

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: H el ene Boudreau-Laforge, CCR

1 Digby, Nova Scotia

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

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

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

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

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

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

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

25 One is... This is directed to Bilcon,

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

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

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

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

14 We are now up to a total of 43.

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

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

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

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

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

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

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

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

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1 NSDEL regulatory issues at the Porcupine Mountain Quarry.

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

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

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

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

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

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

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

4 **PRESENTATION BY BILCON OF NOVA SCOTIA - Mr. PAUL BUXTON**

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

8 THE CHAIRPERSON: Of course.

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

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

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

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

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

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

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

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

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

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

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

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1 that has now been postponed.

2 The studies undertaken go back to 2002.

3 There was a geological assessment first of all by MVCI, and
4 then back again in 2005 for a geology and groundwater
5 assessment.

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

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

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

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

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

25 There are two watersheds involved.

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

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

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

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

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

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

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

25 If you were standing just outside of

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

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

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

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

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

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

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

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

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

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

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

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

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

25 So we now think there is some recharge

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

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

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

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

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

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

25 A second monitoring program or

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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1 processing part of the crushing operation.

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

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

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

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

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

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1 that there are potential effects.

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

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

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

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

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

25 And I think that this is the policy that

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

3 Nonetheless, we followed through with
4 our compensation policy.

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

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

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

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

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

1 THE CHAIRPERSON: Thank you, Mr. Buxton.

2 Gunter Muecke will ask you some questions now.

3 **PRESENTATION BY BILCON OF NOVA SCOTIA - QUESTIONS BY THE**
4 **PANEL**

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

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

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

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

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

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

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

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

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

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

21 But I think that what we are now
22 presenting is our latest view, and I think our statement is
23 that we believe, notwithstanding the fact that the recharge
24 area is outside of the site and notwithstanding the fact
25 that the groundwater flows are all towards the Bay of Fundy,

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1 that there may be some residual effects.

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

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

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

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

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

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

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

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1 doesn't appear in that.

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

5 --- Pause

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

8 (Mic. feedback)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

25 We do not, at the present time, have a

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

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

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

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

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

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

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

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

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

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

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

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

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

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

25 So how does that conform to not

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1 intersecting the Upper Flow/Lower Flow contact?

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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1 we're getting is reliable information.

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

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

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

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

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

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

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

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

3 We will simply go in and replace that
4 water supply.

5 Dr. GUNTER MUECKE: Regardless of cost.

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

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

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

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

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

25 If their well supply goes down, then we

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1 will replace the water supply.

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

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

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

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

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

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

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1 down any further.

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

4 Dr. JILL GRANT: Just to follow up on
5 this line, my understanding is in the EIS, the proposal is
6 800 metres from the active quarry face.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

17 "Essentially, I agree with the general
18 thrust of the statement found in section
19 9.1.3.2, first bullet, on page 28, that
20 'the quarry will not adversely impact
21 the recharge regime of domestic or
22 commercial wells', but I do so with two
23 qualifications."

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

5 **PRESENTATION BY BILCON OF NOVA SCOTIA - QUESTIONS BY THE**
6 **PUBLIC**

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

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

18 THE CHAIRPERSON: Mr. Buxton?

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

25 The experts from Nova Scotia Environment

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

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

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

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

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

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

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

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

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

9 THE CHAIRPERSON: Ms. Peach?

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

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

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

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

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

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

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

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1 effect may be. So we're talking about the magnitude of the
2 effect. In spatial terms, how many wells, how many people.

3 What is the significance of the effect; well, if your water
4 supply has gone down, this is a very serious effect. We
5 depend on our water supply for our everyday living.

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

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

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

25 And it is certainly within the power and

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

18 SISTER BARBARA: Thank you.

19 THE CHAIRPERSON: Mr. Morsches?

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

25 There's a book out concerning 20 million

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

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

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

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

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

22 Mr. BOB MORSCHEs: Mr. Buxton.

23 THE CHAIRPERSON: Mr. Buxton, please.

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

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1 at it.

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

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

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

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

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

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

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

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

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

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

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

6 THE CHAIRPERSON: Thank you, Mr.
7 Morsches.

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

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

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

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

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

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

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

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

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

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

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

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

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

25 Mr. PAUL BUXTON: No.

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

3 Mr. PAUL BUXTON: That's correct.

4 SISTER BARBARA: Halfway up.

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

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

12 SISTER BARBARA: Yes.

13 Mr. PAUL BUXTON: Excuse me. 300 feet...
14 90 metres from the top...

15 --- Pause, conferring

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

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

21 Mr. PAUL BUXTON: Yes. Don't take that
22 as an exact figure because, you know, the topography of the
23 top of the mountain does this. But in that general order,
24 300-odd feet, yes.

25 SISTER BARBARA: And what would it be at

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1 high tide?

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

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

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

9 THE CHAIRPERSON: Whatever it adds up to.

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

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

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

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

22 SISTER BARBARA: Thank you.

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

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

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

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

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

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

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

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

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

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

8 --- Applause

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

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

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

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

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

21 **PRESENTATION BY NATURAL RESOURCES CANADA - Dr. MIROSLAV**
22 **NASTEV**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

25 I will now pass the mic to Dr. Nastev

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

3 Dr. MIROSLAV NASTEV: Thank you Mr.
4 McAllister.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

25 The pumping test that has been done in

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

11
12 Okay. Close to the seashore, it's
13 obvious. Actually, that I'm not supporting. Field data is
14 simply not supporting these water levels. Field data I have
15 said does not support the proposed or the qualitative
16 interpretation of the geological units that the Upper Flow
17 Unit is very little permeable, that the Middle Flow Unit is
18 much more permeable.

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

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

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

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

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

8 Maybe the Promoter is right that the
9 impacts will be very low, negligible, but this is only one
10 interpretation again.

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

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

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

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

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

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

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

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

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

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

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

25 So draining today's natural recharge and

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

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

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

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

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

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

25 Additional field data are necessary. In

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

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

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

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

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

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

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1 impacts.

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

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

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

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

17 **PRESENTATION BY NATURAL RESOURCES CANADA - QUESTIONS BY THE**
18 **PANEL**

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

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

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

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

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

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

15 Dr. MIROSLAV NASTEV: I'm sorry?

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

18 Dr. MIROSLAV NASTEV: Okay.

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

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

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

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

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

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

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

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

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

25 Dr. GUNTER MUECKE: Yeah. I basically

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

22 We have one complex aquifer.

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

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1 horizon is really not the right approach?

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

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

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

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

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

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

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

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1 though.

2 So can you give us your impression of
3 that?

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

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

10 THE CHAIRPERSON: Thank you.

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

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

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

21 --- Pause

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

25 The nature of the surface

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

15 **PRESENTATION BY NATURAL RESOURCES CANADA - QUESTIONS BY THE**
16 **PROPONENT**

17

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

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

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

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

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

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

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

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

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

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

25 And I would note again because it just

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

4 "The apparent transmissivity, T, of the
5 basalt between Halls Harbour and Digby
6 Neck is between 0.27 m² per day and 78.8
7 m² per day, that is, between 3.1 x 10⁻⁶
8 m² per day and 9.1 x 10⁻⁶ m² per second."

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

12 According to FETA, in a 1994 study, a
13 value of T for a good well would be at least 0.015 x 10⁻⁶ m²
14 per second.

15 This means that the North Mountain
16 basalt tested has a transmissivity that is between 16.4 and
17 4,800 times too low to be called good for water supply
18 purposes.

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

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

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

3 Could you comment on that for me,
4 please?

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

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

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

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

19 The relation between transmissivity and
20 hydraulic conductivities, T , equal to $K \times B$. B is the
21 initial saturated thickness in the well, so the transfer is
22 fairly easy.

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

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

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

6 They have one order of magnitude lower
7 hydraulic conductivity, which is in the order of 10^{-7}
8 m/sec. So these data are given in Conestoga Rovers report
9 2007.

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

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

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

24 Dr. MIROSLAV NASTEV: I will repeat
25 myself again.

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

5 I mean, I cannot say anything else.

6 Mr. PAUL BUXTON: Then I misunderstood.

7 If you could just give me one moment,

8 Mr. Chair?

9 --- Pause

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

11 We have no further questions. Thank you.

12 **PRESENTATION BY NATURAL RESOURCES CANADA - QUESTIONS BY THE**
13 **PUBLIC**

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

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

19 Mr. ANDY MOIR: [Inaudible - off mic]

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

22 --- Pause

23 THE CHAIRPERSON: You have to...

24 Mr. BRIAN MEESON: My name is Brian

25 Meeson, and I'm a resident of Sandy Cove. Not a permanent

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1 resident, but about 25 percent of the year.

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

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

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

12 Thank you.

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

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

21 Does that help you?

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

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

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

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

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

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

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

20 It can be going in the opposite
21 direction.

22 Any other questions? None?

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

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

NOVA SCOTIA ENVIRONMENT AND LABOUR
(Mr. JOHN DRAGE)

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

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

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

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

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

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

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

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

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

24 THE CHAIRPERSON: Go ahead.

25 Before we begin with the presentation, I

NOVA SCOTIA ENVIRONMENT AND LABOUR
(Mr. JOHN DRAGE)

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

3 THE CHAIRPERSON: By all means.

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

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

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

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

23 So I hope that clarifies that issue.
24 Thank you.

25 THE CHAIRPERSON: Thank you.

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

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

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

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

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

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

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

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

1 metres above sea level.

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

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

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

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

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

25 And subsequent to that, once the

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

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

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

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

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

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

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

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

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

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

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

13 Thank you.

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

16 **PRESENTATION BY NOVA SCOTIA ENVIRONMENT AND LABOUR -**
17 **QUESTIONS BY THE PANEL**

18 Dr. GUNTER MUECKE: Yes.

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

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

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

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

7 Mr. JOHN DRAGE: Yes, I was.

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

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

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

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

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

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

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

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

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

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

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

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

1 groundwater levels throughout the rock formation would vary
2 with depth.

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

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

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

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

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

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

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

1 doing field work.

2 Which one of these would you choose?

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

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

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

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

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

19 Dr. GUNTER MUECKE: Thank you.

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

24 Can you give us an indication of that?

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

1 haven't been involved in any directly.

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

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

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

14 How should that drainage system work on
15 the quarry face?

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

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

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

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

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

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

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

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

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

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

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

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

1 matter of hours or days rather than weeks.

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

8 And there's a second part to that
9 question.

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

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

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

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

25 So it's important that we have a process

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

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

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

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

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

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

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

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

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

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

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

16 THE CHAIRPERSON: Thank you. Mr. Buxton?

17 **PRESENTATION BY NOVA SCOTIA ENVIRONMENT AND LABOUR -**
18 **QUESTIONS BY THE PROPONENT**

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

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

25 And I think you did say so, but perhaps we

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

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

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

10 Mr. PAUL BUXTON: Thank you.

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

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

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

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

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

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

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

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

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

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

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

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

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1 approval.

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

4 --- Pause

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

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

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

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

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

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

19 THE CHAIRPERSON: Thank you. Questions
20 from the floor.

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

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

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

2 THE CHAIRPERSON: You were poised.

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

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

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

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

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

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

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

1 THE CHAIRPERSON: Yes.

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

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

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

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

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

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

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

8 Mr. ANDY MOIR: Thank you.

9 THE CHAIRPERSON: Ms. Peach?

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

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

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

25 THE CHAIRPERSON: Could you clarify, were

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

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

5 THE CHAIRPERSON: Mr. Mahtab?

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

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

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

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

18 --- Pause

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

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

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

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

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

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

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

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

18 --- Pause

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

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

1 reaction like that really is not appropriate in these
2 hearings.

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

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

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

16 **PRESENTATION BY ST. CROIX ESTUARY PROJECT - ARTHUR MacKAY**

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

19 THE CHAIRPERSON: Bring that microphone
20 closer.

21 Mr. ARTHUR MacKAY: Yes.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

1 So I would like to talk to you about the
2 value of the place, how industry is developed over the last
3 40 years in here in the area, and then I would like to give
4 you some examples of a real quarry.

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

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

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

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

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

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

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

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

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

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1 soup of living creatures.

2 It is a unique ecosystem. It is the model
3 for sustainability. It is the foundation of sustainability.

4 But I think I'll be able to show you that we haven't really
5 gotten there in terms of realizing how valuable this asset
6 is.

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

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

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

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

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

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

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

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

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

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

2 I can't tell you what this is all worth.

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

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

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

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

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

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

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

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

13 So that is fed by these pumps, these
14 nutrient pumps, the feed pumps. Wherever the feed is,
15 that's where the fish go.

16 We have the same situation with birds; the
17 outer Bay is extremely important for pelagic birds. A wide
18 variety of them, you might be interested to know that Head
19 Harbour Passage is designated as an area of global
20 significance for marine birds, and I'm sure that that would
21 amaze the people at Long Island and Brier Island who
22 probably feel they have one of the best bird-watching areas
23 around. So I think it's a toss-up there.

24 Very important area, you'll notice also,
25 in terms of this current application, that it's within this

1 area.

2 In terms of whales, the same thing, the
3 whales are where the food is, and that's where they go.

4 In terms of humans, all of the things that
5 we do in the Bay are based on these nutrient flows and the
6 location of fish, or the location of whales, if you happen
7 to be in the tourism industry.

8 So those areas are the foundation of our
9 Bay of Fundy eco-economy.

10 I have this wonderful friend who still
11 wears a thing his head that he's probably one of the oldest
12 hippies on the east coast, but he's also an interesting
13 cartoonist. And he presented this to me.

14 His vision of the Bay of Fundy is that
15 it's turning into Fundy SupersPort, and I put that there to
16 ask the question, is this true? Are we turning Fundy into a
17 SupersPort, or is there still time, in fact, for us to
18 benefit from the sustainable eco-economy that we currently
19 have?

20 You folks will have to answer that, but I
21 really do like his cartoon, so brought it along to make the
22 message clear.

23 When I came back here in 1964, my river,
24 the St. Croix River, had been destroyed by black liquor that
25 had been dumped in from a pulp mill. In the process of

1 dumping the black liquor into the St. Croix River, they
2 literally destroyed, killed, the St. Croix River estuary and
3 reduced the population of invertebrates and fishing in
4 Passamaquoddy Bay.

5 They did this for almost 10 years. I have
6 no idea why they allowed them to do it. However, the upshot
7 was, it caught my attention because literally the mudflats
8 in St. Stephen bubble with hydrogen sulfide gas, paint
9 peeled off houses, it was probably the worst pollution that
10 I'd ever seen.

11 And it activated me, I guess, at that
12 time, so I've been involved ever since, trying to bring
13 things back in that area to where they were.

14 At that time, there were only two coastal
15 industries; this mill in St. Stephen, and the complex in
16 Saint John. There was no other major industries in the Bay
17 at that time. But as you proceed along at roughly 10-year
18 intervals, Point Lepreau pops up. Colson Cove pops up. A
19 new mill in St. George pops up. And so on.

20 The next 10 years, 1980 to 2000, the
21 emergence of the aquiculture industry, and these are the
22 initial cage sites that were located on the New Brunswick
23 shore. Not a lot of activity happening in Nova Scotia yet.

24 Go through from 2000 to 2006, now all of a
25 sudden aquiculture is starting to pop up, or has popped up

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1 on the Nova Scotia shore, and you can see the increase in
2 density of challenges from industry.

3 Today, we have a series of new challenges.
4 We have three quarries, not one. Three quarries in the Bay
5 of Fundy; one in the St. Croix estuary, one on the neck and
6 also one that is still alive and still being talked about
7 that's located in Beaver Harbour, along the New Brunswick
8 shore.

9 We have a second nuclear reactor. We have
10 an L&G Terminal in Saint John, and an announced chemical
11 plant in Saint John. We have two, three L&G Terminals
12 planned for Passamaquoddy Bay.

13 So we're in a burgeoning situation, here.
14 I'd like to speak to the... I think I heard 50 ships will
15 come in, and someone is going to talk to you about the
16 number of ship strikes and right whales, which is really a
17 serious problem.

18 And I'd like to give you an analogous
19 situation. One of the L&G Terminals says, "We will have 50
20 ships coming in a year." Well, the fact of the matter is,
21 they also will have four giant V-drive tugs. There are
22 turbine tugs that will go out and service these, into the
23 whale territory. They will have a security vessel with
24 armed guards on it. They will have the pilots vessel, and
25 if they work out a deal with Canada, they'll have two more

1 of those.

2 So I think I add that up to somewhere
3 between eight and 10 actual vessels going in and out. So
4 you multiply that by two. So say you've got 16 passages
5 through there. The fact of the matter is, you multiply that
6 by 365, by the number of days... Number of weeks, sorry. 52
7 weeks. And you'll find that there's a whole lot more than
8 just 50 vessels going in, as to do with passages.

9 Now, you add to it 50 ships coming into
10 this quarry over here, another 50 ships going into the new
11 quarry in Bayside, and another 50 to 100 ships going to the
12 L&G Terminal in Saint John, and we have a critical situation
13 vis a vis the most endangered marine mammal in the world;
14 the right whale.

15 This is DFO's official map that came out.
16 They were trying to find someplace they could put a few
17 offshore aquiculture sites. The ones with, the circles with
18 the question marks are the only places that they could find.

19 I put this in because this is built on a
20 variety, a series of maps that DFO did, and you'll see that
21 there's a lot of challenge going on out there for the Bay of
22 Fundy. Everyone wants a piece of the action. The shaded
23 area down along the neck, too, by the way, does deal with
24 whales that somehow or other don't seem, in the current
25 application, to get up that far.

1 I hate to be the one to tell you, but
2 whales do get up that far.

3 Anyway, we've lost a lot, and I'll skip
4 through this relatively rapidly, because I'm sure you're all
5 aware, we have a horrible history, over 400 years of taking
6 care of what's in the Bay of Fundy. These are actual
7 animals, birds that occurred in the Bay of Fundy area, the
8 passenger pigeon, Labrador duck, and the Great Hawk, which
9 we quite literally slaughtered and helped make extinct.

10 We also changed the ecosystem and moved
11 these animals out of here. They've been extirpated. The
12 wolf and the caribou were the original deer and predator
13 here up until about 1900. White-tailed deer was not our
14 deer.

