PUBLIC HEARING

WHITES POINT QUARRY AND MARINE TERMINAL PROJECT

JOINT REVIEW PANEL

V O L U M E 6

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

PLACE HEARD: Digby, Nova Scotia

DATE HEARD: Friday, June 22, 2007

PRESENTERS:
-Bilcon of Nova Scotia
Mr. Paul Buxton
-Natural Resources of Canada
Dr. Miroslav Nastev
-Nova Scotia Dept of Environment and Labour
Mr. John Drage
-Atlantic Canada Chapter, Sierra Club of Cda
Mr. Stephen Hazel
-St. Croix Estuary Project (ACAP – St. Croix)
Mr. Arthur MacKay
-Father Danny Mills
-Ms. Jill Klein
-Mr. Rob Buckland-Nicks
-Mr. Lawrence Outhouse

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Per: Hélène Boudreau-Laforge, CCR

Digby, Nova Scotia

--- Upon resuming on Friday, June 22, 2007, at 9:00 a.m.

THE CHAIRPERSON: Ladies and gentlemen, we would like to begin please. Could you take your seats? Thank you.

Just a few introductory comments. First of all, as usual, I expect that there are some people in the room who have not been here before.

Just let me introduce the Panel to you. On my left is Jill Grant, who is a Professional Planner. On my right is Gunter Muecke, who is an Earth Scientist, and I am Robert Fournier, an Oceanographer by training.

Another comment is for those of you who are new here, the headphones are very useful to augment the sound in the room and even though it is for simultaneous translation, a number of people will be wearing them simply because they can hear better, so I urge you to do that if the hearing is a problem.

With regards to the undertakings, just ongoing business, Mr. Buxton, we received number 11, which was the residual ammonia one.

Now we have that, it came in yesterday and with regard to today... There are three I believe which are due today.

One is... This is directed to Bilcon,

which was to provide the 2007 production cost for aggregate in New Jersey.

The second one was also to Bilcon, which was a statement of how the facility (meaning the terminal), would be removed at the end of the day, meaning the end of the Project.

The third one was directed to the Nova Scotia Department of Natural Resources to provide information of buffer requirements for coastal areas in other jurisdictions.

And as I normally do, I would like to simply go back over the undertakings that were taken that we took record of yesterday.

We are now up to a total of 43.

Number 32 was directed to Bilcon, and it was to clarify the amount of explosive to be used per blast, the amount of explosive to be used per ton or rock blasted, the total amount of explosive to be used in a two-week period, and to identify the number of holes that would be required per blast, and the charge per hole. Only metric units will be used.

Number 33, to provide engine emission estimates for all project sources influencing air quality, including heavy equipment and vessel traffic, to Bilcon as well.

Number 34 was directed at Environment Canada to provide the number of prosecutions and convictions under the **Fisheries Act** during the past 15 years; to provide the number of enforcement personnel currently employed by Environment Canada.

Number 35, also directed at Environment Canada, to provide information on enforcement options and the ranges of penalties provided in the acts administered by Environment Canada.

Number 36, directed to Environment Canada, to use the 1870 to 2006 daily rainfall data set to find the year with the worst drought conditions.

Number 37, directed at the Nova Scotia Department of Environment and Labour, to advise on any quarries in the Province that have undergone an environmental assessment, that have expanded after the assessment, and to advise on how each expansion approval was obtained.

I have two number 37s here. So the second 37 is directed to the Nova Scotia Department of Environment and Labour, to provide the most recent 5-year inspection record for the Aulds Cove Coastal Quarry.

Number 38, directed at the Nova Scotia Department of Environment and Labour, to provide information on whether or not blast residues and or ammonia have been

NSDEL regulatory issues at the Porcupine Mountain Quarry.

Number 39, directed to the Nova Scotia Department of Environment and Labour, in relation to past siltation incidents at the quarry site, to advise on the length of time between receiving a complaint and conducting an inspection.

Number 40, directed to Natural Resources Canada, to provide advice on the use of basalt fines as a soil conditioner and implications related to copper mobility under those conditions.

Number 41, directed to Natural Resources Canada, to provide advice on the presence of explosive residues in storage piles and its influence on the pH and eH of wash water.

Number 42, directed to the Partnership for Sustainable Development of Digby Neck and the Islands Society, to provide a characterization of the Partnership, including information on purpose, frequency of meetings, funding of membership.

Number 43, directed to Bilcon of Nova Scotia, to check on the availability of a more current CV for the archeologist who conducted the archeological report for the Project.

So because we had a double 37, the total number then would be up to 44 undertakings.

Okay. I think that's all the housekeeping business for the moment. I think now, we turn to Bilcon, and they will be making a presentation.

PRESENTATION BY BILCON OF NOVA SCOTIA - Mr. PAUL BUXTON

Mr. PAUL BUXTON: Good morning Mr. Chair. I have one small item of business if I may, before we start here.

THE CHAIRPERSON: Of course.

Mr. PAUL BUXTON: We were advised late yesterday evening that Dr. Schupner will not be able to be here on Wednesday, he has personal problems. I'm sorry, on Monday.

If we could reschedule that at the convenience of the Panel, we do believe that he can attend to the issues that he has to attend with by Wednesday or Thursday.

If we could have another slot perhaps? We did say that he would speak to the issue of copper, and in particular he is our expert on that subject. He has answered all our technical questions on copper from the regulatory authorities.

THE CHAIRPERSON: Perhaps we could discuss it and we can get back to you on that.

Mr. PAUL BUXTON: Thank you very much Mr. Chair.

This morning's subject is hydrogeology, and the Chair was good enough to give us a slight extension on Monday and Wednesday on our presentations, and I hope that we will be under today to make up a little time.

For those of you that were not here before, this is a conceptual sketch of the project in its very early stages. It shows the marine terminal, the processing facility, the storage areas and the sediment ponds and the foreground.

Today, I'm going to go through the background characterization of the hydrogeological environment, an effects assessment and a conclusion.

The consulting firms that have been working on this with us: AMEC, Atlantic Marine Geological Consulting, Conestoga Rovers and Associates, Jacques Whitford Environmental Ltd and Mineral Valuation Capital Inc.

The particular individuals that have been working on this element throughout the Project had started on this element in 2002 and continue.

Bilcon representatives here today, we've all mentioned them before. In attendance today, we have Mr. Melick, who is an expert on blasting; we have Stephen Sauveur, hydrogeology; and Mr. Schupner was to be here today, and it was put back until Monday, but unfortunately

that has now been postponed.

The studies undertaken go back to 2002. There was a geological assessment first of all by MVCI, and then back again in 2005 for a geology and groundwater assessment.

Jacques Whitford did the preliminary work initially to see what the parameters were. He did a preliminary hydrogeological assessment in 2002, a water level survey, a spring reconnaissance survey and preliminary water supply identification.

CRA has done a domestic well survey, groundwater quality sampling slug testing, a 24-hour aquifer test, and a conceptual hydrogeological model refinement, all in 2006.

And AMEC has looked at potential contaminants and did a risk assessment.

So to go back to site characteristics, we are located in the North Mountain Basalt Formation. The topography of the site slopes to the Bay of Fundy. There is a thin overburden.

Upper, Middle and Lower Flow Units, with all quarrying to take place in the Upper Flow Unit of the basalt. And all the flow units slope towards the Bay of Fundy.

There are two watersheds involved.

There's the Little River watershed, which is a local watershed, and the Bay of Fundy watershed, which is a regional watershed, and I will show that on the mapping shortly. The quarry footprint is entirely within the Bay of Fundy watershed.

Water quality. The on-site water meets the Canadian Drinking Water Standards.

Here are the watersheds, and the Bay of Fundy watershed is this whole piece all the way along the coast.

On the other side, there are little regional watersheds, or local watersheds I should say. And this one in particular, that's the Little River watershed here.

And here, we have the basalt stringing all the way along the coast, the location of the Whites Point Quarry and the location of existing basalt quarries on Digby Neck.

This is a topographic map of the site, and although it's a little bit difficult to see, the high point is along this line here, and all this ground slopes down towards the Bay of Fundy.

Highway 217, and from the top of the mountain here, slopes down towards Highway 217.

If you were standing just outside of

Little River and looking to the west... So we're standing... This is the view from the east, and looking up to the North Mountain, the top of the mountain is here with the quarry on the other side to the west.

I'll spend a little bit more time on this particular piece of mapping.

The black dots along the road are the properties that were identified in the original preliminary assessment by Jacques Whitford, who indicated that there could be 19 properties potentially affected by the activities on the Whites Point site.

The line with the arrows on it is the top of the Mountain, there's the topographic divide, and there's a first cut. The preliminary assessment said that possibly, the topographic divide was also the groundwater divide.

So from this line, you could take a first cut assumption that the water would flow, the groundwater would flow in this direction, and in this direction from the topographic high.

However, later on in the process we identified and mapped and surveyed the boundary between the Upper Flow Unit and the Middle Flow Unit, which is here, and this line is not mapped and this line is somewhat hypothetical, but there's fairly good evidence of this being

the line demarking the boundary between the Middle Flow Unit and the Lower Flow Unit.

We are now of the opinion that in general terms, the groundwater flows almost from and possibly from the boundary between the Upper Flow Unit... I'm sorry, the Lower Flow Unit and the Middle Flow Unit, towards the Bay of Fundy.

And we'll show a cross-section. We'll show that in a little bit more detail, but preliminarily one can generally assume, and in many cases there are some truth, that the groundwater will follow the topographic divide.

So it would come from this line, in this direction, and in that direction. We now believe it flows from this line towards the Bay of Fundy.

To look at that in a little more detail and just to orient you the Bay of Fundy is here, the Whites Point site here, Highway 217 here.

The two boundaries that I showed you on the plan, the boundary between the Middle Flow Unit and the Lower Flow Unit is here, and the boundary between the Upper Flow Unit and the Middle Flow Unit here.

This line is mapped in fairly good detail. This one is largely conceptual.

So we now think there is some recharge

in this area. In fact, we think perhaps this whole area is recharged. The recharge takes place in Middle Flow Unit and flows down towards the Bay of Fundy.

Domestic wells are in this area here. We have a monitoring well here, and we have other monitoring wells on the site here, and a bore hole here, and a bore hole here.

In identifying initially the quality of the rock on the site, there were four bore holes drilled, one here, here, here, and here.

The causes were of course extracted and examined to look at the quality of the rock, and it also of course tells you quite a bit about the structure of the rock and whether it's tight or whether there are impurities in it, whether there are gaps in it and that sort of thing, you know?

So that gave us a good look at the geology, and also the groundwater was measured in those bore holes, and those boreholes were intended to be used as a part of the site investigation from a hydrogeological perspective.

Unfortunately, this bore hole and this bore hole were vandalized. We have been unable to use the data from these holes.

A second monitoring program or

identification, investigative holes if you like, which we think will be useful for monitoring later, we have a well here, here, here, here and here. There are six of them. I'm missing the other one. Right here, okay.

So those were drilled and initial results were gained from those holes. They're in different units, flow units, but again unfortunately this monitoring well here and both of the monitoring wells on the top of the hill were vandalized.

We believe that the results from these two after re-drilling and trying to re-open the holes have some validity, but we don't believe what we're getting now from this hole has any validity.

So 10 holes drilled on the site to date in various places to try to get further information with respect to the groundwater regime.

This is the drill rig, and I would point out that to drill a monitoring well is not just a question of bringing the drill rig on site, one has to build a road in to get it onto the site. So it's not a quick or easy thing to do.

Just typically, this is a house in Little River, on the westside of Highway 217, and this is a... I'm sorry. This is a typical domestic well, properly installed with a casing above ground.

There was a period of time when the casings tended to be left below ground, and they're sort of difficult to identify, but this one is properly done and is in place.

So what were our concerns? The potential effects on domestic well water, quality and quantity, and the potential effects on the flow in Little River.

We look at the domestic wells. First of all, a possible lowering of the water level, which could lead to a loss of yield. That would be in the drilled wells. There is also the effect of blasting on the drilled wells.

Also, there are possible changes in water quality caused by potential water contamination of the water supply that is in the drilled wells, in the groundwater.

So in trying to identify the extent of the effect, we went back to the original Jacques report where they identified 19 properties that had potential risks.

We then went onto the properties and did further investigation, because it was apparent that some properties had more than one well, some properties didn't have a well but were taking water from the neighbour's

property, so we tried to identify the actual location of the wells and surveyed them on the site.

We identified 17 drilled wells. Three of those are owned by Bilcon of Nova Scotia, and seven dug wells, six of which we know the location of and one we do not know the location of.

A baseline water quality was established and water quality. We know that all the drilled wells are located in the Middle Flow Unit because of their location. The nearest non-owned drilled well is 400 metres from the active quarry.

So that's if you like the magnitude of the potential effect. So to look at the considerations, we believe that the groundwater flow, generally speaking, is in the Middle Flow Unit.

We believe that the groundwater flow under the quarry footprint is towards the Bay of Fundy.

The area between the Upper Flow Unit and the Middle Flow Unit, the contact between the two and the domestic wells is the zone of groundwater recharge, and that recharge may take place as far east as the Lower Flow Unit/Middle Flow Unit contact.

We will not be quarrying in the Middle Flow Unit and we do not plan to extract groundwater from the quarry site.

Again, for those who are not familiar with the area, this is the Little River watershed, and so the concern is a possible reduction in flow in the Little River.

The considerations: The flow in Little River has been reported to reduce to very low levels during the summer months.

Little River is located in the Middle Flow Unit and Lower Flow Unit. The river is noted to cross that contact point between the Lower Flow Unit and the Middle Flow Unit.

The Middle Flow Unit is interpreted as a groundwater recharge area in the conceptual hydrogeological model.

Based on the above, Little River does not appear to receive baseflow discharge from groundwater and may even be a zone of groundwater recharge.

We conclude that the flow in Little River is not anticipated to be affected by quarry activities.

And just to get back to the plan of the site, for those of you who weren't here before, the surface water storage on the site takes place in five ponds here and a sixth pond, which will be built in the 16th year, here. So this is where the water will be stored on site for the

processing part of the crushing operation.

Mitigation: We have done a domestic well survey. Some of the residents would not permit a well survey to be done, and I think there are one or two who were away at the time and away for extended periods of time, not just for the weekend or for the week, and we would intend to complete that, if possible.

We intend to implement a compensation policy. We are making the statement that there is a possible effect. It will need to be further quantified. We will need to do further modelling, but we are accepting the fact that there may be an effect, and we are saying that we will replace the water supply at no cost, without litigation.

We will disclose all the monitoring results taken from the present monitoring wells and the future monitoring wells to the public through the CLC or by other mechanisms and, of course, those would go to the Nova Scotia Department of Environment and Labour.

We will monitor the on-site well water quality and quantity, and the on-site well would be for domestic purposes associated with the office facility and washing facilities, et cetera.

We've reached the conclusion that there are no significant residual adverse effects, so we're saying

that there are potential effects.

We will carry out a further program of investigation in consultation with the Nova Scotia Department of Environment and Labour, and we will put in place a compensation policy which will replace any well which is damaged or alleged to be damaged with no litigation.

In other words, we will investigate from our own perspective because we would like to know and to obviously try to mitigate what caused that, but whatever the cause, we will replace the well.

We did have one case just in the fairly recent past where a home owner on the corner of the Whites Cove Road and Highway 217 came to us and said that his well had gone dry on the property, and he'd fairly recently purchased the house.

We investigated the situation and determined that, in fact, his water supply was a spring significantly to the west of his house and, in fact, not even on his property.

We reviewed the situation in-house and determined that this was a special circumstance and decided that we would drill a well, install the pump connected to his house at no cost to the homeowner.

And I think that this is the policy that

we will have in place, so clearly here, no activity on the site. It was a spring not associated with the property.

Nonetheless, we followed through with our compensation policy.

We have adequate knowledge of the existing environment to make the statement that we believe that there may be potential effects, but we think that those potential effects are limited in magnitude.

We think that we can largely avoid adverse effects. We will carry out a comprehensive monitoring program under the direction of the Nova Scotia Department of Environment and Labour and, in fact, carry out some more investigative work in consultation with the Nova Scotia Department of Environment and Labour.

But we think we have effective mitigation in place. We have compensation with no litigation.

We will have a transparent process in that all monitoring results from the wells, both with respect to quality and quantity, will be given to the Community Liaison Committee and, of course, to the regulators, the Nova Scotia Department of Environment and Labour.

Thank you very much. We'd be pleased to answer any questions.

THE CHAIRPERSON: Thank you, Mr. Buxton. Gunter Muecke will ask you some questions now.

PRESENTATION BY BILCON OF NOVA SCOTIA - QUESTIONS BY THE PANEL

Dr. GUNTER MUECKE: Yes. To start off with, I have a question which is process rather than what you have presented.

You just presented two very critical diagrams in terms of groundwater regime, the flow unit boundaries, which indicate the recharge area for the area of consideration, and a hydrogeological cross-section showing, again, the recharge area and the watertable in that area.

This information is substantially different from what was submitted to the Panel, and so my question is, why was this material not provided to us?

Mr. PAUL BUXTON: I'm not sure that it is substantially different. I think we have been gaining information on this process for five years, almost, or on the hydrogeological processes on the site.

I think we received and were pleased to receive a valuable report by Dr. Hanson, which was part of a submission by Sustainable Development, and we found that very interesting and very informative.

We responded to comments which were made in the EIS, which is a significant period of time ago, and

we received no more follow-up at that time on those responses.

So we have been working in the recent past to try to clarify and particularly with, I think, respect to the comments that were raised by Dr. Hanson, and we believe that at the present time with the information that we have that what I showed you today is our most recent thinking on the site.

Some of the material is, I think, fairly well defined. I think that we feel that we can establish or have established and surveyed, for example, the boundary between the Upper Flow Unit and the Middle Flow Unit, very largely in consultation with the Nova Scotia Department of Natural Resources and the expert on North Mountain basalt, Dr. Contact, who came out on site and assisted with that process.

So we think that we have that fairly well defined. We do not believe that we have defined absolutely definitively all the precise elements of the hydrogeological regime on the site.

But I think that what we are now presenting is our latest view, and I think our statement is that we believe, not withstanding the fact that the recharge area is outside of the site and notwithstanding the fact that the groundwater flows are all towards the Bay of Fundy,

that there may be some residual effects.

We don't know that, and the monitoring wells that were placed down fairly close to Highway 217, which are still useful information, they're in the Middle Flow Unit, are providing good information on flows in the Middle Flow Unit.

We would certainly like to do more work on the site, but I think, first of all, we need to establish a program in consultation with the Nova Scotia Department of Environment and Labour.

We would certainly like to be able to conduct future work and future monitoring work, future investigation on the site under more secure conditions.

There's very little value in us drilling monitoring wells if they're vandalized 36 hours later. Very difficult for us to have security on the site, and we would certainly want to make sure that we have site security in place before we carry out another and perhaps more extensive monitoring program.

Dr. GUNTER MUECKE: Mr. Buxton, I don't think you have answered my question.

And that question was, why was this information not available to the Panel before this?

We were given a copy of your presentation a couple of days ago. This new information

doesn't appear in that.

Have the reviewers had a chance to... Who are going to talk today had a chance to look at this information prior to today?

--- Pause

Mr. PAUL BUXTON: You're quite right, Dr. Muecke. The cross-section was not...

(Mic. feedback)

I still have this on. Unless they disconnect it, Mr. Chair, I can't speak into both.

My understanding is that, while we had that cross-section, it was not in a form to put on the Powerpoint.

And that's basically all I can say, that there's a blank in the presentation that was submitted, a blank page, because it was not formatted to go onto the Powerpoint at that point. But we certainly had that information from our consultants at that time, but it was not formatted properly.

Dr. GUNTER MUECKE: Well, personally, I don't care about the format, you know. It's the fact that it wasn't brought forward before this.

You talk about the cross-section, but if I look at the map of the flow unit boundaries, the one I was given is substantially different in terms of showing

groundwater flow compared to the map you just put on the screen.

So it's not just missing one slide. It's one that has been substantially altered.

Mr. PAUL BUXTON: Well, I think, as I tried to point out, this has been a moving work for five years, and I'm not sure that we're totally and absolutely convinced that what we've provided in this cross-section is absolutely the final word.

And I think I did say in the presentation that we had developed what we would call a conceptual hydrogeological model of the site, and this is our latest version of that model.

THE CHAIRPERSON: Mr. Buxton, I think what Dr. Muecke is saying is that the purpose of the hearings is to assess your Environment Impact Statement. The normal procedure is to provide us and others with information to allow us to process it, to reflect on it, to check it, and thereby to reach some kind of conclusion.

The purpose of the hearing is to bring experts together so that we can do this. If you present us with information five minutes before the discussion begins, it's a disadvantage to us. It's an unfair disadvantage.

It's not providing us with the information in a timely manner. I think that's the issue.

Some of these diagrams you've presented to us are different, and the implications of the differences are important.

So, in a sense, we can continue the discussion as we planned, but I think it's inappropriate. It should have been forwarded to us and to others so that they could reflect on it. That's the issue.

Mr. PAUL BUXTON: I was actually unaware that the hard copy had not gone out to you or had not gone to the Panel Manager on the 6th. I thought that it had gone.

I knew that there were problems in formatting this particular diagram, but I did think that it had gone.

Dr. GUNTER MUECKE: So my next question is where this new information comes from. Is there a new consultant's report?

Mr. PAUL BUXTON: There isn't a new consultant's report in the sense that we certainly have used a number of consultants to answer the questions that were raised by Environment and Labour and by Natural Resources Canada with respect to hydrogeology, and those were submitted and Natural Resources Canada has replied to our responses.

We do not, at the present time, have a

response from Nova Scotia Department of Environment and Labour to our responses, so the work continues on this element.

Dr. GUNTER MUECKE: Okay. Let's get, then, to the issue itself.

What do the Nova Scotia Pit and Quarry Guidelines have to say about intersection of the watertable by a quarry operation?

Mr. PAUL BUXTON: Essentially, we would have to make the determination as to whether or not we intend to quarry below the watertable.

If that is our intent, then there is a different program of work to which we would be held.

We have made the statement that we do not intend to quarry below the watertable, primarily because we feel that the main groundwater flow is at the intersection of the Upper Flow Unit and the Middle Flow Unit, and I think that we made it very clear that we do not want the quarry in the Middle Flow Unit.

So if we got into the Middle Flow Unit, then probably we would be getting into the watertable, the area of major groundwater flow, and we would be introducing impurities into our product.

Dr. GUNTER MUECKE: Yes. You say that you will not intersect or attempt not to intersect the

Middle Flow Unit, and I concur that that probably represents, for a substantial part of the quarry area, the aquifer that we're dealing with.

So the question becomes were the piezometric service, non-technical people, basically the watertable... I'm just trying to simplify the terminology. I realize the difference, where it actually lies.

And your determination is based on a number of monitoring wells, and you have outlined that some of these cannot be used because they have been vandalized.

In terms of the first 10 years of operation and defining where that watertable may lie, a critical well is MW6 because it is closest to the area that will be disturbed or mined initially.

Now, in the CRA, the latest geological study by consultants that you have, in that well the watertable lies at 36 to 40 metres above sea level, and that is to say five to seven metres below the ground surface.

Now, when I look at MW6, it appears to lie within or very close to the proposed processing area. The processing area will be levelled to an elevation of about 30 metres above sea level and, to me, that indicates that the processing area lies approximately six to 10 metres below the watertable.

So how does that conform to not

intersecting the Upper Flow/Lower Flow contact?

Mr. PAUL BUXTON: We don't think that the results that we're getting from MW6 are in any way, shape or form accurate. We did bring the drill rig back on to the site and tried to rehabilitate the well, but the damage to the wells consists of driving essentially tree boles, tree trunks, down into the well casting.

And unfortunately, it's very difficult to repair that kind of damage to the well.

We did get preliminary readings for a week or so on that well and, of course, the readings that were taken when the well was constructed, but literally within two weeks three of our monitoring wells were down.

Dr. GUNTER MUECKE: Okay. Well, let's get back to MW6 because, to me, it seems to be quite an important well.

You say that obstructions were placed into the well. Is that correct?

Mr. PAUL BUXTON: I'm sorry. I didn't get your question.

Dr. GUNTER MUECKE: You just said that MW6 is not useable because obstructions were put into the well?

Mr. PAUL BUXTON: Essentially, yes. Basically, tree stumps were driven into the well.

What we tried to do was to drill them out, which was unsuccessful. We then tried to push them to the bottom of the monitoring well, and I think that that process worked at the top of the hill in monitoring well two and three.

It did not work in monitoring well number six, and we really don't know what we've got in that well now.

Dr. GUNTER MUECKE: Well, in order for the water level in that well not to be meaningful, you would have to plug the well, that is to say, completely seal it by some object.

If there was any possibility of water going through the obstruction, it eventually would find the two watertables.

And so what evidence do you have that that well is actually plugged rather than partially obstructed?

Mr. PAUL BUXTON: We have the evidence from the well driller that tried to clear it out. We're just simply saying that, from our perspective, the results from that well are simply unreliable.

We continue to monitor it. We continue to monitor it on a weekly basis, as we have since the well was drilled, but we just simply don't believe that what

we're getting is reliable information.

And I think that I would like to repeat that we certainly want to get reliable information from the site.

We certainly want to do another monitoring well program in consultation with the regulator, but I think we want to be able to have that next set of data reliable, which means that we're going to have to have site security.

So I think there is a time to do that next level of work.

Dr. GUNTER MUECKE: You indicated that you will compensate anybody whose well is impacted by your activities.

I put it to you that it's virtually impossible to prove or demonstrate the cause of change in well yields, change in watertable at a particular location because there are so many factors, from precipitation to other activities in the area that may influence the watertable and the yield of a particular well.

So what sort of proof would a well owner have to provide in order to be compensated?

Mr. PAUL BUXTON: I agree with your first statement entirely, and that is why the homeowner in the area which can be determined, I think, in general terms by

experts the area that may be influenced, that we will require no proof whatsoever.

We will simply go in and replace that water supply.

Dr. GUNTER MUECKE: Regardless of cost.

Mr. PAUL BUXTON: I think I made that very clear, regardless of cost, we will replace that water supply.

Dr. GUNTER MUECKE: For what distance from the quarry? I mean, this is not an unlimited undertaking that anybody in Digby Neck can some to you and say they want to have their well replaced.

Mr. PAUL BUXTON: That is correct. We, from the preliminary report that we received, the preliminary assessment, have identified the properties which are deemed to be at risk.

It may be that Nova Scotia Department of Environment and Labour might say: "Well, we want you to go another 100 metres further out." We don't know that. That's our proposal at this time.

The ones that we have shown on our mapping have been done very clearly, and those we have said that we will not litigate. We will not put any burden of proof on the homeowner.

If their well supply goes down, then we

will replace the water supply.

And I would just like to sort of perhaps add here that there is some knowledge of the quantity of water, if you like, in the Middle Flow Unit, and it is very significant.

I can address a house almost in the middle. If you recall the slide that I showed looking from the east towards the west, the side of the mountain, and there was a house halfway up, if you like, the mountain. There's a house below that on the other side of Highway 217.

That drilled well gives 45 gallons a minute. And on the very lowest bounds, one could get by on about a quarter of a gallon a minute.

One wouldn't want to do that, perhaps, but there are wells known throughout the North Mountain basalt in the Upper Flow Unit and the flows of a quarter of a gallon per minute are considered to be reasonable in the Upper Flow Unit.

In the Middle Flow Unit, 45, 35, 75 gallons are not untypical. The well that we drilled for the homeowner who had lost his surface water supply was taken down fairly shallowly until the well driller believed that a good supply was there.

The test showed it was 15 gallons a minute, which was clearly adequate, and we stopped going

down any further.

So the amount of water in that Middle Flow Unit is very significant.

Dr. JILL GRANT: Just to follow up on this line, my understanding is in the EIS, the proposal is 800 metres from the active quarry face.

Is that the distance that you've identified for compensation?

Mr. PAUL BUXTON: I don't know that 800 metres was used on that. Our consultants looked at the properties they felt could be influenced rather than a specific diameter.

