

PUBLIC HEARING

WHITES POINT QUARRY AND MARINE TERMINAL PROJECT

JOINT REVIEW PANEL

V O L U M E 4

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

PLACE HEARD: Digby, Nova Scotia

DATE HEARD: Wednesday, June 20, 2007

PRESENTERS: -Bilcon of Nova Scotia
Mr. Paul Buxton
-Transport Cda and Atlantic Pilotage Authority
Jim Cormier/John Prentiss/Gary MacCaul/Steve
Bone/Patrick Gates/Mike Freeman/Alan Milne
-Fisheries and Oceans Canada
Mike Murphy/Dave Bishara/Ian Marshall/David
Millar/John Tremblay/Ted Potter/Kent Smedbol
Tana Worcester/Tony Henderson/Norman Cochrane
-Dalhousie University
Mr. Chris Taggart
-Jerry Ackerman
-Leslie Wade
-Linda O'Neil

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Per: H el ene Boudreau-Laforge, CCR

OPENING REMARKS
(Mr. ROBERT FOURNIER)

1 Digby, Nova Scotia

2 --- Upon resuming on Wednesday, June 20, 2007, at 9:00 a.m.

3 THE CHAIRPERSON: Ladies and gentlemen, I
4 would like to get underway please.

5 Let me begin by introducing the Panel.
6 Some of you are new to this Panel event. On my left is Jill
7 Grant, who is a professional planner by training; on my
8 right is Gunter Muecke, who is an earth scientist by
9 training; and my name is Robert Fournier, and I am an
10 oceanographer.

11 A couple of housekeeping things I would
12 like to bring to your attention. There are headsets
13 available for everybody in the audience if you chose to use
14 it.

15 People are using them for two reasons.
16 One is because of translation. Presentations can be made in
17 French or English, so we have simultaneous translation
18 services.

19 Other are using them simply as a way of
20 augmenting the sound, because the acoustics in the room are
21 not so good. So if anybody feels they cannot hear very
22 well, then putting a set of headphones on makes it a lot
23 clearer.

24 I should also remind you once again that
25 every day, the schedule is revised, so the Secretariat has

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OPENING REMARKS
(Mr. ROBERT FOURNIER)

1 the revised schedule for today available for you, and I
2 believe there are some changes that have been made from
3 yesterday to today.

4 I have been asked by the Secretariat to
5 tell you the fact that the microphone is a little bit
6 unusual. You have to keep a six to eight-inch distance to
7 it.

8 If you get too close, it pops and it
9 disconnects, and if you get too far away, it doesn't carry.
10 The other thing is that if you're at a microphone, please
11 turn it off when you're not speaking. They seem to conflict
12 with each other.

13 Finally, I'd like to mention the subject
14 of undertakings. We have accumulated a few more
15 undertakings, which I will read for you.

16 Number 19, which is due on the 20th, and
17 that's today, is to convert a 140-mesh size referred to
18 during the June 18th hearings to millimetres. So 140 mesh
19 of course is the mesh used to separate out the material
20 which would be used in the quarry, and we need a conversion
21 to millimetres. That is due today.

22 Number 20, which is due on the 29th of
23 June, is to provide a drawing of the quarry property coastal
24 zone illustrating the forested areas and the areas of
25 coastal barrence.

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OPENING REMARKS
(Mr. ROBERT FOURNIER)

1 Number 21, which is due on the last day,
2 which is the 30th, is to provide, if possible, air photos,
3 preferably from the 1940s, illustrating the location of the
4 Whites Cove Road, with an emphasis of the west portion
5 approaching the Fundy shore.

6 Number 22, also due on the 30th, will
7 advise if shipping related noises were included in the
8 evaluation conducted by the Department. And I believe that
9 is in reference to Health Canada. Health Canada is the
10 party being asked to produce that.

11 Number 23, Bilcon is being asked to
12 provide calculations behind Bilcon's emission estimates, and
13 these are carbon dioxide estimates of 80,000 tonnes. That
14 is due on the 28th.

15 Number 24, the Nova Scotia Department of
16 Natural Resources has been asked to provide on the 22nd
17 information of buffers, buffer requirements for coastal
18 areas in other jurisdictions.

19 And finally, number 25, the Mining
20 Association of Nova Scotia has been asked to produce on the
21 29th a comparison of job intensity figures in the mining,
22 fishing, forestry and tourism industries based on
23 contributions to the GDP.

24 One final point is that some of the
25 previous undertakings are due today.

OPENING REMARKS
(Mr. ROBERT FOURNIER)

1 Mr. Buxton, number one, which was to
2 provide a drawing of a cross-section of the marine terminal
3 with the observation post identified.

4 Number 11. This one, the date on my
5 sheet says the 21st, but as I understand it we agreed that
6 this would be provided when your blaster was here, and this
7 was to provide references for the levels of residual ammonia
8 resulting from modern blasting techniques.

9 I believe there was one more
10 undertaking, yes. Number 19, this was to convert... Oh
11 yes, to convert the 140-mesh size.

12 So there were three undertakings, two
13 which are officially for today and that third for the 21st I
14 think is actually due for today, so...

15 Mr. PAUL BUXTON: Thank you Mr. Chair. I
16 believe some of them have already gone across and are on
17 record.

18 THE CHAIRPERSON: We'll check by the
19 break. I'll check with the Secretariat.

20 Mr. PAUL BUXTON: Thank you.

21 THE CHAIRPERSON: Have they been
22 received? We don't know yet, so we'll check at the break
23 then.

24 Mr. PAUL BUXTON: Thank you.

25 THE CHAIRPERSON: Okay. The agenda for

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1 today is... I should backtrack a moment and say that this
2 morning is a marine morning, that is marine-related issues
3 will be dealt with this morning, and there will be three
4 presentations.

5 There will be a presentation by Bilcon
6 of Nova Scotia, there will be a presentation by Transport
7 Canada, and then there will be a presentation by Fisheries &
8 Oceans Canada.

9 DFO will actually extend into the
10 afternoon, I believe the questioning will anyway.

11 So we will commence this morning with a
12 presentation by Bilcon.

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

14 Mr. PAUL BUXTON: Thank you Mr. Chair.
15 Can everybody hear at this level? Thank you.

16 Today's presentation as the Chair
17 pointed out from Bilcon is on the marine environment, and
18 this is an extensive subject.

19 We tried to keep it as brief as
20 possible, and I think that we may be just a few moments over
21 30 minutes, but I will do my best to get through in that
22 time.

23 The outline first. We will be giving
24 background. We will characterize the existing marine
25 environment, its physical environment and the biological

1 environment.

2 We will briefly touch on the effects
3 assessment for marine animals, fish, other biota and the
4 effects of the environment on the Project, and then we will
5 reach some conclusions.

6 The Project team, the consultation firms
7 are AMEC Earth and Environmental, Atlantic Marine Geological
8 Consulting Ltd, Canadian Seabed Research, JASCO Research,
9 LGL Ltd.

10 And there are a significant number of
11 project-team individuals, most of whom are here today.
12 Today, we have a significant number of experts in
13 attendance, and there they are: Michael Brylinsky, marine
14 biology; Patrick Campbell, physical oceanography; Scott
15 Carr, marine acoustics; Gordon Fader, marine geology; Glenn
16 Gilbert...

17 Actually, I think that is being covered
18 by Patrick Campbell.

19 We have David Kern, environmental
20 planning; John Melick for blasting; James Ross, fisheries
21 habitat compensation and Uwe Wittkugel on environmental
22 assessment.

23 So we look at existing marine
24 environment first.

25 We have carried out 17 marine biological

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1 surveys and studies: Intertidal habitat and communities;
2 Plankton/zooplankton communities; Near-shore macroflora and
3 fauna; Waterbirds; Migratory birds; Marine mammals; the IboF
4 Salmon and invasive species.

5 For marine physical investigations, we
6 have looked sediments (quality, transport and the bedrock);
7 the water quality (suspended solids, and the chemistry of
8 the water); physiography and bathymetry (sidescan sonar);
9 and the contaminants in the water.

10 The results generally are that the
11 conditions off the site are generally speaking pristine.
12 The concentration are below interim sediment quality
13 guidelines and probable effect levels.

14 Only copper concentrations are near the
15 guidelines limits due to high background levels.

16 With respect to physical oceanography,
17 in physiography and bathymetry, we have determined that
18 where the marine terminal is, we are on exposed rock basalt,
19 and we have water depths of the berthing dolphins of
20 approximately 16 metres.

21 We have carried out a preliminary review
22 for conceptual design of tides, currents, winds, waves,
23 storm surges and ice.

24 This is a representation of what was
25 scanned by the sidescan sonar, which was carried out by

1 Canadian Seabed Research.

2 The area of the marine terminal... This
3 is the marine terminal here, and this area with the squared
4 hatching, is in fact bedrock.

5 In this area, there is a very thin layer
6 of sand overlaying the bedroom. Here and here are the
7 marine sediments. In this specific area again, we are on
8 bedrock.

9 This is the cross-section we've seen
10 before in other presentations of the marine terminal, and
11 you can see it on the pipe piles allowing the currents to
12 flow between the piles and create a minimum disturbance for
13 currents flows and minimum disturbance to the marine
14 habitat.

15 The existing fish habitat, we have
16 looked at intertidal communities, benthic habitats and
17 communities, pelagic habitats and their communities, the
18 plankton community, the nekton community and benthic-pelagic
19 interactions.

20 The Bay of Fundy marine biota with
21 Federal Conservation Status. For marine mammals, we have
22 the whales, the North Atlantic Right Whale, Blue Whale
23 (which is occasional in the Bay of Fundy), the Harbour
24 Porpoise and the Fin Whale.

25 Marine fish, we have a significant

1 number, and these were added to quite recently, after the
2 EIS was presented, and we have updated the EIS to reflect
3 the new additions. Waterbirds and other species, like the
4 leatherback turtle.

5 It should be remembered that this list
6 is a movable list if you would like. It gets added to,
7 possibly even deleted from, but it is not a static list. It
8 will change throughout the Project.

9 This is just the generalized jotted
10 marine resources, developed partly from information from DFO
11 and partly by a local organization, the Western Valley
12 Development Authority.

13 So there's a significant amount of
14 traditional knowledge in here combined with more specific
15 knowledge from DFO.

16 Right Whale sightings, and again we did
17 look at this chart earlier on. The North Atlantic Right
18 Whale Conservation Area here, with a heavy concentration of
19 whale sightings within this Conservation Area.

20 The terminal is here, the shipping lanes
21 as you can see, and these are the new shipping lanes, and
22 the track of the ship into the marine terminal back, out
23 again into the shipping lanes, without going into the
24 Conservation Area.

25 Two different whales, the Finback Whale

1 and the Humpback Whale.

2 These are 30-year sightings, and again
3 these are slightly different, in slightly different areas
4 than the North Atlantic Right Whale.

5 The heavier lines, the heavier blocks,
6 are an increased number of sightings and the smaller blocks
7 are a few number of sightings, and there is the Whites Point
8 Quarry in each of those drawings.

9 The in-shore Bay of Fundy Salmon now.
10 Now this is I'm afraid a little difficult to see, but the
11 cross which is shown here and show extensively on this
12 mapping is exactly zero fish, and when we get into the
13 circles, that is fish identified.

14 The dotted little centres quantify fish.
15 There's a couple here, and now again, here is the marine
16 terminal and these are generally speaking crosses in this
17 area.

18 Quickly getting into an effects
19 assessment.

20 The valued environmental components
21 established now. For the habitat, the intertidal and near-
22 shore. The American Lobster, invasive species, marine
23 waterbirds.

24 Now the marine species at risk, there
25 are fish, mammals, waterfowl, reptiles.

1 The physical oceanography, the water
2 quality, tides and currents and the marine geology.

3 The works and activities that will be
4 carried out on site now.

5 Obviously, there will be a construction
6 phase, then an extended operations phase and a decommission/
7 abandonment phase.

8 For the construction of the marine
9 terminal, no dredging and no fill. This was specifically
10 designed to create the least amount of effect to the marine
11 habitat.

12 The operations phase now. There will be
13 blasting on land. There will be the use and the processing
14 of water. We will use it in our process operation. We have
15 marine transport continuously through the operation. Then,
16 we go into the site reclamation phase.

17 Site decommissioning. As noted, not in
18 this report but in previous reports, the reclamation on the
19 site will be incremental. It will continue throughout the
20 50-year life and monitoring throughout the process.

21 A plan view of the marine terminal, for
22 those who haven't seen it before, we are approximately 200
23 metres off shore. Three berthing dolphins, mooring buoys.
24 This is a quadrant ship loader and the typical Panamax-size
25 vessel is here.

1 And again, the cross-section showing the
2 pipe pile supports; the ship loader which you can see can be
3 extended as it goes around on its quadrant so it can load
4 the ship without the ship having to move.

5 The proposed shipping route, and again
6 the shipping lanes here, the new shipping lanes. This is
7 where ships would go off to Saint John.

8 Many of these ships actually clip the
9 corner of the North Atlantic Right Whale Conservation Area,
10 but Bilcon's ships will come into the marine terminal and
11 back out precisely the same route, into the outbound lane,
12 and so out to sea.

13 Again for those of you that were not
14 here for previous presentations, this is a typical Panamax-
15 size vessel with one hatch open.

16 This particular ship has seven hatches
17 and will be loaded by the quadrant loader.

18 What are the key concerns? Well, we
19 have effects on marine mammals which can be identified from
20 on-land blasting, from noise and from potential ship/whale
21 collisions.

22 The effects on other marine biota are
23 on-land blasting, habitat alteration and destruction and
24 introduction of invasive species.

25 Then we have the effects of the marine

1 environment on the Project. We have the navigational safety
2 and the integrity of the site infrastructure.

3 Potentially affected mammal species with
4 Federal Conservation Status.

5 Again, we have the North Atlantic Right
6 Whale, the Blue Whale, the Harbour Porpoise and the Fin
7 Whale.

8 What are the potential effects of
9 blasting and noise? We have the blasting effects, auditory
10 effects, behaviour effects and masking effects.

11 Also, we have the potential effects of
12 whale/ship collisions, injuries and mortal effects.

13 For marine fish, and again a more
14 extensive list on the left-hand side which may be added to
15 in the future and which we would then have to take into
16 account, but the potential effects are habitat destruction
17 or alteration and the possible lethal and sub-lethal effects
18 of blasting on-land. There will be no blasting in the
19 water.

20 And other species with Federal
21 Conservation Status are waterbirds and waterfowls, which
22 includes the Harlequin Duck (winters in the area), and other
23 species include the leatherback turtle.

24 The potential effects are blasting
25 effects and possible behaviour changes.

1 Let's deal with blasting first. The
2 regulatory requirements, okay. There are guidelines for the
3 use of explosives in or near Canadian Fisheries Waters
4 produced by DFO in 1998.

5 For marine mammals, no explosives will
6 be knowingly detonated within 500 metres of any marine
7 mammal.

8 For fish, no explosive is to be
9 detonated in or near fish habitat that produces or is likely
10 to produce an instantaneous pressure change, that is an over
11 pressure, greater than 100 kPa, equivalent to 14.5 psi in
12 the swim bladder of a fish.

13 No explosive is to be detonated that
14 produces or is likely to produce a peak particle velocity
15 greater than 13 millimetres per second in a spawning bed
16 during the period of incubation.

17 So those are the thresholds set out by
18 DFO.

19 For marine birds and for leatherback
20 turtles, we have been unable to identify any specific
21 guidelines.

22 Provincially, under the Pit and Quarry
23 Guidelines from the Nova Scotia Department of Environment
24 and Labour (1999), there are no regulations or guidelines
25 specific to marine environments.

1 A blasting model was produced to model
2 the shockwave propagation from the blast site to the marine
3 water column.

4 This model considered the worst case
5 scenario on the precautionary principle. It involved the
6 topography, the bedrock composition, the bathymetry and the
7 weight and type of explosives. All these things affect the
8 result.

9 The results of the model with respect to
10 marine mammals now. Pressure level for whales is 100 dB RMS
11 achieved at 500-metre setback, which is the significance
12 threshold we just dealt with.

13 DFO has commented on this, on the
14 blasting protocol and model in that:

15 "...it is unlikely the blasting would
16 result in physical effects on marine
17 mammals, endangered or otherwise, beyond
18 500 metres."

19 With respect to fish, the model
20 indicated that 25 kPa would not be exceeded in the nearest
21 marine water column.

22 As we pointed out, the guideline for
23 fish is an over pressure of 100 kPa, and that is the
24 significance threshold.

25 The Department of Fisheries and Oceans

1 has commented on this as follows:

2 "100 kPa criterion pertains to lethal or
3 obvious sub-lethal injury to fish and
4 not to more subtle behavioural effects
5 which, if they do exist, are likely to
6 be transitory considering the frequency
7 of quarry blasting. Based on physical
8 modelling, there seems to be minimal
9 cause for concern in terms of lethal
10 effects on fish."

11 So what can we do to mitigate? We can
12 take into account weather conditions, fog for example. We
13 can blast infrequently (weekly during construction and
14 biweekly generally during production). And we can also
15 establish the setbacks in compliance with the guidelines for
16 blasting.

17 But we can also go further than that.
18 We can be precautionary, and we intend to do so. With
19 respect to the IboF Salmon, we intend to use a three times-
20 designated setback during the migration period of the IboS
21 through the Bay of Fundy, which is from May through
22 September.

23 With respect to marine mammals with
24 Federal Conservation Status, again we intend to be
25 precautionary and use a 2,500-metre setback rather than the

1 500-metre setback set out in the guidelines.

2 We noted a little earlier that we were
3 unable to find guidelines with respect to waterbirds,
4 however, again on a precautionary principle, we will
5 establish a 170-metre setback for waterbirds.

6 With respect to fish habitat
7 compensation, and there will be some damage, some
8 destruction in fact of the habitat when the pipe piles go
9 in, we will be required to provide compensation in a manner
10 acceptable to the Department of Fisheries and Oceans, and
11 that is an area three times the area which is being
12 destroyed.

13 Other mitigation measures. There's
14 detection, deterring devices, ongoing consultation with the
15 Department of Fisheries and Oceans.

16 And I can say at this point that we have
17 had a significant number of meetings with the Department of
18 Fisheries and Oceans and their experts, and they have been
19 very helpful throughout this process.

20 We'll train marine observants and we
21 will consult with DFO on model verification and finalization
22 of those safety zones.

23 Again blasting and model verification
24 monitoring. We will verify the model. After all, it is
25 only a model, even though we use worst-case scenarios.

1 We will verify the model in the tidal
2 zone at 73 metres, 118 metres and 164 metres from the point
3 of detonation and that the margin of the North Atlantic
4 Right Whale Conservation Area, which as you have seen on the
5 plan is significantly off shore.

6 Ongoing, we will continue to monitor
7 underwater noise levels at 500 metres, 1,000 metres, 2,500
8 metres and at the perimeter of the North Atlantic Right
9 Whale Conservation Area, as a precautionary measure that
10 is.

11 We will do the same thing with
12 underwater background noise and underwater vessel noise.

13 There will be ongoing monitoring with
14 respect to marine mammals with Federal Conservation Status,
15 like the leatherback turtle.

16 We will observe a 2,500-metre radius by
17 work boat prior to a blast event if endangered mammals are
18 being reported in the area.

19 During ship arrival and departures and
20 low visibility, again we will send our marine observers out
21 by boat.

22 We will record weather parameters (fog,
23 cloud cover, ceiling and visibility), and the predictions
24 for inversion.

25 We will continue to test the

1 effectiveness of observation methods and we will observe the
2 behaviour of the nearby seal colony when blasting takes
3 place.

4 As to noise monitoring now. Well, as we
5 just mentioned, 500 metres, 2,500 metres and right out at
6 the margin of the North Atlantic Right Whale Conservation
7 Area.

8 So what are the results of our studies
9 and our modelling? We believe that the adverse effects of
10 blasting activity on marine biota is not expected to be
11 significant.

12 Why do we say that? Because sound
13 levels are within regulatory guidelines. The potential for
14 physical effects on marine mammals is limited to 500 metres
15 and mitigating by no blasting if marine mammals are sighted
16 within the 500-metre zone. The frequency of blasting is
17 limited, weekly or biweekly events.

18 We will carry out extensive monitoring.
19 There are mechanisms for corrective action in place, and we
20 have adopted to precautionary principle for marine biota
21 with Federal Conservation Status.

22 Now we deal with another issue, and this
23 is the potential for collisions between ships and whale. We
24 looked at whale occurrences, transport routes, vessel
25 frequency, vessel operation and potential mitigation

1 methods.

2 And again, here we are, the North
3 Atlantic Right Whale Conservation Area. So one of the
4 primary mitigation methods is to make sure that our shipping
5 route does not approach the North Atlantic Right Whale
6 Conservation Area.

7 That is not to say that there are not
8 Right Whales outside, but the primary concentration is in
9 this area.

10 This one is a little bit more difficult
11 to see, but this is a better measure of the whale density
12 measured as a measure of effort if you would like, sightings
13 per unit effort, which is a little bit different from mere
14 observations.

15 The darker colour here indicates an
16 increased density. This very light mauve colour here
17 actually identifies zero observations per unit effort.

18 But again, you can see the concentration
19 tending to be in this area, which is the North Atlantic
20 Right Whale Conservation Area.

21 So let's look at the factors with
22 respect to potential collisions. North Atlantic Right Whale
23 sightings are concentrated within the North Atlantic Right
24 Whale Conservation Area.

25 Our transportation routes will be in the

1 shipping lanes and we will stay outside the North Atlantic
2 Right Whale Conservation Area.

3 There are currently 800 rule vessels per
4 year using the Bay of Fundy. This does not include fishing
5 vessels, ferries and other ships which are using the water,
6 and we believe that there are probably 2,200, 2,300 other
7 vessels using the water.

8 We will have one vessel per week, which
9 is an increase of 6 percent of the current rule vessels
10 occupying the water.

11 With respect to speed, we will ensure
12 that our approach and departure speed is less than 12 knots.

13 This is a precautionary approach because we believe from
14 all the literature that model collisions typically occur at
15 speeds greater than 14 knots.

16 So mitigation. Well the route, our
17 shipping route is outside the North Atlantic Right Whale
18 Conservation Area. The vessel speed is less than 12 knots
19 during approach and departure, and further speed reduction
20 if whales are sighted.

21 There is a change of course in case of
22 whale sighting within approach or departure. And we have
23 the cooperation with the North Atlantic Right Whale Recovery
24 Team.

25 We will monitor the presence of whales

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1 through the Fundy Traffic regular advisories, and certainly
2 our own observations from the ship loader, from the work
3 boat, certainly if they're reported in the area and
4 visibility is poor.

5 We conclude that the effects are not
6 significant. There is a small increase in vessel traffic,
7 and that vessel transit is infrequent and it's a short
8 duration, and collision is highly unlikely.

9 DFO have commented as follows:

10 "The conclusions provided in the EIS
11 regarding collision risk with Right
12 Whales are generally correct. The
13 increased ship traffic due to the
14 proposed activity and the proposed route
15 for these vessels will result in an
16 increase in the probability of
17 vessel/whale interaction along the
18 proposed route, but the increase will
19 not be substantial. The likelihood of
20 collision will still be low in the
21 immediate vicinity of the marine
22 terminal relative to other regions in
23 the Bay of Fundy such as the vicinity of
24 the Conservation Zone."

25 Another important concern which has been

1 raised throughout our consultation process is the issue of
2 invasive species by ballast water.

3 When we started this process, there were
4 guidelines in place for the exchange of ballast water, but
5 they were simply guidelines.

6 Effective 2006, ballast water management
7 will be in accordance with the Canadian Ballast Water
8 Control and Management Water Regulations, under the **Canadian**
9 **Shipping Act**.

10 The vessel operator is required to
11 implement ballast water management plans.

12 Monitoring. There will be compliance
13 monitoring, and this will be carried out by Transport
14 Canada.

15 However, we have carried out baseline
16 monitoring for Phyto- and zooplankton at the Whites Point
17 and the New Jersey Port for future reference and decision
18 making for now and ongoing.

19 Our operation is in compliance with the
20 regulatory framework, will be kept in compliance with the
21 regulatory framework, and we believe that no significant
22 adverse effects are likely to occur.

23 The effects of the marine environment;
24 currents, tides, winds, waves, fog, existing traffic,
25 navigational safety; they are all issues. The integrity of

1 our structure is certainly of significant issue.

2 Marine terminals are extremely expensive
3 to build. We will be required to look for a detailed
4 design, storm surges, waves, water level changes, global
5 warming and using the precautionary approach.

6 Mitigation. The vessel will operate in
7 compliance with Transport Canada and Atlantic Pilotage. We
8 will carry out a detailed design based on extensive
9 additional data collection and modelling.

10 We will need to collect specific data on
11 off-shore and near-shore wave height; operational wave
12 height at the berth; extreme wave analysis, extreme water
13 level assessment; marine environmental load assessment;
14 compliance with all applicable engineering standards, best
15 practices and safety margins.

16 That is a very expensive marine
17 terminal, and it must be built to the highest safety
18 standards.

19 So monitoring, this will require site-
20 specific oceanographic conditions, site-specific climatic
21 parameters.

22 The effects assessment we have
23 identified was not significant. The adverse residual
24 effects were unlikely to occur.

25 An overhead view of the site for those

1 of you that have not been to previous presentations. A
2 little coastal bog coming in, the coast line, the marine
3 terminal off here at this point, Whites Cove and here.

4 So conclusions now. The adverse
5 residual effects: Where applicable, all effects are within
6 regulatory standards or guidelines.

7 Overall, the effects are localized,
8 small scale, infrequent and highly unlikely. No significant
9 residual effects are likely to occur.

10 Mitigation and monitoring now: There
11 will be an environmental management plan, a comprehensive
12 monitoring plan, an emergency response plan and continued
13 ongoing training of all personnel.

14 The marine effects assessment: We
15 carried out a comprehensive analysis of all relevant marine
16 components.

17 This is a typical marine terminal
18 operation. It has no special or unusual features. We have
19 looked at malfunctions and accidents.

20 We have looked at and will continue to
21 look at the effects of the environment on the Project, and
22 we have looked at cumulative effects.

23 Our determination is that no significant
24 residual adverse effects are likely to occur.

25 Implementation and commitment: We will

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(QUESTIONS BY THE PANEL)

1 have a very detailed work program for the detailed
2 oceanographic study which will be required for the detailed
3 design of the marine terminal and other waterfront
4 activities.

5 We will have mitigation and
6 environmental management. We will have monitoring and an
7 adaptive management approach. We will have compliance
8 monitoring and audits.

9 There will be transparency of that
10 monitoring and of the audits.

11 We will continue to involve the public
12 through the Community Liaison Committee, and we will
13 continue to cooperate with recovery teams, the research
14 community and the Department of Fisheries and Oceans.

15 Thank you very much Mr. Chair.

16 THE CHAIRPERSON: Thank you Mr. Buxton.
17 Okay.

18 **PRESENTATION BY BILCON OF NOVA SCOTIA - QUESTIONS BY THE**
19 **PANEL**

20 THE CHAIRPERSON: We will commence with
21 some questions, and my colleague, Dr. Muecke, will begin
22 now.

23 Mr. GUNTER MUECKE: Since this particular
24 session involves a lot of questions about blasting, we tried
25 to initiate discussions on blasting one of the previous

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1 sessions, and we differed until today. So perhaps I can
2 start out with that?

3 Mr. PAUL BUXTON: Yes.

4 Mr. GUNTER MUECKE: Because we have
5 concerns about both the frequency and the magnitude of the
6 proposed blast during the operational phase.

7 So, I'll start out my questions as I did
8 before, before we decided that we were going to differ the
9 discussion.

10 My first inquiry was: For the purpose of
11 the test blast, you thought that 2.5 tonnes of explosives
12 would be used from the test blast, and I asked is that
13 figure correct.

14 Mr. PAUL BUXTON: I'm not sure this
15 microphone is on. Can people here hear with this
16 microphone? Thank you, I've still got this one on. Is this
17 acceptable to the recorder?

18 Yes, the test blast has a long history.

19 And I think I mentioned the other day that the objective of
20 work on the permitted 4-hectare quarry was to look at the
21 test blast or blasts to gather empirical data.

22 Modelling is all very well, but we
23 wanted to gather empirical data.

24 We looked to carry out test blasts and
25 made applications to do so in September of 2002.

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BILCON OF NOVA SCOTIA
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1 To date, we have not carried out test
2 blasts, but we certainly intend to do so to verify the
3 model.

4 What is most significant, and when we
5 get into technical details, I am not a blasting expert, we
6 have one here, so when we get into details, I will pass the
7 question.

8 Mr. GUNTER MUECKE: Yes.

9 Mr. PAUL BUXTON: But it is perhaps not
10 as significant to consider the total weight of all the
11 explosive in the blast, but to consider the weight of the
12 explosive in a delay.

13 These explosives do not go off together.
14 They go off in sequence as you know, and that sequence
15 allows the effect to be diminished, and we have said that we
16 would use weights of 45 kilograms per delay in our test
17 blast.

18 The original test blast was conceived to
19 be probably the closest points that we would blast to the
20 water.

21 There are toes of basalt, if I can best
22 describe them, at the bottom of the steep slope, and if you
23 will recall from the slide conceptual layout of the plant
24 which I showed, the processing plant is at a height of 30
25 metres, so it was a question of knocking off these little

BILCON OF NOVA SCOTIA
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1 toes of basalt to get a well-organized site and to make
2 arrangements and space for the stockpiles.

3 So that was where the initial test blast
4 was conceived, so it had significance in that it was
5 probably going to be our closest blast towards the water
6 column, and not half a mile back on the hill, where it would
7 have less significance.

8 So that particular blast was
9 specifically designed for a specific area.

10 When we get into the discussions of
11 monitoring of the test blast and specifically how we do
12 that, we would expect to be sitting down with the Department
13 of Fisheries and Oceans people, deciding on the specific
14 location, the specific charges, what we're trying to achieve
15 and what monitoring we will carry out on land, in the water,
16 acoustically, et cetera.