15 Walrus occurred here in the Bay of Fundy
16 and offshore at Sable. They're long gone.

17 And that little fellow down there on the
18 right is my favourite. That's the giant sea mink, *Mustela*
19 *macrodon*, which only occurred in the northern Gulf of Maine
20 and we, all by ourselves, managed to trap into extinction.
21 It went up to about 30-odd inches and was bright red.

22 Didn't bring much in the market, but hey,
23 it was big.

24 And now we're talking about real problems
25 with shad, striped bass, alewives. I received an e-mail

1 yesterday from the survey people to do the St. Croix River.

2 The alewife runs there have virtually
3 collapsed this year as a result of man-made activities.
4 There is literally a handful going up there when there used
5 to be in excess of two million annually.

6 Those fish provided one of the key forage
7 species for the western Bay of Fundy.

8 You all know about the inner Bay of Fundy
9 salmon problems that we're having. You probably aren't
10 quite so aware that American eel is rapidly disappearing
11 from many of our streams.

12 And of course, we have cod and other
13 problems as well.

14 And underwater, we've done the surveys.
15 And this shows you what's happened. For a few benthic
16 creatures in the St. Croix Estuary, on the left is what our
17 model looked like when Champlain was here.

18 We're very fortunate over there. This guy
19 wrote about everything and drew pictures. And subsequently,
20 we had a wonderful group of people pass through. Audubon
21 wrote about the place.

22 A fisheries guy by the name of Perly wrote
23 about it. The border dispute referred to the natural
24 resources there and so on and so on.

25 So we have a pretty good idea, and along

1 came the biological station to add to that.

2 The one in the middle is about 1976. By
3 that time, we had lost quite a lot, and this is as a result
4 of that black liquor that I told you about.

5 That's long gone, but when we surveyed in
6 2002-2003, we discovered that the invertebrates were still
7 disappearing from that body of water. This is true
8 elsewhere.

9 What really was frightening was that we
10 found whole areas of the bottom that were dead. They looked
11 like it was covered with a lichen.

12 There were hardly any other creatures
13 there. This is all documented on video as well.

14 It's my belief that that bottom is
15 recovering from the black liquor that went down.

16 Added to this, now, we have a quarry, and
17 I'll speak to that in a moment.

18 So we've not done a really, really good
19 job taking care of things in the Bay of Fundy, and it is a
20 gift. We've had 400 years to work at this.

21 You can see that in the last 40 years of
22 the 400 years that we have, in fact, started to add more and
23 more industry into the Bay of Fundy at the expense of our
24 fishing and resource-based industries, which we already have
25 established and already people make a living from and

1 already the money comes to rest in our respective provinces.

2 The question becomes whether or not we can
3 any more look at each application such as this quarry in its
4 own right and to the exclusion of other things.

5 Now, I know the Panel has its mandate and
6 you have your directions, but I think what I'd like to do is
7 tell you how things are proceeding up in our area and what I
8 call is a quarry gone wrong.

9 This is the Bayside Quarry. To the right
10 bottom you will see a dock. And behind that, you'll see two
11 buildings, and directly over the top of that another sort of
12 whiteish building directly over that.

13 And if you go kind of to the left and up
14 towards the woods, you'll see another building up there.

15 Well, you remember the wonderful Hines
16 tuna factory, the tainted tuna scandal that went down many
17 years ago? That's the location of that plant.

18 When that plant shut down because of the
19 problems that came up in negotiating the tainted tuna, a
20 gentleman who worked there decided that he could establish a
21 boutique port where that wharf is. Everything was shut
22 down.

23 So a guy by the name of Peter Frost went
24 to Cuba. He went to suppliers like McCain's for potatoes.
25 And he built, literally, by himself, built a small boutique

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1 port there.

2 The trade there grew quite rapidly, and
3 also small, medium-sized tour ships began to come because
4 immediately to the right in that picture is our resort town
5 of St. Andrew's with the Algonquin, the equivalent to your
6 Pines over here.

7 So everyone was watching the ships really
8 carefully because we didn't want... We were trying to get
9 our river and our Passamaquoddy Bay back.

10 Did I mention, by the way, that we have
11 evaluated the fishery that we lost in the estuary in
12 Passamaquoddy Bay in today's dollars at \$20 million? Not a
13 bad piece of change for the local economy. We think we can
14 get it back.

15 Anyway, along came a company by the name
16 of Shaw Brick, and they discovered that the aggregate that
17 was located in this industrial park was perfect for roads
18 and concrete and whatever use they put the aggregate to, so
19 they began to talk to the Provincial Government about
20 establishing a quarry there.

21 I can't go into the details 'cause I can't
22 say that what I believe is true. However, when it all came
23 out, a company that is now... Was, at least a year ago,
24 named Florida Rock out of Florida, I think it has a new name
25 because they did some sort of tax merger this past year, so

1 there may be another name to them, but Florida Rock on the
2 internet will get them.

3 Came here and the Port Authority decided
4 they needed a little more lay down area, so what they did
5 was Florida Rock or Jaymar Materials, their representatives
6 here, they have this sort of diverse corporate structure,
7 they came and said, "We will create lay down for you in
8 return for the aggregate free."

9 People weren't overly excited about it,
10 but, you know, well, okay. That's not a bad argument.

11 And in something like five, six, seven
12 years they were supposed to have the lay down finished and
13 they were supposed to be long gone and the port was supposed
14 to become rejuvenated.

15 This was all promised in public meetings
16 similar to this one.

17 As you can see, something happened. And
18 what happened was that Florida Rock gained control over...
19 By buying up some of the small companies, they gained
20 control over the Port Authority.

21 The Province of New Brunswick has not
22 responded on regulation, or they've prevaricated. You will
23 now see that as of, what's the date, January 23... I think
24 this one is really quite a nice picture because the snow's
25 there and you can see all the mistakes that were made.

1 As you can see, the quarry is way larger
2 than some additional lay down associated with the dock area.

3 Also, at the same time, the population...

4 I don't know whether you can tell in that or not, but to
5 the left immediately above the left part of the quarry
6 you'll see a little mountain. That's called Simpson's Hill.

7 It's a treasured hill because it has a
8 whole series of trails and paths and geo-caching things on
9 it. It's for a long time been used to view the area.

10 What happened there was that Florida Rock
11 or Jaymar Materials has purchased half of that property
12 pretty much over to the water, the snow that you see on the
13 right above the quarry.

14 The intent, and it is now public that this
15 is their intent, is that they wish to drill a hole through
16 underneath Route 127, which is right along the edge of the
17 top of the quarry.

18 If you follow the line, top line of the
19 quarry down, that's the main road, 127, to the resort town
20 of St. Andrew's.

21 Oh, and by the way, my organization owns
22 350-acre nature park directly across from this, so we have a
23 marvellous view of what's happening.

24 In any event, their intention, and it has
25 been stated publicly now, was to take aggregate to take down

1 the side of that mountain.

2 Now, you have to keep in context here that
3 this is a resort area, always been a resort area. And what
4 we now have is this huge quarry in there, and it is no
5 longer a port.

6 Now let me tell you where it went wrong.

7 Two years ago, the fines from this quarry
8 were starting to get in the way, so the company, in its
9 wisdom, bought some land. Would it be all right if I stood
10 up and kind of pointed to where that was?

11 [Off mic] They bought some land right
12 about here.

13 THE CLERK: Sir, you have to speak into the
14 microphone.

15 Mr. ARTHUR MACKAY: I think I'm all right
16 now.

17 If you saw where I pointed, they moved
18 tons of fines to that site, smoothed it all off. They did a
19 wonderful job making it look good and so on, but the next
20 spring, when people went to their homes and cottages when
21 the ice come out, they discovered that that lake that you
22 see there had a big plume, a big grey plume in it.

23 Now here's the key factor. That lake is
24 the domestic water supply for the Town of St. Andrew's and
25 all of the surrounding area.

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1 When they went to have a look at it, they
2 had the material analysed and discovered they had elevated
3 levels of arsenic in the water.

4 I know this lake very well. It has lake
5 trout in it. It has landlocked salmon in it, so it's a
6 post-glacial refugem. It did have huge runs of eels, so it
7 does communicate with the ocean.

8 So it is a vital resource to the area, so
9 you're looking at two things, the future of the community
10 and its water supply, and a development of a quarry for
11 which the Province of New Brunswick receives no royalties
12 whatsoever. Not one penny. Badly negotiated deal.

13 Now, I think you've told you about the
14 arsenic. Dust, noise and social conflicts are important,
15 too.

16 The whole community is up in arms about
17 this. There have been huge public meetings in this regard.

18 I will say this. Jaymar Materials pays
19 their people well. They build loyalty well. They do
20 contribute to things like the airport in St. Stephen.

21 They are good corporate citizens within
22 that context. However, they are destroying the hopes, the
23 future and the aspirations of a whole community.

24 It's a very, very difficult situation. It
25 has recently become worse.

1 But before I go there, I'd like to tell
2 you about the noise. That's the social conflicts.

3 Noise and dust has been an ongoing issue.
4 The papers have been filled with the people that own
5 property down there. The dust blows over them. It blows
6 into the water.

7 The noise of the explosions is very
8 intense and some people are really starting to get really
9 upset about it. But oddly enough, the noise that's bothered
10 everybody the most is the beeper on the equipment.

11 Every morning at daybreak, the beepers are
12 backing up and they're going, "beep, beep, beep, beep". And
13 really, this is bothering people more than the explosions,
14 or at least the people I've talked to.

15 So you have a tiger by the tail up there
16 in Bayside. No involvement whatsoever from the Federal
17 Government. Question why.

18 That's fish habitat directly in front of
19 you. That bottom, and we have the data to show it, once had
20 good scallop there. There are lobster there.

21 This was a place where weir fishing took
22 place for herring. Squid would come up there.

23 This was a very, very productive stretch
24 of water. Unfortunately, things are starting to happen this
25 spring, 10 years in.

1 Please note the plume coming into the
2 water.

3 After they discovered arsenic in the
4 fines, an order was issued by the Department of Environment
5 and the local Government to remove it, which the company did
6 over quite a long time. It took longer than the time they
7 were given.

8 They dug a huge great hole and they dumped
9 the aggregate fines into that hole. I'm not sure which one
10 it is. I would have to get someone to tell you.

11 However, if you look very closely at this
12 picture, which you can't do here, you'll see that plume
13 coming out. That's not overflow. That actually is
14 sediment-laden water leeching out through the bedrock, okay.
15 And you can see it coming out from the bedrock.

16 So in other words, all the activity there,
17 the blasting, the digging and so on, has fractured this
18 place in such a way that the sediments are actually coming
19 out into the ocean.

20 I will bet this will happen over the long
21 haul at White Cove, White Point.

22 What's even worse, this is a dust. This
23 goes on frequently. And I have to be sorry to tell
24 everybody that airborne arsenic and dust goes into the
25 water, too.

1 This stuff settles in the water, so there
2 are sources from runoff, from fractured veins in the
3 bedrock, from the air into the water that's surrounding it.

4 It's so serious that my organization,
5 which does an annual monitoring of this, was getting
6 prepared to send divers down and do monitoring there.

7 Am I okay for the moment?

8 Just when we were talking about it, this
9 ship came in, the "Ambassador", and did a power turn in
10 front of the port, and this is what the props brought up
11 from the bottom. There just happened to be a guy flying
12 over with a camera.

13 You'll see at the bottom, that's the wake
14 from the ship leaving. That's sediment from the bottom.

15 We have not been to the bottom to survey
16 this, but we expect that that will be there.

17 I heard that there were sedimentation
18 areas off White Cove. If these sediments go there... They
19 may not be right in front of the place. They may go
20 downstream or upstream.

21 But there are sinks for sediments in the
22 Bay of Fundy, and I can guarantee you this stuff, with
23 whatever is in it, will settle there.

24 The question is, what's in it. We know in
25 this case that sulfide deposits in the granite do have a

1 variety of heavy metals, including... Copper is really not
2 an issue. I was amazed that it came up as being something
3 worth worrying about.

4 There are a whole lot of other things that
5 you should be worrying about. Cadmium is one of them.
6 Arsenic is another one.

7 UNIDENTIFIED MALE VOICE: [Inaudible - no
8 mic]

9 Mr. ARTHUR MACKAY: I'm done.

10 In any event, I hope this has been
11 helpful. I think that you really need to ask yourself if
12 it's necessary.

13 Thank you very much.

14 **PRESENTATION BY Mr. ARTHUR MacKAY - QUESTIONS BY THE PANEL**

15 THE CHAIRPERSON: Mr. MacKay, how big is
16 that site?

17 Mr. ARTHUR MACKAY: I'm sorry?

18 THE CHAIRPERSON: How big is that site?

19 Mr. ARTHUR MACKAY: The site, I can't give
20 you the exact specifications. I can make them available to
21 you if you'd like to have it.

22 THE CHAIRPERSON: You don't have a ballpark
23 figure for the moment. 100 hectares, 50?

24 Mr. ARTHUR MACKAY: I...

25 THE CHAIRPERSON: You don't know.

1 Mr. ARTHUR MACKAY: The scientist in me
2 rebels at guessing.

3 THE CHAIRPERSON: How old is that site?

4 Mr. ARTHUR MACKAY: The site started in
5 1998, okay...

6 THE CHAIRPERSON: Ten years.

7 Mr. ARTHUR MACKAY: ...so we're going into
8 our tenth year. And the renewal is happening this year.

9 THE CHAIRPERSON: What's the planned
10 lifetime of that particular quarry?

11 Mr. ARTHUR MACKAY: 50 years.

12 THE CHAIRPERSON: 50 years. Okay.

13 Dr. JILL GRANT: Mr. MacKay, can you tell
14 us whether the dust that you showed an image of dust over
15 the site. Is that after a blast, or what kind of activities
16 were going on that generated that dust?

17 Mr. ARTHUR MACKAY: Yeah. That's the
18 blasting. We have tons of photographs taken where it shows
19 the dust lifting over the water, in fact, settling down
20 around people's houses.

21 And there are pictures and depositions
22 from people who live in the area that they ended up with
23 dust in their properties, on their properties. It's
24 pervasive.

25 Dr. JILL GRANT: Do you know how often

1 they're blasting on that site?

2 Mr. ARTHUR MACKAY: I'm sorry. I can't
3 give you that information, either.

4 Dr. GUNTER MUECKE: Do you know whether
5 they sprayed the site prior to blasting?

6 Mr. ARTHUR MACKAY: There is supposed to be
7 a spray program in place. In fact, one of the things that
8 was supposed to happen is one of these huge tin buildings
9 was supposed to be built for that activity.

10 It never was, so all of those ponds are
11 identical to the ponds that have been testified to here.
12 The purpose of them is to get wash waters and so on, wash
13 water available for the blasting and treatment.

14 They used dynamite, by the way, not
15 ammonium nitrate.

16 Dr. GUNTER MUECKE: My other question is,
17 are the crushing and grinding and sieving activities
18 enclosed in this facility, or are they open?

19 Mr. ARTHUR MACKAY: They're open.

20 THE CHAIRPERSON: What kind of rock is it?

21 Mr. ARTHUR MACKAY: Again, it's a granite
22 rock that they're... I can't give you the exact
23 constituency of it.

24 I do know that it has sulfide zones in it,
25 and that's where a lot of the problem will come.

1 I wonder at White Point whether or not
2 there actually has been an adequate assessment done of the
3 rock because it's the sulfides that seem to contain the
4 really worrisome heavy metals.

5 THE CHAIRPERSON: Has any scientific study
6 been done of the water in front of the quarry? Are there
7 any baselines on which to look at changes in benthos or fish
8 or whatever?

9 I mean, you alluded to two things. You
10 said there's a runoff. I recognize that it's groundwater
11 runoff rather than surface water runoff, but also you're
12 saying that the ship was stirring up the sediments.

13 Has any indication, done by scientists,
14 not by inspection... Have scientists shown any impact of
15 any sort there?

16 Mr. ARTHUR MACKAY: Yes. A scientific
17 survey was done. I led the work in 1976.

18 So we have records that were...

19 THE CHAIRPERSON: In 1976 you were with
20 who?

21 Mr. ARTHUR MACKAY: In 1976, I was running
22 a consulting firm, and this was done under contract to the
23 New Brunswick Department of Fisheries.

24 Additional work has been done, I don't
25 have the dates, by the biological station on bottom fauna in

1 the muds, so there's a good body of information.

2 Between 2002 and 2004, we did another
3 survey of exactly the same transects and bottom sites that
4 were visited in '76, so we have two sequential scientific
5 surveys.

6 THE CHAIRPERSON: And what did they show?

7 Mr. ARTHUR MACKAY: It showed that there
8 was no major change in 2003. We haven't been in the water.
9 That will happen within a short while.

10 THE CHAIRPERSON: So there's no scientific
11 evidence suggesting that there's been any changes.

12 Mr. ARTHUR MACKAY: Well, apart from the
13 photograph, which created some urgency in getting on with
14 this, I would imagine that we will have the answer to that
15 within 30 to 60 days.

16 Dr. GUNTER MUECKE: This is releasing of
17 sediments into coastal waters, and under DFO regulations not
18 allowed.

19 What has been DFO's response to all of
20 this?

21 Mr. ARTHUR MACKAY: DFO has been notably
22 quiet about the whole process, as has been the Province,
23 although there's been a tremendous amount of back and forth
24 between the local residents and the local LSD, which is sort
25 of our rural equivalent of a village, Local Service

1 District, and the Municipality of St. Andrew's.

2 Tremendous amount of back and forth in
3 that context.

4 If we discover that there are problems
5 there, it's our job, my group, to get in touch with DFO to
6 advise them as to what is there.

7 It would be my hope that that would
8 initiate a moratorium on the permissions and perhaps, again,
9 CEAA review similar to what's happening here. That would be
10 my hope.

11 Dr. GUNTER MUECKE: Does the company have a
12 Community Liaison Committee, and how much impact has that
13 had on trying to stop the activities?

14 Mr. ARTHUR MACKAY: The community has
15 several hundreds of people that have been involved in this.
16 Every meeting has filled the local meeting hall and so on.

17 The company actually does try to get
18 involved with the community, but they do it on a one-on-one
19 basis, albeit they have been at the recent meetings and made
20 their position really clear.