I think at the furthest south, I would think that we are further than 800 metres, but I don't think it was... It wasn't just a specific radius that was taken. It was an area of influence that we thought that an effect could be potentially felt, and all the houses in that area were... Well, there were 19 properties, but actually 24 wells on those properties.

Dr. GUNTER MUECKE: Have we been provided with a map showing these?

Mr. PAUL BUXTON: The map is in the EIS, and it's the original Jacques Whitford map from the preliminary assessment where they identified the 19 properties, and they're all numbered in the original EIS.

Dr. JILL GRANT: And those distances, are they related at all to the active quarry face, or it's just the ones that are on the map? That's the definition?

Mr. PAUL BUXTON: I don't believe that Jacques Whitford looked at a footprint of the active area of the quarry at that time. They simply looked at the geology and the hydrogeology, the topography, and said these are the ones that we think may be at risk.

Dr. GUNTER MUECKE: The Jacques Whitford study was preliminary, and the picture has altered substantially since that time on how you define the hydrogeology.

I am somewhat puzzled. Their recommendations on which wells could be impacted isn't relevant anymore because the whole picture in terms of the recharge of the aquifer is completely different from what was envisioned previously.

Mr. PAUL BUXTON: I think it is somewhat different, but I think, in fact, probably the impact or the potential impact, the potential effect is probably now less than we thought that it was.

Dr. JILL GRANT: Can you just clarify, are you including both drilled and dug wells in the compensation program?

Mr. PAUL BUXTON: I think that we've been

somewhat specific in that we have said drilled wells. The dug wells are either springs, which tend to dry up in the summer, or they are relatively shallow wells in the upper till overburden.

I had not been able to identify anybody that has been able to attribute any effect from work in the Upper Flow Unit to an effect in the water level in a well and the till unit on the other side of the mountain.

They are surface water fed, and one of the problems with surface wells is that they are, with dug wells, is that they are surface water fed, and this can lead to contamination of the water supply by bacteria.

Yes, I would, Mr. Wall reminds me that the one well that we did replace was, in fact, it wasn't even a dug well. It was actually just a little spring in the mountainside. So I don't think that I would want to take the position that we would not replace a dug well, but I think we want to make it clear to the homeowner, as we did in this particular case, that there was no effect from our operations. We replaced this one, and there was no operation in place.

And I wonder, I wonder whether I could just comment, and it does add to Dr. Muecke's question. Talk about, or just refer to, the report that was done by David Hanson, Dr. Hanson, following a significant amount of

work that we did, and I think that it was a very clear, well put together little document.

There was a concern by the residents, for example with respect to the fish plants on the St. Mary's Bay side, and he says:

"They are supplied by drilled wells in one case driven into the LFU, and in the other into a geological unit not shown in any of the above figures, namely the Blomidon Group, located to the east. Broadly speaking, I do not see any hydrogeological reason for any concern."

And I would also refer to commentary with respect to domestic wells or commercial wells. He says:

"Essentially, I agree with the general thrust of the statement found in section 9.1.3.2, first bullet, on page 28, that 'the quarry will not adversely impact the recharge regime of domestic or commercial wells', but I do so with two qualifications."

And the qualifications that he's talking about are the small zone that could be affected by the

quarry, and this is he zone that we have now reflected on our new cross-section, so this is really not new information.

We have agreed with Dr. Hanson that the area between the topographic high and the interface between the Upper Flow Unit and the Middle Flow Unit is, in fact, a recharge area, and we reflected that on our new drawing.

And if I could just go one step further, the second set of concerns that we had were not with the wells but with the Little River Water Shed, and again, Dr. Hanson, in his investigation, basically says:

> "In summary, and in my opinion, the quarry will not affect the hydrogeology or hydrology of the Little River Water Shed, unless it cuts into the bedding plain that separates the UFU from the MFU. However, even if this did happen, I would not expect a large effect."

So I think we have reflected on all the information that has been provided to us, and we've gathered it along the way, and we are essentially saying yes, there is still a potential effect, and yes we acknowledge that. We can't precisely define it, and perhaps we never can precisely define the level of the effect. But we will compensate, without any litigation, without any onus of

proof on a homeowner to demonstrate that we caused the problem.

Dr. GUNTER MUECKE: Well, it would be nice to have Dr. Hanson here to verify that what you just... And I think you're taking his report and quoting it somewhat selectively.

At the time when he wrote that report, the information that you have presented was not available. So his conclusions are based on that. And the recharge area now is a substantial portion of the Little River Water Shed.

Initially, when he wrote that, you had the topographic divide, which is the surface water shed, coinciding with the ground water shed. That is no longer true, in the new evaluation.

So I have my reservations, then, about conclusions which were reached on a totally, from a very substantially different picture than has emerged now.

Mr. PAUL BUXTON: Well, I would say that this document that I just quoted from is in the EIS and it is available, and I would say that actually Dr. Hanson disagreed with our preliminary assessment, and he shows on his sections where he thinks the recharge area is.

And in general terms, we're inclined to agree with his interpretation. I do say that the idea that the recharge area now goes out as far east as the boundary

between the MFU and the LFU is conceptual. We don't know that, but we're saying that certainly the recharge area could be out as far as that intersection point.

We initially had not thought that the recharge area was that extensive, but I think the general conclusion to be reached here is that the groundwater flows are all towards the Bay of Fundy. There is a significant groundwater recharge regime there. And that the main groundwater discharge towards the Bay of Fundy, where we are concerned, lies at the boundary of the Upper Flow Unit and the Middle Flow Unit, and I don't think that Dr. Hanson has anything to disagree with that.

Dr. GUNTER MUECKE: I would like to let that rest at the moment.

Clearly, from the picture that emerges now, the contact between the Upper Flow Unit, the Middle Flow Unit, and its intersection has become an extremely important subject.

And I think I'll come back to that at a later time. Perhaps this might be the time to let others voice their concerns and ask questions of you.

Dr. JILL GRANT: Just one other question about the compensation programs. If my well runs dry, what do I do? What's the process by which the compensation program will work?

Mr. PAUL BUXTON: You would report it to the company, and the company of course would have offices right there, there would be an immediate investigation of the situation, I think we would naturally look at technical problems first, is your pump working, is your pressure tank working, you know, those sorts of things, and determine whether in fact it's not a water supply problem but a water pumping problem.

If we identify that there has been a change in the regime for whatever course, the water level has gone down significantly and it is not recovering in a very short period of time, 12, 24 hours, we would take immediate steps to determine the best way to replace the water supply.

If it were to drill a deeper well, type of well, then we would do that immediately. We would engage a drill company and get it done quickly, and in the meantime we would provide certainly a supply of domestic water to the household.

THE CHAIRPERSON: I think the Panel will stop its line of questioning at the moment and then ask whether there are any questions from Provincial or Federal Government representatives.

If not, then we'll turn to the audience and ask... We're going to set up a microphone. I'll ask

you to go to the microphone and kind of line up behind it so that I can keep a sense of what's going on.

So Mr. Sharpe and Mr. Morsches, and Sister Barbara, and Ms. Peach, and so forth.

PRESENTATION BY BILCON OF NOVA SCOTIA - QUESTIONS BY THE PUBLIC

Mr. ANDY SHARPE: Okay, thank you. As you may be aware, there are a number of fish processing plants in Little River which are vital local employment sources, and these fish processing plants depend on a number of commercial wells in this area.

And so I would like to know whether Bilcon will be providing any further evidence to show that these commercial wells will not be adversely affected, and perhaps more importantly, if they are adversely affected, will the compensation program which has been discussed, will that be extended to these fish plant wells?

THE CHAIRPERSON: Mr. Buxton?

Mr. PAUL BUXTON: Yes, thank you. I think "commercial well" is the wrong term, Mr. Chair. There is a defined industrial well, and that is defined by the quantity of water which is taken out per day, which far exceeds domestic levels, and I believe that that is 25,000 litres per day.

The experts from Nova Scotia Environment

and Labour are here, and could confirm or correct that figure. An industrial well is a permitted well. One is not allowed to remove 25,000 litres per day, or whatever the correct figure is, fro a well without a permit.

We are advised by the Nova Scotia Department of Environment and Labour that there are no industrial wells on Digby Neck.

Now, having said that, we do know that there are wells which supply the fish plants, and we know, to some extent, where they are. They are deep wells, and I suspect that certainly some of them, if not all of them, go down into the Blomidon formation, which is a sandstone formation underlying the sandstone or shale type formation underlying the Lower Flow Unit.

And it is certainly a very significant source of water, which is why the wells go down into that level. I have been unable to determine from any of my experts that we could possibly affect the waters levels in the Blomidon formation, which lies under the Lower Flow Unit, which lies under the Middle Flow Unit.

These wells are of significant depth to get the amount of water which they require. Now, certainly I'm not suggesting that we have no interest in the problem or the issue, potential effect. We did go to the Department of Environment and Labour and ask for a list of the

industrial wells, and we're told that there aren't any on Digby Neck.

So perhaps I, I don't know whether that answers your question.

THE CHAIRPERSON: Mr. Sharpe, follow-up? questions?

Mr. ANDY SHARPE: I take it the answer is, to the two parts, "no" and "no"? Okay. Thank you.

THE CHAIRPERSON: Ms. Peach?

Ms. JUDITH PEACH: I think for people that live in the real world, the process' scientific approach is a little frustrating, because it doesn't seem to take into account all the interactions in the ecosystem, the way things interact, different flow units and all that stuff. It just breaks everything up into little boxes.

And from Dr. Fournier's description of the scientific method very early on in these hearings, I'm getting the feeling that we're still in that sort of hypothesis, experimentation, revise the hypothesis, do more experimentation. We're not at the point where we really even understand the system.

So I'm wondering, does Bilcon feel that we're at... I guess the question is, how confident is Bilcon that the Panel has the information it needs to properly assess the hydrogeology of the site?

Mr. PAUL BUXTON: I think, you know, there are various purposes to investigations in scientific study, and I think for the purposes of an Environmental Assessment it's very clear that what we need to do is to find out what the effects may be, or what the magnitude of the effects may be, who could be affected, how they could be affected, for what length and period of time, how they're going to be affected.

And I think that that's, you know, the first very significant stage in the process. I believe that it's almost impossible to remove every level of uncertainty, and certainly, if we had taken the position that we believe that we're not going to affect anybody's well, and if people think that we're going to affect their wells, let them prove it, and then litigate, and then we'll respond, would be one approach. We do not want to be seen as that type of corporate citizen.

I think that we could drill holes for the next ten years on that site and in that area and in the various flow units, and our degree of understanding would naturally increase, and our degree of certainty would increase. But we'd never reach the hundred percent certainty level.

So what we're saying is, let's define who may be affected, how they may be affected, what the

effect may be. So we're talking about the magnitude of the effect. In spatial terms, how many wells, how many people. What is the significance of the effect; well, if your water supply has gone down, this is a very serious effect. We depend on our water supply for our everyday living.

So what we're saying is that within a zone which credibly we can say that there could be some influence, we will put a compensation plan in place.

Compensation plans such as this are not unusual. It may very well be that the Department of Environment and Labour may ask us, as a part of their process under the Industrial Permit, to provide either a bond or cash, and provide that up front, so that in fact even the premise that we may go out of business or whatever is taken away; that if there is an effect, the compensation, somewhat in the same manner as reclamation, is already in Government hands, and even if something catastrophic happened to the Government and wells went down after that point, the money is in Government hands.

So I think what we're saying here is that we cannot be totally certain, we admit that, and hence we're putting in a compensation plan to remove, if you like, that degree of uncertainty that somebody may say what happens if my well goes down. It will be replaced.

And it is certainly within the power and

the competence of the Department of Environment and Labour to make us enter into a bond arrangement or a cash arrangement to enforce that commitment, and we would be very comfortable with that.

THE CHAIRPERSON: Ms. Peach, do you want to follow up, anything?

Ms. JUDITH PEACH: There's kind of a lot to say on that subject. I mean, one thing that concerns me is that it wouldn't be volume impact on the well, but it could be a contamination of the quality of the water. I don't think there's certainty that there's no water travelling through the Upper Flow Unit into aquifer, is there? I mean, I didn't get that feeling.

Mr. PAUL BUXTON: I think we've made it very clear, Mr. Chair, that we're talking about quality and quantity, here.

Ms. JUDITH PEACH: But how, if you replace a well on somebody's land into a contaminated aquifer, isn't the next well also going to be contaminated?

Mr. PAUL BUXTON: I think what we've said is that we will replace the water supply, and I think one of the Panel members alluded to that; that yes, it could be an expensive proposition if we, in fact, had to... If there were contamination. And again, we do not think that there will be, but if there were, that we may have to drill a well

a significant distance away, perhaps on other pieces of land that we own, and supply that property owner, and that could be a significant cost.

We're not limiting the cost. We have said that we will compensate with respect to both quality and quantity.

THE CHAIRPERSON: Thank you, Ms. Peach. Sister Barbara?

SISTER BARBARA: My name is Sister Barbara, and I'm in Rossway, and I just have quick question about wells.

Hypothetical: If I'm a landowner, my well runs dry, Bilcon replaces it because they're the reason why it ran dry, will there be a limit as to how many wells you'll replace for me in a 50-year life span of this quarry? That's a lot of wells, if the well goes dry once or seven times or 70 times, are you going to be replacing these wells?

And if I only have an acre of land, that's not a lot of land mass to put all these wells on. And if you can't replace the wells, will you relocate the homeowner to another area of Digby Neck?

Mr. PAUL BUXTON: I would go back to my previous statement, Mr. Chair, and that is that we will replace the water supply, and I think I would also go back

to a previous answer with respect to the high water bearing capacity of the Middle Flow Unit. It is a very prolific water bearer. And the Middle Flow Unit is a fairly thick unit.

In terms of supply, I have no doubt whatsoever that we can replace the supply on the same piece of property.

With respect to quality, if something totally unexpected happened with respect to the quality of the water and we could not replace the well on that piece of property with respect to quality, then we would undertake to resupply, to supply water to that house at our expense, of good quality and good quantity.

Yes. There is no time limit, here. There is no number of wells which a homeowner... It's a blanket statement that we will replace the water supply. Yes.

SISTER BARBARA: Thank you.

THE CHAIRPERSON: Mr. Morsches?

Mr. BOB MORSCHES: This, Mr. Chair, concerns a subject that was not brought up by Mr. Bilcon(sic), or Mr. Buxton, excuse me. But it does concern not the wells but the flow of fresh water into the Bay of Fundy.

There's a book out concerning 20 million

years of the coastline along Nova Scotia on the Bay of Fundy side. In the book it says approximately 75 percent of the basalt in along this whole area is columnar, where the consistency of the basalt is more what I call mushroom formations.

If you blast columnar, it could affect not only the wells, but it also could have a dramatic effect on the coastline by having fresh water flow into the Bay of Fundy. This could affect significantly whales, salmon, lobsters, urchins, and other ground species around that area.

What is the compensation policy with respect to the effect on marine life? It affects the lobsterman, it affects the salmon gainers, and the urchin divers in the Bay of Fundy, not only in Nova Scotia but all the way over to New Brunswick.

And the area which is a concern, like Mr. Kemp Stanton said yesterday, with the tides, that has a tremendous effect on a large area.

THE CHAIRPERSON: Are you directing that question to Mr. Buxton?

Mr. BOB MORSCHES: Mr. Buxton.

THE CHAIRPERSON: Mr. Buxton, please.

Mr. PAUL BUXTON: I'm not sure I totally understood the question, Mr. Chair, but let me take a stab

at it.

The ground water, certainly to the west of the divide and we think even further east than that, in fact does flow towards the Bay of Fundy, and has always done so, at least in recent geological history.

I don't believe that we're changing in any way shape, or form, that regime. And I would point out that the Upper Flow Units and the Middle Flow Unit and the Lower Flow Unit don't stop at the end of the property. They continue under the Bay of Fundy for a considerable distance.

So I don't believe that we're changing the groundwater regime under the Bay of Fundy, as it is now. I'm not sure that that answers your question, because I'm not sure I understood the question.

Mr. BOB MORSCHES: The question is, if you're in columnar blast, it affects the water. The water flow could change because of that. It could go internally to the wells, but it could also go to the coastline because if you read anything about the archaeology part, it is so stated in the book, and Mr. Mowatt (ph), who drilled your well, drilled my well, and I'm on the St. Mary's side, but he hit mushroom basalt, but he was afraid of a columnar.

And then he described to me what could happen if you hit columnar and you changed the water flow, fresh water flow, and it could go into the St. Mary's Bay

and mix with the salt water, and it would have an effect on marine species.

THE CHAIRPERSON: Mr. Morsches, it seems to me that Mr. Buxton can't answer this question. He doesn't have the technical knowledge for this. I mean, it's the first time the subject, columnar versus mushroom, has been entered into. So I don't think anyone's prepared to answer that question.

Mr. PAUL BUXTON: I think I could add a little bit to it, if I might try, Mr. Chair. The Upper Flow Unit is a massive basalt, although it tends, in perhaps the bottom metre or two, or perhaps even slightly more, it tends to be columnar.

The Lower Flow Unit tends to be, in general terms, columnar, which is why, on the Bay of Fundy coast, you see the columnar formations like the Balancing Rock. So that if you're on St. Mary's Bay side and drill a well, you will be drilling into the Lower Flow Unit, which tends to be columnar.

The other aspect, we do not intend to be blasting in the Middle Flow Unit, let alone the Lower Flow Unit, and one of the fairly significant ways that we can tell that we're approaching the Middle Flow Unit is that we get into that bottom, small bottom columnar layer at the bottom of the Upper Flow Unit. Does that help at all?

Mr. BOB MORSCHES: Yes, sir, it does. However, I think if you talk to your blasting expert he probably should know when you're in columnar what effect it has concerning the water flow and the channel for which way it's going to go.

THE CHAIRPERSON: Thank you, Mr. Morsches.

Are there any other questions? Mr. Stanton, please. Sister Barbara, you've already been once. I'd just like to make sure that everyone has at least gone once, and then we can ask again.

Mr. KEMP STANTON: I'd just like to know, when we're sailing along the shore in a boat, we see on the shore a straight line along that seems to be one layer of rock separated from another layer of rock, with broken rock in between.

Is this a sub-flow, or is it just an anomaly? It seems to travel quite a distance in a straight line along the shore. I was wondering if water would flow through that series of cracks.

Mr. PAUL BUXTON: I can't answer that question, Mr. Chair. My belief is, from what the geologists have told us, that the Upper Flow Unit is of significant depth at the shoreline. It may be an effective wave action, freeze/thaw, I'm not sure.

But I don't believe that there is another flow in there.

THE CHAIRPERSON: Any additional questions? Another round of questions, if someone's interested. Sister Barbara, please?

SISTER BARBARA: Yes, I'm really interested in knowing about water levels. I noticed from Mr. Buxton's slide I saw the water, the Bay of Fundy I saw the land mass.

Could anyone tell me in English measurement what it is from the bottom low level, low tide, to the land mass?

THE CHAIRPERSON: I certainly can't. I don't know, Mr. Buxton, can you?

Mr. PAUL BUXTON: Could you... From the low tide to?

SISTER BARBARA: Low tide, to where the quarry will be situated.

Mr. PAUL BUXTON: Well, the quarry will extend somewhat up the mountain. Would you like a level between low tide and the top of the mountain? Would that help?

SISTER BARBARA: Sir, the quarry is not going to be on top of the mountain.

Mr. PAUL BUXTON: No.

SISTER BARBARA: It's going to be halfway up?

Mr. PAUL BUXTON: That's correct.

SISTER BARBARA: Halfway up.

Mr. PAUL BUXTON: Well, we have made the statement that we will not, at any time, blow through the top of the mountain, because we did make the statement that this quarry will not be observed from Highway 217.

So, but I could give you, in rough terms, the height from the top of the mountain to low tide. Does that help?

SISTER BARBARA: Yes.

Mr. PAUL BUXTON: Excuse me. 300 feet... 90 metres from the top...

--- Pause, conferring

Mr. PAUL BUXTON: About 320 feet. I deliberately put it in feet, because it may be more helpful, Mr. Chair.

SISTER BARBARA: 320 feet. That's at low tide. Correct?

Mr. PAUL BUXTON: Yes. Don't take that as an exact figure because, you know, the topography of the top of the mountain does this. But in that general order, 300-odd feet, yes.

SISTER BARBARA: And what would it be at

high tide?

Mr. PAUL BUXTON: Within, I think there's probably a difference of 20 feet or something like that in the tidal level.

THE CHAIRPERSON: Just add 20 to 30 feet to that.

SISTER BARBARA: Alright. So it's 340 feet?

THE CHAIRPERSON: Whatever it adds up to.

SISTER BARBARA: 340 feet. Right. So it's 340 feet at high tide from the bottom to the top.

THE CHAIRPERSON: You have the numbers. Just add them up. Yes.

SISTER BARBARA: Sorry. Yes. So it's not going to flow over the land mass once the high tide comes up? See, I've been living on Digby Neck for 25 years. I still don't know where the site is. I might never know where it is, actually. But I really don't know what it looks like.

THE CHAIRPERSON: I'm sorry, I can't help you.

SISTER BARBARA: Thank you.

THE CHAIRPERSON: Okay. I'm going to bring this session to a close, but before I do, I have a comment to make.

Mr. Buxton, I'd like to say in the strongest possible terms how disappointed the Panel is with your presentation this morning. This process, you've told us repeatedly this process has been underway since 2002. That's five years. From the time of the first scoping session to the present is two and a half years.

And you have seen fit to bring to us a moving target for analysis. You've changed the diagrams, changed the model which you're using, and you do that at the very last minute. I think it's totally inappropriate.

It would seem to me that the people here, sitting here, the community, as well as the Panel, has the right to expect a reasonably well-developed plan which they can judge and gauge in terms of the future.

To change it at the last minute, and then to suggest that it's going to continue to change, I think is not reassuring at all.

And I think, and I have to agree with some of the comments that I've heard, is that it seems totally inappropriate to present it to us as a moving target, ask us to evaluate it, and in the same words to tell us that it's going to change again, and again, and again.

You've had two and a half years to look at this process. It would seem to me, as a Panel member I would've thought that we would be looking at something that

would be settled and defined. Instead, what you're offering up is a compensation plan.

So I'm sorry to verbalize it this way, but I think, speaking for the Panel, I believe that this is an inappropriate response.

So we'll take a break now for 15 minutes.

--- Applause

THE CHAIRPERSON: Please. I think that's inappropriate.

--- Recess at 10:38 a.m.

--- Upon resuming at 10:54 a.m.

THE CHAIRPERSON: Okay. We have both of our presenters from Natural Resources Canada, NRCan, so we'll get underway with the first of two presentations this morning.

The first will be by NRCan, and then subsequently by the Nova Scotia Department of Environment and Labour, but right now we'll start with Andrew McAllister and Dr. Miroslav Nastev.

PRESENTATION BY NATURAL RESOURCES CANADA - Dr. MIROSLAV NASTEV

Mr. ANDREW MCALLISTER: Ladies and gentlemen, thank you once again to allow us to present in the hydrogeology thematic session.

For those in the audience who were not here yesterday, I'll just quickly go over a bit of NRCan's mandate, and then we'll lead right into Dr. Nastev's presentation.

My name is Andrew McAllister. I am a Senior Environmental Assessment Officer with Natural Resources Canada, or NRCan for short, out of Ottawa.

I'm responsible for coordinating the NRCan review of the Environmental Impact Statement as well as NRCan's participation in this Joint Review Process.

I'll make a very short presentation to introduce NRCan to the Panel and to provide a brief summary of our involvement in this environmental review.

To my right is Dr. Miroslav Nastev, who is a research scientist working in the Quebec office of the Geological Survey of Canada.

Dr. Nastev was part of the team who carried out NRCan's technical review of the EIS and is responsible for the NRCan hydrogeology comments that were filed with the Panel on June the 12th.

Dr. Nastev will make a brief presentation of the key issues that are identified as a result of this technical review.

As mentioned yesterday, NRCan is an economic science-based federal department with a mandate to

promote stable development, responsible use of Canada's mineral, energy and forestry resources and to develop an understanding of Canada's landmass.

The Department also conducts research and technical surveys to assess Canada's resources.

NRCan's role in this project is relatively limited. NRCan has no regulatory or decision-making responsibilities for this project.

As such, NRCan's involvement in the joint Environmental Review Process stems from its obligations under the **Canadian Environmental Assessment Act**, through which NRCan has determined that it was a federal authority in possession of specialist information or knowledge relevant to the Project.

Therefore, in the context of this environmental review, NRCan's role is to provide technical and scientific expertise within the limits of its mandate.

Based on the information provided in the EIS, NRCan experts provided comments in areas of its mandate, including hydrogeology, which we are here today to discuss in this thematic session.

I outlined NRCan's other non-hydrogeological comments to the Panel in yesterday's session.

I will now pass the mic to Dr. Nastev

who will speak to hydrogeology issues and NRCan elements in more detail, thank you.

Dr. MIROSLAV NASTEV: Thank you Mr. McAllister.

Tout d'abord, merci pour cette opportunité qui m'a été présentée de donner l'opinion de Ressources Naturelles Canada sur la carrière de Whites Point.

I will continue in English just to be easier for the translation.

Let me go back to the previous slide, which outlines a little bit what I will present today.

First, I will talk about the site hydrogeology, the conceptual model which the Proponent presented so far in the three consecutive studies I think.

I will discuss a little bit about the potential impacts, and finally I will give my recommendation.

Fractured rock aquifers are probably the most difficult hydrogeological settings to define.

In opposition, granular aquifers are much more easier to understand how the groundwater flows, where it comes from, where it flows and where it goes.

In fractured aquifers, it is not so obvious. The standard procedure to study fractured aquifers

or any type of aquifers is to build first a conceptual model before going to the field.

Based on this conceptual model of the groundwater flow, then we decide which methodology, which approach we will use in order to study the aquifers.

Then, we go to the field. We apply our methodology, we collect the data, after that we interpret the data. Eventually, we build numerical models and we decide about the impacts, effects that given project studied will have.

So here I present... Sorry. Okay. Here I present... This is a figure from another study. I just adapted it a little bit to fit more what we have in Whites Point.

The geological description of the units tell us that water-bearing fractures are more or less horizontal to sub-horizontal, dipping 5 to 10 percent towards the Bay of Fundy.

Most of the groundwater flow occurs in these sub-horizontal water-bearing fractures, and the contact between this sub-horizontal fracture is done with vertical joints, which are much more rare or more sparsely distributed in the rock mass.

The groundwater is replenished, recharged from water that comes from precipitation. In the

first hydrogeological study given by the Proponent, done by Jacques Whitford, it is very well explained how the infiltration water is retained by the granular deposits, till deposits above the rock surface, and then it slowly infiltrates further down through horizontal and vertical fractures.

The problem with fractured aquifers is that groundwater flow is not uniform at all. Some of the fractures will take most of the flow where some of the fractures will take none of the flow.

The additional problem at this particular site is the terrain topography, that the aquifer itself is not... It is horizontal. There is hilly areas and more flat areas towards the Little River, which makes the problem more difficult.

Why? Simply because in horizontal... When we have more or less horizontal groundwater flow, the water levels are more or less identical, depending of the depth of the monitoring well.

So we can talk about a given water level or watertable, which the Proponent uses quite often in the reports.

However in fractured aquifers, each water-bearing fracture can be considered as separate, as a distinct aquifer unit.

Those units are separated by blocks of solid rock, and this way, we have complex aquifers or several aquifers that are interconnected and in which water flows downwards or upwards, depending of the gradient and of the water input and the water output.

So if we install an observation well and... Actually, what I present here with the grid is the screened section or open-borehole section of this monitoring well.

Usually, we call... In hydrogeology, we call this piezometers, a piezometer. When the screen section is much... It's shorter, like three to five feet in general. So depending where this monitoring well is put, the water levels will vary considerably.

If we are in the topographical heights, like in this case, and if we have a shallow monitoring well, then the water level in this well will be shallow as well.

If we install another monitoring well just beside this one, so on the same spot, the screened section of this monitoring well is located much deeper in the aquifer, actually it intercepts a water-bearing fracture that is much lower than...

