon learned what all this meant; that the Proponent was preparing an EIS, and if we did not want inadequate or erroneous information as the record, we had to fight this report every inch of the way.

To this end, we formed The Partnership for Sustainable Development of Digby Neck and Islands Society, also known as the Stop The Quarry Group. So we listened and we learned, and gradually understood more and more.

Many believe that when the Minister of Fisheries persuaded the Minister of the Environment to elevate this three years ago to the status of a Panel Review that this would quickly bring the project to closure. It is

an incredible process, too weighty for a tiny community to comprehend in the beginning stages.

This process must play to completion. Many people, both tourists and local alike, do not comprehend that we were unable to shorten it. Even today, many do not understand what is happening. Many believe if our group was more adequate we could've gotten this over with sooner. Others attribute this to the power of the Proponent, who they think wouldn't spend all this money if they didn't already know the answer.

We were indeed fortunate to introduced to the book, "Soil and Soul: People Versus Corporate Power", by Alistair MacIntosh. It was about the Isle of Harris, where Lafarge was still attempting to install a giant quarry in a remote part of Scotland. This battle was to prove to be an excellent role model, as there were so many similarities between the two battles with their remote area profiles.

Many of those early meetings talked about the attempt to put a large quarry on the other side of Little River 12 years previously. For four years, the battles raged, they recall. In the minds of many in the community, this had the same project leader as we face today.

We learned last week this was not the

case. Mr. Buxton was merely in an advisory position to the Proponent at that time. That attempt was defeated, thanks to the politicians of the day who fulfilled their electoral responsibility to the people and listened to them when they said they did not want a large quarry on this narrow spit of land.

Mining 101 says get community support first. Bilcon well knows that, especially because of the attempt in Little River 17 years ago.

Previously, when politicians did help opposed the project, the whole issue apparently died. It doesn't take much projection capability to guess there were many hands to help the change of the Provincial laws to allow the foot in the door, or the 3.9. The salt was also dropped from being classified as a mineral.

And this time, Mr. Buxton overcame the original hurdle of the political assistance at community level. This time, the MLA did help at the same level. But it was to introduce Mr. Buxton to many of the businesses and non-profit groups of the area, and try to secure their participation in the CLC, or the Community Liaison Committee.

However, both the MLA and the quarry group has discounted the passion, strength and determination of the current community on Digby Neck who are willing to

forge ahead without the politicians with the Isle of Harris as a role model.

One other resource kept popping up in people's conversations about corporate power. It was a book called "Red Clay, Pink Cadillacs and White Gold" about the Kaolin Chalk wars in Georgia. From the jacket of the book, I quote:

> "Sweet-talking agents for the Kaolin industry fanned out into this poverty-stricken land, looking for farmers desperate or gullible enough to sign away their mineral rights.
>
> Today, the companies that hired these agents work with Georgia's finest lawyers to bind heirs to these yellowing mineral leases.
>
> The leases paid landowners as little as a nickel a tonne for what will later be sold for 50 to 700 dollars a tonne."

From page six of the introduction, I quote:

> "The story Kaolin perhaps is but a chapter in the dismal story of extraction industries all over the world. They are the live-for-today

industries that take from the land, and in their wake leave mostly ruined soil and water, and broken people."

The next section is 50 years, past and future. The Proponent wishes to be granted a permit to mine for 50 years, and we know it has extended its lease to 90 years. 50 years is an incredible span of time. Who can even begin to guess what life will be like in 50 years? Few people in this room are able to clearly look at the experience of a 50-year span.

Myrna and I have both been married for almost 50 years. It is incredible to look back and see the changes during that period. 50 years ago, as a Digby teenager, I recall hearing a tourist say to her companion, "This damned backwards place. They roll up the streets every night at 6:00." I remember feeling ashamed at living in a such a backward place, and wished it could be different.

50 years later, many of us have come to treasure the very things we felt disdainful about so very long ago.

Myrna remembers in 1950 when the road from Centreville to East Ferry was being prepared for paving. She and her cousins used to ride in the dump trucks hauling the gravel from the Whites Cove gravel pit. They

were excited, not only because of the ride in the trucks, but because of the steam shovel and the rock crusher. To a child, these were magnificent machines, never seen before.

Although there was no blasting, this old gravel pit is often referred to as a quarry.

Thinking through the years, Myrna also remembers going to Whites Cove in the fall with a pillowcase to pick cranberries for winter. In those days, Whites Cove was very active. There were fishing shacks with boats being hauled up the way poles, and fish were dried on flag structures made of wooden wire.

She recalls her parents and grandparents often telling her and her brothers about the village that used to be in Whites Cove and the people who lived there and survived by the land and the sea. They would talk about how some of those early relatives were born and died there, and were buried in the burial grounds, which at that time were covered by alders and trees.

Of course, as kids, Myrna said they were always cautioned not to go near this area. Her memory spans many years of fun in Whites Cove; wiener roast, picnics, visits to Camp Fog. Myrna says: "I feel this place is a part of me, and all the others who were there, some dead, now dead and only a memory. It's a part of my life, the being."

The ensuing years brought many changes to both our lives. Myrna and her husband chose to remain on Digby Neck and raise their family there. My husband and I left the province and relocated in Saint John, New Brunswick. However, we spent every vacation on Digby Neck and eventually retired here eight years ago.

Through those years, we saw incredible changes in technology, medicine, and particularly in people's values, beliefs, and their interests, entertainment, et cetera. But every year we were able to come back to beautiful, little-changed Digby Neck, which everyone seemed to value more and more with the passage of time.

We are all aware of how rapidly change is taking place now, with people barely able to keep up. One of the most incredible changes is happening right now at this point in time. Al Gore's book, "An Inconvenient Truth", is changing everyone's perspective on environmentalism. Even movie stars are advocating the green movement.

I heard a commercial last week when a young woman proudly proclaimed she was a tree hugger. With a Herculean leap of culture change, we've gone from being tiresome environmental oddballs on our way to becoming heroes and heroines. It has already become the wrong time

in history for this quarry; wrong time, wrong place.

The Kaolin Chalk wars began in 1960; 50 years ago. There is still no end to it. Some land leases are for 99 years. Does all this have a familiar ring?

The next section, changes and disruptions in the community and people over a five-year period, while the issues is unresolved. The largest culture shock occurred when we received a copy of the DNR website, which began "Come and take advantage of Nova Scotia's resources". In our naivety, we still believe the mandate of the DNR was to protect our land and our animals.

It has lessened our pride in our province, and being a member of it. To sum it up, we now feel that the bureaucratic infrastructure views the entire province as one giant resource for them to give away.

Nothing appears to be a treasure in Nova Scotia, as seen through bureaucratic eyes.

The slap suit deserves special mention, here, at the head of this list, as it influenced many, many people not to get involved, and not to discuss the topic with their neighbours, and certainly not to write letters to the editor. Besides which, everyone heard the courier also received a slap suit, and since they weren't blind they noticed the lack of freedom of the press that appeared to follow.

There is a feeling of helplessness, powerful interest, and powerless victims. Many believe the Proponent wouldn't spend so much money buying so many houses if it wasn't already a done deal.

We are all totally different people than we were five years ago; less naive and trusting. But the community solidarity of 2002 is now lost as people take sides, based mainly on employment versus non-employment.

Bilcon is demonstrating what a good corporate citizen it is, and we understand why they do this; however, it leaves the other side - us - at an unintentional disadvantage.

For example, when we sent our blue tartan singers float to the Scallop Day Parade in Digby last year, there was some debate about our acceptability from the parade co-ordinator. She felt we would be disturbing to Bilcon, who had been a very substantial contributor to the parade. After a minimal amount of negotiations, this was resolved satisfactorily, and we were in the parade, but it left a bad taste in our mouth.

This is not the only indicator that the Town of Digby is positioning itself on the other side. The Digby Board of Trade has appeared to be extremely supportive of Bilcon from day one, and opposed to those questioning the advisability of the quarry.

Does this mean that good corporate citizenship begins before one is even a corporate citizen and is still in the "want-to-be" stage? Before we got public relation spin doctors and marketing consultants, this was called such nasty names as bribery, buying your way in, et cetera, et cetera. But today, as long as we can dress it u and call it pretty names, it appears to be acceptable.

The same goes for conflict of interest, old-fashioned terminology that it is. Today, it appears to be acceptable to have the person who was the administrative assistant to the Minister of Labour and Fisheries immediately to across the street to work for the Proponent when that Minister was not re-elected. And then the same person became Elgin Consultants for the EIS. And that same person then became President of the Digby Board of Trade.

The next thing we hear in the EIS is that the Digby Board of Trade should be one of the three groups to pick and send members to the CLC Management Committee. This appears to be the Digby version of all roads lead to Rome.

However, not all the things that have happened in the community over these years have been negative. Some of us have made lasting friends from the casual acquaintances of a few years ago. Also, we have been able to reach out to other people and communities, and have

formed a network that we never dreamed could exist all over Nova Scotia.

If we spent all the time and effort of the last five years in enhancing our community instead of struggling to preserve it, how different our outlook would be today.

One thing we did do was get out our computers and learn to travel the communications highway. Five years ago, many of us did not know how to send an email. Today, traffic is heavy, and has enabled many from other areas to follow the course of these events.

When it comes to sharing information and getting our story out there, this is not an isolated community, vulnerable and defenceless.

It is upsetting that over the past month things are deteriorating even more among community members, and it appears to be escalating at an alarming rate. Many people are expressing the concern that hatreds are being born that will last, regardless of which side prevails in the end.

The next section is the VECs, the intangibles. Much has been said about the VECs, or valued environmental components. They are identified by the people who live here and visit here. Why does Bilcon never address what we consider to be the quality of life issues, the

sounds of the area, the feeling of community, and the peace that comes from our spiritual attachment to the land, have not been acknowledged in the EIS.

How can you deal with someone who doesn't understand where you come from?

Bilcon has expressed their perplexity about the fact that people around here don't mind the noise of the waves crashing upon the shore, which is often louder than quarry sounds, they say. How dare the DNR representative suggest earlier this week, in a very dismissive fashion, that communities adjust once the quarry is up and running.

I guess it's easier to rationalize these things away than to admit that neither the Proponent nor DNR can mitigate them. Obviously none of them are empathetic enough to even comprehend them, let alone acknowledge and attempt to address them. We don't even speak the same language.

The DNR, Environment Canada, and the Proponent speak dispassionately of dead birds, pick them up daily instead of weekly, species at risk and SARA are the forms they use. While the community rejoices in the sighting of bald eagles, mother and baby, resting on the Carty property near the shore in a tree, and enjoy and discuss all the birds that come to our feeders, depending

heavily on our assistance during their migratory flights in the spring and fall.

No amount of community/proponent interface is going to bridge this abyss of basic cultural differences.

My next section is management, CLC style. Quoting from a notice in the newspaper:

"A community liaison committee is an advisory body to the project proponent, and provides inputs on matters regarding operations or approvals, permits, that have or are perceived to have environmental impacts."

As has often been explained, members of this society started attending the CLC meetings in March 2003; the nearest meeting after their incorporation. We were not about to lose our identity as anti-quarry people, especially in light of past history, when we had been accused of using school children to bolster the number of signatures on our petition by the owner of the quarry lands, which are leased to Bilcon.

I always felt that our biggest problem in attending these meetings was that the anti-quarry group did a lot of outside research, and the members of the CLC relied very heavily on the Proponent for all their

information. And all too often, that information did not quite agree.

Also, committee members with a minimum amount of knowledge did not understand why we were upset when a seismic expert came to address a session we understood was to be on blasting, hopefully in a coastal environment, or when we were anticipating the expert would discuss current marine bio-invaders like the zebra mussel, and we were given the results of a study by DO on zooplankton, which did not address our concerns, whatsoever.

Also, members of the committee appeared not to hold Bilcon accountable for answers to information. Many a comment appeared in the CLC minutes about getting back to the committee, but members appeared never to follow up on this.

It boggles my mind to attempt to guess how this scenario can transform to meet the needs of a management committee.

We also occasionally received an indicator of conflict resolution, Bilcon style, and this did inspire confidence for the possibility of resolving future problem areas.

And then my last section is Bilcon as a neighbour. I was totally prepared to come here and say that my problem was with the project, not the Proponent.

However, after attending these sessions for over a week I went home, took my eraser, and got rid of that part of my speech. After listening for 10 or 12 days, I am even more frightened of the Proponent than I am the project.

Please do not assume I refer only to Bilcon when I say that. To me, the word "Proponent" has now assumed new dimensions. I have listened to how all the expertise and resources of many government departments have been dedicated to getting Bilcon to this point, inadequate as it may be.

It all appears to be done without a thought to the cost to the taxpayer of offering these resources. I have watched while they bond with each other, even to the extent of having Bilcon offer research monies in their role of good corporate citizen, of course, while they commit to all happily working together into the future.

Everyone appears to be on a giant learning curve, with our quality of life and our land as the playing field. It takes my breath away to think that anyone would consider placing something like this spit of land, which is a jewel in the Bay of Fundy, into the hands of the group we have met this week.

In my opinion, they are like a bunch of destructive, adventuresome teenagers; willing to experiment and learn as they go, with no accountability for the outcome

or for the future of this area.

I wish to go on record as categorically stating that nothing any Panel, any politician, or Minister of the Environment could produce in the area of mitigation would be able to restore my confidence in a company who admittedly has no experience in mining basalt.

I feel exactly the same about their bureaucratic cronies who are willing to hold their hand every step of the way, work with them until they get the acceptable words on paper, and then, at the end of the day, assume the role of monitors and enforcers.

I've heard it all, and thank you very much, I don't want any of it.

THE CHAIRPERSON: Thank you, Ms. Stanton. Mr. Buxton?

Mr. PAUL BUXTON: Thank you, Mr. Chair, I have no questions.

THE CHAIRPERSON: Questions from the audience? None. Thank you, Ms. Stanton.

That's the end of the afternoon session. Let's see, when are we going to meet. I think we will meet at 6:30, okay? The evening session will start at 6:30.

--- Recess at 5:10 p.m.

--- Upon resuming at 6:32 p.m.

THE CHAIRPERSON: Ladies and gentlemen,

we'd like to begin the session.

The first presentation for this evening's session is Ms. Tina Little.

PRESENTATION BY Ms. TINA LITTLE

Ms. TINA LITTLE: Hi. I'm Tina Little, and I'm representing my family, who are with me here tonight.

I'm going to show you some slides, and I apologize. They're not going to be the quality that I would like them to be.

These are actually art photographs that are in display around the world. They are from the award-winning artist, Edward Burtynsky.

We look back in time through art to understand the struggles of civilizations because they're depicted in our art through the centuries. I brought this short slide show so that we can act today on foresight, and not hindsight.

So this is because I want to act on foresight today, and not tomorrow on hindsight.

These photographs that are in museums around the world are there because Burtynsky is known for his work that is nature transformed through industry. And he has won the 2007 Genie Award for best documentary.

He has won the Toronto 2006 Best

Canadian Documentary Film, and he has been awarded the Medal of Honour by the Canadian Government, which is the highest civilian honour that anyone can be bestowed.