21 You know, they haven't prevaricated about
22 their position at all.

23 Dr. GUNTER MUECKE: I was asking about a
24 formal Community Liaison Committee. Does it exist?

25 Mr. ARTHUR MACKAY: I'm sorry. Yes, there

1 is. It is under the auspices of the Town Council of St.
2 Andrew's. And the gentleman heading it is Dr. John Castell,
3 who is a retired DFO biologist from the biological station.

4 Dr. GUNTER MUECKE: Then the last part in
5 that context, what has been... Or can you speak to that?
6 What has been the impact of the CLC committee on trying to
7 stop some of the problems that you have just described?

8 Mr. ARTHUR MACKAY: At the moment,
9 virtually none. There has been virtually no impact.

10 The level of frustration is exceedingly
11 high.

12 THE CHAIRPERSON: You said there was a lot
13 of back and forth, but I don't know what that means.

14 Have there been official, I mean official,
15 representations to DFO and to Government and so forth? I
16 mean by the community, by the CLC, by the Mayor. Do those
17 exist?

18 Mr. ARTHUR MACKAY: There has been, over
19 the last few months, legal. This community committee has
20 been negotiating with the Province of New Brunswick, the
21 appropriate authorities. They've sought legal advice in the
22 process of doing that.

23 And I think it's been a week or a little
24 bit better word was received that without a public meeting
25 of any sort whatsoever the permissions requested were given,

1 so there's great concern. Not to cross the road, but to
2 extend the quarry further upstream.

3 THE CHAIRPERSON: Thank you, Mr. MacKay.

4 Mr. ARTHUR MACKAY: Thank you.

5 THE CHAIRPERSON: I think Mr. Buxton.

6 Mr. PAUL BUXTON: I have no questions.

7 Thank you, Mr. Chair.

8 THE CHAIRPERSON: Questions from the
9 audience. Government first. None? Okay. Mr. Dittrick.

10 **PRESENTATION BY MR. ARTHUR MacKAY - QUESTIONS FROM THE**
11 **PUBLIC**

12 Mr. MARK DITTRICK: Yes. A couple of
13 little pieces of information that I'm sure Art has once in a
14 while seen.

15 I visited this quarry site. I have had a
16 site visit conducted by the manager of the quarry.
17 Actually, the previous manager of the quarry.

18 And the footprint of this initially was to
19 clear an area of 90 acres, so that was the initial footprint
20 of this quarry. And I think that's sort of what they're
21 doing now. That's the area of the quarry.

22 THE CHAIRPERSON: Acres or hectares?

23 Mr. MARK DITTRICK: Acres.

24 The other thing is, Art also mentioned...
25 You asked a question about is the crusher open.

1 And I say the crusher is actually
2 enclosed. I mean, there's a house there. And the dust
3 suppression aspect of this, we were told, was state of the
4 art, atomized. I forget the name of the system. We could
5 find this out as well.

6 They atomize the water in a very, very
7 fine spray and, matter of fact, there's like spaghetti all
8 over the place with these tubes sort of like, you know, in a
9 garden drip feeding, but sprayed under pressure.

10 And the day that I was there at that,
11 there was a very large dust event and the manager looked at
12 me and says, "Well, that does happen on occasion", so...

13 THE CHAIRPERSON: Mr. Dittrick, are you
14 going to ask a question?

15 Mr. MARK DITTRICK: Yeah. Well, I'm just
16 throwing out to Art to maybe add to what I was saying there,
17 and this is to verify this sort of thing at the quarry since
18 he lives in the area.

19 Mr. ARTHUR MACKAY: I don't often disagree
20 with Mark, so he seems to get his stats pretty good, so I'm
21 guessing the area is as he said and their visit down on the
22 site.

23 Looking at the aerial photos, legally
24 there are some buildings there, but I'm not so sure that
25 they're being used the way they should be. But I couldn't

1 comment on that beyond that.

2 THE CHAIRPERSON: Thank you, Mr. MacKay.
3 Mr. Ackerman. The light's too intense. I can't see.

4 Mr. Morsches. Sorry. Mr. Ackerman, go
5 ahead.

6 Mr. JERRY ACKERMAN: Mr. MacKay, I
7 understood you to say there was no Federal involvement.

8 Mr. ARTHUR MACKAY: That's correct.

9 Mr. JERRY ACKERMAN: As I recollect 11
10 years ago, a Member of Parliament...

11 THE CHAIRPERSON: Mr. Ackerman...

12 Mr. JERRY ACKERMAN: ...lived nearby.

13 THE CHAIRPERSON: [Inaudible - no
14 microphone] That's the way it is. Can you hear me?

15 Mr. JERRY ACKERMAN: Yes.

16 THE CHAIRPERSON: What I'm saying is that
17 the questions really should be coming through me and I'll
18 re-direct them. So, in other words, what we're trying to
19 prevent is a cross conversation where...

20 Mr. JERRY ACKERMAN: Okay.

21 THE CHAIRPERSON: ...it's just between you
22 and him.

23 Mr. JERRY ACKERMAN: No. My question is,
24 does that exclude the Member of Parliament at the time whose
25 name was Greg Thompson and who lived nearby and who was

1 bought off, and who is still in Ottawa?

2 Mr. ARTHUR MACKAY: Yes. As it turns out,
3 I can speak to that.

4 Greg Thompson has been active in the
5 quarry problem for quite some time. I can't speak to
6 confidences that he has divulged to me.

7 However, I can tell you that in the
8 process of this happening he was not bought off. His
9 property was purchased and everyone assumed he was bought
10 off, and he subsequently moved elsewhere.

11 He has, in this recent term, become very
12 active. Those who would like to check Hansard will find
13 that Greg has been very active on the quarry...

14 THE CHAIRPERSON: Mr. MacKay, I don't know
15 if this is germane to what we're talking about here. I
16 don't...

17 Mr. ARTHUR MACKAY: Probably not.

18 THE CHAIRPERSON: I don't...

19 Mr. ARTHUR MACKAY: But a Government
20 department has never been involved.

21 THE CHAIRPERSON: All right. That's useful
22 information.

23 Mr. ARTHUR MACKAY: Yeah.

24 THE CHAIRPERSON: Thank you. Mr. Morsches,
25 please.

1 Mr. BOB MORSCHEs: Doctor, I would like to
2 have Dr. MacKay answer this question.

3 In your interchange with the public at
4 these meetings, has anyone ever complained about cracked
5 walls, broken foundations, dust on their gardens and their
6 livestock or any asthmatic where people can't breathe?

7 Mr. ARTHUR MACKAY: Yes. I can only speak
8 to... There have been many complaints about wells and
9 cracked foundations and so on.

10 I can say that at least two individuals
11 have mentioned in one case they believed that their whole
12 house had been badly damaged, and subsequently compensation
13 was provided to that individual and they did, in fact, build
14 a new house.

15 THE CHAIRPERSON: Thank you. Mr. Stanton.

16 Mr. KEMP STANTON: I noticed that there
17 were very few quiet, unused, and when the DFO recognized
18 that, did they consider not using them and just letting them
19 remain quiet, or was it basically just for the purpose of
20 finding sites for industrial activity?

21 Mr. ARTHUR MACKAY: The paper that that was
22 taken from was a study to determine whether or not offshore
23 aquiculture could be done in the Bay of Fundy, and the
24 little circles were the places where, perhaps, offshore
25 aquiculture could be done.

1 I have no idea why the study was done or
2 who initiated, or whether it was just curiosity.

3 Nonetheless, it speaks to probably what I
4 would view as over-use of the Bay. I think that my advice
5 would be, in terms of things at hand right now, that a
6 moratorium probably should be put in place until such time
7 as a coastal management plan could be put on the table.

8 That was looked at back in the '70s, and
9 no one has had the political will to, in fact, get involved
10 with coastal management.

11 If we don't, we'll lose a lot of our
12 valuable economic assets, I think.

13 THE CHAIRPERSON: If I'm not mistaken,
14 you're an ACAP organization, are you not?

15 Mr. ARTHUR MACKAY: That's correct.

16 THE CHAIRPERSON: Is that not a coastal
17 management organization?

18 Mr. ARTHUR MACKAY: That it is, yeah.

19 THE CHAIRPERSON: What are you doing?

20 Mr. ARTHUR MACKAY: Oh, how much time do
21 you have?

22 THE CHAIRPERSON: No. I don't mean in
23 general. I mean are you active in terms of bringing the
24 issue to the fore and...

25 Mr. ARTHUR MACKAY: We are. As a matter of

1 fact, in October right after the ACAP annual meeting, we
2 will be holding an international conference on mechanisms
3 for protecting the Quoddy region, if not the Bay of Fundy as
4 a whole. That will include coastal management.

5 THE CHAIRPERSON: Thank you. Any
6 additional questions? Yes, please.

7 I think this is the first time for you,
8 isn't it?

9 Ms. TINA LITTLE: Yes. My name is Tina
10 Little. I am registered to present next week.

11 THE CHAIRPERSON: Thank you. Go ahead.

12 Ms. TINA LITTLE: I own property in
13 Annapolis Royal and Victoria Beach, and I know this last
14 four years has created such levels of emotion in me, and I
15 consider myself to be a very stable person.

16 But it's really a highly emotional issue,
17 and I've heard so much scientific information, and I hope
18 this is appropriate at this time. If it isn't, please tell
19 me.

20 THE CHAIRPERSON: It's leading to a
21 question, is it?

22 Ms. TINA LITTLE: Yes, it is.

23 I wonder if the sense of pride that the
24 people in the community felt before this, and perhaps their
25 sense of helplessness, hasn't... Do they have a sense of

1 helplessness that they can't be a part of their future or
2 their community and have they given up?

3 Is there a population decline or an
4 increase in alcohol and drug use because of this
5 helplessness?

6 THE CHAIRPERSON: I think, Mr. MacKay,
7 you're being asked about a kind of social change. Has there
8 been some...

9 Mr. ARTHUR MACKAY: I can speak to that
10 within the context of the ACAP group because we do two
11 things, social environment and the natural environment.

12 One of the programs that we have in place
13 over there right now is called Reconnecting the Community.
14 We had seniors who were depressed because there appeared to
15 be no value in their life any more, and we had young people
16 who were sitting in front of the local coffee shop doing
17 drugs.

18 We've put these people together in what I
19 consider to be a remarkable program where they go to some
20 place that's of value within our community.

21 They may go to a hunting camp or they
22 might go to... We have a ramrodders club that does re-
23 enactment type things, and they go that. And they're going
24 to Campobello Island.

25 I would say what we have seen is that this

1 is the truth. However, what we're seeing is that people do
2 not want to go there. They want to find some way to gain
3 control over their communities and their lives.

4 And as an ACAPer, this has been one of the
5 most remarkable things because the mentoring, I thought,
6 would be from us seniors, down. It turns out that it's both
7 ways. And sometimes the kids are the ones that are bringing
8 the parents along, particularly single-parent families.

9 So the answer to the question is yes. In
10 my view, we do need to regain control over our communities
11 and, in part, we've lost it in New Brunswick because all of
12 the power has moved to the central authority, whereas
13 previously towns and villages took care of themselves.

14 So there has to be a rejigging, I think,
15 of our communities.

16 THE CHAIRPERSON: Thank you, Mr. MacKay.
17 Does that answer your question?

18 Ms. TINA LITTLE: Thank you.

19 THE CHAIRPERSON: Thank you. Any
20 additional questions? If not, thank you, Mr. MacKay.

21 Mr. ARTHUR MACKAY: Thank you.

22 THE CHAIRPERSON: We're now moving to the
23 Sierra Club. Mr. Dittrick or Mr. Marcocchio. No, neither.

24 I'm informed it's Mr. Stephen Hazel.

25 PRESENTATION BY SIERRA CLUB OF CANADA - Mr. STEPHEN HAZEL

1 Mr. STEPHEN HAZEL: That's correct, Mr.
2 Chair. My name is Stephen Hazel. I'm Executive Director of
3 the Sierra Club of Canada. I'm based in Ottawa.

4 Thank you for the opportunity to appear
5 before you this afternoon.

6 My purpose today is really to kind of set
7 the stage for the evidence that Sierra Club of Canada will
8 be bringing over the next few weeks, and you've already
9 heard some of that testimony already, just the way things
10 have worked out with schedules and that.

11 But I'd like to introduce myself first,
12 talk a bit about the Sierra Club, talk about our involvement
13 in other Environmental Assessments, and then there will be
14 some specific matters that I would like to speak to myself,
15 areas of expertise that I have myself that my colleagues
16 won't be addressing, if that's okay.

17 I am a lawyer by training. I'm not here
18 as a lawyer. I'm here as Executive Director of Sierra Club
19 of Canada, but I do have training as a lawyer.

20 I have also training as a plant ecologist,
21 although this goes back some years now.

22 I have worked for environmental groups
23 most of my life, although I have, for a number of years,
24 served as Director of Regulatory Affairs for the Canadian
25 Environmental Assessment Agency in Ottawa, so I have quite a

1 bit of familiarity with Federal Environmental Assessment
2 issues.

3 And I think I've written the only book
4 length text on Federal Environmental Assessment policy and
5 law that I think is in publication.

6 Sierra Club of Canada is a national
7 grassroots environmental organization basically dedicated to
8 protecting global ecosystems. Sierra Club focuses on a wide
9 range of threats to ecosystems.

10 A current focus for us is climate change
11 and greenhouse gas emissions, but we also work on
12 biodiversity issues. We work on the toxic chemical issues.
13 We work on protected areas.

14 So we have a wide range of interests
15 across Canada. We have a national office in Ottawa and
16 chapters across the country, including a very dynamic
17 chapter here in Atlantic Canada.

18 I have personally been involved in
19 Environmental Assessments going back over 20 years or more
20 to the Rafferty Alameda project in 1986 in Saskatchewan.

21 I've been involved with the great whale
22 project in northern Quebec, the diamond mines in the
23 Northwest Territories starting with the BHP Mine.

24 And more recently, with Sierra Club, we
25 have been a leading intervenor in the McKenzie gas project,

1 and I'll have a bit more to say about that later because I
2 think it does actually have some interesting parallels with
3 the project that you're currently considering.

4 Sierra Club has been an active intervenor
5 in the Atlantic region as well, and most recently with the
6 Sydney tar ponds panel review and the Deep Panuke
7 comprehensive study.

8 Sierra Club, I think we've got about three
9 or four witnesses that will be presenting. You've heard
10 from Art MacKay just now.

11 A few days ago, you heard from Dr. Chris
12 Taggart, who identified a number of problems with the
13 Environmental Impact Statement relating to whales such as
14 the absence of spatial and distribution data for fin, sae
15 and humpbacks.

16 He also indicated that the sediment from
17 the project area could be carried by prevailing currents
18 into primary whale feeding areas in the Grand Manan Basin.

19 And I think thirdly he proposed an
20 orthogonal routing for ship traffic approaching and leaving
21 the terminal to reduce the likelihood of ship strikes to
22 right whales rather than the Proponent's oblique angle
23 approach.

24 Other witnesses that will be presenting
25 include Mark Dittrick. Mark's going to talk about the

1 initiative of Sierra Club of Canada and Sierra Club US
2 called Beacon, which involves monitoring coastal
3 developments along the Eastern Seaboard from Florida to
4 Atlantic Canada that might threaten right whales.

5 Mark will also be identifying deficiencies
6 in the Environmental Impact Statement concerning right
7 whales and mitigation measures, showing that the Proponent's
8 methodology and approach to assessing the occurrence of
9 right whales within the vicinity of the quarry is inadequate
10 and that the sighting data has been misused in the
11 Environmental Impact Statement.

12 And finally, Dr. Janet Eaton will be
13 discussing the impacts of the North American Free Trade
14 Agreement, or NAFTA, especially Chapter 11, on the
15 regulatory scope of action available to the Governments of
16 Canada and Nova Scotia with respect to new basal quarries
17 should the White Point Quarry be approved.

18 I'd like to discuss climate change first.

19 In Sierra Club's view, this White Point
20 Quarry sets Nova Scotia, at least partially, on a path
21 towards a high carbon economy when Canada, Nova Scotia need
22 to be moving very quickly to a low carbon economy by
23 reducing the burning of fossil fuels.

24 We've heard from the Proponent that the
25 project will generate roughly 82,000 tonnes of greenhouses

1 gases annually.

2 A rough calculation has been done by Anna-
3 Maria Galante on the additional greenhouses gases that would
4 be associated with shipping the aggregate, and that estimate
5 is a back of the envelope calculation, but it's 10,000 to
6 16,000 tonnes, so we're looking at roughly 95,000 tonnes of
7 greenhouse gas emissions annually, coming close to 0.1
8 megatonnes.

9 Now, the Proponent has indicated in its
10 documentation that that represents only 0.27 percent
11 increase in Nova Scotia's annual greenhouse gas emissions,
12 and that doesn't sound like a lot.

13 But this has to be presented in the
14 context of what we're facing on a planet-wide basis and what
15 Canada is facing.

16 In order to avoid a 2 degree Celsius
17 increase in global temperatures, which is thought by, I
18 think, the consensus of international scientists to be a
19 critical point at which we could have uncontrolled,
20 catastrophic climate change, what we need is we need to have
21 basically an 80 to 90 percent reduction in greenhouse gas
22 emissions by 2050.

23 In order to get there, we're really going
24 to have to have reductions of about 25 percent by 2020.

25 So we're talking about really large-scale

1 reductions in greenhouse gas emissions in Canada, including
2 Nova Scotia, over the next number of years.

3 So this is going to put tremendous
4 pressure on all sorts of industries, on individuals across
5 Canada.

6 We've done a calculation that if every
7 man, woman and child in the three counties closest to the
8 project, that's Digby, Yarmouth and Annapolis, successfully
9 took the one-ton challenge that was brought on by the
10 previous Liberal Government, the quarry's greenhouse gas
11 emissions would still only be partially offset.

12 So, in essence, the quarry would undo all
13 of the good that the sacrifices of the residents of these
14 three counties would have achieved, just to give you a sense
15 of the scale of the emissions that we're talking about.

16 So in order to achieve the dramatic
17 reductions that are needed, as a society we have got to
18 transform our current economy, which is so heavily dependent
19 on burning fossil fuels, to one that is much more dependent
20 on renewable resources and much more efficient use of those
21 previous fossil fuels that we do burn.