The water level in the second monitoring well will be lower than the water level in the first well

because on the topographical heights, which we call usually recharge areas, groundwater is seeping slowly downwards, so we have downward gradient.

Those gradients, hydraulic gradients, make the groundwater flow to be very complex in this fractured aquifer.

If we go further downward on the hill slope towards the seashore, and if we build a shallow monitoring well, actually where the screened open-borehole section is shallower, then we will have another water level because this screened section most probably will intercept another water-bearing fracture.

However, if we build another monitoring well just beside this one, which will go much deeper in the aquifer, actually which will screen the horizontal water-bearing fracture that is located downward, further deep in the aquifer, the water level in this monitoring well will be much higher.

If we are in the discharge area, it can be even a flowing well.

So not necessarily disagreeing with the Proponent's comments on monitoring well number six, but it might be that the water level, which is only five to six metres below the ground surface, it might be that this is the real water level at this site.

So having said this, there is no one watertable, there is no one water level in this aquifer. There are many other water levels, as many as there are horizontal water-bearing fractures.

So if we know this and if we visualize this before going to the field, then we should choose the right approach, methodology, how to define groundwater flow in these types of aquifers.

In the preliminary study, which was the first one done in 2002 by Jacques Whitford, four boreholes were drilled.

I think that these boreholes were not drilled for hydrogeological purposes, but more for geological purposes.

Water levels in these boreholes were further used to describe a general groundwater level which could occur at the base of the quarry.

A conceptual model has been proposed by the consultant. This conceptual model, initial conceptual model, slightly "evoluated" (meaning evolved) in the second study by MVCI, and then further developed with the next consultant, and we see today that there is maybe a fourth version of this conceptual model.

Not necessarily disagreeing with what the Proponent is proposing, the Proponent is conceptualizing

the groundwater flow. This is only one of the possibilities, or it is a liberal explanation of something that can be explained in another way or I mean in many other ways.

So the second hydrogeological study which has been done... Or the second field study which has been done in September 2005, unfortunately the consultant or the Proponent, they chose the same methodology, to use boreholes in the monitoring wells that are open boreholes throughout the rock body.

So these monitoring wells intercept several water-bearing fracture at the time.

What is the water level measured in this well? We cannot say because we don't know for which depth or water-bearing fracture this water level is representative of.

So I think that the approach, the methodology for field campaign used by the promoter is or was not appropriate to study this type of aquifers.

So, long open boreholes are not suitable for fractured rock and they are not suitable to define the groundwater levels, but they are also not suitable to define the transmissivity, the hydraulic conductivity, actually the facility with which groundwater moves through the aquifer or through the aquifers in this case.

The Promoter has done in the third study... I'm sorry, I'm using only three studies, but there are maybe several, much more of them.

The third study for me is the one done by CRA in 2007, February 2007.

Bail tests have been conducted in five of the monitoring wells, and an attempt has been done to conduct a pumping test in one of the monitoring wells.

The results from the bail test indicate that the monitoring well number one, and unfortunately I don't have the cross-sections 6(a) or 6(b) in my presentation, but the monitoring well number one, which intercepts the Upper Flow Unit and the Lower Flow Unit at the same time, has very low hydraulic conductivity, extremely low. It could not be measured.

At the same time, two other monitor wells, number two and number three, which intercept as well, but stratigraphic units, they have a hydraulic conductivity of 10 to minus 6 metres per second.

Monitoring wells number four and five, which intercept only the Middle Flow Unit, which is usually defined by the Promoter as the most permeable, have lower hydraulic conductivity, 10 to minus 7, so the lower hydraulic conductivity.

The pumping test that has been done in

the... I agree that there were other problems with conducting this pumping test.

First, the pumping rate could not be assessed precisely so it went dry or it was very difficult to find a proper pumping rate.

Because of the distance of the observation wells comparatively very high comparing to the small pumping grade, no impacts of the pumping or direct draw downs of the pumping could be observed in the observation wells.

However, only interpreting the draw down observed in the pumping well itself, it appears that the monitor well number five is two orders of magnitude more than the bail test has shown. Please correct me if I am wrong.

So the methodology, the approach used by the Promoter to define the transmissivity, the hydraulic conductivity of this type of fractured aquifer, I think it is not appropriate. It was not appropriate.

Let me just come back a little bit on the groundwater levels again.

In figures number 6(a) and 6(b), hydrogeological section AA and BB given in the EIS, actually those are the cross-sections that the Promoter presented this morning again.

There are several, or let's say... I will just check the figure 6(a), but there are one, two, three, four, five... Five monitoring wells or domestic wells or boreholes that are shown on this figure together with the groundwater table.

However, only one or two of those wells presented on the figure have measured groundwater level. The others are only for information.

Monitoring levels measuring those wells are not used to build the inferred groundwater table, simply because the monitoring wells were vandalized or because in domestic or commercial wells, there were no measures taken.

So actually, the watertable that is given in those figures, 6(a) and 6(b) and even this morning, there is very, very few data that support this watertable. Let me use the same term as the Promoter.

I don't necessarily disagree with what is presented, however I just want to mention or to say that there might be some other interpretation, many other interpretations of the water levels.

In the last report by CRA, there is a figure number... In the attachment (a), there is a figure, number A-1, which graphically presents... I'm sorry again that I don't present this figure on the Power Point.

But it gives the observed water levels in the wells, in the monitoring wells on a longer time period, of more than a year.

If we regard these observed water levels, we can see that most of them, if not all of them, fell in the very narrow range, between 35 to 45 metres above sea level.

This means that all the groundwater table that was presented with topographical high, flat area, and then topographical low...

Okay. Close to the seashore, it's obvious. Actually, that I'm not supporting. Field data is simply not supporting these water levels. Field data I have said does not support the proposed or the qualitative interpretation of the geological units that the Upper Flow Unit is very little permeable, that the Middle Flow Unit is much more permeable.

Bail tests and pumping tests do not support these qualitative estimates.

Okay. Let me move to the other slide. I just want to see... Okay.

Having in mind what I said, like what will be the conceptual model of the groundwater flow, we can only discuss what the quarry operation...what the impact of

the quarry might possibly be, but we cannot tell whether it will happen and what will be the magnitude of those impacts, because we know very...

How can I say that, there are actually very few field data to support all the characterization and now, in this light, to support what could be the expected impact.

Maybe the Promoter is right that the impacts will be very low, negligeable, but this is only one interpretation again.

So I think that the quarry operations will impact the groundwater recharge, will impact the groundwater levels, will impact the well yields, will impact the discharge, the groundwater discharge and less probably the groundwater quality.

I think the Promoter this morning not agreed, but proposed the same possible impacts.

So let us go back to the same figure as the previous one, just removing the block of the rock mass that the quarry will take out.

The initial groundwater dynamics with topographical highs as recharge areas and topographical lows with discharge areas, they now change completely.

What will the actual impacts be? We cannot say at this stage of the current knowledge.

What can be said with great certainty is that the quarry base will be very close, maybe in the groundwater level.

So the groundwater most probably will discharge from the vertical or from the horizontal fracture that will be eventually intercepted by the proposed quarry.

The groundwater that infiltrates on top of the hill and that seeps slowly vertically downwards and then horizontally in the water-bearing...in the horizontal/ sub-horizontal water-bearing fracture, will appear at the quarry walls, will seep from the quarry walls. This can be said with high certainty.

So the Proponent proposes a drainage at the base of the quarry, a drainage system at the base of the quarry.

This drainage system will drain the groundwater discharging from the base of the quarry, the groundwater seeping from the quarry walls.

At the same time, this drainage system will drain the groundwater, which could eventually infiltrate... Which today, in the current natural conditions, are infiltrating the rock aquifer. This rock mass won't be there anymore, so the current recharge will not occur in the future quarry conditions.

So draining today's natural recharge and

draining certain quantities of groundwater from the quarry bottom and from the quarry walls, this equals to a certain pumping rate, to a certain pumping well with a huge diameter.

Although the quarry operations will be carried above some or certain watertables, the quarry operation itself will act as a huge pumping well.

What will be the impacts of this operation on the groundwater level in the domestic wells on the other side of the hill, we cannot say with high certainty today, because the current knowledge does not allow us to express on the magnitude of those impacts.

However, the type of impacts, we can discuss this and I think the Proponent went through the type of impacts this morning.

Okay. Here, I just present a quarry where the more regional watertable is at this level, and how the water seeps from two water-bearing fractures on the quarry walls. This is just for information purposes.

So having said all this, if we want to know, with high precision, what will be the impacts of the quarry operations on the groundwater, on the domestic neighbouring wells, then we should have appropriate knowledge.

Additional field data are necessary. In

the Conestoga Rovers and Associates' last report, February of 2007, the consultant proposes several, if not many points that should be done before or in parallel with the quarry operation in order to define more the groundwater, the aqua-geology of the site.

I agree completely with those recommendations, and I just want to emphasize the use of piezometers, not monitoring wells.

Also, more long-term monitoring groundwater levels, using multi-level wells, which means several wells screened and different depths in the aquifer at the same spot.

In order to define... This is to define the groundwater levels, in order to define the facility or difficulty with which groundwater moves through the aquifers.

I propose to use packer testing, which is... Packer is like a balloon, inflatable balloon, so using a straddle-packer system, two balloons, isolating certain portions of the aquifer, like one metre high or three metres high, we can exactly define the transmissivity profiles or where the water-bearing fractures are located in the aquifer.

So a comprehensive field study should be done if we want to advance the knowledge on the potential

impacts.

Collecting additional field data means interpreting that data. Interpretation can... If sufficient data is available, then we can either advance a numerical model or an analytical solution to assess the potential impacts.

Finally, using that interpretation, the promoter should provide the worst case scenario. I think this was advanced already several times in the EIS.

The range or the worst case, what will be the... This is the most critical actually, or most conservative for you as a Panel to know what will be the range of those impacts, so you can decide on your recommendations.

Thank you very much. So I will be pleased to answer questions.

PRESENTATION BY NATURAL RESOURCES CANADA - QUESTIONS BY THE PANEL

THE CHAIRPERSON: Thank you Mr. McAllister and Dr. Nastev. We have some questions.

Dr. GUNTER MUECKE: Dr. Nastev, thank you for your very comprehensive and very clear exposition of the problem at hand.

Were you actually able to visit the site at any stage?

Dr. MIROSLAV NASTEV: Well, I arrived yesterday and last night, yesterday afternoon, I went to the site. There was no one to stop me. I wanted to ask whether I can enter the site, so I probably entered the site without permission. I did.

So I parked my car just beside the Highway 217, and then I climbed up the hill. There was truck parked somewhere there, and I climbed on the top of the hill, and just had the first touch of the site. Then I walked along the Little River, where the fisheries are. Yes.

THE CHAIRPERSON: Well Dr. Nastev, that is a public road, you can walk down that public road, apparently.

Dr. MIROSLAV NASTEV: I'm sorry?

THE CHAIRPERSON: I believe that's a public road. You're allowed to walk down that road.

Dr. MIROSLAV NASTEV: Okay.

Dr. GUNTER MUECKE: The reason I ask is because if you... And I was very interested in hearing your analysis in terms of fracture systems, because one of things... I'm not a hydrogeologist, but I am a geologist, and I have worked on basalts extensively.

One of the things I noticed is there are very relative fine fracture zones in the Upper Flow Unit.

These run approximately north/south, which is the direction of a fault system, which cuts the North Mountain basalts, so...

These are just... Instead of having the big faults, you have smaller ones, and actually the Proponent has showed us oblique areal photos of the site, and if you can find it, maybe you can show it to us.

One of the things that stares a geologist in the face there is one of these fractures running through the outcrops, near the shore, you see them near the shoreline.

So my question is, in view of what you have said, you showed sort of a spacing joint type, horizontal joints and vertical joints, but what would be the influence on the groundwater system if you had fractures running through?

Dr. MIROSLAV NASTEV: Well, of course it depends on the density of the fractures.

So if I understand well, your question is we have a fractured flow, extremely fractured flow, so appropriate methodology should be applied in order to study this type of aquifers.

I don't know whether I answered your question, whether I understood your question first.

Dr. GUNTER MUECKE: Yeah. I basically

wanted to know how it affects flow and flow volume, from your experience.

Dr. MIROSLAV NASTEV: I studied fractured aquifers extensively in my career, mainly in the St. Lawrence, which are sedimentary rocks, fractures are much more denser there.

So on the regional scale, we can consider them as porous media or equivalent.

However, on the local scale, as in this study, then we applied geophysical testing in order to find out how the groundwater is moving in these aquifers.

My experience tells me that when we have a monitoring well that intercepts several fractures, because we're in accidental terrains with topographical highs and lows, that several fractures or one or several fractures, are giving water to the well and then there is another set of fractures that are taking water out from the well, so the water is always in a dynamic situation. It is never static water, static flow.

So water is moving constantly in those fractures, and this will be exactly what we have on this particular site because of all the accidental terrain.

Dr. GUNTER MUECKE: So I don't want to put words into your mouth, but if you had a fracture zone it would basically be a focus of groundwater flow?

Dr. MIROSLAV NASTEV: Each of the water-bearing fractures can be considered as distinct aquifers.

Depending on the aperture of the fractures, they will bear more or less of the groundwater flow. The groundwater flow will concentrate only on the fractures, so if we have only two fractures in 100 metres of interval, then water will flow only through those two fractures.

And giving the transmissivity of the whole section of the 100 metres is more or less useless, because water is flowing only... The aquifer is only the fracture itself. So we should study aperture and transmissivity only of the fractures.

Dr. GUNTER MUECKE: That's what I was after, is that it becomes useless to study it in the solid blocks between the fractures. You have to focus your studies on the fractures and the fracture zones.

Dr. MIROSLAV NASTEV: Yes, provided that the solid block is really solid.

So you should make a packer profiling all the way through the boreholes and then assure that the solid blocks are really solid and they act as an aquitard between two aquifer units.

Dr. GUNTER MUECKE: Again, it's partially reiterating what you were saying.

So in terms of recharge, we are looking at a much broader area than what the Proponent's studies seem to indicate, which focus on the Middle Flow Unit. As you said, that is probably...

The transmissivity of that is lower than the upper at times, so we should really focus in terms of recharge on the whole of the ground service, including the Upper Flow, is that...

Dr. MIROSLAV NASTEV: The Proponent is emphasizing probably more than it should be the Upper Flow Units, the distinction between the Upper Flow Units, the Middle Flow Units, the contact between those two units, the basalt 10 metres of the Upper Flow Units.

Those... In geological terms, this is probably right. In hydrogeological terms, field data does not support this distinction.

The aquifer... I would rather talk about the complex aquifer, which might be more or less permeable at given depths, but certainly not... I won't use like two aquifer units. Field data simply does not support that.

We have one complex aquifer.

Dr. GUNTER MUECKE: So a discussion of whether you're going to intersect...that you can confine interference with the watertable by avoiding one particular

horizon is really not the right approach?

Dr. MIROSLAV NASTEV: I agree with you. If there is one watertable, it is the one that is in the granular glacial deposits on top of the rock. This is the local watertable.

All the others are water levels that depend on the depth of the water-bearing fracture and the vertical gradients, whether downwards or upwards.

Dr. GUNTER MUECKE: Thank you very much. That clarifies it.

THE CHAIRPERSON: Dr. Nastav, is it appropriate to ask you if you're comfortable with the model produced by the Proponents, yes or no?

I mean, you made some recommendations at the end of your presentation, and are they simply to refine the existing model, or are they to attempt to substantiate the original model?

I don't think you've said it, and I don't even know if you want to say it, but it's my... I'm just trying to get some sense of the qualifications that you've just offered us relative to the model we've been using.

Now, the one distinction you did make was the separation between the different layers as existing in a geological sense, but not in a hydrogeological sense

though.

So can you give us your impression of that?

Dr. MIROSLAV NASTEV: On local scale, we should consider fractured aquifer. We cannot talk about homogenous, uniform or of two homogenous, uniform units, so we should talk about fractured aquifer.

If we talk about fractured aquifer, the conception model should be substantiated, not refined.

THE CHAIRPERSON: Thank you.

Dr. JILL GRANT: Dr. Nastav, can you give us an idea if there's a major intersection of the watertables in the way that you've described and a lot of water is coming out of the side of the quarry face? What is the geographic extent to which areas could be affected?

Like if the aquifer, if the groundwater comes down, what's the distance that we could be looking at potential effects from that kind of an incident?

Dr. MIROSLAV NASTEV: Yeah. Maybe we can go on the first figure. Please, Andrew?

--- Pause

Dr. MIROSLAV NASTEV: This is a difficult question to answer having the current knowledge of the groundwater flow.

The nature of the surface

water/groundwater divide is usually using hydrogeology to define... Sorry. The surface water divide is usually using hydrogeology to define the groundwater divide as well.

If we move the groundwater divide elsewhere from the surface water divide, we've got to have field data to do that.

The ideal case is that we have three monitoring wells that are spaced on a given on 5, 10, 20 metres distance, depending on the topography, and then two lateral wells are giving same water level, the middle wells are giving high water level, so we say: "Okay, the groundwater divide is there."

You should know that there is not only one watertable in fractured aquifers. There are several of them.

On the site of the quarry, the water-bearing fractures are dipping 5 to 10 percent toward the Bay of Fundy. I don't know, maybe the Proponent could help us, what is happening with those fractures on the other side of the surface water divide.

If we move the groundwater divide as was proposed this morning further closer to the Little River watershed, on that side, it means that the groundwater levels... So again, I have difficulties with having one watertable.

The water levels will be lower. Just moving the groundwater divide toward Little River, the water levels at the quarry will be lower, which, in that case, supports that the quarry operations will be above the watertable.

However, if we do that, then the water that seeps through the sub-horizontal fractures will come to the quarry walls before reaching the groundwater table.

In that case, we might dry...not completely, but start to dry those water bearing fractures that are located above the watertable.

So the question is complex, and the answer... There is no one single answer. It is very difficult to say up to which distance the operations of the quarry will be felt.

The real answer might be very close to the quarry wall; the answer might be further from the quarry walls.

Dr. JILL GRANT: And am I right in understanding that given the nature of this kind of fracturing and how the water is going to flow in a range of directions, that some of the dug wells on the other side of the crest of the hill may be fed by some of these kinds of fractures and could be affected by alterations made by the quarry?

Dr. MIROSLAV NASTEV: The dug wells are usually down in the deposits. They might be fed by a water-bearing fracture against them. However, in most of the cases, I think the dug wells simply use water which is in granular deposits themselves which comes from infiltration from precipitation.

So saying that quarry operations may impact dug wells that are on the other side of the surface water divide is difficult to me. I don't agree with that.

So what I say, I think that the quarry operations will not have impacts on the dug wells on the other side of the surface water divide.

THE CHAIRPERSON: The Panel is finished with its questions. It's over to you, Mr. Buxton.

PRESENTATION BY NATURAL RESOURCES CANADA - QUESTIONS BY THE PROPONENT

Mr. PAUL BUXTON: Thank you, Mr. Chair. Just one or two comments and one or two questions.

We had not seen this presentation prior to this morning, so we haven't discussed the presentation in detail.

I want to indicate again that I think what we did say clearly this morning was that we had a conceptual model and that we would be doing modelling and,

in fact, I think NSDEL has been quite specific in asking us to do specific modelling, and we have agreed to do that.

We do have a program that's set out by Conestoga Rovers, and it was alluded to by the presenter, and we intend to carry out that work program.

Just a couple of notes. We characterized the Upper Flow Unit in somewhat different fashion as being basically a massive basalt.

And we do have some cores, and I agree we only have four, and those cores are not particularly useful in trying to identify vertical faults because unless we're lucky enough and a fault is there, we wouldn't identify it.

But they are quite useful for identifying horizontal faults, and we do have those cores and we'd be very pleased to make those cores available to the presenter for examination.

Certainly the cores were identified by our geologist and by Dr. Kontak as representing basalt. In other words, there was no sign of horizontal fractures in those particular holes, which doesn't mean to say that they're not there.

But I would note I was a little puzzled about the context with respect to transmissivity.

And I would note again because it just

happens to have been put together very coherently by Dr. Hanson, and if I could quote him, Mr. Chair, Section 9.1.3.1 of Bilcon EIS states that:

> "The apparent transmissivity, T, of the basalt between Hulls Harbour and Digby Neck is between 0.27 m^2 per day and 78.8 m^2 per day, that is, between 3.1 x 10^{-6} m^2 per day and 9.1 x 10^{-6} m^2 per second."

Those are figures provided to us in the documentation from that study by the Department of Natural Resources.

According to FETA, in a 1994 study, a value of T for a good well would be at least 0.015 x 10^{-6} m^2 per second.

This means that the North Mountain basalt tested has a transmissivity that is between 16.4 and 4,800 times too low to be called good for water supply purposes.

So certainly the studies that we had access to and which we used as background conducted by the Department of Natural Resources certainly referred to the Upper Flow Unit as having very low transmissivity.

I perhaps misunderstood. This is not my subject, and I don't pretend that it is, but I thought that at one point you might have suggested that the

transmissivity in the Upper Flow Unit was, in fact, greater than the transmissivity in the Middle Flow Unit.

Could you comment on that for me, please?

Dr. MIROSLAV NASTEV: Actually, what I said the bail test results, which are given in the Conestoga Rovers & Associates report February 2007 indicate that monitoring well number one, which intercepts 80 percent the Upper Flow Units, 20 percent the Lower Flow Units, is extremely low. They couldn't interpret the bail test.

So we have a monitoring well in both units with extremely low hydraulic conductivity.

Monitoring wells number two and number three that intercept both units but in different percentages, have hydraulic conductivity, not transmissivity, of 10^{-6} m/sec.

The results of hydraulic tests were given in hydraulic conductivities, not transmissivities.

The relation between transmissivity and hydraulic conductivities, T, equal to K x B. B is the initial saturated thickness in the well, so the transfer is fairly easy.

So we have three monitoring wells that intercept both units. One has extremely low hydraulic conductivity and two have hydraulic conductivities in the

order of 10^{-6} m/sec.

Two other monitoring wells, number four and number five, intercept only the Middle Flow Unit, not the Upper Flow Unit, at the same time. Only the Middle Flow Unit.

They have one order of magnitude lower hydraulic conductivity, which is in the order of 10^{-7} m/sec. So these data are given in Conestoga Rovers report 2007.

And then a pumping test has been done in monitoring well number five. And there, we have transmissivity estimates, and I have to check just to compare with the numbers you gave right now.

Mr. PAUL BUXTON: I don't think really I'm sort of interested in great detail here because we know what the results were because we produced them, but I thought I heard the comment from you, and perhaps I misunderstood, that you did reference the different transmissivities in the two flow units.

And I did think that I heard you say that the transmissivity in the Middle Flow Unit was lower than that in the Upper Flow Unit. If I misunderstood, then please correct me, and that's the end of the question.

Dr. MIROSLAV NASTEV: I will repeat myself again.

Data given in Conestoga Rovers & Associates 2007 show that monitoring wells intercepting both units are more permeable than monitoring wells intercepting only the Middle Flow Unit. That is what I said.

I mean, I cannot say anything else.

Mr. PAUL BUXTON: Then I misunderstood.

If you could just give me one moment, Mr. Chair?

--- Pause

Mr. PAUL BUXTON: Thank you, Mr. Chair. We have no further questions. Thank you.

PRESENTATION BY NATURAL RESOURCES CANADA - QUESTIONS BY THE PUBLIC

THE CHAIRPERSON: Thank you. We're now open for questions from the floor. Are there any Government interventions? No? Okay.

Ladies and gentlemen, anybody? Mr. Moir? No? You looked poised again.

Mr. ANDY MOIR: [Inaudible - off mic]

THE CHAIRPERSON: Okay. So there are no questions. Oh, yes, please come forward.

--- Pause

THE CHAIRPERSON: You have to...

Mr. BRIAN MEESON: My name is Brian Meeson, and I'm a resident of Sandy Cove. Not a permanent

resident, but about 25 percent of the year.

I would just like to have had a little clearer explanation of stratification. I'm not asking it to be produced now, but I noticed that all the models are posited on the quarry side only of North Mountain.

I'm not sure, myself not being in the remotest level a geologist, whether the pitch of the strata continues at the same angle on the Little River side or whether it reverses.

It would be helpful to have a cross-section analysis of the whole mountain.

Thank you.

Dr. GUNTER MUECKE: I don't know whether it's my job to clarify for the Proponent, but we had Mr. MacDonald a couple of days ago describing the geology of the North Mountain basalts in that region.

He showed diagrams indicating that for the whole of the North Mountain in the Digby Neck area the strata are dipping, which is the geological term for sloping, towards the Bay of Fundy.

Does that help you?

Mr. BRIAN MEESON: It helps me in a naive sense to feel that then all the water tends to flow to the Bay of Fundy, so if there is seepage and drainage in the stratification of the mountain, eventually will that not

remove some of the water from the Little River aquifer and affect the wells?

THE CHAIRPERSON: I believe Dr. Nastav was about to offer a comment.

Dr. MIROSLAV NASTEV: Well, the aquifers may dip towards the Bay of Fundy or the water-bearing fractures, however the groundwater flow in those fractures may not necessarily be in that direction simply because the fractures are dipping that way.

The groundwater flow is a little bit more complex or follows other forces which are vertical gradients, so we can have that the water-bearing fractures dipping in one direction; however, due to the hydraulic gradients, the groundwater flow goes the other way.

So what the Mister said just now may not be true.

THE CHAIRPERSON: So sir, your question about the slope of the land, what Dr. Nastav is saying, it doesn't tell you which way the water is going.

It can be going in the opposite direction.

Any other questions? None?

Okay. We're going to break for this morning. We'll be back at 1:00.

--- Recess at 11:56 a.m.

--- Upon resuming at 1:01 p.m.

THE CHAIRPERSON: Ladies and gentlemen, we're going to begin.

The first item for this afternoon is a presentation by the Nova Scotia Environment and Labour, and we have three individuals.

Gentlemen, would you identify yourselves again, one of you, anyways, or two of you, anyways. So identify yourself by name and by affiliation within the organization, and if your name is complicated, please spell it out for us.

Mr. JOHN DRAGE: Thank you, Mr. Chair. My name is John Drage. The last name is spelled D-r-a-g-e. I'm a hydrogeologist with Nova Scotia Environment and Labour in the Halifax office.

Mr. SCOTT LISTER: Scott Lister. I'm regional hydrogeologist in the western region for Department of Environment and Labour.

Mr. BOB PETRIE: And I'm Bob Petrie, the Western Regional Manager with EMC.

THE CHAIRPERSON: I believe you have a presentation for us.

Mr. JOHN DRAGE: That's correct, Mr. Chair.

THE CHAIRPERSON: Go ahead.

Before we begin with the presentation, I

would like to ask if we could clarify a response to one of Dr. Grant's questions that we gave yesterday morning.

THE CHAIRPERSON: By all means.

Mr. JOHN DRAGE: Thank you. The question that Dr. Grant asked us was whether or not we were satisfied with the information that the Proponent provided regarding water supply for washing of aggregate.

And the answer was yes. We had submitted a comment asking for clarification from the Proponent about what the source of the process water would be during the dry months in the summer. We just wanted to know if it was going to be from a groundwater source or another surface water source.

And the Proponent responded saying that was going to come from water storage from surface water runoff, storm water runoff. So the Proponent did address our concerns.

The reason we had deferred that question to today is that we had thought that Dr. Grant was referring to the on site water well that's proposed as a water supply for potable use in the office, and we wanted to defer groundwater and well questions to today.

So I hope that clarifies that issue. Thank you.

THE CHAIRPERSON: Thank you.

PRESENTATION OF NOVA SCOTIA DEPARTMENT OF ENVIRONMENT AND LABOUR - Mr. JOHN DRAGE

Mr. JOHN DRAGE: So I'm going to move on to our hydrogeological presentation.

First, I would like to thank the Panel for the opportunity to make this presentation. We will keep this presentation brief and focussed on the key hydrogeological issues, and we've already discussed the mandate of our Department yesterday.

The presentation is broken into three parts. I'll start with discussing our key hydrogeological comments on the EIS. Secondly, I'll talk about the potential effects on groundwater that the project can have.