So the reason I talk about this is because I want to talk about what's in the hearts and the minds of the Canadian people. What is being expressed through their art and what has been picked up by the Canadian government as pertinent enough to give this man the civilian Medal of Honour?

I think it's pretty staggering to say that the government has looked at these photographs and said that we need to do something about this and we're going to give this man an award and that he won the 2006 documentary for Canadian films. And art is important to the humanity that we live in.

Okay. That's all I want to do with those slides. I think it speaks for itself.

I would like to, first of all, thank the Panel for this week that I've been involved. I'm so grateful for the hard work that you've put into this, and I see how excellent you are. And I just want to thank you.

First of all, I want you to know I am not paid to be here, and, actually, the truth is that every minute that I spend dedicated here I am losing money, so I'm in a negative.

Last night I heard myself referred to as a nomad. I take offense to that. I am a seasonal resident. What does that mean?

Well, that means that I've chosen to invest a lot of money in this community, and I spend all my free time here and I have told my daughter that our seasonal house that we bought shall stay in our family forever, and she is never allowed to sell that cottage.

I want my child to grow up in a community that's clean and beautiful, where ethics and right decisions will change the world. And that's why my daughter is sitting in the front row, because I am teaching her that one voice makes a difference.

And if my one voice can help you to make a decision on this, then let me haunt you. I want to haunt you.

So let's talk about Bilcon, can we?

I have this flyer. Do you recognize this? Yes, of course you do. You put it in the mailboxes of the people that should have it.

This is what this says:

"Why should I support the quarry? For people who have retired to Digby Neck or others who spend a couple of weeks here in the summer, any change is

understandably something they might be worried about. By and large, their working days are behind them or they work somewhere else and come to spend the summer. Obviously, the quarry and its long-term economic impact doesn't matter as much to them."

We're talking about discrimination here. Now, there is no human resource department in any corporation I have ever worked for that would ever allow this discriminatory statement to be sent out like that.

The psychology of this question, what response did Bilcon want to create or, as I'm a word person, what did they want to incite in the people with this kind of a statement? I resent this.

Do you know how much money I've put into this community in the last two years? Let me tell you something, when I'm in Florida working very hard, not retired, I send a large proportion of that money up here to restore buildings and bring life back into the community that I love.

And I have considered becoming a dual citizen, so I resent all of this stuff about seasonal residents.

If you knew how much money we put into

this community, hundreds of thousands of dollars personally, in the last two years. And that money goes to carpenters. It goes to people that are pulling timber out of the forest. It goes to painter. It goes to my caretaker every month for two properties.

I love this place. Why do I love it? I'll go on.

I'd like to say that, as a parent and as a human being, sometimes I don't know what the right thing to do is, but I know that I can depend on good common sense.

In the case of this quarry, it is commonly agreed, generally in the world, that for every action there is an equal and opposite reaction. But what about the reactions that create domino effects that we cannot predict?

How can we consider this large quarry will not affect the environment? It has already affected the social environment of the community.

It's not will it affect. It already has, if we look at it as a whole.

What single reason provided by Bilcon is worth destroying the future of the Bay of Fundy?

Compromise is a solution when you must do something and have no other options, when you do not have the power to do what is right for the environment or the

better of the greater humanity. What is wrong with a simple question, is this good for Nova Scotia?

And if the answer isn't yes, why do we even proceed with the conversation? I keep asking myself, "Why are we having this conversation?" My 10 year old daughter says that.

All right. So now let's talk about the tourists. I am the disenchanted tourist, but I am not the disengaged tourist. I'm going to tell you a story.

When I bought my cottage up on the top of the hill overlooking the Bay of Fundy, I had never experienced such euphoria in my life as I did that day that I smelled the grass of Nova Scotia. We saw a whale off our back yard deck.

I took a walk that day. I never experienced such happiness in my life. I thought to myself, "I've come to the end of the earth and I found what it was I was looking for", and I was so happy.

That day, we took our daughter down to Digby to enjoy the rest of the community. We walked to the toy-maker's and it was like a Stephen King novel.

I heard about the quarry, and not only the quarry that was planned to come down at Whites Cove, but the quarry that had applications right around the corner from my house at Victoria Beach. Right around the corner

there would be trucks going up a road that I'm afraid sometimes two cars can't pass on, let alone have big heavy trucks going on.

My world crashed that day. I thought that the beauty of the Bay of Fundy and Nova Scotia was a result of the protection of a great Canadian government.

Canada has identified the natural resource of Nova Scotia. We see it every day on every license plate. Nova Scotia, "Canada's Ocean Playground". It is the liquid gold of this province and needs to be protected.

That brings me to the topic of protection and opportunists, and opportunism. Opportunist, as described in the dictionary, "taking advantage of opportunities with little regard for principles or ultimate consequences."

Another interesting term, predatory, "ravaging, pillaging, thieving, larcenous". Trust is the big issue here.

Okay, listen. The fact that you have the people showing up is a miracle because the nature and complexion of the people of Nova Scotia is one that matches the pastoral beauty of the environment.

These are people with a history of a trusting beauty and naivete. It's a virginal land, with

naivete that matches it. It's a beautiful place.

Last night, the young gentleman agreed that he trusted Bilcon basically because he was a trusting individual, and he would trust anyone's word. Blind faith.

I was naive. As a parent, the hardest thing for me is to teach my daughter not to open the door at our house when a stranger knocks because, you know why, human instinct is that we want to trust.

When I stand at my door and a stranger knocked the first time when I was teaching her not to open the door, I so wanted to open that door because I felt because someone was knocking, they deserve for me to open the door.

Now imagine that somebody's standing that door and they're going to tell me in detail how they're going to rape me and pillage my property. I most certainly would not open that door.

All right. It's naive to believe that Bilcon is capable of self monitoring for adaptive management. This whole quarry is about money.

I am a businesswoman. I like that bottom line. And I go for that bottom line, and everyone I hire better be concerned about that bottom line or they're out of a job.

I'm sure that manager knows that if he

doesn't keep up that bottom line, he's out of here. Okay?

So with lobster in the winter, salmon in the spring and the winter, whales in the summer, the environmental monitoring would be extensive. Against the good bottom line, how can we trust Bilcon to self monitor?

How can you put someone who is in a predatory posture in charge of preserving something that is getting in their way? Self monitoring should be reserved for those who have displayed, over time, exemplary behaviour. It is a result of earned trust.

Okay. The DOF, the whale expert that was here. We had extensive conversation about their desire to see and monitor the whales. They talked about how hard it was for them to monitor these whales, two ships, special glasses, fatigue. But remember something. Their perspective is what it's all about.

They would have loved to see the whales. God bless them. Okay. Now, put the shoe on the other foot.

I'm self monitoring and I've got a bottom line. Maybe there's a storm coming. Maybe I'm behind in production. It's a foggy day. I'm tired. Bilcon is behind.

The man in charge of seeing the bump in the water which is the whale knows that it's really better

if he doesn't see a whale, but he has to monitor it because that's according to the regulations. Okay. That bump, is it a whale or isn't it a whale?

Do you want to see a whale or do you not want to see a whale? If you want to see a whale, it's a whale. If you don't want to see a whale, it's a bump in the water. And that goes with every other aspect of self monitoring and that adaptive management that I've heard about which, if I hear that one more time... I'm sorry, I will learn to keep my mouth shut.

All right. So it depends on who you are and how badly you want or don't want to see a whale or a sediment or a bad chemical blow, whatever it is. It's the cat watching the mice.

It's a complete conflict of interest for Bilcon to find anything other than what will help them make their bottom line financially. I am a businesswoman, and I speak from the truth.

The burden of proof. I had the whole thing turned around in my mind when I had that come up. When they talked about the onus of you being able to say they have to prove it's absolutely without doubt going to happen, that's the way this should be.

I teach my daughter not to engage in risky behaviour. We heard the man today talk about the

lobster business. It's a quarter of a billion dollar business that comes into Nova Scotia.

It's 10,000 jobs versus 34 jobs. That is not a good ratio for taking a risky behaviour. It is an act of desperate self-cannibalism to destroy the earth for 34 lives. I'm sorry. I cannot support that.

This brings me to my conclusion.

The enlightened trend in thought today is to try to heal the harm we have already done to the environment and apply whatever we have learned from the past to create wisdom, to create our future.

A great country is what you want to have here. The future, according to Bilcon, is depressing. It makes me want to stand on my cliff and jump if I listen to them, but I'm not naive any more and I'm not going to jump.

I know better, and I don't trust Bilcon's view of the future. I refuse.

There are a lot of people who see a different future here of sustainability. I have myself invested in the future and plan to live in harmony with the people and the land.

I have so many friends here who, like me, are bringing their children to raise them with principles and ethics and standing up for the earth and for the world and for what's right and for what's wrong.

You have to make a series of good decisions. The future of this whole area depends on you.

If you let this project come in, there are others lined up to follow suit. I promise you, it will haunt you. This decision will haunt you.

Kevin Costner said in the "Field of Dreams", "If you build it, they will come." Well, this is not that. In this case, if you don't build it, I promise you they will come and they will spend the money.

Thank you.

THE CHAIRPERSON: Thank you, Ms. Little.

PRESENTATION BY Ms. TINA LITTLEnvironment - QUESTIONS FROM THE PANEL

Dr. JILL GRANT: Ms. Little, can you tell us how long have you been living in Victoria Beach?

Ms. TINA LITTLE: I started investing in the area four years ago.

Dr. JILL GRANT: Can you tell us why you picked this part of the country for a summer home rather than some other part of the country?

Ms. TINA LITTLE: It's the most beautiful place on earth for me. I have visited France, Italy, Spain, California. I love coastal communities.

I read "Coastal Living". I mean, you want to know where the future is? "Coastal Living" tells

you that the environment and the coastal areas is where we're going.

I love this area. It's beautiful.

Dr. JILL GRANT: You're obviously very passionate about it.

How do you respond, though, to the people who are looking for job opportunities and see this as potential for them? What's your response to that kind of concern?

Ms. TINA LITTLE: Okay. I feel very much for them. I do understand that they need work, but I don't think by... The MLA yesterday, when he spoke and he talked about the problems with the fisheries and that sort of thing, I think we need to look at what the resources here are and what the best way to build this economy is.

I think that he was right on with bringing the fisheries back. He talked about examples in Norway and Finland and other places where they've done this.

I feel that those people are so desperate that they will do anything, and I don't think they're able to make good judgment. When you're desperate, you can't make good decisions.

I would do everything within my capability to create more jobs in this economy to help take care of those people.

THE CHAIRPERSON: Gunter.

Dr. GUNTER MUECKE: Just for a point of information, what was proposed to be the quarry at Victoria Beach, what is your understanding of the status of that?

Ms. TINA LITTLE: My understanding is they are in wait and see mode. They are waiting to see what happens with this particular quarry situation.

They're letting Bilcon pay the bill for all this and then, if it goes through, they'll re-apply.

THE CHAIRPERSON: Mr. Buxton?

Mr. PAUL BUXTON: Thank you, Mr. Chair. I have no questions.

THE CHAIRPERSON: Questions from the floor, anyone? No?

Thank you, Ms. Little.

Ms. TINA LITTLE: Thank you.

THE CHAIRPERSON: Okay. Our next presentation is from Ashraf Mahtab.

--- Pause

PRESENTATION BY MR. ASHRAF MAHTAB

Mr. ASHRAF MAHTAB: Members of the Panel and ladies and gentlemen attending the session, I would like to thank the Panel for the opportunity to make comments on the proposed project.

THE CHAIRPERSON: Identify yourself,

please.

Mr. ASHRAF MAHTAB: Oh, my name is Ashraf Mahtab, and I am a resident of Sandy Cove. Our home has been in the name of the family since about 50 years ago.

It is about 4.5 kilometres fro the site of the quarry.

In preparing my presentation, I have relied on my professional background, which includes graduate degrees in Mining Engineering and Geological Engineering. I also have worked and researched in projects for surface and underground excavations, which includes quarries and pits.

My comments are directed to the following three issues that I'm going to present in sequence. The first one is blasting of the basalt for the quarrying operation. The second is impact of the quarry on the groundwater table in the area.

And the last one is conflict of interest issue raised in Petition 178 to the Commissioner of Environment and Sustainable Development of Canada.

The blasting protocol of EIS is based on the use of ANFO, which is Ammonium Nitrate Fuel Oil mixture, as the explosive. However, the DFO guidelines for the use of explosives in or near Canadian fisheries waters, 1998, state the following under Item 4 on page 5:

"No use of Ammonium Nitrate Fuel Oil mixtures occurs in or near water due to the production of toxic by-products, for instance, ammonia."

Then there's a note:

"The deposit of deleterious substances into waters frequented by fish is prohibited under Section 36(3) of the **Fisheries Act** unless otherwise permitted by the Regulations. There is no Regulation pursuant to the **Fisheries Act** that permits the deposit of by-products resulting from the use of Ammonium Nitrate Fuel Oil mixtures."

Obviously, the proposed project as described in the EIS is in conflict with the DFO guidelines. It should, therefore, be rejected.

This figure shows the blasting protocol which was originally proposed by the Proponent. Actually, it was proposed by Novastone Company, and it has been incorporated into the EIS in Appendix 9.

This illustrates the blasting design of benches in a quarry, but it doesn't really show or illustrate the bench itself. I had to go into literature and find out an appropriate illustration for the design of a

bench.

This is from Dr. William Austerlitz book of 1999. This figure illustrates what the relationship is between the boreholes, the bench height, the depth of the boreholes, the spacing between the boreholes and the other requirements, but this is missing.

There is this figure from the EIS which shows the development of the quarry in seven stages. It shows 217 and shows the geological divide in the middle, and there is this contact between the two flows.

So if we take that into consideration with respect of the stage-wise expansion or the excavation of the quarry, the conceptual design of the blasting needs to consider the multiple bench configuration and also the depth to which these operations will go. Depth and the distance beyond the shoreline.

If we look at the next figure, that gives us an idea of what the height of the bench is going to be after a certain distance towards the North Mountain.

In this figure, you can see there is a bench which is 20 metres high, so we are talking about an average 20 metres, plus or minus, bench height.

I developed a table in which I used the protocol as the baseline and I used the 20-metre bench height which comes later on as a more realistic or required

scheme, so the second column is the required scheme and the first column is the protocol.

The baseline of the borehole diameter, 102 millimetres, borehole grid, nine feet by nine feet, and average borehole length and the bench height. The bench height is slightly different from the length of the borehole because you have to drill a little bit deeper than the bench height.

So now we are talking about 20 metres, and using this baseline, I want to determine how much tonnage will be produced per borehole and how many boreholes we need for the production, for the blast, and then how much ANFO we need.

This is the ANFO per borehole, that's 99 pounds, 44 kilograms, which was increased to 114 for the 20-metre bench.

So the second part of this table gives you a little bit more information on what can be expected from blasting using the 20-metre bench as a basis.

So the most important thing is the number of blasts... The first most important is the number of blasts per year.

These, I have used the figure 22 because in the EIS, the mention is made of the 44 weeks for the operation, and then one blast every two weeks, so that gives

us 22 blasts per year.

I have used this other figure, which is important. Instead of 2 million tonnes per year of the rock to be blasted, I have included 15 percent of the waste.