22 And I think that the residents of Digby
23 Neck and Islands and other Nova Scotians are up to that
24 challenge of moving towards a low carbon future, but we have
25 to start making the move.

1 We can't continue to do things the way
2 we've always done things, that is, to assume that we can
3 burn as much fossil fuels as we want, we can release as much
4 greenhouse gases as we want. We're entering a new time in
5 the world.

6 And this is partly why I'm here, why I
7 feel like we have to talk about climate change in the
8 context because it's projects like this which are sort of
9 projects the way we've always done them historically.

10 We can't do them that way any more. We
11 have got to start thinking about ways of doing things a lot
12 smarter.

13 And from Sierra Club's point of view, just
14 focussing on greenhouse gas emissions, it's difficult for us
15 to see how we can approve this mega-quarry that would drive
16 up carbon emissions only by .27 percent if you accept the
17 Proponent's numbers, and we're not necessarily doing that,
18 but using their numbers, to ship millions of tons of what's
19 acknowledged to be a low-value mineral hundreds of
20 kilometres south to the United States to build more roads
21 which would, presumably, feed the same vicious cycle of more
22 cars, more greenhouse gas emissions in the United States.

23 This is not a sustainable path, in our
24 view.

25 So, I mean, as a minimum, we would

1 recommend that the Panel at least direct the Proponent to
2 prepare a climate change plan as called for in the
3 Environmental Assessment Agency Guidelines on Climate Change
4 Assessment before submitting its recommendations to
5 Government.

6 So that's the first set of points relating
7 to climate change.

8 The second set of points deals with
9 financial liability for greenhouse gas emissions.

10 Most of the people in the room may be
11 aware that the Federal Government announced a new so-called
12 Federal Regulatory Framework for Air Emissions in April
13 2007.

14 And in that Regulatory Framework, the
15 Government wants to reduce greenhouse gas emissions in
16 Canada by 20 percent from 2006 levels, it should be 1990,
17 but from 2006 levels by the year 2020.

18 So that's a significant effort, and they
19 are proposing what I consider to be probably the biggest
20 regulatory effort ever on the part of Environment Canada and
21 Natural Resources Canada and Transport Canada to get there.

22 This regulatory regime is expected to come
23 into force by 2010, roughly, would set regulated reductions
24 for greenhouse gas emissions by large emitters, and would
25 establish a carbons emissions trading regime.

1 It would also establish what's called a
2 technology fund or a tech fund available to companies to
3 assist them to offset their greenhouse gas emissions.

4 The cost to emitters to offset their
5 emissions would start at \$15.00 a tonne, and it would
6 escalate from there to, I think, \$25.00 a tonne over the
7 life of the tech fund.

8 So this is where I think it gets
9 interesting. I think large emitters are going to be
10 compelled to either reduce their emissions or else
11 contribute to the tech fund so they can offset them.

12 My colleague, Matthew Bramley, at the
13 Penben Institute, has done some analyses of what this means
14 for proponents who are bringing forward projects such as
15 this one that will produce significant amounts of greenhouse
16 gas emissions.

17 Well, again it's a rough calculation, and
18 you might want to have a chat with Matthew Bramley to get a
19 real, solid economist's calculations on this, but if we
20 assume that roughly 82,000 tonnes of greenhouse gas
21 emissions per year and we're talking about costs of, say
22 \$15.00 a tonne, that's going to cost the Proponent about
23 \$1.4 million a year. And that will go up.

24 Now, notice that the Green Party is
25 talking about pegging the cost of carbon at \$50.00 a tonne.

1 So if Elizabeth May becomes the next Prime
2 Minister, Elizabeth May is my predecessor at Sierra Club.
3 If Elizabeth May becomes the next Prime Minister of Canada,
4 the annual cost to the Proponent would be roughly \$5
5 million.

6 So I guess what I'm saying is that we're
7 entering into a regulatory regime, and I have no doubt that
8 the current Government is serious about what they're up to,
9 and I think the opposition parties are just as serious.

10 We're entering into a time where there's
11 going to be a price on carbon. And I think this has to be
12 figured into all of the analyses, the economic analysis, the
13 viability of the project, that sort of thing.

14 But I think it was important for the Panel
15 to understand that that's the way Canada's going and it's
16 the way the rest of the world is going, too, much faster
17 than we are. But we are slowly trying to catch up.

18 A third point on climate change relates to
19 the impacts of climate change on the project itself.

20 And that's something that the Proponent is
21 obliged to do, and I believe it's included in the EAS
22 Guidelines as well.

23 I think when we look at this project, it's
24 building right on the sea. We know the sea level is going
25 to slowly increase.

1 We're not sure about, you know, how much
2 faster sea level might rise if we had sort of a catastrophic
3 loss of glacial ice on the Greenland ice sheet or the West
4 Antarctic ice sheet, but setting aside those two possibly
5 very significant events, we're looking at, I think, 30
6 centimetre rise by 2050. Something like that.

7 It's not a huge amount, but that's a
8 factor that needs to be taken into consideration that could
9 well affect the project.

10 I think perhaps more importantly is that
11 there is evidence now of increased severity and duration of
12 storms and hurricanes due to global warming in the North
13 Atlantic.

14 Hurricane Juan is a possible example of
15 what may occur more often in Nova Scotia as water
16 temperatures in the North Atlantic increase.

17 Now, under the EIS Guidelines, the
18 Proponent is required to assess so-called worst case
19 scenarios, and what we're suggesting is that when that
20 analysis is done that it really should look at the impacts
21 of climate change, global warming over the next 50 years
22 'cause this will drive... You know, the science seems to be
23 that this will be tremendously significant.

24 So that when they're doing their worst
25 case scenario, it should include an assessment of a worst

1 case scenario based on the possibility that a Hurricane
2 Juan, a Hurricane Andrew or a Hurricane Katrina could hit
3 the Bay of Fundy coast.

4 So I would just offer that as something
5 that Sierra Club thinks should be part of the overall
6 analysis because I think it's well within the realm of
7 possibility.

8 The next subject I wanted to touch on is
9 what we call sustainability, sustainability framework. I
10 know that the Panel has asked questions about this already,
11 and we think this is a solid approach that you're taking.

12 Typically, environmental assessment panels
13 traditionally have focussed on identifying adverse
14 environmental effects, assessing the significance of those
15 effects and then, you know, addressing how they could be
16 mitigated, et cetera.

17 It seems like you're taking a bit of a
18 broader view looking at the sustainability assessment, which
19 we think is a sound way to go because, frankly, the whole
20 process of identifying environmental effects and determining
21 their significance has become a bit of a game.

22 And, of course, the game is, for the
23 Proponent, how can we get away with finding that there is no
24 significance to this or that environmental effect.

25 So looking at sustainability more broadly

1 is, we think, a good idea.

2 I'm not, obviously, from Digby Neck or
3 from the Islands, but I understand that this community has
4 made some choices already relating to sustainability and
5 they seem to be forward looking.

6 There was a process, I believe, called
7 Vision 2000, a planning process. There was the applications
8 for UNESCO biosphere reserve status, et cetera that
9 indicates that they see sustainable development as not
10 including or arguing for a preference against non-renewable
11 resource extraction.

12 So, in our view, when you're thinking
13 about sustainability, I think we have to think about it
14 within the context of the local community and how the local
15 community has expressed itself on those issues.

16 Now, I didn't know this before yesterday,
17 but I understand that Dr. Robert Gibson from Waterloo will
18 be appearing before the Panel on behalf of the Partnership
19 for Sustainable Development of Digby Neck and Islands
20 Society.

21 Dr. Gibson has done some really tremendous
22 work for the Joint Review Panel for the MacKenzie Gas
23 Project and, in particular, he has helped the panel in terms
24 of doing its so-called sustainability assessment or
25 developing a sustainability framework for its work.

1 And I know, because the Sierra Club of
2 Canada has been perhaps the lead intervenor in that very
3 long Environmental Assessment process, that this has been of
4 tremendous value to the Panel, so I think his evidence is
5 likely to be of great interest to you.

6 And I won't go on about this any more
7 'cause you'll hear from him directly.

8 Partly I wanted to raise it, though,
9 because the MacKenzie Gas Project and the White Pine(sic)
10 Quarry, I think, there's some similarities.

11 The MacKenzie Gas Project, \$16 billion.
12 It's called by industry so-called Basin Opening Project.

13 And what that means is that, if
14 constructed, this 1,200-kilometre pipeline and the anchor
15 fields that go with it will basically transform the economy
16 of the MacKenzie Valley into one that is really... It's an
17 oil and gas economy. That's what it will become.

18 And the pipeline will achieve that because
19 it will induce all sorts of other natural gas development
20 and probably mineral development as well.

21 So the MacKenzie Gas Project is important
22 because it represents a fundamental point for the
23 transformation of the local economy and local society and
24 ecology as well.

25 Now, I don't want to overstate the point,

1 but I think you could make the argument as well that the
2 White Point Quarry could have that transformative effect
3 here in Digby Neck and the Islands as well.

4 You can call it, in essence, a mountain
5 opening project.

6 I think that once large-scale quarrying of
7 basalt is established on Digby Neck North Mountain, it may
8 become politically and perhaps legally difficult under NAFTA
9 to turn down other quarry proposals. That is, that once
10 this goes forward, there's no turning back.

11 So that's why I'm here. I think the work
12 that you're doing is so important that we get this right.

13 Cumulative Effects Assessment. Cumulative
14 Effects Assessment, Sierra Club believes, is a key tool to
15 understand these sustainability issues, and that's why
16 they've been included in the Canadian **Environmental**
17 **Assessment Act** as a requirement for the past 15 years or so.

18 Our view is that the materials provided to
19 the, by the Proponent fails to meet the requirements of the
20 EIS Guidelines, nor does it meet the Cumulative Effects
21 Assessment Guidelines provided by the Canadian Environmental
22 Assessment Agency.

23 Apparently Peter Duinker will also be
24 testifying before the Joint Review Panel, and you may know,
25 or you may not know that he and Lorne Greg submitted an very

1 important study to the MacKenzie Gas Project Joint Panel on
2 this very subject of cumulative effects assessment, and
3 parenthetically, Sierra Club has brought a motion before the
4 Panel for MacKenzie Gas Project, arguing that the
5 conclusions and recommendations by Greg and Duinker should
6 be implemented.

7 But in the report, Greg and Duinker note
8 that the most important part of an Environmental Impact
9 Assessment, and especially an Environmental Impact
10 Assessment for a large development such as the MacKenzie Gas
11 Project, is actually the Cumulative Affects Assessment.

12 The basic opening nature of projects such
13 as the MGP is actually the cumulative effects assessment.
14 Sorry, I misread that. I jumped a line. The basic opening
15 nature of projects such as the MacKenzie Gas Project means
16 that if they are approved, we can be certain there will be
17 directly- and indirectly-induced development.

18 So the primary message of Greg and
19 Duinker, that report, is that the MacKenzie Gas Project
20 requires a meaningful cumulative effects assessment, and
21 that the most appropriate way to get there is through the
22 development of scenarios.

23 In practice in Canada, these scenarios
24 usually set out different development paths that could
25 happen, and typically they're scaled at five- or ten-year

1 intervals over the life of the Project.

2 Cumulative effects assessment is
3 challenging work. It's complicated, but it's important. It
4 has been done for an number of Environmental Assessments
5 that I'm familiar with, including the Cheviot Mine Project -
6 they did a good one - and for several diamond mines in the
7 Northwest Territories. Thank you.

8 The Proponent has provided little
9 discussion of reasonably foreseeable development that could
10 interact with this Project, nor have they provided scenarios
11 of how the Digby Neck, North Mountain could develop in
12 future.

13 The Proponent has said, in testimony that
14 I read, that they can't predict the future, and that's true,
15 and nobody can predict the future, but that's why we do
16 these scenarios; to get a sense of possible futures, likely
17 future, so that Governments, and residents, and industry,
18 and NGOs, we can all look at them and say, "How is this
19 going to work? What path do we actually want to go down?"

20 All too often the approach that we have
21 taken is one of death by thousand cuts. We develop one
22 little project; don't think about anything else. Develop
23 another little project; don't think about it. And then
24 before we know it, you know, we've lost the cod fishery, or
25 the wolves and the caribou have been scared out of the

1 Province, whatever.

2 So that's why cumulative effects
3 assessment is important. That's why this concept of
4 developing scenarios is important.

5 The final area to talk about is with
6 respect to follow-up programs. The Sierra Club thinks it's
7 very important that the Panel require that a follow-up
8 program be required. Follow-up has been a huge weakness in
9 the Federal Environmental Assessment system.

10 There's been very little learning over the
11 years as to whether or not predictions of environmental
12 effects have been proven out or not. We look at the Panel
13 Reviews that have been done over the past 30 years, plus all
14 of the comprehensive studies and screenings; millions and
15 millions of predictions. How many of them actually prove to
16 be true or not? There's virtually no information on that.

17 And it's not just a question of being in
18 compliance with terms and conditions issued by the Nova
19 Scotia Government, or Department of Fisheries and Oceans.
20 It's about looking at whether or not our predictions turned
21 out to be true or not.

22 So how do we do that? And this is a
23 difficult issue. I don't think the Community Liaison
24 Committee is enough. I think what we have to have is an
25 independent body that has guaranteed local representation,

1 that was guaranteed funding, that can monitor the Project,
2 and the ecological impacts and other impacts of the Project
3 so that we can figure out if we're on the right path or not.

4 They might have a role in looking over the
5 Proponent's shoulder with respect to adaptive management, as
6 well.

7 There are a number of examples where this
8 has worked successfully. Not all Federal Panels have
9 recommended this. I mean, going back many years, there was
10 one that was done for the expansion of the Vancouver
11 Airport. Probably the best one that's underway right now is
12 with respect to the diamond mines in the Northwest
13 Territories. So that information is available, and I would
14 commend it to your review.

15 Now we've got a number of... Maybe I
16 should stop. We've got a number of recommendations that we
17 would like to propose, but I think some of the key ones are
18 we really should have a Cumulative Effects Assessment done,
19 given that this is a, one could call it a mountain opening
20 project. It's the first large scale basalt quarry, you
21 know, on the Fundy Shore of Nova Scotia.

22 We need a climate change plan from the
23 Proponent. We need a worst-case analysis that talks about,
24 you know, predictions for climate change over the next 40,
25 50 years, and we need a serious follow-up program, and an

1 independent agency that can actually make sure that the
2 follow-up program happens.

3 'Cause typically what goes on, you know,
4 there's interest for a year or two, interest falls off, you
5 know, Government gets onto other things, and then it all
6 dies away.

7 Those are my remarks, Mr. Chair. Thank
8 you.

9 THE CHAIRPERSON: Thank you, Mr. Hazel.

10 **PRESENTATION BY SIERRA CLUB OF CANADA - QUESTIONS BY THE**
11 **PANEL**

12 Dr. JILL GRANT: Can you give us a little
13 bit more about the idea of the follow-up program, and what
14 kinds of measures would be taken, and by whom. You said
15 something about an independent body, but how do those, how
16 would that get funded?

17 Mr. STEPHEN HAZEL: Well, I think there's
18 probably several ways in which you could fund it. You could
19 fund it through a Trust, so that a certain amount of money
20 would be set aside so that the Agency, or the body, or the
21 Committee could have ongoing funding so that it would be
22 immune from political interference. I mean, that would be
23 one way to go about it.

24 The purpose of the body is really, is to
25 monitor, to report. It's not to act; it's not to... It

1 would have no authority to direct the Proponent to do
2 anything. It would have no authority to direct Government
3 doing(sic). It would be really intended just to gather
4 information, to study, you know, to provide information --

5 For example, if there's been a number of
6 commitments made that there would be observations made by
7 the Proponent of marine mammals before blasting occurs.
8 Well, you could see how a monitoring agency might review
9 that, and make sure that happens, 'cause 50 years is a long
10 time, and you know, people change, and commitments change,
11 and this sort of thing.

12 So it would undertake those sorts of
13 things, and report on them publically.

14 Dr. JILL GRANT: And could I ask you also
15 about your suggestion on cumulative effects; that the
16 possibility that the approval of this Project would be
17 initiating some particular kinds of change. Can you
18 elaborate on that? You suggested it's a "mountain-opening
19 project", so can you elaborate on that?

20 Mr. STEPHEN HAZEL: I mean, cumulative
21 environmental effects should be assessed for all projects,
22 but it's particularly important where you have a project
23 such as this one that has potential to open up a whole new
24 area for non-renewable resource development. We could see
25 many more quarries being established along the 100

1 kilometres north of, you know, between here up to I think
2 it's Port George. Sorry, my geology's not that great, but
3 where the high-quality basalt is.

4 So that's important, and the use of
5 scenarios like what happens if we have three or four or five
6 large-scale basalt mines along Digby Neck and the North
7 Mountain? What would the likely impacts of that be on the
8 valued ecosystem components? I mean, does that mean the end
9 of right whales in the Bay of Fundy? That could be one
10 scenario to explore.

11 Another one might be, well, what happens
12 if we don't have any development at all? I mean, how are we
13 going to do then? I mean, these communities desperately
14 need more jobs, they need more economic activity. What's
15 that going to mean?

16 And that would be up to the designer to
17 work through, but our suggestion is, is that it really needs
18 to be done, and to the extent that the Proponent has
19 difficult doing that, and I have some sympathy for the
20 Proponent in doing these cumulative effects assessments,
21 because a lot of the time a lot of the information is out of
22 their control.

23 I mean, they don't necessarily know what
24 other applications are brewing for, you know, basalt
25 quarries along the Fundy Shore. They might not know that,

1 but Governments do, so there's a bit of a joint
2 responsibility, and I would suggest that, I know time is
3 always an issue, but this given that... Well, in our
4 opinion, this is a tremendously important analysis to be
5 undertaken; that we should take the time.

6 I don't know, I'm sorry. I'm rambling. I
7 may not have answered your question there, Jill. Sorry.

8 Dr. GUNTER MUECKE: Could you point us to a
9 previous Environment Assessment which could be taken as a
10 model, let's say, for cumulative effects analysis, or is
11 there no such thing?