17 Mr. GUNTER MUECKE: Okay, Mr. Buxton.
18 The reason I bring up the 2.5 tonnes, and now I realize
19 we're talking in 45 kilogram charges here and delays, et
20 cetera, but nevertheless, the total in terms of a impact is
21 also a measure, okay, which we can take in terms of the
22 intensity of the blast.

23 Mr. PAUL BUXTON: Eh...

24 Mr. GUNTER MUECKE: In other words, if I
25 have... It will make a difference, even if I limit myself

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1 to 45 kilograms per hole, okay, whether I am setting off 50
2 or 100 of those charges, would you not agree?

3 Mr. PAUL BUXTON: It may have some, if
4 there is a beaming effect, if there is some overlap, but
5 that certainly would be a function of the design to make
6 sure that the overlap or the beaming effect is minimized and
7 that comes with the design of the blast delays.

8 Now the reason I bring up the 2.5 tonnes
9 here is because these are the only measures we have been
10 given, so you know, this is what I have to work with.

11 But the reason is that later on in the
12 EIS document, this 2.5-tonnes blast is characterized as
13 being or described as a worst case scenario, and later on in
14 the EIS, in section 11.2.5, under "accidents and
15 malfunctions", there's mention of 7.5 tonnes of explosive
16 involved in the blasts.

17 When we go back into the CLC minutes, we
18 are told that the typical blast would be 4.5 tonnes of
19 explosives.

20 So I'm confused as to exactly what range
21 of explosive rates are involved, and perhaps you could
22 clarify for me what the range is?

23 I realize it is not a fixed amount, but
24 there must be a range or explosive ranges here which are
25 involved in the operational phase?

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(QUESTIONS BY THE PANEL)

1 Mr. PAUL BUXTON: Yes. I think we should
2 separate out the test blast.

3 The test blast is designed to do
4 specific things, and that is basically to verify the model,
5 so the charge per delay and the total would be designed very
6 specifically to look at all the parameters and the best
7 places on the site.

8 We certainly called it a worst-case
9 scenario with respect to its proximity to the water pond, so
10 I think that this is a pretty important value here.

11 We do expect the effects to be
12 significantly mitigated as we move away from the water
13 column, so we certainly wanted to have a test blast which
14 had significance and some real values in the water column,
15 and we were calling that basically a worst-case scenario
16 because that was the closest blast we anticipated to the
17 water column.

18 In terms of ongoing blasts to produce
19 the production rock, I'm going to turn to our blasting
20 expert, Mr. John Melick.

21 Mr. GUNTER MUECKE: Could I...

22 Mr. PAUL BUXTON: I'm sorry.

23 Mr. GUNTER MUECKE: Just before you do
24 that,---

25 Mr. PAUL BUXTON: Yes.

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1 Mr. GUNTER MUECKE: ---I'd like to have
2 a few specifics here.

3 Mr. PAUL BUXTON: Sure.

4 Mr. GUNTER MUECKE: Just to make sure, in
5 terms of the test blast, how close to the shoreline will
6 that be?

7 Mr. PAUL BUXTON: I would have to make
8 reference to that. I believe that it was something in the
9 order of 134 metres, and I'm saying that off the top of my
10 head. We will check that reference and advise you
11 specifically.

12 Mr. GUNTER MUECKE: Okay.

13 Mr. PAUL BUXTON: I don't have the test
14 blast protocol in front of me.

15 Mr. GUNTER MUECKE: Okay. That's fine.

16 Mr. PAUL BUXTON: We'll get back with
17 that specific figure very shortly. And I would ask Mr. John
18 Melick to talk about the size of blasts to produce volumes
19 of rock.

20 Mr. JOHN MELICK: Good morning. My name
21 is John Melick, and I'm here to represent Bilcon as the
22 blaster.

23 Do you have a specific question Sir?

24 Mr. GUNTER MUECKE: Well, I just outlined
25 to Mr. Buxton what I was concerned about.

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BILCON OF NOVA SCOTIA
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1 During the operational phase of the
2 quarry, we have been given different numbers as to the
3 amount of total explosives used for each blast.

4 These blasts are specific to be
5 biweekly, and the numbers have ranged from 4.5 tonnes of
6 explosives to 7.5 tonnes, and I guess I would like to have
7 some indication of which of these numbers is right, and I
8 realize there will be a range of values, but could you
9 provide us with what that range would be?

10 Mr. JOHN MELICK: Yes. We expect to use
11 approximately one pound of explosives to blast two tonnes of
12 rock.

13 Mr. GUNTER MUECKE: Again, the same...
14 What is in the EIS and what you're telling me now seem to be
15 two different things because what I have gotten here out of
16 the EIS, and that is again section 11.2.5, on accidents and
17 malfunctions, is that the generation of one tonne or rock
18 requires 0.4 kilograms of explosives.

19 One pound per tonne, per two tonnes, is
20 not the same.

21 Mr. JOHN MELICK: You have to bear with
22 me Sir, as I am an American, and I am jumping back and forth
23 between kilograms and pounds, but...

24 Mr. GUNTER MUECKE: Let's just use round
25 numbers here, that half a kilogram is a pound, and so what

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1 we have in the document is that one pound of explosives will
2 yield one tonne of rock.

3 You just told me that one tonne of
4 explosives will yield two tonnes of rock.

5 Mr. JOHN MELICK: That is correct, that
6 is what I said. I'm not sure... I would have to refer to
7 the document to verify that.

8 Mr. GUNTER MUECKE: Okay. So the
9 definitive answer is one pound per two tonnes then?

10 Mr. JOHN MELICK: That's correct.

11 Mr. GUNTER MUECKE: Okay. So then if
12 that is a definitive answer, I'd like to move on because in
13 order to load two bulk carriers, the biweekly production has
14 to be 80,000 tons, on the average, per blast.

15 Is that correct?

16 Mr. JOHN MELICK: It would be... Yes,
17 there would be 80,000 tonnes of rock yielded via 40,000
18 pounds of explosives.

19 Mr. GUNTER MUECKE: I work in metrics, so
20 I think we are on different scales here unfortunately.

21 Mr. JOHN MELICK: Okay.

22 Mr. GUNTER MUECKE: If I take the
23 conversion, one pound is approximately half a kilogram.
24 We're talking approximations here anyway.

25 I come up with that the blast will

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1 involve 16 tonnes of explosives, is that right? Metric
2 tonnes?

3 Mr. JOHN MELICK: That sounds high to me
4 Sir. I would be at...

5 Mr. GUNTER MUECKE: Well, it's a simple
6 calculation. You take 80,000 tonnes and half a kilogram,
7 okay?

8 Mr. JOHN MELICK: Which would be 40,000
9 kilograms.

10 Mr. GUNTER MUECKE: Oh, that is 40
11 tonnes.

12 Mr. JOHN MELICK: That would be... It
13 would be 40,000 kilograms.

14 Mr. GUNTER MUECKE: Yes. That's 40
15 tonnes per blast of explosives. I think we have to half
16 that. Okay. What it comes down to is 20 tonnes.

17 Mr. JOHN MELICK: 20 tonnes, yes, is
18 correct.

19 Mr. GUNTER MUECKE: Okay. I come back to
20 where we started with this. In the document it says that a
21 typical blast is 4.5 tonnes, and now you are at 20 tonnes,
22 and there's also mention of 7.5 tonnes. So there's a vast
23 discrepancy of figures here.

24 Mr. PAUL BUXTON: I think the original
25 figure that you're talking about what a discussion of the

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1 test blast, was it not?

2 Mr. GUNTER MUECKE: Well...

3 Mr. PAUL BUXTON: I'm looking here, and I
4 see...

5 Mr. GUNTER MUECKE: I'm sorry, but I'm
6 looking at section 11.2.5, and I don't recall anything about
7 the test blast there. That's the 7.5 tonnes figure.

8 And the figure from the CLC minutes
9 refer not to the test blast, but to the typical blast during
10 the production phase.

11 Mr. PAUL BUXTON: What I'm looking at
12 here under "Accidents and malfunctions", which would have
13 been drawn from industry standards", not site specific but
14 industry standards at that time:

15 "The quantity of explosives handled will
16 depend upon the size of the design,
17 however it would be in the order of 0.4
18 kilograms per tonne blasted or
19 approximately 7,500 kilograms or 1,500
20 pounds for a 20,000-tonnes blast."

21 Mr. GUNTER MUECKE: Okay. We have agreed
22 now that it's 20 tonnes?

23 Mr. PAUL BUXTON: I'm sorry?

24 Mr. GUNTER MUECKE: Have we agreed now
25 that it's 20 tonnes per blast during the operation?

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1 Mr. PAUL BUXTON: I think what we have
2 said, we have agreed that it's a pound for every two tons of
3 rock that...

4 Mr. GUNTER MUECKE: To generate 80,000
5 tonnes would take a 20,000-tonnes blast.

6 Mr. PAUL BUXTON: Yes.

7 Mr. GUNTER MUCKE: It's just, you know,
8 for clarity because it was not clear to us. And that number
9 of 20 tonnes has not appeared in any document anywhere so
10 far.

11 Mr. PAUL BUXTON: Could I just give you
12 the figures that you had previously asked for?

13 Mr. GUNTER MUCKE: Okay.

14 Mr. PAUL BUXTON: The test blast was
15 designed at 73 metres to the high tide line from the point
16 of detonation, and 118 metres to the water at low tide.
17 That's the location that we have proposed to carry out the
18 test blasting.

19 Mr. GUNTER MUCKE: Thank you. And that
20 was 2.5 tonnes?

21 Mr. PAUL BUXTON: I believe so, but
22 again, I think... I want to specify that it was agreed that
23 we would design this blast in consultation with the
24 Department of Fisheries and Oceans to get the information
25 that we wanted out of it to confirm the CONWEP model.

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1 Mr. GUNTER MUCKE: That's understood.

2 Thanks.

3 Like I said, we have concerns. We were
4 trying to clarify the frequency and the size of the blasts,
5 and I think we have done that.

6 The other clarification that we are
7 looking for involved the atmospheric conditions under which
8 no blasting would occur.

9 And in the EIS, there are a number of
10 climactic conditions, atmospheric conditions specified. No
11 blasting if there's fog. No blasting with overcast. No
12 blasting with thermal inversions. No blasting with or in
13 the case of precipitation.

14 And as I previously indicated in my
15 previous question, which we didn't get through, is that all
16 of these conditions range over a variable scale, and to be
17 meaningful, some limits would have to be attached, or
18 trigger points that are specified that would define exactly
19 what these conditions encompass.

20 So I would like to ask for clarification
21 on that.

22 Mr. PAUL BUXTON: I think we can give you
23 something, at least I can give you some text with respect to
24 inversions. We did not look up the cloud cover figure last
25 night, and I apologize for that, and we will visit that at

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1 the lunch-time break and get back to you after lunch.

2 Mr. GUNTER MUCKE: In terms of
3 precipitation and fog?

4 Mr. PAUL BUXTON: Likewise.

5 Mr. GUNTER MUCKE: Okay. Thank you. I
6 think that will clarify about the blasting, and perhaps my
7 colleagues would like to ask some further questions.

8 Ms. JILL GRANT: I have a few questions
9 about the observation process and the mechanisms to be used
10 for it.

11 The other day, we asked for an
12 illustration that would show where the observation station
13 is. You didn't show that this morning, but can you tell me
14 where the observation station is located on the terminal?

15 Mr. PAUL BUXTON: It has been sent. We
16 think we can put it up on screen?

17 It has been sent over to the Panel
18 managers.

19 Ms. JILL GRANT: Thank you. While that
20 is getting put up, maybe you can tell me, how does the
21 observer get to it?

22 Mr. PAUL BUXTON: He would get there the
23 same way as the operator. There is in fact a catwalk, and
24 it's not clearly illustrated on the cross-section, but
25 perhaps we'll have a look at it and you could see.

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1 Ms. JILL GRANT: Okay. And the observer
2 is going back and forth between the observation station and
3 the boat, is that correct?

4 Mr. PAUL BUXTON: I'm sorry.
5 Communication between?

6 Ms. JILL GRANT: No. The observer is
7 going back and forth between the observation station and the
8 boat to do boat observations?

9 Mr. PAUL BUXTON: Yes, there will be
10 communication between the two, and that booth will have a
11 communications device because it's got to talk to the ship's
12 Captain, the shore and everybody else.

13 Ms. JILL GRANT: Do you have two people
14 then doing observation? Is it not the same person doing the
15 observation from the station and from the boat?

16 Mr. PAUL BUXTON: No, it's not the same
17 person. No.

18 There... If you could have a look at
19 the... I'm sorry, the light is going to be in your eyes,
20 but...

21 The observation booth is seen right up
22 there, perhaps 100-odd feet in the air. And then on the
23 right-hand side, you will see that booth with the operator
24 in it.

25 Ms. JILL GRANT: Thank you. What's the

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1 height of that observation booth above the water?

2 Mr. PAUL BUXTON: It's probably 110 feet,
3 something like that.

4 Ms. JILL GRANT: And according to your
5 documents, there's about 500 metres of visibility that is
6 good visibility for an observer from that observation
7 station. Is that correct?

8 Mr. PAUL BUXTON: I think we said 500
9 metres can certainly easily be observed from that height,
10 yes.

11 My own observations, which are taken
12 every day from slightly higher than that, at about 130 feet
13 over the Annapolis Basin, enable me, with very standard
14 binoculars, 7 by 50 binoculars, to see into Digby Harbour
15 perfectly well and the sea in between, about seven miles
16 with perfect clarity.

17 I do that for at least an hour, an hour
18 and a half every day of my life. You would be surprised at
19 the clarity that you get and the observation status you get
20 at 100-odd feet up in the air. It's quite dramatic.

21 Ms. JILL GRANT: But we're talking about
22 observing fairly small features, so the visibility to seven
23 miles is different than the ability to observe details at
24 500 metres. And the documents do say 500 metres I believe,
25 so...

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1 Mr. PAUL BUXTON: I can see birds with
2 perfect clarity on Bear Island. I watch them every day with
3 perfect clarity, and Bear Island is well over a mile from my
4 deck.

5 It's the height that gives you that
6 advantage, and it really is quite astonishing when you get
7 to that height what you can observe.

8 Ms. JILL GRANT: Thank you.

9 THE CHAIRPERSON: Can I jump in?

10 Ms. JILL GRANT: Yeah.

11 THE CHAIRPERSON: Mr. Buxton, I question
12 those observations because seeing a bird and seeing the
13 distance in the distance is one thing, but looking for an
14 object in the water, particularly if you've got a
15 significant sea state where the water is roiled and you have
16 waves, it's very, very difficult under the best of
17 circumstances.

18 Since you offered us an anecdote, I'll
19 offer you one as well. As an oceanographer, I've been on
20 many cruises, and on one cruise in particular we were
21 looking for a buoy which was two metres across painted
22 international orange.

23 And it was sub-surface. It came to the
24 surface and when it did, we moved the ship in to try and
25 hook it, and we missed it. And so we had to come around a

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1 second time to pick it up. We never saw it again.

2 We had people in the superstructure of
3 the ship. We circled forever. We had everybody on the crew
4 looking for it. We couldn't find it.

5 Now when you're looking for an object
6 like a human head, which is one of the difficulties of
7 course when people are lost overboard, the only object is a
8 small thing, but when you're looking for an object the size
9 of two metres across and international orange, you would
10 think that it would be distinctly visible within a few
11 hundred metres or so, and yet we couldn't find it.

12 2,500 metres, which is the distance
13 you're suggesting will be quite visible, is a mile and a
14 half. If it's perfectly flat, calm, I presume that you
15 won't have any difficulty seeing things, although keeping in
16 mind that whales, for example, particularly the Northern
17 Right Whale, is very low in the water and blends in with the
18 water.

19 So if you have an advanced sea state, 30
20 to 40 knots, 20 to 30 knots, and the sea surface comes up, I
21 don't think the visibility is going to be very good.

22 Now, you can ask... This is a place,
23 perhaps where local knowledge might have helped you, because
24 there are a lot of fishermen around and a lot of people who
25 use the water who probably would substantiate what I'm

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1 saying.

2 It's very difficult. Certainly from a
3 boat, it's difficult. But when you go up, the visibility
4 improves.

5 But what makes it complicated is the
6 disturbed sea state, so... That's just a personal
7 observation.

8 So I'm not as certain as you are that
9 even if an individual is at 110 feet above water, on
10 difficult circumstances, whether that individual will be
11 able to see what you think he or she will be able to see.

12 And maybe some discussion with local
13 fishermen might be a useful adjunct to the information you
14 already have.

15 Mr. PAUL BUXTON: Yes, thank you.

16 I don't think that, with many of these
17 sorts of mitigation measures that one is talking about,
18 there is absolute certainty.

19 The guideline is quite specific, and
20 that is that we must not knowingly explode or detonate
21 within 500 metres of a marine mammal.

22 I think that our intent is to... We've
23 had discussions in our several meetings with DFO personnel
24 over observation methods, over training methods because this
25 is a training exercise.

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1 People need to know what to look for,
2 how to look for it, and we understand that.

3 Now having said that, whether it's 500
4 metres or 700 metres, could we be absolutely certain, or
5 1,000 metres or 2,500, that there is a marine mammal in the
6 water?

7 If it doesn't surface, we would never
8 know, and that's why we have said that there are acoustic
9 devices which can perhaps if mammals emit noise, that we can
10 pick them up by acoustic devices in the water. And we're
11 certainly prepared to work with DFO in the use of those
12 devices to increase the level of certainty.

13 Ms. JILL GRANT: I know that in the EIS
14 it talks about the possibility of using those devices if
15 they're proven along the way, but are you now saying that
16 this is part of the proposed Project, that there will be
17 acoustic devices being used?

18 Mr. PAUL BUXTON: No. I think what we
19 have said is what we mean, that if these devices are proven
20 and they are proven useful and we receive that kind of
21 advice from DFO, that we would certainly be prepared to
22 adopt them.

23 We're led to believe at the moment that
24 they're not necessarily fully proven devices. Perhaps it's
25 a matter of calibration, I don't know. I'm not an expert in

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1 the subject.

2 But I'm quite sure that there are people
3 in DFO who are following this development in technology, and
4 when it reaches a point where it increases our degree of
5 certainty, we will most certainly use them.

6 Ms. JILL GRANT: Thank you. The
7 observation point is obviously fixed on the site, so it
8 can't move along with the blast as you're moving along
9 through the different parts of the site, so are you able to
10 determine what proportion of blast events the observation
11 station will actually be useful for?

12 Mr. PAUL BUXTON: I think if you look at
13 the contours of the site, you will see that it would be
14 useful for all blasts on the site. There are no concealed
15 areas.

16 The topography is from the high point
17 down to the shore, essentially on all parts of the site.

18 Ms. JILL GRANT: But you have a coastline
19 of 1.6 kilometres, and the visibility range is 500 metres,
20 so it presumes there are parts of the site which would be
21 out of the usual visibility range that the EIS suggests is
22 secure from that for the observer?

23 Mr. PAUL BUXTON: Well, certainly if one
24 were blasting on the extremity, either on the north or to
25 the south, it would certainly increase the uncertainty, if

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1 you like.

2 But I think I would repeat that we will
3 use the best techniques that are available or are made known
4 to us so that we can comply with the guideline that we will
5 not knowingly detonate when there is a marine mammal within
6 500 metres.

7 Ms. JILL GRANT: And during the
8 construction phase, I presume that's when you're going to be
9 doing the test blast, is during the construction phase.

10 That's when you're closest to the
11 shoreline, and at that point the marine tower won't be
12 built, is that correct?

13 So there won't be an observation high up
14 for the blasts that are in that zone, is that correct?

15 Mr. PAUL BUXTON: You're correct in your
16 last statement. I'm not so sure that the first statement
17 was entirely accurate.

18 We would love to conduct a test blast
19 tomorrow morning. We have been working diligently to gather
20 empirical data since September '02, and we have not been
21 able to do that at this stage.

22 I believe, perhaps, and the DFO
23 officials will be here to present later, if they have now
24 the degree of confidence which we believe they have to sit
25 down and design a test blast, we would be prepared to

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1 conduct it immediately.

2 We would like, for ourselves, the
3 confirmation of our model results.

4 Mr. GUNTER MUCKE: Mr. Buxton, in order
5 to visualize the effectiveness of an observer on the loading
6 facility, it would be extremely useful if you could produce
7 a plan which would show the location of the most extreme
8 edges of where charges will be set off for production along
9 the coastline, the locations of these blasts, and 500-metre
10 and 2,500-metre circles of observation, basically, around
11 these so that one can get a more effective picture as to
12 what sort of distances an observer on the loader will have
13 to be to view to effectively see any mammals, marine mammals
14 within 500 metres of the actual site where the explosion
15 occurs.

16 Mr. PAUL BUXTON: I think, Mr. Chairman,
17 we could do that, but I would ask that it would be next...
18 Not this Friday, but a week on Friday.

19 And I would perhaps just add here that
20 that may... The plan may shed a little light on the 500
21 metres. It's 500 metres from the point of detonation.

22 And I think, as I pointed out, the worst
23 case scenario, and this is a little toe if you like, of
24 rock, which protrudes out the bottom and we would like to
25 clean off and start with the vertical faces of 118 metres.

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BILCON OF NOVA SCOTIA
(QUESTIONS BY THE PANEL)

1 The point on the ship loader, my guess
2 is probably about 160 metres into the water, so really from
3 the point of blast, our observer is already 260 metres into
4 that zone.

5 Now, we're talking this 500 metres from
6 the point of blast that one must not knowingly detonate
7 explosives.

8 Essentially, our observer is already, in
9 the worst case scenario, about 260 metres out to sea from
10 that point so that, you know, even if we are somewhat
11 uncertain as to the visual acuity of our observer and other
12 sea conditions, et cetera, even if that is 400 metres that
13 he can see well, the worst case scenario is 660 metres from
14 the point of blast.

15 So our observer is well out to sea.
16 We're getting him out into the body of water.

17 And the other thing is that I think we
18 have said quite specifically that if we think the visibility
19 is poor because perhaps of limited fog, wisps of fog which
20 would perhaps still enable us to blast, just simply poor
21 visibility, we have a work boat and we would certainly
22 conduct observations by the work boat.

23 Ms. JILL GRANT: The difficulty, Mr.
24 Buxton, is that your observation point is fixed in one place
25 and your detonation point may be in another place, and the

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1 circles of 500 metres may not overlap.

2 So that's why we're asking for those
3 clarifications about where exactly the blasting is likely to
4 occur, so that we can determine how often the observation
5 point will actually be useful to observe the arc that's
6 created from the detonation place.

7 I'd like to follow up with some
8 questions around the boat trip.

9 You indicated that the boat trip would
10 be used if mammals are reported in the area or if visibility
11 is poor.

12 How long do you think that the
13 observer's going to be out there on the boat, and what kind
14 of strategy would they have for examining the area?

15 Mr. PAUL BUXTON: I can only say they
16 would be out as long as is necessary. And I think we should
17 go back to the guideline here. The guideline is that we
18 must not knowingly blast when there's a marine mammal in the
19 water within 500 metres.

20 And certainly what we are saying is that
21 we will carry out whatever strategy is necessary and
22 satisfactory to the regulatory agencies to put in place a
23 precautionary approach.

24 You know, quite frankly, if we were not
25 concerned about this issue, we could just simply say we're

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1 going to meet the guideline. And if we don't blast with
2 knowledge of a whale in the water, then we're fine.

3 I think what I'm trying to convey here
4 is that we understand the reasoning behind this, that there
5 is some importance to this, and we will adopt whatever
6 strategies with whatever technologies are suitable to
7 provide the greatest level of safety and security for marine
8 mammals.

9 THE CHAIRPERSON: Mr. Buxton, a question
10 about ship docking. It's been a concern for us from the
11 beginning because of the nature of the oceanographic
12 environment here.

13 As I understand it, we will see a ship
14 arriving once a week, about 70,000 dead weight tonnes,
15 capable of carrying 40,000 tonnes of aggregate. And I see
16 three possible scenarios which I'd like to run by you.

17 The first is the one which you've
18 outlined in the EIS, is that the ship approaches in the
19 shipping lane, breaks away from the shipping lane, comes
20 into the pylons or piers, and eventually ties up without any
21 untoward event happening.

22 A second scenario is one in which you've
23 got particular aspects of the tidal cycle, northwest winds
24 blowing 30 to 40 knots, and a ship which is large in terms
25 of its surface area which, of course, is impacted by the

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1 wind and the ship acts like a sail to some extent.

2 So a ship moving into these pylons under
3 extraordinary circumstances of tidal activity, surface wave
4 activity, intense wind gusting and moving all over the
5 place, and the ship would move into these pylons and perhaps
6 damage itself or damage the pylons or may, in fact, even
7 overcome the pylons and ground, which, of course, would be a
8 crisis.

9 Those would be the two extremes, safe
10 arrival, no difficulties, and worst-case scenario of a ship
11 running up on the rocks.

12 But there is a middle ground as well,
13 and that is that you mentioned yesterday or the day before
14 for the first time, although... For the first time, it's
15 not mentioned in the EIS. But that there is a possibility
16 that you could use tugs under some circumstances.

17 I'm wondering about the environmental
18 effect of bringing in a big ship, also perhaps even
19 supported by a tug, in which the impact on the local
20 environment could be quite severe in the sense of I'm
21 thinking about prop wash.

22 You bring in a big ship and the way it
23 slows itself down, of course, is it reverses its propellers,
24 so it changes the pitch in the propellers and thereby, it
25 generates a huge amount of turbulence as it's slowing down.

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1 Also, they use thrusters. Thrusters generate turbulence as
2 well.

3 And both of these things, I think, are
4 entangling. They entangle lines and they generate
5 turbulence.

6 And for individuals like lobster
7 fishermen who are intent on working in this environment, it
8 could be quite catastrophic when you have lobster pots
9 connected to lobster pot connected to lobster pot, that sort
10 of thing.

11 I wonder if you could give us a sense of
12 where you stand with regard to the development of this
13 docking facility and these ships?

14 As I said, you've provided us with
15 knowledge that suggests that you're now considering tugs,
16 but where do we stand with regard to this?

17 I think the underlying concern is that
18 it's an unprotected shore facing prevailing westerlies,
19 north westerlies, and that it's known to be a very difficult
20 environment, and the EIS simply projects it as just
21 straightforward, easygoing. There doesn't seem to be any
22 hint of the potential difficulties which are there, which I
23 think are quite considerable.

24 Mr. PAUL BUXTON: I don't think that
25 we've brushed off the difficulties of this. We recognize

BILCON OF NOVA SCOTIA
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1 that there will be periods in the weather when we can't
2 bring a ship in.

3 In our discussions with shippers who are
4 very familiar with the Bay of Fundy, who presently serve as,
5 for example, the Bayside Quarry in New Brunswick, the gypsum
6 vessels which go to Hantsport, and we have talked with
7 senior Captains of shipping lines, and they recognize and
8 have said there are going to be periods when we will not
9 come in.

10 For us, it's primarily a cost of doing
11 business in the sense that if we have stockpiles ready to go
12 and a ship can't come in, we can't deliver our product to
13 market.

14 For the shipper, it's a much more
15 serious issue because these new vessels are now about \$50
16 million apiece.

17 And I think it is highly unlikely that a
18 shipping line would in any way put a \$15 million ship at
19 risk. After all, if they delay in coming in, the shipping
20 line doesn't pay for it. We pay for it. We have to pay
21 demurrage.

22 So in a sense, for us, the shipping
23 lines have looked at this terminal. They've looked at the
24 conceptual designs. They're very familiar with the Bay of
25 Fundy, and they have said: "Yes, it has some difficulties

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1 and you could find yourself paying demurrage." And we have
2 built that into our economic plan.

3 I certainly have no experience as a
4 ship's Master or running a shipping line. The people that
5 we have spoken to are extremely knowledgeable about
6 shipping. They operate ships.

7 We have spoken to the senior Captain of
8 lines, who arranges for shipping, and yes, we recognize the
9 issues.

10 We feel that there may be significant
11 periods in the winter when we cannot ship, but we
12 recognize...

13 We also think there are going to be
14 significant periods in the winter, perhaps a month, six
15 weeks, of very bad winter, eight weeks, where we can't use
16 our wash plant, and hence don't want to ship.

17 I think these are all sort of the
18 vagaries which are built into our business plan, and our
19 objective is to ship two million tonnes a year, and we think
20 that that is attainable. We do not think that we can say
21 the ship will come in on a Monday morning, 52 weeks a year,
22 and pick up a cargo.

23 We know it will be weather contingent,
24 and certainly we have very high confidence in the ability of
25 shipping lines to know their business and determine when

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1 it's safe to come in and when it is not safe to come in, and
2 I will absolutely guarantee you that a ship's master or a
3 shipping line will not risk its ship for one voyage of
4 40,000 tonnes of aggregate when that ship is worth \$50
5 million.

6 THE CHAIRPERSON: I appreciate that, but
7 the sea bottom is littered with ships that have had the same
8 philosophical approach; in other words, people make
9 miscalculations. The weather is extreme. Unpredictable
10 things happen.

11 So this is more than simply a cost or
12 extra cost or inconvenience to the company, it has written
13 into it environmental potential.

14 If a ship runs aground and its tanks are
15 holed, for example, and it loses fuel, then we have a
16 hydrocarbon problem. If it ends up on the... If it drags
17 down the coast, it will interact with all kinds of things
18 along that coast.

19 It could be a serious environmental
20 problem, not because the intention or concern of the company
21 is any less, but simply because events overtake it. So in a
22 sense, what I'm saying is, is that you're intending to bring
23 in very large ships into a coastline which is known to be
24 difficult, and it's totally unprotected, and I'm wondering
25 what sort of mitigative measures, other than simply saying:

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1 "Yes, they won't do that..."