The waste which occurs due to the fillings in the fractures, and then in the operation of crushing, screening and washing.

15 percent in my opinion is not an exaggeration. It could be more, but certainly I don't think it could be less than 15 percent.

So if I use that as a basis, then the rock removed per blast, which is per shot, is 104,500 tonnes.

This will be the same for both scenarios, the protocol and the required scheme.

The ANFO per shot, using that baseline, is 52,770 pounds or 26.3 tonnes.

This is the same.

The number of blasts per shot is another very important consideration. All you have to do is to take this number, and take the annual production, and then you get the number of blasts that you need.

So 533 blasts of 56 holes each, with a depth of less than 10 metres, or 210 blasts for the 20-metre bench, so we are still talking about the same baseline

production, except for this increased value because of the waste.

And the ANFO is given per shot here, it's given here in tonnes and in kilograms. And the ANFO over the life of the quarry, 49 years is given here. That's 2.6 million kilograms.

Now a statement I would like to make is that requirements of a realistic blasting scheme regarding the 20-metre high benches to be used in a major part of the Project are not met by the blasting plan provided in the EIS.

As indicated in this table 1(b), 210 shot holes would be required to meet the bi-weekly production requirements.

I'm just repeating this because this is an important point.

So I say there are two questions that need to be answered.

First, is the conceptually derived 210-hole biweekly blast, using 114 kilograms of explosive per hole, a possible solution?

Number two, can you do an environmental assessment without examining a technically credible blasting design for various stages of the quarry development?

These questions have occurred now but

surely they should have risen before the Proponent submitted the EIS.

Now the other concern is that the weight of ANFO used per year will be 579 tonnes as we have shown here, or 52,650 kilograms.

The weight of ANFO used over 49 years will be this, 2.6 million tonnes.

Even a small percentage of this charge of ANFO will be a source of irreversible and unmitigable pollution to the local aquifer and the Bay of Fundy.

I'll show you an example of not directly pollution due to residue discharge, but this is a picture of part of the abandoned quarry site on Whites Cove, and you can see the siltation is flowing down, and then it has gone to the Bay of Fundy.

However, the Proponent has provided a design or a sketch or conceptual illustration of a later state of the Project, where there is a siltation pond.

This pond is about four metres deep, and its top is at 10 metres above the watertable or the ocean level.

The explosive residue will enter the surface water and groundwater or the aquifer, and this is a concern, through gravity flow of the runoff and the water used to wash the aggregate.

Now, if we try to divert it to the siltation pond, it is important to recognize that any residue polluted water collected in the sedimentation pond cannot be restrained from entering the aquifer by gravity flow through the porous, sand and gravel, bottom of the pond.

There is no way to avoid the entry of part of the explosive residue to the groundwater and aquifer, and eventually to the Bay of Fundy, and probably to the whales of Little River.

The potential contamination of the seawater near Whites Cove will spread through the Gulf of Maine, over and beyond the 50-year span of the Project.

Pollution of the aquifer will also pose a significant threat to the water resource of the local community.

On this topic of blasting, my concluding remarks are:

"1. The use of ANFO will be in violation of the DFO Guidelines.

2. The blasting design is not adequate for allowing an environmental assessment of the proposed project.

3. There will be a significant amount of blast residue which cannot be restrained

from entering the groundwater and seawater.

4. The cumulative effects of ammonia and nitrate pollution cannot be mitigated."

Now, I will move on to the next topic. How is my time? How many minutes? Thank you.

The next topic is groundwater, impact on groundwater.

I will first put on a figure which is part of the EIS, it was developed by Jacques Whitford, and you can see the reference of that figure.

This just shows the site, the site plan, the topography and some drill holes which were drilled at that time, in 2002.

Now I will show you a view, a picture of the site, which shows the basalt. This is the stripped tail on the site, and you can see that the basalt has visible fractures.

They are not regular homogeneous or constant spacing et cetera, but there are fractures, both in the vertical direction and in the horizontal direction and in various directions.

So the statement cannot be made that this massive basalt has no fractures which will take in

water and produce a conductivity.

We'll talk about it a bit later.

Now there are some statements I will quote from the EIS, which will indicate that lack of confidence in the type and degree of information that is available.

The first statement is:

"The surface elevation and lateral continuity of individual basalt flows can vary considerably from one location to another, and care must be exercised in interpreting information between a relatively few information points."

This is from the response by the Proponent of February, 2007. It was prepared by Conestoga Rovers and Associates.

A second piece of information is as follows:

"The orientation, spacing, and sealing of the limited fractures in the basalt appear to be random and hence unpredictable."

That's in the EIS, tab 29.

This figure gives an idea of the fractured nature of the basalt, the figure which is on the

screen now in the proposed quarry.

And the last quote I'm going to make from the EIS is:

"Overall, the results of the aquifer-testing program do not provide any conclusive evidence to support a conclusion as to whether or not the Upper Flow and Middle Flow Units are hydraulically connected."

This is from Conestoga Rovers, in the same response, February, 2007.

Now interestingly, this interpretation of Jacques Whitford was criticized later by the Proponent. However, given the database, then and perhaps even now, you cannot refute the fact that the water does flow in from the surface down either these curves or different curves.

And I will show you another diagram later.

And then, if the quarry is constructed somewhere here, naturally the water is going to be drawn down, and the watertable, the return watertable is going to be lowered.

Lowering of the watertable will of course depend on the time frame and some other ones, recharge, et cetera.

The statements that were made in the Jacques Whitford report, and I'll just read two or three of them:

"As the quarry advances Northeast and East..."

Northeast means it's going towards the Mountain, northern and east.

"...into the side of North Mountain, the watertable in the immediate vicinity of the quarry wall will begin to decline as the water drains into the quarry through numerous fractures in the bedrock. Conceptually, a 25 to 30-metre cut (which is probably what we are looking at here, maybe looking at a bigger cut) into the cliff face could theoretically lower the water levels by 10 metres, depending on the current static levels and bedrock hydraulic properties..."

And then:

"The process of watertable lowering would be slow and would occur over several years as the quarry face advances into the side of the mountain."

So this is what this picture is depicting, and there is this so called Upper Flow and Middle Flow contact, which is found all over the place in the EIS, but nothing is assured that this is in such a smooth table-like manner that you find this contact.

Interestingly, in the presentation of Dr. Nastev of Natural Resources Canada, we found the same kind of a statement.

Here is the original surface, here is the quarry which has been developed, and this is the water flow.

Dr. Nastev was talking about this continuant flow pattern because the water has defined the vertical fracture, then the horizontal fracture, in order for it to flow.

However, there are a sufficient number of fractures so that the flow is allowed to occur, and this is undoubtedly, over a period of time, depending on the conductivity, this event will occur.

The event occurs and then takes the water and drains. So not only will this water be drained, but if there is connection behind and above, that water will also be drained down.

Now we can look at a sketch of the quarry wall at the end of the 49 years. This is a bit of a

larger scale than in other diagrams, however we can see that this is the wall we are talking about at the end, and this is the area.

And now, if we superimpose the watertable and the quarry line, we can make a picture like this.

Again, I apologize for the repetition of the word "conceptual", but it has to be conceptual because almost all the data which is input into this figure is conceptual.

So I do not want to excuse myself too much, however this is just a point that I would like to make.

This is the quarry. Again, we have just taken the data from the figure I showed you before.

This is the surface, original. That is the watertable, original watertable. And now, we are looking at the quarry and the flow of the water. Just imagine the flow of the water into the quarry and out into the Bay of Fundy.

Interestingly, this... If you look at the surface, all of the surface, and then look at part of this, from one to two, one to two surface is about 40 percent of the surface from 0.1 to three.

So we are talking about a loss of

recharge from about 40 percent of the hill after this quarry has been established, and I can read you the comments that I have made:

"The schematic quarry (which was put in here)..."

And then:

"As illustrated by the outflow of water from the hill behind the quarry wall, along the UFU-MFU..."

Somebody asked me to always spell it out. This is that unit, which is supposed to be really conductive.

"...along the UFU-MFU contact, into the Bay of Fundy..."

So the water flow, along this contact, into the Bay of Fundy.

"...about 40 percent of the recharge area for the common aquifer will be removed by the quarrying operation of 49 years.

With the reduced recharge, the level of the watertable will continue to lower because of the draw down from wells from both sides of the geologic divide."

Which is really another conceptual

divide.

The watertable is supposed to follow the topography of the ground, but because of inhomogeneity, et cetera, it may not exactly follow.

So this is what was assumed before, and this is what I am suggesting, that with the lowering of the watertable, what is going to happen is that the top of the watertable is going to ship in the direction of St. Mary's Bay.

The cumulative impact of the lack of recharge, the sustained pumping of water by the community and lowering of the watertable during and beyond the life of the proposed quarry are some of the critical issues that need to be examined in detail.

The recharge from the quarry site constitutes only a part of the source for storage of water in the basalt aquifer.

The aquifer is below the watertable. This is the storage of water. That's where the wells here are going to get their water from.

However, as pointed out by Fetter, who is a hydrogeologist who has written a book in 1994, and I quote:

"As the well draws water only from storage in the aquifer, draw down

proceeds as a function of the logarithm or time."

So it is slow, but it continues and it's only going to lower the watertable.

Research on the cumulative impact of draw down needs to be done by using numerical models and software for ground flow analysis.

An example of widely accepted software for this purpose is MODFLOW, which can be used.

For a reasonable assessment of the environmental impact of the 50-year quarrying operation, it is essential to define the hydrogeological parameters with an assigned and acceptable "degree of confidence".

This would require the use of a database that would be significantly larger than the one hitherto used by the Proponent.

I will quickly shift to my last issue.

The third issue concerning some bias report in the EIS was raised in petition 178 to the Commissioner of the Environment and Sustainable Development of Canada.

Appendix one of the EIS provides the names and curriculum vitae of the 20 or so "reference document contributors" or experts whose reports (about 35 in total) were used as background for developing the EIS.

Three of the experts, whose reports I consider to be biassed, were employed by AMEC, the consultant to the Proponent, for preparing their reports for input to the EIS.

One of the experts was on leave of absence from Health Canada. We all know about that situation.

The employment of this person with AMEC and the preparation of a report for the EIS was in violation of the Values and Ethics Code for the Public Service.

I have that quote if somebody is interested in having a look at it.

The Code specifies that:

"Public servants also have the following specific duties:

(c) They should not step out of their official roles to assist private entities or persons in their dealings with the government where this would result in preferential treatment to the entities or persons.

(d) They should not knowingly take advantage of, or benefit from, information that is obtained in the course of their official duties and that

is not generally available to the public."

The other two experts produced seven reports (six by one and one by the other) on various subjects for AMEC prior to the 12-month period after their retirement from Natural Resources Canada.

The conflict of interest in chapter three of this document defines that:

"Without unduly restricting their ability to seek other employment, former public servants should undertake to minimize the possibility of real, apparent or potential conflicts of interest between their new employment and their most recent responsibilities within the federal public service. Before leaving employment, public servants should disclose their intention of future employment and discuss potential conflicts with their Deputy Head."

Then there are provisions:

"Former public servants shall not, within a period of one year after leaving office:

(b) Make representations for, or on behalf of, persons to any department or organizations with which they personally, or through their subordinates, had significant official dealings..."

Now my comment is that I believe these reports to be biassed or tainted.

These reports should not be allowed to constitute a part of the EIS for the proposed Project.

I thank you for your patience, and if you would have some questions, I would be ready to answer them.

PRESENTATION BY Mr. ASHRAF MAHTAB - QUESTIONS FROM THE PANEL

THE CHAIRPERSON: Mr. Mahtab, I was interested in seeing some of the numbers you produced with regard to blasting.

I presume you were here this morning. We were talking about blasting this morning, and we've been talking about blasting on several occasions, but what I noticed was the disparity between the numbers that we have been talking about...

For example, am I correct in looking at your presentation that we have been assuming that 80,000 tonnes would be blasted every 2 weeks?

But what you're saying is that there's wastage in that, and that that wastage means that in order to successfully obtain 80,000 tonnes, that you have to blast in excess of 100,000 tonnes?

Is that correct? Did I understand that correct?

Mr. ASHRAF MAHTAB: That's correct Mr. Chair, and the number I have here is 104,500.

THE CHAIRPERSON: Yes.

Mr. ASHRAF MAHTAB: And if you take... If you divide it by 1.15, I think that's what I have, 15 percent, then you would still get more than the 80,000.

THE CHAIRPERSON: Yes. Also another number that we were discussing this morning was the number of shots or holes...

Well, the number of holes per shot that would be required in order to generate that amount, that volume of rock, and the Proponent has suggested 43 holes I think, and you're suggesting 210 holes.

Mr. ASHRAF MAHTAB: Okay. My calculation is based on the baseline of four-inch diameter and 102 millimetres, and nine by nine foot grid pattern.

THE CHAIRPERSON: Yes.

Mr. ASHRAF MAHTAB: If you increase the diameter of the hole, you change the grid pattern and you

can have a smaller number of shots; however there are several implications in doing this, one your charge is very large, and second your velocity may be very high and you may not be able to comply with the requirements, with the guidelines.

I think that will be a difficult... To me, it seems like a very or almost impossible task.

THE CHAIRPERSON: Okay. The other thing I noticed is that in the undertaking we received this morning, the suggestion was made that we would need 17.9 tonnes of ANFO every two weeks.

Your figures are based, I guess in part because of the larger volume of rock, the extra 15 percent and maybe other reasons as well, but the number you are presenting us with is 26.3 tonnes every two weeks.

Mr. ASHRAF MAHTAB: Mr. Chair, this amount or this weight is independent of how many... No, sorry.

ANFO per shot is going to produce 104,500 tonnes. No matter what design you use, you still have to use the same amount of ANFO, more or less the same amount of ANFO.

Therefore, the use of ANFO per shot to produce 104,500 tonnes is constant as you see in this table between the two columns.

Between the protocol and the required scheme, the amount is exactly the same.

THE CHAIRPERSON: Except that if I multiply the number I was given this morning of 17.9 by 15 percent, it doesn't come up to 26.3, which leads me to the last question

How much ANFO do you require in order to produce a tonne of rock?

Mr. ASHRAF MAHTAB: Well, I don't have that in my table here. I wonder what happened. Okay.

In my table here, weight of rock blasted per hole is 196 tonnes. This is from the protocol, which uses a less than 10-metre hole and is four inch diameter. And it uses 45 kilograms.

So it's 45 kilograms per 196 tonnes, so that gives you the figure which I think you were mentioning a figure of .23 kilograms per pound.

THE CHAIRPERSON: Well, the number we were given this morning was 0.23, but when the blaster was here last week, he used Imperial units and he said one pound per tonne, which is 454 grams per tonne.

And the number that we looked at in the EIS, the EIS says 400. It says .4 kilos, 400 grams. And then the number we were given this morning was 0.23, so now we have a range from 0.23 on up through 0.454.

And I'm trying to figure out what yours is, then.

Mr. ASHRAF MAHTAB: Well, it's 196 tonnes is for 44 kilograms, so 44 kilograms is about 100 pounds, so it's 100 pounds for 196 tonnes, so it's one pound for almost two tonnes. This is what the blaster was saying, I think.