12 Mr. STEPHEN HAZEL: Well, we are making
13 some progress. I would not say that there is a model, per
14 se, but I think that if you look at the cumulative effects
15 assessment that was done under duress, I should add, by the
16 Cardinal River Coal Company for the Cheviot case, I think
17 that's one that's worth looking at.

18 The others are, for the BHP Joint Review
19 Panel of the... It's a diamond mine in the Northwest
20 Territories and the barren lands. That one, as well, you
21 might take a look at. Those are two are the best ones in
22 Canada.

23 Outside of Canada, there have been some in
24 the United States that are better, and I'd be pleased to
25 provide some additional references, although you know I

1 think, to be honest, you've got Peter Duinker coming, and
2 he's the expert, you know, so it's probably just, if you
3 just ask those questions to him, I think he'll give you some
4 good answers.

5 THE CHAIRPERSON: Mr. Buxton?

6 Mr. PAUL BUXTON: I have no questions.

7 Thank you, Mr. Chair.

8 THE CHAIRPERSON: Questions from the floor?

9 Oh, one. Ms. Little?

10 **PRESENTATION BY THE SIERRA CLUB OF CANADA - QUESTIONS FROM**
11 **THE PUBLIC**

12 Ms. TINA LITTLE: I'm a businesswoman, and
13 when I'm going to put in a retail establishment somewhere, I
14 look for all the other people that do the same thing I do
15 that are making a lot of money, and that's a good place for
16 another business of the same sort.

17 It is my understanding, and I wondered if
18 the gentleman from The Sierra Club had any information on
19 this for you, that there have been other applications along
20 the North Mountain on the Bay of Fundy to do a similar type
21 of an operation; some sort of basalt mining, and going into
22 the Bay of Fundy. It was, I believe, around Parker's Cove,
23 or Victoria Beach, and it would lead me to believe that
24 there must be a lot of people just watching these
25 proceedings to see if they, too, want to do that.

1 So I wondered if you knew anything about
2 that.

3 Mr. STEPHEN HAZEL: I'm sorry. I don't
4 know the answer to that question, but one of my colleagues
5 might be able to help you out, off-line.

6 Ms. TINA LITTLE: Okay. Thank you.

7 THE CHAIRPERSON: Ms. Little, we were told
8 by the Provincial Government that there were something like
9 six, I think, that had, over the years, over the last few
10 years had indicated an interest; that they were... They
11 weren't very specific, but they said something like six or
12 so inquiries, maybe, is the best way to characterize it.

13 So, yes, I think the answer is others have
14 inquired. Whether they're sitting there watching these
15 proceedings or not remains to be seen. We didn't have very
16 explicit information.

17 Ms. TINA LITTLE: Yeah. It would seem to
18 me that the amount of money that's gone out to make these
19 proceedings go --

20 THE CHAIRPERSON: Yes.

21 Ms. TINA LITTLE: -- forth for five years,
22 if I was going to open a business, if it was --

23 THE CHAIRPERSON: Yes.

24 Ms. TINA LITTLE: -- worth five years of
25 money for another company, it sure would be interesting to

1 me.

2 THE CHAIRPERSON: Yes.

3 Ms. TINA LITTLE: Thank you.

4 THE CHAIRPERSON: And Dr. Grant just told
5 me that it isn't necessarily from this area, necessarily.
6 In other words, there have been requests, but it could be
7 wide-ranging. Okay?

8 Ms. TINA LITTLE: Okay.

9 THE CHAIRPERSON: Yeah.

10 Ms. TINA LITTLE: Thank you very much.

11 THE CHAIRPERSON: Okay. So there are no
12 questions from the... Oh, there's one. Mr. Ackerman?

13 Mr. JERRY ACKERMAN: Yes, thank you. Is
14 there any value in establishing a surety bond with an
15 independent Trustee for not would-be polluters, but to see
16 that the conditions of the Environmental Assessment Approval
17 do get met?

18 Mr. STEPHEN HAZEL: Sorry, I missed the
19 first part of your---

20 Mr. JERRY ACKERMAN: Okay. It's---

21 Mr. STEPHEN HAZEL: ---statement.

22 Mr. JERRY ACKERMAN: ---about a surety bond
23 of an independent---

24 Mr. STEPHEN HAZEL: Oh, surety bonds.

25 Mr. JERRY ACKERMAN: ---Trustee. I'm

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1 thinking about Northwest Territories, and I'm thinking about
2 Bay Aquiti in Ontario, and places like that.

3 Mr. STEPHEN HAZEL: Well, I mean, I had
4 dropped this little bit from my presentation, but I had
5 noticed that it doesn't seem that there is any requirement
6 for bonding or for sureties in order to insure a reclamation
7 of the site. I mean, correct me if I'm wrong, but I think
8 this is something that really, that should be done. It's
9 done by the mining sector elsewhere in Canada, and we're
10 talking about 50-year long Project.

11 You know, as the Project moves forward,
12 and you know, land is disturbed, I mean, there should be a
13 bond sufficient, or some sort of financial guarantee
14 sufficient to reclaim and restore those lands, in my
15 opinion.

16 THE CHAIRPERSON: Okay. I think we're at
17 the end of this presentation. We will... Thank you, Mr.
18 Hazel. Thank you very much. And we're going to take a
19 15-minute break now.

20 --- Recess at 3:17 p.m.

21 --- Upon resuming at 3:34 p.m.

22 THE CHAIRPERSON: Ladies and gentlemen,
23 we're about to resume.

24 --- Pause

25 THE CHAIRPERSON: Okay, we're about to get

1 started.

2 I do have an announcement that I would
3 like to make, and that is, is that some people are planning
4 to make presentations down the road. Now I realize there
5 are many people who are planning, but have not done so, but
6 it would be extremely helpful to us if you could give us
7 those presentations in written form, assuming you have them,
8 as soon as possible to the Secretariat, or at least a day or
9 two ahead of time would be useful, as opposed to the last
10 minute. It makes our job a little bit easier.

11 And if you were to give them to the...
12 And you've done it on a computer, and you are able to give
13 it to us in electronic form, as well as written form, that's
14 equally useful. Remember, these things go into the Public
15 Record, and if they're not in electronic form, they have to
16 be scanned. If they're in electronic form, it's much easier
17 for us, okay?

18 So a day or two ahead would be wonderful,
19 and in electronic form as well as paper would be useful.
20 It's not critical, but it would be really helpful.

21 So we're now moving into, there are
22 actually four presentations that are planned over the next
23 bit. The first one will be by Danny Mills. Is Danny Mills
24 here?

25 --- Pause

1 THE CHAIRPERSON: Mr. Mills, that
2 microphone should be about six to eight inches from you.
3 Okay?

4 Mr. DANIEL MILLS: Okay?

5 THE CHAIRPERSON: Yeah.

6 **PRESENTATION BY FATHER DANIEL MILLS**

7 Mr. DANIEL MILLS: My name is Daniel Mills
8 and everybody does call me Danny. I'm a Roman Catholic
9 priest who I believe 42 years ago last Sunday celebrated my
10 first Mass in Digby Neck, and then probably also at
11 Freeport, because we had a little chapel there.
12 And by coincidence, I now live in the Church where I first
13 celebrated Mass 42 years ago.

14 And so I'm not going to give you a long
15 list about my accomplishments, because the fact that the
16 Church closed may deter people's mind about anything
17 positive, or anything that I might say about myself that
18 would attempt at flattering my curriculum vitae. So that's
19 where I began, and that's where I am now, and it's good to
20 be here.

21 I'm going to preface my presentation with
22 something I read in the Bilcon, I'm not sure whether it's
23 quarterly. Is it quarterly, or? It comes out every month
24 or so, anyway, and it came in this morning, and I saw
25 something that puzzled, and also will help me to explain why

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1 I'm here. And I'll read the paragraph to you:

2 "For people who have retired to Digby
3 Neck, or others who might spend a couple
4 of weeks here in the summer, any change is
5 understandably something they might be
6 worried about. By and large, their
7 working days are behind, or they work
8 somewhere else, and come to visit in the
9 summer. Obviously, the quarry and its
10 long-term economic impact"

11 And there's an error here, but I'll repeat
12 it anyway:

13 "And its long-term economic impact don't
14 matter as much to them".

15 Or I guess it was correct. Anyway, what I
16 want to say, that's why I'm here.

17 I'm retired, as many of the people are,
18 who are involved in this Project with the sustainability
19 efforts being made for the past five years, and that's why
20 we're here is because precisely we are deeply concerned
21 about the long-term economic impact upon this community,
22 upon this people, and upon this culture.

23 That's why I came here. I like Digby
24 Neck. There's no question about it. I bought my place a
25 few years before I moved into it, and a day or two after I

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1 wondered why did I do that, but as time went on, and I began
2 to prepare my building to live in, and cleared the land, and
3 began to landscape in my own simple way, I began to truly
4 like the place.

5 And then about four or five years ago, I
6 was inflicted with cataracts, and I couldn't see it anymore,
7 and I got a sense of what it's like not to be able to see
8 the stars. And since I had surgery a couple of years ago,
9 every morning at 5:00 or so, when I go out to pick up my
10 paper, I just can't help but marvel at the grandeur of the
11 skies.

12 And so I like Digby Neck, but I know that
13 if I lost my eyesight tomorrow, that I would still love the
14 people of Digby Neck, and that's why I'm here. I've become
15 very close to many of them, very attached to them, very
16 attached to their way of life, very impressed by their
17 resilience, by their caring for each other, and for their
18 community. And I don't want to see that destroyed. That's
19 why I came here, because I do have other things that I could
20 be doing, as many of the rest of us could, I'm sure, too.

21 So I'll begin, then, with my presentation,
22 and I'll tell you the story about two tiny hummingbirds.
23 They or their ancestors have claimed roosting rights on my
24 clothesline since I positioned a feeder there nearly ten
25 years ago, and every year they come to this very same place.

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1 They depend upon it being here, and sometimes if I'm a few
2 days late in getting the feeder out before they arrive in
3 early May, they make a point to come and practically crash
4 into my windows to alert about their need, their pressing
5 need for sustenance.

6 And for some strange reasons, I know that
7 they have a right to expect that much of me. I expect that
8 cycle to continue as long as I am here, and they may well
9 show up for a generation or more after I have cast off this
10 mortal coil(sic).

11 In some analogical way, these little
12 creatures have attained rights to find liquid-laced
13 refreshment at 9396 Waterford on Digby Neck. It just seems
14 so right that I, in turn, uphold my part of this unwritten
15 but nevertheless inscribed-on-the-heart pact which exists
16 between us. On the flip side, it would feel so terribly
17 wrong not to do so.

18 And so if I am seen to be for the birds,
19 how much more should you be for the people? There's nothing
20 grander, after all, than each and every single human being.

21 It's when we allow the human being to live his due
22 transcendence even as that which we see to the tiny
23 hummingbird that we can understand that to use jobs as an
24 excuse for a quarry at Whites Point is nothing more than a
25 red herring flailed by the Proponents of this Project.

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1 If we must see red, let it be of a
2 well-protected Bay of Fundy sustaining and providing an
3 annual menu of red lobsters on the plates of people all over
4 the world. That preferred to putting this whole community
5 on the rocks, while Bilcon exploits it by shipping the
6 mountain to New Jersey.

7 We will not be duped by so flimsy a
8 proposition. It's not the rock that counts, nor is it the
9 jobs that would be created for locals that count. This is a
10 people issue, and people transcend economics by a mile at
11 any given time, in any given place.

12 I spent the best part of my life in the
13 service of people. So often I was awed by their resilience,
14 their goodness, their beauty, even in the midst of the
15 greatest of trials and tragedies. I tried to make them
16 count, and I still do.

17 In retirement these past years, I've seen
18 a new and emerging phenomenon. The larger businesses
19 become, the more monopolies that are effected, the less
20 personable they become, and the less that people count. And
21 there I dare say lies the crux of the problem here on Digby
22 Neck.

23 It's my belief from the very bottom of my
24 heart that both in the eyes of big business and in the eyes
25 of big Government that people do not count. Can I prove it?

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1 I think so, and quite conclusively, too. No one from
2 either has asked me or my compatriots how we feel about what
3 is consistent with what I believe can be likened to a true
4 home invasion; perhaps even a very subtle form of terrorism
5 inflicted upon a helpless and fearful community.

6 No matter how you look at it, the people
7 of Digby Neck have had no say. At whatever level, when I
8 and my neighbours went to the voting station, never did we
9 endorse the rape of the land, the land that we live on, nor
10 the destruction that could and inevitably will, I suspect,
11 destroy the habitat of that which has employed 16 or more
12 generations of people whose very hearts and souls are rooted
13 in the waters of the Bay of Fundy.

14 As one of the very wise amongst them once
15 said, we need that narrow strip of land to build houses on
16 as our springboard to the sea, a place to rest the weary
17 body. Would I exaggerate to add that surely more than one
18 has fantasized the possibility of a gill transplant, because
19 the sea is in their veins.

20 We elected our Governments to govern, but
21 to govern over and see that which deals with the ongoing,
22 normal run-of-the-mill issues of the day. What family can
23 survive a major change in the way things are done in the
24 home, when one simply chooses to change everything for any
25 or no reason, without consultation with family members, and

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1 some very serious consideration, discussion, study, prayer
2 even, over all the implications of any action that
3 eventually must be taken by those who make a final decision.

4 It seems to me that Governments and big
5 business alike have chosen, made a conscious choice to
6 succumb to the tried and true favourite tact of divide and
7 conquer in dealing with people. It's their lovechild.
8 That's the way they do things. Their lovechild born to have
9 citizens and families engaged in battle, celebrated as in
10 our case with a proliferation of weatherbeaten signs lining
11 our highways. What a disgrace that is, when you stop to
12 think about it.

13 This, in turn, gives rise to suspicion and
14 negative criticisms about those who have chosen their cards
15 a little closer to their chest, engendering even more anger
16 and dissension amongst families, friends and neighbours.
17 And when the truth comes out, we learn that a good many, far
18 too many throw in their hands rather than declare out of
19 fear.

20 Why have the heads of our community
21 households, our elected Governments not demonstrated real
22 concern for people by asking them what their wishes are
23 regarding any majoral(sic), structural changes to their
24 home, to their dwelling place? If consensus cannot be
25 derived by consultation, at least let the people vote so as

1 to add another significant dimension to the information
2 gathered by you, and the ultimate decision-makers, our
3 political bodies at both levels.

4 Responsible leaders, above all else it
5 seems to me, should be expected to do all that is possible
6 to keep people in our villages at peace and living in
7 harmony. And so I ask you to remember that we are people,
8 people here, whether the quarry comes or not, whether it
9 rains or shines, at the end of the day, what we'll be left
10 with are people who want to stay home on Digby Neck, and
11 they are the people who have a right to be here.

12 For generations, they have paid their
13 dues. They are rooted in Digby Neck and bonded with the
14 sea, and no risk must be taken to destroy that.

15 An old but nonetheless timely teaching of
16 moral theology is that we can never act in doubt. Sound
17 familiar? Trust me, the people here have many grave doubts
18 which need to be dispelled before anything else transpires.

19 I recently heard someone ask the question,
20 "What's going on in our society?", and the answer that was
21 given is, "It's due to the lack of respect for the human
22 good". Today we hear about the environmental good, the
23 economic good, the political good, the emotional and
24 spiritual and psychological good, but rarely do we speak
25 about the human good, the common good in this me, me, me

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1 world.

2 By emphasizing these, of course, we
3 automatically denigrate the transcendence of the human
4 person to which I referred earlier. If you add to this the
5 dimension of faith and belief, we see that this
6 transcendence is all the more amplified by the revealed
7 truth that we are made in the image and likeness of God, but
8 believe it or not, take a look at the human seated next to
9 you, and realize and see his dignity, and be awed by it.

10 May you respected Panel and elected
11 leaders also take that realization into your heavy
12 deliberations on behalf of the people of Digby Neck, and
13 indeed of the whole North Mountain. I know you would do
14 what is right for hummingbirds in your backyards. Do also
15 for the people of Digby Neck, for men do not live by bread
16 alone.

17 Thank you.

18 THE CHAIRPERSON: Thank you, Mr. Mills.
19 Think we should comment.

20 Dr. JILL GRANT: Thank you, Father Mills.
21 When you came to Digby 42 years ago, it must have been quite
22 a different place. Can you give us an idea of the kinds of
23 changes that you've seen in the community over that period?

24 Mr. DANIEL MILLS: I think one of the
25 things that we've noticed, of course, is the downturn of the

1 fishery, the absence of the many fish plants, and fishing
2 enterprises that used to take place. The absence of that.

3 Also, I notice that the communities on the
4 Neck seem to be much more involved with each other than they
5 were 42 years ago, when many communities were quite
6 isolated. Transportation wasn't that great, and so forth.
7 I see that. I see that people have enjoyed more affluence
8 during that time. Their homes are well kept, their lawn's
9 well groomed, and everyone has, seems to have fine vehicles
10 and so forth.

11 Those are some of the things I think of
12 right off the bat.

13 Dr. JILL GRANT: Can you give us, also, an
14 idea of how the composition of the community has changed?
15 The character of households, household size, the kinds of
16 things people do for a living, those kinds of changes?

17 Mr. DANIEL MILLS: Well, certainly the
18 households have changed. There aren't the huge families
19 that we used to have in villages. One of the reasons the
20 little church closed was because the numbers became so
21 small. Families were, some of the families had 12, 13
22 children, and the church is, it was a small church, but it
23 would be packed on Sunday with youngest.

24 Today, the family is much smaller, and as
25 a result of that, the people who remain there deem it

1 preferable to join the congregation in Digby.

2 That, for one thing, is... I don't know
3 if I can think of anything else at the moment. Oh, I had
4 something else that I was going to share. One of the things
5 that, and I didn't have time, but if you bear with me, it's
6 there was an editorial in "The Halifax Herald", no, in the
7 "Digby Courier" a few days ago, and the editor enumerated a
8 number of the various undertakings that are arising on Digby
9 Neck; reference to new projects, and that type of thing.

10 And I have a response which I've taken in
11 to "The Courier" for the next edition, and I added to his
12 list, and if I may, I'll read to you, and this may give you
13 some insight into what I... The change that I've seen. You
14 wouldn't have seen this 42 years ago:

15 "To the list of enterprises enumerated in
16 the column, may I offer a challenge to any
17 town or village to come down the Neck and
18 see the little village of Gulliver's Cove,
19 for one example."