And finally, I'll discuss some of the management approaches to mitigating those potential effects on groundwater.

So firstly, our first hydrogeological comment is that the proposed depth of the quarry relative to groundwater levels must be known in order to evaluate impacts on groundwater.

And the EIS states that there is no intention at any time to quarry below the water table.

And in support of that statement, the EIS presents a number of cross-sections which show the base of the quarry floor, primarily at an elevation of about 13

metres above sea level.

And on those same cross-sections, they show the water table to be located primarily at about 13 metres above sea level. It varies a bit, but that's mostly where it's shown.

However, the data presented in the EIS shows that groundwater levels are greater than 35 metres above sea level in about eight of the nine Monitoring Wells that are installed at the site, so there seems to be a discrepancy between the groundwater levels that were collected and where the water table is assumed at in presentation of these cross-sections.

So our comment is that clarification is needed on the location of the water table and how quarrying will be restricted to above the water table.

And I believe the EIS acknowledges this issue and, in the CRA report, recommends that additional data be collected.

We also agree that additional hydrogeological data needs to be collected to support the evaluation of groundwater impacts, and we would recommend that this include additional pesometers to assess groundwater levels and aquifer properties in both the horizontal and vertical direction.

And subsequent to that, once the

additional hydrogeological data is collected, an assessment should be carried out to predict how the quarry will affect groundwater levels off site, particularly at water wells.

And this can be done by predicting the extent of the draw-down, groundwater draw-down associated with the quarry, and I feel this is best evaluated with a groundwater model.

And I should point out that the EIS has committed to constructing a groundwater model in the future.

So those are the key hydrogeological comments. I'll just move on to discuss potential impacts that the quarry could have on groundwater.

The two main impacts would be reducing groundwater levels, and one consequence of that could be affecting nearby water wells.

The second potential impact is associated with blasting, and blasting could cause yield changes and temporary siltation to nearby water wells.

So in terms of what management options are there available to mitigate or address these impacts, there's a number of things.

One is quarrying above the water table. One is designing blasting procedures to minimize side effects and carry out pre-blast surveys for baseline information.

The other is the implementation of groundwater monitoring plans and, finally, contingency plans to address impacts to water wells should they occur. And by this, I mean repairing or replacing water supplies that are affected by the quarry.

And I should note here that all of these options to address impacts have been committed to in the EIS using all these approaches to address groundwater impacts.

So that concludes our presentation. I'd like to thank the Panel for the opportunity again to make this presentation, and we'd be happy to answer any questions at this point.

Thank you.

THE CHAIRPERSON: Thank you. I believe that Dr. Muecke has some questions for you.

PRESENTATION BY NOVA SCOTIA ENVIRONMENT AND LABOUR - QUESTIONS BY THE PANEL

Dr. GUNTER MUECKE: Yes.

First of all, I'd like to perhaps again, for me, to clarify what the Pit and Quarry Guidelines have to say about quarries intersecting the groundwater table.

Mr. JOHN DRAGE: There's a statement in the Pit and Quarry Guidelines that say quarries should not go above or below the water table without approval from the Department.

And typically, when we give approvals for quarries, that's also a condition written in to the approval, that the operator cannot go below the water table without permission from the Department.

Dr. GUNTER MUECKE: Were you present this morning when Dr. Nastav gave his presentation?

Mr. JOHN DRAGE: Yes, I was.

Dr. GUNTER MUECKE: In view of what he had to say about the existence of a water table in this particular instance, how can these guidelines be applied in this case?

Mr. JOHN DRAGE: The guidelines are written in a fairly generic way, so it's only stated that once you go below the water table, you would need permission.

So in this case, based on what Dr. Nastav explained this morning, there would be a very shallow water table. The first one that would be intersected would be at the till bedrock interface, and then there could be a series of other water tables.

So my interpretation of the guidelines would be that the water table would be intersected and that permission would have to be granted.

And typically, that would involve an assessment of the effects of going below the water table or several water tables.

Dr. GUNTER MUECKE: Okay. So it's almost a given, then, you say that the water table in this case will be intersected.

Mr. JOHN DRAGE: I believe so. I think there are other interpretations, but I believe the data shows that the water table will be intersected in this case.

Dr. GUNTER MUECKE: We are now facing two possible conceptual models, the modified version that was presented to us by Bilcon this morning, and then Dr. Nastav's model, and the two differ considerably.

In your professional opinion, which of these models is preferable at the present time?

Mr. JOHN DRAGE: I've looked at both conceptual models, and I think there are some overlaps between the two of them, particularly in the geological side of things with the upper flow unit and middle flow unit, et cetera.

There are some aspects of the latest conceptual model presented by CRA that I agree with. The main issue that I would interpret differently is the depth to the water table.

And in that case, I agree with Dr. Nastav's opinion that there are several water tables and probably vertical gradients, and the proper way to assess that would be through multi-level pesometers because the

groundwater levels throughout the rock formation would vary with depth.

Dr. GUNTER MUECKE: Thank you. To be a bit more specific, which parts of the CRA model do you agree with?

Mr. JOHN DRAGE: I agree with the opinion that the contact between the upper flow and the middle flow unit where it appears that there's a higher hydraulic conductivity zone probably represents a zone where there's increased groundwater flow.

I believe that the CRA conceptual model suggested that the majority of recharge was attributed to that zone and perhaps the middle flow unit.

In that case, I'm not sure. I think we could still have a reasonable amount of recharge coming, as Dr. Nastav suggested, vertically through the upper flow unit.

Dr. GUNTER MUECKE: Have you been at the site?

Mr. JOHN DRAGE: No, I haven't.

Dr. GUNTER MUECKE: If you were asked to evaluate in view of Dr. Nastav's presentation the amount of fracturing in the upper flow unit, which becomes critical in terms of recharge and so on, if it is through that unit, you would have the choice of either looking at drill cores or

doing field work.

Which one of these would you choose?

Mr. JOHN DRAGE: Well, probably both. I would look at the existing cores, but I think we would need additional information.

One of the points that Dr. Nastav made was that packer tests should be done to assess the vertical variation of hydraulic conductivity.

And that's a way of collecting information that then tells you something hydraulically, not just about the geology, because, as DIS points out, some of the fractures may be filled and, therefore, less permeable.

So from a groundwater flow perspective, I think the formation needs to be evaluated hydraulically, and that would involve packer tests to see, do these fractures actually convey flow.

And that would need to be done in the vertical direction in several discrete zones.

Dr. GUNTER MUECKE: Thank you.

Dr. JILL GRANT: I wonder if I could ask whether the Department is aware, are there other quarries where problems with intersecting the water table have caused wells in neighbouring areas to experience problems?

Can you give us an indication of that?

Mr. JOHN DRAGE: I'm not aware of any. I

haven't been involved in any directly.

I have been involved in projects where groundwater levels were drawn down due to pumping at municipal well fields and sort of large commercial-industrial wells, so I have experience in well interference effects like you're speaking of, but not in other quarries.

Dr. JILL GRANT: And in terms of the possibility of intersecting the water table, the Proponent proposes a drain at the bottom.

Do you have any concerns about what happens with that water? Is it likely to be extensive flows? Is it going to make a difference in terms of the sediment ponds? Should it be bypassed?

How should that drainage system work on the quarry face?

Mr. JOHN DRAGE: I don't know the answer to the question of how much flow we would expect from the quarry.

That's something that would need to be addressed after the collection of additional hydrogeological information and then, using that information, a model could be constructed or an analytical groundwater equation could be used to predict flows from the quarry.

But at this point, I can't answer that question.

Dr. JILL GRANT: And could you give us a little bit more information about what potential effects might be from the blasting?

You mentioned briefly that blasting was a possible effect, both on yield and on water quality, turbidity and so on.

Can you give us more information on what kinds of effects might happen with that?

Mr. JOHN DRAGE: Okay. Again I should qualify this by saying I don't have any direct experience at investigating blasting effects on wells, but from what I've read in the literature, the main effects are changes to yield. And that can be both increasing or decreasing yield.

Often it an increase yield, but that could cause water levels to drop, which still can be a problem for a well if your pump is placed above the new water level.

So that's from a water quantity point of view.

From a water quality point of view, the most common problem reported is temporary turbidity.

Dr. JILL GRANT: And how long can that kind of turbidity last? Are we talking about hours, days, weeks? How long is temporary?

Mr. JOHN DRAGE: I don't know for certain. I think my impression from reading the literature is a

matter of hours or days rather than weeks.

THE CHAIRPERSON: If you had to recommend approval or disapproval of a project such as this in which the face was cut into the side of a mountain and it intersected the water table in a very significant way, 10 metres, 15 metres, something like that, would you recommend approval?

And there's a second part to that question.

Mr. JOHN DRAGE: If the quarry was approved and we came to a point in time where we were doing our normal Part 5 industrial approval, at that point we would need to know the sort of details that I've already discussed, like how far below the water table, what are the potential effects.

So we would need to have that information before we could approve it at our Part 5 approval stage.

THE CHAIRPERSON: Would you consider this to be a moderately significant factor in the assessment, or a major factor in the assessment?

Mr. JOHN DRAGE: Well, in the case of impacting off site wells, I'd consider that to be quite important because people need water supplies. So if their water supplies are interrupted, that's unacceptable.

So it's important that we have a process

in place to ensure that there's compensation so that water supplies are continued and people have the necessary water for their day-to-day activities.

THE CHAIRPERSON: Am I correct in assuming that if this were to occur and it was a significant incursion into the water table that whatever water budget had been constructed for the site would no longer be valid in the sense that a budget constructed on the presumption of rainfall and other sources suddenly would be intersecting a water table, which means that the quarry would be filling with water from that water table and would have to be dealt with in some way?

So presumably it would be a significant amount of water in-flooding into the quarry. Is that correct?

Mr. JOHN DRAGE: I think the first part of your comment is definitely correct, that there will be in-flows into the quarry. And if the water budget was prepared without those considerations, it would be incomplete.

The second part, whether or not it would be significant, I can't answer that question.

It goes back to Dr. Grant's question, what sort of flows would you expect, and that's something that would need to be calculated once we saw additional hydrogeological information collected.

THE CHAIRPERSON: None of the information you have at the moment or that's available at the moment allows those calculations to be made. Is that correct?

Mr. JOHN DRAGE: Well, one of the fundamental issues is where are water levels on the site, and we don't have that information now.

We have some information, but there seems to be a lot of uncertainty about it, partly because of the way the wells were constructed. They are not pesometers.

They have long intervals, so they're sort of average water levels across a great distance. And also partly because some of the problems that have happened with damage on the wells.

So there doesn't appear to be enough data to make those calculations at this point.

THE CHAIRPERSON: Thank you. Mr. Buxton?

PRESENTATION BY NOVA SCOTIA ENVIRONMENT AND LABOUR - QUESTIONS BY THE PROPONENT

Mr. PAUL BUXTON: Just a few, perhaps, clarifications.

In the comments on the EIS, you set out and Mr. Lister, indeed, as well, separately set out what, in general terms, you would like to see on site, and that included modelling.

And I think you did say so, but perhaps we

could reconfirm that it's your understanding that we have agreed, that is, Bilcon has agreed to carry out all that work.

Mr. JOHN DRAGE: That was a recommendation that I made. I feel that that's an appropriate way, once we collect enough data, to go into the model to evaluate the potential effects.

And I did read in the EIS that Bilcon was committed to constructing such a model at a later date.

Mr. PAUL BUXTON: Thank you.

Is this sort of detailed data collection typically a part of the Part 5 industrial approval process?

Mr. JOHN DRAGE: It's site specific because hydrogeology varies from area to area, so I've seen approvals done in both ways.

Sometimes the information, including numerical models, is available up front during the EA process or before the Part 5 approval is written, and sometimes it's a condition in either one of those approvals.

Mr. PAUL BUXTON: Just with respect to effects and typical mitigation could be on a project compensation, how does the Department normally handle that compensation, by way of bond, or how is that put into a condition of approval?

Mr. JOHN DRAGE: The project that I'm most

familiar with where their well interference is a large municipal well field, in that case there was no bond that I'm aware of.

I believe probably the reason for that is that it was a Government agency, Municipal Government, who owned the well field, so it was thought that there was no need to have a bond.

Mr. PAUL BUXTON: But is either a cash deposit or a bond considered as a reasonable part of a mitigation process?

Mr. JOHN DRAGE: I have seen that used in other projects where there are suspected or there are potential impacts on groundwater and then to other receptors.

I have seen... And this is in a case where there were mining companies involved, so private sector. I have seen cases where there has been a bond required, yes.

Mr. BOB PETRIE: Just as a follow-up to that, Mr. Chair and Mr. Buxton, that it is not unusual for there to be a condition in the approval as well which reconfirms that a Proponent is responsible for replacing, you know, lost or damaged water supplies.

So in addition to the commitments made, that would not be unusual for that to be a condition of

approval.

Mr. PAUL BUXTON: Thank you. Could you just bear with me one moment, Mr. Chair?

--- Pause

Mr. PAUL BUXTON: I think just a point of clarification, Mr. Chair.

There seems to be perhaps a misunderstanding that both NR Canada and NSDEL have suggested and recommended the use of pesometers on site.

And I'm reminded by our hydrogeological expert that that is, in fact, what we proposed in the EIS, to do that level of work.

And I just wanted to confirm that we, indeed, did agree to do that level of work.

Mr. JOHN DRAGE: Yes, I did notice that in the CRA report, that that was recommended.

Mr. PAUL BUXTON: Thank you. No further questions. Thank you, Mr. Chair.

THE CHAIRPERSON: Thank you. Questions from the floor.

Anything from Government first? Anybody? No? Mr. Moir. And anyone else who's interested in questions, just come forward, please.

PRESENTATION BY NOVA SCOTIA ENVIRONMENT AND LABOUR - QUESTIONS FROM THE PUBLIC

Mr. ANDY MOIR: And I was poised that time.

THE CHAIRPERSON: You were poised.

Mr. ANDY MOIR: I'd like some clarification or some sense of... You say that the guidelines say that the water table shouldn't be breached, to use that word, by a quarry operation, but you do make exceptions to that.

I guess I'd like to get a sense of how often and under what circumstances do you allow that breaching of a water table to happen.

Mr. JOHN DRAGE: I can't give you any details about how often that occurs, but I can maybe speak to, I think, the intent of your question of, now, what would happen, what sort of things would we look at when someone's requesting to excavate below the water table.

The assumption is that when you're standing above the water table, there's very little chance to impact groundwater, especially wells off the site because you're not going to be drawing down the water table.

However, as soon as someone is excavating below the water table, there's a potential to draw the water table down, and that could have an effect on wells off site.

So what we're looking for at that point is an evaluation of what the potential effects could be of drawing down the water table.

Mr. ANDY MOIR: Could I do a follow-up?

THE CHAIRPERSON: Yes.

Mr. ANDY MOIR: I guess I just want to get a sense of, because we are talking about guidelines here, they're not regulations, so I guess I want to get a sense of is it commonplace for a quarry operation to come along and say, "We've got to go below the water table, and here are the reasons, and we think they're pretty good." So it's approved.

Does this happen once in a lifetime of a quarry or is it commonplace... I guess I'd really like to see some hard facts on how often your department has actually allowed this to happen.

Mr. BOB PETRIE: We wouldn't be able to provide precise figures for you at this time. I guess subjectively I would characterize it as not common. Periodic, perhaps. But not a common feature in most pit and quarry approvals.

Mr. ANDY MOIR: Could I have one last follow-up?

Given what you know about this quarry and what we've heard today about the various levels of water tables, how likely is it that your department, knowing going into this that they are probably going to breach one of these many water tables, would allow this quarry to go ahead and breach water tables.

Mr. BOB PETRIE: I guess I'll rephrase what Mr. Drage stated, that given, you know, on the assumption that a water table would be intersected, the question then becomes not will they intersect a water table but what will the impacts of that be.

And can they be prevented, mitigated, or compensated for in that order.

Mr. ANDY MOIR: Thank you.

THE CHAIRPERSON: Ms. Peach?

Ms. JUDITH PEACH: I think people who own wells would overwhelmingly prefer prevention of contamination or draw-down to compensation. Compensation has been suggested for another proposed project that was at Gulliver's Cove, and there was overwhelming outrage at the idea.

I believe in a democracy, Governments, one of their jobs is to protect the health and welfare of the people. How does the Department weight prevention over compensation? Is compensation just as good, in your mind, as prevention of affecting people's wells?

THE CHAIRPERSON: I think, typically, and this concept doesn't just apply to groundwater or well water impacts, but the prevention of adverse effects is always preferable in the first approach.

THE CHAIRPERSON: Could you clarify, were

you biassing? You were giving a bias towards prevention? Were you? It wasn't clear.

Mr. BOB PETRIE: Yes. We would prefer adverse effects be prevented, yes.

THE CHAIRPERSON: Mr. Mahtab?

Mr. ASHRAF MAHTAB: Thank you, Mr. Chair. I would like to know if, in the past 15 years, the projects which have been approved after the IA process, how many of these projects would deny the industrial permit?

THE CHAIRPERSON: I think we've already asked that. Isn't that the subject of...

Just trying to decide whether we had already taken that as an undertaking. So could you restate that, Mr. Mahtab?

Mr. ASHRAF MAHTAB: What percent of the proposed projects accepted in the last 15 years, after EIA, have been rejected in the state of industrial approval?

--- Pause

Mr. BOB PETRIE: We would not have precise figures on that at this time, so if the Panel desired that as an undertaking, we would take that on.

THE CHAIRPERSON: Yes. Yes, we would. At what date can you deliver that?

Mr. BOB PETRIE: Certainly by the 29th, if that's acceptable.

THE CHAIRPERSON: Could I just ask you whether this is specific to quarries or any endeavour involving Environmental Assessment?

Mr. ASHRAF MAHTAB: I think my question is general, but I'm more, I'm specifically interested in quarries. If the general question cannot be answered, is more difficult, then we can say "quarry". But I think the question is general.

THE CHAIRPERSON: Okay. Thank you. Are there any additional questions arising from the floor? Anyone?

If not, then we will thank our presenters from the Nova Scotia Department of Environment and Labour. Thank you, gentlemen.

We will now be moving towards the additional presentations, beginning with the St. Croix Estuary Project.

--- Pause

THE CHAIRPERSON: We're about to have a presentation by the St. Croix Estuary Project.

I feel that it's important to let you know the thinking of the Panel, which is that we would like to discourage, or I put it even more strongly, is that we don't wish to tolerate any more outbursts as occurred yesterday and this morning. I think applause or any emotional

reaction like that really is not appropriate in these hearings.

I know that emotion runs high. That's obvious. But it's not appropriate for the Proponent and it's not appropriate for anyone in the audience or for anyone, for that matter.

So I would just like to say try and constrain that sort of outburst. And I think it will make the procedure run much more smoothly. And I think there's an element of disrespect in it, as well. So please. Okay?

Now, I'm sorry, we don't have your name here, so would you identify yourself clearly, identify the organization you're with, and if your name is an unusual spelling please spell it out for the people who are taking the transcriptions. Thank you.

PRESENTATION BY ST. CROIX ESTUARY PROJECT - ARTHUR MacKAY

Mr. ARTHUR MacKAY: My name is Art MacKay, Arthur MacKay, M-a-c-K-a-y.

THE CHAIRPERSON: Bring that microphone closer.

Mr. ARTHUR MacKAY: Yes.

THE CHAIRPERSON: It should be about six to eight inches.

Mr. ARTHUR MacKAY: My name is Arthur MacKay. I am the... That's M-a-c-k-a-y. I am the

Executive Director of the St. Croix Estuary Project, which is an ACAP group located on the other side of the Bay in the Quoddy region, Deere Island, Campobello, Grand Manan area.

I was invited here by the Atlantic Chapter of the Sierra Club. They asked me if I would make a presentation, which I agreed to do for two reasons. One is I believe that, I hope, that I have some information that will be of value to the Panel in their deliberations, and I also have some information on a real life, real time, ten-year-old quarry project that is taking place in our area, and many of the questions I heard yesterday and concerns I heard yesterday are now part of reality in our area.

So I'm hopeful that this information will be useful to you.

There is a second reason that I'm here. I now am approaching 50 years of professional activity in the Bay of Fundy. I think that's a fairly long period of time, and I've discovered - Mr. Stanton would understand this - I've discovered that my soul actually lives here.

And I think you'll understand that as I go along you will receive technical information, but you will also receive information from me, as an individual who's had a longstanding relationship with the Bay of Fundy.

I view the Bay of Fundy now as a gift. At one time, when I graduated from school, I couldn't get out

of here fast enough. I thought I wanted to travel the world and be a biologist and so on. Inexorably, this body of water dragged me back here, and I began operating in 1964 as a professional consultant.

I did work in Newfoundland, in the Gulf, down in Maine, the Arctic, India, but virtually all of the important work, or that I feel is important anyway, took place in the Bay of Fundy.

So I have, since '64, been continuously involved in studies and field work in the Bay. I think I have an excellent understanding of how the Bay works.

Among the things that I have done, just so that, to give you my professional bona fides, I and my colleagues surveyed the entire coast of the Bay of Fundy at half-mile intervals over a five-year period of time, and did the very first resource inventory ever done for a major strip of coast in the Bay of Fundy.

I did the sighting monitoring for the Point Lepreau Nuclear Power Plant, did the environmental sighting for the Q&M pipeline, which some of you may be old enough to remember was the first Sable pipeline to pass through the area, I've done dredge spoils work in Saint John Harbour.

But the thing that really, the job that really spoke to the issues that are at hand here today was

for Parks Canada, when they wanted to look into the possibility of having the first marine park on the east coast.

We did the initial survey, and I have to say, it was a wonderful thing to be involved with because we got to do primary research; we actually went and dove in the water and actually recorded everything that was there.

The three sites that were identified as being the most important on the east coast of Canada were West Isles, which is between Garollen and Campobello, in the Passamaquoddy Bay area; Grand Manan Island; and Brier Island/Long Island. Those are areas that are known to have elevated biological diversity.

And early on, in looking at this, we all began to start working on why is this the way it is. Well, I'll speak to that more as we go along, because there are three things I'd like to leave with you.

A quick-and-dirty lesson in the ecosystem and how it relates to this quarry application: I believe that the Bay of Fundy is rapidly approaching a tipping point, if we are not at a tipping point right now, and there is some indication that, rather than this being the ultimate sustainability model that we were building on, we are now competing against a level of potential industrial development that may well preclude the value of this place.

So I would like to talk to you about the value of the place, how industry is developed over the last 40 years in here in the area, and then I would like to give you some examples of a real quarry.

This is the Bay. Everyone knows it has the highest tides in the world. I'm not sure everyone knows that the little corner up there in the upper left has the highest bio-diversity on the east coast of Canada, and probably on the east coast from Cape Cod to Newfoundland.

The reason that is important, or the reason that that happens, is the same reason you have an elevated level of biological activity on the other side of the Bay at Brier Island/Long Island/Digby Neck. They are, in fact, almost identical, except that there probably is more territory to produce more and diverse species on the New Brunswick shore.

What this means in terms of the biological productivity of the Bay is that we have these strange little areas that produce an elevated productivity. They produce plankton at a level that can support all of our whale populations, the enormous fish populations that support our activities and so on; extremely vital area, in terms of our resource-based industries, including tourism, which draws on the birds and the whales, of course.

So it's a unique eco-system, and there are

reasons for that. The tide is the first reason. Up and down it goes, billions of tonnes of water, twice each day, coming in and out. All of those passages that you see, Petits Passage and all the other little places where tides go in and out, really are just funnels.

They're plankton concentrators. And wherever those things occur, Grand Manan, West Isles, Digby Neck, wherever they occur you will find veritable underwater organisms of benthic orgamisms, little creatures that live on the bottom that Mr. Stanton talked about yesterday that we don't know anything about.

Well, know quite a bit, if we take the time to look. The fact of the matter is, the plankton production in the Bay is quite high, and it supports a lot of life. But when the plankton from the open bay is concentrated as it passes through these passageways, you in fact get a funnel effect.

The result of that is you have these unusual places where the amount of food increases rapidly four times a day as the tides go in and out. In those places, you have gardens of plankton-eating creatures that also contribute to the plankton base for their own gametes.

So they spew stuff off into the water, producing levels of plankton that are quite phenomenal, and if you pick up water in the right place you literally see a

soup of living creatures.

It is a unique ecosystem. It is the model for sustainability. It is the foundation of sustainability. But I think I'll be able to show you that we haven't really gotten there in terms of realizing how valuable this asset is.

There a number of nutrient sources in the Bay, and I'll go through this very quickly. You've all probably heard of them, lots of television programs and so on.

The first of these are your estuary river pumps. These are productive areas that drain huge rivers, like the Saint John River or the Annapolis River. When these fresh waters come down into the estuaries, they produce some very, very interesting and unusual habitats that give us a type of plankton that actually is the foundation of over-wintering of commercial fish stocks.

Little shrimp called Mysis stenolepis that occur by the tonnes, quite literally, are created up in these estuaries and so on where these rivers and estuary pumps occur.

Other sources of nutrients are embayment pumps. These are like in Digby, here, these are places where these creatures like Mysis stenolepis, sticklebacks, a whole bunch of forage species, are produced in enormous

numbers and are fed off shore to the commercial fishes and other species that come here annually.

So that's two, three huge marsh pump up the Bay, and also at Waweig, or sorry, at Musquash, which has recently been declared a marine protected area on the basis of that, and a bunch of other smaller marshes around here, there, and everywhere.

But the one at the head of the Bay is hugely productive, and is very, very important, as we all know, in terms of seabirds that, shorebirds that flock there, and other species.

On top of that, at the mouth of the Bay, these funnels that I talked about produce huge amounts of plankton. The red areas are some of the most important benthic pumps, nutrient pumps out there. Primarily, they produce plankton ready to go, ready to eat, and these are the creatures that two important planktars feed upon. One is called calinus finmarchicus, totally the food of the right whale and very important to a variety of species of marine birds and other whales, as well, and meganycttphanes norvigica, which is krill. It's the stuff you hear about on TV in the Antarctic.

These things are so abundant out there that that Bay, at the entrance, is able to feed the large numbers of whales and birds and whatnot that come in here,

along with the variety of fish that supports a huge fishery.

I can't tell you what this is all worth. I can tell you that it's an economic issue. It is not an environmental issue. This is an eco-economy that we've had for years, and I can tell you how much part of it is worth.

So what we have in existence in the Bay of Fundy today is an eco-economy that must be worth billions. I cannot tell you exactly how much it's worth in terms of the three resource industries here. I can, however, tell you that we have worked up the value for Passamaquoddy Bay because of three L&G terminals that wish to locate there, and we are able to estimate that the annual income is just under a billion dollars a years, and tourism, fishing, and aquiculture in that Passamaquoddy Bay, Grand Manan region alone.

You add to that Nova Scotia, the inner Bay, all of the other activities that are happening there, and this is not funny. This is a huge economy we're talking about.

But it is an eco-economy. It's based on the environment in the Bay.

So we have these places and this is a different set of diagrams. What I've tried to do is just indicate with the arrows in the black areas, stippled areas, where these key areas are. And again, you'll see Grand

Manan is important, Long Island, St. Mary's Bay, very important. The inner Bay is important. Passamaquoddy Bay area is very important.

And what I've done is laid over this the key areas where, in this case, you will find fish that are available to the fishermen; not all the areas where they occur, but the key area where fish are produced and where our fishermen go to obtain them.

You'll be interested to note that it runs all the way from Brier Island up the Nova Scotia shore into St. Mary's Bay. Everyone's familiar with the herring fishery in St. Mary's Bay.

So that is fed by these pumps, these nutrient pumps, the feed pumps. Wherever the feed is, that's where the fish go.

We have the same situation with birds; the outer Bay is extremely important for pelagic birds. A wide variety of them, you might be interested to know that Head Harbour Passage is designated as an area of global significance for marine birds, and I'm sure that that would amaze the people at Long Island and Brier Island who probably feel they have one of the best bird-watching areas around. So I think it's a toss-up there.

Very important area, you'll notice also, in terms of this current application, that it's within this

area.