2 But as we all know, I mean ship masters
3 make mistakes for one reason or another. And also, events
4 can overtake them sometimes.

5 Mr. PAUL BUXTON: I appreciate your
6 comments, Mr. Chair, and I disagree with nothing that you've
7 said but I think that, you know, the shipping industry is a
8 mature industry. Just as the airline industry has matured.

9 I think that the levels of risks we
10 accept every time we fly or every time we drive seem to be
11 acceptable.

12 We drive tanker trucks of gasoline down
13 the road every day and, you know, there has to be some level
14 of risk associated with every activity that we undertake in
15 our lives.

16 I'm certainly not qualified to speak any
17 further on the safety or not, or the unsafe arrival of
18 ships.

19 THE CHAIRPERSON: Have you considered the
20 possibility of formal risk analysis? There are
21 organizations, individuals, consultants, that can provide an
22 analysis of risk, that can look at the situations, the
23 background history, and provide an analysis of the amount of
24 risk which is being considered.

25 Mr. PAUL BUXTON: We have, on some of the

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1 aspects of the site, consulted with a risk analyst. We have
2 not in this specific one.

3 As I say, we think that these sorts of
4 events are extremely unlikely, and we do have emergency
5 response plans in place. There are emergency response plans
6 in place. I don't know that I could go any further than
7 that.

8 THE CHAIRPERSON: Thank you. Okay, we're
9 running behind schedule, but we have one small set of
10 questions yet to be asked, but I think what we'll do is take
11 a break for 15 minutes, and then we'll be back.

12 We'll complete that questioning, and
13 then we'll move to Transport Canada. My apologies for
14 delaying Transport Canada.

15 --- Recess at 10:35 a.m.

16 --- Upon resuming at 10:53 a.m.

17 THE CHAIRPERSON: As I indicated before
18 the break, we have a few more questions for Bilcon, and then
19 we will move to Transport Canada.

20 There will be an opportunity for people
21 in the audience to ask questions after Transport Canada,
22 before we break for lunch.

23 There'll be a subsequent opportunity to
24 ask questions after we deal with DFO, which will be this
25 afternoon. Okay?

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1 So I think that should satisfy the need
2 for questioning at this point.

3 Now, I'm looking for Mr. Buxton. There
4 he is. Mr. Buxton, a bit of unfinished business. We are
5 still missing two outstanding undertakings. One, maybe your
6 blaster can give us this information, but we asked for
7 supporting documentation to identify the percentage of
8 residual ammonia after an explosion.

9 And the second thing we asked for, I
10 think was through Mr. Wall, was the metric equivalent of 140
11 mesh. Both those things were supposed to be delivered
12 today.

13 I wonder if it's possible that we can
14 get them today? If not, then certainly no later than
15 tomorrow. They seem like simple calculations or simple
16 observations.

17 Mr. PAUL BUXTON: Yes. We had planned on
18 doing those at the lunch break and getting to them
19 immediately after lunch.

20 THE CHAIRPERSON: That's perfectly
21 satisfactory then. Thank you.

22 Okay. We'll turn over questions to Dr.
23 Muecke.

24 Mr. GUNTER MUECKE: I have a set of
25 questions regarding loading from the stockpiles.

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1 Your stockpiles are exposed to the
2 atmosphere, and because you are on the shoreline, it means
3 they accumulate salt spray during the storage period.

4 In other coastal operations that I'm
5 familiar with, usually washing will have to be done before
6 the material is loaded in order to wash the salt spray off
7 the aggregate.

8 Is that contemplated in this case?

9 Mr. PAUL BUXTON: No, it is not.

10 Mr. GUNTER MUECKE: In terms of the
11 stockpiles, are they dry or wet?

12 Mr. PAUL BUXTON: The last operation
13 which will happen to the crushed material is that it will be
14 washed, so certainly when it is put on the stockpile, it
15 will be wet, if you like, damp, surface damp.

16 There is no question that the surface of
17 the stockpile will dry in good summer drying weather, wind
18 and hot sun, so I would say that the top surface foot,
19 perhaps six inches to a foot, maybe surface dry. The rest
20 of it will retain its moisture.

21 Mr. GUNTER MUECKE: So the material that
22 goes onto the loader, onto the belts of the loader, if I
23 understand it right, is derived from the interior of the
24 pile near the bottom, so it is material in a wet state. Am
25 I right there?

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1 Mr. PAUL BUXTON: That would be generally
2 correct, yes. It would be picked up in the loading tunnel,
3 yes.

4 Mr. GUNTER MUECKE: So during the loading
5 process, because you are... The ship is loading moist
6 material, so one of the results of that will be that bilge
7 water will be generated in the ship.

8 During the movement of the material, its
9 settling in the holes, there's bound to be some release of
10 water resulting in bilge water, which the...

11 And so my question is, has any
12 consideration been given to the discharge of these bilge
13 waters in terms of the possible environmental effects?

14 Mr. PAUL BUXTON: It is not permitted to
15 discharge bilge water unless at a facility which has the
16 specific facilities to enable that. That, I think, has been
17 in place for some time.

18 I think for specifics on the regulations
19 and legislation, Transport Canada will be here and I'm sure
20 that they would have the specifics.

21 My information is that one may not
22 discharge bilge water except at a facility now which can
23 accommodate that.

24 Mr. GUNTER MUECKE: We will revisit that
25 with Transport Canada. Thank you.

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1 THE CHAIRPERSON: Okay. I think that
2 brings to an end the Panel's questioning of Bilcon. We
3 would now like to bring Transport Canada individuals
4 forward.

5 And if you can align yourself. There's
6 six I believe.

7 **PRESENTATION BY TRANSPORT CANADA/ATLANTIC PILOTAGE AUTHORITY**
8 **- VARIOUS INDIVIDUALS**

9 --- Pause

10 THE CHAIRPERSON: It's my understanding
11 that this is a combined presentation from Transport Canada
12 and the Atlantic Pilotage Authority. Is that correct?

13 Mr. JIM CORMIER: That is correct.

14 THE CHAIRPERSON: Could I ask each of you
15 to give your name and your affiliation, and if your name has
16 any unusual spelling or whatever, would you spell it out so
17 that the transcriber will get it right?

18 And maybe we could just start over here,
19 and just go through so we have all those names.

20 Mr. JIM CORMIER: Yes, thank you. My
21 name is Jim Cormier. I am the Regional Manager of
22 Environmental Affairs for the Maritimes for Transport
23 Canada.

24 Mr. JOHN PRENTISS: Good morning. I'm
25 John Prentiss. I'm a **Navigable Waters Protection Act**

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1 Officer with Transport Canada.

2 Mr. GARRY MACCAULL: I'm Garry MacCaull.

3 That's G-a-r-r-y; M-a-c-c-a-u-l-l. And I'm a Senior Marine
4 Inspector, Transport Canada Marine Safety.

5 Mr. ROSS MUNN: Ross Munn, M-u-n-n. I'm
6 Regional Manager Transportation Security Operations.

7 Mr. PATRICK GATES: Patrick Gates,
8 Director of Operations for the Atlantic Pilotage Authority.
9 I'm also a Master Mariner.

10 Mr. MIKE FREEMAN: And Mike Freeman with
11 Transport Canada, Environmental Assessment Officer.

12 THE CHAIRPERSON: Two gentlemen in back,
13 please.

14 Mr. STEVE BONE: Steve Bone, B-o-n-e.
15 I'm the Communications Adviser for Transport Canada.

16 Mr. ALAN MILNE: Alan Milne. I'm the
17 Acting Regional Director of Marine Safety.

18 THE CHAIRPERSON: Thank you very much.
19 Now I believe you're going to make a presentation, so I'll
20 just let you go to it.

21 Mr. JIM CORMIER: Thank you very much for
22 inviting Transport Canada here today.

23 As you can see, we have our team of
24 experts that hopefully will be able to present our area of
25 responsibility and involvement in this project as well as

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1 provide any advice to the Panel on areas of concern.

2 Transport Canada's mission is to develop
3 and administer policies, regulations and services for the
4 best transportation system of Canada and Canadians, one that
5 is safe, secure, efficient, affordable, integrated and
6 environmentally friendly.

7 Transport Canada is broken down into
8 different core activities, branches as we call them, Marine
9 Safety being one of them that has the greatest interest in
10 this project, as well as Security and Emergency
11 Preparedness.

12 We have a Programs group, that is where
13 the Environmental Affairs sits and also incorporates
14 airports, harbours and ports.

15 Other branches that Transport are
16 involved with are surface, rail, civil aviation,
17 communication, policy and coordination.

18 Transport's involvement... Or the
19 Federal EA involvement began in February 2003 with the
20 identification of two potential Law List triggers under the
21 **Canadian Environmental Assessment Act**, one being the
22 **Navigable Waters Protection Act**, the **NWP**, and the **Fisheries**
23 **Act Authorization**.

24 And it's important to note that, at that
25 time, both of these mandates were under the Minister of

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1 Fisheries and Oceans.

2 Transport became a responsible
3 authority, an RA, under CEAA, in March of 2004 when the
4 Navigable Waters Program was transferred from the Minister
5 of Fisheries and Oceans to the Minister of Transport Canada.
6 Transport's active involvement in the CEAA began in August
7 2004.

8 Mr. JOHN PRENTISS: Okay. And I work
9 with the Navigable Waters Protection Program, and we
10 administer the **Navigable Waters Protection Act**, which is a
11 Federal Act.

12 It's designed to authorize interferences
13 to the public right of navigation.

14 We do this by ensuring that works are
15 reviewed and regulated to mitigate any potential
16 interferences or any impact on the public right of
17 navigation.

18 Our processes are in legislation and
19 require registering plans and advertising the Project. And
20 it's also... Several of the sections are CEAA triggers,
21 hence our involvement.

22 So we became... We had a completed
23 application in January 2003. By February we had advised the
24 Proponent of their need to register their plans and proceed
25 with the public notification process.

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1 Our Navigational Impact Assessment is
2 basically complete. We are awaiting the results of this
3 process to make sure we're in a position to come up with a
4 favourable decision.

5 Mr. GARY MACCAULL: Marine Safety. I'll
6 talk about the vessel, the foreign vessels coming to
7 Canadian waters. Marine Safety is responsible for the
8 compliance and enforcement of all vessels in Canadian
9 waters.

10 Foreign vessels that come to Canada must
11 comply with international conventions under the National
12 Maritime Organization.

13 To list, there's the International
14 Convention for the Safety of Life at Sea, and that's
15 concerning safety and safety equipment onboard vessels.

16 There's the International Convention for
17 the Prevention of Pollution from Ships, which is called
18 MARPOL, and MARPOL is broken down in six annexes.

19 The first annex deals with oil
20 pollution. The second annex, noxious liquid substances.
21 The third annex, hazardous substance in package form. Annex
22 four is sewage. Annex five is garbage, and annex six is the
23 air emissions from the ship.

24 Also for crew on the Crew Standards of
25 Training, this comes under the International Convention for

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1 Standards of Training Certification and Watchkeeping for
2 Seafarers, also called STCW95. That's the latest revision
3 to the STCW Code.

4 Under the **Canada Shipping Act**, the
5 relevant regulations are the Ballast Water Management
6 Regulations, Navigation and Safety Regulations, and the
7 Regulation for the Prevention of Pollution from Ships and
8 for Dangerous Chemicals.

9 To ensure that the vessels are complying
10 with the conventions and regulations, Marine Safety uses the
11 following procedures.

12 All vessels are required to report to
13 the Eastern Canada Vessel Traffic Service System, and
14 there's established Eastern Canada Vessel Traffic Service
15 Zones around eastern Canada from 60 degrees North down to
16 the American waters.

17 Vessels are required to provide 24-hour
18 reports prior to...24 hours prior to reporting to the ECAREG
19 zone. These reports would be the identification of the
20 vessel, the Master on board, the destination and the route
21 of the vessel, the cargo on board, deficiencies in machinery
22 or equipment of the vessel, any release of pollutants, and
23 also the requests to request clearance to enter Canadian
24 waters.

25 Once the vessel is within the ECAREG

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1 zone, it's required to have frequent reports on ship
2 movement and also any incidents concerning the safety or
3 pollution when the vessel is in our zone.

4 We also do port state control on foreign
5 vessels. There's a program in the North Atlantic Trade
6 area. It's the Paris MOU it's called, and we're a signatory
7 to that, so we put our Marine Safety Inspectors aboard
8 vessels to inspect vessels, and they're done at least once
9 every six months.

10 These vessels are boarded on arrival in
11 Canada, if they haven't already done it within six months,
12 and we go through and ensure that the vessel is complying
13 with all the conventions and regulations.

14 If the vessel is in deficiencies, we
15 have the power to detain that vessel until the deficiency is
16 rectified.

17 Also in the reporting procedure, when
18 the vessel is coming, it's been instigated that there is
19 ballast water reporting to confirm that the vessel has a
20 ballast water management program in place.

21 This can be achieved in one of four
22 ways: exchange of ballast water before in Canadian waters;
23 treatment of ballast water; discharge to reception
24 facilities; or retention on board.

25 We require the report of vessels, like I

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1 say, before... Along with the ECAREG, before they come into
2 Canadian waters to ensure that they are managing their
3 ballast water on board.

4 One other point I'd like to bring up,
5 and it was mentioned this morning, Marine Safety would
6 strongly encourage the Proponent to develop a Port Procedure
7 Manual.

8 The details of the Port Procedure Manual
9 can be found in our publication [inaudible] Process, and in
10 this book I'd just highlight some of the procedures that
11 would be required in the Port Procedure Manual.

12 You have stuff like berthing strategy,
13 terms of design on ship approach, departure from the
14 terminal, upper limbs berthing operations, terms of winds
15 velocity, wave heights, tidal stream velocity, ice cover,
16 visibility and means of measuring and indicating these
17 factors, load measurements and limbs supporting lines, ship-
18 shore communication procedures, designated anchorages,
19 emergency measures.

20 Just to name a few, also there would
21 be... Also, in the... With the developed checklist for the
22 procedures for the vessel, for example, inspection, testing
23 and preventative maintenance of terminal berth equipment
24 used by the ships, pre-arrival and departure operations,
25 tests and checks of ship machinery and equipment, cargo pre-

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1 transfer inspection, checklists and conferences, ship-
2 terminal communication chain of authority, cargo-handling
3 procedures, including emergency shut-down procedures, safety
4 precautions, ship-oriented emergency procedures, which would
5 be included in the terminal's contingent plans, and
6 receiving facilities for ballast, dirty ballast, slops and
7 garbage.

8 Here again, Marine Safety is... It's
9 not a regulatory requirement, but we would strongly
10 encourage that the Proponent develop a Port Procedure
11 Manual. Thank you.

12 Mr. ROSS MUNN: Good morning. Within the
13 Atlantic Region, Marine Security oversight is conducted by
14 the Security and Emergency Preparedness Branch.

15 To receive these vessels and to operate
16 the marine terminal, the Proponent must comply with the
17 Marine Security requirements under the International
18 Maritime Organization's International Ship and Port Facility
19 Security Code.

20 Of note is that the amendments to the
21 International Convention for the Safety of Life at Sea and
22 the requirements under the Code have been implemented
23 through Canada's **Marine Transportation Security Act** and the
24 Regulations.

25 What does that mean? Basically, in

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1 accordance with the Marine Transportation and Security
2 Regulations, the Proponent is required to prepare a Marine
3 Facility Security Assessment in collaboration with us and
4 develop and implement a Marine Facility Security Plan prior
5 to the operation of the marine terminal.

6 For these operations to begin, all shall
7 be submitted to the Regional Director of Transportation,
8 Security and Emergency Preparedness for approval, and this
9 must be done six months in advance of operation of the
10 facility.

11 Mr. JIM CORMIER: So to sum up, the
12 Proponent is required to adhere to all conditions of a
13 **Navigable Waters Protection Act** approval.

14 They must ensure a Port Procedures
15 Manual is completed prior to the facility operating, ensure
16 all necessary pilotage requirements are in place prior to
17 the facility operating, which our colleague, Captain Gates,
18 will be speaking to in just a moment, and ensure a Port
19 Security Plan is approved.

20 Transport Canada looks forward to the
21 Joint Review Panel's report and we, along with Fisheries and
22 Oceans, as a responsible authority for the EA, will respond
23 to the Panel's report once it's released.

24 I've included a list of contacts that
25 are at this table, and phone numbers, and copies of the

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1 presentation are at the back of the room for those
2 interested parties that may be interested in contacting us
3 after the hearings if they think of additional questions or
4 something.

5 **PRESENTATION BY ATLANTIC PILOTAGE AUTHORITY**

6 Mr. PATRICK GATES: Good morning. I'm
7 Captain Patrick Gates. I'm Director of Operations for the
8 Atlantic Pilotage Authority based in Halifax. Just a little
9 intro on the Atlantic Pilotage Authority.

10 We are a Federal Crown corporation,
11 which has to be self-sufficient, and we report, through
12 Transport Canada, to the Minister of Transport.

13 The Atlantic Pilotage Authority mandate
14 is to establish, operate, maintain and administer in the
15 interests of safety an efficient pilotage service within the
16 designated waters of the Atlantic region.

17 Compulsory pilotage area designations.
18 Each Pilotage Authority exercises jurisdiction over the
19 waters within its geographic boundaries specified in the
20 **Pilotage Act** for each pilotage region.

21 The Atlantic Pilotage Authority, APA,
22 gives power for all Canadian waters in and around the four
23 Atlantic provinces, including the waters of Baie des Chaleur
24 in the Province of Quebec and south of Cape d'Espoir.

25 The **Pilotage Act** also empowers each

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1 Pilotage Authority to make regulations establishing
2 compulsory areas within the Authority's geographic
3 boundaries.

4 Pros of compulsory pilotage for terminal
5 operators provides professional pilots. Pilots are
6 knowledgeable of local conditions, reduces damage to your
7 infrastructure.

8 The pilotage areas for the APA, as
9 designated on the chart there, there are 16 compulsory
10 pilotage areas and many non-compulsory areas throughout the
11 Atlantic region. And we provide the ships...

12 Either the owners or the ship Captains
13 do contact our office from time to time, and a lot of the
14 smaller ports, to provide pilotage service at some of the
15 minor ports where there's not that much traffic.

16 The criteria for pilotage. The criteria
17 for determining which ports and districts should become
18 compulsory are the degree of difficulty and the hazards in
19 approaches within the port itself; the amount of vessel
20 movement and manoeuvrability and size of those vessels; the
21 nature of cargo carried on board, i.e. oil, gas, explosives,
22 hazardous materials; and the design of the wharves, slips
23 and actual space available for manoeuvring.

24 The environmental concerns and the
25 preservation of the ecosystem. The Ministerial review of

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1 outstanding pilotage issues, the Canadian Transportation
2 Agency review in 1999 contained 21 recommendations, all of
3 which Transport Canada concurs in principle with.

4 The details of the Agency's
5 recommendations and the Departmental response thereto can be
6 found in the Report to Parliament by the CTA.

7 CTA recommendation number 1. The Panel
8 recommends that each Authority be required to identify, in
9 consultation with interested parties any compulsory areas
10 where a change in the factors and circumstances relating to
11 the designation justifies a detailed re-examination of that
12 designation and to develop a plan and a time-frame for doing
13 so.

14 The Panel recommends that each Authority
15 be required to conduct a risk-based assessment of the
16 proposed new compulsory areas, and those areas where changed
17 factors and circumstances justify a detailed re-examination
18 of the designation.

19 Pilot risk management methodology. Such
20 designation not be imposed indiscriminately; appropriate
21 research and evaluation of all the facts; a meaningful
22 consultation with the stakeholders; clear justification that
23 compulsory pilotage is warranted.

24 The PRMM is a consultive process
25 consisting of easy to follow steps to provide a consistent,

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1 transparent, well documented decision-making process.

2 The PRMM stresses the importance of
3 involving stakeholders, maintains good documentation
4 throughout all stages in the process. Communication is
5 essential. Data and information are very important, and it
6 is fully endorsed by the Minister of Transport.

7 Exchange of information. Providing a
8 greater understanding of the issues; identifying possible
9 options.

10 Documentation produced during the
11 process also becomes the building blocks for the risk
12 management library where decisions and risk context issues
13 have assumptions, proceedings, research, et cetera, that can
14 be compiled for future reference.

15 PRMM documentation provides the
16 following benefits: A record of decisions; a means to
17 explain and defend decisions; historical information and
18 data for future decisions that enhances the knowledge and
19 uniformity and consistency of future decisions; context for
20 informing stakeholders of decisions; a paper trail of events
21 and decisions; and in the event of legal action, a detailed
22 and comprehensive record of previous decisions.

23 Procedural steps. The Authority will
24 appoint an experienced facilitator who is respected within
25 the industry.

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1 Although the facilitator is ultimately
2 responsible for the success of the completion of the
3 Project, it is expected that he or she appoint an Advisory
4 Committee comprised of a limited number of direct
5 stakeholders.

6 This group will address or debate all
7 the needs, issues and concerns of the stakeholders.

8 At the conclusion of the process, the
9 facilitator will present to the Atlantic Pilotage Authority
10 his conclusions and recommendations. It will be reviewed by
11 Transport Canada for due process.

12 All stakeholders who participate in the
13 project will be asked for their comment.

14 The Board's final decision to accept,
15 amend or reject such recommendation will follow, and that
16 Board is the Board of the Atlantic Pilotage Authority.

17 These list the compulsory pilotage areas
18 in New Brunswick, Nova Scotia, Newfoundland, Labrador and
19 Prince Edward Island.

20 This is a list of ports where we are
21 asked to provide pilots, and they usually come from one of
22 those major ports that were on the previous slide, and we
23 also do coastal and ice-pilotage work as required by the
24 ship's Captain or the owner.

25 Whites Point pilotage review, compulsory

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1 pilotage. The Authority will maintain the use of gross
2 tonnage as a criteria on which to base pilotage
3 requirements, limits and exemptions.

4 Canadian and registered ships above
5 1,500 gross registered tonnes remain subject to compulsory
6 pilotage. Canadian fishing vessels, Canadian Government
7 ships are not subject to pilotage.

8 In addition, offshore supply vessels of
9 5,000 gross registered tonnes or less are not subject to
10 compulsory pilotage.

11 This means that an offshore supply
12 vessel of 5,000 gross tonnes or less that operates out of a
13 base in a compulsory pilotage port located within the
14 Atlantic region will not be subject to a compulsory
15 pilotage.

16 Marine pilots. The Authority employs
17 professional marine pilots who are competent in all aspects
18 of ship handling. They have a thorough understanding of the
19 effects of wind, current and tidal influences.

20 This is reflected in the expertise they
21 demonstrate in navigation and handling of all size vessels
22 in proximity to land and within narrow channels and
23 harbours.

24 There's just some pictures of pilots
25 boarding some large ships and it just gives a bit of a size

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1 of what they have to undertake.

2 Pilot boats. The Authority operates
3 pilot boats in Halifax, Saint John, New Brunswick and
4 Placentia Bay, Newfoundland. The Authority has 16 contract
5 pilot boat operators in the remaining compulsory and non-
6 compulsory areas.

7 These are pilot boats that are
8 continued. And the one on the left is actually the same one
9 on the right, but we have that from Boston, and the one on
10 the... That's the new one in Saint John now.

11 And this is the end except questions.
12 Thank you, gentlemen.

13 **TRANSPORT CANADA/ATLANTIC PILOTAGE AUTHORITY - QUESTIONS BY**
14 **THE PANEL**

15 THE CHAIRPERSON: Gentlemen, I don't know
16 which one will answer this, but I have a question about the
17 Port Procedure Manual. Is that mandatory?

18 Mr. GARY MACCAULL: No, it's not
19 mandatory. The term port review process is a voluntary
20 process, and the guidelines for that Port Procedure Manual
21 comes from that review process.

22 But it's... Like I said, Transport
23 Canada would strongly recommend that a Port Procedure Manual
24 be developed for this operation.

25 THE CHAIRPERSON: From your standpoint,

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1 it's a useful exercise, is it?

2 Mr. GARY MACCAULL: Indeed it is. Indeed
3 it is, yes.

4 THE CHAIRPERSON: It regularizes the port
5 activities.

6 Mr. GARY MACCAULL: Exactly. It's put
7 standard procedures in place so that the ship knows what to
8 do, you know... And when they're doing a transfer of cargo,
9 you know, it will talk about situations...

10 They talked about contingency plans but
11 you know, this is just regular operations, you know?
12 Contingency plans would be in place too.

13 THE CHAIRPERSON: Okay. Thank you.
14 Jill?

15 Ms. JILL GRANT: The Proponent proposes
16 to have a ship coming in on what it calls an exact line, or
17 I think Mr. Buxton this morning called it a precise line, in
18 and out. And we're wondering how reasonable it is to think
19 that the ship will come in in a very precise way?

20 This is to avoid fishing gear and other
21 things. Can you comment on that?

22 Mr. GARY MACCAULL: If the vessel is
23 taking a pilot, it would be under the guidance of the pilot
24 for a certain approach to the port.

25 When he comes into the traffic lane, he

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1 would... I would expect that the fishermen would recognize
2 that that is the route that this vessel is going to come in
3 and they wouldn't lay their gear across that area.

4 It can be fairly standard, you know?
5 The route can be very standard.

6 I have one comment on the route that's
7 indicated on the Proponent's diagram there.

8 He indicates that the vessel will depart
9 and join the traffic separation scheme, but under Rule 10 of
10 the Collision Regulations, it's required to rejoin or...
11 When you're crossing the separation scheme, the vessel
12 should do, as best as practical, a right angle to the flow
13 of the traffic.

14 So in that case, that would indicate
15 that the vessel probably would come and join a little
16 further North, you know, to do the right-angle crossing into
17 the traffic zone.

18 But as far as coming in... Also too,
19 weather conditions would affect, you know, how the vessel's
20 going to approach. Like I say, if the vessel was on a
21 regular schedule, a week schedule, I think the fishermen...
22 And probably it would be a good idea for the Proponent to
23 advise the fishermen that they're coming in.

24 I can give you a little anecdote or
25 example of the Northumberland Strait where we're dealing

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1 with a situation right now where the cruise ships, you know,
2 in the summertime, ply up to Northumberland Strait.

3 The fishermen are always saying they're
4 running through the gear all the time, you know, so what we
5 have done with the cruise lines there in that case is they
6 have recommended routes that they maintain, understanding
7 that, you know, these are recommended.

8 You can't dictate that the vessel always
9 follow these routes. There's other instances where he has
10 to deviate from these routes for the safety of the vessel.

11 Ms. JILL GRANT: So you would suggest
12 that the route becomes a kind of exclusion zone for fishing
13 then?

14 Mr. GARY MACCAULL: I don't know if we
15 could make it an exclusive zone. As the traffic separation
16 scheme, that's not exclusive to fishing.

17 You know, the fishing is still allowed
18 in the traffic separation scheme, although under Rule 10 a
19 fishing vessel, when he's engaged in fishing and displaying
20 his proper signals, has the obligation of a burden vessels,
21 so other vessels have got to stay out of his way.

22 Under Rule 10 of the Collision
23 Regulations, in the traffic separation scheme, the fishing
24 vessel doesn't have that right. He has to act like another
25 vessel.

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1 So in this case here, you know, we can't
2 exclude him from fishing in the area, but on the other hand
3 he still would have to abide by the Collision Regulations
4 and, you know, give way where appropriate, although if he's
5 outside the traffic separation scheme, and if he's a fishing
6 vessel he would be... He'd have some privileges as a
7 fishing vessel.

8 Ms. JILL GRANT: And can you clarify, I
9 wasn't sure from the presentation whether a pilot has to go
10 onto this ship from the Pilot Authority, or would that only
11 be determined through the kind of risk assessment process
12 that was described?

13 Mr. PATRICK GATES: There has been no
14 determination on pilotage at this stage, and this is the
15 first opportunity that the Authority has been brought in to
16 be involved with this project.

17 And we would propose that we would have
18 to do a risk management review, a PRMM, in order to
19 establish the feasibility of pilotage and whether it'd be
20 necessary or not.

21 There are certain benefits to bringing a
22 pilot in with his experience of the local tides and weather
23 conditions and so on, and also with the proposed terminal,
24 we would strongly recommend that the Proponent do some
25 computer modelling at the simulator.

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1 There's one in Port Hawkesbury or
2 Summerside where you can actually model this and bring
3 people in and try doing it under certain weather conditions
4 and define the practicality of it and to find out whether or
5 not or how many tugs you may need for this operation.

6 Just as an aside, we have conducted this
7 for the Nova Scotia Power Terminal in Port Hawkesbury. We
8 did a review for Bear Head Project. We've done a review for
9 the Celtic Petrochemicals in Goldborough (ph) on simulation,
10 and we've spent a lot of time working with Irving Oil in
11 Saint John for the L&G Terminal.

12 And out of that, between Irving Oil and
13 Repsol and ourselves, we've developed protocol and procedure
14 of how those ships are going to be taken to the dock, how
15 many tugs have to be available to do it, and also determine
16 the weather conditions, the sea states, of how that vessel
17 can stay at the dock and work its cargo.

18 So there is certain benefits of getting
19 into consultation with the Pilotage. You'd have to
20 establish this as a separate entity, and we would probably,
21 if it was to come about, it would probably be serviced from
22 Halifax, or from one of the collection of pilots in Halifax,
23 and we'd have to do some additional training and the like
24 for that, and establish an area and where the pilot would
25 board and how he would get on board the ship and so on and

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1 so forth.

2 Ms. JILL GRANT: Thank you. The proposal
3 suggests that exiting the shipping lanes the ship will be
4 down to 12 knots maximum speed, reducing its speed obviously
5 as it comes in.

6 If the pilot sees a whale, how long does
7 it take to actually slow down a ship of that size that's
8 coming in? Is it feasible to be able to slow down to avoid
9 a marine mammal, or is it feasible to divert course to avoid
10 a mammal that might be spotted in the vicinity?