20 I used that an example because it's in
21 that proximity that I live:

22 "There is more energy and vitality exerted
23 there than in most places I've lived in
24 Southwest Nova Scotia during the past 42
25 years. Businesses include a fish packing"

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1 And all these new businesses, since I've
2 arrived on Digby Neck, on my retirement nine years ago:
3 "Businesses include a fish-packing plant,
4 an emu farm, a dulsing enterprise, a
5 building contractor, a growing greenhouse
6 project, an auto salvage business which
7 was there prior to my coming, a young and
8 new hospitality service that's with a
9 tourist home, and an enterprising young
10 woman who's teaching scrapbooking all
11 throughout the fall, winter and during the
12 year. Then besides those who choose to
13 work out of the village, there are the
14 rugged individualists who work on their
15 own, some as families. A trapper, dulsers
16 and periwinklers, and there are a few who
17 are retired seniors. And anybody who is
18 able to work and wants to work in
19 Gulliver's Cove is working."

20 I live in Waterford. I surveyed the place
21 in my mind. It's not a large village, but everyone in
22 Waterford who wants to work is working. There are a number
23 of seniors, of course. Rossway from my place at least to
24 the Gulliver's Cove Road; I know those people better, and
25 everybody is working. In my village of Waterford just in

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1 the last, well, since I've been there in the last few years,
2 five new homes built, three old homes that were falling
3 apart have been renovated and brought back to new life.

4 Those are some of the things that I see
5 that are happening. The people are alive and very well in
6 my section of Digby Neck.

7 Dr. GUNTER MUECKE: Yes. Our previous
8 speaker emphasized, from Sierra Club, that in cumulative
9 effects, one should be looking at development scenarios,
10 various scenarios. Could you give me an idea of what is
11 your scenario for the future of Digby Neck?

12 Mr. DANIEL MILLS: My scenario for Digby
13 Neck I think is something I've been saying for awhile. It
14 applies to our country, and probably to our world.

15 It seems that somebody started a snowball
16 somewhere along the way, and it got out of control, and is
17 getting bigger and bigger all the time. We all sit here;
18 we'll sit in all kinds of meetings, and we should do this
19 and we should do that, but we don't know how to stop the
20 ball. Simple as that. And it's just going faster and
21 faster and faster until finally it's going to collide and
22 run over us. That's what I think of what the accumulation
23 of this type of thing that we're doing is.

24 We need to put on the brakes, and find
25 some wisdom to deal with the problems that are arising.

1 THE CHAIRPERSON: Mr. Buxton?

2 PRESENTATION BY FATHER DANNY MILLS - QUESTIONS BY THE
3 PROPONENT

4 Mr. PAUL BUXTON: Thank you, Mr. Chair. I
5 may have misunderstood, but I rather gathered that Father
6 Mills said that nobody has been consulted on the Neck, and I
7 was wondering whether he remembered a session that he had
8 with me in my office to discuss the project.

9 FATHER DANNY MILLS: When I'm talking
10 about consultation, actually I went to your place and we
11 didn't talk too much about the quarry that day. I've gone
12 to other gatherings, as well.

13 But that's not the kind of consultation I
14 think that we need. People need to have a global, a
15 communal input into the thing, and I think the best way to
16 do it is by plebiscite, so people are not afraid to make the
17 X in the appropriate place.

18 With this divide and conquer approach that
19 you take, it's like a steamroller coming down Digby Neck.
20 You got families on one side afraid to speak because of
21 what's going to happen on the other side, and that's wrong.
22 That's very wrong.

23 And big business or any big Government or
24 people in that kind of thing should be very ashamed of
25 themselves. I don't think me going and sitting down with

1 your or sitting down with anybody else, trying to talk one
2 to one and whether to be won over or not, I don't know if
3 that's the... There was no, from the time I first heard of
4 the quarry and read anything about it, I knew that it wasn't
5 healthy.

6 I don't think that's going to work. I
7 think the people need to be consulted. Every taxpayer who
8 pays taxes on Digby Neck, and if you pay taxes on Digby
9 Neck, I don't care if you come from Hong Kong or East Ferry.
10 If you're paying taxes there, you're local.

11 We've got people on Digby Neck who have
12 been told, who moved into our communities, who have been
13 told by neighbours, "Don't get involved in this. You don't
14 really have any business being involved in it. You're an
15 outsider." That's wrong.

16 Put your money where your mouth is. Have
17 a plebiscite. Give the people a chance to talk. Get what
18 the people feel, take it to the Panel, and let them use that
19 also as an indication of what's going on. Somebody makes
20 the final decision, I understand that.

21 THE CHAIRPERSON: Mr. Buxton?

22 Mr. PAUL BUXTON: I have no other
23 questions. Thank you, Mr. Chair.

24 THE CHAIRPERSON: Any questions from...
25 Yes, Ms. Peach?

1 **PRESENTATION BY FATHER DANNY MILLS - QUESTIONS BY THE PUBLIC**

2 Ms. JUDITH PEACH: I think it's been said
3 that the population, the composition of the population on
4 Digby Neck and Islands is maybe a little in the older
5 category. Maybe, you know, I think Bilcon said the 19 to
6 39-year-olds have declined over the years, and the
7 implication is that they are the people who contribute to
8 the communities.

9 I wonder if Mr. Mills could speak a little
10 bit to the contribution of senior people, retired people, in
11 the community. Do they contribute to the community in any
12 way, or are they just pretty much sitting in their homes
13 doing nothing?

14 FATHER DANNY MILLS: If you took the senior
15 people off of Digby Neck and had this issue arise anew, the
16 younger people are so busy, whatever it is that they're
17 doing, they're all working, that there would be no
18 leadership. There's not many young people involved in the
19 sustainable... What's it called?

20 Partnership for Sustainability. There are
21 very few young people. They're very, very busy. I suppose
22 maybe they support if financially and come out to suppers
23 and that type of thing, but they simply don't have the time
24 to go to lots of meetings.

25 All leadership, in most communities where

1 I come from, or where I've been, generally comes from the
2 senior people, because they've got the time, they've got the
3 experience, and they have the will to participate. And it's
4 very prominent on Digby Neck. I can't speak for the
5 Islands, because I don't know the people on the Islands too
6 well, but certainly on Digby Neck it's very much so. Very
7 much indeed.

8 THE CHAIRPERSON: Thank you. Mr. Morsches?

9 Mr. BOB MORSCHEs: Doctor, this is a
10 follow-up of Dr. Grant's first question about the changes.

11 Have you ever, I know you've seen a
12 decrease in the size of the families, et cetera, but Father
13 have you noticed there's an increase in seniors on Digby
14 Neck? For instance, in Sandy Cove, where I live, 68 percent
15 of the people there are seniors.

16 There's very few, I think there's only
17 about a couple small, or young families, that are in their
18 30s, and the other people that are still working, they're in
19 their 50s and looking forward to retirement.

20 And I was wondering if you notice the same
21 thing at Waterford or Rossway or up the pipe?

22 FATHER DANNY MILLS: It's the same thing
23 everywhere in rural Nova Scotia, and I spent most of my
24 lifetime in small communities in Southwest Nova Scotia.
25 It's the same everywhere. The population is aging. The

1 families are smaller. More and more young people are
2 getting formal education and moving on into professions that
3 they can't celebrate or work in, in rural areas.

4 They move on to other places. Young
5 people have always left home. I often think of... I was
6 just a little fellow when the Second World War ended but I
7 had uncles who came home, and those who were their age and
8 so forth, and if you go to Sudbury, Ontario today you'll
9 find more of my relatives there than you'll find anywhere
10 else. They went there to work in the mines, and they stayed
11 there, raised families. They're grandparents now, great-
12 grandparents, I suppose, some of them.

13 And that's true in every community in the
14 Maritimes, I believe, and so what's wrong with that?

15 I often think, I was in the Military
16 Chaplaincy for a few years, and I was approached to go in
17 the Military at a little Military Station at CFS Barrington
18 one evening, was another thing...

19 But I certainly didn't expect them to move
20 the training school to Barrington Passage. I had to go to
21 Chilliwack. You have to go, for what you want to do, you
22 have to go where it's happening.

23 Mr. BOB MORSCHEs: Thank you, doctor.

24 THE CHAIRPERSON: Anyone else? If not,
25 then thank you, Father Mills.

1 We'll now hear from Jill Klein.

2 --- Pause

3 THE CHAIRPERSON: We're going to switch
4 presenters. Ms. Klein has got to get herself organized with
5 regard to her laptop, so while she's doing that, we'll get
6 the other presenter, who is Rob Buckland-Nicks. Might he be
7 available? There he is. And then, Ms. Klein, you'll be
8 next.

9 Please. Just bring up the microphone six
10 or eight inches from you.

11 **PRESENTATION BY Mr. ROB BUCKLAND-NICKS**

12 Mr. BUCKLAND-NICKS: This is good now? So
13 my name is Rob Buckland-Nicks, and I'm not from Digby Neck
14 and the Islands, although I have been there many times in my
15 life and have sent thousands of people down there for whale
16 watching.

17 I have a business in Bear River which is
18 an art gallery and craft shop.

19 Part of selling art and craft is to story-
20 tell about the artists who aren't there to represent
21 themselves. It sort of makes the whole process more
22 intimate, and they get an understanding of the person that
23 created a painting or the piece of craft, and I feel like
24 I'm largely here to speak about a work of art which is Digby
25 Neck and the Islands. It can't speak for itself.

1 So I'm going to start with a story which
2 is about my family and myself, on a whale watching trip. I
3 don't know why I'm getting so emotional.

4 And just before I start, on the back shore
5 of Brier Island one day, in the early '70s, long before
6 whale watching, I was on a small stone causeway that
7 separates the ocean from some brackish water, and there was
8 nobody around, and it was just me. And it was the first
9 week of August, and I was watching the sun go down.

10 And I was just walking very slowly on the
11 causeway, and I just stopped and took a deep breath and just
12 took it all in, and suddenly of semipalmated plovers flew up
13 all around me. It kind of opened like the red sea and
14 closed behind me, and I had no idea they were there.

15 And I realized at that moment that they
16 didn't mind me being there, and knew also that I couldn't
17 see them, and they very much used the stones for their own
18 security and invisibility.

19 From that point, I have made a living
20 painting birds on stones and describing landscaping stones.
21 So I have a lot, in many ways, to thank the whole area for.

22 Anyway, I'd like to tell this store first,
23 and the tie it in somewhat with 27 years as a retail
24 business owner who deals specifically with tourists.

25 The Captain of a whale-watching vessel,

1 frustrated by days of thick fog, but otherwise sunny
2 weather, asked a few of us if we would like to venture out
3 and see whether there were some whales around.

4 Everyone on the boat knew each other, and
5 were mostly parents and teenagers, perhaps number 25. Some
6 of us had been out before, and for some it was going to be
7 their first experience on a whale-watching cruise.

8 We left the harbour, turning right with
9 the sun on our backs and blue skies above. We could clearly
10 see the bank of fog which started half a mile out, and the
11 nearer we came, the more it appeared like glistening
12 architecture.

13 And then, there we were, in front of the
14 walls Jericho, a hundred feet high, almost a defining line
15 between its base and the calm blue water.

16 The Fundy is rarely glass calm, but this
17 day was, as we slowly pierced the wall of fog and went
18 inside. There was almost no visibility, and everyone
19 strained to make out anything at all.

20 It was akin to hand over hand, pulling
21 yourself through clouds.

22 We'd been edging forward like this for
23 maybe five minutes, and the Captain I'm sure was thinking,
24 "This is a lost cause", when we suddenly, without warning,
25 broke into this perfect clearing, a half-mile diameter

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1 circle, surrounded by shimmering walls and a shimmering
2 roof, as the sun illuminated the mist.

3 An airplane could've flown over us and not
4 seen us, and a boat could've passed by us and not seen or
5 heard us. For this clear bubble in which we would ourselves
6 had insulated us from the outside world.

7 With the boat's engines turned off, we
8 were silent observers of an amazing unfolding spectacle. As
9 far as the eye could see, and in every direction, were
10 herring throwing themselves out of the water, an event known
11 to fishermen as a herring storm. Millions of pitter-
12 patterings, as glistening bodies fell back into the water,
13 were floating pockets of pink krill everywhere you looked.

14 These were the catches of the day for
15 three trawling fin whales on the perimeter of our circle,
16 and three humpbacks that dived and bubble netted time and
17 time again in the centre. Gannets plunged arrow-like from
18 50 feet, terns from 20, gulls screamed and bickered. A
19 couple of immature puffins looked a little lost. A razor
20 bill shot through and out. Shearwaters and petrels skimmed
21 and danced, and those too small to effectively compete left
22 early.

23 The creatures were mostly oblivious to us,
24 except for one humpback. He drove directly at the boat
25 side, and at the last moment, with everyone hanging on to

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1 each other, gently dipped and passed clear under us.

2 Each pectoral fin was 14 feet wide with
3 both spread like wings. It was as wide as the boat was
4 long.

5 The highlight of the day involved a
6 herring gull and a humpback. The humpback feeds by diving
7 and exhaling. This forms a vortex of bubbles that traps
8 nearby fish and takes them to the surface in a bubble net.
9 This bubble net is preceded by a green ring of water which
10 both gulls and humans can spot.

11 A green ring and bubble net full of fish
12 are shortly afterwards followed by the whale's huge mouth.
13 This particular gull knew he had only so much time to eat
14 the herring from the whale's catch, but got greedy and ended
15 up in the whale's mouth

16 The huge jaws closed, but just before
17 submerging opened them one more time to let the gull, that
18 must've seemed like a fluttering moth, fly out to live
19 another day.

20 For my family, and all the other groups on
21 the boat that day, it was an experience that enriched our
22 lives and made us even more determined to become caretakers
23 of our environment.

24 In today's world, it is impossible to
25 underestimate the positive impact these forays into the

1 natural world have on all of us. Every whale watch that
2 goes into the Fundy from Digby Neck and the Islands has the
3 ability to orchestrate hundreds of these experiences with
4 thousands of people who come here to see these wonderful
5 mammals.

6 Visitors come from all over the world, but
7 it is especially the Europeans who want to go to the Fundy.
8 The Governments are very pleased with the increase in
9 European visitors. Well, guess what? The number one thing
10 on their agenda is to whale watch. It is not just the
11 reason to be in our area. It is the main reason that they
12 are in the Province.

13 Nova Scotia is closer than Hawaii, New
14 Zealand or South America. Whale watching in the Fundy Bay
15 is a major tourist attraction.

16 I know this to be true because for 27
17 years I've operated a seasonally-blazed art and craft
18 gallery in Bear River. All of my business is done with
19 people who are travelling, and my staff and I pride
20 ourselves in welcoming and talking to everyone who visits
21 us, and I do mean engaging in conversation.

22 "Where are you from? Is this your first
23 visit? What have you been doing so far? What would you
24 like to do? Oh, you only have four days? Well, I would
25 strongly suggest you ditch the plan to see all of Nova

1 Scotia and Prince Edward Island, unless of course you've got
2 a Ferrari with prepared meals on board and you don't have to
3 use the bathroom", and so on.

4 One of the many things we suggest with our
5 itinerary is a whale watch. This suggestion is never
6 necessary, for they have either just come from one and
7 immediately recount every detail of the trip, or they have
8 already booked and are very excited at the prospect of
9 going.

10 Many people have watched birds on Digby
11 Neck and the Islands for years. The area was already
12 internationally recognized as a hot spot for ornithologists
13 and hikers.

14 Now, of course, the birders also go to the
15 Fundy to get a more intimate look at the pelagic birds.
16 Digby Neck and the Islands are naturally the last landhold
17 for thousands of migrating birds to rest from bad weather
18 before crossing the open sea.

19 The advent of whale watching in the mid-
20 '80s and its subsequent growth had dramatically increased
21 the time that visitors spend in our area. Before whale
22 watching, tourists were, at best, here for a few hours, and
23 now they may be here for days.

24 It is the economic engine that drives
25 tourism in southwest Nova Scotia.

1 So here we are, left by a naturally-
2 occurring, world-renowned ecosystem, the sort of beauty that
3 some countries have to spend billions of dollars to
4 artificially create, where the surrounding waters offer
5 livelihoods to hundreds in the fishery and thousands
6 directly and indirectly in tourism.

7 Into this pristine setting, our Government
8 has agreed to a process whereby a company will apply to run
9 a 50-year quarry operation. Dynamite will be used
10 regularly, and millions of tonnes of greenhouse gasses will
11 be released into the environment; an environment
12 acknowledged finally to being under siege from pollution.

13 And I mean world environment.
14 "Environment" is the whole world environment, as far as I'm
15 concerned. It's not isolated.

16 I wish our Government could've heard the
17 dismay and outrage expressed by tourists when, after an
18 experience of a lifetime on the Fundy, watching whales with
19 their families, they heard what kind of quarrying operation
20 could become a reality in the same vicinity.

21 In an area where tourism is the main
22 industry, in a province where tourism is already declining,
23 it makes no sense to endanger its premier attraction, and
24 for what?

25 A preponderance of blue-green pamphlets

1 flutter into our mailboxes, and through calm language and
2 attractive illustration seek to persuade us that the
3 Proponent will be an unobtrusive neighbour.

4 Dynamite is dynamite, and dust is dust,
5 and crushing rock is what it is, and a sanctuary is a
6 sanctuary. And my hope is that all of the small peaceful
7 fishing communities on Digby Neck and the Islands, whose
8 live and livelihoods are directly connected to this area of
9 the Fundy Bay, will be rewarded for their magnificent
10 efforts to stop the quarry.

11 --- Pause - Crying

12 **PRESENTATION BY ROB BUCKLAND-NICKS - QUESTIONS BY THE PANEL**

13 Dr. JILL GRANT: Mr. Buckland-Nicks, can
14 you give us an idea of what proportion of the families that
15 are in the tourism business have more than one member of the
16 family working in the tourism business in places like your
17 own and others that you're familiar with in this area?

18 Mr. BUCKLAND-NICKS: Could you say that one
19 more time? I didn't quite follow that.

20 Dr. JILL GRANT: I'm just wondering about
21 how often the tourism, those involved in the tourism
22 industry, like yourself, have more than one member of the
23 household working in the business?