In terms of whales, the same thing, the whales are where the food is, and that's where they go.

In terms of humans, all of the things that we do in the Bay are based on these nutrient flows and the location of fish, or the location of whales, if you happen to be in the tourism industry.

So those areas are the foundation of our Bay of Fundy eco-economy.

I have this wonderful friend who still wears a thing his head that he's probably one of the oldest hippies on the east coast, but he's also an interesting cartoonist. And he presented this to me.

His vision of the Bay of Fundy is that it's turning into Fundy SupersPort, and I put that there to ask the question, is this true? Are we turning Fundy into a SupersPort, or is there still time, in fact, for us to benefit from the sustainable eco-economy that we currently have?

You folks will have to answer that, but I really do like his cartoon, so brought it along to make the message clear.

When I came back here in 1964, my river, the St. Croix River, had been destroyed by black liquor that had been dumped in from a pulp mill. In the process of

dumping the black liquor into the St. Croix River, they literally destroyed, killed, the St. Croix River estuary and reduced the population of invertebrates and fishing in Passamaquoddy Bay.

They did this for almost 10 years. I have no idea why they allowed them to do it. However, the upshot was, it caught my attention because literally the mudflats in St. Stephen bubble with hydrogen sulfide gas, paint peeled off houses, it was probably the worst pollution that I'd ever seen.

And it activated me, I guess, at that time, so I've been involved ever since, trying to bring things back in that area to where they were.

At that time, there were only two coastal industries; this mill in St. Stephen, and the complex in Saint John. There was no other major industries in the Bay at that time. But as you proceed along at roughly 10-year intervals, Point Lepreau pops up. Colson Cove pops up. A new mill in St. George pops up. And so on.

The next 10 years, 1980 to 2000, the emergence of the aquiculture industry, and these are the initial cage sites that were located on the New Brunswick shore. Not a lot of activity happening in Nova Scotia yet.

Go through from 2000 to 2006, now all of a sudden aquiculture is starting to pop up, or has popped up

on the Nova Scotia shore, and you can see the increase in density of challenges from industry.

Today, we have a series of new challenges. We have three quarries, not one. Three quarries in the Bay of Fundy; one in the St. Croix estuary, one on the neck and also one that is still alive and still being talked about that's located in Beaver Harbour, along the New Brunswick shore.

We have a second nuclear reactor. We have an L&G Terminal in Saint John, and an announced chemical plant in Saint John. We have two, three L&G Terminals planned for Passamaquoddy Bay.

So we're in a burgeoning situation, here. I'd like to speak to the... I think I heard 50 ships will come in, and someone is going to talk to you about the number of ship strikes and right whales, which is really a serious problem.

And I'd like to give you an analogous situation. One of the L&G Terminals says, "We will have 50 ships coming in a year." Well, the fact of the matter is, they also will have four giant V-drive tugs. There are turbine tugs that will go out and service these, into the whale territory. They will have a security vessel with armed guards on it. They will have the pilots vessel, and if they work out a deal with Canada, they'll have two more

of those.

So I think I add that up to somewhere between eight and 10 actual vessels going in and out. So you multiply that by two. So say you've got 16 passages through there. The fact of the matter is, you multiply that by 365, by the number of days... Number of weeks, sorry. 52 weeks. And you'll find that there's a whole lot more than just 50 vessels going in, as to do with passages.

Now, you add to it 50 ships coming into this quarry over here, another 50 ships going into the new quarry in Bayside, and another 50 to 100 ships going to the L&G Terminal in Saint John, and we have a critical situation vis a vis the most endangered marine mammal in the world; the right whale.

This is DFO's official map that came out. They were trying to find someplace they could put a few offshore aquiculture sites. The ones with, the circles with the question marks are the only places that they could find.

I put this in because this is built on a variety, a series of maps that DFO did, and you'll see that there's a lot of challenge going on out there for the Bay of Fundy. Everyone wants a piece of the action. The shaded area down along the neck, too, by the way, does deal with whales that somehow or other don't seem, in the current application, to get up that far.

I hate to be the one to tell you, but whales do get up that far.

Anyway, we've lost a lot, and I'll skip through this relatively rapidly, because I'm sure you're all aware, we have a horrible history, over 400 years of taking care of what's in the Bay of Fundy. These are actual animals, birds that occurred in the Bay of Fundy area, the passenger pigeon, Labrador duck, and the Great Hawk, which we quite literally slaughtered and helped make extinct.

We also changed the ecosystem and moved these animals out of here. They've been extirpated. The wolf and the caribou were the original deer and predator here up until about 1900. White-tailed deer was not our deer.

Walrus occurred here in the Bay of Fundy and offshore at Sable. They're long gone.

And that little fellow down there on the right is my favourite. That's the giant sea mink, mustela macrodon, which only occurred in the northern Gulf of Maine and we, all by ourselves, managed to trap into extinction. It went up to about 30-odd inches and was bright red.

Didn't bring much in the market, but hey, it was big.

And now we're talking about real problems with shad, striped bass, alewives. I received an e-mail

yesterday from the survey people to do the St. Croix River.

The alewife runs there have virtually collapsed this year as a result of man-made activities. There is literally a handful going up there when there used to be in excess of two million annually.

Those fish provided one of the key forage species for the western Bay of Fundy.

You all know about the inner Bay of Fundy salmon problems that we're having. You probably aren't quite so aware that American eel is rapidly disappearing from many of our streams.

And of course, we have cod and other problems as well.

And underwater, we've done the surveys. And this shows you what's happened. For a few benthic creatures in the St. Croix Estuary, on the left is what our model looked like when Champlain was here.

We're very fortunate over there. This guy wrote about everything and drew pictures. And subsequently, we had a wonderful group of people pass through. Audubon wrote about the place.

A fisheries guy by the name of Perly wrote about it. The border dispute referred to the natural resources there and so on and so on.

So we have a pretty good idea, and along

came the biological station to add to that.

The one in the middle is about 1976. By that time, we had lost quite a lot, and this is as a result of that black liquor that I told you about.

That's long gone, but when we surveyed in 2002-2003, we discovered that the invertebrates were still disappearing from that body of water. This is true elsewhere.

What really was frightening was that we found whole areas of the bottom that were dead. They looked like it was covered with a lichen.

There were hardly any other creatures there. This is all documented on video as well.

It's my belief that that bottom is recovering from the black liquor that went down.

Added to this, now, we have a quarry, and I'll speak to that in a moment.

So we've not done a really, really good job taking care of things in the Bay of Fundy, and it is a gift. We've had 400 years to work at this.

You can see that in the last 40 years of the 400 years that we have, in fact, started to add more and more industry into the Bay of Fundy at the expense of our fishing and resource-based industries, which we already have established and already people make a living from and

already the money comes to rest in our respective provinces.

The question becomes whether or not we can any more look at each application such as this quarry in its own right and to the exclusion of other things.

Now, I know the Panel has its mandate and you have your directions, but I think what I'd like to do is tell you how things are proceeding up in our area and what I call is a quarry gone wrong.

This is the Bayside Quarry. To the right bottom you will see a dock. And behind that, you'll see two buildings, and directly over the top of that another sort of whiteish building directly over that.

And if you go kind of to the left and up towards the woods, you'll see another building up there.

Well, you remember the wonderful Hines tuna factory, the tainted tuna scandal that went down many years ago? That's the location of that plant.

When that plant shut down because of the problems that came up in negotiating the tainted tuna, a gentleman who worked there decided that he could establish a boutique port where that wharf is. Everything was shut down.

So a guy by the name of Peter Frost went to Cuba. He went to suppliers like McCain's for potatoes. And he built, literally, by himself, built a small boutique

port there.

The trade there grew quite rapidly, and also small, medium-sized tour ships began to come because immediately to the right in that picture is our resort town of St. Andrew's with the Algonquin, the equivalent to your Pines over here.

So everyone was watching the ships really carefully because we didn't want... We were trying to get our river and our Passamaquoddy Bay back.

Did I mention, by the way, that we have evaluated the fishery that we lost in the estuary in Passamaquoddy Bay in today's dollars at $20 million? Not a bad piece of change for the local economy. We think we can get it back.

Anyway, along came a company by the name of Shaw Brick, and they discovered that the aggregate that was located in this industrial park was perfect for roads and concrete and whatever use they put the aggregate to, so they began to talk to the Provincial Government about establishing a quarry there.

I can't go into the details 'cause I can't say that what I believe is true. However, when it all came out, a company that is now... Was, at least a year ago, named Florida Rock out of Florida, I think it has a new name because they did some sort of tax merger this past year, so

there may be another name to them, but Florida Rock on the internet will get them.

Came here and the Port Authority decided they needed a little more lay down area, so what they did was Florida Rock or Jaymar Materials, their representatives here, they have this sort of diverse corporate structure, they came and said, "We will create lay down for you in return for the aggregate free."

People weren't overly excited about it, but, you know, well, okay. That's not a bad argument.

And in something like five, six, seven years they were supposed to have the lay down finished and they were supposed to be long gone and the port was supposed to become rejuvenated.

This was all promised in public meetings similar to this one.

As you can see, something happened. And what happened was that Florida Rock gained control over... By buying up some of the small companies, they gained control over the Port Authority.

The Province of New Brunswick has not responded on regulation, or they've prevaricated. You will now see that as of, what's the date, January 23... I think this one is really quite a nice picture because the snow's there and you can see all the mistakes that were made.

As you can see, the quarry is way larger than some additional lay down associated with the dock area.

Also, at the same time, the population... I don't know whether you can tell in that or not, but to the left immediately above the left part of the quarry you'll see a little mountain. That's called Simpson's Hill.

It's a treasured hill because it has a whole series of trails and paths and geo-caching things on it. It's for a long time been used to view the area.

What happened there was that Florida Rock or Jaymar Materials has purchased half of that property pretty much over to the water, the snow that you see on the right above the quarry.

The intent, and it is now public that this is their intent, is that they wish to drill a hole through underneath Route 127, which is right along the edge of the top of the quarry.

If you follow the line, top line of the quarry down, that's the main road, 127, to the resort town of St. Andrew's.

Oh, and by the way, my organization owns 350-acre nature park directly across from this, so we have a marvellous view of what's happening.

In any event, their intention, and it has been stated publicly now, was to take aggregate to take down

the side of that mountain.

Now, you have to keep in context here that this is a resort area, always been a resort area. And what we now have is this huge quarry in there, and it is no longer a port.

Now let me tell you where it went wrong.

Two years ago, the fines from this quarry were starting to get in the way, so the company, in its wisdom, bought some land. Would it be all right if I stood up and kind of pointed to where that was?

[Off mic] They bought some land right about here.

THE CLERK: Sir, you have to speak into the microphone.

Mr. ARTHUR MACKAY: I think I'm all right now.

If you saw where I pointed, they moved tons of fines to that site, smoothed it all off. They did a wonderful job making it look good and so on, but the next spring, when people went to their homes and cottages when the ice come out, they discovered that that lake that you see there had a big plume, a big grey plume in it.

Now here's the key factor. That lake is the domestic water supply for the Town of St. Andrew's and all of the surrounding area.

When they went to have a look at it, they had the material analysed and discovered they had elevated levels of arsenic in the water.

I know this lake very well. It has lake trout in it. It has landlocked salmon in it, so it's a post-glacial refugem. It did have huge runs of eels, so it does communicate with the ocean.

So it is a vital resource to the area, so you're looking at two things, the future of the community and its water supply, and a development of a quarry for which the Province of New Brunswick receives no royalties whatsoever. Not one penny. Badly negotiated deal.

Now, I think you've told you about the arsenic. Dust, noise and social conflicts are important, too.

The whole community is up in arms about this. There have been huge public meetings in this regard.

I will say this. Jaymar Materials pays their people well. They build loyalty well. They do contribute to things like the airport in St. Stephen.

They are good corporate citizens within that context. However, they are destroying the hopes, the future and the aspirations of a whole community.

It's a very, very difficult situation. It has recently become worse.

But before I go there, I'd like to tell you about the noise. That's the social conflicts.

Noise and dust has been an ongoing issue. The papers have been filled with the people that own property down there. The dust blows over them. It blows into the water.

The noise of the explosions is very intense and some people are really starting to get really upset about it. But oddly enough, the noise that's bothered everybody the most is the beeper on the equipment.

Every morning at daybreak, the beepers are backing up and they're going, "beep, beep, beep, beep". And really, this is bothering people more than the explosions, or at least the people I've talked to.

So you have a tiger by the tail up there in Bayside. No involvement whatsoever from the Federal Government. Question why.

That's fish habitat directly in front of you. That bottom, and we have the data to show it, once had good scallop there. There are lobster there.

This was a place where weir fishing took place for herring. Squid would come up there.

This was a very, very productive stretch of water. Unfortunately, things are starting to happen this spring, 10 years in.

Please note the plume coming into the water.

After they discovered arsenic in the fines, an order was issued by the Department of Environment and the local Government to remove it, which the company did over quite a long time. It took longer than the time they were given.

They dug a huge great hole and they dumped the aggregate fines into that hole. I'm not sure which one it is. I would have to get someone to tell you.

However, if you look very closely at this picture, which you can't do here, you'll see that plume coming out. That's not overflow. That actually is sediment-laden water leeching out through the bedrock, okay. And you can see it coming out from the bedrock.

So in other words, all the activity there, the blasting, the digging and so on, has fractured this place in such a way that the sediments are actually coming out into the ocean.

I will bet this will happen over the long haul at White Cove, White Point.

What's even worse, this is a dust. This goes on frequently. And I have to be sorry to tell everybody that airborne arsenic and dust goes into the water, too.

This stuff settles in the water, so there are sources from runoff, from fractured veins in the bedrock, from the air into the water that's surrounding it.

It's so serious that my organization, which does an annual monitoring of this, was getting prepared to send divers down and do monitoring there.

Am I okay for the moment?

Just when we were talking about it, this ship came in, the "Ambassador", and did a power turn in front of the port, and this is what the props brought up from the bottom. There just happened to be a guy flying over with a camera.

You'll see at the bottom, that's the wake from the ship leaving. That's sediment from the bottom.

We have not been to the bottom to survey this, but we expect that that will be there.

I heard that there were sedimentation areas off White Cove. If these sediments go there... They may not be right in front of the place. They may go downstream or upstream.

But there are sinks for sediments in the Bay of Fundy, and I can guarantee you this stuff, with whatever is in it, will settle there.

The question is, what's in it. We know in this case that sulfide deposits in the granite do have a

variety of heavy metals, including... Copper is really not an issue. I was amazed that it came up as being something worth worrying about.

There are a whole lot of other things that you should be worrying about. Cadmium is one of them. Arsenic is another one.

UNIDENTIFIED MALE VOICE: [Inaudible - no mic]

Mr. ARTHUR MACKAY: I'm done.

In any event, I hope this has been helpful. I think that you really need to ask yourself if it's necessary.

Thank you very much.

PRESENTATION BY Mr. ARTHUR MacKAY - QUESTIONS BY THE PANEL

THE CHAIRPERSON: Mr. MacKay, how big is that site?

Mr. ARTHUR MACKAY: I'm sorry?

THE CHAIRPERSON: How big is that site?

Mr. ARTHUR MACKAY: The site, I can't give you the exact specifications. I can make them available to you if you'd like to have it.

THE CHAIRPERSON: You don't have a ballpark figure for the moment. 100 hectares, 50?

Mr. ARTHUR MACKAY: I...

THE CHAIRPERSON: You don't know.

Mr. ARTHUR MACKAY: The scientist in me rebels at guessing.

THE CHAIRPERSON: How old is that site?

Mr. ARTHUR MACKAY: The site started in 1998, okay...

THE CHAIRPERSON: Ten years.

Mr. ARTHUR MACKAY: ...so we're going into our tenth year. And the renewal is happening this year.

THE CHAIRPERSON: What's the planned lifetime of that particular quarry?

Mr. ARTHUR MACKAY: 50 years.

THE CHAIRPERSON: 50 years. Okay.

Dr. JILL GRANT: Mr. MacKay, can you tell us whether the dust that you showed an image of dust over the site. Is that after a blast, or what kind of activities were going on that generated that dust?

Mr. ARTHUR MACKAY: Yeah. That's the blasting. We have tons of photographs taken where it shows the dust lifting over the water, in fact, settling down around people's houses.

And there are pictures and depositions from people who live in the area that they ended up with dust in their properties, on their properties. It's pervasive.

Dr. JILL GRANT: Do you know how often

they're blasting on that site?

Mr. ARTHUR MACKAY: I'm sorry. I can't give you that information, either.

Dr. GUNTER MUECKE: Do you know whether they sprayed the site prior to blasting?

Mr. ARTHUR MACKAY: There is supposed to be a spray program in place. In fact, one of the things that was supposed to happen is one of these huge tin buildings was supposed to be built for that activity.

It never was, so all of those ponds are identical to the ponds that have been testified to here. The purpose of them is to get wash waters and so on, wash water available for the blasting and treatment.

They used dynamite, by the way, not ammonium nitrate.

Dr. GUNTER MUECKE: My other question is, are the crushing and grinding and sieving activities enclosed in this facility, or are they open?

Mr. ARTHUR MACKAY: They're open.

THE CHAIRPERSON: What kind of rock is it?

Mr. ARTHUR MACKAY: Again, it's a granite rock that they're... I can't give you the exact constituency of it.

I do know that it has sulfide zones in it, and that's where a lot of the problem will come.

I wonder at White Point whether or not there actually has been an adequate assessment done of the rock because it's the sulfides that seem to contain the really worrisome heavy metals.

THE CHAIRPERSON: Has any scientific study been done of the water in front of the quarry? Are there any baselines on which to look at changes in benthos or fish or whatever?

I mean, you alluded to two things. You said there's a runoff. I recognize that it's groundwater runoff rather than surface water runoff, but also you're saying that the ship was stirring up the sediments.

Has any indication, done by scientists, not by inspection... Have scientists shown any impact of any sort there?

Mr. ARTHUR MACKAY: Yes. A scientific survey was done. I led the work in 1976.

So we have records that were...

THE CHAIRPERSON: In 1976 you were with who?

Mr. ARTHUR MACKAY: In 1976, I was running a consulting firm, and this was done under contract to the New Brunswick Department of Fisheries.

Additional work has been done, I don't have the dates, by the biological station on bottom fauna in

the muds, so there's a good body of information.

Between 2002 and 2004, we did another survey of exactly the same transects and bottom sites that were visited in '76, so we have two sequential scientific surveys.

THE CHAIRPERSON: And what did they show?

Mr. ARTHUR MACKAY: It showed that there was no major change in 2003. We haven't been in the water. That will happen within a short while.

THE CHAIRPERSON: So there's no scientific evidence suggesting that there's been any changes.

Mr. ARTHUR MACKAY: Well, apart from the photograph, which created some urgency in getting on with this, I would imagine that we will have the answer to that within 30 to 60 days.

Dr. GUNTER MUECKE: This is releasing of sediments into coastal waters, and under DFO regulations not allowed.

What has been DFO's response to all of this?

Mr. ARTHUR MACKAY: DFO has been notably quiet about the whole process, as has been the Province, although there's been a tremendous amount of back and forth between the local residents and the local LSD, which is sort of our rural equivalent of a village, Local Service

District, and the Municipality of St. Andrew's.

Tremendous amount of back and forth in that context.

If we discover that there are problems there, it's our job, my group, to get in touch with DFO to advise them as to what is there.

It would be my hope that that would initiate a moratorium on the permissions and perhaps, again, CEAA review similar to what's happening here. That would be my hope.

Dr. GUNTER MUECKE: Does the company have a Community Liaison Committee, and how much impact has that had on trying to stop the activities?

Mr. ARTHUR MACKAY: The community has several hundreds of people that have been involved in this. Every meeting has filled the local meeting hall and so on.

The company actually does try to get involved with the community, but they do it on a one-on-one basis, albeit they have been at the recent meetings and made their position really clear.

You know, they haven't prevaricated about their position at all.

Dr. GUNTER MUECKE: I was asking about a formal Community Liaison Committee. Does it exist?

Mr. ARTHUR MACKAY: I'm sorry. Yes, there

is. It is under the auspices of the Town Council of St. Andrew's. And the gentleman heading it is Dr. John Castell, who is a retired DFO biologist from the biological station.

Dr. GUNTER MUECKE: Then the last part in that context, what has been... Or can you speak to that? What has been the impact of the CLC committee on trying to stop some of the problems that you have just described?

Mr. ARTHUR MACKAY: At the moment, virtually none. There has been virtually no impact.

The level of frustration is exceedingly high.

THE CHAIRPERSON: You said there was a lot of back and forth, but I don't know what that means.

Have there been official, I mean official, representations to DFO and to Government and so forth? I mean by the community, by the CLC, by the Mayor. Do those exist?

Mr. ARTHUR MACKAY: There has been, over the last few months, legal. This community committee has been negotiating with the Province of New Brunswick, the appropriate authorities. They've sought legal advice in the process of doing that.

And I think it's been a week or a little bit better word was received that without a public meeting of any sort whatsoever the permissions requested were given,

so there's great concern. Not to cross the road, but to extend the quarry further upstream.

THE CHAIRPERSON: Thank you, Mr. MacKay.

Mr. ARTHUR MACKAY: Thank you.

THE CHAIRPERSON: I think Mr. Buxton.

Mr. PAUL BUXTON: I have no questions. Thank you, Mr. Chair.

THE CHAIRPERSON: Questions from the audience. Government first. None? Okay. Mr. Dittrick.

PRESENTATION BY MR. ARTHUR MacKAY - QUESTIONS FROM THE PUBLIC

Mr. MARK DITTRICK: Yes. A couple of little pieces of information that I'm sure Art has once in a while seen.

I visited this quarry site. I have had a site visit conducted by the manager of the quarry. Actually, the previous manager of the quarry.

And the footprint of this initially was to clear an area of 90 acres, so that was the initial footprint of this quarry. And I think that's sort of what they're doing now. That's the area of the quarry.

THE CHAIRPERSON: Acres or hectares?

Mr. MARK DITTRICK: Acres.

The other thing is, Art also mentioned... You asked a question about is the crusher open.

And I say the crusher is actually enclosed. I mean, there's a house there. And the dust suppression aspect of this, we were told, was state of the art, atomized. I forget the name of the system. We could find this out as well.

They atomize the water in a very, very fine spray and, matter of fact, there's like spaghetti all over the place with these tubes sort of like, you know, in a garden drip feeding, but sprayed under pressure.

And the day that I was there at that, there was a very large dust event and the manager looked at me and says, "Well, that does happen on occasion", so...

THE CHAIRPERSON: Mr. Dittrick, are you going to ask a question?

Mr. MARK DITTRICK: Yeah. Well, I'm just throwing out to Art to maybe add to what I was saying there, and this is to verify this sort of thing at the quarry since he lives in the area.

Mr. ARTHUR MACKAY: I don't often disagree with Mark, so he seems to get his stats pretty good, so I'm guessing the area is as he said and their visit down on the site.

Looking at the aerial photos, legally there are some buildings there, but I'm not so sure that they're being used the way they should be. But I couldn't

comment on that beyond that.

THE CHAIRPERSON: Thank you, Mr. MacKay. Mr. Ackerman. The light's too intense. I can't see.

Mr. Morsches. Sorry. Mr. Ackerman, go ahead.

Mr. JERRY ACKERMAN: Mr. MacKay, I understood you to say there was no Federal involvement.

Mr. ARTHUR MACKAY: That's correct.

Mr. JERRY ACKERMAN: As I recollect 11 years ago, a Member of Parliament...

THE CHAIRPERSON: Mr. Ackerman...

Mr. JERRY ACKERMAN: ...lived nearby.

THE CHAIRPERSON: [Inaudible - no microphone] That's the way it is. Can you hear me?

Mr. JERRY ACKERMAN: Yes.

THE CHAIRPERSON: What I'm saying is that the questions really should be coming through me and I'll re-direct them. So, in other words, what we're trying to prevent is a cross conversation where...

Mr. JERRY ACKERMAN: Okay.

THE CHAIRPERSON: ...it's just between you and him.

Mr. JERRY ACKERMAN: No. My question is, does that exclude the Member of Parliament at the time whose name was Greg Thompson and who lived nearby and who was

bought off, and who is still in Ottawa?

Mr. ARTHUR MACKAY: Yes. As it turns out, I can speak to that.

Greg Thompson has been active in the quarry problem for quite some time. I can't speak to confidences that he has divulged to me.

However, I can tell you that in the process of this happening he was not bought off. His property was purchased and everyone assumed he was bought off, and he subsequently moved elsewhere.

He has, in this recent term, become very active. Those who would like to check Hansard will find that Greg has been very active on the quarry...

THE CHAIRPERSON: Mr. MacKay, I don't know if this is germane to what we're talking about here. I don't...

Mr. ARTHUR MACKAY: Probably not.

THE CHAIRPERSON: I don't...

Mr. ARTHUR MACKAY: But a Government department has never been involved.

THE CHAIRPERSON: All right. That's useful information.

Mr. ARTHUR MACKAY: Yeah.

THE CHAIRPERSON: Thank you. Mr. Morsches, please.

Mr. BOB MORSCHES: Doctor, I would like to have Dr. MacKay answer this question.

In your interchange with the public at these meetings, has anyone ever complained about cracked walls, broken foundations, dust on their gardens and their livestock or any asthmatic where people can't breathe?

Mr. ARTHUR MACKAY: Yes. I can only speak to... There have been many complaints about wells and cracked foundations and so on.

I can say that at least two individuals have mentioned in one case they believed that their whole house had been badly damaged, and subsequently compensation was provided to that individual and they did, in fact, build a new house.

THE CHAIRPERSON: Thank you. Mr. Stanton.

Mr. KEMP STANTON: I noticed that there were very few quiet, unused, and when the DFO recognized that, did they consider not using them and just letting them remain quiet, or was it basically just for the purpose of finding sites for industrial activity?

Mr. ARTHUR MACKAY: The paper that that was taken from was a study to determine whether or not offshore aquiculture could be done in the Bay of Fundy, and the little circles were the places where, perhaps, offshore aquiculture could be done.

I have no idea why the study was done or who initiated, or whether it was just curiosity.

Nonetheless, it speaks to probably what I would view as over-use of the Bay. I think that my advice would be, in terms of things at hand right now, that a moratorium probably should be put in place until such time as a coastal management plan could be put on the table.

That was looked at back in the '70s, and no one has had the political will to, in fact, get involved with coastal management.

If we don't, we'll lose a lot of our valuable economic assets, I think.

THE CHAIRPERSON: If I'm not mistaken, you're an ACAP organization, are you not?

Mr. ARTHUR MACKAY: That's correct.

THE CHAIRPERSON: Is that not a coastal management organization?

Mr. ARTHUR MACKAY: That it is, yeah.

THE CHAIRPERSON: What are you doing?

Mr. ARTHUR MACKAY: Oh, how much time do you have?

THE CHAIRPERSON: No. I don't mean in general. I mean are you active in terms of bringing the issue to the fore and...

Mr. ARTHUR MACKAY: We are. As a matter of

fact, in October right after the ACAP annual meeting, we will be holding an international conference on mechanisms for protecting the Quoddy region, if not the Bay of Fundy as a whole. That will include coastal management.

THE CHAIRPERSON: Thank you. Any additional questions? Yes, please.

I think this is the first time for you, isn't it?

Ms. TINA LITTLE: Yes. My name is Tina Little. I am registered to present next week.

THE CHAIRPERSON: Thank you. Go ahead.

Ms. TINA LITTLE: I own property in Annapolis Royal and Victoria Beach, and I know this last four years has created such levels of emotion in me, and I consider myself to be a very stable person.

But it's really a highly emotional issue, and I've heard so much scientific information, and I hope this is appropriate at this time. If it isn't, please tell me.

THE CHAIRPERSON: It's leading to a question, is it?

Ms. TINA LITTLE: Yes, it is.

I wonder if the sense of pride that the people in the community felt before this, and perhaps their sense of helplessness, hasn't... Do they have a sense of

helplessness that they can't be a part of their future or their community and have they given up?

Is there a population decline or an increase in alcohol and drug use because of this helplessness?