THE CHAIRPERSON: No. He said one pound per tonne.

Dr. JILL GRANT: This morning is says one pound per two tonnes.

THE CHAIRPERSON: Yeah. Okay.

So all I'm trying to do...

Mr. ASHRAF MAHTAB: I can just do it, like, in my mind ---

THE CHAIRPERSON: Sure.

Mr. ASHRAF MAHTAB: --- because it's 200 tonnes produced by 45 kilograms, which is 100 pounds, so each pound of ANFO produces two tonnes of rock.

THE CHAIRPERSON: That's consistent with the numbers we received this morning.

Mr. ASHRAF MAHTAB: Not all the numbers, but maybe some numbers.

THE CHAIRPERSON: Yes, some. But it says that the blaster gave us numbers that were inflated by half, or by 100 percent, actually.

He said one pound per tonne. You're saying two pounds per tonne, and the number we got this morning said two pounds per tonne, or two tonnes.

Mr. ASHRAF MAHTAB: Two tonnes per pound.

THE CHAIRPERSON: Yes, yes.

Mr. ASHRAF MAHTAB: 45 kilos will be 100 pounds, and then 200 tonnes.

THE CHAIRPERSON: Right.

Mr. ASHRAF MAHTAB: I just want to remind us and the Panel, please, I am using the figures which were quoted in the EIS. I'm not saying that these figures... I am not giving any degree of confidence.

I'm simply saying I have used this as a database. I do not know if these figures are relevant or they are correct.

THE CHAIRPERSON: Well, that was to be my next question, was to ask you about your conviction about these numbers.

Mr. ASHRAF MAHTAB: I cannot answer this because even the Proponent has had to do some research, and I'm not a blaster. I have a background in mining.

THE CHAIRPERSON: Okay.

Mr. ASHRAF MAHTAB: I can do this kind of table. I can make estimates, and I can draw conclusions. Most of them are based on my experience, but...

THE CHAIRPERSON: The single biggest discrepancy between the numbers you're using and the numbers that we had this morning is the number of shot holes.

Mr. ASHRAF MAHTAB: Yes.

THE CHAIRPERSON: The number of holes. 43 versus 210 is a five time difference.

Mr. ASHRAF MAHTAB: Yes. And this is what concerns me because if you reduce the number of shots, you are going to have to increase size of the borehole. You may go to six, seven inches diameter, and that's huge.

And the charge for that borehole for 20 metres is an enormous amount.

No matter what I heard somebody saying that they would put a bigger delay between blasting two holes, I think these are going to be extremely difficult things to overcome.

THE CHAIRPERSON: The diameter of the hole you're talking about is what?

Mr. ASHRAF MAHTAB: It might go to six, seven inches.

THE CHAIRPERSON: No, no. The hole that you were talking about for the 210 shots was?

Mr. ASHRAF MAHTAB: Oh, it's the same diameter, four inches, 102 millimetres.

THE CHAIRPERSON: 102 millimetres.

Mr. ASHRAF MAHTAB: Yeah. It's exactly the same as...

THE CHAIRPERSON: I can't remember what the number was this morning.

Mr. ASHRAF MAHTAB: No, but the pattern is the same. I used the same pattern, same diameter. Just the depth or the length of the borehole was changed because I wanted to achieve the 20 metres.

THE CHAIRPERSON: How deep was the borehole?

Mr. ASHRAF MAHTAB: The borehole would be deeper than 20 metres because you have to have a sub-drill, about a metre more, so the borehole would be about 21 metres.

THE CHAIRPERSON: Yeah. We were talking about a 20-metre borehole this morning as well.

Mr. ASHRAF MAHTAB: Okay. So it would be...

THE CHAIRPERSON: Okay. Thank you. Jill?

Dr. JILL GRANT: I just wanted to ask you, Mr. Mahtab, with the 210 shot holes, that's a very large area being blasted.

We noted that in Glensanda, the project in Scotland, they were producing, at one time, five million

tonnes a year, but blasting every day versus blasting once every two weeks.

I don't know how much experience you have with this, but does it seem that 210 boreholes at once would be too much expect? Would there likely need to be adjustments to the plan, or what?

Mr. ASHRAF MAHTAB: No. This was my conclusion, that it's an improbable situation to have 210 boreholes per shot per blast.

So either you're going to increase the amount of charge and the size of the hole, or you're going to have to do it more frequently, as you were suggesting, Dr. Grant.

In this other quarry, they had five million tonnes per year and they had to blast every day. Yes. The blast would have to be more frequent.

Dr. GUNTER MUECKE: Mr. Mahtab, I come back to what Dr. Fournier needed some clarification about, and that is you suggested that there be 15 percent of waste involved.

We had a recent undertaking, you may have it by now, too, from the Proponent who puts that at four percent.

And the waste involves two components, in your view, one the fines generated during the crushing

process, but then you added something which we haven't heard about before, which is the fracture in-fillings.

And I'm a bit curious here because I haven't heard from the Proponent that they are planning to separate the fracture in-fillings from the rock and consider that waste, so I wonder how you conceptualize this.

Mr. ASHRAF MAHTAB: In my view, if you are going to sell the aggregate, you must sell the aggregate as basalt.

The statements have been made this is one of the best types of basalt in the area, so if you're going to sell the aggregate to me, I don't want to have zeolite as part of the aggregate. I want just basalt.

So you will have to separate the fillings of the joints, whatever it is, zeolite or other things, and produce the aggregate which is just basalt. And if you do that, you will have a lot of waste.

And when you are grinding and crushing, some of this waste is going to separate naturally, I think, because the intensive strength of the basalt is much higher than the strength of the fracture fillings. And they should separate.

If they don't separate, you may have to find another means of doing it, but I suspect they will separate.

Dr. GUNTER MUECKE: Yes. You're a mining engineer.

Mr. ASHRAF MAHTAB: Yes.

Dr. GUNTER MUECKE: And so we're talking the same language here.

Whenever we talk about separations, mineral separations in an operation like this, particularly you're not separating a sulfite ore, let's say, from its matrix here, separating fracture fillings from a basalt, what do you think is involved?

Do you do it by gravity, by floatation? You're familiar with, you know, the various methods that are used for separation of ores from commercial minerals. In your view, how is this possible in the case of basalt with fracture in-fillings?

Mr. ASHRAF MAHTAB: Well, if the separation doesn't occur during the process of crushing and grinding, then you may have to use some other means more than mechanical. You may have to use chemical means.

And I don't know if it will be economically feasible, so the only feasible alternative I can see is you throw out something which has the impurities stuck to it. The impurity in this case is the fracture filling.

So if you see an impure strip or piece,

you just discard it as a waste. In this case, if this happens, then the proportion of the waste will go beyond 15 percent.

Dr. GUNTER MUECKE: Are you familiar with the MODFLOW model that you suggest?

Mr. ASHRAF MAHTAB: I'm sorry?

Dr. GUNTER MUECKE: You suggested that the groundwater ---

Mr. ASHRAF MAHTAB: Yes.

Dr. GUNTER MUECKE: --- losses could be calculated using a model, and you mentioned MODFLOW.

Mr. ASHRAF MAHTAB: MODFLOW.

Dr. GUNTER MUECKE: Are you familiar with it?

Mr. ASHRAF MAHTAB: Yes. MODFLOW, you can download it from the internet free, and I have used it with colleagues to do the water flow analysis.

And this MODFLOW model was used by one of the consultants of the Proponent for another project. There was a quartz quarry application near Yarmouth, and they had used this model. And they showed what the condition was before starting mining, five years, 10 years and so on.

And it can allow you to take into account the in-home ingenuity and isotropy of the

conductivity, so it's a very straightforward model to use, and it's quite useful.

But the important thing here again is that you have to have data in which you have confidence. Otherwise, as my professor in Berkley, California, said to me, he says, "This computer modelling, garbage in, garbage out."

So you cannot trust the results unless you have made sufficient number of evaluations to input the data. But the model is there, and it should be used.

Dr. GUNTER MUECKE: Is MODFLOW for porous media, or fractured media?

Mr. ASHRAF MAHTAB: I think it's equally valid because you are putting the permeability value in the X, Y and Z direction. You can determine what permeability it was, but you can also divide it into cells, and each cell can have a different permeability.

Dr. GUNTER MUECKE: Do you personally have experience with large blasts? We're now talking in the order of 20 tonnes and it may, depending on the outcome of how much is needed per tonne, go up into the 40s.

Have you got any personal experience with blasts of that magnitude?

Mr. ASHRAF MAHTAB: No, I don't have. As I mentioned earlier, I have not been involved in blasting,

but as a mining engineer I have had to look at the design.

And I was going to say that if I were hired by the owner of this project, which is Clayton Concrete, and they asked me, "What do you think about this?" I would say, "You cannot go ahead. You have to produce a good design. It is not credible, and you are going to lose money down the road."

And that's a risk. I think it's a risk management rather than adaptive management. You must manage the risk beforehand.

If you want to reduce the risk, you have to produce a design which is credible on which you can base all your economic functions.

Dr. GUNTER MUECKE: One last point. Correct me if I'm wrong there.

The design you used, the nine foot by nine foot and the number of holes, was that not the test blast that they suggested as opposed to an operational blast?

Mr. ASHRAF MAHTAB: The information I have, the impression I have is this is the protocol. Whatever that means is beyond me. I raised that question before.

If there is a protocol and it has been mentioned in all the documents, it has been provided to the

various departments, including the DFO, which has spent hundreds of hours in analysing the situation and the damage to the sea mammals, et cetera, then it is the design of the regular blast.

The other comment which the Proponent has made is that "This is an early stage. We do not have to make an exact design. We will go down the road and then we will see what we can do."

And this is what my fear is. The risk is that down the road, not knowing what has to do in a specific situation, is a very risky situation for all of us.

Dr. GUNTER MUECKE: Thank you, Mr. Mahtab.

Mr. ASHRAF MAHTAB: You're welcome, sir.

THE CHAIRPERSON: Mr. Buxton?

PRESENTATION BY Mr. ASHRAF MAHTAB - QUESTIONS FROM THE PROPONENT

Mr. PAUL BUXTON: Thank you, Mr. Chair. You could sit down, if you like, Mr. Mahtab.

Mr. ASHRAF MAHTAB: Well, now that I'm talking to you, I'll sit down.

Mr. PAUL BUXTON: I have some questions and some comments, and I'm at a disadvantage because I don't have any of the information that Mr. Mahtab has presented, so I don't have the charts and tables in front of me that he

has presented.

But I would like to just go over again, and I thought that perhaps we'd put the issue to bed, but perhaps not.

The first mapping of shots, the first blast, which Mr. Mahtab showed, is clearly a part of the process that we were going through with Department of Fisheries and Oceans.

The limits that we have to meet are set out in the Guidelines for Blasting In or Near Canadian Fisheries Waters, and they are 100 kPa for fish over pressure.

And essentially, our initial position was, well, let's establish fairly quickly a series of test blasts so we can see just what is happening here.

That didn't happen because, actually, the reason that I was given is that we were put into a Panel process and, hence, we couldn't do that.

So we said, "Okay, well, how do we proceed from here. How do we sort of get to first base?"

And they said, "All right. You know, give us a model. Give us a protocol that we're going to use for this series of blasts and where you're going to do it, what sort of charge you're going to use and, furthermore, we want an analysis of that blasting model", which was done by

Hannay and Thompson.

The criticism of the blasting model that we used by DFO was that it was too conservative. That was their sole criticism.

The model demonstrated that we would produce 25 kPa at the water column, and this was felt to be a reasonable position to start with, that it was 75 percent less than the allowable and it was agreed that here we have the basis for the start of some testing.

The area that was selected is not intended, was never intended to represent a standard benching of the quarry. In fact, as I think I pointed out earlier today, it represents one of the toes that sticks out closest to the water, and that's why it has this peculiar configuration.

It simply has nothing to do with subsequent blasts.

Our position has always been, and that's why when you sort of say, well, you know, what's the blast going to be here and what's the blast going to be there and exactly how many pounds is that we need to go through this blasting, this testing exercise and monitor the results, and then we can say, "Well, no, it wasn't 25 kPa. The model was wrong. It was 15 kPa" or 50 kPa.

We then modify until we know precisely

what the blast... Because you're inserting coefficients for the rock. You're inserting coefficients for all sorts of things in this blast design.

And the blast design and the coefficients and the ranges of them are all set out in the back of the Guidelines for Blasting In or Near Canadian Fisheries Waters.

But you could say to me, "Well, the blasting for this type of basalt is this" and somebody else could say, "Well, it's this." You insert them and you come out with a model.

The only way to test that is you do it, and you do it under very specific, controlled conditions with the monitoring in the water. And the EIS clearly sets out where the monitoring will take place in the water, out of the water, et cetera.

We look at that. We may need to modify it. We may need to set off three or four of those little blasts.

We then go back in and say, "Right. Now we know what the real coefficients are for this rock, how the blast is being transmitted through the rock and into the water, how it's being transmitted from the air and into the water."

Now we know those things, so now we can

sit down and we can say this is what we need to do to gain the rock.

I mean, I guess we sort of continuously are being pushed to a level of detail which is all predicated on a protocol, a blasting protocol which needs to have empirical data. If we don't have that, you're nowhere.

And we recognized this in September 2002, and we made a request to start this gathering of empirical data in September 2002, and here I am explaining why we don't have this data in June '07. And it's because we were told, "Well, now you're in a Panel process." Now we cannot do any test blasts.

So it's not that we haven't tried to develop this data. We've been prevented from developing this data.

We could have come to you today with the full details of all the monitoring stations, this is what happens when we used 45 kg, this is what happens at 110 metres, this is at 150 metres with 55. It would have all been there.

We can't do it because we've been prevented from doing it, so I'll leave that subject, if I may.

THE CHAIRPERSON: Mr. Buxton, let me just add a comment to that, is that I think we're fully

sympathetic with the need to ballpark it, to some extent, before going into the final detailed analysis, but one of the concerns is that some of the numbers vary by considerable amounts.

For example, the first number that I'm aware of for blasting on a biweekly basis was four tonnes. That number, what you've just given us this morning, is now almost 18 tonnes. That's a factor of four plus, four and a half.

So, in other words, there's ballparking and there's ballparking, and a four and a half-fold difference from one estimate to the next is, you'll have to admit... I mean, as an engineer, you have to realize that's a big number, and a great deal of variability, more so than might... I mean, do you think an average person would find that an acceptable range?

Mr. PAUL BUXTON: No, I don't think they would. I'm not even quite sure, actually, where that first number came from.

We have had a blasting expert advising us for probably the last year, something like that. What we were doing before that was basically trying to set up the protocol for the gathering of this empirical data.

My advisers said to me: "Yes, we can get this rock at an economic rate."

All right. I'm not a production miner, and I have to rely on the people who are investing a very large sum of money to tell me that this rock can be gained at an economical rate.

You know, just some of the other things, and perhaps I'm getting a little impatient. It's warm.

But, you know, when you talk waste, it depends what you're trying to produce. We ship fines. In another quarry, that's waste, all right.

You know, we use this because we produce concrete block. If we just wanted concrete aggregate and we were producing three-quarter to a half, yes, we might well be up into the 15 percent waste. But we're not because we can use most of the product off the site.