11 Mr. GARY MACCAULL: I'll try and answer
12 that. I was involved with the lane change in the Bay of
13 Fundy when we moved the lanes to avoid the Right Whales. At
14 that time, we had several discussions about the speed. In
15 fact, in the United States some of the way they deal with
16 that in some of the areas is reduction of speed.

17 For the situation we had in the Bay of
18 Fundy, the speed, because of the size of the vessels
19 involved, you would get down in speed and you know, you'd
20 run the risk of starting to lose manoeuverability.

21 In some cases I think in the States
22 they're down, maybe down to six knots but I mean...

23 So we did look at that, but we came up
24 with the idea that the best option in the Bay of Fundy was
25 to actually move the lanes to get away from the high density

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1 area of the whales. The problem is, reduce the speed, I
2 mean to spot the whales too, they're not that easy to see.
3 And, you know, it could be nighttime fog, you know?

4 And with the Right Whales, they're
5 peculiar because they don't seem to... They seem to be, you
6 know, they don't seem to pay attention to ships at times,
7 eh? Sometimes they do, sometimes they don't.

8 So you know, the trouble with... It can
9 be argued that going through an area of Right Whales at a
10 certain speed, lessen the time you're going to be there, or
11 if you reduce the speed you're going to be in the area
12 longer, so I don't know, you know, what's the best way to
13 deal with this, you know.

14 Like I say, in the Bay of Fundy we did a
15 lane change, and that substantially reduced the risk to
16 strike a Right Whale because of the concentration.

17 I'm not saying that you're ever going
18 to, you know, eliminate it altogether.

19 I don't know if I could speak to
20 whether, you know, if they have time to... When they see a
21 Right Whale, you're that close, whether a reduction in speed
22 of 12 knots or even, you know, slower, but then you run into
23 the risk when you get the slower speed of the
24 manoeuverability of the vessel, so in fact you can't turn
25 the vessel anyway.

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1 So it's... It's not an easy subject to
2 talk about, okay, but you know, when they talk about
3 reducing the speed to 12 knots, I would think that 12 knots
4 is still an acceptable speed to maintain manoeuverability of
5 the vessel.

6 Whether, you know, a speed from... I
7 don't know what the top speed of these vessels are, but I
8 would expect it to be any more than 16 knots, and to reduce
9 from 16 to 12, you know, whether how much that eliminates
10 the risk of strikes to whales, I don't know. I can't talk
11 to that.

12 THE CHAIRPERSON: Captain Gates, I was
13 going to ask you about docking, but you were in the room and
14 you heard the exchange between myself and Mr. Buxton about
15 docking a big ship and the risks involved and the
16 unpredictability of the weather and so forth.

17 And just a moment ago when you were
18 speaking and you were talking about model, my sense is, is
19 that you were answering my question. Were you, in fact?

20 What I mean is, I was suggesting to Mr.
21 Buxton that it's a very unpredictable place. You're dealing
22 with a great big vessel and that maybe a risk analysis would
23 be useful thing in order to assess what the mitigative steps
24 would have to be.

25 Can you offer a comment on that?

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1 Mr. PATRICK GATES: Yes, Mr. Chairman.
2 First off, we have to recognize that these vessels, they are
3 a good size, and they're going to be coming in on ballast,
4 which is going to give them a fairly high windage, and so
5 there's less below the water.

6 When they leave, they're going to be in
7 the reverse condition, and so therefore probably much more
8 manoeuvrable and can handle somewhat more adverse conditions
9 under better control.

10 We would strongly recommend that this
11 terminal be...this proposed terminal be exercised with a
12 modelling and also to undergo a risk analysis for pilotage.

13 I'm not trying to impose pilotage on here. The Authority
14 would probably take it to review it. There's only one port
15 which was exempted from compulsory pilotage by the APA in
16 1972, and that is Hantsport, and I'm not quite sure of the
17 details of why that wasn't included, but that's... That is
18 a fact.

19 All the other ports, where there were
20 pilots came in under the umbrella of the APA, so new
21 terminals and facilities that are outside of the recognized
22 ports will be looked at, we will be directed by our board to
23 review them, and we would ask the corporation, the Proponent
24 of course, to get involved with that.

25 But for docking the ship, it is going to

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1 be very difficult. Personally, I've only just seen a little
2 bit of that comment there, and I was a little bit concerned
3 about the fact that he proposed to use some mooring buoys
4 for the bow and stern lines, the long lines, and our
5 experience on using those buoys in this part of the world is
6 not very good.

7 The icing conditions in the wintertime
8 create huge problems in trying to get rid of those lines
9 when you have to get off in a hurry, and adverse conditions.

10 You have to put a man on the buoy and you have to get off.

11 So the thought would be, it would be better to have a
12 dolphin setback, and a gantry, a gangway walkway, so that
13 the lines can be brought by a boat to the dolphin, and they
14 have a capstan on the hooks there, the mooring hooks, and
15 haul them up.

16 So that would be one suggestion that
17 needed to be evaluated, I would say, because you can't do
18 that work in the wintertime.

19 THE CHAIRPERSON: Thank you, Captain
20 Gates. Very helpful. Jill?

21 Mr. GUNTER MUECKE: Maybe I could come
22 back, for just a moment, to how the ship will have to leave
23 the shipping lane.

24 And we just heard from you that the
25 recommended course is at right angles as opposed to the

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1 oblique angle that is shown on the plans.

2 Mr. GARY MACCAULL: Yes, that's correct.

3 Yes.

4 Mr. GUNTER MUECKE: In terms of whale
5 strikes, would it not be preferable to - I haven't measured
6 it out on the map, obviously - but the shortest route is the
7 best, regardless of angle?

8 Mr. GARY MACCAULL: Well, we're having...
9 You know, we're having traffic come out the outbound lane
10 now, and he's not going to be anywhere outside the outbound
11 lane.

12 Mr. GUNTER MUECKE: H'm.

13 Mr. GARY MACCAULL: He's cutting across
14 the separation scheme to into the outbound lane. Albeit,
15 he's going to be closer to the conservation area. But the
16 vessels in the outbound lane come right by that, but that
17 was, when we were looking at the development of the lane
18 change that, you know, that moved the traffic. Because
19 before, the outbound lane was right through the middle of
20 that.

21 If he has... You know, if he was going
22 out and he encountered a whale, could see a whale, sure, he
23 would alter, you know. The whole area is under vessel
24 traffic management, Fundy Traffic, of course, you know, and
25 radar coverage, so he'd be in constant consultation with

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1 them.

2 Also, Fundy Traffic does, if they had
3 reports of our right whales in the area, they'd broadcast
4 that to ships, you know, when they're in the zone.

5 But all I'm saying is that in the
6 collision regulations, just for the safety of the traffic
7 movement, it's... Or it's... Unless it's, you know... You
8 try to go across the separation zone at as right an angle as
9 possible before joining it.

10 Mr. GUNTER MUECKE: Okay. Thank you.
11 Could I perhaps ask a few things about ballast water and
12 bilge waters? Okay.

13 In terms of ballast water discharge,
14 maybe you could clarify for us what the current regulations
15 are, and follow that up with how these regulations
16 accommodate exceptional circumstances; if the captain thinks
17 an unballasted docking is not safe, what leeway he has in
18 terms of ballast water discharge?

19 There's... As you know, there's
20 considerable concern about that in the fishing community
21 because of invasive species.

22 Mr. GARY MACCAULL: I have the Ballast
23 Water Control and Management Regulations right here, and you
24 want to know the exceptions? Or...

25 Mr. GUNTER MUECKE: Well, could you just

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1 briefly outline for me what the regulations state as to
2 where the ballast water can be discharged?

3 Mr. GARY MACCAULL: I have a graphic,
4 actually, that would probably help too, if we can get that
5 up on the screen, that would show the areas for exchange of
6 ballast water.

7 Mr. MIKE FREEMAN: Just watch your eyes.
8 --- Pause

9 Mr. GARY MACCAULL: There's two different
10 scenarios we have for vessels arriving in Canada. There is
11 the trans-oceanic navigation, which are the vessels coming
12 from like Europe or overseas, and then we have the non-
13 trans-oceanic navigation, which would be vessels coming up
14 from the States.

15 A lot of... In this case here, that
16 would apply because the vessels are only coming from New
17 Jersey. The regulation requires for, you know... It does
18 require that vessels go beyond the thousand metres to
19 exchange heir ballast, okay?

20 But in this case here, we have traffic
21 that is not, you know... To have it enforced to go to sea
22 to exchange a ballast and come back in, there's been other
23 areas that have been identified that it can be, you know,
24 acceptable to your ballast while on route to Canadian
25 ports.

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1 The green zone there shows the traffic
2 heading to and from Nova Scotia. So this is an area that's
3 just off the Continental Shelf in greater than 1,000 metres
4 of water, and these vessels, you know, especially heading to
5 Nova Scotia, are going up into the Gulf of St. Lawrence and
6 up the river, would require the exchange of ballast that
7 way.

8 For vessels coming from Calais in the
9 Gulf of Maine, we have the area yellow. Now, ballast waters
10 are required to be exchange if ballast is taken south of
11 Cape Cod, the area of Cape Cod.

12 So the vessels exclusively trading north
13 of Cape Cod in Canadian waters to come back and forth to
14 Canada, then they could, you know... They would exchange
15 their ballast, and it wouldn't really come under these
16 regulations. Okay?

17 The red area would be vessels which the
18 Proponent's vessel would come under. He's heading into the
19 Bay of Fundy, and so they're required... They can change
20 the ballast in this area, and also keeping or avoiding any
21 shallow water. I have to look. I think it's... Yeah.
22 Depths of at least 500 metres, okay.

23 And I mentioned before, you know, the
24 other options for not exchanging ballast is to have
25 treatment facilities on board. That's still under

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1 development, and I don't know how far they are with that,
2 but that's...

3 And also there's retention onboard,
4 which is not very practical either, you know? Or to assure
5 reception areas for ballast, which is... We don't have
6 reception facilities in the area right now, but that's what
7 is set up for in that.

8 So the vessels are required to exchange
9 the ballast. We monitor the ballast, this change, you know,
10 to ensure that they do. We have metres and we go aboard the
11 vessels and determine...

12 And basically what it is, it's just to
13 test the salinity of the ballast water. If it's... You
14 know, if it's a high enough salinity, then it can be pretty
15 well assured that the ballast is taken at sea, as opposed to
16 taken in port in fresh water.

17 So... And there is, you know, it's...
18 For compliance, there is a prosecution procedure for vessels
19 who do not comply.

20 Mr. GUNTER MUECKE: Thank you, that was
21 very informative. Now the next part of my question was
22 under certain circumstances, the Captain may consider it
23 unsafe to de-ballast at that stage, and my question is what
24 circumstances would warrant that, and what would be the
25 strategies then in terms of getting rid of the ballast

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1 water? Would he have to stay in that area until conditions
2 have improved?

3 Mr. GARY MACCAULL: Okay. There's... In
4 the regulations it says:

5 "It is not necessary to manage ballast
6 water if one of the following emergency
7 situation occurs:

8 (a) the discharge or uptake of ballast
9 water is necessary for the purpose of
10 ensuring the safety of a ship in an
11 emergency situation or saving life at
12 sea;

13 (Bilcon of Nova Scotia) the discharge or
14 uptake of ballast water is necessary for
15 the purpose of avoiding or minimizing
16 the discharge of pollutants from the
17 ship; or

18 (c) the accidental ingress or discharge
19 of ballast water results from damage in
20 the ship or its equipment that was not
21 caused by the wilful or reckless act of
22 the owner or officer in charge, and all
23 reasonable precautions are taken before
24 and after occurrence of damage, or
25 discovery of the damage, for the purpose

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1 of preventing or minimizing the ingress
2 or discharge."

3 We have situations since these
4 regulations come in effect, which was just last year, that
5 vessels going up into the Gulf of St. Lawrence, into the
6 river...

7 Because it's more problematic in the
8 Great Lakes for vessels, the Marine Safety has directed
9 vessels back out to discharge their ballast and to change
10 ballast, okay?

11 So it depends on the case too, you know?

12 I mean, so we would look at that, you know? But so... I
13 mean, we do have the authorities there to direct the vessel
14 out or just not allow them to discharge their ballast in the
15 Canadian waters.

16 Mr. GUNTER MUECKE: Okay. I think that
17 clarifies it for me.

18 The next point that came up, as you
19 heard earlier, was with respect to bilge water, because
20 loading of moist aggregate will no doubt result in a certain
21 amount of bilge water being generated, and what the
22 regulations are regarding that, and when and how that
23 material can be discharged.

24 Mr. GARY MACCAULL: That would be covered
25 under the MARPOL, the International Convention on Marine

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1 Pollution from Ships, and it would be section... It would
2 come under section...

3 Bilge water would be also encompassed
4 like tank sweepage too. We get into that, you know, where a
5 vessel is cleaning the salt out, eh, and garbage.

6 So there is... Under the MARPOL
7 Convention, there is listed procedures, and also where
8 you're allowed to discharge this bilge water, okay? And I'm
9 just quoting off the top of my head. I don't exactly, but I
10 would expect and know from other incidents in the MARPOL
11 that if it's at sea, at this certain distance from land, at
12 a certain rate, it's allowed to do that. Okay?

13 I can't give you the specifics on it
14 from the top of my head. I can get back to you on that, if
15 required.

16 Mr. GUNTER MUECKE: But is it allowed
17 while the vessel is docked in coastal waters?

18 Mr. ALAN MILNE: There is a certain
19 distance off shore that you're allowed to discharge, and the
20 vessel has to be underway. And as Gary pointed out, it's a
21 limited quantity. It's a rate per nautical mile, the
22 discharge. And of course it's down to... I believe it's 15
23 parts per million, so it's very diluted in terms of
24 pollutants.

25 Mr. GARY MACCAULL: It wouldn't be, you

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1 know, like I say, under MARPOL or even in the ballast water,
2 you know, under "Safety Conditions" too, it would be
3 allowed, okay?

4 If the vessel wasn't... If safety of
5 the vessel or life onboard the vessel was... Or if it's a
6 choice between discharging bilge water or having to
7 discharge oil pollution, you know? So it depends on the
8 case.

9 I don't know exactly the wording of the
10 regulation, you know, but there's... I would expect that
11 there's some allowable, you know, off shore. I don't know
12 alongside. I'd have to get back to you on that. I can't
13 really talk to that specifically.

14 Mr. GUNTER MUECKE: It would perhaps be
15 useful to clarify that for us, because what I visualize is
16 because we are dealing with the same situation every time
17 they load, that they, you know, generate a certain amount,
18 and we have no much, of course, but water that will
19 accumulate in the holds that they...

20 So that, you know, we can have an idea
21 as to, you know, where that water is going to go.

22 Mr. GARY MACCAULL: Yeah. There again, I
23 think, you know, the vessel is allowed to do it a certain
24 distance from shore. That would be the procedure to do, to
25 wait until the vessel got out to discharge that bilge water.

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1 I don't think it would be that amount that would make a
2 difference in the...on the ballast of the vessel.

3 And also it depends on, too, the bilge
4 water, you know? If there's no oil components in that bilge
5 water... I mean, that's definitely not allowed.

6 Mr. GUNTER MUECKE: Yeah, sorry. I don't
7 understand that. If there is no oil in it, it'll make a...
8 Will that allow the ship to discharge at the docking
9 facility?

10 Mr. GARY MACCAULL: There again, I'll
11 have to get back to you. I don't know at that docking
12 facility. It would be allowed off shore, but I would have
13 to check the regulations to see for the docking facility.

14 Mr. GUNTER MUECKE: Okay. Could we have
15 an undertaking from you to clarify this for us?

16 Mr. GARY MACCAULL: Indeed sir.

17 THE CHAIRPERSON: By which date could you
18 get it to us? The hearings end on the 30th. Could we get
19 it before the 30th of June?

20 Mr. GARY MACCAULL: I'll endeavour to do
21 it. If I can't do it myself, I'll task someone to do it for
22 you.

23 THE CHAIRPERSON: Can I put you down for
24 the 29th of June?

25 Mr. GARY MACCAULL: 28th?

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1 THE CHAIRPERSON: 29th.

2 Mr. GARY MACCAULL: 29th.

3 THE CHAIRPERSON: Well earlier, if
4 possible.

5 Mr. GARY MACCAULL: Yeah. I'll try to
6 get it. I'm out of the office, but like I say, I'll task
7 someone to do it for you.

8 THE CHAIRPERSON: Okay. Thank you.

9 Ms. JILL GRANT: I'd like to ask a
10 follow-up question on the exchange of ballast water. You
11 suggested that in the Gulf of St. Lawrence ships are
12 sometimes sent back out.

13 Is that the standard policy, that if a
14 ship is coming in and has not been able to exchange its
15 ballast water that it will be sent back out to do so before
16 it comes into the Bay of Fundy?

17 Mr. GARY MACCAULL: You mentioned the
18 Gulf of St. Lawrence but now you're talking about the Bay of
19 Fundy so...

20 Ms. JILL GRANT: Well, you had said that,
21 you gave an example---

22 Mr. GARY MACCAULL: Yeah.

23 Ms. JILL GRANT: ---from the Gulf of St.
24 Lawrence. So I'm asking whether it's going to be the policy
25 in the Bay of Fundy that if a ship does not or has not been

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1 able to exchange its ballast water, will it be required to
2 go back out to that read zone to do so before it comes in
3 and discharges?

4 Mr. GARY MACCAULL: Yes. That would be
5 the requirement. You're not allowed to just, you know...
6 If it's ballast water that was taken below Cape Cod, that
7 would...

8 Ms. JILL GRANT: Thank you. And the
9 ballast exchange requirement, does that require a hundred
10 percent exchange of the ballast water or is some percent
11 retained?

12 There's a two-day passage from New
13 Jersey. We're just wondering how much of the ballast water
14 would actually be exchanged in that time.

15 Mr. GARY MACCAULL: I think it's better
16 if I include that in, because I don't know the numbers right
17 off the top of my head, you know? So I'll include that in
18 the reply to you on the other one.

19 Ms. JILL GRANT: Thank you. The study
20 provided by the Proponent on the waters where the ballast
21 water will be taken on in the Hudson-Raritan Bay Estuary
22 area indicate that there's very high risk there for a number
23 of organisms of concern, including parasitic lobster
24 disease, mollusk disease, Asian crab, brown tide.

25 So I'm wondering... And perhaps hull

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1 fowling agents.

2 So I'm wondering what kinds of concerns
3 Transport Canada has, and what kind of monitoring you'd be
4 doing around whether these invasive organisms are coming in,
5 in the ballast water, even after exchange?

6 Mr. GARY MACCAULL: As to monitor what
7 species are in the ballast water, I think we would defer
8 that to DFO, because we work in conjunction with them, you
9 know, in consultation with them, to set up the ballast
10 exchange areas, and also they do the monitoring for what's
11 in the water.

12 We check and monitor, like I say, for
13 salinity so that we can check to see that it has being
14 exchanged at sea, but what's actually in the components that
15 could be harmful to our environment, that we'd leave that
16 for the DFO.

17 Mr. GUNTER MUECKE: Could I move on to
18 the decommissioning and abandonment fees of the port, of the
19 loading facility? And I guess we're interested in
20 Transport's opinion on how decommissioning should proceed.

21 Could the terminal actually be left in
22 place after operations cease? How is this seen in terms of
23 an obstruction to navigation?

24 Mr. ROSS MUNN: Well, I'll handle that
25 question, and it's a good question. Under the **Navigable**

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1 **Waters Protection Act**, should the work be approved, it is
2 approved for a set period of time, based on regulation. In
3 the case of marine terminal, it's 30 years, just off the top
4 of my head, but I think it's 30 years.

5 The owner of the work is obliged to seek
6 re-approval at that time, should they wish to continue
7 operation. It's standard in our approvals to have a
8 condition of approval that relates to removing the work at
9 the end of its...should you wish to not use it anymore, we
10 expect you to remove it.

11 Should the owner decide to sell it or
12 divest of it in some way or another, give it or somehow
13 exchange it to another owner, that new owner would then be
14 responsible for any terms and conditions of the **Navigable**
15 **Waters** approval, which would include lighting or whatever
16 conditions they were.

17 So in theory, it could continue on into
18 time, the way the act is set up now, or at some point the
19 owner could modify the structure and seek approval for that,
20 as well, and modification could be completely removing it or
21 changing it in some format, maybe for another purpose.

22 And we would look at that and assess
23 that at the time.

24 Mr. GUNTER MUECKE: What about change of
25 usage?

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1 Mr. ROSS MUNN: We're not, in our...
2 When we analyse the impact on the public right of
3 navigation, we're not really that concerned with the usage,
4 other than the fact that the thing is sticking out into a
5 navigable waterway, and we expect a boat to be tied up to
6 it.

7 If the ship is handling, say, oil or
8 crushed rock, it's kind... From my assessment, it's the
9 same.

10 Others, you know, other departments and
11 other people within Transport Canada may have... It would
12 trigger other ways of assessing the project.

13 But for us, it's just strictly how it
14 impacts on or into the waterway.

15 Mr. JIM CORMIER: And if I could just add
16 to that, the nature of the authorization that **Navigable**
17 **Waters** may be issuing, depending on the type of change, it
18 could trigger **Canadian Environmental Assessment Act**. If the
19 authorization is a 5(1) or a 6(4) authorization, under their
20 Act, they're both triggers under CEAA. So that change might
21 likely invoke CEAA on that change.

22 Mr. GUNTER MUECKE: Thank you.

23 Ms. JILL GRANT: The **Species At Risk Act**,
24 SARA, requires that if a potential harmful effect or death
25 of any kind of endangered species is contemplated, that

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1 there has to be a notification so that special attention is
2 paid to that.

3 I'm just wondering whether Transport
4 Canada issued or received any notifications under SARA about
5 species at risk, and what the implications of those might be
6 for this project.

7 Mr. MIKE FREEMAN: I think those
8 notifications would be directed at the competent Minister,
9 and if it was a marine species it would be directed at DFO,
10 if it's a mammal, marine mammal, and if it was a marine bird
11 or a migratory bird it would be directed at Environment
12 Canada.

13 Ms. JILL GRANT: And did Transport Canada
14 issue such a notice with regard to the shipping for this
15 Project?

16 Mr. MIKE FREEMAN: Not that I'm aware of.

17 THE CHAIRPERSON: That brings the
18 questions from... Oh, sorry.

19 Mr. GARY MACCAULL: I wonder if I just
20 could, if it would be all right if I could ask the recorders
21 to get your questions down, because I didn't, you know, get
22 the specific questions you asked me.

23 THE CHAIRPERSON: The undertaking?

24 Mr. GARY MACCAULL: Yes.

25 THE CHAIRPERSON: Yes. I don't know if

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1 we have it formalized yet, but before you leave perhaps we
2 can give it to you exactly.

3 Mr. GARY MACCAULL: I appreciate it.
4 Thank you very much.

5 THE CHAIRPERSON: Yes. Thank you.

6 The Panel's questions are finished at
7 this point, so we will then ask the Proponent whether he or
8 they wish to ask a question. Mr. Buxton?

9 Mr. PAUL BUXTON: Thank you, Mr. Chair.
10 We have no questions, thank you.

11 THE CHAIRPERSON: That... Following
12 that, I ask if there are any individuals from Government who
13 would like to ask questions from Federal or Provincial
14 Government. If not, then we will ask if there are any
15 questions from registered participants.

16 There's one. Mr. Hunka? We don't have
17 a microphone for you unfortunately. Can you see to that
18 Debbie?

19 **PRESENTATION BY TRANSPORT CANADA/ATLANTIC PILOTAGE AUTHORITY**
20 **- QUESTIONS FROM THE PUBLIC**

21 Mr. ROGER HUNKA: I have a number of
22 questions, but I don't know which one to address first.

23 We've used the term "invasive". I
24 assume you mean alien species?

25 THE CHAIRPERSON: To whom are you

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1 directing that question?

2 Mr. ROGER HUNKA: To the Panel, the
3 Proponent, and this Panel.

4 Ms. JILL GRANT: Invasive species would
5 be species not native to this area.

6 Mr. ROGER HUNKA: Alien species.

7 Ms. JILL GRANT: That grow out of normal
8 conditions, yeah.

9 Mr. ROGER HUNKA: Okay. I'll use the
10 term "alien" because that's the term that I understand it to
11 be.

12 In the discharge areas from Transport
13 Canada of ballast, the red area, is that ballast taken on
14 anywhere along the Bay of Fundy? Because I'm not clear of
15 the question from the Panel and your answer.

16 Mr. GARY MACCAULL: The exchange, if
17 ballast is taken on in the Bay of Fundy, you wouldn't be
18 required to exchange it. It's ballast is taken on south of
19 the latitude of Cape Cod that causes a problem.

20 So if the vessel is ballasting on the
21 way out, he's going out of our waters anyway, so we're not
22 concerned about...

23 For example, if a vessel goes into
24 Sydney with a load, discharges its load, takes on ballast
25 water, and then comes to Halifax and discharges in Halifax,

1 he's not outside the regulations.

2 Mr. ROGER HUNKA: No, but in this case
3 the ship is coming from the Hudson to the Bay of Fundy.
4 Bringing in ballast from the Bay, from the Hudson.

5 Mr. GARY MACCAULL: Okay. I'm sorry.

6 Mr. ROGER HUNKA: So where would that
7 ship be prepared or allowed to discharge its ballast?

8 Mr. GARY MACCAULL: In the red zone
9 that's in areas greater, I think it's 500 metres.

10 Mr. ROGER HUNKA: Okay. The other
11 supplementary to Transport Canada, is Transport Canada or
12 does Transport Canada have a Memorandum of Understanding
13 between itself and the Department of Agriculture, the
14 Inspections Unit, dealing with "alien" and invasive
15 species?

16 Mr. GARY MACCAULL: I'm not aware of
17 anything with the Department of Agriculture. We have MOUs
18 with the Department of the Environment and DFO.

19 Mr. ROGER HUNKA: Are you aware that the
20 Department of Agriculture just recently has established a
21 unit to deal with "alien" invasive species and their
22 pathways?

23 Mr. GARY MACCAULL: Personally, I'm not.

24 Mr. ROGER HUNKA: Is anyone on this Panel
25 aware of it with Transport Canada?

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1 Mr. JIM CORMIER: No, I'm not.

2 THE CHAIRPERSON: Mr. Hunka, I think
3 that's your question and your follow-up, so I'm going to see
4 if there's anyone else interested.

5 Mr. ROGER HUNKA: All right. Thank you,
6 Mr. Chair.

7 THE CHAIRPERSON: I see a hand. Mr.
8 Stanton? Remember, these questions can be directed to the
9 Proponent as well as to Transport Canada or the Pilotage
10 Authority.

11 Mr. Stanton, there's a microphone right
12 there for you.

13 Mr. KEMP STANTON: I'd like to know if
14 it's just the terminal that the Department of Transport is
15 looking at here, or whether they would be looking at the
16 amount of buoys and other parts of the project that the
17 Proponent is putting in the water.

18 Mr. JOHN PRENTISS: From the **Navigable**
19 **Waters Protection Act** perspective, we authorize any works
20 that are placed below the high water mark. So the plans
21 that we have show a terminal, I think a couple of mooring
22 dolphins, maybe three mooring dolphins, and I think two
23 mooring buoys.

24 Those are the only things that we have
25 under consideration at this point in relation to the

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1 terminal, that I'm aware of.

2 THE CHAIRPERSON: Okay. Additional
3 questions? Yes, Mr. Sharp?

4 Mr. ANDY SHARP: A question for Captain
5 Gates. In his discussion about the modelling and review of
6 ship movements into a terminal, he indicated that there was
7 a modelling facility through the Pilotage Authority, and he
8 indicated that other projects in the area had made use of
9 this facility.

10 Am I correct in taking from your
11 comments then that this is something that's typically done
12 before a project gets to the Environmental Assessment or the
13 Environmental Impact Assessment stage? You mentioned the
14 Irving Refinery I believe.

15 Mr. PATRICK GATES: My mention, actually,
16 was to the Irving L&G, only on the marine side of the
17 project, and what we... What usually happen is that we come
18 to meetings such as this and these issues are raised, and
19 then recommendations come from the Committee to the
20 Proponent to follow some guidelines or suggestions, or take
21 it up.

22 The modelling abilities and facilities
23 are at the Community College, Marine Institute, Nautical
24 Institute, in Port Hawkesbury, and the Nautical College in
25 Summerside, for this area, or you can go to Memorial in

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1 Newfoundland, St. John's, Newfoundland, to do that.

2 But normally, at this stage, we put it
3 out there for the Proponent so he will be... We're
4 providing some information, and it's for the Committee to
5 then either recommend to the Proponent to follow up on some
6 of the suggestions that we bring, the information brought
7 forward.

8 THE CHAIRPERSON: Thank you. Additional
9 Questions? Mr. Hunka?

10 Mr. ROGER HUNKA: Thank you Mr. Chair.
11 This is to the Proponent. In your Environmental Impact
12 Statement, also appreciating that you were not informed
13 about the Aboriginal communities or the representatives to
14 these communities, the area of Aboriginal fisheries,
15 commercial fisheries and food fisheries is not addressed at
16 all.

17 The question is, are you prepared to
18 begin to address the issue of the Aboriginal food fisheries
19 and the Aboriginal commercial fisheries in your
20 Environmental Impact Statement?

21 Mr. PAUL BUXTON: I'm not sure really
22 quite exactly what your question means. I was under the
23 assumption that the issue of food fishery for Aboriginal
24 people was a point of negotiation between Federal agencies
25 and the various Native Councils, Native Bands, et cetera,

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1 but...

2 We have not addressed that, and I'm not
3 sure just where we would fit into that process, and as much
4 as I don't believe that we would be interfering with any
5 Native fisheries, it might be useful to raise that same
6 question with the Department of Fisheries and Oceans
7 officials who will be here this afternoon.