24 Mr. BUCKLAND-NICKS: I would say they
25 definitely have more than one person working in the

1 business. Depends on the size of the family, really.
2 Personally, I'm a single person at the moment, but I have
3 two employees. But I think most families, in tourism
4 especially, accommodation and restaurants and certainly
5 whale watching, all have family members working, I would
6 say, yes. Is that the... I didn't quite follow it, really.
7 Sorry.

8 THE CHAIRPERSON: Mr. Buxton?

9 Mr. PAUL BUXTON: I have no questions,
10 thank you, Mr. Chair.

11 THE CHAIRPERSON: Questions from the
12 audience? None. Thank you very much, Mr. Buckland-Nicks.

13 Now we return to Jill Klein.

14 --- Pause

15 **PRESENTATION BY Ms. JILL KLEIN**

16 Ms. JILL KLEIN: My name is Jill Klein. I
17 was born and spent most of my life in the Washington, D.C.,
18 area. I retired from the U.S. Federal Government in 2002.

19 I know what unremitting noise and air
20 pollution can do to one's health. I picked my house in
21 Sandy Cove specifically because it was everything that
22 Washington, D.C., wasn't: clean, quiet, and uncongested.

23 When I stand in my backyard, I can hear
24 the wingflaps of chickadees flying from tree to tree, just
25 as clearly as I could hear cars crashing into each other a

1 mile or two away from my home in suburban Washington.

2 Two months after I bought my dream home
3 here in Sandy Cove, the deal for a mega-quarry was begun,
4 five miles from my house. This mega-quarry will change the
5 entire character of the region. It will be blasting,
6 crushing, and shipping two million tonnes of the salt a year
7 in freighters longer than two football fields end to end.

8 If it is reasonable to place an industrial
9 development of this magnitude in an agricultural community
10 on a small strip of land that is little more than 20 miles
11 long and two miles wide, then there is no place in Nova
12 Scotia where mining of this magnitude is inappropriate, and
13 that would include Citadel Hill in Halifax.

14 I visited Whites Cove in the summer of
15 2001, when it was still a place of great natural beauty.
16 Off its shore is the summer feeding ground of the endangered
17 right whale, the protected humpback, the minke, and
18 dolphins. Lobsters feed and grow off this shore, which is
19 part of the most productive lobstering fishery in the world.

20 A year later, Whites cove was
21 unrecognizable. Global Quarry Products, or Nova Stone, or
22 whatever they were calling themselves then, had grubbed off
23 all vegetation that was holding the soil on the hill.

24 If this project is approved, it will be an
25 ecological disaster that will run out the 21st century.

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1 On Friday of May 23rd, 2003, during a heavy
2 rain, Nova Scotia Environment and Labour was called because
3 a fisherman had reported seeing a plume of silt a half a
4 mile off shore.

5 My husband went down on Saturday to see
6 silted water running off the site into the Bay of Fundy, and
7 went again on Sunday, where there was a repeat of the
8 previous day's run-off.

9 The following Monday, three days after the
10 call to Environment and Labour, my husband escorted the
11 field inspector, Lovett Blades, to the site. I am holding a
12 copy of the field inspection report from Environment and
13 Labour signed by Mr. Blades.

14 On April 20, 2004, Kemp Stanton, President
15 of the Society for Sustainable Development, wrote a letter
16 with pictures of site degradation and a sworn statement to
17 Robert Petrie, District Manager of the Department of
18 Environment and Labour, requesting an investigation of
19 uncontrolled flow of sedimented water.

20 The quarry operator, now known as Bilcon,
21 told us that they are going to be good stewards of the land,
22 environment, and the Bay of Fundy. This statement is
23 inconsistent with a quarry of this magnitude. If the
24 precautionary principle means anything to Canadians, then
25 this quarry must be stopped. This is the wrong project for

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1 the wrong place.

2 And now I'm going to show you...

3 Actually, what you're looking at is a picture of run-off at
4 Whites Cove. More run-off. More run-off. Over-flowed
5 sedimentation ponds. More run-off. And as you can see,
6 gushing water. It's a river.

7 The same thing. And now it looks like a
8 river, well, actually it looks like a lake plus a river, and
9 if you look up in the trees you'll see two great streams
10 that are coming down the hill.

11 And these are the folks that we're
12 supposed to trust with Digby Neck and the home whales and
13 sea life.

14 That's all I have to say.

15 **PRESENTATION BY Ms. JILL KLEIN - QUESTIONS BY THE PANEL**

16 Dr. JILL GRANT: Can you just repeat the
17 date again? Did you say the plume of slit was reported on
18 the 23rd of May, 2003?

19 Ms. JILL KLEIN: That is correct. 2003. I
20 don't know whether you have a copy of my presentation, but -
21 -

22 Dr. JILL GRANT: And three days later, a
23 DFO inspector came and...

24 Ms. JILL KLEIN: That is correct. My
25 husband accompanied Mr. Blades to the site.

1 Dr. JILL GRANT: Were you satisfied with
2 the outcome of the investigation in that case?

3 Ms. JILL KLEIN: Well, if you read Mr.
4 Blades report, he says there was no siltation. Okay? But
5 if it takes three days to get there, I heard Mr. Petrie's,
6 or Rob Petrie's presentation yesterday in which he said that
7 he 80 inspectors who made 12,000 site visits. I don't know
8 whether the follow-up is the same on all of those site
9 visits, or obviously some of them are not the same. It's
10 not the same sort of situation where an occurrence is
11 happening.

12 But it's pretty obvious to me that the
13 Proponent knows there isn't going to be any investigation,
14 and they're not going to find anything. And in fact, Mr.
15 Petrie said he made site visits and never found any
16 siltation. So no, I was not satisfied.

17 Dr. JILL GRANT: To your knowledge, has
18 there been any repeat of that kind of problem from the site?

19 Ms. JILL KLEIN: Well, actually, the first
20 pictures that I showed you, somebody turned off the
21 pictures, were from 2004, and the last one... Please. The
22 last one was May 1st, 2005. Wait a minute. This one.
23 Which is two years ago. So you can imagine the devastation
24 to this area.

25 Dr. GUNTER MUECKE: And just for

1 clarification on the record, I think it was mentioned DFO.
2 I don't think we are talking about DFO here, are we? If
3 you're talking Nova Scotia --

4 Ms. JILL KLEIN: Did I say DFO? I meant --

5 Dr. GUNTER MUECKE: Somebody said, but it
6 was Nova Scotia, just for clarity, it was Nova Scotia
7 Department of Environment and Labour.

8 Ms. JILL KLEIN: It's Nova Scotia
9 Environment and Labour.

10 **PRESENTATION BY Ms. JILL KLEIN - QUESTIONS BY THE PROPONENT**

11 THE CHAIRPERSON: Mr. Buxton?

12 Mr. PAUL BUXTON: Thank you Mr. Chair. No
13 direct questions, but I might comment if I could that the
14 Whites Cove Road is actually not in the ownership of Bilcon.

15 Two of those photographs showed extreme
16 water coming down the Whites Cove Road. Bilcon has been
17 aware of this problem and has in fact used its own forces to
18 try to cure that situation.

19 DFO was in fact involved and came down
20 onto the site when the initial sediment pond was being
21 built, because of allegations of extreme siltation into the
22 Bay of Fundy.

23 I think... And I know the Panel has been
24 to the site, but it was perhaps not pointed out that at the
25 bottom of the Whites Cove Road, as it virtually reaches the

1 beach and then turns north, that all that material that had
2 scoured off the road is actually sitting on the beach and
3 has been scouring down for a long time.

4 Bilcon is unable to do anything about that
5 because we don't own the property, and one of the concerns
6 that we expressed to the Provincial Department of
7 Transportation was this situation, because every time
8 there's an extreme rainfall and the water falls down the
9 Whites Cove Road, and that stuff goes out into the sea, the
10 telephone gets picked up and a call is made to Environment
11 and to DFO, and we have to respond to those and go out and
12 point out where this siltation is coming from.

13 We would like to solve the problem, and we
14 have in fact, and I think I mentioned this, but allowed the
15 Department of Transportation and Public Works to divert
16 water onto our property, to go through the woodland so that
17 it picks up less silt on its way into the Bay of Fundy.

18 Thank you for allowing me that comment Mr.
19 Chair.

20 THE CHAIRPERSON: Questions?

21 Ms. JILL KLEIN: I have a question.

22 THE CHAIRPERSON: Please.

23 Ms. JILL KLEIN: If I may.

24 THE CHAIRPERSON: Please. A question
25 directed to?

1 Ms. JILL KLEIN: Actually, to the Panel and
2 Mr. Buxton, because Mr. Buxton alleges that as Bilcon's
3 representative... I assume that's what he is.

4 But anyway, that he has no direct control
5 over the land and the road, which seems illogical to me.

6 THE CHAIRPERSON: The road is owned by the
7 Province.

8 Ms. JILL KLEIN: That I know Sir, but when
9 that area was grubbed off, there is no possible way that
10 there could be anything but siltation, and that's why I made
11 the statement.

12 This is prologue to what is about to
13 follow if this quarry goes through. That's all I have to
14 say.

15 THE CHAIRPERSON: I saw some hands. Ms.
16 Peach?

17 **PRESENTATION BY Ms. JILL KLEIN - QUESTIONS BY THE PUBLIC**

18 Ms. JUDITH PEACH: I think I heard you say
19 that you were at the site before that grubbing happened, the
20 year before maybe?

21 Ms. JILL KLEIN: Yes, I was.

22 Ms. JUDITH PEACH: How would you compare
23 the condition of the road from that time to the next time
24 you went, after the slope had been grubbed?

25 Because I understand a lot of equipment

1 had to go down that road, a lot of heavy equipment went down
2 that road to do the work on the hill?

3 Ms. JILL KLEIN: It was never what one
4 would call a wonderful road. However, it changed from a
5 passable road, that other than a 4-wheel drive could get
6 down, to something that after the grubbing off and because
7 of the degradation to the whole area and the lack of
8 vegetation to hold silt, et cetera, it turned into this with
9 streams running down it all the time, and it's just a
10 travesty.

11 It's a moonscape. It doesn't even begin
12 to look like a normal area. It's really... It's so sad, I
13 mean...

14 THE CHAIRPERSON: Are there... Yes, sure.

15 Dr. JILL GRANT: Mr. Buxton, perhaps you
16 could give us an idea what kind of equipment had to go down
17 that road to do the grubbing and initial clearing,
18 preparation of the sediment ponds on the site?

19 Mr. PAUL BUXTON: To the best of my
20 recollection Dr. Grant, there was a truck, certainly a
21 backhoe and an excavator, and they would have made
22 essentially one trip down the road, and one trip back out
23 again.

24 Perhaps the truck went out at night, but I
25 doubt it because the top soil that came off the stripped

1 area was stored on site, so nothing was taken off site.

2 So the small excavation group would have
3 gone in. I think the work took about three weeks, something
4 like that, possibly four, and then left the site.

5 Just again to I guess sort of explain a
6 little bit, when a site is grubbed off, it's impossible to
7 stop a certain amount of siltation, but the whole point is
8 you stop it from getting into receiving waters.

9 There is a deep ditch at the bottom of
10 that slope, which has been cleared, which leads into the
11 sediment pond.

12 So yes, sediment does come down off that
13 slope. It doesn't anymore, because it has all come down.
14 And it goes into the sediment pond, which is its function.
15 Thank you.

16 THE CHAIRPERSON: Mr. Mahtab? I can't see
17 very well. Yes.

18 Mr. ASHRAF MAHTAB: Thank you Mr. Chair. I
19 would like to know if the last picture that Jill showed was
20 a picture of the water overflowing the sedimentation pond,
21 and if that is the case, that could be a serious thing.

22 The sedimentation pond is not performing
23 its function?

24 THE CHAIRPERSON: Can someone remove this
25 thing?

1 Mr. ASHRAF MAHTAB: This picture, I want to
2 ask if this is actually the sedimentation pond and the water
3 is overflowing towards the Bay, towards my right.

4 The water is flowing from the
5 sedimentation pond towards the Bay, and that is... The pond
6 is supposed to contain the sediments.

7 THE CHAIRPERSON: Well...

8 Mr. ASHRAF MAHTAB: If that is the case.
9 I'm asking you if that is a picture...

10 Ms. JILL KLEIN: I...

11 THE CHAIRPERSON: Ms. Klein may not be
12 aware of what the sediment pond is, so she may not be able
13 to identify that. I can't speak for her.

14 Maybe that question should be directed to
15 Mr. Buxton?

16 Mr. ASHRAF MAHTAB: Yes.

17 THE CHAIRPERSON: I don't know.

18 Mr. ASHRAF MAHTAB: Well, if Mr. Buxton
19 would answer the question, I would appreciate it.

20 Mr. PAUL BUXTON: What that appears to be
21 Mr. Chair, looking from the west is the east along the north
22 side of the sediment pond.

23 I'm not quite sure, but I'm pretty sure
24 that's what it is.

25 In your bottom left-hand corner, which you

1 can't see, is an overflow. There's a pipe through the
2 natural berm, which is there, and perhaps I should just give
3 a little bit of background to this area.

4 This is the old pit area that you're
5 looking at. And all the material that was taken out of this
6 area was taken out in the late forties, early '50s, to build
7 Highway 217, or at least that is what I am led to believe
8 anyway.

9 The water that you see coming down the
10 hillside is basically fresh water. It doesn't come over
11 what was then the 4-hectare site.

12 The water gathered on the left-hand side
13 is basically clean water off the hillside, and it simply
14 goes out through a pipe into the Bay of Fundy.

15 On your right-hand side is the
16 sedimentation pond, and that sediment pond was designed to
17 see what perhaps the holding capacity was of the natural
18 materials that were there.

19 There is berm, which you can't see, which
20 would be on the bottom of the picture running from left to
21 right, is actually a natural berm. It's what was left when
22 the material was excavated to the west of that.

23 One of our intents was to see how quickly
24 the water might filter through there, what its holding
25 capacity might be, and not on this picture but if you can

1 imagine to your right-hand side, the other side of the
2 settling pond is an overflow, and that overflow goes into a
3 channel, then through three check dams which are built of
4 bails of hay, which are covered then with barrier material
5 to extract any sediment, and then are covered with rock.

6 So this only gives you a little bit of the
7 picture here, and when it goes through those three check
8 dams, it then goes into a natural drainage area, which is
9 there at the moment, and it eventually goes into the Bay of
10 Fundy.

11 And again unfortunately, on occasions, in
12 fact on numerous occasions, those check dams were torn down
13 and had to be rebuilt.

14 For situations such as overflow or unusual
15 events, we use to keep 200 bails of hay on the site, and
16 every time we broke down another load of 200 bails of hay,
17 they would be burned the same day.

18 So yes, we did have difficulties on the
19 site, in trying to maintain the site. The actual perimeter
20 of the settling pond is basically used as a bit of a raceway
21 for ATVs, and through the existing wetland which is there,
22 through which the water flows to go into the Bay of Fundy,
23 but I would remind anybody looking at these pictures that
24 this did not intend to represent a quarry development, it
25 was intended to look at the depth of overburden, which might

1 need to be removed, how quickly it could be removed, what
2 the cost of removal would be, how we might build settling
3 ponds, the effectiveness of check dams and that sort of
4 thing.

5 And over the course of the last three or
6 four years, I think we have gained some very valuable
7 knowledge out of that construction.

8 Thank you.

9 THE CHAIRPERSON: Does that answer your
10 question Mr. Mahtab?

11 Mr. ASHRAF MAHTAB: No Mr. Chair, this
12 was... The answer was very confusing, very spread out. It
13 didn't say whether the berm over which the water is flowing
14 is a part of the siltation pond (sic) or sedimentation pond
15 or not.

16 THE CHAIRPERSON: I thought Mr. Buxton said
17 that the berm was off to the side and the sediment pond was
18 on the right?

19 Mr. ASHRAF MAHTAB: Okay. Therefore, there
20 is a flow over the berm. That's all I wanted to know.

21 THE CHAIRPERSON: Okay.

22 Mr. ASHRAF MAHTAB: Thank you.

23 THE CHAIRPERSON: Yes, please. Can you
24 identify yourself?

25 Ms. MARY MCCARTHY: I'm Mary McCarthy, a

1 registered participant for this Panel Review.

2 THE CHAIRPERSON: Thank you.

3 Ms. MARY McCARTHY: I've seen through the
4 freedom of access to information a cautionary directive from
5 DFO about the runoff from the hillside and the ponds. DFO
6 gave a time limit for Global Quarries to remedy this.

7 It's a long time since I read this
8 directive to Global Quarries, but I do know that there was a
9 time limit set for Global Quarries to remedy this.

10 Now I'm just wondering why...

11 THE CHAIRPERSON: Sorry, remedy this
12 meaning what?

13 Ms. MARY McCARTHY: Remedy the damage that
14 was done by this overflow. So I'm asking if this is
15 connected to the overflow that we have seen today, I'm sure
16 the Proponents are familiar and could update us on that
17 information and cautionary note by DFO, where they were
18 given a time limit to remedy the situation.

19 Because I'm kind of confused how many
20 times this had happened, this overflow?

21 As far as I know, this was an overflow...
22 I'm talking about an overflow from the ponds. Thank you.

23 THE CHAIRPERSON: Any additional...

24 Mr. PAUL BUXTON: I think I can shed some
25 light on that, if it was a question Mr. Chair.

1 THE CHAIRPERSON: Yes.

2 Mr. PAUL BUXTON: DFO, as I think I have
3 already stated, did come down onto the site. There was a
4 formal complaint made and signed, and they came down and
5 investigated the situation.

6 They issued an inspector's directive,
7 which is a formal proceeding which essentially asked us to
8 monitor the outflow into the Bay of Fundy and to provide
9 those monitoring results to DFO, which we did for a year,
10 and since there was no sediment or very little going in,
11 actually less than background, going into the Bay of Fundy
12 for a year, they lifted the inspector's directive.

13 I can also add that we were convinced that
14 the major plume that went into the Bay of Fundy was in fact
15 off the Whites Cove Road.