The question of quality of the rock. I don't believe could imagine that somebody would invest the kind of money that the company has put into this project without determining essentially the quality of the rock.

I mean, we've drilled 10 holes in the basalt. The cores from the first four holes are in my garage. I've looked at them a number of times.

They've been looked at by the Department of Natural Resources. They've been looked at by geologists. They've been looked at by the hydrogeologists. And nowhere in them have they found evidence of horizontal fractures.

Now, I'll grant you this, that if there were a vertical fracture there and we missed it by a foot, you wouldn't see anything at all. It'd be a beautiful, nice long core.

But those cores are tight. They're tight. There's no evidence.

And we drilled six more monitoring holes with a geologist/hydrogeologist there looking at the tailings that came out of that hole. We have found no evidence whatsoever of zeolites.

Zeolites are, generally speaking, in the Middle Flow Unit. I'm not suggesting that somewhere on that site we may not find a little patch of zeolites. That'd be a problem for us.

We'd have to carefully put them on one side. We don't want to get into that.

But, I mean, I would suggest that, you know, when we look at these things as a whole, you know, Mr. Mahtab... Mr. Mahtab, perhaps I could ask you the question.

Have you seen the cores off the site?

Mr. ASHRAF MAHTAB: I didn't ever go to your garage, so I couldn't see the cores.

Mr. PAUL BUXTON: No, but I mean, you made all these, you know, statements about what was there on the site as if you have x-ray eyes. I have the cores.

Now, admittedly, you know, we've said this before. We've got four sets of cores. We've got six drill holes, you know, right the way down.

That doesn't necessarily mean that we have investigated exhaustively the whole site, but certainly the work that has been done on the North Mountain basalt by people like Dr. Kontak, the work that we've done convince us that it's an economic resource. All right?

And just, you know, I'll perhaps sort of finish off because I'm taking far too much time, Mr. Chair, is that I'd just like to ask Mr. Mahtab, you know, a final question, and it's really just sort of a yes or no.

I'm looking at the document that was prepared by David Hanson, Ph.D., P.Eng., who is the fresh water hydrologist, associate professor, Department of Civil and Resource Engineering, Dalhousie University, which was prepared by the partnership.

You must have seen that document.

Mr. ASHRAF MAHTAB: I say yes, but what is your question?

Mr. PAUL BUXTON: I simply asked you whether you had read it.

Mr. ASHRAF MAHTAB: Why should I regret somebody's opinion? I don't regret your opinion.

THE CHAIRPERSON: Mr. Wall?

Mr. JOHN WALL: Yeah. I'd just like to add, when you drill the blast holes and you're drilling, the compressive strength of the basalt is significantly greater than the zeolites, and so when you hit the zeolite, you immediately notice the difference and you see the difference of the cuttings from the blast hole.

And we don't want to be in something that will yield a waste factor. Our processing plant will not be designed to introduce chemicals or have other kinds of methods for handling things, so we would pack the hole and move out of it.

We will stay out of the zeolites. Thank you.

THE CHAIRPERSON: Thank you, Mr. Wall.

PRESENTATION BY Mr. ASHRAF MAHTAB - QUESTIONS FROM THE PUBLIC

Now we're open to questions from the floor. Any questions?

Please, those of you who are interested in asking questions, could you just line up over there? Just one?

Ms. JUDITH CABRITA: Judith Cabrita. I'm way out of my depth here, but I'm just wondering, with all the science and technology that is available, why couldn't you simulate the blast?

THE CHAIRPERSON: You're referring to the test blast now?

Ms. JUDITH CABRITA: Yes.

THE CHAIRPERSON: Yes.

Ms. JUDITH CABRITA: I mean, why could it not be simulated and get the results so that we could all know exactly what they are?

Mr. PAUL BUXTON: Essentially, that is what we have done. I mean, this is what a model is. You put in the coefficients and you push the button and it says: "This is the result."

But again, as we have said so many times throughout these hearings, they are models and the models, they need confirmation.

It's a first shot, and then you refine from there.

THE CHAIRPERSON: Mr. Stanton?

Mr. KEMP STANTON: I don't know which one this should be directed to, but if the test blast had taken place before the hydrogeological information had been collected (I think it was a little deficient), would the blasting on the site change the factors and rocks and maybe the ability to measure water flow as a baseline? If you know what I mean.

THE CHAIRPERSON: H'm. Mr. Buxton, I

guess that is to you.

Mr. PAUL BUXTON: I'm not sure whether I completely understood the question Mr. Chair, but I'll have a crack at it.

The fact is that we did not do a test blast and in fact, as I think I indicated before, if we wanted to do a test blast, all we had to do is just step out of the four-hectare area and let a blast go.

I think we have been very responsible in this, in effect trying to work with the regulatory authorities to develop the right answers here instead of sort of saying: "Well you won't let us blast inside the four-hectare, so just like anybody else, we could just blast outside the four hectares."

But then I think that wouldn't have done us any good, it wouldn't have done the process any good. We have tried to stay inside the process.

THE CHAIRPERSON: Thank you. Sister Barbara?

SISTER BARBARA: Thank you Mr. Chair. I have a question for Mr. Mahtab. In your conceptual drawings, were you taking into account... The last week, we had a Federal Government employee saying that the sea level...

He said the ice was melting and the sea

level was going to rise to 30 centimetres by the year 2050, which I think in imperial measurement is about 90 feet.

So I heard today that the lease of the land is going to be 90 years now, so taking into effect if it goes up another 30 centimetres, that's 180 feet?

THE CHAIRPERSON: Sister Barbara, you said 30 centimetres?

SISTER BARBARA: 30 centimetres.

THE CHAIRPERSON: Yes, that's... 90 feet is not 30 centimetres.

SISTER BARBARA: Oh, okay.

THE CHAIRPERSON: 30 centimetres is this much.

SISTER BARBARA: Oh, so it's not going to go up that far. Okay. So that's not a problem, right? Great, thanks.

THE CHAIRPERSON: Thank you.

Mr. ASHRAF MAHTAB: Just to answer your question, if the water levels go up, the guidelines, the DFO guidelines still have to be followed and they might make some difference in the setback distance.

THE CHAIRPERSON: Please, identify yourself.

Ms. GRETCHEN FITZGERALD: I am Gretchen Fitzgerald, should I spell it?

THE CHAIRPERSON: No, I think that's okay.

Ms. GRETCHEN FITZGERALD: There seems to be considerable debate about the amount of blasting that's going to have to occur, and I'm just wondering if there was any mechanism for incorporating the precautionary approach in your estimates?

There are ways to model using the precautionary approach, and I was wondering if you did use those methods.

Mr. PAUL BUXTON: I would say so, in the sense that you know, we are given a guideline, a threshold, and the guidelines for blasting in or near Canadian fisheries' waters, and the threshold for fatal effects to fish is 100 kPa.

So our model demonstrated what we were going with on this demonstration, test blast, initial blast, call it what you want, and it indicated that we would generate 25.

We also said that we would do this blasting outside of the time frames when endangered mammals may be in the area.

So yes, I think we did incorporate those things.

Ms. GRETCHEN FITZGERALD: I'm referring

to your models about how much blasting will have to occur in the first place.

When you're doing that mathematical model, I know there's ways in fishery science that you can, at the outset, say: "The reproductive value of this fish is so low..."

And you pick the lowest, because you want to be sure that you're not overfishing, and in this case you would pick the highest amount of blasting, because you want to be sure that you are taking all effects into consideration, and I'm just wondering if in the model, this is what happened, if this was implemented?

Mr. PAUL BUXTON: As far as I'm aware, in all the discussions I've had with DFO, the issues with respect to fish, marine mammals, I think were very well understood.

I think the parameters are fairly well understood.

DFO admitted that they had little information with respect to lobsters, and we did make an attempt to research that and I understand that DFO are in fact carrying out their own research on that. I think we heard that this week.

The information that we had is that the levels that we were using we were using were well below the

effects to snow crab.

So based on that, DFO have said: "Well, we think we're confident enough to go ahead, but we want you to monitor."

So you know, I think that that is built-in, that nobody knows so they're asking us to monitor that.

Ms. GRETCHEN FITZGERALD: I guess using the analogy of...

THE CHAIRPERSON: Ms. Fitzgerald, the way it works here is you get a question and a follow-up, and you have had both, so we have to move on and give somebody else a chance.

Mr. Dittrick?

Mr. MARK DITTRICK: Yeah, Mark Dittrick. I have a question for Mr. Wall relating to something he said.

If you drill down and you discover that you're hitting zeolites, and I believe you said that you would then pull out and that you would not pursue that particular area.

If this occurs in enough areas on the quarry site and you leave areas and then go a certain distance from them and then mine that area, you're going to be leaving...

I mean, I would like to know kind of what the profile you would leave would look like, what you would do with that particular area that would have a hole in it?

How do you end up... And then with remediation at the end, with these little areas that you weren't allowed or decided not to drill into because you hit something that potentially could be waste?

Mr. PAUL BUXTON: Mr. Chair, I think we've made it clear that we don't believe there are zeolites on the property.

I mean, it's all hypothetical. We have not encountered zeolites, we don't expect to encounter zeolites. If we do hit zeolites, we will deal with them then.

If we thought that this piece of ground here on the Upper Flow Unit was filled with pockets of zeolites, we wouldn't be sitting here today.

It's just a hypothetical question, I can't answer it, and I'm sure Mr. Wall can't either.

Mr. MARK DITTRICK: Well Mr. Wall, you did make that statement, you did say that if you did hit zeolites, that you have a certain procedure and you would make a certain decision.

So whether it's hypothetical or not, if

it was so hypothetical that it would never occur possibly, you did make that statement, so do you retract that statement? Do you say that something else would happen or would you like to carry on from what Mr. Buxton is saying?

He's saying: "Well, that's never going to happen."

Mr. PAUL BUXTON: Mr. Chair, I think we set out this protocol, an undertaking we just sent across, because the question was raised specifically: "How do we determine where the Middle Flow Unit is?"

If it's 7 metres over 300 metres I think was the specific question, and we've made the point here that you can tell when you hit the Middle Flow Unit. It's very clear.

If we hit the Middle Flow Unit, we back off, we pack the hole, we step two metres off the Middle Flow Unit before we blast. I mean, this is what we do.

Mr. MARK DITTRICK: If I were to say hypothetically, what would you do? In that case, hypothetically, what would it look like at the end of the process?

Mr. JOHN WALL: It would be a smooth floor, smooth floor. We're going to stay out of the Middle Flow Unit. "Smooth floor".

THE CHAIRPERSON: Okay. You got your

answer Mr. Dittrick. Okay. Any others? Go ahead Ms. McCarthy.

Ms. MARY McCARTHY: I'm Mary McCarthy, and my question is directed to Ashraf Mahtab.

It's something that has worried me for a couple of years now, and it concerns blasting and a situation where in the words of Mr. Wall, the shot may "go terribly wrong".

Have you Mr. Mahtab found any consideration given in the EIS to a scenario where the "shot may go terribly wrong"?

And frankly, I would like from Mr. Wall too an explanation of what "terribly bad" means.

Sorry, it's not "terribly wrong", "terribly bad" was the expression used by Mr. Wall. Thank you.

Mr. ASHRAF MAHTAB: Mr. Chair, I have not found anything in the EIS which talked about something happening.

Things can go wrong with the borehole, with the blasting, with the time that the ANFO is stored in the hole, then it gets wet, and the blasting not being efficient, et cetera, et cetera.

But this has not been talked about in the EIS.

Ms. MARY McCARTHY: Thank you Mr. Mahtab. It is contained in the minutes of one of the CLC meetings, and I quoted directly from this.

THE CHAIRPERSON: I think you mentioned the EIS, and he responded to EIS, he didn't respond to the CLC.

Ms. MARY McCARTHY: Sorry, my question was, was this problem taken up in the EIS.

THE CHAIRPERSON: Oh, okay. Sorry.

Ms. MARY McCARTHY: It's okay.

THE CHAIRPERSON: Thank you. That's the end of the questions? One final question perhaps?

Mr. GRAHAM WRIGHT: It's in regards to the testing, and I...

THE CHAIRPERSON: Your name?

Mr. GRAHAM WRIGHT: My name is Graham Wright, and it's with regards to the testing.

I would like to give my question to Mr. Paul Buxton.

When the testing is done on the charges, up until tonight I didn't know about... I heard figures going around, 25, 45, 55, but from what I understand, when the testing starts, then they will determine what the right charge is going to be.

Well the way I look at it... And then

he said: "We'll work at it as we go down the road." Well for something that is so important, and we haven't got really any...

We don't seem to have an exact figure, and all this will be worked out "as we go down the road", and I find that kind of scary.

Perhaps I'm off base here, or perhaps you could explain that?

THE CHAIRPERSON: Do you have a question or...

Mr. GRAHAM WRIGHT: Yes, my question is this testing, when it's done, will that actually show us the amount of charge that is required?

Mr. PAUL BUXTON: That would be the whole purpose of this program Mr. Chair.

THE CHAIRPERSON: So you have your answer.

Mr. GRAHAM WRIGHT: Not really, because I'm sort of... I don't feel good about not knowing what the size of the charge is going to be.

My question... Can I have another question?

THE CHAIRPERSON: It seems to me Mr. Buxton has gone on at some length about this whole thing, and...

Mr. GRAHAM WRIGHT: Okay.

THE CHAIRPERSON: Essentially, what he is telling us is that there's a certain amount of ambiguity about this, and a test blast will define that.

Mr. GRAHAM WRIGHT: And we have to live with that I guess.

THE CHAIRPERSON: Well...

Mr. PAUL BUXTON: Well Mr. Chair, I can almost sort of turn it around. Had we come here and said: "This is precisely the blast that we're going to use throughout the quarry operation absolutely, because we have determined it, our experts have determined it", I'd be here and people would be saying to me: "Why didn't you run a test blast?"

I mean you know, I think this is the responsible way to go, is to do the testing first.

THE CHAIRPERSON: Thank you. Mr. Marcocchio.

Mr. BRUNO MARCOCCHIO: Yeah, one very brief question.

I'm somewhat confused by the response of Mr. Buxton. We saw visual evidence of a highly fractured exposed hill. Mr. Buxton claims that that's not representative and typical of the material, and that it's monolithic.

If it's monolithic, I'm very confused. Given the homogenous nature of the rock and your claim that it is monolithic, why can't you come up with a reasonable estimate on how much dynamite it takes to dislodge an homogenous material that you claim is not fractured?

Mr. PAUL BUXTON: I think the second part of that, I would just be repeating myself Mr. Chair, but just a comment.

And again, please, I am not a geologist, but what we're looking at here is an exposed surface of basalt.

It's been exposed in to the elements, and Mr. Muecke will tell you when it was put down, but 200 million years ago, something like that.

This has been weathered. I'm not sure, again not having the science to tell you how many glaciations have gone over that particular piece of ground.

It's also interesting that the Bay of Fundy in that area, as I am reliably informed, in the fairly recent past, was 145 feet higher than it is now.