8 Mr. ROGER HUNKA: All right. Thank you.

9 THE CHAIRPERSON: Yes? Mr. Morsches.

10 Mr. BOB MORSCHEs: Doctor, I'd like to
11 address my question to Mr. Buxton.

12 During this morning's session, you
13 mentioned about the ship and it coming in during various
14 weather conditions. Have you thought about a formal risk
15 assessment whereby even, I think even Dr. Fournier mentioned
16 this, where you would actually take a ship of ore size, an
17 ore-size ship, and take it under various seasons and all the
18 various weather conditions - fog, snow, rain, ice, and high
19 winds - and come around the Sandy - or Sandy Cove, excuse me
20 - the Whale Cove, Whale Point (sic) area...

21 I've been on many ships during my
22 career, and when you have high winds or inclement weather, a
23 ship, even though it only wants to do 12 knots, will go at a
24 flank speed, and indicates that the props are going to be
25 about 25 to 30 knots per hour.

1 That kind of prop wash causes a
2 turbulence that could go down 50 to 70 metres in depth. The
3 area that we're talking about is full of kelp, urchins, and
4 lobsters.

5 Of course, they may not be there at the
6 time, but the kelp was always there. We have two layers of
7 kelp in that area, it's a very major area for kelp.

8 And so I'm wondering if you have
9 considered having a formal risk assessment by actually
10 deploying a ship, borrowing a ship for a day under these
11 various conditions and try it out?

12 Mr. PAUL BUXTON: I'm not sure, Mr.
13 Chair, that we would do a risk assessment by engaging a ship
14 for a few days.

15 I think we have every intention of
16 consulting the experts in the Atlantic Pilotage Authority at
17 the appropriate time, and availing ourselves of their
18 experience and the experience of the Federal Department of
19 Transportation.

20 There's a lot of expertise out there. I
21 think what we have done is gone as far as to satisfy
22 ourselves that there are sufficient openings and windows
23 that we can carry out a commercial traffic from that
24 facility.

25 We know there are constraints. The

1 constraints are built into our business plan, and we will
2 certainly seek the advice of those with the greatest amount
3 of knowledge with Atlantic Pilotage Authority at the
4 appropriate time.

5 THE CHAIRPERSON: I think that I will
6 bring these questions to a close. There will be another
7 opportunity later this afternoon after DFO presents.

8 But for the moment, I'd like to thank
9 the Pilotage Authority and Transport Canada for coming here
10 this morning. Thank you very much, gentlemen.

11 We will resume the session at quarter
12 past one.

13 --- Recess at 12:13 p.m.

14 --- Upon Resuming at 1:15

15 THE CHAIRPERSON: We've got a minor
16 glitch that we'd like to have... I hope you'll agree with
17 it. Dr. Chris Taggart from Dalhousie is on a tight
18 schedule. He's scheduled... He's got to be out of here by
19 3:00, so what... And he's got a 15-minute presentation, so
20 what we were thinking...

21 You stay put, but what we would do is we
22 would just let him jump in ahead of you, and then you would
23 follow.

24 I know it's a little inconvenient, but I
25 think this will suit everybody.

1 --- Pause

2 THE CHAIRPERSON: Okay, okay. Let me
3 make an introduction, first.

4 Ladies and gentlemen, we're going to get
5 underway right now, and the schedule has been changed, as I
6 indicated a moment ago. Dr. Christopher Taggart from
7 Dalhousie University, Oceanography Department, will be
8 making a presentation prior to the DFO individuals.
9 Okay.

10 **PRESENTATION - DALHOUSIE UNIVERSITY - Mr. CHRISTOPHER**
11 **TAGGART**

12 Mr. CHRISTOPHER TAGGART: Thank you.
13 Pardon me?

14 --- Pause

15 Okay. So my name is Chris Taggart,
16 Oceanography Department, Dalhousie University, and I thank
17 the Panel and Bilcon for this opportunity to make this
18 presentation.

19 To help ensure a thorough examination of
20 the matters relevant to the mandate of the Panel, to provide
21 the encouraged public input that the Panel asked for, and to
22 provide as an interested party, some views on implications
23 of the EIS, and to facilitate information by the Panel so it
24 can address the factors as they are outlined in the Joint
25 Panel Agreement.

1 So that's where I'm coming from, and I'd
2 like to begin by stating that I provided for the Sierra Club
3 a 23-page review document of the EIS, focusing primarily on
4 Volume 4, Section 9, and from that critique, the response
5 from Bilcon listed the issues that were raised. Not all of
6 the issues are on this table, but many of the issues that
7 were raised in that review, going from stock ties to
8 suspended sediments, through to the North Atlantic Right
9 Whale, other whales, shipping lanes, et cetera.

10 From that review, the response from
11 Bilcon to that document was Bilcon has noted the comments
12 contained in the review which is noted as not peer reviewed.

13 So Bilcon chose... If you could, next slide please... To
14 give the one cent response to that review. So I'd like to
15 reiterate some of the points that were raised in that
16 Review for the edification of the Panel, and perhaps the
17 Proponent.

18 If we can go to the next page, please?
19 Yes. From the working paper of the review, number 1628, for
20 which there was no response from the Proponent, there were
21 issues related to tide current information, there was
22 pointed out that there are more sophisticated high
23 resolution and relevant tidal prediction data and models
24 available. There was no evidence or argument provided about
25 the relevance of the tidal information and the currents of

1 the region of interest.

2 Residual circulation and the transport
3 of particulates and contaminants were issues found within
4 the EIS, and current predictions to the proposed site can be
5 at least an order of magnitude greater than those at Saint
6 John, which were the reference point by the EIS.

7 So I'm just going to quickly address
8 each one of these ones here. If you could go to the next
9 slide, please? So the currents shown are those to be
10 expected from the average tidal range at Saint John's, New
11 Brunswick of 20 feet. In the working paper, it's stated
12 that there was no evidence for the argument to provide that
13 this had any bearing or relevance.

14 The point being made is if you look at
15 the tidal currents... Next, please. At Saint John, New
16 Brunswick, those are scaled so that the east/west currents,
17 and the north/south currents are running about .125 or .07
18 metres per second.

19 If you look at the location of the
20 Bilcon site, you will see that the tides are much
21 stronger... Next, please. At the proposed site. These are
22 scaled and so we're reaching .75 to .8 metres a second.

23 So the point to make, be made here is
24 that the currents as proposed at the site can be 16 to 11
25 times stronger than at the reference Saint John's(sic). So

1 as presented in the EIS, this is pretty misleading
2 information.

3 Next point? The wind-driven and
4 residual circulation interests and the residual circulation
5 is going to be relevant to the long term for propagation of
6 suspended sediments, or other contaminants in the water.
7 There is a web-drove model provided and cited by, and used
8 by many people for the Bay of Fundy region, developed by
9 scientists at the Department of Fisheries and Oceans.

10 And I just give you an example here
11 quickly of a drifter... Please? Thank you. If we begin at
12 a high tide at zero depth in that panel near the side, there
13 are a series of drifters released into this model, and it
14 shows you the trajectory of where those drifters would go
15 over I believe it's a two-week period, so mostly along the
16 coastline.

17 If you do the same model at a different
18 time starting a low tide, for two weeks, you get a very
19 different picture of what's going on, and so the message
20 there is... Next?

21 In a highly invective environment, a
22 diligent environmental assessment will recognize that the
23 fate of these materials will depend on the release location,
24 it will depend on the time of release, and there are many
25 uncertainties and possible outcomes from doing this.

1 Next, please? We can then begin at 25
2 metres's depth, and do the same sort of thing. Here we're
3 beginning at high tide, and you see the trajectories of
4 expected projectories over a two-week period, and then we
5 begin at low tide, and we see a somewhat different
6 trajectory over a period of two weeks.

7 So the message here is that it depends
8 also on the depth at where the contaminant or the suspended
9 sediments are provided.

10 Next, please? And one more issue, now
11 I've looked at seven drifters at 25 metres starting at low
12 tide, running for two weeks, and these are, these drifters
13 propagate from the coast out in towards the Grand Manan
14 Basin and you can see the trajectory of those particulates.
15 It's rather interesting, in the next slide, or next point,
16 these trajectories right into the primary right whale
17 feeding habitat.

18 Next slide? So the message is that in
19 some situations, cementing materials, toxins, for example,
20 from some places may focus in the Grand Manan Basin where
21 they could be taking up phytoplankton and possibly
22 biomagnified into the zoo plankton that represent the
23 primary food for the, for whales in this habitat that are
24 resident there for periods of possibly three months.

25 Next slide, please? There's a whole

1 literature on the WebDrogue and Web-Tide prediction models
2 that can be consulted to address these kinds of issues,
3 because most of this is published and most of it's available
4 online.

5 Next slide, please? There was issues
6 about species of whales, the North Atlantic Right Whale,
7 so-called ship interactions, and rationales for designated
8 routes. One consideration of a route would be orthogonal to
9 the coast. Again, there was no response to these
10 suggestions by the Proponent.

11 I will quickly now address each of those
12 here. Next, please? This is whale sighting per unit
13 effort. For all whale species, sei, minke, humpback, fin
14 and right whales, and low white blue is very low sightings
15 per unit effort.

16 Yellow, orange, red is very high
17 sightings unit per effort, and these data are heavily
18 weighted by right whales. So if we look at the Bilcon
19 transit route as proposed by the Proponent.

20 Next point, please. It's not orthogonal
21 is the highest concentration of the expected whales, and so
22 there is an alternate route that is self-determined by the
23 distribution of those data, and that alternate route looks
24 like this.

25 Next, please? And it could have, and

1 should have been considered if environmental concern was
2 foremost.

3 Next, please? So the question is why is
4 Bilcon not concerned with minimizing the likelihood of a
5 vessel/whale encounter? Quickly to the next slide. We can
6 do this by looking at the same sort of... All the other
7 whale species, with the exception of right whales, to remove
8 that heavy bias and look at the distribution of where the
9 whales are.

10 And, again, the Bilcon route is going
11 through the yellow and touching on the orange and green
12 areas. And the alternate route goes up through the blue
13 areas into the shipping lanes, and is also orthogonal to the
14 coast.

15 So you're minimizing the potential
16 interaction with the animals. So this could have, and
17 should have been considered, if the environmental concern
18 was foremost.

19 Next, please? So the question is why
20 are they not interested, and then we could go once more and
21 look at, for example, humpback whales. These are not
22 effort-corrected data. These are simply sightings data over
23 1978 through 2004 data, and again, we can see where most
24 humpback whales are sighted, and again, there's the Bilcon
25 route and there's the alternate route, and I think you can

1 see the obvious difference between the two.

2 So the question is why is there no
3 concern with minimizing the likelihood.

4 Next slide, please? Bilcon mentioned in
5 their EIS that the proximity of the designated shipping
6 lanes is considered a primary mitigation measure, and a
7 strong... I suggest that a stronger measure might be to
8 route that as orthogonal to the coast and with the traffic
9 lanes. But the message seems is that Bilcon is not
10 interested or capable of grasping this message, when it is
11 handed to them.

12 Next slide, please? Presently, Bilcon
13 stated that there are no speed limits on vessels travelling
14 the Bay of Fundy waters. In the review paper, it suggested
15 that perhaps a speed limit could be suggested that would
16 minimize the severity of a collision, but there was no
17 response by the Proponent, and so, again, once must conclude
18 that perhaps Bilcon is not interested or capable of grasping
19 that information.

20 Next, please? If you look at the
21 probability of a lethal strike to a large whale is a
22 function of vessel speed, and here we are assuming these are
23 very large vessels... Much, much bigger than whales... We
24 can see that point.

25 At 12 knots, the probability of a whale

1 strike being lethal at 12 knots is about 50/50. At the next
2 speed, if you drop the vessel speed down to eight knots, the
3 probability of a whale striking being lethal is about 20
4 percent, so that's one in five. Much less. And if you look
5 at the higher levels...

6 Next point? At 15 knots, it's about an
7 80 percent probability that you will kill the animal and, of
8 course, above those speeds, it's almost certain death.

9 So these, this information is known.
10 This information is published, and this information has been
11 provided very similarly by people in the United States of
12 America who have done similar work well over two years ago.

13 Next slide, please? So the message that
14 Bilcon could set their own speed limit if they wanted to
15 reduce the risk of environmental damage.

16 Next slide, please? So this is my
17 summary point. Bilcon was provided with criticisms, ideas,
18 suggestions and concerns. Bilcon chose to ignore or note
19 the criticisms, ideas and suggestions.

20 Next slide, please? Bilcon ignored the
21 opportunity to reduce potential environmental impact.

22 So the final message is, if Bilcon
23 cannot address and provide means of ameliorating potential
24 environmental impact beforehand, particularly when it's
25 pointed out, then what evidence is that there Bilcon will

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(QUESTIONS BY THE PANEL)

1 ever consider or address issues if and when they become
2 demonstrated impacts?

3 So my final point is a question. This
4 is a critical question. What if, and I request the Panel to
5 consider this question.

6 Thank you for your time and, again, I
7 thank the Panel and Bilcon of Nova Scotia for this
8 opportunity to make this presentation.

9 THE CHAIRPERSON: Dr. Taggart, you'll
10 entertain some questions?

11 Mr. CHRISTOPHER TAGGART: Yes, sir.

12 **PRESENTATION BY THE UNIVERSITY OF DALHOUSIE- QUESTIONS BY**
13 **THE PANEL**

14 Ms. JILL GRANT: I couldn't quite read
15 from the graph. Can you tell us what the probability of a
16 strike being lethal is at 14 knots, which I... Is that the
17 speed?

18 Is there any kind of speed?

19 Mr. CHRISTOPHER TAGGART: At 14 knots,
20 the probability of the strike being lethal is about 80
21 percent. The confidence intervals on two different models
22 are provided in the publication that's being referred to
23 here, and they range between a low of about 60 percent to a
24 high of 100 percent.

25 Mr. GUNTER MUECKE: Dr. Taggart, this

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DALHOUSIE UNIVERSITY
(QUESTIONS BY THE PANEL)

1 morning we heard that the manoeuvrability of the ship, the
2 carrier, is affected by speed.

3 Mr. CHRISTOPHER TAGGART: Yes.

4 Mr. GUNTER MUECKE: That it's not only...

5 So as you reduce speed, you also decrease the ability to
6 avoid a sighted whale. So if that is...

7 What would happen to the probability if
8 that was taken... Or is that taken into account in the
9 model that you just showed us?

10 Mr. CHRISTOPHER TAGGART: No, that is
11 only if a strike occurs, what is the probability. It's if
12 the strike occurs to a whale where the speed is known, what
13 is the probability of it being called.

14 Mr. GUNTER MUECKE: So one, in a sense,
15 could add to that if the speed is decreased, there is
16 actually an increase in probability of hitting.

17 Mr. CHRISTOPHER TAGGART: There may be,
18 although I don't know if that's been quantified or measured.

19 The other issue would be, it depends on
20 what kind of speed limits you're limiting the ship to. In
21 the Bay of Fundy, you're dealing with currents of two to
22 four knots, which a ship has to overcome.

23 The estimates that we've been able to
24 compile show that it's about a 20 percent probability at
25 eight knots. How manoeuvrable the proposed vessel might at

1 those speeds is not known to me, and what will matter is
2 whether or not the vessel has bow thrusters. Vessels that
3 have bow thrusters are very manoeuvrable.

4 Ms. JILL GRANT: And can I ask you a
5 question about the illustrations that you showed indicating
6 where particles end up?

7 What size particles are we talking
8 about, or are we talking about dissolved materials, or
9 what...

10 Mr. CHRISTOPHER TAGGART: No. These do
11 not include diffusion or mixing base kinds of trajectories.
12 These are straight advective. It would be equivalent to an
13 orange put into the ocean, or following a water mass as a
14 drifter.

15 It is a model, okay. The validation
16 basis of that model is not known to me.

17 THE CHAIRPERSON: Mr. Buxton?

18 Mr. PAUL BUXTON: Just a couple of quick
19 ones, if I may, Mr. Chair.

20 I just wondered whether Dr. Taggart was
21 aware that we had committed to vessel speeds.

22 Mr. CHRISTOPHER TAGGART: Whether which?

23 Mr. PAUL BUXTON: Whether Bilcon had
24 committed to specific vessel speeds.

25 Mr. CHRISTOPHER TAGGART: I'm not aware

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(QUESTIONS BY THE PANEL)

1 of what those committed speeds might be.

2 Mr. PAUL BUXTON: Well, the fact is that
3 they are in our responses. They are in the document.
4 They've been presented at least twice to the Panel, if not
5 more, since these proceedings started.

6 And I don't really have any specific
7 comments, Mr. Chair, except to say that we did recognize Dr.
8 Taggart's talents in these matters and, over a significant
9 period of time, we corresponded with Dr. Taggart, in fact,
10 asked him to carry out very specific work for us, to which
11 there was initial agreement. And I believe the arrangement
12 with Dalhousie University was also permitted and agreed
13 upon.

14 And subsequently, Dr. Taggart declined
15 to carry out work for us. Is there some truth in that?

16 Mr. CHRISTOPHER TAGGART: That would be
17 incorrect. We did correspond. You did ask that something
18 be done, and then, the last information that I had from you
19 was what would I do for you as opposed to this is what we
20 would like done. I have records.

21 Mr. PAUL BUXTON: I think we could
22 provide, if it's of any interest to the Panel, copies of e-
23 mails in that matter.

24 Mr. CHRISTOPHER TAGGART: As could I.

25 THE CHAIRPERSON: Are there any

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(QUESTIONS BY THE PUBLIC)

1 additional questions emerging, first of all, from Federal or
2 Provincial Government individuals? If not, from the
3 audience.

4 **PRESENTATION BY THE UNIVERSITY OF DALHOUSIE- QUESTIONS BY**
5 **THE PUBLIC**

6 Mr. Moir, you look poised. You're not
7 poised. Okay. Mr. Hunka?

8 Mr. ROGER HUNKA: Just some clarification
9 from this morning from Transport Canada on right angle entry
10 is preferred.

11 How does your proposed northern route
12 fit in with what Canada Transport suggested as a preferred
13 route for intersecting a route?

14 Mr. CHRISTOPHER TAGGART: I believe the
15 plot shows that before entry to the lane the ship would turn
16 left, or right if it was leaving.

17 As you can see, it's not directly 90
18 degrees, but it's close to 90 degrees entry and exit to the
19 lanes.

20 THE CHAIRPERSON: Are there any
21 additional questions for Dr. Taggart? Gunter.

22 Mr. GUNTER MUECKE: Dr. Taggart, some of
23 this information is new to us. We haven't seen it.

24 Could we ask you to submit it to us?

25 Mr. CHRISTOPHER TAGGART: Well, you can

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1 have this.

2 Mr. GUNTER MUECKE: Thank you. You'll
3 make the Powerpoint available to us.

4 Mr. CHRISTOPHER TAGGART: Yes.

5 Mr. GUNTER MUECKE: Thank you.

6 THE CHAIRPERSON: If there are no further
7 questions, we thank Dr. Taggart. Thank you.

8 Mr. CHRISTOPHER TAGGART: Again, I thank
9 you for the opportunity.

10 THE CHAIRPERSON: Gentlemen, we finally
11 get to you. You've been very, very patient. Thank you very
12 much.

13 Perhaps we can start by getting you to
14 identify yourselves and your affiliations, internal
15 affiliations. Presumably you're all from DFO.

16 And if you've got a complicated name in
17 any way, please spell it. It's for the benefit of the
18 transcriber of these documents. So maybe we could start
19 here.

20 Mr. IAN MARSHALL: I'm Ian Marshall. I'm
21 the Area Director for Sou'western Nova Scotia.

22 Mr. NORMAN COCHRANE: My name is Norman
23 Cochrane. I'm a research scientist with the ocean physics
24 section at the Bedford Institute of Oceanography.

25 Mr. KENT SMEDBOL: I'm Kent Smedbol. I'm

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1 a research scientist stationed in St. Andrew's, New
2 Brunswick. I lead the region's research team for species at
3 risk. S-m-e-d, as in Delta, B as in Bravo, o-l.

4 Mr. MIKE MURPHY: I'm Mike Murphy. I'm
5 the Acting Regional Director of Oceans and Habitat for the
6 Maritimes Region.

7 Mr. TED POTTER: I'm Ted Potter, and I'm
8 the Acting Regional Manager for Habitat Protection and
9 Sustainable Development.

10 Mr. TONY HENDERSON: Tony Henderson,
11 Habitat Assessment Biologist.

12 Mr. JOHN TREMBLAY: I'm John Tremblay.
13 I'm a research scientist with the Population Ecology
14 Division at Bedford Institute of Oceanography.

15 Mr. THOMAS WHEATON: And I'm Thomas
16 Wheaton. I'm the Area Habitat Coordinator for Southwest
17 Nova Scotia.

18 Mr. DAVID BISHARA: My name is David
19 Bishara, B-i-s-h-a-r-a. And I'm the Conservation and
20 Protection Supervisor responsible for enforcement for Digby,
21 Annapolis and Kings County.

22 Ms. Tana Worcester: Tana Worcester, W-o-
23 r-c-e-s-t-e-r. I'm with DFO Science and the Centre for
24 Science Advice.

25 Mr. DAVID MILLAR: David Millar. I'm the

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(VARIOUS PRESENTERS)

1 Species at Risk Coordinator for the Oceans and Habitat
2 Branch, and it's M-i-l-l-a-r.

3 THE CHAIRPERSON: We have you all, then.
4 I understand you're going to make a presentation now.

5 **PRESENTATION BY DEPARTMENT OF FISHERIES AND OCEANS - VARIOUS**
6 **PRESENTERS**

7 Mr. MIKE MURPHY: Yes. Thank you very
8 much.

9 In terms of the presentation, we've
10 provided you with the presentation already, and in the
11 interests of time, I think I'll move to the middle of the
12 presentation and leave out a lot of the roles and mandate
13 and our involvement in the project and go directly to the
14 middle where we talk about the overview of issues related to
15 DFO's mandate.

16 I'd like to review some of DFO's
17 findings, recommendations and outstanding questions as a
18 result of our review of the Proponent's information.

19 Our presentation will highlight the main
20 findings around marine mammals and blasting, marine mammals
21 and shipping, fish and blasting, and this is on a variety of
22 fish and shellfish species, lobster and blasting, invasive
23 species, and fish habitat.

24 My colleagues and I will address any
25 detailed questions in these areas after the presentation.

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DEPARTMENT OF FISHERIES AND OCEANS
(VARIOUS PRESENTERS)

1 Human activities in or near the ocean
2 often transmit sounds under water, and some of these sounds
3 can have a range of effects on marine mammals from no
4 response to small behavioural changes, masking of hearing,
5 temporary or permanent changes in hearing sensitivity to
6 non-auditory injury such as haemorrhage and direct fatality.

7 In general, sound propagation modelling
8 conducted by the Proponent and reviewed by DFO predicts
9 sound levels in the water column at 500 metres to be 185
10 decibels as the worst case estimate for a single blast, and
11 we understand a single blast to mean a single shot.

12 It is important to note that noise
13 levels for distances other than those at the water line and
14 at 500 metres were not modelled.

15 The US National Marine Fishery Service
16 has been using 180 decibels root mean square as the maximum
17 acceptable exposure level to impulsive sounds for cetaceans.

18 To compare these thresholds to the sound levels predicted
19 for the Whites Point Quarry Project, five decibels should be
20 added to this value to arrive at an exposure level of 185
21 decibels.

22 DFO assumes there is a risk of potential
23 effects within 500 metres, and this is reflected in the DFO
24 guidelines for the use of explosives in or near Canadian
25 fisheries waters, which states that no explosive should be

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1 detonated within 500 metres of any marine mammal.

2 While the zone of disturbance of marine
3 organisms by sound may extend beyond the 500-metre safety
4 zone, it is considered unlikely that blasting would result
5 in physical effects on marine mammals, endangered or
6 otherwise, beyond 500 metres.

7 However, there may some behavioural
8 effects, but it is uncertain what this would be and whether
9 they would have any long-term impact on an individual or
10 population, considering the amount of blasting.

11 There may be some subtle behavioural
12 effects on marine mammals beyond 2,500 metres from the blast
13 site. However, these are not expected to result in overall
14 changes to the distribution of the population or other
15 population scale impacts.

16 The 500-metre safety zone, which states
17 no blasting in this zone when marine mammals are observed or
18 known to be present, and the 2,500-metre safety zone for
19 endangered marine mammals are expected to reduce the
20 potentials for harmful impact of blasting on marine mammals
21 under good visibility conditions.

22 The use of a trained observer to monitor
23 the 2,500-metre and 500 metre-safety zone would need to be
24 in place to ensure marine mammals are not in these areas
25 prior to a blast.

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1 However, there is some uncertainty as to
2 the ability to detect and identify marine mammals at
3 distances of 2,500 metres, particularly under poor
4 visibility conditions such as fog, rain or waves.

5 It is not clear, from the information
6 provided by the Proponent, when observation from a boat
7 would be conducted to improve the chance of sighting marine
8 mammals and how much this would increase the effectiveness,
9 especially in poor visibility.

10 The following research and monitoring
11 recommendations would help to verify the predictions
12 included in the environmental assessment.

13 Validate acoustic modelling using the
14 initial blast in near and far field locations prior to
15 operational blasting and arrival of endangered right whales
16 in the Bay of Fundy.

17 This would include measuring the
18 underwater blast sound levels at 500, 1,000 and 2,500 metres
19 plus at the margin of the right whale core area during
20 blasting conducted outside the time when endangered whales
21 are present in the Bay of Fundy.

22 After this initial blast, there should
23 be visual observation of marine mammal behaviour before,
24 during and after operational blasting when whales are
25 present. This would be conducted in areas of known marine

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1 mammal aggregations.

2 Verifying the effectiveness of visual
3 observation methods at 2,500 metres from the blast site is
4 also recommended, including determination of the average
5 site visibility conditions.

6 Use of ongoing passive acoustic
7 monitoring should also be considered.

8 Opportunities to link up with other
9 research initiatives such as university research should be
10 considered.

11 I'll now move to marine mammals and
12 shipping.

13 It is understood that shipping has the
14 potential to affect marine mammals through noise and ship
15 strikes. However, the project is not expected to
16 significantly increase shipping in the Bay of Fundy.

17 Just using the pilotage numbers for the
18 Port of Saint John, the relative increase in large vessel
19 traffic from the proposed project would be approximately six
20 percent.

21 The main mitigation in place for ship
22 strikes in the Bay is the new shipping lane. The new
23 shipping lanes which came into effect on July 1, 2003 were
24 expected to reduce the likelihood of a right whale suffering
25 a ship strike in the Bay of Fundy by up to 80 percent.

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1 Now, biologists at the Centre for
2 Coastal Studies in Provincetown, Massachusetts think the
3 reduction is closer to 95 percent. Also, the route from the
4 shipping lane to the quarry is not a known aggregation area
5 for whales, including right whales.

6 The Proponent has also stated that the
7 ships will decrease speeds once leaving the shipping lanes.
8 Our information was to below 10 knots. I understood this
9 morning now to 12 knots, which will further reduce the
10 likelihood of lethal strikes.

11 However, given that the shipping
12 companies would likely not be under the direct control of
13 the Proponent during transit, it is not clear how some of
14 the proposed mitigation will be controlled by the Proponent.

15 Shipping noise. It is possible that the
16 higher levels of ambient noise in the ocean have reduced the
17 ability of right whales to hear mating calls over large
18 distances, perhaps reducing mating opportunities.

19 As noted previously, the Proponent has
20 indicated that the ships will decrease speeds once leaving
21 the shipping lanes, which will also reduce the noise from
22 ships approaching or leaving the quarry.

23 If this project were to proceed, it
24 would be advisable to make baseline measurements of bulk
25 carrier noise around the terminal and nearby areas of

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1 potential environmental sensitivity.

2 Fish and blasting, potential effects.

3 Studies by DFO show that an over-pressure in excess of 100
4 kiloPascals will result in damage to the swim bladder, the
5 gas-filled organ that permits most fish to maintain
6 buoyancy. The kidney, liver, spleen and sinus venous may
7 also rupture and haemorrhage.

8 Fish eggs and larvae also may be killed
9 or damaged.

10 Department of Fisheries and Oceans has
11 prepared the guidelines for the use of explosives in or near
12 Canadian fisheries water to provide information to
13 Proponents on the conservation and protection of fish,
14 marine mammals and their habitat from impacts arising from
15 the use of confined or unconfined explosives in or near
16 Canadian fisheries waters.

17 These guidelines provide methods and
18 practices which, if incorporated into a project proposal,
19 are intended to prevent or avoid the destruction of fish or
20 any potentially harmful effects to fish habitat that could
21 result from the use of explosives.

22 Using DFO's guidelines, the Proponent
23 would need to maintain a setback distance of at least 33.7
24 metres in order to meet the DFO guideline criteria of less
25 than 100 kiloPascals over pressure. DFO has requested that

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1 the Proponent increase the separation distance by a factor
2 of three, to 100 metres when inner Bay of Fundy stock of
3 salmon, an endangered species, would be present.

4 Our information is that this is between
5 May and October. I believe the Proponent said May to
6 September.

7 This would ensure the shock waves from
8 blasting are well below the levels that could cause injury
9 or death. Any behavioural reaction would likely be a brief
10 startle response, with no impacts to the individual or
11 overall population.

12 Monitoring of the initial blast levels
13 near shore should be required to confirm these calculations.

14 Blasting and potential effects on
15 lobster. DFO's guidelines on the use of explosives in or
16 near Canadian fisheries waters are based on impacts on fin
17 fish, and therefore do not necessarily apply to lobsters,
18 which lack the sensitive swim bladder.

19 The Proponent's modelling predicts that
20 the pressures at even the closest location in the water are
21 not expected to exceed 216 decibels.

22 There's very little information on the
23 impact of blasting on lobsters. The most relevant and
24 recent information we are aware of is a study done by DFO
25 staff in Newfoundland examining the impact of seismic noise

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1 on lobsters.