THE CHAIRPERSON: I think, Mr. MacKay, you're being asked about a kind of social change. Has there been some...

Mr. ARTHUR MACKAY: I can speak to that within the context of the ACAP group because we do two things, social environment and the natural environment.

One of the programs that we have in place over there right now is called Reconnecting the Community. We had seniors who were depressed because there appeared to be no value in their life any more, and we had young people who were sitting in front of the local coffee shop doing drugs.

We've put these people together in what I consider to be a remarkable program where they go to some place that's of value within our community.

They may go to a hunting camp or they might go to... We have a ramrodders club that does re-enactment type things, and they go that. And they're going to Campobello Island.

I would say what we have seen is that this

is the truth. However, what we're seeing is that people do not want to go there. They want to find some way to gain control over their communities and their lives.

And as an ACAPer, this has been one of the most remarkable things because the mentoring, I thought, would be from us seniors, down. It turns out that it's both ways. And sometimes the kids are the ones that are bringing the parents along, particularly single-parent families.

So the answer to the question is yes. In my view, we do need to regain control over our communities and, in part, we've lost it in New Brunswick because all of the power has moved to the central authority, whereas previously towns and villages took care of themselves.

So there has to be a rejigging, I think, of our communities.

THE CHAIRPERSON: Thank you, Mr. MacKay. Does that answer your question?

Ms. TINA LITTLE: Thank you.

THE CHAIRPERSON: Thank you. Any additional questions? If not, thank you, Mr. MacKay.

Mr. ARTHUR MACKAY: Thank you.

THE CHAIRPERSON: We're now moving to the Sierra Club. Mr. Dittrick or Mr. Marcocchio. No, neither.

I'm informed it's Mr. Stephen Hazel.

PRESENTATION BY SIERRA CLUB OF CANADA - Mr. STEPHEN HAZEL

Mr. STEPHEN HAZEL: That's correct, Mr. Chair. My name is Stephen Hazel. I'm Executive Director of the Sierra Club of Canada. I'm based in Ottawa.

Thank you for the opportunity to appear before you this afternoon.

My purpose today is really to kind of set the stage for the evidence that Sierra Club of Canada will be bringing over the next few weeks, and you've already heard some of that testimony already, just the way things have worked out with schedules and that.

But I'd like to introduce myself first, talk a bit about the Sierra Club, talk about our involvement in other Environmental Assessments, and then there will be some specific matters that I would like to speak to myself, areas of expertise that I have myself that my colleagues won't be addressing, if that's okay.

I am a lawyer by training. I'm not here as a lawyer. I'm here as Executive Director of Sierra Club of Canada, but I do have training as a lawyer.

I have also training as a plant ecologist, although this goes back some years now.

I have worked for environmental groups most of my life, although I have, for a number of years, served as Director of Regulatory Affairs for the Canadian Environmental Assessment Agency in Ottawa, so I have quite a

bit of familiarity with Federal Environmental Assessment issues.

And I think I've written the only book length text on Federal Environmental Assessment policy and law that I think is in publication.

Sierra Club of Canada is a national grassroots environmental organization basically dedicated to protecting global ecosystems. Sierra Club focuses on a wide range of threats to ecosystems.

A current focus for us is climate change and greenhouse gas emissions, but we also work on biodiversity issues. We work on the toxic chemical issues. We work on protected areas.

So we have a wide range of interests across Canada. We have a national office in Ottawa and chapters across the country, including a very dynamic chapter here in Atlantic Canada.

I have personally been involved in Environmental Assessments going back over 20 years or more to the Rafferty Alameda project in 1986 in Saskatchewan.

I've been involved with the great whale project in northern Quebec, the diamond mines in the Northwest Territories starting with the BHP Mine.

And more recently, with Sierra Club, we have been a leading intervenor in the McKenzie gas project,

and I'll have a bit more to say about that later because I think it does actually have some interesting parallels with the project that you're currently considering.

Sierra Club has been an active intervenor in the Atlantic region as well, and most recently with the Sydney tar ponds panel review and the Deep Panuke comprehensive study.

Sierra Club, I think we've got about three or four witnesses that will be presenting. You've heard from Art MacKay just now.

A few days ago, you heard from Dr. Chris Taggart, who identified a number of problems with the Environmental Impact Statement relating to whales such as the absence of spatial and distribution data for fin, sae and humpbacks.

He also indicated that the sediment from the project area could be carried by prevailing currents into primary whale feeding areas in the Grand Manan Basin.

And I think thirdly he proposed an orthogonal routing for ship traffic approaching and leaving the terminal to reduce the likelihood of ship strikes to right whales rather than the Proponent's oblique angle approach.

Other witnesses that will be presenting include Mark Dittrick. Mark's going to talk about the

initiative of Sierra Club of Canada and Sierra Club US called Beacon, which involves monitoring coastal developments along the Eastern Seaboard from Florida to Atlantic Canada that might threaten right whales.

Mark will also be identifying deficiencies in the Environmental Impact Statement concerning right whales and mitigation measures, showing that the Proponent's methodology and approach to assessing the occurrence of right whales within the vicinity of the quarry is inadequate and that the sighting data has been misused in the Environmental Impact Statement.

And finally, Dr. Janet Eaton will be discussing the impacts of the North American Free Trade Agreement, or NAFTA, especially Chapter 11, on the regulatory scope of action available to the Governments of Canada and Nova Scotia with respect to new bastal quarries should the White Point Quarry be approved.

I'd like to discuss climate change first.

In Sierra Club's view, this White Point Quarry sets Nova Scotia, at least partially, on a path towards a high carbon economy when Canada, Nova Scotia need to be moving very quickly to a low carbon economy by reducing the burning of fossil fuels.

We've heard from the Proponent that the project will generate roughly 82,000 tonnes of greenhouses

gases annually.

A rough calculation has been done by Anna-Maria Galante on the additional greenhouses gases that would be associated with shipping the aggregate, and that estimate is a back of the envelope calculation, but it's 10,000 to 16,000 tonnes, so we're looking at roughly 95,000 tonnes of greenhouse gas emissions annually, coming close to 0.1 megatonnes.

Now, the Proponent has indicated in its documentation that that represents only 0.27 percent increase in Nova Scotia's annual greenhouse gas emissions, and that doesn't sound like a lot.

But this has to be presented in the context of what we're facing on a planet-wide basis and what Canada is facing.

In order to avoid a 2 degree Celsius increase in global temperatures, which is thought by, I think, the consensus of international scientists to be a critical point at which we could have uncontrolled, catastrophic climate change, what we need is we need to have basically an 80 to 90 percent reduction in greenhouse gas emissions by 2050.

In order to get there, we're really going to have to have reductions of about 25 percent by 2020.

So we're talking about really large-scale

reductions in greenhouse gas emissions in Canada, including Nova Scotia, over the next number of years.

So this is going to put tremendous pressure on all sorts of industries, on individuals across Canada.

We've done a calculation that if every man, woman and child in the three counties closest to the project, that's Digby, Yarmouth and Annapolis, successfully took the one-ton challenge that was brought on by the previous Liberal Government, the quarry's greenhouse gas emissions would still only be partially offset.

So, in essence, the quarry would undo all of the good that the sacrifices of the residents of these three counties would have achieved, just to give you a sense of the scale of the emissions that we're talking about.

So in order to achieve the dramatic reductions that are needed, as a society we have got to transform our current economy, which is so heavily dependent on burning fossil fuels, to one that is much more dependent on renewable resources and much more efficient use of those previous fossil fuels that we do burn.

And I think that the residents of Digby Neck and Islands and other Nova Scotians are up to that challenge of moving towards a low carbon future, but we have to start making the move.

We can't continue to do things the way we've always done things, that is, to assume that we can burn as much fossil fuels as we want, we can release as much greenhouse gases as we want. We're entering a new time in the world.

And this is partly why I'm here, why I feel like we have to talk about climate change in the context because it's projects like this which are sort of projects the way we've always done them historically.

We can't do them that way any more. We have got to start thinking about ways of doing things a lot smarter.

And from Sierra Club's point of view, just focussing on greenhouse gas emissions, it's difficult for us to see how we can approve this mega-quarry that would drive up carbon emissions only by .27 percent if you accept the Proponent's numbers, and we're not necessarily doing that, but using their numbers, to ship millions of tons of what's acknowledged to be a low-value mineral hundreds of kilometres south to the United States to build more roads which would, presumably, feed the same vicious cycle of more cars, more greenhouse gas emissions in the United States.

This is not a sustainable path, in our view.

So, I mean, as a minimum, we would

recommend that the Panel at least direct the Proponent to prepare a climate change plan as called for in the Environmental Assessment Agency Guidelines on Climate Change Assessment before submitting its recommendations to Government.

So that's the first set of points relating to climate change.

The second set of points deals with financial liability for greenhouse gas emissions.

Most of the people in the room may be aware that the Federal Government announced a new so-called Federal Regulatory Framework for Air Emissions in April 2007.

And in that Regulatory Framework, the Government wants to reduce greenhouse gas emissions in Canada by 20 percent from 2006 levels, it should be 1990, but from 2006 levels by the year 2020.

So that's a significant effort, and they are proposing what I consider to be probably the biggest regulatory effort ever on the part of Environment Canada and Natural Resources Canada and Transport Canada to get there.

This regulatory regime is expected to come into force by 2010, roughly, would set regulated reductions for greenhouse gas emissions by large emitters, and would establish a carbons emissions trading regime.

It would also establish what's called a technology fund or a tech fund available to companies to assist them to offset their greenhouse gas emissions.

The cost to emitters to offset their emissions would start at $15.00 a tonne, and it would escalate from there to, I think, $25.00 a tonne over the life of the tech fund.

So this is where I think it gets interesting. I think large emitters are going to be compelled to either reduce their emissions or else contribute to the tech fund so they can offset them.

My colleague, Matthew Bramley, at the Penben Institute, has done some analyses of what this means for proponents who are bringing forward projects such as this one that will produce significant amounts of greenhouse gas emissions.

Well, again it's a rough calculation, and you might want to have a chat with Matthew Bramley to get a real, solid economist's calculations on this, but if we assume that roughly 82,000 tonnes of greenhouse gas emissions per year and we're talking about costs of, say $15.00 a tonne, that's going to cost the Proponent about $1.4 million a year. And that will go up.

Now, notice that the Green Party is talking about pegging the cost of carbon at $50.00 a tonne.

So if Elizabeth May becomes the next Prime Minister, Elizabeth May is my predecessor at Sierra Club. If Elizabeth May becomes the next Prime Minister of Canada, the annual cost to the Proponent would be roughly $5 million.

So I guess what I'm saying is that we're entering into a regulatory regime, and I have no doubt that the current Government is serious about what they're up to, and I think the opposition parties are just as serious.

We're entering into a time where there's going to be a price on carbon. And I think this has to be figured into all of the analyses, the economic analysis, the viability of the project, that sort of thing.

But I think it was important for the Panel to understand that that's the way Canada's going and it's the way the rest of the world is going, too, much faster than we are. But we are slowly trying to catch up.

A third point on climate change relates to the impacts of climate change on the project itself.

And that's something that the Proponent is obliged to do, and I believe it's included in the EAS Guidelines as well.

I think when we look at this project, it's building right on the sea. We know the sea level is going to slowly increase.

We're not sure about, you know, how much faster sea level might rise if we had sort of a catastrophic loss of glacial ice on the Greenland ice sheet or the West Antarctic ice sheet, but setting aside those two possibly very significant events, we're looking at, I think, 30 centimetre rise by 2050. Something like that.

It's not a huge amount, but that's a factor that needs to be taken into consideration that could well affect the project.

I think perhaps more importantly is that there is evidence now of increased severity and duration of storms and hurricanes due to global warming in the North Atlantic.

Hurricane Juan is a possible example of what may occur more often in Nova Scotia as water temperatures in the North Atlantic increase.

Now, under the EIS Guidelines, the Proponent is required to assess so-called worst case scenarios, and what we're suggesting is that when that analysis is done that it really should look at the impacts of climate change, global warming over the next 50 years 'cause this will drive... You know, the science seems to be that this will be tremendously significant.

So that when they're doing their worst case scenario, it should include an assessment of a worst

case scenario based on the possibility that a Hurricane Juan, a Hurricane Andrew or a Hurricane Katrina could hit the Bay of Fundy coast.

So I would just offer that as something that Sierra Club thinks should be part of the overall analysis because I think it's well within the realm of possibility.

The next subject I wanted to touch on is what we call sustainability, sustainability framework. I know that the Panel has asked questions about this already, and we think this is a solid approach that you're taking.

Typically, environmental assessment panels traditionally have focussed on identifying adverse environmental effects, assessing the significance of those effects and then, you know, addressing how they could be mitigated, et cetera.

It seems like you're taking a bit of a broader view looking at the sustainability assessment, which we think is a sound way to go because, frankly, the whole process of identifying environmental effects and determining their significance has become a bit of a game.

And, of course, the game is, for the Proponent, how can we get away with finding that there is no significance to this or that environmental effect.

So looking at sustainability more broadly

is, we think, a good idea.

I'm not, obviously, from Digby Neck or from the Islands, but I understand that this community has made some choices already relating to sustainability and they seem to be forward looking.

There was a process, I believe, called Vision 2000, a planning process. There was the applications for UNESCO biosphere reserve status, et cetera that indicates that they see sustainable development as not including or arguing for a preference against non-renewable resource extraction.

So, in our view, when you're thinking about sustainability, I think we have to think about it within the context of the local community and how the local community has expressed itself on those issues.

Now, I didn't know this before yesterday, but I understand that Dr. Robert Gibson from Waterloo will be appearing before the Panel on behalf of the Partnership for Sustainable Development of Digby Neck and Islands Society.

Dr. Gibson has done some really tremendous work for the Joint Review Panel for the MacKenzie Gas Project and, in particular, he has helped the panel in terms of doing its so-called sustainability assessment or developing a sustainability framework for its work.

And I know, because the Sierra Club of Canada has been perhaps the lead intervenor in that very long Environmental Assessment process, that this has been of tremendous value to the Panel, so I think his evidence is likely to be of great interest to you.

And I won't go on about this any more 'cause you'll hear from him directly.

Partly I wanted to raise it, though, because the MacKenzie Gas Project and the White Pine(sic) Quarry, I think, there's some similarities.

The MacKenzie Gas Project, $16 billion. It's called by industry so-called Basin Opening Project.

And what that means is that, if constructed, this 1,200-kilometre pipeline and the anchor fields that go with it will basically transform the economy of the MacKenzie Valley into one that is really... It's an oil and gas economy. That's what it will become.

And the pipeline will achieve that because it will induce all sorts of other natural gas development and probably mineral development as well.

So the MacKenzie Gas Project is important because it represents a fundamental point for the transformation of the local economy and local society and ecology as well.

Now, I don't want to overstate the point,

but I think you could make the argument as well that the White Point Quarry could have that transformative effect here in Digby Neck and the Islands as well.

You can call it, in essence, a mountain opening project.

I think that once large-scale quarrying of basalt is established on Digby Neck North Mountain, it may become politically and perhaps legally difficult under NAFTA to turn down other quarry proposals. That is, that once this goes forward, there's no turning back.

So that's why I'm here. I think the work that you're doing is so important that we get this right.

Cumulative Effects Assessment. Cumulative Effects Assessment, Sierra Club believes, is a key tool to understand these sustainability issues, and that's why they've been included in the Canadian **Environmental Assessment Act** as a requirement for the past 15 years or so.

Our view is that the materials provided to the, by the Proponent fails to meet the requirements of the EIS Guidelines, nor does it meet the Cumulative Effects Assessment Guidelines provided by the Canadian Environmental Assessment Agency.

Apparently Peter Duinker will also be testifying before the Joint Review Panel, and you may know, or you may not know that he and Lorne Greg submitted an very

important study to the MacKenzie Gas Project Joint Panel on this very subject of cumulative effects assessment, and parenthetically, Sierra Club has brought a motion before the Panel for MacKenzie Gas Project, arguing that the conclusions and recommendations by Greg and Duinker should be implemented.

But in the report, Greg and Duinker note that the most important part of an Environmental Impact Assessment, and especially an Environmental Impact Assessment for a large development such as the MacKenzie Gas Project, is actually the Cumulative Affects Assessment.

The basic opening nature of projects such as the MGP is actually the cumulative effects assessment. Sorry, I misread that. I jumped a line. The basic opening nature of projects such as the MacKenzie Gas Project means that if they are approved, we can be certain there will be directly- and indirectly-induced development.

So the primary message of Greg and Duinker, that report, is that the MacKenzie Gas Project requires a meaningful cumulative effects assessment, and that the most appropriate way to get there is through the development of scenarios.

In practice in Canada, these scenarios usually set out different development paths that could happen, and typically they're scaled at five- or ten-year

intervals over the life of the Project.

Cumulative effects assessment is challenging work. It's complicated, but it's important. It has been done for an number of Environmental Assessments that I'm familiar with, including the Cheviot Mine Project - they did a good one - and for several diamond mines in the Northwest Territories. Thank you.

The Proponent has provided little discussion of reasonably foreseeable development that could interact with this Project, nor have they provided scenarios of how the Digby Neck, North Mountain could develop in future.

The Proponent has said, in testimony that I read, that they can't predict the future, and that's true, and nobody can predict the future, but that's why we do these scenarios; to get a sense of possible futures, likely future, so that Governments, and residents, and industry, and NGOs, we can all look at them and say, "How is this going to work? What path do we actually want to go down?"

All too often the approach that we have taken is one of death by thousand cuts. We develop one little project; don't think about anything else. Develop another little project; don't think about it. And then before we know it, you know, we've lost the cod fishery, or the wolves and the caribou have been scared out of the

Province, whatever.

So that's why cumulative effects assessment is important. That's why this concept of developing scenarios is important.

The final area to talk about is with respect to follow-up programs. The Sierra Club thinks it's very important that the Panel require that a follow-up program be required. Follow-up has been a huge weakness in the Federal Environmental Assessment system.

There's been very little learning over the years as to whether or not predictions of environmental effects have been proven out or not. We look at the Panel Reviews that have been done over the past 30 years, plus all of the comprehensive studies and screenings; millions and millions of predictions. How many of them actually prove to be true or not? There's virtually no information on that.

And it's not just a question of being in compliance with terms and conditions issued by the Nova Scotia Government, or Department of Fisheries and Oceans. It's about looking at whether or not our predictions turned out to be true or not.

So how do we do that? And this is a difficult issue. I don't think the Community Liaison Committee is enough. I think what we have to have is an independent body that has guaranteed local representation,

that was guaranteed funding, that can monitor the Project, and the ecological impacts and other impacts of the Project so that we can figure out if we're on the right path or not.

They might have a role in looking over the Proponent's shoulder with respect to adaptive management, as well.

There are a number of examples where this has worked successfully. Not all Federal Panels have recommended this. I mean, going back many years, there was one that was done for the expansion of the Vancouver Airport. Probably the best one that's underway right now is with respect to the diamond mines in the Northwest Territories. So that information is available, and I would commend it to your review.

Now we've got a number of... Maybe I should stop. We've got a number of recommendations that we would like to propose, but I think some of the key ones are we really should have a Cumulative Effects Assessment done, given that this is a, one could call it a mountain opening project. It's the first large scale basalt quarry, you know, on the Fundy Shore of Nova Scotia.

We need a climate change plan from the Proponent. We need a worst-case analysis that talks about, you know, predictions for climate change over the next 40, 50 years, and we need a serious follow-up program, and an

independent agency that can actually make sure that the follow-up program happens.

'Cause typically what goes on, you know, there's interest for a year or two, interest falls off, you know, Government gets onto other things, and then it all dies away.

Those are my remarks, Mr. Chair. Thank you.

THE CHAIRPERSON: Thank you, Mr. Hazel.

PRESENTATION BY SIERRA CLUB OF CANADA - QUESTIONS BY THE PANEL

Dr. JILL GRANT: Can you give us a little bit more about the idea of the follow-up program, and what kinds of measures would be taken, and by whom. You said something about an independent body, but how do those, how would that get funded?

Mr. STEPHEN HAZEL: Well, I think there's probably several ways in which you could fund it. You could fund it through a Trust, so that a certain amount of money would be set aside so that the Agency, or the body, or the Committee could have ongoing funding so that it would be immune from political interference. I mean, that would be one way to go about it.

The purpose of the body is really, is to monitor, to report. It's not to act; it's not to... It

would have no authority to direct the Proponent to do anything. It would have no authority to direct Government doing(sic). It would be really intended just to gather information, to study, you know, to provide information --

For example, if there's been a number of commitments made that there would be observations made by the Proponent of marine mammals before blasting occurs. Well, you could see how a monitoring agency might review that, and make sure that happens, 'cause 50 years is a long time, and you know, people change, and commitments change, and this sort of thing.

So it would undertake those sorts of things, and report on them publically.

Dr. JILL GRANT: And could I ask you also about your suggestion on cumulative effects; that the possibility that the approval of this Project would be initiating some particular kinds of change. Can you elaborate on that? You suggested it's a "mountain-opening project", so can you elaborate on that?

Mr. STEPHEN HAZEL: I mean, cumulative environmental effects should be assessed for all projects, but it's particularly important where you have a project such as this one that has potential to open up a whole new area for non-renewable resource development. We could see many more quarries being established along the 100

kilometres north of, you know, between here up to I think it's Port George. Sorry, my geology's not that great, but where the high-quality basalt is.

So that's important, and the use of scenarios like what happens if we have three or four or five large-scale basalt mines along Digby Neck and the North Mountain? What would the likely impacts of that be on the valued ecosystem components? I mean, does that mean the end of right whales in the Bay of Fundy? That could be one scenario to explore.

Another one might be, well, what happens if we don't have any development at all? I mean, how are we going to do then? I mean, these communities desperately need more jobs, they need more economic activity. What's that going to mean?

And that would be up to the designer to work through, but our suggestion is, is that it really needs to be done, and to the extent that the Proponent has difficult doing that, and I have some sympathy for the Proponent in doing these cumulative effects assessments, because a lot of the time a lot of the information is out of their control.

I mean, they don't necessarily know what other applications are brewing for, you know, basalt quarries along the Fundy Shore. They might not know that,

but Governments do, so there's a bit of a joint responsibility, and I would suggest that, I know time is always an issue, but this given that... Well, in our opinion, this is a tremendously important analysis to be undertaken; that we should take the time.

I don't know, I'm sorry. I'm rambling. I may not have answered your question there, Jill. Sorry.

Dr. GUNTER MUECKE: Could you point us to a previous Environment Assessment which could be taken as a model, let's say, for cumulative effects analysis, or is there no such thing?

Mr. STEPHEN HAZEL: Well, we are making some progress. I would not say that there is a model, per se, but I think that if you look at the cumulative effects assessment that was done under duress, I should add, by the Cardinal River Coal Company for the Cheviot case, I think that's one that's worth looking at.

The others are, for the BHP Joint Review Panel of the... It's a diamond mine in the Northwest Territories and the barren lands. That one, as well, you might take a look at. Those are two are the best ones in Canada.

Outside of Canada, there have been some in the United States that are better, and I'd be pleased to provide some additional references, although you know I

think, to be honest, you've got Peter Duinker coming, and he's the expert, you know, so it's probably just, if you just ask those questions to him, I think he'll give you some good answers.

THE CHAIRPERSON: Mr. Buxton?

Mr. PAUL BUXTON: I have no questions. Thank you, Mr. Chair.

THE CHAIRPERSON: Questions from the floor? Oh, one. Ms. Little?

PRESENTATION BY THE SIERRA CLUB OF CANADA - QUESTIONS FROM THE PUBLIC

Ms. TINA LITTLE: I'm a businesswoman, and when I'm going to put in a retail establishment somewhere, I look for all the other people that do the same thing I do that are making a lot of money, and that's a good place for another business of the same sort.

It is my understanding, and I wondered if the gentleman from The Sierra Club had any information on this for you, that there have been other applications along the North Mountain on the Bay of Fundy to do a similar type of an operation; some sort of basalt mining, and going into the Bay of Fundy. It was, I believe, around Parker's Cove, or Victoria Beach, and it would lead me to believe that there must be a lot of people just watching these proceedings to see if they, too, want to do that.

So I wondered if you knew anything about that.

Mr. STEPHEN HAZEL: I'm sorry. I don't know the answer to that question, but one of my colleagues might be able to help you out, off-line.

Ms. TINA LITTLE: Okay. Thank you.

THE CHAIRPERSON: Ms. Little, we were told by the Provincial Government that there were something like six, I think, that had, over the years, over the last few years had indicated an interest; that they were... They weren't very specific, but they said something like six or so inquiries, maybe, is the best way to characterize it.

So, yes, I think the answer is others have inquired. Whether they're sitting there watching these proceedings or not remains to be seen. We didn't have very explicit information.

Ms. TINA LITTLE: Yeah. It would seem to me that the amount of money that's gone out to make these proceedings go --

THE CHAIRPERSON: Yes.

Ms. TINA LITTLE: -- forth for five years, if I was going to open a business, if it was --

THE CHAIRPERSON: Yes.

Ms. TINA LITTLE: -- worth five years of money for another company, it sure would be interesting to

me.

THE CHAIRPERSON: Yes.

Ms. TINA LITTLE: Thank you.

THE CHAIRPERSON: And Dr. Grant just told me that it isn't necessarily from this area, necessarily. In other words, there have been requests, but it could be wide-ranging. Okay?

Ms. TINA LITTLE: Okay.

THE CHAIRPERSON: Yeah.

Ms. TINA LITTLE: Thank you very much.

THE CHAIRPERSON: Okay. So there are no questions from the... Oh, there's one. Mr. Ackerman?

Mr. JERRY ACKERMAN: Yes, thank you. Is there any value in establishing a surety bond with an independent Trustee for not would-be polluters, but to see that the conditions of the Environmental Assessment Approval do get met?

Mr. STEPHEN HAZEL: Sorry, I missed the first part of your---

Mr. JERRY ACKERMAN: Okay. It's---

Mr. STEPHEN HAZEL: ---statement.

Mr. JERRY ACKERMAN: ---about a surety bond of an independent---

Mr. STEPHEN HAZEL: Oh, surety bonds.

Mr. JERRY ACKERMAN: ---Trustee. I'm

thinking about Northwest Territories, and I'm thinking about Bay Aquiti in Ontario, and places like that.

Mr. STEPHEN HAZEL: Well, I mean, I had dropped this little bit from my presentation, but I had noticed that it doesn't seem that there is any requirement for bonding or for sureties in order to insure a reclamation of the site. I mean, correct me if I'm wrong, but I think this is something that really, that should be done. It's done by the mining sector elsewhere in Canada, and we're talking about 50-year long Project.

You know, as the Project moves forward, and you know, land is disturbed, I mean, there should be a bond sufficient, or some sort of financial guarantee sufficient to reclaim and restore those lands, in my opinion.

THE CHAIRPERSON: Okay. I think we're at the end of this presentation. We will... Thank you, Mr. Hazel. Thank you very much. And we're going to take a 15-minute break now.

--- Recess at 3:17 p.m.

--- Upon resuming at 3:34 p.m.

THE CHAIRPERSON: Ladies and gentlemen, we're about to resume.

--- Pause

THE CHAIRPERSON: Okay, we're about to get

started.

I do have an announcement that I would like to make, and that is, is that some people are planning to make presentations down the road. Now I realize there are many people who are planning, but have not done so, but it would be extremely helpful to us if you could give us those presentations in written form, assuming you have them, as soon as possible to the Secretariat, or at least a day or two ahead of time would be useful, as opposed to the last minute. It makes our job a little bit easier.

And if you were to give them to the... And you've done it on a computer, and you are able to give it to us in electronic form, as well as written form, that's equally useful. Remember, these things go into the Public Record, and if they're not in electronic form, they have to be scanned. If they're in electronic form, it's much easier for us, okay?

So a day or two ahead would be wonderful, and in electronic form as well as paper would be useful. It's not critical, but it would be really helpful.

So we're now moving into, there are actually four presentations that are planned over the next bit. The first one will be by Danny Mills. Is Danny Mills here?

--- Pause

THE CHAIRPERSON: Mr. Mills, that microphone should be about six to eight inches from you. Okay?