16 So we commissioned a specific study to
17 look at the beach pools in the area in front of our sediment
18 ponds and across to where the Whites Cove Road discharges
19 into the... Well, the drainage from it discharges into the
20 Bay of Fundy.

21 That study, which was done by Dr.
22 Brylinsky, is in fact in our EIS, and I think that... I
23 think that we demonstrated that there was no inorganic silt
24 found in the beach pools, in the rock pools adjacent to our
25 activities.

1 Thank you.

2 THE CHAIRPERSON: Anything further? Yes

3 Ms. Peach.

4 Ms. JUDITH PEACH: Soon after the hillside
5 was grubbed and the ponds were built, and there was a ditch
6 leading from the base of the grubbed hillside into the pond,
7 one of the ponds, and the water didn't flow very well
8 because the grading was the wrong way, so it was leading
9 down, leading the water into the pond, but in fact holding
10 it back.

11 I don't know if anyone else remembers
12 that, but that didn't help with the overflow when there was
13 a big rain event.

14 THE CHAIRPERSON: Okay. Anything further?

15 It appears not. Thank you Ms. Klein.

16 The final presenter for today is Lawrence
17 Outhouse. Is Lawrence Outhouse here? Yes.

18 **PRESENTATION BY Mr. LAWRENCE OUTHOUSE**

19 Mr. LAWRENCE OUTHOUSE: My name is Lawrence
20 Outhouse, I live in Tiverton.

21 I've made previous submission for the
22 response for the Draft Guidelines, and first, I'd like to
23 thank the Panel for bearing with me.

24 I apologize for being late in getting my
25 things in, and I thank Debbie for helping me get things in

1 order.

2 I'm one of those seniors that Father Mills
3 talked about that's probably so busy, he's gotten a little
4 bit behind, but I'll get right on to my presentation because
5 we're running over time.

6 I would just like to say that I'm pleased
7 that the concerns I raised in my response to the Draft
8 Guidelines for the Environmental Impact Statement were
9 covered in the final definition of the impact study.

10 A review to these basic concerns is the
11 topic of my present submission, as it appears that they have
12 not been fully responded to by the Proponent's Project.

13 The first of these is that the concept of
14 a marine terminal as has been proposed on the open Bay of
15 Fundy shore at Whites Cove astounds me.

16 To imagine that such a terminal used to
17 dock 70,000 gross-ton ships in a competitive commercial
18 operation could function over a 30 to 50 year period without
19 a serious environmental accident is incredulous.

20 My other and greatest concern is that
21 based upon the background information I've been able to
22 access regarding the potential market for aggregate, if
23 approved, this Project would most probably be a financial
24 success, at least initially.

25 Assuming this to be the case, it would be

1 only the first of any such projects from Long Island to Cape
2 Split. This becomes a political problem more than an
3 environmental problem.

4 With this particular project I mean. The
5 environmental problem is not with this particular project,
6 it's with the expansion of these projects.

7 I bluntly do not believe that our
8 governments have given proper concern for the long term
9 potential for basalt from the North Mountain of Nova
10 Scotia.

11 If this is to become a major industry in
12 our area, it is essential that long-term environmental and
13 socio-economic studies beyond the scope of this Project be
14 carried out and appropriate legislation enacted, prior to
15 the approval of this project, in order to ensure that the
16 maximum benefit is derived from the resource.

17 With NAFTA in place, it would become
18 partly impossible to reject any other project or change the
19 rules for how they should operate once we have approved or
20 you have approved this Project.

21 Now to get a little more detail on the
22 marine terminal, I found it interesting to find on
23 Wednesday that the representative of the Atlantic Pilotage
24 Authority expressed concerns about the concept of the marine
25 terminal that agree with my assessment.

1 I understand that no detailed design of
2 the terminal has yet been presented for review by the Panel,
3 or for the appropriate DFO and Canada Transport officials.

4 To leave such a major part of the Project
5 out of the detailed review process is unacceptable. In the
6 short time I spent at these hearings on Tuesday, June the
7 19th, the representatives of the Nova Scotia Department of
8 Natural Resources, in response to a question, implied that
9 the Bay of Fundy coastline on Digby Neck and Islands was not
10 considered an exposed coastline.

11 If Bilcon are using this type of
12 assessment to assume there will not be major problems
13 related to the proposed marine terminal, then I suspect they
14 will be in for some major problems once this Project has
15 been approved.

16 As suggested by the Atlantic Pilotage
17 Authority, before any such terminal is approved for
18 construction and use, a major long-term study of the risk
19 conditions resulting from the wind, sea and tidal effects on
20 such a terminal should be carried out.

21 I have a rhetorical question now, but that
22 could be answered later, for the Proponent.

23 Have the insurers of the shipping company
24 been consulted as to whether they would provide insurance
25 for the ships docking at the proposed terminal and if so,

1 what conditions would be applied for the docking?

2 Just hypothetically for a moment, let us
3 assume that approval for this Project is given with all the
4 suggested compensation, safety precautions and remedial
5 environmental requirements put in place, and then Bilcon
6 discovers that: "Guess what, this terminal on the Bay of
7 Fundy shore is not operationally viable."

8 What will be their alternative to overcome
9 this problem?

10 After all the investment that they will
11 have made at this point, it would not seem right not to
12 provide them with some alternative.

13 This would be their demand I'm sure, and I
14 would assume it would be supported by at least the Nova
15 Scotia Department of Natural Resources.

16 It doesn't take much effort to come up
17 with the idea that a similar terminal located on the St.
18 Mary's Bayside of Digby Neck would function quite well.
19 That side of the Neck is not an exposed seacoast.

20 I will leave it to you all to consider if
21 the assumed approval we're talking about would have been
22 granted if the original marine terminal for this project had
23 been located on the St. Mary's Bayside shore near Little
24 River, particularly as such an operation was rejected over
25 10 years ago.

1 What I'm saying is that if that might be
2 the outcome of this, then we should be considering the
3 problems that would be associated with a terminal on St.
4 Mary's Bay, as well as one on the Bay of Fundy.

5 And I really think that it's essential
6 that we have full disclosure and full studies made as to the
7 viability of the terminal.

8 As for the potential effects... Or no, as
9 for the potential of aggregates and the effect of additional
10 quarries, I understand, and I may be incorrect in this, that
11 the simple reply from Bilcon to this question was that they
12 had no intention or plans for developing other quarries in
13 our area, and I assume this is correct.

14 However, it does not address what the
15 intent, or certainly my intent of that question was.

16 As a parent company of Bilcon, Clayton
17 Concrete is a major supplier of aggregate in the U.S. One
18 would assume that they would be one of the most reliable
19 sources for the Panel to get information from regarding the
20 potential for aggregate development along the North Mountain
21 and the coast to the Bay of Fundy in Nova Scotia.

22 The Panel then would be able to make an
23 assessment as to whether this would be a single, one
24 operation or if there might be more to follow.

25 Certainly, the environmental effects on

1 whales, potential pollution of the Bay, introduction of
2 foreign species would be considerably greater if within the
3 next 20 years we might anticipate 20 more such quarries in
4 operation from Long Island to Cape Split.

5 I understand that this is not really
6 Bilcon's problem, however it is a problem that all the
7 provincial, federal and environmental agencies should have
8 to take into consideration.

9 It is also a socio-economic problem as it
10 would mean the whole area would be changed from a fishery-
11 and tourism-based economy to a mining community, with all
12 the related effects that this would bring.

13 I'm not certain if this Panel has been
14 presented with data on the magnitude and potential of the
15 aggregate industry in North America, but in case they
16 haven't, I have provided you with a copy, not part of my
17 thing here, but of the U.S.G.S. 2005 Minerals Yearbook for
18 crushed stone.

19 I would just like to go over a few numbers
20 in that, and I think I'll keep it brief because we're trying
21 to get out of here.

22 To summarize, the 2 million tonnes of
23 aggregate from the proposed Project represents less than 1
24 percent of the aggregate used in the northeast section of
25 the U.S.

1 Assuming the product from our area is high
2 quality and the combined cost of production and shipping are
3 less than that from the local inland sources, it is not
4 difficult to assume 20 such operations would have no problem
5 finding a market along the eastern seaboard in the U.S.,
6 because they would only represent 20 percent of the market.

7 If they can produce a quality cost-
8 efficient material, there should be no problem to expand to
9 that amount.

10 It also does not take much time going on
11 the Internet to discover markets around the world for
12 aggregate which is available from a suitable marine
13 terminal.

14 In summary, much of what I have discussed
15 may appear to be outside the scope of this hearing, however
16 I believe it is essential for the Panel to take these items
17 under consideration in their determinations and obtain more
18 information, where necessary, to reach the proper
19 conclusions and make the necessary recommendations to ensure
20 full consideration is given to these items by the Proponent
21 and the appropriate government authorities.

22 Thank you.

23 THE CHAIRPERSON: Thank you Mr. Outhouse.
24 Gunter?

25 PRESENTATION BY Mr. LAWRENCE OUTHOUSE - QUESTIONS BY THE

1 **PANEL**

2 Dr. GUNTER MUECKE: You mentioned that you
3 would like to see some extra legislation. Is that
4 legislation regarding quarries or aggregate taxes or...
5 Could you give us some indication?

6 Mr. LAWRENCE OUTHOUSE: What I would like
7 to see is proper consideration by the Government as to
8 what...

9 You know, it appeared from some of the
10 presentations made here that they're very much in favour of
11 turning this into a mining community, and surely if they
12 think they should do that, we should get the maximum benefit
13 from it.

14 We should ensure there's proper
15 regulations on that can contain these developments when
16 necessary, and I don't think they're in place at the present
17 time, and it will be impossible to put them in place once
18 this quarry has been approved.

19 Dr. JILL GRANT: Thank you for your
20 comments about the aggregate industry in the U.S. You
21 suggested that it wouldn't be unusual for Nova Scotia to
22 potentially be able to supply 20 percent of the market.

23 What do you base that conclusion on Mr.
24 Outhouse?

25 Mr. LAWRENCE OUTHOUSE: Well, it's based

1 somewhat on the information provided by Bilcon, that they
2 can land this material at their depots along the coast of
3 the U.S. cheaper that they can get the material from their
4 own markets.

5 The market is expanding, there's... And
6 to go up to 20 percent, if you're supplying a better
7 product, does not seem to be an unreasonable thing to reach
8 here.

9 And I'm not saying Bilcon is going to try
10 to do this, they're just one... Or Clayton Concrete is just
11 one of a number.

12 And as far as I can tell from the Internet
13 Search, they aren't mentioned amongst the top 20 aggregate
14 companies in the U.S.

15 Now that may be because they haven't
16 disclosed information, but...

17 There's also... There's things that
18 Bilcon could put in this... Going through the report that
19 you have, you find that basalt isn't even mentioned as an
20 aggregate material. It's part of the tap rock.

21 And I don't know... And the tap rock
22 includes basalt and other things, but I am not sure...
23 Bilcon could give you a better idea or somebody doing some
24 more research, but whether the Basalt we have is a quality
25 material. The rumour you get here is that it's the very

1 best.

2 You do find in England aggregate people
3 who brag about the quality of their basalt aggregate, but
4 I'm not an expert, I just seem to have a feeling that this
5 basalt, if it's high quality, would be a seller.

6 Dr. JILL GRANT: And that concurs with what
7 Mr. Buxton told us the other day, that it's a very high-
8 quality product.

9 Can you give us a little bit more detail
10 about the points you raised about St. Mary's Bay?

11 You suggested that since the exposed coast on
12 the Bay of Fundy may be inappropriate for a terminal of the
13 sort, that St. Mary's Bay might be an alternative site?

14 Is that a worry of the community or is
15 that a suggestion that you're making? Can you just clarify
16 that?

17 Mr. LAWRENCE OUTHOUSE: It's very much a
18 worry of the community. St. Mary's Bay is the most
19 lucrative lobster fishing area, and to get to it you would
20 have to go the whole way along St. Mary's Bay.

21 I don't think the ships would want to go
22 through Petit Passage with the tide, so you would run the
23 whole way along St. Mary's Bay, out beyond Brier Island, and
24 you would be going...

25 The ships would be traversing one of the

1 most lucrative lobster fishing areas in the world. And over
2 10 years ago, a proposal was put forward to put a quarry and
3 a terminal on the shore of St. Mary's Bay, just near Little
4 River, and it was...

5 It didn't get to the hearing level, it was
6 rejected by everybody and the politicians long before that.

7 So it became known that this was not a
8 place... You know, you couldn't get approval for doing
9 that.

10 I'm saying that once Bilcon has invested
11 money, and they certainly have invested money, but if they
12 haven't established that their terminal is going to work
13 before they start, they shouldn't be allowed if it doesn't
14 work to suggest that they could transport this across the
15 neck to St. Mary's Bay and put a terminal in there, that's
16 it.

17 Dr. GUNTER MUECKE: I guess it's sort of
18 fairly new to us that such a proposal was ever made. To
19 what stage did it get in terms of let's say the Department
20 of Environment?

21 Was it ever submitted to them or was this
22 just discussions which basically ceased after the community
23 rejected it?

24 Mr. LAWRENCE OUTHOUSE: As I understand, it
25 was stopped politically by the outcry from the community

1 before it got into any detailed assessments.

2 However, there are some people here who
3 could answer that question better than I, so if one of them
4 would like to speak up, I...

5 **PRESENTATION BY Mr. LAWRENCE OUTHOUSE - COMMENTS BY THE**
6 **PROPONENT**

7 THE CHAIRPERSON: Mr. Buxton?

8 Mr. PAUL BUXTON: Thank you Mr. Chair, no
9 questions, but just perhaps a couple of clarifications.

10 Bilcon is not an aggregate company, so it
11 would never be found in a list of aggregate suppliers. It
12 is a supplier of concrete and concrete block, and it does
13 not pave roads.

14 Thank you.

15 THE CHAIRPERSON: Any questions from the
16 audience? Oh, there's a hand.

17 **PRESENTATION BY Mr. LAWRENCE OUTHOUSE - QUESTIONS BY THE**
18 **PUBLIC**

19 Ms. WANDA VANTASSEL: Hi, my name is Wanda
20 Vantassel, and I'd like to ask Mr. Outhouse a couple of
21 questions.

22 When you talk about...

23 THE CHAIRPERSON: Would you ask the
24 questions this way, and then...

25 Ms. WANDA VANTASSEL: I'm just wondering if

1 it's not a good idea or if they prove that they can't put
2 the marine terminal down where Whites Cove Quarry would be,
3 I'm just wondering if there's other alternatives which could
4 possibly be up towards Gulliver's Cove?

5 Mr. LAWRENCE OUTHOUSE: No, I don't think
6 in terms of a marine terminal that there would be any
7 alternative along the Bay of Fundy coast until you got up in
8 the Digby [inaudible].

9 Ms. WANDA VANTASSEL: Okay. And my second
10 question is, like I heard you, and you kept mentioning how
11 these quarries could keep coming in and stuff.

12 Have you ever heard anything on a quarry
13 come into Gulliver's Cove? Digby Neck?

14 Mr. LAWRENCE OUTHOUSE: Yes, I have been
15 told by... And I can't disclose the source, but I'm going
16 to say a reliable source, that inquiries have been made to
17 DFO in discussions carried out by a company who has property
18 already in its possession at Gulliver's Cove, who are just
19 waiting for the results of this Panel Review and these
20 hearings to go forward with a quarry at least the size of
21 this one. It was implied that it would be bigger.

22 Ms. WANDA VANTASSEL: And that's my fears
23 of what could happen here, because I really feel... I've
24 heard the story, and my husband was on a beach, and he met
25 up with a company, it was a guy from Dartmouth which was

1 down in the area and he was doing some work for people in
2 the States, and they were talking about putting in a wharf,
3 and this company wanted to know if it could be done.

4 I have information that one day I'm
5 hoping I can get to come before this Panel is all done, and
6 I want to talk to you guys and share some of the stuff that
7 I have learned.

8 I've called to make an appointment, but I
9 haven't received a phone call.

10 THE CHAIRPERSON: Well, you should talk to
11 the Secretariat before you leave today.

12 Ms. WANDA VANTASSEL: Okay.

13 THE CHAIRPERSON: Okay? And we'll see if
14 it's possible. I don't know if it's possible, because the
15 schedule is very tight.

16 And you can put something in writing if
17 you want to. But if you wish to speak, I mean you have to
18 see them and see whether we can fit you in.

19 Ms. WANDA VANTASSEL: Okay.

20 THE CHAIRPERSON: Okay?

21 Ms. WANDA VANTASSEL: Thank you.

22 THE CHAIRPERSON: Anyone else? Yes,
23 there's a hand.

24 Ms. CHERYL DENTEN: Hi, my name is Cheryl
25 Denten, and I am a registered participant.

1 I would just like to comment on the
2 proposed marine terminal in the St. Mary's Bay 15 years
3 ago.

4 That was ongoing throughout the four-year
5 battle at that time, and it is a very real concern of the
6 citizens of Little River today because what we're afraid of
7 is mitigating circumstances, and that this is indeed what
8 the company may want.

9 It is the deepest sheltered harbour where
10 they could bring those ships up into, in St. Mary's Bay.

11 THE CHAIRPERSON: You remember the
12 circumstances of... I mean, Mr. Outhouse was saying that it
13 didn't go to a hearing, it was discussed in the community
14 and that action was taken so that it never went any
15 further?

16 Ms. CHERYL DENTEN: Yes, that's right. It
17 was discussed in the community. There was a meeting at
18 Sandy Cove Hall where Mr. Buxton brought the owner of
19 Riverside Construction Materials, and he was the gentleman
20 who was looking to put a quarry on Eastern Head, and that
21 was discussed I believe at that meeting that they would need
22 to put a terminal in, and that's where they would have liked
23 to put it at that time.

24 And it was even good money wise. They
25 said it would be a \$10 million terminal at that time. And I

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1 believe that was in the newspapers at that time.

2 THE CHAIRPERSON: Thank you.

3 Ms. CHERYL DENTEN: You're very welcome.

4 THE CHAIRPERSON: If not, then we will
5 close for the day. Thank you Mr. Outhouse.

6 We'll adjourn until 9:00 tomorrow morning.

7 --- Whereupon the matter was adjourned at 5:18 p.m. to
8 resume on Saturday, June 23, 2007, at 9:00 a.m.