2 This research demonstrated that adult
3 lobster exposed to seismic sound levels of 227 decibels
4 showed no mortality or significant injury.

5 It should be noted, however, that non-
6 lethal effects were observed in the recent lobster research
7 with respect to feeding and biochemistry, with effects
8 sometimes being observed weeks to months after exposure. A
9 histochemical change was also noted in the hepato-pancreas,
10 tamale, of animals exposed four months previously.

11 These initial studies were meant to be
12 exploratory in nature, and caution is warranted about over-
13 interpretation of these results. Also, the recent study did
14 not include an assessment of noise on lobster eggs or
15 larvae.

16 Given that some uncertainty on the
17 impact of blasting on lobsters remains, a monitoring program
18 with input from DFO should be implemented if this project
19 proceeds.

20 Potential impacts from invasive species.
21 Aquatic invasive species have already been responsible for
22 significant impacts on some native fish species in Canada.

23 Annually, the problem is responsible for
24 billions of dollars in lost revenue and control measures.

25 During the late 1990s, two invasive

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1 species of tuna kit were determined to be having a
2 detrimental impact on numerous shellfish aquiculture sites
3 in Nova Scotia. The European green crab originally arrived
4 in a ship's bilge water and have moved up the coast from
5 Cape Cod.

6 For this project, the determination of
7 likelihood of effects is challenging in that one successful
8 introduction in colonization from one vessel discharge can
9 lead to local and regional effects.

10 One of the main mitigation measures is
11 the Ballast Water Management Regulations. These Regulations
12 require ballast water exchange for vessels travelling
13 between points south of Cape Cod, Massachusetts and Canadian
14 waters.

15 These Regulations are administered by
16 Transport Canada and were addressed in their presentation.
17 Also, the risk of invasive species increases with the rate
18 of shipping.

19 As previously mentioned, the relative
20 increase in shipping for this project is low, but it still
21 must be recognized that it only takes one successful
22 colonization to result in regional impacts.

23 Monitoring may help detect possible
24 invasive species in the early stages of colonization.
25 However, depending on the species, eliminating or

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1 controlling the introduced species after it is detected can
2 be difficult or impossible.

3 Fish habitat. The marine terminal would
4 be built using pilings, which are less destructive to fish
5 habitat than a traditional in field wharf. However, the
6 installation of the pilings will result in some habitat
7 loss.

8 The extent of marine benthic habitat
9 affected by the pilings would be approximately 40 square
10 metres.

11 If the project proceeds, an
12 authorization under Section 35 of the **Fisheries Act** would be
13 required and the proponent would be required to establish or
14 enhance fish habitat in accordance with DFO's policy for the
15 management of fish habitat.

16 This policy contains the guiding
17 principle of no net loss of productive capacity of fish
18 habitat through habitat compensation.

19 As part of its Environmental Impact
20 Statement, the Proponent has provided an initial
21 compensation plan using artificial reef structures for a
22 site near the proposed terminal. DFO's conducting research
23 on various artificial habitat structures to evaluate which
24 are best for habitat enhancement for various species,
25 including lobsters.

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1 If this project proceeds, DFO will use
2 this research and information from similar projects to
3 ensure appropriate fish habitat compensation is developed by
4 the Proponent. Also, as a component of the compensation
5 plan, the Proponent will be required to monitor the project
6 to ensure it is providing the required compensation for lost
7 productive capacity.

8 In some situations, habitat can be
9 harmfully altered by the release of sediments which covers
10 habitat, affecting feeding or reproductive areas in both
11 fresh water and marine environments.

12 DFO works closely with the Nova Scotia
13 Departments of Environment and Labour and Natural Resources
14 in protecting fish habitat from sedimentation arising from
15 projects regulation by Provincial legislation.

16 Mitigation and monitoring of sediment
17 from quarry, mines and pits are typically requirements of
18 Provincial approvals, and DFO will often review monitoring
19 information and recommend additional mitigation if there is
20 a concern that sediment levels may affect fish habitat.

21 If the project proceeds, in addition to
22 the mitigation measures proposed earlier, DFO recommends
23 monitoring in the following areas.

24 Noise from blasting and shipping at
25 various locations and times of the year to verify noise

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1 level predictions, including a representative blast prior to
2 the presence of right whales in the area.

3 Marine mammal behaviour observation
4 during blasting events using qualified observers.

5 Monitoring of habitat compensation for
6 various species, including lobster, as well as a monitoring
7 program developed with DFO input on the impact of blasting
8 on lobsters.

9 Sediment monitoring at the settling
10 pond's outfall or other potential sediment source areas.

11 Monitoring for invasive species near the
12 terminal.

13 If the project proceeds, DFO will
14 continue with our regulatory role, specifically applying the
15 **Fisheries Act** and **Species at Risk Act** to those components of
16 the project which interact with DFO's areas of interest.
17 There are other areas, such as ballast water management,
18 where we can provide expertise, but we do not have a
19 regulatory role.

20 If monitoring was to show that the
21 project was having unacceptable impacts on fish or fish
22 habitat, including marine mammals, DFO would address these
23 issues through the **Fisheries Act** or **Species at Risk Act**.

24 Fisheries and Oceans Canada looks
25 forward to the recommendations from the Joint Review Panel

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1 and, shortly thereafter, the Federal Government will provide
2 a formal response to the Panel findings. Thank you.

3 **PRESENTATION BY THE DEPARTMENT OF FISHERIES AND OCEANS -**
4 **QUESTIONS BY THE PANEL**

5 THE CHAIRPERSON: Thank you very much.

6 One issue of some interest to us is
7 whether, in fact, DFO has any experience with other coastal
8 quarries. There was recently a coastal quarry that was
9 under way in British Columbia, I remember.

10 Are there others, Newfoundland, anywhere
11 else, where you've had experience?

12 Mr. TED POTTER: Your reference to BC is
13 the Orca Quarry, and here in Nova Scotia in Aulds Cove and
14 Martin Marietta (ph), Porcupine Mountain on the Strait of
15 Canso. That's right next to the water.

16 THE CHAIRPERSON: Are there lessons to be
17 learned from these other quarries?

18 Mr. TED POTTER: In that particular site,
19 we're not dealing with species at risk in that immediate
20 vicinity, similar to the right whale or inner Bay of Fundy
21 salmon. There are things we've learned with regard to
22 infilling the rocks, habitat compensation issues.

23 THE CHAIRPERSON: What about the British
24 Columbia experience? That is some ways is similar to this
25 one, is it not?

1 Mr. TED POTTER: It's similar in some
2 ways, but in other ways it's different. Different species,
3 again. So, you know, and you have the same general project
4 components from quarrying to shipping, ships coming in, the
5 conveyor belt. And so that information from this project
6 and work done there has been exchanged back and forth.

7 THE CHAIRPERSON: So there, what you're
8 saying is that the information obtained in those other
9 places is not translatable; it doesn't translate to this
10 project, not even in generalities.

11 Mr. TED POTTER: No, in a general sense,
12 yes.

13 THE CHAIRPERSON: Can you convey any of
14 that wisdom to us? Is there anything there that you should
15 flag for us, or anything of importance?

16 Mr. TED POTTER: Well, in a, from a DFO
17 perspective, we focus our attention on fish and fish
18 habitat, and in the case of these quarries, unless there's
19 diversion of a stream, fish bearing waters, we look at the
20 marine terminal aspect of the project.

21 Quite like, as a general sense, we look
22 at the footprint of the facility, what's that going to be,
23 is that a solid structure, is it on piles, will there be
24 free-flow, what's the sources of sediment, will the sediment
25 be going into the fish bearing waters, and we will also use

1 the guidelines for use of explosives near fish bearing
2 waters.

3 THE CHAIRPERSON: What about some of the
4 issues that were just identified, the five, the list, the
5 five, of invasive species, for example? If I'm not
6 mistaken, the project in the west coast is actually moving
7 into the U.S., is it not?

8 Mr. TED POTTER: The, looking at the
9 invasive species, we're working here on the east coast, we
10 take it from a zonal perspective. So we're working here on
11 the east coast through a committee that's been set up, and
12 it's to look at what species we have here.

13 The primary mitigation that's used is
14 the similar thing that's being considered on the west coast,
15 which is the ballast transfer zones. So those things are
16 very similar.

17 Ms. JILL GRANT: A few questions about
18 the species at risk. As you just identified, that's a
19 different issue here. So I understand under SARA that when
20 a species at risk is likely to be affected there is some
21 kind of notification that happens. Does that happen in this
22 project?

23 Mr. TED POTTER: In general sense, in
24 this case, for this project, when it was initiated, the
25 Department of Fisheries and Oceans was lead RA, responsible

1 authority, for both the **Navigable Waters Protection Act** and
2 the **Fisheries Act**. We are not in the practice of sending
3 letters to ourselves, given that we initiated it, so we were
4 aware of it from the onset.

5 When the file, when Transport Canada
6 received the Navigable Waters Program, there was no need for
7 them to send back a notification on a file that we had
8 already initiated. So the responsible authority in this
9 case, DFO, for the marine mammals and marine fish, was well
10 aware, and we were working in close collaboration with
11 Environment Canada for the migratory birds and any bird
12 species that fall under the **Species at Risk**.

13 Ms. JILL GRANT: And can you clarify for
14 me whether the meaning of "likely effects" is the same under
15 SARA as it is under the CEAA legislation? It seems like
16 it's a little bit different. Can you clarify what the
17 meaning of "likely effects" would be?

18 Mr. KENT SMEDBOL: Yeah, and it's used
19 slightly differently in Section 79(1) from 79(2), so in
20 79(1), the requirement for notification is likely effects,
21 and it's not just adverse, and it's not just significant.
22 It's any effect, there should be notification.

23 So even if your project is going to
24 benefit a species at risk, and even if it's not a
25 significant benefit, it's just minimal, whatever the effect

1 is, you're supposed to do the notification. So we don't use
2 that same significance criteria in the **Species At Risk Act**.

3 And also, under 79, it doesn't have to be adverse.

4 Under 79(2) it's about identifying
5 adverse effects, but again, you don't have that word
6 "significant" in there. Under 79(2), you're supposed to
7 identify any adverse effects, and if there is an adverse
8 effect you're supposed to take measures to reduce that
9 effect and to monitor it.

10 So again, we don't put that significant
11 threshold in the **Species At Risk Act**. We would expect that
12 any adverse effect at all, minimization should be in place,
13 mitigation, as well as monitoring. So I think that's the
14 big difference is that we don't put a focus, under the
15 **Species At Risk Act**, on whether an effect is significant or
16 not, because with **Species At Risk** we want any adverse effect
17 to be managed, effectively. So I guess that's the big
18 difference.

19 Ms. JILL GRANT: And am I right in
20 understanding that if there's likely to be any effect under
21 SARA that's some kind of permit, if there's any kind of
22 potential harm, some sort of permit would have to be issued?
23 Is that correct?

24 Mr. KENT SMEDBOL: If there's an
25 expectation that there would be... Basically, there's a

1 section of SARA called the "Prohibitions", which you may or
2 may not be aware of, which is, you know, you cannot harm,
3 kill, harass, there's a series of them, capture, take, a
4 species at risk.

5 And so if you expect that one of those
6 prohibitions would be violated, then if someone wanted to
7 proceed with an activity that was going to cause that
8 violation, then they would need a permit in order to avoid
9 potentially facing penalties under the **Species At Risk Act**.

10 So the question then becomes is the
11 activity going to violate one of those prohibitions, and if
12 there is an expectation that it is likely that it would
13 violate one of those prohibitions, then the Proponent would
14 need that permit, if they wanted to protect themselves from
15 prosecution or from penalties under the **Species At Risk Act**.

16 Ms. JILL GRANT: So in this case, you've
17 indicated that there is some possibility of physical harm
18 from ship strikes, and some possibility of behavioural
19 effects.

20 Can you give us an idea of what kind of
21 behavioural effects are possible in the species at risk,
22 especially the right whale?

23 Mr. KENT SMEDBOL: Possible, so you're
24 thinking non-lethal? With behavioural, I assume you mean
25 non-lethal. It really is quite a range there. It would

1 tend to group into things. I think that it would affect
2 behaviour on a relatively long-term basis, and those that
3 would affect behaviour very quickly or quite, what's the
4 word that I'm looking for. Anyways. Quickly gone.

5 They can, for fish... Well, let's start
6 with marine mammals. If we look at things such as noise,
7 then some suite of behaviours that may be changed include
8 things like feeding behaviour, socialization, logging at the
9 surface, which is just the animals resting.

10 It's difficult to say what the animal,
11 what a particular animal will actually do in response to a
12 particular event. There is a large variation in individual
13 behaviour [inaudible].

14 Some of the controlled studies that have
15 been done in the U.S., for instance, using noise playbacks
16 to right whale, in particular, some whales will stop doing
17 whatever they're doing and just hold to and listen. Others
18 are oblivious and continue on with what they're doing.
19 Others change from one behaviour to another. So for
20 instance, if they're involved in feeding dives, they'll stop
21 diving and they'll swim along the surface.

22 It's difficult to pinpoint a particular
23 type of behaviour resulting from a particular stimulus.

24 Ms. JILL GRANT: And my understanding of
25 some of the studies that were done in Trinity Bay,

1 Newfoundland, in I think that's humpback whales, but in the
2 1990s there was a lot of drilling and blasting and...

3 Mr. KENT SMEDBOL: The Bblleoram, yes.

4 Ms. JILL GRANT: Yes. Do you have some
5 indication on the kinds of results that that had?

6 Mr. KENT SMEDBOL: There are two cases
7 from Bblleoram of actually humpback whales washing up dead
8 on the surface. Post-op necropsies highlighted damage to
9 inner ear structures that were likely caused by severe over-
10 pressure, but this could not, they could not link blasting
11 in Bblleoram directly to those whale deaths.

12 Sudden lethal behavioural changes, the
13 suite of things that were seen in that, in the Bblleoram
14 situation are similar to what's been seen in most studies
15 that have looked at the effect of noise and marine mammals.

16 This is actually a large field,
17 especially brought to prominence again in the last several
18 years because of the use of mid-range, mid-frequency sonars
19 by U.S. Navy. So there actually is a lot of literature on
20 the effect, possible effects, of noise on cetaceans, but it
21 is not a group of animals upon which we can easily
22 experiment, so it's difficult to establish cause and effect.

23 Ms. JILL GRANT: Right. And in the
24 blasting in Trinity Bay, there was feeding changes and
25 avoidance behaviour, is that right?

1 Mr. KENT SMEDBOL: I am familiar with
2 some avoidance behaviour, but it's a long time since I've
3 read that literature, so I can't give you a definitive
4 answer yes or no. I do remember vaguely some behavioural
5 changes, but I'd have to go back and look that up for you.

6 Ms. JILL GRANT: Thank you. And there
7 was some discussion in the presentation about changes to the
8 conservation area, the shipping lanes, and so on. When were
9 those changes made?

10 Mr. MIKE MURPHY: The shipping lanes were
11 instituted July 1st, 2003.

12 Ms. JILL GRANT: Thank you. 2003. And
13 am I right in understanding that two right whales were
14 killed by collisions in the summer of 2006?

15 Mr. KENT SMEDBOL: Actually, more than
16 two. I think you're referring to possible deaths in
17 Canadian waters. One was seen off shore, off the southern
18 southwest Scotian Shelf, close to Brown's Bank. There's
19 actually a second right whale conservation area in Rosalie
20 Basin, in that vicinity.

21 A second one, I don't remember the exact
22 location, but I do not believe it was discovered in the Bay
23 of Fundy. There have also been two right whale strikes this
24 year in U.S. waters. Lethal. All four that I'm discussing
25 are lethal.

1 There was also a definitive strike in
2 Canadian waters in 2005, which was, we actually did the
3 necropsy in Campobello Island. Our U.S. colleagues actually
4 undertook the necropsy. That was struck and killed by what
5 was likely a small vessel, probably around 50 feet, based on
6 the propeller size.

7 So actually, when we talk about ship
8 strike, some of us who are a bit close to this prefer to use
9 the term "vessel strike", because it's not just large ships
10 that kill right whales.

11 THE CHAIRPERSON: When these whales are
12 pronounced dead, is it generally the case where knowledge
13 about the experience is available? You just conjectured
14 that maybe it was a 50-foot, based on a propellor, but are
15 most of these kills simply discovered after the fact and
16 it's hard to connect the information together, so you don't
17 know necessarily exactly where it was, or what the ship
18 speed was, or any of that contributing information?

19 Mr. KENT SMEDBOL: With the right whale,
20 we actually rarely have that information. Most of the
21 evidence generated for cause of death comes from the
22 necropsy. There are a few cases, especially down in the
23 southern U.S. where right whales are much more coastal than
24 they are in our waters, that we have, you know, a vessel
25 master will actually call in and say, you know, "We struck a

1 whale", and we have a time and a place.

2 Right whales are actually, you know,
3 they're very rare, so actual collision of right whales
4 relative to the total number of large cetaceans is
5 relatively small. For instance, in Dr. Taggart's
6 presentation, they used, in their analysis, they used ship
7 strikes, ship collisions, with all large whales in the
8 vicinity in order to generate the figure.

9 THE CHAIRPERSON: Isn't it true, too,
10 that right whales are essentially oblivious to their
11 surroundings, or at least oblivious to ships we hear, and
12 they're either feeding or sleeping or doing something, but
13 the ships just seem to, they don't frighten them away.

14 Mr. KENT SMEDBOL: That's generally
15 correct. Especially relative to other cetaceans, they tend
16 not to show this type of escape response, or even often any
17 response to vessels at the surface.

18 There was a study undertaken in 2005, I
19 believe, in the U.S., where they've been trying to develop
20 alarm calls, actually using some of the whales' calls
21 themselves to alert whales, and this has turned out to be,
22 the irony of it such work actually elicits the worst
23 possible behaviour from right whales. They come up, and they
24 hide ten metres under the surface, which means they're
25 basically undetectable.

1 Right whales also have a habit of what
2 we call logging, so that they may sit just at the surface
3 and do nothing. It probably relates to its resting
4 behaviour.

5 The second type of behaviour that's
6 quite common especially in Canadian waters, right whales are
7 taken, a behaviour that's called, we call surface active
8 groups, and it's quite intense socialization, actually, a
9 lot of wrestling, a lot of splashing of water. You can have
10 up to 50 animals involved in these. And when right whales
11 are involved in a certain active group, they are utterly
12 oblivious to what's going on around them.

13 It's unfortunate, but their behaviours
14 make them very conducive to vessel strike, and they're a
15 coastal whale. So time and space and their behaviour are
16 all against them.

17 Ms. JILL GRANT: One of the elements in
18 the presentation suggested that a six percent increase in
19 traffic was not significant. What level of traffic increase
20 would there have to be for it to be significant.

21 Mr. KENT SMEDBOL: That's a good
22 question. My background, as a scientist, I tend to treat
23 significance from a statistical sense. I don't think that's
24 the way that it was meant.

25 Six percent, five percent chance of...

1 What was really being measured there is what is the
2 probability of a whale and a ship occupying the same three-
3 minute square in about the same time.

4 So what you're saying, you're increasing
5 that probability, or with that increase in shipping if it's
6 a linear... I can't remember, actually, from the research
7 that was undertaken, I didn't not undertake that research.

8 If that relationship is linear, it's one
9 to one. If not, it is quite a small increase. We've
10 already Saint John has reduced the potential overlap,
11 time/space overlap in the same squares by about 95 percent
12 over the last three years, so I guess you would add six
13 percent shipping to that, do your re-calculation.

14 You'd have to re-look at, you'd have to
15 look again at the new shipping distribution, taking into
16 account that six percent of ships. I would argue that it is
17 likely not substantial. I think it would actually be quite
18 a low increase in probability of ship strike, but not zero.

19 Ms. JILL GRANT: Thanks. And there were
20 some comments raised about problems with the proposed
21 observation strategy to identify whales in the area that the
22 ship is traversing, so I would like to have some comment on
23 the technical feasibility of this mitigation strategy.

24 Mr. KENT SMEDBOL: Yeah, I listened to
25 your questions earlier today concerning... So if I deal

1 first with the single observer on the stand. If one looks
2 at that relative to 2500 metres is your outer limit of
3 interest, given... Well, first I'll say given excellent
4 conditions, good sea state, the trained observer, that
5 observer would be able to detect whales out to 2.5
6 kilometres now, starting from that point.

7 The first thing is, at that distance it
8 would be extremely difficult to detect, to be able to
9 speculate that animal. You might be able to say, yes, it's a
10 large animal, it's a large whale. It'd be highly unlikely
11 to be able to say that is it a right whale or is it a hump
12 back whale.

13 When we do this kind of sightings work
14 from ships, I actually went back last night and looked at
15 some of the data that we have on this, we have detected
16 right whales as individuals out to over a kilometre.
17 Usually we're using cues like the blow, which is a V-blow,
18 which is diagnostic, but you can't have any breeze and you
19 have to be right on the angle when you see that.

20 Really, there are four factors or four
21 different issues that come into play in detectability and
22 sightability of animals at the surface. The first one, of
23 course, the obvious one, is weather. So on a clear day,
24 without glare, without haze, with a good sea state, say
25 Beaufort two and lower, you might have a good chance.

1 I'm not saying you'll see every whale
2 that's there, but you might detect whales if they're
3 present. The detectability is definitely not zero at that
4 range.

5 But as soon as you bring in glare, fog,
6 precipitation, sea state, we don't even, for abundance
7 estimation, if we use line transect sightings data, we
8 usually throw out everything at Beaufort four and higher.
9 We don't even use it because detectability goes down so low.

10 The second thing is the angle of
11 incidents from the, of the observer to the whale. This
12 actually, with the set-up that's described by the Proponent,
13 is actually quite good for that. They're very high up,
14 relative to the surface.

15 The third thing that people who do this
16 work understand all too well, but if you don't do it, you
17 probably never of it, and that's the idea of observer
18 fatigue. You're basically staring at the water for a long
19 time. When we do sightings, transect surveys, we usually
20 employ a team, and those teams are rotated out to avoid...

21 This has been modelled many times on
22 sighting surveys, that observer detectability drops, and
23 it's a non-linear function. The longer an observer is
24 looking at the water, the poorer they get at seeing
25 anything.

1 The fourth thing is actually the target
2 species that's involved, so this brings in all the issues of
3 size of the animal, so detecting a humpback versus a harbour
4 porpoise. Harbour porpoise you will not see up to two and a
5 half kilometres, and the animal is only a metre long.

6 The behaviour of the animal, so what
7 does it do at the surface, what are its markings or cues, is
8 there something diagnostic about that species. For
9 instance, the right whale, they don't have a dorsal fin.
10 They have a V-blow, it's the only one to V-blow, and they
11 also fluke up when they dive, so they tend to wave at you.

12 Dive time is important, right whale
13 dive, although not in that close to shore, but out in the
14 basin, probably 20-minute dives. So there is an issue of
15 availability to be sighted. So you have to factor that into
16 the time that one would allow prior, you know... How long
17 would one have to be watching before you were sure that
18 there were no animals in the area.

19 So there are all those, those four
20 general categories that come into play in detectability.

21 Ms. JILL GRANT: And you said that was in
22 the best of conditions. So in this particular part of the
23 Province, how often is that going to be the case, and what's
24 the situation when the conditions are not so good, starting
25 with that observation tower, and then we'll go to the boat.

1 Mr. KENT SMEDBOL: Higher is probably
2 always better, except maybe in fog conditions. To be
3 honest, I wouldn't be able to give you a good estimate of
4 amount of available days that are of use. High summer, when
5 we do our work is, we do it because the weather is great and
6 not just because the whales are there. The whales are also
7 there through October, and once you hit September then you
8 get wind shifts and stuff like that.

9 Very difficult to determine. Some
10 animals... I'll just leave it at that. I don't think I can
11 give you a solid answer on that. But there's no doubt that
12 as those conditions change, your detection range, effective
13 detection range, is decreasing.

14 Ms. JILL GRANT: And what about the
15 proposal to go out with a work boat and try to observe in
16 situations where the visibility is not adequate to observe
17 from the observation tower or the distance is too far? How
18 effective can we expect a work boat observer to be?

19 Mr. KENT SMEDBOL: I think that would
20 depend on the protocol, how they search the area. They will
21 run, an observer on a small boat, we run small boat surveys,
22 as well. If one's effective sighting range is reduced down
23 to, say, 500 metres, then you would have to adjust your
24 survey track to make sure that you're effectively occupying
25 or at it can cover, at least, sight all the available area.

1 As, of course, in fog, well, I basically think you're out
2 of luck.

3 So it then becomes an issue of coverage
4 in time, but I don't think there's a straightforward answer
5 to it. It's certainly better than not having the boat out.
6 There is no doubt about that.

7 Ms. JILL GRANT: Is there a certain level
8 of sea swell where it becomes impossible to see enough?

9 Mr. KENT SMEDBOL: We don't count whales
10 after sea state four. You can...

11 THE CHAIRPERSON: Can you put that into
12 miles per hour? Or knots would be fine?

13 Mr. KENT SMEDBOL: Beaufort four?
14 Anyone?

15 Mr. BOB MORSCHEs: [No microphone]
16 Doctor, sea state is wind plus the water, and it's how high
17 the winds are...

18 THE CHAIRPERSON: Yes, but can you
19 convert Beaufort four to knots?

20 Mr. KENT SMEDBOL: There's a fetch issue
21 too, with that.

22 THE CHAIRPERSON: Yeah.

23 Mr. KENT SMEDBOL: So usually,
24 effectively, for large whales, we would stop counting at a
25 metre seas with breaking waves. You can still see them,

1 though, but your detectability drops. But if you have the
2 wherewithal to spend time at it, you will still detect
3 whales.

4 Ms. JILL GRANT: And I notice that the
5 Proponent, in their Proposal and in your presentation here
6 today, too, it was suggested that the effectiveness of this
7 observation strategy should be monitored. How can you
8 monitor and determine the effectiveness of this mitigation
9 strategy, given that you won't know what you've missed.
10 What do you...

11 Mr. KENT SMEDBOL: Yeah, and that's an
12 excellent question. That also confronts us whenever we do a
13 survey for abundance estimation. So what we do is we
14 actually statistically model our detectability, and then
15 once that function drops down below a pre-defined threshold,
16 say, well, pick one, then we lop off all the distances that
17 are greater than that, and we discount it.

18 So what we do is, after the fact we come
19 back into the lab, analyse our data, fit a curve, and the
20 say: "Oh, actually, we were only really good out of 500
21 metres instead of a kilometre", and then that's what we're
22 stuck with.

23 In this situation, I tried to give it a
24 little thought last night. I'm not sure how... I think it
25 would require a bit of thought, and I can't give you an

1 answer right now, how one would address that. One
2 possibility, off the top of my head, is you put markers out,
3 but you just don't tell the observer where the markers are,
4 and then see how they go.

5 But there may be, there may be stuff
6 that's already done, but I'm not familiar with it, any such
7 techniques.

8 Ms. JILL GRANT: If this monitoring
9 identifies a whale as a ship's coming in, is it feasible to
10 think that strategies can be taken with sufficient time to
11 actually avoid a collision?

12 Mr. KENT SMEDBOL: I can't speak for the
13 vessel. There's one thing to bear in mind with this.
14 There's no guarantee that the whale is going to stay where
15 it is. So the two things are moving in time/space. I'll
16 let others perhaps address the vessel issue.

17 THE CHAIRPERSON: So I guess to
18 summarize, that if you're dealing with winds of 30 knots,
19 let's say, 30, 35, wind speeds in which it's probably okay
20 for a ship to make its way into a pier, but probably not
21 higher than that, and if the wind has been blowing for a day
22 or two, so that you've had a fetch and you've got a sea
23 that's running a metre or a metre and a half or so, and that
24 individual's up in the tower, 110 feet above the water,
25 looking out there, and of course it's blowing at the same

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1 time, and presumably the weather could be deteriorating.

2 The, what you're saying is it's almost
3 impossible for somebody to see 2500 metres, two and a half
4 kilometres. That's a mile and a half.

5 Mr. KENT SMEDBOL: I think effective
6 detectability would be close to zero at that range.

7 THE CHAIRPERSON: Zero.

8 Mr. KENT SMEDBOL: Close to zero. I
9 can't give you a definitive, out to the end of the range,
10 especially if there's whitecaps. So one of the things, one
11 of the things we really cue on is water disturbance or a
12 whale jumping or a fluke-up or something like that.

13 So what happens with sea state, where
14 you have waves, you're looking for that motion as well,
15 right? And everything is motion. So it really drops.
16 Especially at distance. It really is a function of cue
17 sighting at distance.

18 But I can't give you a percentage. I
19 would say it's definitely low, out that far.

20 THE CHAIRPERSON: Okay.

21 Mr. MIKE MURPHY: I think I should, just
22 for a little bit of clarification, the 2500 metre zone, the
23 observation during that period is for the blasting, not so
24 much for the shipping.

25 THE CHAIRPERSON: Okay. Well, there are

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1 two elements of concern, as you are well aware; incoming
2 ships and the blast effect. Yes.

3 Mr. GUNTER MUECKE: Taking in a slightly
4 different direction, regarding the blasting model that is
5 going to be applied.

6 You said that what, in terms of the
7 model, what matters is the charge, and you gave 45 kilograms
8 as the model parameter, if I understood this right. And my
9 question is, to what extent is the total blast size in terms
10 of total amount of explosives relevant in the modelling.

11 Mr. NORMAN COCHRANE: Well, I think this
12 is a very important question, and one that I don't think has
13 been really fully resolved. The modelling study that was
14 done by Hannay and Thompson, that is the JASCO and LGL
15 report dated August 2003, largely dealt with the effect of a
16 single shot hole that was loaded, as you say, with 45
17 kilograms of ANFO.

18 And the modelling that they did was in
19 terms of a single shot hole detonation, and there are, I
20 think, mentions that probably the effect of multiple shot
21 holes would not enhance the overall sound pressure levels
22 due to the fact that the signatures, the pressure signatures
23 of these individual blasts would not significantly overlap.