Mr. DANIEL MILLS: Okay?

THE CHAIRPERSON: Yeah.

PRESENTATION BY FATHER DANIEL MILLS

Mr. DANIEL MILLS: My name is Daniel Mills and everybody does call me Danny. I'm a Roman Catholic priest who I believe 42 years ago last Sunday celebrated my first Mass in Digby Neck, and then probably also at Freeport, because we had a little chapel there. And by coincidence, I now live in the Church where I first celebrated Mass 42 years ago.

And so I'm not going to give you a long list about my accomplishments, because the fact that the Church closed may deter people's mind about anything positive, or anything that I might say about myself that would attempt at flattering my curriculum vitae. So that's where I began, and that's where I am now, and it's good to be here.

I'm going to preface my presentation with something I read in the Bilcon, I'm not sure whether it's quarterly. Is it quarterly, or? It comes out every month or so, anyway, and it came in this morning, and I saw something that puzzled, and also will help me to explain why

I'm here. And I'll read the paragraph to you:

"For people who have retired to Digby Neck, or others who might 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, or they work somewhere else, and come to visit in the summer. Obviously, the quarry and its long-term economic impact"

And there's an error here, but I'll repeat it anyway:

"And its long-term economic impact don't matter as much to them".

Or I guess it was correct. Anyway, what I want to say, that's why I'm here.

I'm retired, as many of the people are, who are involved in this Project with the sustainability efforts being made for the past five years, and that's why we're here is because precisely we are deeply concerned about the long-term economic impact upon this community, upon this people, and upon this culture.

That's why I came here. I like Digby Neck. There's no question about it. I bought my place a few years before I moved into it, and a day or two after I

wondered why did I do that, but as time went on, and I began to prepare my building to live in, and cleared the land, and began to landscape in my own simple way, I began to truly like the place.

And then about four or five years ago, I was inflicted with cataracts, and I couldn't see it anymore, and I got a sense of what it's like not to be able to see the stars. And since I had surgery a couple of years ago, every morning at 5:00 or so, when I go out to pick up my paper, I just can't help but marvel at the grandeur of the skies.

And so I like Digby Neck, but I know that if I lost my eyesight tomorrow, that I would still love the people of Digby Neck, and that's why I'm here. I've become very close to many of them, very attached to them, very attached to their way of life, very impressed by their resilience, by their caring for each other, and for their community. And I don't want to see that destroyed. That's why I came here, because I do have other things that I could be doing, as many of the rest of us could, I'm sure, too.

So I'll begin, then, with my presentation, and I'll tell you the story about two tiny hummingbirds. They or their ancestors have claimed roosting rights on my clothesline since I positioned a feeder there nearly ten years ago, and every year they come to this very same place.

They depend upon it being here, and sometimes if I'm a few days late in getting the feeder out before they arrive in early May, they make a point to come and practically crash into my windows to alert about their need, their pressing need for sustenance.

And for some strange reasons, I know that they have a right to expect that much of me. I expect that cycle to continue as long as I am here, and they may well show up for a generation or more after I have cast off this mortal coil(sic).

In some analogical way, these little creatures have attained rights to find liquid-laced refreshment at 9396 Waterford on Digby Neck. It just seems so right that I, in turn, uphold my part of this unwritten but nevertheless inscribed-on-the-heart pact which exists between us. On the flip side, it would feel so terribly wrong not to do so.

And so if I am seen to be for the birds, how much more should you be for the people? There's nothing grander, after all, that each and every single human being. It's when we allow the human being to live his due transcendence even as that which we see to the tiny hummingbird that we can understand that to use jobs as an excuse for a quarry at Whites Point is nothing more than a red herring flailed by the Proponents of this Project.

If we must see red, let it be of a well-protected Bay of Fundy sustaining and providing an annual menu of red lobsters on the plates of people all over the world. That preferred to putting this whole community on the rocks, while Bilcon exploits it by shipping the mountain to New Jersey.

We will not be duped by so flimsy a proposition. It's not the rock that counts, nor is it the jobs that would be created for locals that count. This is a people issue, and people transcend economics by a mile at any given time, in any given place.

I spent the best part of my life in the service of people. So often I was awed by their resilience, their goodness, their beauty, even in the midst of the greatest of trials and tragedies. I tried to make them count, and I still do.

In retirement these past years, I've seen a new and emerging phenomenon. The larger businesses become, the more monopolies that are effected, the less personable they become, and the less that people count. And there I dare say lies the crux of the problem here on Digby Neck.

It's my belief from the very bottom of my heart that both in the eyes of big business and in the eyes of big Government that people do not count. Can I prove it?

I think so, and quite conclusively, too. No one from either has asked me or my compatriots how we feel about what is consistent with what I believe can be likened to a true home invasion; perhaps even a very subtle form of terrorism inflicted upon a helpless and fearful community.

No matter how you look at it, the people of Digby Neck have had no say. At whatever level, when I and my neighbours went to the voting station, never did we endorse the rape of the land, the land that we live on, nor the destruction that could and inevitably will, I suspect, destroy the habitat of that which has employed 16 or more generations of people whose very hearts and souls are rooted in the waters of the Bay of Fundy.

As one of the very wise amongst them once said, we need that narrow strip of land to build houses on as our springboard to the sea, a place to rest the weary body. Would I exaggerate to add that surely more than one has fantasized the possibility of a gill transplant, because the sea is in their veins.

We elected our Governments to govern, but to govern over and see that which deals with the ongoing, normal run-of-the-mill issues of the day. What family can survive a major change in the way things are done in the home, when one simply chooses to change everything for any or no reason, without consultation with family members, and

some very serious consideration, discussion, study, prayer even, over all the implications of any action that eventually must be taken by those who make a final decision.

It seems to me that Governments and big business alike have chosen, made a conscious choice to succumb to the tried and true favourite tact of divide and conquer in dealing with people. It's their lovechild. That's the way they do things. Their lovechild born to have citizens and families engaged in battle, celebrated as in our case with a proliferation of weatherbeaten signs lining our highways. What a disgrace that is, when you stop to think about it.

This, in turn, gives rise to suspicion and negative criticisms about those who have chosen their cards a little closer to their chest, engendering even more anger and dissension amongst families, friends and neighbours. And when the truth comes out, we learn that a good many, far too many throw in their hands rather than declare out of fear.

Why have the heads of our community households, our elected Governments not demonstrated real concern for people by asking them what their wishes are regarding any majoral(sic), structural changes to their home, to their dwelling place? If consensus cannot be derived by consultation, at least let the people vote so as

to add another significant dimension to the information gathered by you, and the ultimate decision-makers, our political bodies at both levels.

Responsible leaders, above all else it seems to me, should be expected to do all that is possible to keep people in our villages at peace and living in harmony. And so I ask you to remember that we are people, people here, whether the quarry comes or not, whether it rains or shines, at the end of the day, what we'll be left with are people who want to stay home on Digby Neck, and they are the people who have a right to be here.

For generations, they have paid their dues. They are rooted in Digby Neck and bonded with the sea, and no risk must be taken to destroy that.

An old but nonetheless timely teaching of moral theology is that we can never act in doubt. Sound familiar? Trust me, the people here have many grave doubts which need to be dispelled before anything else transpires.

I recently heard someone ask the question, "What's going on in our society?", and the answer that was given is, "It's due to the lack of respect for the human good". Today we hear about the environmental good, the economic good, the political good, the emotional and spiritual and psychological good, but rarely do we speak about the human good, the common good in this me, me, me

world.

By emphasizing these, of course, we automatically denigrate the transcendence of the human person to which I referred earlier. If you add to this the dimension of faith and belief, we see that this transcendence is all the more amplified by the revealed truth that we are made in the image and likeness of God, but believe it or not, take a look at the human seated next to you, and realize and see his dignity, and be awed by it.

May you respected Panel and elected leaders also take that realization into your heavy deliberations on behalf of the people of Digby Neck, and indeed of the whole North Mountain. I know you would do what is right for hummingbirds in your backyards. Do also for the people of Digby Neck, for men do not live by bread alone.

Thank you.

THE CHAIRPERSON: Thank you, Mr. Mills. Think we should comment.

Dr. JILL GRANT: Thank you, Father Mills. When you came to Digby 42 years ago, it must have been quite a different place. Can you give us an idea of the kinds of changes that you've seen in the community over that period?

Mr. DANIEL MILLS: I think one of the things that we've noticed, of course, is the downturn of the

fishery, the absence of the many fish plants, and fishing enterprises that used to take place. The absence of that.

Also, I notice that the communities on the Neck seem to be much more involved with each other than they were 42 years ago, when many communities were quite isolated. Transportation wasn't that great, and so forth. I see that. I see that people have enjoyed more affluence during that time. Their homes are well kept, their lawn's well groomed, and everyone has, seems to have fine vehicles and so forth.

Those are some of the things I think of right off the bat.

Dr. JILL GRANT: Can you give us, also, an idea of how the composition of the community has changed? The character of households, household size, the kinds of things people do for a living, those kinds of changes?

Mr. DANIEL MILLS: Well, certainly the households have changed. There aren't the huge families that we used to have in villages. One of the reasons the little church closed was because the numbers became so small. Families were, some of the families had 12, 13 children, and the church is, it was a small church, but it would be packed on Sunday with youngest.

Today, the family is much smaller, and as a result of that, the people who remain there deem it

preferable to join the congregation in Digby.

That, for one thing, is... I don't know if I can think of anything else at the moment. Oh, I had something else that I was going to share. One of the things that, and I didn't have time, but if you bear with me, it's there was an editorial in "The Halifax Herald", no, in the "Digby Courier" a few days ago, and the editor enumerated a number of the various undertakings that are arising on Digby Neck; reference to new projects, and that type of thing.

And I have a response which I've taken in to "The Courier" for the next edition, and I added to his list, and if I may, I'll read to you, and this may give you some insight into what I... The change that I've seen. You wouldn't have seen this 42 years ago:

> "To the list of enterprises enumerated in the column, may I offer a challenge to any town or village to come down the Neck and see the little village of Gulliver's Cove, for one example."
>
> I used that an example because it's in that proximity that I live:
>
> "There is more energy and vitality exerted there than in most places I've lived in Southwest Nova Scotia during the past 42 years. Businesses include a fish packing"

And all these new businesses, since I've arrived on Digby Neck, on my retirement nine years ago:

"Businesses include a fish-packing plant, an emu farm, a dulsing enterprise, a building contractor, a growing greenhouse project, an auto salvage business which was there prior to my coming, a young and new hospitality service that's with a tourist home, and an enterprising young woman who's teaching scrapbooking all throughout the fall, winter and during the year. Then besides those who choose to work out of the village, there are the rugged individualists who work on their own, some as families. A trapper, dulsers and periwinklers, and there are a few who are retired seniors. And anybody who is able to work and wants to work in Gulliver's Cove is working."

I live in Waterford. I surveyed the place in my mind. It's not a large village, but everyone in Waterford who wants to work is working. There are a number of seniors, of course. Rossway from my place at least to the Gulliver's Cove Road; I know those people better, and everybody is working. In my village of Waterford just in

the last, well, since I've been there in the last few years, five new homes built, three old homes that were falling apart have been renovated and brought back to new life.

Those are some of the things that I see that are happening. The people are alive and very well in my section of Digby Neck.

Dr. GUNTER MUECKE: Yes. Our previous speaker emphasized, from Sierra Club, that in cumulative effects, one should be looking at development scenarios, various scenarios. Could you give me an idea of what is your scenario for the future of Digby Neck?

Mr. DANIEL MILLS: My scenario for Digby Neck I think is something I've been saying for awhile. It applies to our country, and probably to our world.

It seems that somebody started a snowball somewhere along the way, and it got out of control, and is getting bigger and bigger all the time. We all sit here; we'll sit in all kinds of meetings, and we should do this and we should do that, but we don't know how to stop the ball. Simple as that. And it's just going faster and faster and faster until finally it's going to collide and run over us. That's what I think of what the accumulation of this type of thing that we're doing is.

We need to put on the brakes, and find some wisdom to deal with the problems that are arising.

THE CHAIRPERSON: Mr. Buxton?

PRESENTATION BY FATHER DANNY MILLS - QUESTIONS BY THE PROPONENT

Mr. PAUL BUXTON: Thank you, Mr. Chair. I may have misunderstood, but I rather gathered that Father Mills said that nobody has been consulted on the Neck, and I was wondering whether he remembered a session that he had with me in my office to discuss the project.

FATHER DANNY MILLS: When I'm talking about consultation, actually I went to your place and we didn't talk too much about the quarry that day. I've gone to other gatherings, as well.

But that's not the kind of consultation I think that we need. People need to have a global, a communal input into the thing, and I think the best way to do it is by plebiscite, so people are not afraid to make the X in the appropriate place.

With this divide and conquer approach that you take, it's like a steamroller coming down Digby Neck. You got families on one side afraid to speak because of what's going to happen on the other side, and that's wrong. That's very wrong.

And big business or any big Government or people in that kind of thing should be very ashamed of themselves. I don't think me going and sitting down with

your or sitting down with anybody else, trying to talk one to one and whether to be won over or not, I don't know if that's the... There was no, from the time I first heard of the quarry and read anything about it, I knew that it wasn't healthy.

I don't think that's going to work. I think the people need to be consulted. Every taxpayer who pays taxes on Digby Neck, and if you pay taxes on Digby Neck, I don't care if you come from Hong Kong or East Ferry. If you're paying taxes there, you're local.

We've got people on Digby Neck who have been told, who moved into our communities, who have been told by neighbours, "Don't get involved in this. You don't really have any business being involved in it. You're an outsider." That's wrong.

Put your money where your mouth is. Have a plebiscite. Give the people a chance to talk. Get what the people feel, take it to the Panel, and let them use that also as an indication of what's going on. Somebody makes the final decision, I understand that.

THE CHAIRPERSON: Mr. Buxton?

Mr. PAUL BUXTON: I have no other questions. Thank you, Mr. Chair.

THE CHAIRPERSON: Any questions from... Yes, Ms. Peach?

PRESENTATION BY FATHER DANNY MILLS - QUESTIONS BY THE PUBLIC

Ms. JUDITH PEACH: I think it's been said that the population, the composition of the population on Digby Neck and Islands is maybe a little in the older category. Maybe, you know, I think Bilcon said the 19 to 39-year-olds have declined over the years, and the implication is that they are the people who contribute to the communities.

I wonder if Mr. Mills could speak a little bit to the contribution of senior people, retired people, in the community. Do they contribute to the community in any way, or are they just pretty much sitting in their homes doing nothing?

FATHER DANNY MILLS: If you took the senior people off of Digby Neck and had this issue arise anew, the younger people are so busy, whatever it is that they're doing, they're all working, that there would be no leadership. There's not many young people involved in the sustainable... What's it called?

Partnership for Sustainability. There are very few young people. They're very, very busy. I suppose maybe they support if financially and come out to suppers and that type of thing, but they simply don't have the time to go to lots of meetings.

All leadership, in most communities where

I come from, or where I've been, generally comes from the senior people, because they've got the time, they've got the experience, and they have the will to participate. And it's very prominent on Digby Neck. I can't speak for the Islands, because I don't know the people on the Islands too well, but certainly on Digby Neck it's very much so. Very much indeed.

THE CHAIRPERSON: Thank you. Mr. Morsches?

Mr. BOB MORSCHES: Doctor, this is a follow-up of Dr. Grant's first question about the changes.

Have you ever, I know you've seen a decrease in the size of the families, et cetera, but Father have you noticed there's an increase in seniors on Digby Neck? For instance, in Sandy Cove, where I live, 68 percent of the people there are seniors.

There's very few, I think there's only about a couple small, or young families, that are in their 30s, and the other people that are still working, they're in their 50s and looking forward to retirement.

And I was wondering if you notice the same thing at Waterford or Rossway or up the pipe?

FATHER DANNY MILLS: It's the same thing everywhere in rural Nova Scotia, and I spent most of my lifetime in small communities in Southwest Nova Scotia. It's the same everywhere. The population is aging. The

families are smaller. More and more young people are getting formal education and moving on into professions that they can't celebrate or work in, in rural areas.

They move on to other places. Young people have always left home. I often think of... I was just a little fellow when the Second World War ended but I had uncles who came home, and those who were their age and so forth, and if you go to Sudbury, Ontario today you'll find more of my relatives there than you'll find anywhere else. They went there to work in the mines, and they stayed there, raised families. They're grandparents now, great-grandparents, I suppose, some of them.

And that's true in every community in the Maritimes, I believe, and so what's wrong with that?

I often think, I was in the Military Chaplaincy for a few years, and I was approached to go in the Military at a little Military Station at CFS Barrington one evening, was another thing...

But I certainly didn't expect them to move the training school to Barrington Passage. I had to go to Chilliwack. You have to go, for what you want to do, you have to go where it's happening.

Mr. BOB MORSCHES: Thank you, doctor.

THE CHAIRPERSON: Anyone else? If not, then thank you, Father Mills.

We'll now hear from Jill Klein.

--- Pause

THE CHAIRPERSON: We're going to switch presenters. Ms. Klein has got to get herself organized with regard to her laptop, so while she's doing that, we'll get the other presenter, who is Rob Buckland-Nicks. Might he be available? There he is. And then, Ms. Klein, you'll be next.

Please. Just bring up the microphone six or eight inches from you.

PRESENTATION BY Mr. ROB BUCKLAND-NICKS

Mr. BUCKLAND-NICKS: This is good now? So my name is Rob Buckland-Nicks, and I'm not from Digby Neck and the Islands, although I have been there many times in my life and have sent thousands of people down there for whale watching.

I have a business in Bear River which is an art gallery and craft shop.

Part of selling art and craft is to story-tell about the artists who aren't there to represent themselves. It sort of makes the whole process more intimate, and they get an understanding of the person that created a painting or the piece of craft, and I feel like I'm largely here to speak about a work of art which is Digby Neck and the Islands. It can't speak for itself.

So I'm going to start with a story which is about my family and myself, on a whale watching trip. I don't know why I'm getting so emotional.

And just before I start, on the back shore of Brier Island one day, in the early '70s, long before whale watching, I was on a small stone causeway that separates the ocean from some brackish water, and there was nobody around, and it was just me. And it was the first week of August, and I was watching the sun go down.

And I was just walking very slowly on the causeway, and I just stopped and took a deep breath and just took it all in, and suddenly of semipalmated plovers flew up all around me. It kind of opened like the red sea and closed behind me, and I had no idea they were there.

And I realized at that moment that they didn't mind me being there, and knew also that I couldn't see them, and they very much used the stones for their own security and invisibility.

From that point, I have made a living painting birds on stones and describing landscaping stones. So I have a lot, in many ways, to thank the whole area for.

Anyway, I'd like to tell this store first, and the tie it in somewhat with 27 years as a retail business owner who deals specifically with tourists.

The Captain of a whale-watching vessel,

frustrated by days of thick fog, but otherwise sunny weather, asked a few of us if we would like to venture out and see whether there were some whales around.

Everyone on the boat knew each other, and were mostly parents and teenagers, perhaps number 25. Some of us had been out before, and for some it was going to be their first experience on a whale-watching cruise.

We left the harbour, turning right with the sun on our backs and blue skies above. We could clearly see the bank of fog which started half a mile out, and the nearer we came, the more it appeared like glistening architecture.

And then, there we were, in front of the walls Jericho, a hundred feet high, almost a defining line between its base and the calm blue water.

The Fundy is rarely glass calm, but this day was, as we slowly pierced the wall of fog and went inside. There was almost no visibility, and everyone strained to make out anything at all.

It was akin to hand over hand, pulling yourself through clouds.

We'd been edging forward like this for maybe five minutes, and the Captain I'm sure was thinking, "This is a lost cause", when we suddenly, without warning, broke into this perfect clearing, a half-mile diameter

circle, surrounded by shimmering walls and a shimmering roof, as the sun illuminated the mist.

An airplane could've flown over us and not seen us, and a boat could've passed by us and not seen or heard us. For this clear bubble in which we would ourselves had insulated us from the outside world.

With the boat's engines turned off, we were silent observers of an amazing unfolding spectacle. As far as the eye could see, and in every direction, were herring throwing themselves out of the water, an event known to fishermen as a herring storm. Millions of pitter-patterings, as glistening bodies fell back into the water, were floating pockets of pink krill everywhere you looked.

These were the catches of the day for three trawling fin whales on the perimeter of our circle, and three humpbacks that dived and bubble netted time and time again in the centre. Gannets plunged arrow-like from 50 feet, terns from 20, gulls screamed and bickered. A couple of immature puffins looked a little lost. A razor bill shot through and out. Shearwaters and petrels skimmed and danced, and those too small to effectively compete left early.

The creatures were mostly oblivious to us, except for one humpback. He drove directly at the boat side, and at the last moment, with everyone hanging on to

each other, gently dipped and passed clear under us.

Each pectoral fin was 14 feet wide with both spread like wings. It was as wide as the boat was long.

The highlight of the day involved a herring gull and a humpback. The humpback feeds by diving and exhaling. This forms a vortex of bubbles that traps nearby fish and takes them to the surface in a bubble net. This bubble net is preceded by a green ring of water which both gulls and humans can spot.

A green ring and bubble net full of fish are shortly afterwards followed by the whale's huge mouth. This particular gull knew he had only so much time to eat the herring from the whale's catch, but got greedy and ended up in the whale's mouth

The huge jaws closed, but just before submerging opened them one more time to let the gull, that must've seemed like a fluttering moth, fly out to live another day.

For my family, and all the other groups on the boat that day, it was an experience that enriched our lives and made us even more determined to become caretakers of our environment.

In today's world, it is impossible to underestimate the positive impact these forays into the

natural world have on all of us. Every whale watch that goes into the Fundy from Digby Neck and the Islands has the ability to orchestrate hundreds of these experiences with thousands of people who come here to see these wonderful mammals.

Visitors come from all over the world, but it is especially the Europeans who want to go to the Fundy. The Governments are very pleased with the increase in European visitors. Well, guess what? The number one thing on their agenda is to whale watch. It is not just the reason to be in our area. It is the main reason that they are in the Province.

Nova Scotia is closer than Hawaii, New Zealand or South America. Whale watching in the Fundy Bay is a major tourist attraction.

I know this to be true because for 27 years I've operated a seasonally-blazed art and craft gallery in Bear River. All of my business is done with people who are travelling, and my staff and I pride ourselves in welcoming and talking to everyone who visits us, and I do mean engaging in conversation.

"Where are you from? Is this your first visit? What have you been doing so far? What would you like to do? Oh, you only have four days? Well, I would strongly suggest you ditch the plan to see all of Nova

Scotia and Prince Edward Island, unless of course you've got a Ferrari with prepared meals on board and you don't have to use the bathroom", and so on.

One of the many things we suggest with our itinerary is a whale watch. This suggestion is never necessary, for they have either just come from one and immediately recount every detail of the trip, or they have already booked and are very excited at the prospect of going.

Many people have watched birds on Digby Neck and the Islands for years. The area was already internationally recognized as a hot spot for ornithologists and hikers.

Now, of course, the birders also go to the Fundy to get a more intimate look at the pelagic birds. Digby Neck and the Islands are naturally the last landhold for thousands of migrating birds to rest from bad weather before crossing the open sea.

The advent of whale watching in the mid-'80s and its subsequent growth had dramatically increased the time that visitors spend in our area. Before whale watching, tourists were, at best, here for a few hours, and now they may be here for days.

It is the economic engine that drives tourism in southwest Nova Scotia.

So here we are, left by a naturally-occurring, world-renowned ecosystem, the sort of beauty that some countries have to spend billions of dollars to artificially create, where the surrounding waters offer livelihoods to hundreds in the fishery and thousands directly and indirectly in tourism.

Into this pristine setting, our Government has agreed to a process whereby a company will apply to run a 50-year quarry operation. Dynamite will be used regularly, and millions of tonnes of greenhouse gasses will be released into the environment; an environment acknowledged finally to being under siege from pollution.

And I mean world environment. "Environment" is the whole world environment, as far as I'm concerned. It's not isolated.

I wish our Government could've heard the dismay and outrage expressed by tourists when, after an experience of a lifetime on the Fundy, watching whales with their families, they heard what kind of quarrying operation could become a reality in the same vicinity.

In an area where tourism is the main industry, in a province where tourism is already declining, it makes no sense to endanger its premier attraction, and for what?

A preponderance of blue-green pamphlets

flutter into our mailboxes, and through calm language and attractive illustration seek to persuade us that the Proponent will be an unobtrusive neighbour.

Dynamite is dynamite, and dust is dust, and crushing rock is what it is, and a sanctuary is a sanctuary. And my hope is that all of the small peaceful fishing communities on Digby Neck and the Islands, whose live and livelihoods are directly connected to this area of the Fundy Bay, will be rewarded for their magnificent efforts to stop the quarry.

--- Pause - Crying

PRESENTATION BY ROB BUCKLAND-NICKS - QUESTIONS BY THE PANEL

Dr. JILL GRANT: Mr. Buckland-Nicks, can you give us an idea of what proportion of the families that are in the tourism business have more than one member of the family working in the tourism business in places like your own and others that you're familiar with in this area?

Mr. BUCKLAND-NICKS: Could you say that one more time? I didn't quite follow that.

Dr. JILL GRANT: I'm just wondering about how often the tourism, those involved in the tourism industry, like yourself, have more than one member of the household working in the business?

Mr. BUCKLAND-NICKS: I would say they definitely have more than one person working in the

business. Depends on the size of the family, really. Personally, I'm a single person at the moment, but I have two employees. But I think most families, in tourism especially, accommodation and restaurants and certainly whale watching, all have family members working, I would say, yes. Is that the... I didn't quite follow it, really. Sorry.

THE CHAIRPERSON: Mr. Buxton?

Mr. PAUL BUXTON: I have no questions, thank you, Mr. Chair.

THE CHAIRPERSON: Questions from the audience? None. Thank you very much, Mr. Buckland-Nicks.

Now we return to Jill Klein.

--- Pause

PRESENTATION BY Ms. JILL KLEIN

Ms. JILL KLEIN: My name is Jill Klein. I was born and spent most of my life in the Washington, D.C., area. I retired from the U.S. Federal Government in 2002.

I know what unremitting noise and air pollution can do to one's health. I picked my house in Sandy Cove specifically because it was everything that Washington, D.C., wasn't: clean, quiet, and uncongested.

When I stand in my backyard, I can hear the wingflaps of chickadees flying from tree to tree, just as clearly as I could hear cars crashing into each other a

mile or two away from my home in suburban Washington.

Two months after I bought my dream home here in Sandy Cove, the deal for a mega-quarry was begun, five miles from my house. This mega-quarry will change the entire character of the region. It will be blasting, crushing, and shipping two million tonnes of the salt a year in freighters longer than two football fields end to end.

If it is reasonable to place an industrial development of this magnitude in an agricultural community on a small strip of land that is little more than 20 miles long and two miles wide, then there is no place in Nova Scotia where mining of this magnitude is inappropriate, and that would include Citadel Hill in Halifax.

I visited Whites Cove in the summer of 2001, when it was still a place of great natural beauty. Off its shore is the summer feeding ground of the endangered right whale, the protected humpback, the minke, and dolphins. Lobsters feed and grow off this shore, which is part of the most productive lobstering fishery in the world.

A year later, Whites cove was unrecognizable. Global Quarry Products, or Nova Stone, or whatever they were calling themselves then, had grubbed off all vegetation that was holding the soil on the hill.

If this project is approved, it will be an ecological disaster that will run out the 21st century.

On Friday of May 23rd, 2003, during a heavy rain, Nova Scotia Environment and Labour was called because a fisherman had reported seeing a plume of silt a half a mile off shore.

My husband went down on Saturday to see silted water running off the site into the Bay of Fundy, and went again on Sunday, where there was a repeat of the previous day's run-off.

The following Monday, three days after the call to Environment and Labour, my husband escorted the field inspector, Lovett Blades, to the site. I am holding a copy of the field inspection report from Environment and Labour signed by Mr. Blades.