So it has been weathered by waves, it's been weathered by I'm not sure how many glaciations. I don't think that it's particularly unusual that the surface of that rock would be weathered, checkered, et cetera.

But you drill into that rock, you would

find a completely different picture.

Mr. BRUNO MARCOCCHIO: I understand Mr. Buxton, but you didn't respond to my question which was if this is a homogenous material, why can't you estimate how much dynamite it takes to blast a homogenous material?

Mr. PAUL BUXTON: I'm sure we could, and we could have told the Chair that it was "X" pounds per tonne or "X" percentage of a pound per tonne, but I would then be asked: "Where is your empirical data? Do you know whether that amount will reach the guidelines for blasting in or near Canadian fisheries' waters? Does it meet all the guidelines with respect the seismic effect, within 7 metres of a house on a adjacent property?"

Dr. GUNTER MUECKE: Mr. Buxton, maybe it's because it's late at night, but you are getting me confused now.

From your answer that you just gave, are you suggesting that the test blast is necessary to determine how much explosives are needed to dislodge a tonne?

Mr. PAUL BUXTON: No, that's precisely not what I'm saying. I said: "I could come in here with a figure, but which would have no background with respect to the effects of that on fish or on anything else."

I mean, those are the primary considerations here. We have to work within the parameters,

the environmental parameters.

That's what sets our whole blasting protocol up on this site.

So we start from that basis. We have to start from there. We have to start and say: "What effects are we creating with the first blast?"

Dr. GUNTER MUECKE: I understand that, and that's not what I'm after. In the previous answer, you seemed to suggest that you need the test blast in order to determine how much rock gets dislodged per weight of explosives.

Mr. PAUL BUXTON: I think if you look at the undertaking, it was clearly asked by the Panel, and it was an undertaking we provided and we said: "This is the amount of ANFO that is required to dislodge this much rock."

If you then come back and ask me the question: "Does that satisfy all the other parameters out there?", I would say: "Dr. Muecke, I can't tell you until we have done the test blasting."

Does that answer your question?

Dr. GUNTER MUECKE: Yes. Now it's just for clarity, okay? And in your response right now, you said what you supplied in the undertaking, I can take that figure and it's not dependant on the test blast.

I wasn't talking about the effects, I was talking about the simple number of how many grams per tonne.

Mr. PAUL BUXTON: That's correct, yes.

THE CHAIRPERSON: Okay. I think we have exhausted the questions, thank you Mr. Mahtab.

Mr. ASHRAF MAHTAB: Thank you Mr. Chair.

THE CHAIRPERSON: We're now moving to the Ecology Action Centre. There will be two individuals, Jennifer Graham and Gretchen Fitzgerald.

PRESENTATION BY ECOLOGY ACTION CENTRE - Ms. GRETCHEN FITZGERALD AND Ms. JENNIFER GRAHAM

Ms. JENNIFER GRAHAM: Good evening, I'm Jennifer Graham.

Ms. GRETCHEN FITZGERALD: I'm Gretchen Fitzgerald.

Ms. JENNIFER GRAHAM: We'd like to thank the Panel...

THE CHAIRPERSON: And you're both with the Ecology Action Centre, correct?

Ms. JENNIFER GRAHAM: Yes.

THE CHAIRPERSON: Okay.

Ms. JENNIFER GRAHAM: And we would like to thank the Panel for the opportunity to make this presentation, and we would also like to thank all the hard-

working staff that have coordinated this monumental undertaking.

The Ecology Action Centre is Nova Scotia's oldest independent environmental organization.

We've been around since 1971 and we represent a membership of 1,700 scattered across the Province.

The focus of our presentation today will be under two parts. Myself, Jennifer Graham, as Coastal Coordinator, will focus on the Whites Point Quarry proposal in the context of a need for a provincial coastal policy and for integrated coastal management.

Ms. GRETCHEN FITZGERALD: And myself, Gretchen Fitzgerald, I'm the incoming Director of the Sierra Club of Canada, Atlantic Chapter, and I'm going to be talking about the risks that the quarry poses in terms of the introduction of non-native invasive species.

Ms. JENNIFER GRAHAM: I want to start with background, just to make the point that generally, invasion or bio-invasion is forever, and I've got three cases of some of the worst bio-invasions in our region, the MSX Oyster parasite, which killed most of the oysters in the Bras d'Or Lakes.

We have tunicates found in mussel lines in PEI, those are actually supposed to be mussels and

they're just infested with filter feeding tunicates that are invasive.

And in the bottom, we have a picture of tunicates, another type of tunicate that is covering more than 225 square kilometres on George's Bank right now.

And as I said, invasion is eradicated in some very rare and expensive cases, when invasions are detected at extremely low levels, usually quite soon after introduction, and here are some cases where the cost of introduction has cost communities and countries a lot of money.

Caulerpa taxofolia is referred to as the killer alga. It actually transforms some parts of the Mediterranean into what is referred to as an underwater golf course.

It's a green alga, and it was discovered in California, and it cost them $4.5 million to eradicate, quite soon after it was introduced.

The black strip mussel was discovered in Australia, in a bay in Australia. It's actually related or similar to the zebra mussel and when they discovered it, the Australia Government had to pour in $2.2 million dollars to eradicate this mussel, and that's not even including the extensive labour costs that were used to get rid of it.

For those invaders that can't be

eradicated, the costs are astronomical. It's estimated $120 billion U.S. per year is spent on battling and combatting and trying to control invasive species.

42 percent of rare and endangered species in the U.S. are threatened by invaders, so the cost in terms of bio-diversity is also astronomical.

Some examples, the green crab, which is a voracious predator of clams and mussels. It cost the New England industry $44 million when it was introduced.

Then there's the zebra mussel which was introduced with the Great Lakes. Most people are familiar with that. It's estimated to have cost $5 billion thus far.

Losses due to the introduction of MSX in Cape Breton. MSX is a parasite which kills off oysters. It basically destroyed an emerging and expanding oyster-growing industry in an economically depressed area of our province. It was $900,000 a year, and it was growing that industry, so that industry is essentially wiped out.

The Government spent $250,000 to restore oysters in the region, which was not successful. Monitoring costs are ongoing and you may be interested to note that new sites have been found last fall, so the parasite is spreading in the lakes.

And there was no compensation for the

oyster growers who basically lost their entire investment, so...

Lobster disease has been mentioned earlier today by the District 34 representative.

Essentially, some 90 percent decline on lobster catches in 1999 were attributed to this disease. A state of emergency funds were called in because of the disaster that this caused to this extremely important industry.

There was extensive research done on that, and in the E.A. statement, it is alluded to the fact that pesticides were a factor in this outbreak, and actually, Pierce did an extensive review of the causes, and what they found was there was a perfect storm in Long Islands that caused this outbreak to reach the levels that it did.

That perfect storm consisted of warm water and increased density of lobsters.

And if you think about climate change and the rising catches of lobster in LFA 34, we may have the conditions for a perfect storm right here on Digby Neck.

So what kind of numbers are we talking about in terms of introductions in ballast?

I'm just going to talk a little bit about a study that was done by Carver and Mallet, which is

the same consultant that did the ballast water section of the E.A. for the Proponent.

And to give you a little bit of background, they went on several types of ships that were travelling to ports in Atlantic Canada, and they looked at the different types of water and in particular they were interested in what types of exchange, how exchange affected the density of organisms in the ballast water.

And by ballast water exchange, I mean exchanging ballast water taken on in a port with water that is either in the coastal zone or ideally in the off shore area, and this is the method that is generally used by most ships, ocean going vessels, to reduce the number of coastal invasive species carried in their ballast.

They found that the highest number of taxa and cell density for phytoplankton was seen in bulk carriers and tankers coming from the U.S. east coast.

The maximum numbers they saw were 68 different types of species of phytoplankton in a 50 litre sample and 218,000 cells of phytoplankton per litre.

So those are the maximums. Now average numbers in a ship that had performed coastal exchange, so ballast water exchange in coastal area, which would be probably essentially what a ship travelling to the quarry would be doing, and they found 3,700 on average cells of

phytoplankton per litre, and I had to estimate using the international ballast water regulators or the international regime for estimating ballast water, because the Proponent hasn't provided an estimate for the volume of ballast being discharged per ship in this case, so the 25 million litres of ballast per trip potentially that would be discharged in the Digby area, so we're talking 95 billion phytoplankton cells per vessel.

Of course, not all of these are going to be invasive species.

The Carver studies found that 25 percent of the phytoplankton species were not indigenous, and between one to three percent were actually toxic, and that means it's the type of phytoplankton that can be toxic to shellfish, and also potentially damaging to human health.

So based on those proportions, every vessel coming to the quarry might have 23 billion non-indigenous phytoplankton cells, and 925 million toxic phytoplankton cells per vessel.

And what I'm trying to show here, and these are of course rough figures, is the type of inoculation pressure the Digby quarry will expose this area to.

The conclusion of the Mallet study in

2002:

"Given the scope of ballast water issues, it may be advisable to focus on developing strategies to minimize the impact of regular ballast water discharges in ecologically sensitive areas."

And I think many of the people presenting to the Panel have reiterated that Digby is such an area.

Mallet was commissioned by the Proponent to do a study in the Hudson River to see what kind of invaders were there, and they found 21 potential invasive species that could be travelling by ship.

And as you see the ecological roulette continues because it's not just ballast water that is a source or a vector for invasive species, there are residual sediments that are in the bottom of water ballast tanks.

There is residual sediments that are the bottom of ballast water tanks. There are also hull-fouling organisms which are thought to be a potential vector for things like those tunacates that were clinging to the mussel lines in my second slide.

I also wanted to point out that the effect could be regional. This is a chart showing the

potential exchange zone for ships travelling from the coastal U.S. up into Atlantic Canada, and the pink gridded line area, which shows the potential exchange zone that ships coming into the quarry would be using.

So they could be discharging these critters right there, in the Gulf of Maine, with potential regional effects.

So the Mallet Research Services, they identified the water in New Jersey as high risk, and in addition, their previous work highlighted the fact that short voyages mean less time to exchange and greater survivability of organisms in ballast water.

Bulk carriers are carrying large volumes of water, and the Digby area is relatively pristine and productive, meaning that it could provide potentially a really nice habitat for invasive species.

This is a slide that I've taken from the Proponent's presentation, and I just wanted to highlight here, in this section of my presentation, the mitigation measures, ballast water management, in accordance with the Canadian regulations, and also monitoring. They're saying they're going to monitor in compliance with Transport Canada.

And of course they conclude, based on being in line with these rules, there'll be no significant

adverse effects.

I want to show how effective ballast water regulation is. This is from a report done by the Commissioner of the Environment and Sustainable Development in Canada, and on the left access we have number of invaders going into the Great Lakes, and we have year on the bottom access. So this is voluntary guidelines introduced here. This is ballast water regulations introduced here.

So every ship after that was supposed to be performing exchange, and there was monitoring. You see no difference in the rate of invasion. So this is highlight that exchange is not enough.

And nor is it always performed. Of course, the safety of the ship must come first, so in cases where there's bad weather or other emergencies discharging or exchanging ballast is not necessary under the Canadian regulations and SOR 2006, 129 is the Canadian regulations for ballast water.

And I wanted to highlight to the Panel that there are other options, aside from exchange. There is the treatment of ballast water on board ship. There is also requiring the Proponent to have a reception facility to prevent the indirection. These two options would be way better than exchange.

This would also be consistent with the

International Convention for the control of ballast water and sediments, which include some other requirements, as well. Sampling for salinity on a regular basis, timely removal of sediments, minimal uptake at high-risk times, and also I wanted to reiterate that the International Convention here does allow us, under Section C:

> "A party, individually or jointly with other parties, may impose on ships additional measures to prevent, reduce, or eliminate the transfer of invasive species."

So it can be done within the international regime, if the Panel so wishes.

But of course all mitigation measures must occur within the context of a strategic and democratic coastal plan, and that's what Jennifer is going to talk about now.

Ms. JENNIFER GRAHAM: Thanks, Gretchen.

There have been a number of presentations over the last few days that have highlighted the importance of coastal policy or the lack thereof in Nova Scotia, and why this particular proposal is such an interesting case study of where lack of coastal policy brings us to.

I wanted to begin by explaining what I

mean by coastal policy, and then a few of the key concepts that I think are relevant for this discussion.

Coastal policy is an over-arching framework that guides decisions around coastal uses. And this sentence is a value statement because it recognizes the ecological value, the economic significance, and also the vulnerability of coastal areas.

Coastal policy or coastal policies can be developed and applied at many levels, and in fact should be. We're not only talking about the need for coastal policy for Nova Scotia, but about better coastal policies and land-use decisions at the municipal level, and indeed at the level of individuals and individuals business.

And the kind of coastal policies we need to guide us in our decision making around proposals such as this one are actually a package; measures and tools that will protect our coasts.

These can include, and should include, specific legislation around coastal uses, but it also should include regulations and guidelines, better land-use planning, community plan zoning, better enforcement of existing regulations.

So an earlier presentation referred to coastal strategy as what we needed, and I quite like that because it implies the strategic nature, the looking ahead

that we need to be thinking of.

One of the tools of coastal policy is integrated coastal management, and this is a way to manage use of coastal areas in a co-ordinated integrated manner, and I think something that's important is it addresses appropriate and sustainable use of coastal areas.

I think one of the themes that's come up very often over the course of these hearings is, is this particular project appropriate for the Digby Neck area? Is it a sustainable project? And using an integrated coastal management approach helps answer these questions.

Another important idea about integrated coastal management is holistic. It looks at the coastal zone as an entity. A lot of the time, and I believe the Proponent mentioned themselves in the opening statement, these valued ecological components that are considered are actually interconnected.

The coastal watersheds drain into our coastal waters. We have human impacts on the coast. We have current and future uses. Integrated coastal management looks at these as a whole.

It's a multi-stakeholder approach. It involves broad-based community inputs. It's a process of avoiding conflicts and I guess, another important point, it's a transparent and information-based process.

It's been mentioned a couple of times throughout these hearings that we're here because we don't have a plan. We're here because we haven't assembled information ahead of time and identified future research gaps to serve as a background for decisions on existing and new uses of the coastal zone.

We've also heard a little bit about land-use planning, and I'm not going to read this quote, but it comes from a guide to land-use planning in the coastal zone prepared by Department of Fisheries and Oceans in 2003, and they stress that coastal land-use planning or land-use planning is an essential element for integrated management of Canada's coastal zone because of the high potential of human impacts or land-based impacts on our coastal lands and waters, and they also stress the importance of looking at economic, political, and environmental elements, and how they affect the coast.

Throughout this hearing, we've heard repeatedly how community members have felt disenfranchised from the process of determining the future of their communities and area. How would communities fit into coastal planning? With a number of ways that are all commonly accepted in parts of the world where there is coastal planning.

In coastal planning, there's room, in

fact, there should be, community-articulated visions for the coast that are nested with an over-arching coastal policies and plans. Community participation is a way of incorporating local knowledge, values, and valuing existing uses.

In the Environmental Impact Statement for this project, the Proponent stresses that this is an area where there is no existing plan, and therefore this proposed quarry is a suitable alternative development. And I want to stress that the absence of a formalized plan that's been legally recognized or passed as a resolution does not mean there's no community plan.