24 I, myself, am not fully convinced that
25 that is necessarily the case, and especially at the 500-

1 metre range, where if we accept the CONWEP model that was
2 put forth by the Proponent's representatives, the duration
3 of the blast is quite long, in the order of ten
4 milliseconds, and it would seem to me that certainly if you
5 are detonating explosives with the 8-millisecond delay, that
6 there would be some quite significant overlaps.

7 Now I'm not sure if you want me to go
8 into my assessment of the acoustic model, its virtues and
9 shortcomings, so of which has been I think communicated to
10 the Proponent's representatives.

11 Mr. GUNTER MUECKE: Perhaps before I ask
12 you that, you can talk to one of my concerns of risk here.
13 As an earth scientist, I'm somewhat familiar with
14 seismology, that's one of the things I've touched upon in my
15 life.

16 How would the model be effected do you
17 think if there was, in the rocks themselves, if there were
18 in the rocks themselves, good reflectors?

19 Mr. NORMAN COCHRANE: Well, certainly
20 there would be diffraction effects, and I think there are
21 many good questions that could be asked.

22 I think, and I believe I'm correct in
23 stating this, that the model put forth is not intended to be
24 a very precise description of actually what happens but
25 rather is to give essentially an upper bound... It's a

1 crude model that would give an upper bound to the effects,
2 that is the model has been parameterized very
3 conservatively, and I would agree that that's probably the
4 case.

5 As you'll notice, the model is two
6 dimensional, and it's being applied to a three-dimensional
7 situation, an actual shoreline.

8 It is a complex model in that it deals
9 with an explosion in an elastic medium, where the effects
10 are very close to the explosives, very difficult to model.

11 But in addition to that, it deals with
12 the propagation of sound into a sloping wedge of water,
13 where the medium does support elastic waves, and that is a
14 very complex problem in itself and one that you really have
15 to search the literature to find it dealt with properly.

16 Do you want me to go on and elaborate in
17 some detail or are there some...

18 Mr. GUNTER MUECKE: It would be useful,
19 yes.

20 Mr. NORMAN COCHRANE: Okay. The... I
21 will tell you what we have done anyway in trying to assess
22 this model.

23 The Proponent uses a transmission model
24 from the elastic medium for soundwaves propagating from the
25 elastic medium into the water by Oriard, I have taken to try

1 to verify Oriard's computations.

2 It is basically a model that predicts
3 energy flux from one medium into the other in terms of P-
4 waves in the water wedge.

5 The only thing I could find immediately
6 in the literature is a model by Perkowski that dealt with
7 the same problem, and I was able to verify from Perkowski
8 the magnitudes of the reflected P-wave from the water
9 bedrock interface and the converted S-wave that is
10 generated.

11 However, Perkowski's results for the
12 transmitted P-wave were in variance with Oriard's, and it
13 appears that that is most likely a typographical error in
14 the formula and that derivation of that particular result
15 was not recorded in the literature, and it's a very
16 complicated thing, so it was not easy to go back and verify,
17 however at least the amplitudes of two of the waves were
18 predicted properly by Perkowski's result.

19 Perkowski's result, as stated, does not
20 appear to support conservation of energy, is not consistent
21 with where Oriard is, so I presume that there is a
22 typographical error, and so we were able to satisfy
23 ourselves that the Oriard Model is very likely correct, and
24 we were able to set that model up on a computer so that we
25 could actually compute the transmission coefficients from

1 the bedrock into the water as a function of angle
2 incidence.

3 Now as I said, the model that they used
4 is a fairly conservative one. I believe for the
5 transmission coefficient of 0.3 that is stated in the Hannay
6 & Thompson report, they assume an incidence angle of about
7 80 degrees, or the waves are coming in at about 10 degrees
8 to the water bedrock interface, that is at a very shallow
9 angle.

10 It seems to me from looking at the
11 shoreline, we're probably dealing with a slope on that
12 interface of two, three, maybe 3.5 degrees.

13 We did do some calculations, but what we
14 did come up with, and I don't think it has been verified by
15 the Proponent's representatives, but I believe that there
16 was an error here and that the transmission coefficient is
17 much smaller.

18 Our calculations seem to show that
19 that's about a factor 5 too large.

20 THE CHAIRPERSON: Could I just briefly
21 interrupt here? I find this very interesting and in many
22 ways, it would be extremely useful for us, for me, if you
23 could have that writing. Would that at all be possible?

24 Mr. NORMAN COCHRANE: Yes. I'm not
25 sure...

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1 UNIDENTIFIED SPEAKER: We have submitted
2 that as part of our comments.

3 Mr. GUNTER MUECKE: Pardon?

4 THE CHAIRPERSON: I couldn't hear you.

5 MR. NORMAN COCHRANE: We have submitted
6 our critique as part of our overall comments on the review
7 of the EIS.

8 Mr. GUNTER MUECKE: At the level of
9 detail we have just heard?

10 MR. NORMAN COCHRANE: Yes, approximately
11 that level of detail.

12 Mr. GUNTER MUECKE: Okay. Okay, I will
13 go over that again. Going back to one of my original
14 points, a single shot versus timed multiple shots.

15 Could you provide me with some
16 indication on this, as you increase the size of the array,
17 the size of the blast, what happens to the ability of the
18 waves to become accumulative?

19 MR. NORMAN COCHRANE: The model, if you
20 look at the transmitted wave form, you will find that a key
21 point in the Proponent's model is that there is a
22 cancellation of the pressure signature in the water column
23 from the pressure wave reflected from the water surface, the
24 water/air interface, which is a pressure release surface
25 that leads to an inversion of the waveform when it is

1 reflected.

2 The effect of the directly transmitted
3 wave up through the water column and the reflective wave
4 from the surface tends to effectively shorten the pulse
5 length associated with the detonation, that is if we do
6 accept the CONWEP model.

7 Now I have not stated this, and this is
8 not in writing, but I feel that there is an additional
9 problem here.

10 We're really using a RAY (ph) Model, and
11 I believe that it's really what I would call an item RAY
12 Model, where you have to trace out all the possible ray
13 paths, and it seems to me that some important ray paths
14 have not been included here that would lead to a much
15 extended reverberation within the water column.

16 For one thing, if the ray is transmitted
17 into the wedge and the transmission coefficients are very
18 small, then the reflection coefficients are very large, and
19 that means that the ray, once it's into the water column,
20 gets trapped there and reverberates.

21 I don't think the model as presented
22 takes into account these effects properly, so while I do
23 agree with the Proponent that if the model as stated is
24 valid, then the effective waveform is greatly shortened and
25 the potential for overlap, even at 8-millisecond delays, the

1 effect is greatly lessened.

2 But if the reverberation is extended
3 within this water column, then the effect of overlap becomes
4 I think much more significant, and it would have to be
5 further investigated.

6 The other thing is I'm not... The
7 Proponent has not really given us a proper description of
8 what the delays will be from the individual shots once they
9 actually reach the water.

10 It depends upon the geometry and the
11 precise layout of the shot array. Actually, I would like to
12 see a better description of what the impulses, the sequence
13 would be really like in practice.

14 The other thing to consider, if we go to
15 longer ranges, and really long-range propagation has not
16 been modelled.

17 In fact, predictions within the water
18 column are only out to I think 164 metres. We have looked
19 at 500 metres, but only by us taking the model, the CONWEP
20 model for the impulse in the bedrock at the 500-metre range
21 and assuming the same angle of incidence and the
22 transmission coefficient of 0.3, and that's the way we were
23 able to come up with the 186 dB or so.

24 Mr. GUNTER MUECKE: Yeah, I think that
25 has...

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1 Mr. NORMAN COCHRANE: But longer ranges,
2 I don't think this model is necessarily valid. There are a
3 lot of other things that occur that...

4 Certainly at longer ranges, there are
5 interface waves and things like that. They become very
6 important to the propagation of the energy along the water
7 bedrock interface.

8 Mr. GUNTER MUECKE: I think I have a
9 better understanding now of what is happening here and what
10 the limitations of the model are, and I'm looking forward to
11 seeing it a written submission. I really would look forward
12 to that.

13 I think it's probably at this point an
14 appropriate time to break?

15 THE CHAIRPERSON: Yes. I would like to
16 take a 15-minute break and then we will come back and resume
17 this discussion.

18 --- Recess at 2:46 p.m.

19 --- Upon resuming at 3:01 p.m.

20 THE CHAIRPERSON: Ladies and gentlemen,
21 let's begin.

22 It's come to my understanding that you
23 do have some information on the Orca program?

24 Mr. MIKE MURPHY: Yeah, we have a couple
25 of pages that may help you out, and we'll provide this at

1 the end of the process. And if there's any more, then feel
2 free to get a hold of us and we can try and get the
3 information from the Pacific Region.

4 I also - I'd like to ask David Millar to
5 just add a couple more comments about the SARA permitting
6 process that he'd like to add to his answer of earlier.

7 THE CHAIRPERSON: Please.

8 Mr. DAVID MILLAR: So I just wanted to
9 clarify on SARA permitting that we don't just give permits
10 to anyone. There are conditions that have to be met to get
11 those permits, and this is definitely germane to this
12 particular project.

13 There's basically three conditions for
14 issuing an Incidental Harm permit, which would be that they
15 must have considered all reasonable alternatives to the
16 activity and selected the best solution. They must put all
17 feasible mitigation measures in place.

18 And the third one is that we must be
19 confident that the activity will not jeopardize the survival
20 or recovery of the species at risk.

21 We determine that, in part, through
22 something that we call an Allowable Harm Assessment, which
23 is a scientific review process done through peer review that
24 looks at the productivity of the species and the amount of
25 human-induced mortality and harm that it can tolerate.

1 For both inner Bay of Fundy salmon and
2 for right whale, that process has been done. And in both
3 cases, it's determined that there's no allowable mortality
4 for either of those species.

5 So that's obviously an important
6 consideration, and it means that there would be very limited
7 circumstances in which we would issue permits for these two
8 species, so that should be taken into account.

9 THE CHAIRPERSON: Thank you.

10 I would like to raise an entirely
11 different subject with you, and that has to do with residues
12 from blasting.

13 Yesterday, I think, or maybe it was the
14 day before, we had a discussion in which we were talking
15 about the explosives that will be used at the site, which is
16 ANFO, Ammonium Nitrate Fuel Oil.

17 And we were talking about the fact that
18 it's a well-known fact that when this explosive is used that
19 there's a residue of ammonia left behind.

20 We were using the number of two percent,
21 which may be incorrect, but we're in the process of trying
22 to refine that number. But for the sake of this discussion,
23 we will assume it is two percent until we hear otherwise.

24 The question I have for you is that if
25 blasting is done in this site once every two weeks and we

1 established this morning that the amount of explosive that
2 will be used is 20 tonnes. 20 tonnes every two weeks.

3 Two percent of that is residue in the
4 form of ammonia which, as I said, may be too high, but that
5 would work out to 400 kilograms released every two weeks.
6 So it would be on the site.

7 And obviously some of it would be
8 buried, some of it would be on rocks, some of it... I don't
9 know. But there's a large amount. 400 kilograms is almost
10 half a tonne.

11 So every two weeks, this material would
12 weather and, presumably, the way the plan is in the EIS, is
13 that it would converge or be drawn to sediment ponds, where
14 it would be trapped.

15 Now, the sediment ponds would retain
16 water and the water would be used to... Be recycled within
17 the project, but at some point those ponds would be too full
18 and there would have to be a controlled release, so this
19 material, which every two weeks is accumulating and building
20 into the system.

21 Now, I'm well aware that ammonia breaks
22 down and changes to other things, but also, there would be a
23 strong nitrogenous component to this material.

24 Now, as it builds up, assuming that
25 ammonia washes out, one part of it is that it's toxic. The

1 other part is that it's an important nutrient.

2 And if there was... And we have heard
3 earlier in our presentations, presentations of others, that
4 if there was an anticipated storm or a big event was coming
5 and there was some fear that the ponds couldn't hold the
6 amount of water that was anticipated to be coming, there
7 would be a sudden flash release of it to bring the levels
8 down. Otherwise, the water would overflow or the berms
9 might break. Okay?

10 So it's possible that not only could
11 there be controlled releases of this material, but there
12 could be sudden episodic events of 10,000, 20,000 litres.

13 Now, the impact on this... This is
14 hypothetical, of course, because we don't know the exact
15 number of the percentage, but the question then becomes,
16 from a habitat standpoint, from an organism standpoint, the
17 sudden release or even the controlled release of large
18 amounts of toxic material or even if it breaks down and
19 converts to nitrate or nitrite, it's still going to be
20 nitrogenous and it's still going to end up in the
21 environment.

22 I'd like to hear what you have to say
23 about that.

24 Mr. TED POTTER: I'll speak to this on a
25 couple of fronts.

1 The pollution prevention provisions of
2 the **Fisheries Act** are administered by Environment Canada
3 and, in this case, the residue here would be considered as a
4 deleterious substance, and we'd be looking for Environment
5 Canada to speak to this.

6 In the scenario that you've outlined,
7 this is something that's really become, to our knowledge, as
8 an issue over the last few days as... You know, and the
9 amount, as you said, could be a hypothesis as to the correct
10 amount.

11 So it's not something that we have spent
12 a great deal of time or effort looking at.

13 That being said, you know, this stuff
14 goes into a sediment pond. That needs to be treated in an
15 appropriate way.

16 And your question also alluded to upset
17 or storm events which would see washouts and that. These
18 are things that would need to be considered and contained in
19 environmental protection plan for the site.

20 So there's not something there where
21 we've gone through or reviewed anything in the EIS that
22 would speak to that at that level as you've described.

23 We would be very concerned if there was
24 eutrophication in the area on the nitrogen side.

25 THE CHAIRPERSON: Is there anything to be

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1 gained by asking you to take an undertaking to reflect on
2 this, and is this... Are your comments all that we can
3 expect from you, or is there anything additional to that
4 that we might find useful in considering this?

5 We consider this to be an important
6 issue, and we would be interested in having a more
7 reflective view of it.

8 Mr. TED POTTER: Where I would see going
9 with this is that we'd work in collaboration with
10 Environment Canada to provide an appropriate response.

11 THE CHAIRPERSON: All right. The
12 hearings break up on the 30th. We would like to know when
13 that might be possible.

14 Mr. TED POTTER: Prior to the 30th, but
15 as soon as possible.

16 THE CHAIRPERSON: 29th?

17 Mr. TED POTTER: At the latest.

18 THE CHAIRPERSON: At the latest. Okay.
19 We'll put it down as the 29th.

20 Mr. TED POTTER: And if it's earlier, you
21 won't mind.

22 THE CHAIRPERSON: No. Correct.

23 I'd like to take you somewhere else as
24 well, and that is, is that we've also discussed the role of
25 science in this initiative. And we recognize that samples

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1 are collected and observations are made for multiple
2 reasons.

3 One of those reasons, of course, is to
4 satisfy regulatory requirements, but there are also other
5 requirements or needs that are filled by science.

6 And one of the things that has concerned
7 the Panel is the fact that observations have been made on
8 sediments, benthos. Photographs have been taken. Plankton
9 samples have been made. Inter-tidal observations have been
10 collected, that sort of thing.

11 But most of these are rather modest in
12 number, maybe a dozen samples, let's say, and usually taken
13 within a day or two or three, on the outside, maybe four
14 times. So what we have is maybe anywhere from half a dozen
15 to a dozen samples collected over a period of several days,
16 which really works out to a point in a temporal point.

17 And in some sense, you might consider
18 these to be opportunistic rather than systematic.

19 And as I said, collections of this sort
20 can be extremely useful, and I'm not questioning the
21 collection process itself or the quality of the individuals
22 who did it. That's not in question.

23 But the collections can be used for
24 identifying VECs, for example, or they can assess the
25 presence or absence of things, or they can create a

1 snapshot.

2 But if you wanted to use that
3 information to look at ecosystem-based management, for
4 example, a broader overview, or you wanted to do long-term
5 monitoring, for example, or, as has been suggested in the
6 Proponent's document, the EIS, adaptive management, all of
7 those things require very secure view of the starting point.

8 They require a baseline that is
9 substantial because everything is related back to that
10 baseline. You start from something and you proceed onward.

11 I'm wondering how DFO would view this in
12 the... I'm asking now about the role of science in all this
13 because ecosystem-based management is an important component
14 of the EIS. Long-term monitoring has been suggested in many
15 different places, and adaptive management is referred to in
16 the EIS 140 times.

17 In other words, there are many places
18 where things have been referred to adaptive management.
19 This is what we'll do, and if we run into difficulties, this
20 is how we'll do it.

21 So I'd be interested in DFO's comments.

22 Oh, and there's one other example which
23 I might offer to you, and that is, it's been suggested that
24 the conservation square that is used to contain... That
25 contains the right whales that a small boat would monitor

1 the explosives, the shock waves from the explosives, at the
2 corner of that square.

3 And it's considered to be long-term
4 monitoring as a way of gauging the impact from the
5 explosives on the right whales.

6 And maybe you could comment on the value
7 of that.

8 Mr. TED POTTER: There'd probably be two
9 or three of us who would respond to this question given its
10 breadth.

11 With regard to your introductory part
12 about the number or quantities of samples taken, they are
13 low. They are very low.

14 It provides some background information.
15 It gives an indication of what's present, so it can be used
16 as a presence-absence for what's been found, but it does not
17 provide a detailed baseline overview that could be used for
18 future environmental effects monitoring.

19 In particular with respect to other,
20 large-scale projects we've been involved in, this is
21 probably one of the weakest parts of the science links going
22 forward, is not having adequate or sufficient quantitative
23 versus qualitative baseline measurements.

24 Over the course of an environmental
25 effects monitoring program, our observations for other

1 proponents has been more along the lines of hypothesis drift
2 as opposed to substantiating hypothesis.

3 The questions from a scientific
4 perspective, these were the predictions that were made in
5 the Environmental Impact Statement. Here are our
6 conclusions as to what would be the results, and we have
7 either met or not met them.

8 And therefore, the value of the
9 information derived is limited, at best. And so that would
10 be a key cornerstone that an effective environmental
11 monitoring program would be established, the cornerstone of
12 which would be sufficient in number and in quality of
13 baseline samples so that... As a general overview.

14 And this is across many major projects.

15 THE CHAIRPERSON: I could ask Dr. Smedbol
16 about the corner monitoring of sound, particularly in result
17 of the blasting. Will it be useful? Will it be effective?

18 Dr. KENT SMEDBOL: Yeah, I haven't given
19 that a lot of thought.

20 One thing that comes to mind immediately
21 is I would see the primary use of such a passive receiver
22 would be simply to monitor the... And determine the level
23 of received sound from the blast and to ensure that that
24 level of received sound is below some threshold that has
25 been determined by management of the project.

1 It's interesting to note that, unrelated
2 to the project, that one of the core objectives of the draft
3 recovery strategy I have in front of me is actually passive
4 acoustic monitoring of the population.

5 So there might be some piggybacking on
6 that value above and beyond its worth to this particular
7 proposal. Beyond that idea of ensuring that received sound
8 stays below a threshold, given... For instance, if it was
9 only one receiver, you can't triangulate on, so that same
10 receiver could also be set up with hydrophones to receive
11 whale calls, for instance.

12 If you had an array, you could then
13 triangulate on calls and determine where the whales are
14 relative to the sound source, so there may be additional
15 value in that.

16 I think the receiver would have to be
17 set up in a way that it can be interrogated almost real
18 time.

19 There are examples of this in use, for
20 instance, in Cape Cod Bay. There is a passive acoustic
21 array set up in there to track right whales in relation to
22 traffic and they're communicated with through cell phone
23 technology.

24 Beyond those two ideas, determining
25 received sound level and detection of right whales, off the

1 top of my head, I can't think of any other strong uses for
2 it. Give me a few days, I might come up with some other
3 hypothesis to test.

4 But I think the important one is
5 ensuring compliance monitoring.

6 Mr. MIKE MURPHY: There's some additional
7 comments from Tana.

8 THE CHAIRPERSON: Please.

9 Ms. TANA WORCESTER: My additional
10 comments were just on the first part of the question, not so
11 much on the right whale monitoring.

12 In terms of long-term monitoring of
13 environmental effects, I guess some other experience from
14 some other projects would be the establishment of sites that
15 you could go back to and look at sort of over time.

16 So in order to look at a time series of
17 change over time in response to an environmental effect, you
18 might want to establish those up front of what the locations
19 were that you were going to investigate.

20 And certainly, I mean, specifically in
21 relation to the existing baseline monitoring data in terms
22 of the inter-tidal habitat, for example, there might be
23 additional sites that you would want to investigate,
24 including what was mentioned this morning about the
25 Laminaria beds or the kelp beds, which I believe were not

1 surveyed in the information that's been presented to date.

2 So that would be another component to
3 consider.

4 THE CHAIRPERSON: Thank you. Thank you
5 to all of you.

6 Mr. GUNTER MUECKE: Since we have been
7 talking about monitoring, maybe I can continue along those
8 lines.

9 Bilcon also proposes to monitor for
10 invasive species, and now I need feedback because my memory
11 has just gone from Bilcon.

12 Could you quickly outline to us again
13 the monitoring program for invasive species that you're
14 proposing?

15 Mr. PAUL BUXTON: I think I... Rather
16 than get into specifics, I think I should return to a point
17 here, and I was going to make it in my remarks, but that we
18 have proposed monitoring protocols, but there has been
19 general agreement at all meetings with DFO that the issue of
20 long-term monitoring would be discussed with DFO, with the
21 appropriate people within DFO.

22 So whether it's... And I noted the
23 comment that we would be doing monitoring at the corner of
24 the North Atlantic right whale conservation area in a boat.

25 Well, I don't think we've ever discussed

1 a boat, and we would certainly not propose a boat. It would
2 be either a surface buoy or a bottom-anchored buoy, whatever
3 our experts proposed, and the protocols of the information
4 would be determined in consultation with DFO.

5 I think what we have said is that we
6 have got some background information on invasive species.
7 We have taken samples at the site, that we will take samples
8 in the future at certain points in time for two reasons.

9 One is we want to know what's happening
10 at the site because if something does come in, we want to be
11 able to issue a warning that it's come in.

12 I'm not so sure that there are rules and
13 regulations in place which would specify what we should do
14 in terms of monitoring because the compliance monitoring
15 basically rests with Transport Canada.

16 And I think I made this point the other
17 day that what we would like to do is to contribute to some
18 knowledge here so that we would propose to do some long-term
19 monitoring of invasive species off the site.

20 We would like to do that in consultation
21 with DFO so that we can determine (a) if something is coming
22 in, but also to provide some background and some research
23 data on the site.

24 So I don't think I'd be prepared right
25 now to say this is what we intend to do, although we have

1 suggested various things that we would propose to do. Those
2 things, in my view, would be determined in discussions with
3 DFO.

4 Mr. GUNTER MUECKE: Okay. Could I turn
5 it back to DFO, then?

6 What would you envision would be an
7 effective monitoring program for invasive species?

8 Mr. TED POTTER: Our first step would be
9 before that. It's prevention, as Mr. Murphy outlined in his
10 presentation that one incident can lead to colonization
11 either at a local or regional level.

12 So prevention is the measure here as
13 opposed to sighting it once it arrives. Invasives have
14 proven very difficult to the point of almost impossible to
15 eradicate on establishment.

16 So the first part would be direct...
17 The main mitigation would be directed at the ballast
18 transfer as through the Transport... Or Transport Canada
19 regs through the ballast.

20 Within the broader context in a Nova
21 Scotia setting, there are 45 monitoring sites in Nova Scotia
22 along the coast, through the Bras d'Or Lakes, as well as 11
23 additional sites on the New Brunswick side of the Bay of
24 Fundy.

25 DFO's aquatic invasive species group is

1 looking at five species, primarily tunakits. Of those, we
2 have already discovered... Our closest monitoring site is
3 at the Digby Yacht Club, and we have found gold star and a
4 few vase tunakits at that site.

5 We have also found... Our next site
6 going down around the Neck and around the Islands is near
7 Meteghan in St. Mary's Bay, and again, vase and gold star
8 tunakits are present there.

9 We are concerned that other species
10 would come in. In particular, we're concerned about
11 potential diseases that would affect lobster and, in
12 particular, the disease that affected the Long Island
13 lobster in 1999.

14 There are green crab, which was
15 mentioned in our presentation, which have already
16 established themselves and have moved north along the coast
17 through the Bras d'Or Lakes and into the Gulf of St.
18 Lawrence.

19 And we are concerned about Chinese
20 mitten crab as well entering the area.

21 Monitoring. We have monitoring
22 protocols set up, and I believe it's... I'll just refer to
23 the document here. We can provide a copy of that to the
24 Panel, but it's ranked as invasive species Level 2
25 monitoring.

1 And there's a whole series of detail
2 here as to site selection, protocols, equipment to be used
3 that we can provide.

4 Really, monitoring confirms that you've
5 got a problem and there's very little you can do about it.
6 Prevention is the answer in this case.

7 Mr. GUNTER MUECKE: Thank you.

8 Ms. JILL GRANT: Just a couple of other
9 questions on the invasive species question.

10 Do you have any special concerns around
11 the area where the ship is going, the other end?

12 Some concerns have been flagged in a
13 study done for the Proponent by Mallet about the high risk
14 of some of the species in that area, so I just wonder
15 whether that creates a special concern or not.

16 Mr. TED POTTER: In general, it's the
17 ballast water that is the source of invasive species,
18 although it's not the only source. There could be
19 attachment to the hulls.

20 Our environment assessment focuses on
21 invasive species coming to our area, not going to a home
22 port, international destination. Our jurisdiction doesn't
23 carry us that far.

24 Ms. JILL GRANT: What's your experience
25 of the effectiveness of ballast water transfer for removing

1 the risks of these kinds of organisms?

2 Mr. TED POTTER: That would be beyond my
3 capacity to answer.

4 The program has been put in place over
5 the last two years. The monitoring started last year.

6 And for effectiveness, what we've seen
7 is about five species per decade since European arrival in
8 the Americas. And with increase in shipping and vessels
9 going all over the world, I'd be at a loss to see that
10 actually declining.

11 We are trying to take preventative
12 measures here. I think that, in the long run, this will
13 delay as opposed to prevent.

14 Ms. JILL GRANT: One of the species that
15 you mentioned is the parasitic lobster disease.

16 What's the value of the lobster fishery
17 in the Bay of Fundy, and what's the nature of the parasitic
18 disease that might affect them?

19 Mr. TED POTTER: What I'll do is I'll ask
20 two experts here we have with us. I'll ask the Area
21 Director for Southwest Nova Scotia to speak to the value of
22 the lobster fishery, and then I'll ask Dr. John Tremblay to
23 speak to the effect with regard to lobster.

24 Dr. JOHN TREMBLAY: The way the
25 information on landings is acquired b DFO is through logs

1 from fishermen. It's not sliced up quite as easily.

2 I don't have that in front of me for the
3 entire Bay of Fundy, but on the Digby side, looking at, say,
4 the upper Bay of Fundy on the Nova Scotia side, you'd be
5 looking at the order of 10 million, 10 million dollars.

6 Are you looking at... Looking for
7 figures on value or landings?

8 Ms. JILL GRANT: I'm not sure what the
9 difference is between those two, but we... Yeah. We want
10 to get a sense of what the annual value of the lobster
11 fishery is.

12 Dr. JOHN TREMBLAY: Yeah. It's
13 substantial.

14 With respect to the disease, it hasn't
15 been found north of... It hasn't been found in Maine, I
16 don't believe, so there are, you know, other waters where
17 these vessels are going through and the disease has not been
18 found there yet.

19 So I expect the chances of it getting
20 here are reduced, but they're not zero.

21 Ms. JILL GRANT: And does that disease
22 completely eliminate the lobster catch? Does it reduce
23 catch?

24 What is, exactly, the effect of it?

25 Dr. JOHN TREMBLAY: In Long Island Sound,

1 which is quite a localized area when you look at the
2 distribution of lobsters as a whole, catches declined
3 remarkably over a period of several years.

4 But I understand it wasn't just disease.

5 It was a combination of low temperature, particular
6 environmental conditions, low oxygen as well.

7 So I'd be very surprised if it would
8 eliminate any population of lobsters on its own, but it
9 would certainly have a serious impact.

10 Mr. MIKE MURPHY: If I could just add in
11 terms of the value of the lobster fishery, I wouldn't want
12 you to leave with the impression that the industry is 10
13 million dollars.

14 It depends on where you decide to...
15 From what line to what line. You know, I think if it was
16 helpful we could provide you with some information by
17 statistical district or by different areas along the coast
18 and you would have a sense of 10 million dollars in this
19 particular area, but if you expanded those boundaries out,
20 you may be talking of 300 million dollars in Sou'west Nova
21 Scotia.

22 I mean, it just depends on where you
23 want those boundaries to be.

24 Ms. JILL GRANT: Thank you. That would
25 be very helpful, so we'll register that as an undertaking.

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(QUESTIONS BY THE PANEL)

1 If you could get it to us by the 29th at
2 the latest, that would be great.

3 Mr. MIKE MURPHY: That one I think we can
4 get by the 29th.

5 Mr. GUNTER MUECKE: While we're on the
6 lobster fishery, I'm, in my mind, trying to configure how
7 the impact of this project on a lobster catch can be
8 evaluated.

9 And is it possible or has it been done
10 in terms of the possible local effects to evaluate? You
11 have to have a baseline to evaluate change, have the lobster
12 catches been affected.

13 This will be, obviously, within a
14 certain specified, limited local radius, and to evaluate it
15 you have to have a lobster catch analysis prior to the
16 enterprise.

17 Has this been undertaken or should it be
18 undertaken?

19 Dr. JOHN TREMBLAY: It hasn't been
20 undertaken. There are landings available on a 10-minute
21 grid basis.

22 That's the finest resolution we have, so
23 quite a large area, but we do have landings on that basis
24 going back 10 years, so we could look at the grid that is
25 closest to the proposed quarry and look at changes over

1 time.