On April 20, 2004, Kemp Stanton, President of the Society for Sustainable Development, wrote a letter with pictures of site degradation and a sworn statement to Robert Petrie, District Manager of the Department of Environment and Labour, requesting an investigation of uncontrolled flow of sedimented water.

The quarry operator, now known as Bilcon, told us that they are going to be good stewards of the land, environment, and the Bay of Fundy. This statement is inconsistent with a quarry of this magnitude. If the precautionary principle means anything to Canadians, then this quarry must be stopped. This is the wrong project for

the wrong place.

And now I'm going to show you... Actually, what you're looking at is a picture of run-off at Whites Cove. More run-off. More run-off. Over-flowed sedimentation ponds. More run-off. And as you can see, gushing water. It's a river.

The same thing. And now it looks like a river, well, actually it looks like a lake plus a river, and if you look up in the trees you'll see two great streams that are coming down the hill.

And these are the folks that we're supposed to trust with Digby Neck and the home whales and sea life.

That's all I have to say.

PRESENTATION BY Ms. JILL KLEIN - QUESTIONS BY THE PANEL

Dr. JILL GRANT: Can you just repeat the date again? Did you say the plume of slit was reported on the 23rd of May, 2003?

Ms. JILL KLEIN: That is correct. 2003. I don't know whether you have a copy of my presentation, but --

Dr. JILL GRANT: And three days later, a DFO inspector came and...

Ms. JILL KLEIN: That is correct. My husband accompanied Mr. Blades to the site.

Dr. JILL GRANT: Were you satisfied with the outcome of the investigation in that case?

Ms. JILL KLEIN: Well, if you read Mr. Blades report, he says there was no siltation. Okay? But if it takes three days to get there, I heard Mr. Petrie's, or Rob Petrie's presentation yesterday in which he said that he 80 inspectors who made 12,000 site visits. I don't know whether the follow-up is the same on all of those site visits, or obviously some of them are not the same. It's not the same sort of situation where an occurrence is happening.

But it's pretty obvious to me that the Proponent knows there isn't going to be any investigation, and they're not going to find anything. And in fact, Mr. Petrie said he made site visits and never found any siltation. So no, I was not satisfied.

Dr. JILL GRANT: To your knowledge, has there been any repeat of that kind of problem from the site?

Ms. JILL KLEIN: Well, actually, the first pictures that I showed you, somebody turned off the pictures, were from 2004, and the last one... Please. The last one was May 1st, 2005. Wait a minute. This one. Which is two years ago. So you can imagine the devastation to this area.

Dr. GUNTER MUECKE: And just for

clarification on the record, I think it was mentioned DFO. I don't think we are talking about DFO here, are we? If you're talking Nova Scotia --

Ms. JILL KLEIN: Did I say DFO? I meant --

Dr. GUNTER MUECKE: Somebody said, but it was Nova Scotia, just for clarity, it was Nova Scotia Department of Environment and Labour.

Ms. JILL KLEIN: It's Nova Scotia Environment and Labour.

PRESENTATION BY Ms. JILL KLEIN - QUESTIONS BY THE PROPONENT

THE CHAIRPERSON: Mr. Buxton?

Mr. PAUL BUXTON: Thank you Mr. Chair. No direct questions, but I might comment if I could that the Whites Cove Road is actually not in the ownership of Bilcon.

Two of those photographs showed extreme water coming down the Whites Cove Road. Bilcon has been aware of this problem and has in fact used its own forces to try to cure that situation.

DFO was in fact involved and came down onto the site when the initial sediment pond was being built, because of allegations of extreme siltation into the Bay of Fundy.

I think... And I know the Panel has been to the site, but it was perhaps not pointed out that at the bottom of the Whites Cove Road, as it virtually reaches the

beach and then turns north, that all that material that had scoured off the road is actually sitting on the beach and has been scouring down for a long time.

Bilcon is unable to do anything about that because we don't own the property, and one of the concerns that we expressed to the Provincial Department of Transportation was this situation, because every time there's an extreme rainfall and the water falls down the Whites Cove Road, and that stuff goes out into the sea, the telephone gets picked up and a call is made to Environment and to DFO, and we have to respond to those and go out and point out where this siltation is coming from.

We would like to solve the problem, and we have in fact, and I think I mentioned this, but allowed the Department of Transportation and Public Works to divert water onto our property, to go through the woodland so that it picks up less silt on its way into the Bay of Fundy.

Thank you for allowing me that comment Mr. Chair.

THE CHAIRPERSON: Questions?

Ms. JILL KLEIN: I have a question.

THE CHAIRPERSON: Please.

Ms. JILL KLEIN: If I may.

THE CHAIRPERSON: Please. A question directed to?

Ms. JILL KLEIN: Actually, to the Panel and Mr. Buxton, because Mr. Buxton alleges that as Bilcon's representative... I assume that's what he is.

But anyway, that he has no direct control over the land and the road, which seems illogical to me.

THE CHAIRPERSON: The road is owned by the Province.

Ms. JILL KLEIN: That I know Sir, but when that area was grubbed off, there is no possible way that there could be anything but siltation, and that's why I made the statement.

This is prologue to what is about to follow if this quarry goes through. That's all I have to say.

THE CHAIRPERSON: I saw some hands. Ms. Peach?

PRESENTATION BY Ms. JILL KLEIN - QUESTIONS BY THE PUBLIC

Ms. JUDITH PEACH: I think I heard you say that you were at the site before that grubbing happened, the year before maybe?

Ms. JILL KLEIN: Yes, I was.

Ms. JUDITH PEACH: How would you compare the condition of the road from that time to the next time you went, after the slope had been grubbed?

Because I understand a lot of equipment

had to go down that road, a lot of heavy equipment went down that road to do the work on the hill?

Ms. JILL KLEIN: It was never what one would call a wonderful road. However, it changed from a passable road, that other than a 4-wheel drive could get down, to something that after the grubbing off and because of the degradation to the whole area and the lack of vegetation to hold silt, et cetera, it turned into this with streams running down it all the time, and it's just a travesty.

It's a moonscape. It doesn't even begin to look like a normal area. It's really... It's so sad, I mean...

THE CHAIRPERSON: Are there... Yes, sure.

Dr. JILL GRANT: Mr. Buxton, perhaps you could give us an idea what kind of equipment had to go down that road to do the grubbing and initial clearing, preparation of the sediment ponds on the site?

Mr. PAUL BUXTON: To the best of my recollection Dr. Grant, there was a truck, certainly a backhoe and an excavator, and they would have made essentially one trip down the road, and one trip back out again.

Perhaps the truck went out at night, but I doubt it because the top soil that came off the stripped

area was stored on site, so nothing was taken off site.

So the small excavation group would have gone in. I think the work took about three weeks, something like that, possibly four, and then left the site.

Just again to I guess sort of explain a little bit, when a site is grubbed off, it's impossible to stop a certain amount of siltation, but the whole point is you stop it from getting into receiving waters.

There is a deep ditch at the bottom of that slope, which has been cleared, which leads into the sediment pond.

So yes, sediment does come down off that slope. It doesn't anymore, because it has all come down. And it goes into the sediment pond, which is its function. Thank you.

THE CHAIRPERSON: Mr. Mahtab? I can't see very well. Yes.

Mr. ASHRAF MAHTAB: Thank you Mr. Chair. I would like to know if the last picture that Jill showed was a picture of the water overflowing the sedimentation pond, and if that is the case, that could be a serious thing.

The sedimentation pond is not performing its function?

THE CHAIRPERSON: Can someone remove this thing?

Mr. ASHRAF MAHTAB: This picture, I want to ask if this is actually the sedimentation pond and the water is overflowing towards the Bay, towards my right.

The water is flowing from the sedimentation pond towards the Bay, and that is... The pond is supposed to contain the sediments.

THE CHAIRPERSON: Well...

Mr. ASHRAF MAHTAB: If that is the case. I'm asking you if that is a picture...

Ms. JILL KLEIN: I...

THE CHAIRPERSON: Ms. Klein may not be aware of what the sediment pond is, so she may not be able to identify that. I can't speak for her.

Maybe that question should be directed to Mr. Buxton?

Mr. ASHRAF MAHTAB: Yes.

THE CHAIRPERSON: I don't know.

Mr. ASHRAF MAHTAB: Well, if Mr. Buxton would answer the question, I would appreciate it.

Mr. PAUL BUXTON: What that appears to be Mr. Chair, looking from the west is the east along the north side of the sediment pond.

I'm not quite sure, but I'm pretty sure that's what it is.

In your bottom left-hand corner, which you

can't see, is an overflow. There's a pipe through the natural berm, which is there, and perhaps I should just give a little bit of background to this area.

This is the old pit area that you're looking at. And all the material that was taken out of this area was taken out in the late forties, early '50s, to build Highway 217, or at least that is what I am led to believe anyway.

The water that you see coming down the hillside is basically fresh water. It doesn't come over what was then the 4-hectare site.

The water gathered on the left-hand side is basically clean water off the hillside, and it simply goes out through a pipe into the Bay of Fundy.

On your right-hand side is the sedimentation pond, and that sediment pond was designed to see what perhaps the holding capacity was of the natural materials that were there.

There is berm, which you can't see, which would be on the bottom of the picture running from left to right, is actually a natural berm. It's what was left when the material was excavated to the west of that.

One of our intents was to see how quickly the water might filter through there, what its holding capacity might be, and not on this picture but if you can

imagine to your right-hand side, the other side of the settling pond is an overflow, and that overflow goes into a channel, then through three check dams which are built of bails of hay, which are covered then with barrier material to extract any sediment, and then are covered with rock.

So this only gives you a little bit of the picture here, and when it goes through those three check dams, it then goes into a natural drainage area, which is there at the moment, and it eventually goes into the Bay of Fundy.

And again unfortunately, on occasions, in fact on numerous occasions, those check dams were torn down and had to be rebuilt.

For situations such as overflow or unusual events, we use to keep 200 bails of hay on the site, and every time we broke down another load of 200 bails of hay, they would be burned the same day.

So yes, we did have difficulties on the site, in trying to maintain the site. The actual perimeter of the settling pond is basically used as a bit of a raceway for ATVs, and through the existing wetland which is there, through which the water flows to go into the Bay of Fundy, but I would remind anybody looking at these pictures that this did not intend to represent a quarry development, it was intended to look at the depth of overburden, which might

need to be removed, how quickly it could be removed, what the cost of removal would be, how we might build settling ponds, the effectiveness of check dams and that sort of thing.

And over the course of the last three or four years, I think we have gained some very valuable knowledge out of that construction.

Thank you.

THE CHAIRPERSON: Does that answer your question Mr. Mahtab?

Mr. ASHRAF MAHTAB: No Mr. Chair, this was... The answer was very confusing, very spread out. It didn't say whether the berm over which the water is flowing is a part of the siltation pond (sic) or sedimentation pond or not.

THE CHAIRPERSON: I thought Mr. Buxton aid that the berm was off to the side and the sediment pond was on the right?

Mr. ASHRAF MAHTAB: Okay. Therefore, there is a flow over the berm. That's all I wanted to know.

THE CHAIRPERSON: Okay.

Mr. ASHRAF MAHTAB: Thank you.

THE CHAIRPERSON: Yes, please. Can you identify yourself?

Ms. MARY McCARTHY: I'm Mary McCarthy, a

registered participant for this Panel Review.

THE CHAIRPERSON: Thank you.

Ms. MARY McCARTHY: I've seen through the freedom of access to information a cautionary directive from DFO about the runoff from the hillside and the ponds. DFO gave a time limit for Global Quarries to remedy this.

It's a long time since I read this directive to Global Quarries, but I do know that there was a time limit set for Global Quarries to remedy this.

Now I'm just wondering why...

THE CHAIRPERSON: Sorry, remedy this meaning what?

Ms. MARY McCARTHY: Remedy the damage that was done by this overflow. So I'm asking if this is connected to the overflow that we have seen today, I'm sure the Proponents are familiar and could update us on that information and cautionary note by DFO, where they were given a time limit to remedy the situation.

Because I'm kind of confused how many times this had happened, this overflow?

As far as I know, this was an overflow... I'm talking about an overflow from the ponds. Thank you.

THE CHAIRPERSON: Any additional...

Mr. PAUL BUXTON: I think I can shed some light on that, if it was a question Mr. Chair.

THE CHAIRPERSON: Yes.

Mr. PAUL BUXTON: DFO, as I think I have already stated, did come down onto the site. There was a formal complaint made and signed, and they came down and investigated the situation.

They issued an inspector's directive, which is a formal proceeding which essentially asked us to monitor the outflow into the Bay of Fundy and to provide those monitoring results to DFO, which we did for a year, and since there was no sediment or very little going in, actually less than background, going into the Bay of Fundy for a year, they lifted the inspector's directive.

I can also add that we were convinced that the major plume that went into the Bay of Fundy was in fact off the Whites Cove Road.

So we commissioned a specific study to look at the beach pools in the area in front of our sediment ponds and across to where the Whites Cove Road discharges into the... Well, the drainage from it discharges into the Bay of Fundy.

That study, which was done by Dr. Brylinsky, is in fact in our EIS, and I think that... I think that we demonstrated that there was no inorganic silt found in the beach pools, in the rock pools adjacent to our activities.

Thank you.

THE CHAIRPERSON: Anything further? Yes Ms. Peach.

Ms. JUDITH PEACH: Soon after the hillside was grubbed and the ponds were built, and there was a ditch leading from the base of the grubbed hillside into the pond, one of the ponds, and the water didn't flow very well because the grading was the wrong way, so it was leading down, leading the water into the pond, but in fact holding it back.

I don't know if anyone else remembers that, but that didn't help with the overflow when there was a big rain event.

THE CHAIRPERSON: Okay. Anything further? It appears not. Thank you Ms. Klein.

The final presenter for today is Lawrence Outhouse. Is Lawrence Outhouse here? Yes.

PRESENTATION BY Mr. LAWRENCE OUTHOUSE

Mr. LAWRENCE OUTHOUSE: My name is Lawrence Outhouse, I live in Tiverton.

I've made previous submission for the response for the Draft Guidelines, and first, I'd like to thank the Panel for bearing with me.

I apologize for being late in getting my things in, and I thank Debbie for helping me get things in

order.

I'm one of those seniors that Father Mills talked about that's probably so busy, he's gotten a little bit behind, but I'll get right on to my presentation because we're running over time.

I would just like to say that I'm pleased that the concerns I raised in my response to the Draft Guidelines for the Environmental Impact Statement were covered in the final definition of the impact study.

A review to these basic concerns is the topic of my present submission, as it appears that they have not been fully responded to by the Proponent's Project.

The first of these is that the concept of a marine terminal as has been proposed on the open Bay of Fundy shore at Whites Cove astounds me.

To imagine that such a terminal used to dock 70,000 gross-ton ships in a competitive commercial operation could function over a 30 to 50 year period without a serious environmental accident is incredulous.

My other and greatest concern is that based upon the background information I've been able to access regarding the potential market for aggregate, if approved, this Project would most probably be a financial success, at least initially.

Assuming this to be the case, it would be

only the first of any such projects from Long Island to Cape Split. This becomes a political problem more than an environmental problem.

With this particular project I mean. The environmental problem is not with this particular project, it's with the expansion of these projects.

I bluntly do not believe that our governments have given proper concern for the long term potential for basalt from the North Mountain of Nova Scotia.

If this is to become a major industry in our area, it is essential that long-term environmental and socio-economic studies beyond the scope of this Project be carried out and appropriate legislation enacted, prior to the approval of this project, in order to ensure that the maximum benefit is derived from the resource.

With NAFTA in place, it would become partly impossible to reject any other project or change the rules for how they should operate once we have approved or you have approved this Project.

Now to get a little more detail on the marine terminal, I found it interesting to find on Wednesday that the representative of the Atlantic Pilotage Authority expressed concerns about the concept of the marine terminal that agree with my assessment.

I understand that no detailed design of the terminal has yet been presented for review by the Panel, or for the appropriate DFO and Canada Transport officials.

To leave such a major part of the Project out of the detailed review process is unacceptable. In the short time I spent at these hearings on Tuesday, June the 19th, the representatives of the Nova Scotia Department of Natural Resources, in response to a question, implied that the Bay of Fundy coastline on Digby Neck and Islands was not considered an exposed coastline.

If Bilcon are using this type of assessment to assume there will not be major problems related to the proposed marine terminal, then I suspect they will be in for some major problems once this Project has been approved.

As suggested by the Atlantic Pilotage Authority, before any such terminal is approved for construction and use, a major long-term study of the risk conditions resulting from the wind, sea and tidal effects on such a terminal should be carried out.

I have a rhetorical question now, but that could be answered later, for the Proponent.

Have the insurers of the shipping company been consulted as to whether they would provide insurance for the ships docking at the proposed terminal and if so,

what conditions would be applied for the docking?

Just hypothetically for a moment, let us assume that approval for this Project is given with all the suggested compensation, safety precautions and remedial environmental requirements put in place, and then Bilcon discovers that: "Guess what, this terminal on the Bay of Fundy shore is not operationally viable."

What will be their alternative to overcome this problem?

After all the investment that they will have made at this point, it would not seem right not to provide them with some alternative.

This would be their demand I'm sure, and I would assume it would be supported by at least the Nova Scotia Department of Natural Resources.

It doesn't take much effort to come up with the idea that a similar terminal located on the St. Mary's Bayside of Digby Neck would function quite well. That side of the Neck is not an exposed seacoast.

I will leave it to you all to consider if the assumed approval we're talking about would have been granted if the original marine terminal for this project had been located on the St. Mary's Bayside shore near Little River, particularly as such an operation was rejected over 10 years ago.

What I'm saying is that if that might be the outcome of this, then we should be considering the problems that would be associated with a terminal on St. Mary's Bay, as well as one on the Bay of Fundy.

And I really think that it's essential that we have full disclosure and full studies made as to the viability of the terminal.

As for the potential effects... Or no, as for the potential of aggregates and the effect of additional quarries, I understand, and I may be incorrect in this, that the simple reply from Bilcon to this question was that they had no intention or plans for developing other quarries in our area, and I assume this is correct.

However, it does not address what the intent, or certainly my intent of that question was.

As a parent company of Bilcon, Clayton Concrete is a major supplier of aggregate in the U.S. One would assume that they would be one of the most reliable sources for the Panel to get information from regarding the potential for aggregate development along the North Mountain and the coast to the Bay of Fundy in Nova Scotia.

The Panel then would be able to make an assessment as to whether this would be a single, one operation or if there might be more to follow.

Certainly, the environmental effects on

whales, potential pollution of the Bay, introduction of foreign species would be considerably greater if within the next 20 years we might anticipate 20 more such quarries in operation from Long Island to Cape Split.

I understand that this is not really Bilcon's problem, however it is a problem that all the provincial, federal and environmental agencies should have to take into consideration.

It is also a socio-economic problem as it would mean the whole area would be changed from a fishery- and tourism-based economy to a mining community, with all the related effects that this would bring.

I'm not certain if this Panel has been presented with data on the magnitude and potential of the aggregate industry in North America, but in case they haven't, I have provided you with a copy, not part of my thing here, but of the U.S.G.S. 2005 Minerals Yearbook for crushed stone.

I would just like to go over a few numbers in that, and I think I'll keep it brief because we're trying to get out of here.

To summarize, the 2 million tonnes of aggregate from the proposed Project represents less than 1 percent of the aggregate used in the northeast section of the U.S.

Assuming the product from our area is high quality and the combined cost of production and shipping are less than that from the local inland sources, it is not difficult to assume 20 such operations would have no problem finding a market along the eastern seaboard in the U.S., because they would only represent 20 percent of the market.

If they can produce a quality cost-efficient material, there should be no problem to expand to that amount.

It also does not take much time going on the Internet to discover markets around the world for aggregate which is available from a suitable marine terminal.

In summary, much of what I have discussed may appear to be outside the scope of this hearing, however I believe it is essential for the Panel to take these items under consideration in their determinations and obtain more information, where necessary, to reach the proper conclusions and make the necessary recommendations to ensure full consideration is given to these items by the Proponent and the appropriate government authorities.

Thank you.

THE CHAIRPERSON: Thank you Mr. Outhouse. Gunter?

PRESENTATION BY Mr. LAWRENCE OUTHOUSE - QUESTIONS BY THE

PANEL

Dr. GUNTER MUECKE: You mentioned that you would like to see some extra legislation. Is that legislation regarding quarries or aggregate taxes or... Could you give us some indication?

Mr. LAWRENCE OUTHOUSE: What I would like to see is proper consideration by the Government as to what...

You know, it appeared from some of the presentations made here that they're very much in favour of turning this into a mining community, and surely if they think they should do that, we should get the maximum benefit from it.

We should ensure there's proper regulations on that can contain these developments when necessary, and I don't think they're in place at the present time, and it will be impossible to put them in place once this quarry has been approved.

Dr. JILL GRANT: Thank you for your comments about the aggregate industry in the U.S. You suggested that it wouldn't be unusual for Nova Scotia to potentially be able to supply 20 percent of the market.

What do you base that conclusion on Mr. Outhouse?

Mr. LAWRENCE OUTHOUSE: Well, it's based

somewhat on the information provided by Bilcon, that they can land this material at their depots along the coast of the U.S. cheaper that they can get the material from their own markets.

The market is expanding, there's... And to go up to 20 percent, if you're supplying a better product, does not seem to be an unreasonable thing to reach here.

And I'm not saying Bilcon is going to try to do this, they're just one... Or Clayton Concrete is just one of a number.

And as far as I can tell from the Internet Search, they aren't mentioned amongst the top 20 aggregate companies in the U.S.

Now that may be because they haven't disclosed information, but...

There's also... There's things that Bilcon could put in this... Going through the report that you have, you find that basalt isn't even mentioned as an aggregate material. It's part of the tap rock.

And I don't know... And the tap rock includes basalt and other things, but I am not sure... Bilcon could give you a better idea or somebody doing some more research, but whether the Basalt we have is a quality material. The rumour you get here is that it's the very

best.

You do find in England aggregate people who brag about the quality of their basalt aggregate, but I'm not an expert, I just seem to have a feeling that this basalt, if it's high quality, would be a seller.

Dr. JILL GRANT: And that concurs with what Mr. Buxton told us the other day, that it's a very high-quality product.

Can you give us a little bit more detail about the points you raised about St. Mary's Bay?

You suggested that since the exposed coast on the Bay of Fundy may be inappropriate for a terminal of the sort, that St. Mary's Bay might be an alternative site?

Is that a worry of the community or is that a suggestion that you're making? Can you just clarify that?

Mr. LAWRENCE OUTHOUSE: It's very much a worry of the community. St. Mary's Bay is the most lucrative lobster fishing area, and to get to it you would have to go the whole way along St. Mary's Bay.

I don't think the ships would want to go through Petit Passage with the tide, so you would run the whole way along St. Mary's Bay, out beyond Brier Island, and you would be going...

The ships would be traversing one of the

most lucrative lobster fishing areas in the world. And over 10 years ago, a proposal was put forward to put a quarry and a terminal on the shore of St. Mary's Bay, just near Little River, and it was...

It didn't get to the hearing level, it was rejected by everybody and the politicians long before that.

So it became known that this was not a place... You know, you couldn't get approval for doing that.

I'm saying that once Bilcon has invested money, and they certainly have invested money, but if they haven't established that their terminal is going to work before they start, they shouldn't be allowed if it doesn't work to suggest that they could transport this across the neck to St. Mary's Bay and put a terminal in there, that's it.

Dr. GUNTER MUECKE: I guess it's sort of fairly new to us that such a proposal was ever made. To what stage did it get in terms of let's say the Department of Environment?

Was it ever submitted to them or was this just discussions which basically ceased after the community rejected it?

Mr. LAWRENCE OUTHOUSE: As I understand, it was stopped politically by the outcry from the community

before it got into any detailed assessments.

However, there are some people here who could answer that question better than I, so if one of them would like to speak up, I...

PRESENTATION BY Mr. LAWRENCE OUTHOUSE - COMMENTS BY THE PROPONENT

THE CHAIRPERSON: Mr. Buxton?

Mr. PAUL BUXTON: Thank you Mr. Chair, no questions, but just perhaps a couple of clarifications.

Bilcon is not an aggregate company, so it would never be found in a list of aggregate suppliers. It is a supplier of concrete and concrete block, and it does not pave roads.

Thank you.

THE CHAIRPERSON: Any questions from the audience? Oh, there's a hand.

PRESENTATION BY Mr. LAWRENCE OUTHOUSE - QUESTIONS BY THE PUBLIC

Ms. WANDA VANTASSEL: Hi, my name is Wanda Vantassel, and I'd like to ask Mr. Outhouse a couple of questions.

When you talk about...

THE CHAIRPERSON: Would you ask the questions this way, and then...

Ms. WANDA VANTASSEL: I'm just wondering if

it's not a good idea or it they prove that they can't put the marine terminal down where Whites Cove Quarry would be, I'm just wondering if there's other alternatives which could possibly be up towards Gulliver's Cove?

Mr. LAWRENCE OUTHOUSE: No, I don't think in terms of a marine terminal that there would be any alternative along the Bay of Fundy coast until you got up in the Digby [inaudible].

Ms. WANDA VANTASSEL: Okay. And my second question is, like I heard you, and you kept mentioning how these quarries could keep coming in and stuff.

Have you ever heard anything on a quarry come into Gulliver's Cove? Digby Neck?

Mr. LAWRENCE OUTHOUSE: Yes, I have been told by... And I can't disclose the source, but I'm going to say a reliable source, that inquiries have been made to DFO in discussions carried out by a company who has property already in its possession at Gulliver's Cove, who are just waiting for the results of this Panel Review and these hearings to go forward with a quarry at least the size of this one. It was implied that it would be bigger.

Ms. WANDA VANTASSEL: And that's my fears of what could happen here, because I really feel... I've heard the story, and my husband was on a beach, and he met up with a company, it was a guy from Dartmouth which was

down in the area and he was doing some work for people in the States, and they were talking about putting in a wharf, and this company wanted to know if it could be done.

I have information that one day I'm hoping I can get to come before this Panel is all done, and I want to talk to you guys and share some of the stuff that I have learned.

I've called to make an appointment, but I haven't received a phone call.

THE CHAIRPERSON: Well, you should talk to the Secretariat before you leave today.

Ms. WANDA VANTASSEL: Okay.

THE CHAIRPERSON: Okay? And we'll see if it's possible. I don't know if it's possible, because the schedule is very tight.

And you can put something in writing if you want to. But if you wish to speak, I mean you have to see them and see whether we can fit you in.

Ms. WANDA VANTASSEL: Okay.

THE CHAIRPERSON: Okay?

Ms. WANDA VANTASSEL: Thank you.

THE CHAIRPERSON: Anyone else? Yes, there's a hand.

Ms. CHERYL DENTEN: Hi, my name is Cheryl Denten, and I am a registered participant.

I would just like to comment on the proposed marine terminal in the St. Mary's Bay 15 years ago.

That was ongoing throughout the four-year battle at that time, and it is a very real concern of the citizens of Little River today because what we're afraid of is mitigating circumstances, and that this is indeed what the company may want.

It is the deepest sheltered harbour where they could bring those ships up into, in St. Mary's Bay.

THE CHAIRPERSON: You remember the circumstances of... I mean, Mr. Outhouse was saying that it didn't go to a hearing, it was discussed in the community and that action was taken so that it never went any further?

Ms. CHERYL DENTEN: Yes, that's right. It was discussed in the community. There was a meeting at Sandy Cove Hall where Mr. Buxton brought the owner of Riverside Construction Materials, and he was the gentleman who was looking to put a quarry on Eastern Head, and that was discussed I believe at that meeting that they would need to put a terminal in, and that's where they would have liked to put it at that time.

And it was even good money wise. They said it would be a $10 million terminal at that time. And I

believe that was in the newspapers at that time.

THE CHAIRPERSON: Thank you.

Ms. CHERYL DENTEN: You're very welcome.

THE CHAIRPERSON: If not, then we will close for the day. Thank you Mr. Outhouse.

We'll adjourn until 9:00 tomorrow morning.

--- Whereupon the matter was adjourned at 5:18 p.m. to resume on Saturday, June 23, 2007, at 9:00 a.m.