Less formal processes, such as community vision statements, sustainable development statements, and other kinds of process for articulating the future are ways that communities participating in coastal planning.

Communities can also participate in coastal planning to municipal planning strategies and developing land-use bylaws, and there's a well-established history of stakeholder processes, management bodies, that develop plans and regulations in other parts of the world.

The other thing I want to stress about community participation in coastal planning is that it should be an ongoing and continuing role. It's not a one-of consultation, yea or nay, we want this particular project,

but community participation implies an ongoing role in monitoring, evaluating, initiating, new projects, assessing proposed new uses. And these are opportunities that can exist within coastal planning for community participation.

Again, from the same DFO document on coastal land-use planning, it stresses that coastal planning is a collaborative approach to oceans management. It's inclusive and transparent. It involves multiple stakeholders. It recommends that land-use planning should be a fully-integrated approach, that planning on the coast should consider not only the coastal zone, but adjacent lands that form the coastal watershed.

Quite like this one, as well. I think it's quite relevant. Land-use planning should incorporate higher levels of protection in natural and undeveloped areas to maintain these areas in a near-pristine state. Planning should err on the side of caution and use the precautionary principle. Planning should incorporate long-term planning and development goals.

Coastal policies, coastal management, whatever we're calling it, it in fact is a tool or a way of achieving exactly the same things that the Proponent was asked to achieve in developing the Environmental Impact Statement for this project. Coastal management is about allowing eco-system-based management, about applying the

precautionary principle, incorporating adaptive management, public participation, and using traditional ecological knowledge.

A lot of this has been theoretical, so far. Vague ideas about public participation, integrated management, eco-system approach. So I thought I'd look at some of the practical applications. Why should the state regulate coastal land?

I looked up coastal land use in New Jersey, which is the home state of Clayton Concrete, the parent company for Bilcon, and I found this statement, which I'll read most of:

> "New Jersey's coast line is a rich a diverse fabric of natural wonders and economic engines that improve our quality of life and enrich our economy. Businesses, tourists and residents are drawn to New Jersey's coast for its many economic and recreational opportunities. Coastal industries contribute a normalcy to New Jersey's economy. Coastal land provides crucial habitat for a wealth of wildlife, including migrating birds, commercially-valuable fish and shellfish, and sporting and

recreational species.

Yet our coastline is under threat from human activities. Hasty, unco-ordinated development along the New Jersey shore has already had an impact on this fragile eco-system. Regulation is necessary to prevent pollution, destruction of vital wildlife habitat, increases in rainwater run-off, and the destruction of the natural beauty that attracts visitors.

Regulation of coastal activities is also necessary in some cases to prevent loss of life and property from coastal storms, erosion, and flooding."

So who has coastal policies? This is a pretty partial list, and I wanted to show a wide range of national-level coastal management programs and acts, acts such as the **Massachusetts Wetland Act**, which protects particular coastal features. I wanted to draw attention to some of the coastal policies in our neighbouring provinces or elsewhere in Canada, and I'd be happy to talk more about the measures within these, if anyone wanted to ask me questions.

But I thought I'd focus on something

that wasn't specifically coastal but is quite relevant for this discussion, which is the Scottish National Planning and Policy Guidelines, the NPPG-4, Land for Mineral Working.

Now, these guidelines came about as a result of intense national debate over potential conflicts between mineral extraction in Scotland and other values, such as the natural and built heritage of Scotland. This particular paragraph comes from the sub-section on coastal super-quarries, and it says:

> "Given the potential size and scale, super-quarries are likely to have significant impacts on their locations where development does take place. In recognizing the complex economic, environmental, and social issues involved, the Government believes that a cautious approach is required to the further development of coastal super-quarries. The Government strategy is to provide a national framework for any such developments, enforced through normal planning procedures and development controls, in conjunction with broad locational guidelines an upper limit on super-quarry numbers, and

periodic reviews of policy."

A little later in that document, it also talks about some of the significant impacts that is mentioned in that paragraph, and they specify that they're not only negative impacts on Scotland's natural and built heritage, but could potentially influence the designation of particular coastal areas as national heritage sites or as protected areas, which I think is relevant in the context of this discussion.

Could also lead to greater social conflicts, and it also stresses the real risk of cumulative impacts of more than one quarry in a particular location.

So who doesn't have a coastal policy? (Laughs) Nova Scotia. We are, as mentioned in earlier presentation, one of the few jurisdictions in North America without any kind of broad coastal policy, and 46 percent, only 46 percent of our municipalities have any kind of municipal planning strategy, and only a very small number of those have anything to do with specific measures protecting the coast or regulating land use along the coast.

How would a coastal policy help when quarries come to town? Well, one thing is that coastal policies are intended to avoid the kind of conflict, hard feelings, and cynicism that this piecemeal approach has produced here in Digby Neck. They set up a transparent

process to involve stakeholders. They provide stakeholders with a continuing role, so it makes the process more accountable.

It identifies up front the areas that are particular suited for different types of economic development opportunities and those that are environmentally sensitive. We've heard enough over the last little while to recognize how environmentally-sensitive this area is. And that these areas should require conservation and protection, to make sure we have the information up front to ensure better understanding of the process, and environmental impacts of the project.

And this is, coastal management approach is pro-active, inclusive, and transparent, so that communities know and understand what the trade-offs are in reaching a consensus on future uses for the coastal area. And they also have a role in ensuring that this consensus is honoured by Government over the long term.

So in short, integrated coastal management would look at some of the negative impacts of a project like this quarry, and I'm not going to go into them. They've been covered very well by previous presentations.

But it wouldn't only list these particular negative impacts; it would consider these issues and the connections between them. IT would consider the

cumulative impacts; not only of this quarry, but the cumulative impacts of potential other land uses and similar developments in the area. It would create the process and a framework for decision-making that would deal with these multiple potential uses, respect local visions for the future, and recognizes and values existing assets.

In short, integrated coastal management is a proven approach, and many other communities have done it.

So given all this, we feel that a quarry in Digby Neck without a coastal policy does pose unacceptable ecological, economic, and social consequences. We feel that it precludes other, more sustainable options, and it's a deterrent for coastal planning.

To explain that a little more, based on the many existing traditional values, and the visions for the future, which include eco-tourism, quality of life, ongoing traditional fishery, we think the quarry is an incompatible use. But we also worry that allowing this precedent-setting decision to go forward, to allow a quarry to go, will make it more difficult to incorporate future coastal planning and policies and may tie our province into continuing to approve such large-scale resource extraction projects, and not having the tools to prevent them. In fact, it would be a deterrent to future coastal planning.

And I want to reiterate that this particular quarry is contrary to many of the existing visions for the future that have been so well articulated by many local community members.

So given this, we recommend that the Panel reject the White Point Quarry proposal, and we recommend that you use this opportunity to recommend that the Provincial Government move I would say with due haste to work with key stakeholders to develop provincial coastal strategy that looks at integrated coastal management and involves full community participation, and in the meantime that you recommend a freeze on large-scale industrial extraction projects on the coast until such a policy is developed.

I want to close with a little bit from a press release that was issued by Friends of the Earth on April the 2nd, 2004.

This was announcing the end of their longest-ever campaign, which was when the Lafarge Concrete company withdrew its quarry plans for a Lingerbay on the Isle of Harris. They say that the decision to withdraw... Friends of the Earth says that this decision is a great decision for the people and the environment of Harris and Lafarge's decision is, without doubt, the only responsible and ethical decision that could have been taken.

And then following that press release, Lafarge themselves made a statement, and they say that they are withdrawing their proposed coastal quarry proposal, but they say

"The issue of sourcing for the medium and long-term supplies of mineral in the U.K. remains unresolved."

And they call for a serious public debate about where the building material for the future will come from.

Never thought I'd find myself actually agreeing with the world's largest aggregate company, but I think their thoughts at the end of the 2004 process are relevant because we do need a serious public debate in Nova Scotia. We need a serious public debate about the future we want for our coast and the kind of developments we want to allow there.

And in conclusion...

Ms. GRETCHEN FITZGERALD: All of the proposed mitigation measures that I have suggested for ballast water and preventing the introduction of invasive species on ships coming to the quarry are based on the premise that we have a strategic and democratic coastal plan.

With no plan, there should be no quarry.

Ms. JENNIFER GRAHAM: And I say no quarry, then how about a plan.

Ms. GRETCHEN FITZGERALD: Thank you very much. We also have questions for the Panel.

PRESENTATION BY ECOLOGY ACTION CENTRE - QUESTIONS FROM THE PANEL

Dr. JILL GRANT: I have a question for Ms. Fitzgerald about monitoring the potential risk of invasive species and the different mitigation strategies that you discussed.

And my question is around monitoring, because as one of the scientists who was here this week said to us, it's important to detect these things very early if you have any hope of stopping them.

So when you're reading about invasive species, what frequency of monitoring is necessary to identify these things early and be able to take preventive action?

Ms. GRETCHEN FITZGERALD: That's an excellent question, and I would refer the Panel probably to Australia, which has some of the most stringent regulations in monitoring in place for things like invasive species.

So for the quarry, I wouldn't, off the top of my head, want to say, but I think if a ship is coming in once a week, then they should be sampling that ballast

water once a week. I mean, it should be treated, because of the implications of introducing ballast water, it should be treated like a pollutant, in my view, because it's forever. It's not just an, well, an oil spill is bad, but invasion can actually be worse in terms of impacts because it never goes away.

So I would like to see every ship coming in be sampled, and I would like them to be monitoring the marine environment around the quarry, of course in the context of a coastal plan, on a regular basis. So I would say monitoring the marine environment, I would recommend at least monthly surveys that are thorough and done by an independent scientist, paid indirectly through Environment Canada, where Bilcon gives the money to Environment Canada and they commission it out. Everything would have to be done at arm's length. And then every single ship coming in should be monitored.

Dr. GUNTER MUECKE: Yes, I have a question about invasive species, too. I mean, there are ships that are coming in regularly into the Bay of Fundy right now, exchanging ballast water in the zone that was indicated on the map.

Have you got any... And Bilcon is proposing one ship per week. Have you got any figures or opinions about what proportion or how much that one ship per

week would increase the amount of ballast water released in that region?

Ms. GRETCHEN FITZGERALD: I believe Bilcon presents those numbers, and it does seem quite low, because they look entirely at all the ships coming into the region.

But in my paper presentation, our submission earlier, I made the argument that because Digby Neck is such an ecologically significant area, I think this area should be treated differently. I think the volumes are substantial, because there is no ballast water coming in here right now. So it would be a, you know, a 100 percent increase for Digby.

And I think a lot of the other projects, actually, that are in place in the Bay of Fundy actually were established before CEAA came into force, or did not trigger the environmental assessment that's going on right here.

So I think pointing to other projects is a bit of a red herring. I think, had they undergone this thorough process, they would be doing the right thing. I have a couple other arguments on that front, I think. Hold on a sec.

I don't believe CEAA actually upholds the idea of relative risk, and I think the Panel's

instructions to the Proponent included how to ask the Proponent to deal with this risk, and I would like them to be taken to task on this.

Dr. GUNTER MUECKE: Going back to your answer, you seem to allude that ballast water would be discharged outside the zone, in the area that has been specified. You're saying that it would increase the risk in terms of Digby, the Digby County coast. Could you just qualify that?

Ms. GRETCHEN FITZGERALD: Certainly. In some cases, ballast water exchange is impossible, if that is, indeed, the mitigation measure that the Proponent is proposing, because it's not safe, or the vessel doesn't have time to perform a complete exchange.

And also, in the study that I showed you, and actually we'll be submitting hard copies of some of the documents we've alluded to today, they actually had performed exchange, but exchange isn't good enough to stop to reduce the risk.

I mean, all the ships going into the Great Lakes after 1993 had performed an open ocean exchange, never mind a coastal exchange, and invasions still go up.

So yeah, they're going to be discharging ballast here on Digby Neck, and it may been exchanged in the coastal exchange zone, but it will still probably contain

invasive species.

So I think, yeah, and in some cases where safety is a factor, it will be unexchanged ballast, it'll be pure New Jersey water.

THE CHAIRPERSON: Mr. Buxton?

Mr. PAUL BUXTON: Thank you, Mr. Chair. I don't have any questions. Thank you.

THE CHAIRPERSON: Questions from the floor?

PRESENTATION BY ECOLOGY ACTION CENTRE - QUESTIONS FROM THE PUBLIC

THE CHAIRPERSON: Mr. Ackerman? Sister Barbara? Anyone else? Please move over there so we can get an assessment.

Mr. JERRY ACKERMAN: Thank you. Jerry Ackerman is my name.

I want to ask about disinfection as a mitigation of the invasive species. I have a relative who is a biochemist, and when I ask him about chlorine as a disinfectant he turns me on to ultraviolet, and he emphasizes that it is cleaner and clearer, and things like cholor sporidium and so on are destroyed.

And is this being used?

Ms. GRETCHEN FITZGERALD: Actually, there are ships out there that are using technologies to treat

their ballast. A lot of it is done on a trial basis right now, but there is technology being developed, and I think a lot of it, as in most industries, it has to do with the will of the regulators and people such as the Panel requiring industry to take steps.

But there are technologies, including the U.V. to which you refer, which is a, I think it's one of the most hopeful ones; U.V. combined with filtration for ship-board treatment, and then don't neglect the idea of shore-based treatment. That's also another idea that could be possible.

SISTER BARBARA: Thank you, Mr. Chair. I'm Sister Barbara from Rossway, and thank you for your presentation.

In your presentation, you mentioned super-quarries. Now, in the Whites Point Quarry update this week from the Proponents it says:

"Point two: The Whites Point Quarry is not a mega-quarry, but is in fact a fairly average-sized quarry provincially and nationally."

Would you say it is a super-quarry or a mega-quarry?

Ms. JENNIFER GRAHAM: I looked at the definition that they were using for this, for their super-

quarries in the Scottish NPGG... Let me get that right. In the Scottish NPPG-4 Land for Mineral Working paper, and you're right that they define a super-quarry as five million tonnes or more of crushed aggregate per annum, which is larger than this proposed quarry. And those were the size of quarry for which these specific guidelines were developed.

They do note that quarries of two million tonnes of crushed aggregate per annum, which is, I believe, the approximate estimate for this quarry, merited special concern, should not be approved by local planning authorities without prior notification at the national level and could be subjected to comprehensive environmental assessments as well to ensure that they did not exacerbate the risks of damage to the marine and coastal environment, et cetera, that were associated with the larger quarries.

So I'm not going to hazard a definition as to whether this one is a super-quarry or not, but I am going to say that, in the Scottish experience, coastal quarries of this size merited special consideration in planning and approval.

SISTER BARBARA: Thank you very much.

THE CHAIRPERSON: Mr. Mullin?

Mr. DON MULLIN: Yes, Don Mullin. Just a quick question.

You said there were 21 of these invasive species found in the water off the water area near New Jersey. And do we know what the known or estimated survivability of those 21 beasties are?

Ms. GRETCHEN FITZGERALD: Carver and Mallet were actually pretty thorough in screening out the ones that they thought would not survive off of here, so those 21 are the ones that they felt were likely to survive, given the conditions off Digby Neck.

So those are the usual suspects, as they would say.

Dr. GUNTER MUECKE: Could I just ask you about a statement you made that you believe that coastal zone management or strategies for Nova Scotia would be inhibited by the approval of the quarry?

Now, you alluded to NAFTA, and we've had expert opinion given to us, Department of Foreign Affairs, that environmental laws or regulations will not be inhibited, that the jurisdictions are free to implement them without any NAFTA implications.

So my question is, other than NAFTA, how would coastal zone management in Nova Scotia be inhibited by an approval of the quarry?

Ms. JENNIFER GRAHAM: I'm happy to hear that the clarification of environmental jurisdiction under

NAFTA allows Nova Scotia to continue to improve our environmental performance. That's very reassuring.

In my opinion, much of what we've been hearing over the last few days about the value and significance of this area hinges upon these fully functioning ecosystems that support a variety of marine life and a variety of traditional occupations.

It offers us a full range of opportunities for a range of sustainable development activities, and this includes protecting and conserving certain of these areas and their ecological processes and values.

Once we start permitting uses that are going to change these systems or decrease their value, both economically and ecologically, we are closing the door on other possible options and narrowing the ranges of choices we have when we're assessing in our planning processes.

And that's my answer kind of specific to the rare opportunity we have here in Digby Neck and the Island.

What I do note, and I think this conversation has also been held throughout this hearing, is certain land uses, when they're permitted, do also lower certain values, property values near the blasting, people's willingness to live in an area, people's ability to stay in

an area, the spiritual values and the sense of connection and place.

All of these things also make it difficult to develop a municipal plan for Digby Neck, to make by-laws to protect particular water sheds when right next door there is a large quarry affecting another one.

I guess, to use the kind of expression my grandmother would use, it sets the tone of the neighbourhood, and I do think that's a way of precluding our options.

THE CHAIRPERSON: If there are no further questions, thank you, Ms. Graham, Ms. Fitzgerald.

By the way, we didn't receive a copy of your document before. You have left it for the secretariat, have you?

Ms. GRETCHEN FITZGERALD: There's an electronic copy on here, and we also have these other, additional documents that we can leave with the secretariat.

THE CHAIRPERSON: See that the secretariat gets them, please. Thank you.

Ms. GRETCHEN FITZGERALD: Are we permitted to ask questions of the Panel at this point?

THE CHAIRPERSON: Not particularly, no. We're not here to answer questions. We're to ask them.

Ms. GRETCHEN FITZGERALD: Okay. Thanks.

THE CHAIRPERSON: Okay. That brings us to the last presentation for this evening, and that's Mr. Morsches.

--- Pause

PRESENTATION BY Mr. BOB MORSCHES

Mr. BOB MORSCHES: It is a great pleasure to address the Panel on the subject of traffic, especially truck traffic, along Highway 217.

I am a home owner that sits right in the middle of east Sandy Cove, right by the Bay, approximately 30 metres from the centre of the road.

I'm a member of the Executive Committee for the partnership, and I'm a retired Naval officer from Naval Intelligence and Naval Operations and Combined Operations. I spent 25 years doing that.

Highway 217 is a collector highway, and collector highways are classified as a third C category type road. You have your 100 series, which are the main roads, and you have your Bs, which are your Route 1s, 8s, et cetera.

Collector highways are designed to actually be used by communities to go up and down, around various villages and communities and up maybe if you live way south, you go to Digby to do your shopping.

It supports schools and churches. Also,

there's local stores and shops and the fishermen that keep going back and forth.

Collector roads, and I take this verbatim from the Chief of the Digby Region Transportation and Public Works:

"They do not support any heavy industrial mining or quarry activities."

This is a diagram of the various kinds of hazards that you would have coming all the way where you see 217 West from Middle Cross Road all the way down to Whites Point.

When you travel that road, you are going from one community to the other. You are never in an area which is nothing but fields or woods. There are homes all along it.

When you get down in the Sandy Cove area, which is probably the largest village along that road that's so close to it, you have steep hills. You have fog. You have fishermen coming in and out of the piers. You have schools, Digby Neck Consolidated School.

You have speed zones, and then, since I live in the base of the thing at the sea level, you have lots of fog, lots of ice, lots of snow.

As you pass that, you will pass Mink Cove, which is not that many people live there any more and

then, all of a sudden, you're going into the Little River area before you're down to 50 kilometres an hour to go into Little River.

However, in order to get to the site, you go down, and this is the official name of the road, 422. Not Whites Cove Road, which is right in this area here.

As you can see by the various symbols there, that doesn't mean that every sign looks like that. That's the kind of activity that you have on that road.

The typical traffic hazards that we have on Highway 217 happened in June 2005. We had a truck accident, and this was caused by a senior citizen pulling out of the Quickway store at the bottom of Sandy Cove Road. And it's very heavy truck traffic travelling down that area then. Not now.

It's a steep hill going down there and, as you can see, there's a partial truck. It was the cab only that was coming down.

He swerved, and from the road to the fall, which is a bunch of rocks, it's one metre. And we have that type of condition here and there throughout.

I don't know if the Panel knows about this, but there's sea wall. Sea wall's a very dangerous area.

I didn't get any information about

recent accidents, but there have been all kinds of various things that have been caused by cars, but mainly by large trucks.

The gentleman, fortunately, was not killed when he rolled over, but they spent five hours to try to get him out of the cab. They had to get a piece of equipment to saw the cab up in order to get him out. They took the ambulance, and off he went, where they took him by chopper to Halifax. Excuse me, helicopter.

The problem is what the Panel issued. The Panel requires a pre-engineering level of detail at this stage of the project planning as opposed to a conceptual information or design.

The Panel asked you to quantify the expressed increase in truck traffic along 217 during construction and decommissioning periods and explain how it's possible for the project to effectively eliminate heavy truck traffic.

There were 18 other queries about the same subject. I read them all, analysed them all, and they came from the government, from various organizations that were looking about this, Sierra Club and et cetera.

Of the 18, the comments that were put back in the revised EIS was "noted". I looked up the word "noted", and it means that you heard it. It doesn't mean

you agree or disagree with it. So we're still in a quandary about the details of this truck traffic.

Bilcon's response to the Panel was that using 217 in the area of the proposed quarry is not available.

Well, I sort of questioned that because I know there's stuff available. I've seen it.

And I brought with me a book that was sent to me from Halifax in overnight express mail when I asked for it by Mr. Lester, who's a part of the Nova Scotia Transportation and Public Works. And it was published in 2006.

And the details of all the traffic. It didn't differentiate trucks in our area, which is 217, Segment 030. But it is something different than what Bilcon put in their revised EIS.

I took my own survey. I have a measuring device which I brought with me, a GPS and everything. And I counted every home and structure that I could see from the road as I drove from Middle Cross Road all the way down to Whites Point.

I don't know if you can see this or not. Maybe the view of it is not too good, but there was 178 structures that was within 18.2 kilometres.

The residents that I've talked to and

myself, and others on the committee, the partnership, we feel that it was very non-responsive.

You list the total number of trucks for transportation of supplies and equipment, but there's no planning about the kind of trucks that you require as required by the Nova Scotia Transportation and Public Works.

You did not classify the type of truck by category, yet you know exactly what kind of equipment you're going to take. You specify in one of your diagrams in the revised EIS that you're going to have a D2 CAT.

Well, all you have to do is call up CAT and ask them what is the size, shape and weight of that D2 CAT.

The Nova Scotia Transportation people have 10 categories of trucks, starting out with what we call a straight truck, which is strictly a cab and attached container on it which has either two or three axles.

You did not determine the weight or dimensions of each type of quarry supply that you needed, and yet when you look at the Caterpillar list, you can say a D2 weighs this, its length and its width is this.

Now, I don't understand why you can't do this kind of work. It took me about two days to find it out.

You did not address the required driver

training requirements. I talked to some Transportation people, and they said it depends on the truck, but you must be registered and certified.

It takes up to one year, sometimes, to have an individual be trained to drive, let's say, a truck pony trailer, which is a very large type of trailer, goes up to, I think, close to 65 feet.

You did not describe the procedures for certifying vehicle compliance, which every time you drive a truck of one of these categories with a big payload, you must have it certified and it must be inspected.

Now, you're going to bring these trucks, most of them, from Halifax, and then you're coming down 101 and then you're going to cross over Middle Cross Road in order to avoid the Digby area.

It seems to me that you have a big job about describing exactly how much you're going to have, where you're going to go, and none of this was even mentioned in the revised EIS or the EIS.

Furthermore, you did not address the dangers and the hazards of using 217. I specifically went over there, I do believe, it was on Monday and talked to the District Manager, Mr. Roger Foote, F-o-o-t-e. And he told me that you bring down anything that's ANFO, even though it's not put together yet, you have a problem.

They've never carried explosives down that road, and he doesn't think that they will allow it. He is the District Director of the Digby area.

On the average last 10 years, and I did this myself, took it out of this book. I then spent several days at the ferry, at Middle Cross Road, and I counted the number of trucks. I even interviewed Kenny, which is way down in Brier Island, who takes fish and fish products from Brier Island to Boston and Rhode Island.

I interviewed Mr. d'Eon (ph), who has lobster products. I also talked to a gentleman from Tiverton, who has a state truck oil truck where he comes around and he refuels the various lobster boats.

So it was easy information to obtain, but it was never presented. It did not take me but about three weeks to get all this data together.

I'm down at this area here now. You talked about having 848 truckloads during the construction phase. A truckload goes down there, he's got to get back.

Empty or not, large trucks are dangerous on 217 per Roger Foote. Also, you said there would be 247 truckloads per year during the 50-year operations phase.

That's 494 trips or, if you really want to take a look at it closely, that's 24,700 trips over a 50-year period bringing mainly explosives.

Now, I know you don't think that ammonium nitrate, when it's not connected to oil, would be doing anything. If anybody's ever read anything about the government building at Oklahoma City that was blown up in 1995, I'm sorry to say that you can do major damage by having a wreck.

The way they did that, they took the truck. They had two bags of the AN part of it, and they had a gas tank and an oil piece back in their back. It was hooked up electrically. They crashed it, and off it went.

It destroyed an eight storey building. It killed 197 people, and it blew houses and all kinds of items within 300 metres of the building. That is dangerous.

In the decommissioning period, I show there's 650 trips vice your 329.

I did the calculations based on all the data that I collected, and you will have an increase of traffic by trucks by 652 percent during the construction period.

Bilcon will increase it by 190 percent a year during the operations phase, and 253 during the deconstruction phase.

In conclusion, it is proposed that 217 be a collateral highway, and Mr. Foote said the same thing. It's a huge demand and increase in dangerous trucks.

It is therefore recommended that Bilcon be denied the use of this road and every other aspect of the proposed quarry. Mr. Foote said he cannot see any trucks like that coming down the road.

He will not have that road paved completely for the next 10 years, and he said the way they're going now, it would be 15 years before they would do it. And he will not permit trucks to go down that road.

If you've ever been down there, you know there's potholes all over it. That's dangerous for trucking.

Thank you very much, Doctor.

THE CHAIRPERSON: Thank you, Mr. Morsches. Gunter?

PRESENTATION BY Mr. BOB MORSCHES - QUESTIONS FROM THE PANEL

Dr. JILL GRANT: I have a question.

Mr. Morsches, do you have any information on accidents on that road? You showed us one accident, but are there any kind of data available generally on the number of accidents on 217 above Little River?

Mr. BOB MORSCHES: Dr. Grant, I went to the police station and they never kept any records outside of the Rocksville area, which goes down by Middle Cross, back into Digby.

And I went down there several times and,

I'm sorry, I couldn't get it. I was after the same thing you were, ma'am.

Dr. GUNTER MUECKE: You alluded to the Oklahoma disaster, the bomb that was set off.

I'm a bit puzzled how you relate that to truck traffic because in one case you're dealing with a configuration of both the fuel and the ammonium nitrate and diesel fuel which is, in the case of the Proponent, doesn't come together as a unit until it is on site.

So could you just explain to me?

Mr. BOB MORSCHES: Yes, Doctor. I talked to some people and, also, there's an article which I'd be glad to furnish the Panel from the FBI that did the investigation, and they had a scenario where they actually did this, taking a truck and ramming it with just the ammonium nitrate in it. And the thing sparked, and the gasoline went off and, bingo.

They didn't indicate how much destruction it did, but there was a problem.

So if a truck turns over, you have a possibility, I'm not saying it's a probability, of having the same event happen.

Dr. GUNTER MUECKE: Well, if you have documentation on that, I certainly would be interested in seeing it.

Mr. BOB MORSCHES: Sir, I have documentation for everything I said, and I'd be glad to... I don't have that documentation in my references which I gave the Panel, but I will be glad to give it to you, and if it's okay I would give it to you tomorrow night or on the 29th.

Dr. GUNTER MUECKE: Thank you.

THE CHAIRPERSON: Mr. Buxton?

PRESENTATION BY Mr. BOB MORSCHES - QUESTIONS BY THE PROPONENT

Mr. PAUL BUXTON: I don't have any specific question. I'll be very brief, Mr. Chair, that I think our statement that the statistics on truck traffic is not available is correct. There are statistics on total traffic that are done by the strips across the road, and they count axles, so you don't know whether it's a car or a truck.

Secondly, blasting explosives are carried down the Neck on a regular basis. The Tiverton Quarry was blasted. They were taken down there by road.

And just a final point. All truck traffic which goes on highways has to comply with weight restrictions, width restrictions, and so on, and certainly the people who would be trucking this equipment in for us would have to comply with all those regulations.

Thank you very much.

THE CHAIRPERSON: Mr. Buxton, I have a question. One of the things that Mr. Morsches said which took me by surprise was his suggestion that truckloads of ANFO would not be allowed down that road.

Have you any, can you bring anything to bear on that? I mean, have you, in fact, inquired whether that would be the case, or are explosives regularly brought down that road for other purposes?

I mean, it seems like an odd situation.

Mr. PAUL BUXTON: I wouldn't say regularly, but blasting is carried out down there, there's an operating quarry on Digby Neck. Certainly when the Tiverton Quarry was in use, they used blasting compounds.

It is, it's regulated in the sense that the vehicle has to be a very specific vehicle, it has to comply with all kinds of regulations, but as to being banned from a road, no, I would say that that's incorrect information.

THE CHAIRPERSON: Does one truck carry 15 to 20 tonnes of ANFO?

Mr. PAUL BUXTON: I couldn't tell you offhand. I'd have to get that information for you.

Mr. BOB MORSCHES: Doctor, I just have a comment about what Mr. Buxton said. I don't know if he's

ever seen this, but this is an application that I obtained from Digby for registered way of commercial vehicles, and it specifically says what is the limit by truck type of what you can carry.

In 2008, it's going to decrease on collateral roads, and it may increase on, let's say, Highway 101 once it's been all fixed up.

THE CHAIRPERSON: Thank you. Any questions from the audience for Mr. Morsches? No? Okay, then.

Thank you very much. Thank you Mr. Morsches, and we're adjourning for the evening. We'll be here at 1:00 tomorrow afternoon.

--- Whereupon the matter was adjourned at 9:34 p.m. to resume on Monday, June 28, 2007, at 1:00 p.m.