2 Obviously that's not the best way
3 because we like to have higher resolution information, so
4 this is why DFO proposed a monitoring program.

5 We haven't discussed this any further.
6 We certainly would want some industry input in the design of
7 any such program, but it could involve sampling before and
8 in between actual blasts, for example, to see if something
9 like catch rate declines dramatically after a blast.

10 And it could also involve looking at
11 hemolymph protein to see if it's affecting moult cycles and
12 so forth.

13 But basically, there is not a lot known
14 about the effect of blasting on lobsters and other decapod
15 crustaceans, other crabs and so forth.

16 It certainly doesn't seem to induce
17 mortality. Some studies in the lab exposing animals to
18 quite high levels of seismic have not shown any mortality,
19 but there are some sub-lethal effects that have been shown
20 recently.

21 Most of that information is preliminary
22 or in review, is where that is. It hasn't really been peer
23 reviewed.

24 Ms. JILL GRANT: Just a follow-up. We
25 asked Transport Canada earlier today, and maybe it's

1 appropriate to ask you as well.

2 Given the nature of the kind of
3 turbulence that the ship's likely to generate coming in and
4 the unpredictability of when it's going to be able to get in
5 due to conditions, how feasible do you see it being for
6 lobster fishermen to continue to work in this area once...
7 If the project does go ahead?

8 Mr. JOHN TREMBLAY: I guess we really
9 don't have the information on the table as to what the
10 turbulence would be, to answer that question.

11 I mean, there is fishing going on in
12 other areas where large ships come in, but, you know, we
13 don't have the comparative data to make the conclusive
14 statement.

15 THE CHAIRPERSON: That information
16 wouldn't be generally available, say, 70,000 dead weight
17 tonne ship reversing its propellers, for example, as it
18 positions itself. The amount of energy released into the
19 water would be huge.

20 And that turbulence, I mean, tipping
21 over lobster pots, perhaps, or... I don't want to put words
22 into your mouth. I don't even know the answer to this.

23 And lobster pots are joined together so
24 that tying them up in knots and that sort of thing, is that
25 just fanciful or is there any possibility there?

1 No one knows.

2 Mr. TED POTTER: I think the answer is
3 nobody's really looked at this closely.

4 With regard to what's proposed here, if
5 we were to look across the Bay at the Canaport facility with
6 huge oil tankers coming in, there's an exclusion zone there
7 for safety while the vessel's coming in.

8 And having talked to some of the
9 operators, while the vessels are not there, strings of
10 lobster pots are laid through the area and recovered or
11 retrieved prior to a ship coming in.

12 That does not negate that traps get
13 entangled or washed out.

14 What DFO would do, because this is not
15 part of our authorization process, is we would strongly
16 encourage the Proponent and industries, in particular in
17 this case with the fishing industry, to have discussions on
18 how they would interact and what the arrangements would be
19 there and come to an agreement.

20 THE CHAIRPERSON: Thank you. That's very
21 helpful.

22 Mr. GUNTER MUECKE: We understand that
23 there is quite an important herring fishery in this part of
24 the coast, and having a facility, the loading facility which
25 is lit up and with lights directed downward in order to

1 avoid boat collisions and interference with migratory birds,
2 could you give me a sense of how you feel about possible
3 interference of the facility with the herring fishery?

4 Mr. KENT SMEDBOL: Light is a known
5 attracter for herring. In fact, it used to be commonly used
6 in the herring fishery, the seiner fishery, as a way to
7 attract fish to the surface. That's no longer done.

8 So I could foresee, hypothetically
9 speaking, that it may actually function in drawing herring
10 into the area.

11 It should be noted that there is... The
12 area along Digby Neck, in the summer months, it does sustain
13 a very heavily prosecuted fishery for herring. Mainly
14 seiners come in quite shallow in that area.

15 There are also still several weirs that
16 function along Digby Neck, so it's a known area for herring
17 aggregations during the spring, summer, fall months.

18 Other than it... So it is possible that
19 lights at night could attract them, but they're there in the
20 area to begin with.

21 Mr. GUNTER MUECKE: Would it in any way
22 interfere with their spawning or their usual movement
23 patterns?

24 Mr. KENT SMEDBOL: Spawning areas for
25 herring in Scotia Fundy are well documented, and there isn't

1 one in that particular area.

2 Spawning tends to occur in the summer
3 months, usually July, August for this species. The main
4 areas in and around Fundy would be there's a large spawning
5 area in Scotts Bay at the head of the Bay.

6 There's also a very large one on German
7 Bank, which is the largest component of Scotia Fundy
8 herring, where that spawns. There are a few smaller ones
9 down past St. Mary's Bay.

10 To my knowledge, there is not a
11 substantial component that spawns in that area.

12 Mr. GUNTER MUECKE: What about movement
13 patterns?

14 Mr. KENT SMEDBOL: They actually move
15 back and forth quite close to the coast in that area. It's
16 one of the reasons why we... You know, it's an historical
17 area for fishing weirs.

18 It's also one of the reasons why we find
19 large fish-eating whales in the area. They're targeting
20 herring in that area so, for instance, herring are the
21 reason why we have whale watchers on Digby Neck.

22 THE CHAIRPERSON: Okay. I believe that
23 the Panel is finished its questioning, so now we'll turn it
24 over to the Proponent, Mr. Buxton.

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

1 Some of these will be clarifications, some may be a comment,
2 and some may be direct questions, if you'll let me.

3 To your last question with respect to
4 turbulence, it may be that there is significant information
5 available at Porcupine Mountain Aulds Cove. Certainly about
6 60 ships a year come into that facility to pick up aggregate
7 and, also, there was a coal loading facility there taking
8 coal up to Point Aconi.

9 And I'm led to believe that the area
10 directly in front of the port is, in fact, heavily fished
11 for lobster, so it may be that there is some background
12 information that the local lobster fishermen could provide
13 data on.

14 I don't have it, but it may be
15 available.

16 A clarification with respect to the in
17 shore Bay of Fundy salmon.

18 I did say May through September, and Mr.
19 Murphy said May to October. It may be my wretched accent,
20 but I did say May through September, and I'd like to ask you
21 if that's correct.

22 Mr. MIKE MURPHY: Our information is to
23 October, through October, that would... There would still
24 be inner Bay of Fundy salmon in the area in October. So to
25 or through.

1 Mr. PAUL BUXTON: Okay. Thank you. I
2 think our original information was that it was May through
3 September, and so that's what we put in the document.

4 If it's October the 15th, we have no
5 difficulty with that. We just don't have that information,
6 I guess.

7 On to fish habitat compensation plan,
8 which was mentioned in your presentation. And I would just
9 simply like to comment on that, perhaps, that I think we
10 spent a dozen, perhaps not a dozen, 10 meetings with DFO
11 officials outlining this compensation plan to the extent
12 that we felt at our last meeting that everybody was
13 comfortable with it.

14 I understand since from DFO that there's
15 been new research, new documentation and they would like us
16 to revisit that in the light of new information which has
17 come to hand, and we're very comfortable with that. If
18 there are new technologies, we'd be very pleased to meet
19 with DFO again and revise that plan in accordance with
20 better science, if you like.

21 I have a comment on CEAA and a question
22 on CEAA. Perhaps as an impression that only new projects
23 that pass through comprehensive studies or panels are
24 subject to CEAA, and I would like the DFO expert... I am
25 sorry about names. Didn't get them all in my head. To just

1 comment on whether or not CEAA, in fact, applies to all
2 existing projects as well as new projects which are coming
3 in.

4 Mr. DAVID MILLAR: There's different
5 components of CEAA that apply differently. Section 79,
6 which is the project review component, applies to new
7 projects. It's specifically intended to apply to these kind
8 of situations, projects that are undergoing an environmental
9 assessment under CEAA.

10 And so that's intended to make sure that
11 CEAA review identifies adverse effects on species at risk
12 and proposes appropriate mitigation monitoring.

13 So that part of the Act would apply only
14 to new projects. On the other hand, the prohibitions which
15 say you can't harm, harass, kill applies to all activities
16 unless they have a permit or some sort of exemption, so that
17 does apply to all activities regardless of whether it's a
18 new project or an ongoing activity or any other kind of
19 activity, regardless of whether it requires a review or an
20 EA or anything.

21 Does that clarify?

22 Mr. PAUL BUXTON: Thank you very much,
23 Mr. Chair.

24 I would just like to make a comment on
25 ammonia, since it came up yesterday, and, in fact, we have

1 an undertaking to provide you with some background data.

2 And also, we are preparing an additional
3 piece on that to clarify our position.

4 But I would like to refer to a meeting
5 which was held February 7, 2005 with DFO and Bilcon, and it
6 covered a number of subjects, as our many meetings with DFO
7 did.

8 But at that meeting, DFO... And these
9 are the minutes. I'm reading from the minutes of the
10 meeting now, which were prepared by DFO.

11 "DFO provided the Proponent with a paper
12 entitled 'Practical Methods to Reduce
13 Ammonia and Nitrate Levels in Mine
14 Water' by Gordon F. Reevey on mitigation
15 measures for the use of ANFO, ammonium
16 nitrate fuel oil-based explosives.
17 DFO's explosives expert has said that if
18 the mitigation that has been proposed by
19 the Proponent and the recommendation
20 outlined in the paper by Gordon Reevey
21 were incorporated into the blasting
22 plan, there will be little in the way of
23 residual impacts occurring from this
24 aspect of the proposal."

25 And I could just also add to that

1 that... And we will put this in writing for you, that an
2 awful lot depends, of course, on best practice.

3 If things are done properly, certain
4 things happen. If they're done improperly, other things,
5 and not very nice things, happen.

6 In correspondence with Gordon Reevey as
7 of last night, communication to Bilcon, his statement is the
8 percentage of ammonium nitrate residue would likely not be
9 measurable if best practices are used.

10 Now, we intend to put this into a little
11 presentation for you along with the reference documents that
12 you asked for, and we will give that to you before this
13 Panel terminates.

14 I would like to ask just, really, a
15 general question with respect to the model, the CONWEP
16 model. This is certainly not my field of expertise, and
17 clearly DFO has very considerable expertise.

18 But I would like to confirm, and this
19 was my understanding and I think it had been clearly said in
20 the documents, that the CONWEP model that we ran was, in
21 fact, a very conservative model.

22 Mr. NORMAN COCHRANE: Presumably you want
23 me to respond to this.

24 Mr. PAUL BUXTON: Well, let me perhaps
25 give a quote from DFO's comments on our EIS because we can

1 only respond to communications that are made to us. And it
2 refers to fish habitats blasting:

3 "Most assertions in this section are
4 based on the acoustic model study by
5 Department. Hannay, JASCO Research, and
6 D. Thompson, LGL Limited, titled 'Peak
7 Pressure and Ground Vibration Study of
8 Whites Cove Quarry Blasting Plan'.
9 Comments on this study have been
10 provided previously by DFO. See
11 Appendix 9 of the EIS.
12 And that was a preliminary.
13 Several issues were earlier identified
14 in regard to the study, the most
15 important pertaining to apparent
16 quantitative inaccuracies in assessing
17 how P compressional to S sheer wave
18 conversions at the water sediment
19 interface would enhance the amplitude of
20 P waves transmitted into the water. The
21 conclusion was that Hannay and Thompson
22 study probably over-estimated the
23 compressional wave amplitudes
24 transmitted into the water column. This
25 would tend to strengthen the statement

1 that the model presented represents
2 worst case situation."

3 And that is a direct quote from DFO
4 comments. Our response to that was:

5 "Bilcon agrees with the conclusion that
6 the CONWEP model study conducted by
7 JASCO Research probably over-estimated
8 the compressional wave amplitudes
9 transmitted into the water column and
10 that this aspect of the model represents
11 a worst case situation."

12 I'd just like a comment on that, please.

13 Mr. NORMAN COCHRANE: Is it all right if
14 I speak to this, Mr. Chairman?

15 THE CHAIRPERSON: Yes, please.

16 Mr. NORMAN COCHRANE: Yes. I think
17 there's a bit of confusion here.

18 The CONWEP model is only one component
19 of the Hannay and Thompson overall model. We mentioned the
20 CONWEP model, which was essentially a model for giving us
21 the time domain signature of the compressional wave in the
22 bedrock generated by the explosion. That is the CONWEP
23 model.

24 The Oriard model is the model that
25 attempts to quantify the transmission of acoustic energy

1 from the bedrock into the water.

2 And in addition to that, the Hannay and
3 Thompson study also attempted to look at what happens within
4 the water wedge itself and how there can be interference
5 phenomena that tends to decrease the acoustic pressure
6 signature within that wedge of water itself.

7 So there are really three different
8 components, and the CONWEP model is only one of them.

9 I, myself, am not an expert on the
10 CONWEP model, and I cannot really give you a very good idea
11 of just how accurate it is likely to be or at what range it
12 would give an adequate description of this compressional
13 wave pulse in the bedrock.

14 Mr. PAUL BUXTON: Thank you very much. I
15 would just perhaps like to ask a follow-up question. It was
16 our intent on this project from September 2002, when an
17 application was first made, to in fact have a blasting plan
18 approved so that we could set off test blasts and produce
19 empirical data, and I would just like a comment on the value
20 of, let's say, models versus the data that can be gained
21 from empirical test blasts where we now have concrete
22 evidence.

23 Mr. NORMAN COCHRANE: Yeah. I'd like to
24 go back to some of your earlier comments. I would like to
25 say that we still...

1 In fact, in my earlier remarks, I did
2 support the stated conclusions in that DFO report that
3 indeed the transmitted pressure wave into the water is
4 likely to be somewhat lower than was stated in the Hannay
5 and Thompson report by...

6 A transmission coefficient lower by
7 about a factor of five, which probably makes you very happy
8 so...

9 But I should also say that there is some
10 concern about the Hannay and Thompson model, as well as the
11 reverberation phenomena within the water column is properly
12 and adequately modelled. So in a sense, that might increase
13 the acoustic levels within the water column.

14 But at the same time, the model does
15 seem to be parameterized fairly conservatively, so... But
16 there are many uncertainties. It's a very simplistic model,
17 and I believe what you're trying to imply is that monitoring
18 is going to be a very important component, and I would
19 certainly concur with that, and I would certainly encourage
20 a very comprehensive modelling or monitoring, as opposed to
21 strict modelling, study.

22 Monitoring is going to be all-important.

23 Mr. PAUL BUXTON: I think that that was
24 the point that I was trying to make, Mr. Chairman, however
25 complex, and this seems to be an extremely esoteric subject

1 which I don't pretend to understand.

2 But certainly we do intend to enter into
3 detailed discussions with DFO's experts to set up the test
4 blasts to that we can either confirm or amend the sorts of
5 distances that we've set out, and I think that that's the
6 position that we've taken from day one, and we're simply
7 waiting to be able to do the test blasts to be able to do
8 that.

9 Just moving on a little bit, and again,
10 I don't want to get into large debates about these issues,
11 but perhaps a commentary would be useful. We did have some
12 information earlier on this afternoon about ship speeds and
13 the speed of the ship with respect to mortality rates.

14 But I think we missed out a rather large
15 section of the discussion, and that is, I wonder whether any
16 reliable information can be brought forward with respect to
17 the reliability or, I'm sorry, the probability of a
18 whale/ship collision, because we can debate what happens
19 when a ship hits a whale, but what is the probability of a
20 whale/ship collision in the Bay of Fundy?

21 Mr. KENT SMEDBOL: There are a series of
22 analyses that are currently under review. They have not
23 been peer reviewed. They deal specifically, though, with
24 the relative probability of collision, not the absolute
25 probability of collision. So what these analyses evaluate

1 is the probability of having a collision in a particular
2 area within the Bay, relative to any other area within the
3 Bay. But it can't, but these analyses can't give you an
4 answer that says there's a one in one thousand chance a
5 whale will be struck.

6 It's... There are statistical reasons
7 why for that. For instance, we don't know where all the
8 whales actually are in time and space, so we can't give you,
9 we can't calculate an absolute value. So I guess the short
10 answer is at this moment there is not a peer-reviewed
11 document that can provide that answer. It is an area of
12 current study, even the absolute analysis.

13 Mr. PAUL BUXTON: Yes, thank you. We've
14 found the same thing. We do have at hand a non-peer-
15 reviewed study, which leads us to believe that the levels of
16 probability are relatively astronomical, and you may have
17 access to that document and may want to comment on it.

18 Mr. KENT SMEDBOL: One comment I can make
19 is that the probabilities, the magnitude of the relative
20 probabilities are driven by where the whales are, not by the
21 ships. I'll leave it at that. So one could understand that
22 the likelihood of collision, the relative likelihood of
23 collision is highest in the lane of the traffic lane that
24 crosses the major concentration of right... Or just is
25 adjacent to the major concentration of right whales.

1 So it is the whales that tend to drive
2 the risk.

3 Mr. PAUL BUXTON: Yes. Thank you very
4 much. But I'm just wondering whether anybody has an
5 estimate of the probability. We know in general terms where
6 the ship is going. May be some debate about precisely where
7 it comes off the shipping lanes.

8 But in broad terms, could you
9 characterize the level of risk, the probability of a
10 whale/ship collision?

11 Mr. KENT SMEDBOL: Again, not in absolute
12 terms, and I'm not the lead on these analyses. I am
13 familiar with them, and given they're not peer-reviewed, I
14 don't know how much I should really speak to them, since I'm
15 not the author.

16 But in general, if you can recall the
17 sightings per unit effort map that was displayed in two of
18 the, actually one of Bilcon's presentations and also one by
19 Dr. Taggart, that figure is not greatly different from the
20 relative probability analysis.

21 As I said, it tends to be driven by the
22 whales, but I must stress, this has not been, this has not
23 made its way through peer review.

24 Mr. PAUL BUXTON: Thank you very much.
25 On whales again, I think something else that perhaps was not

1 gone into, we talked about the issue Okay. blasting with
2 respect to whales, and we have talked about the issue of
3 whale ship collisions.

4 But I wonder if you could give us some
5 sort of reference or some picture of, for example, what the
6 effect of fishing is on whales, for example net
7 entanglements, and I'm aware of a paper that was produced I
8 think jointly between Nova Scotia and Scotland within the
9 last year which talked about the fact that whale watching
10 tours were now being held to be the most significant problem
11 with respect to behavioural effects on whales.

12 A comment would be useful.

13 Mr. KENT SMEDBOL: I have some of that
14 information before me. For context, last winter, in
15 February, DFO undertook what is called a recovery potential
16 assessment for North Atlantic right whale, so most of these
17 statistics that I'll read off in the next little bit are
18 driven from that analysis.

19 So I do have some information that
20 relates to that. I'll find the Table. 50 percent of
21 mortalities in right whale are known to have... Known
22 mortalities in right whale have a human origin. Of those,
23 almost all of them are either due to vessel collision or
24 entanglement.

25 So from 1970 through January of 2006 for

1 known mortalities in North Atlantic right whale... These
2 numbers include both Canadian and U.S. waters... We have 27
3 mortalities due to vessel strike, we have eight known
4 mortalities from entanglement, 12 mortalities are suspected
5 from entanglement, there are eight whales currently
6 entangled, 33 have been entangled in the past, and are now
7 gear free.

8 We have 21 mortalities for which there
9 is not a known... To which we could not ascribe a cause,
10 and this is all excluding neo-natal mortalities, so not
11 young of the year, 'cause there tends to be a high mortality
12 among newly born calves.

13 Some more statistics. From 1986 to
14 2005, there was 61 confirmed reports of entanglements of
15 right whale. Of those, a significant proportion have been
16 entangled more than once.

17 In fact, over 60 percent of the
18 population, the last estimate which is not published, but I
19 have from the right whale consortium, and the New England
20 Aquarium, is that 71 percent of photographed right whales
21 have entanglement scars.

22 Two issues related to detection of cause
23 of mortality. The first one is that... And I think the
24 question even the Panel was getting toward this; that if
25 ships... If vessel collision occurs offshore, we do not

1 know, we don't know what, how many of those that are
2 actually struck that we detect, and when we do detect and
3 are able to assess the condition, they're usually well, you
4 know, well into decomposition. But if they get hit well
5 offshore, we are not going to detect.

6 In fact, there was a vessel, a whale
7 that was struck off the coast of Georgia this winter, and
8 simply... Well, a dead whale was detected floating. We
9 never could get out to assess it because of weather
10 conditions, and we lost track of it. It's gone.

11 Another thing is all... So the best way
12 to characterize this, then, is that known mortalities due to
13 human causes are underestimate of the actual number of
14 mortalities caused by human activities. So I already
15 mentioned vessel strike; what happens if it occurs offshore.
16 We might not be able... It may escape detection.

17 With entangled right whales, for those
18 that are chronically entangled, and that end up dying from
19 that entanglement, they are often in an emaciated state so
20 they no longer float, or it's highly unlikely that they
21 would float. So if the animal eventually dies, we may not
22 detect that death.

23 So there are... We actually have a
24 statistics in the consortium that is used. If we do not
25 re-detect an animal after seven years, it's considered dead,

1 and a higher proportion of animals that have been entangled
2 for at least two years fall into that category than the
3 population at large. So there is some evidence to say that
4 we are not detecting all of the actual human-induced
5 mortalities.

6 But that's all that I have with me.

7 Mr. PAUL BUXTON: Thank you very much. I
8 didn't realize I'd get such a comprehensive answer.

9 Just perhaps another quick comment, can
10 you... And I was surprised to hear you say that there had
11 been a detected whale killed from a small vessel, and you
12 characterized that by being in the 50-foot range, which
13 would be a standard size, let's say a scallop dragger. Have
14 you any information in fact to sort of characterize ship
15 strike mortalities by size of vessel, for example?

16 Mr. KENT: Yeah. In that case, and all
17 the necropsies are actually undertaken by a team that's led
18 out of Wood Hole, Woods Hole Oceanographic Institute, so DFO
19 actually doesn't undertake necropsies but we are party to
20 the information.

21 There are two known deaths from ship
22 strike that are likely caused by... My sentence structure's
23 horrible there. In the last two years, two whales that have
24 been struck and likely killed by a vessel, it was determined
25 that it was likely struck by a small vessel, so the first

1 one which I had mentioned was off Campobello in 2005; a
2 second one off the coast of North Carolina. In that case,
3 we know it because it was hit, and then the owner of the
4 vessel reported it. That was about a 50-foot pleasure
5 craft.

6 The one that was struck in the vicinity,
7 in Canadian waters, in the... Around Campobello, an
8 analysis of the corpse showed from looking at propellor cut
9 patterns on the corpse, from that and from the mark of the -
10 skeg which was visible through the cut pattern, one can
11 determine approximately the size of the prop that struck
12 that animal. And from that, that information was sent to a
13 marine engineer and a marine architect, and they said the
14 best guess was that prop size was between 26 to 30 inches.
15 So it was obviously struck by a small vessel. Whether that
16 vessel was a commercial vessel or a private vessel, we don't
17 know.

18 So the point is right whales can be
19 killed by vessels of all sizes. The manner of their death
20 is different. So in that case, it was probably blood loss.

21 In necropsies of dead whales, there's a second type of
22 cause of mortality, and this is usually extreme blunt force
23 trauma, and this is the one that we consider likely to have
24 occurred from large vessels over 300 gross registered tons.

25 So in those necropsies, you can see, for instance, jawbone

1 completely broke.

2 There's one case last year where the
3 skull was actually cracked in two. The very large
4 broad-scale injuries that are consistent with extreme blunt
5 force trauma, and we would consider those to be consistent
6 with impact from a large vessel.

7 Mr. PAUL BUXTON: Thank you very much.
8 The... My previous question actually had two parts, and you
9 answered one at great length and in great detail, but the
10 second one was concerning a recent study 2006 between a
11 Scottish university and a Nova Scotia university that
12 reported to find that whale watching was the biggest cause
13 of behavioural changes in whales. If you could comment on
14 that, I'd appreciate it.

15 Mr. KENT: Yeah, I'm somewhat familiar
16 with that study, and this is... We acknowledge even within
17 Fisheries and Oceans science that this is a knowledge gap
18 that we have to fill. We actually had our own pilot study
19 to evaluate behavioural responses to ship, to vessels in the
20 Bay of Fundy, but we've been unable to secure further
21 funding for that.

22 In that particular study, it looks at
23 what is considered chronic visitation of individual animals
24 so that the view in that particular paper is that these
25 animals were exposed at, to small vessels, whale-watch

1 vessels, or also private vessels, for an appreciable time
2 during the day, and the view of those researchers was that
3 this, in their interpretation, was interfering with those
4 animals' ability to undertake their daily requirements for,
5 you know, feeding and socializing and that sort of thing.

6 Well, that was their conclusions. There
7 is, among whale researchers, some acknowledgement that this
8 could indeed be occurring. On the west coast, for instance,
9 with transient killer whales, there are rules about not only
10 how close you can approach those pods, but for how long you
11 can stay on an individual pod.

12 We have done some back in the envelope
13 calculations based on mark recapture photography of
14 individual whales.... We can identify individual right
15 whales by their markings.... That for instance one whale in
16 2004 was visited 14 times in one day, 'cause we had 14
17 photographs from different proprietors. So there's no doubt
18 that this may be an issue. We have not properly evaluated
19 it, though.

20 Part of the problem is determining...
21 The real kicker for this is determining impact of those
22 visitations, because the variant, the change in behaviour
23 among individual whales is extremely variable, so it
24 requires a fair bit of data to be able to pick out patterns
25 that we could then relate perhaps back to that human

1 activity. But we fully acknowledge this is a... At least
2 from DFO science, we consider this a knowledge gap.

3 Mr. PAUL BUXTON: Thank you very much.
4 And finally we've had some doubts with respect to the
5 capacity of observers at whatever height and with whatever
6 techniques being able to detect varied mammals in the water
7 at various distances.

8 I believe that the last time that we met
9 with DFO, or perhaps second-last time, we did discuss the
10 state of the art and the development of detection devices to
11 assist in this kind of thing, and I wonder whoever would be
12 the appropriate person could comment on that, at this time.

13 Mr. MIKE MURPHY: Yeah. Unfortunately,
14 there's nobody here who was at that, who was present at that
15 meeting. I think earlier on Kent gave a fairly good
16 overview of the process that they use in science for
17 observation, and certainly that, you know, that gives you a
18 sense of the protocols, or a sense of the concerns that we
19 may have.

20 Mr. KENT: There is one addition that
21 actually I forgot in my evaluation. When the Panel had
22 asked me to... About the probability of detecting animals
23 at distance. If you have a stable platform, you can also
24 employ what are called "Big Eye" binoculars, which... I
25 don't know if you've ever seen them, but they're... And

1 they can basically take you out to the horizon, but the...
2 And these are used on large, stable platforms such as large
3 vessels. The National Marine Fishery Service uses them on
4 their surveys.

5 But again, you need good sea state.
6 That's still a factor. There's no doubt that... It may not
7 help you in the original detection, but it may help you in
8 honing on that cue, and determining the species.

9 The other issue would be passive
10 acoustic detection of animals. That's sort of considered
11 state of the art.

12 Mr. PAUL BUXTON: Thank you very much. I
13 think at that meeting we did say that we would commit to
14 whatever new devices were, had been devised for the
15 detection of marine mammals, and it seemed that the state of
16 the art, at that time, was not quite developed.

17 I think if I could just turn to my
18 colleagues just to see whether that is complete, if you
19 wouldn't mind, Mr. Chair.

20 --- Pause, conferring with colleagues)

21 Thank you, Mr. Chair.

22 And I would like to say, at this stage,
23 that we have been meeting with DFO officials since July
24 2002. We've had a significant number of meetings on a large
25 number of issues, and I would, on behalf of the company,

1 like to, at this time, thank DFO for their professional
2 advice to us over the years. We very much appreciate it.
3 Thank you, Mr. Chair.

4 THE CHAIRPERSON: Thank you, Mr. Buxton.
5 I think there are a couple more questions from the Panel
6 that have surfaced since, so Gunter?

7 Mr. GUNTER MUECKE: Yes. I would like to
8 briefly come back to the blasting model and the test blast.

9 The blasting model is a numerical model
10 which involves large uncertainties. I think that we have
11 established that. And I would like to have your comments on
12 the value of a single test blast in evaluating a model of
13 this type.

14 Mr. NORMAN COCHRANE: Well, I think there
15 are two types of test blasts that one might consider. One
16 might be the detonation of a single shot hole, and the other
17 would be the detonation of a pattern of shot holes similar
18 to what would be utilized during the operational phase of
19 the quarry, which could involve something like 50, 60 or
20 maybe more shot holes.

21 And I think really both of these should
22 of these should be done. For one thing, I think the
23 detonation of a single shot hole could be quite valuable in
24 determining whether reverberation effects within the water
25 layer are quite significant or not, and I personally am not

1 quite certain as to the significance of this, and I think
2 you have to realize that these models are very simplistic,
3 and whereas the physics are very complicated, and certainly
4 the use of a single blast, a single shot hole blast would
5 give us some confidence that we have really captured the
6 complexity of the phenomena.

7 Mr. GUNTER MUECKE: Thank you. Just in
8 my memory, a similar model was evaluated, or they tried
9 evaluate at another quarry. This was respect to damage to
10 buildings, and it actually, in terms of testing it, they
11 suggested that it would take at least a dozen events to test
12 the model to some level of satisfaction. Is that a
13 realistic evaluation that it would take?

14 Mr. NORMAN COCHRANE: I would say the
15 more events that can be tested, the better, yes. But
16 certainly even if the physics is really not properly covered
17 by the simplistic model, by a great margin, maybe even one
18 test would disclose that. But certainly the more you have,
19 the better.

20 I mean, there are many approximations
21 and simplifications have gone in this. We don't consider a
22 rough interface, the fact of scatterers, boulders, that sort
23 of thing, and also I think there could be disagreement as to
24 exactly what the slope of the interface is, or how it is
25 really oriented, as well, with respect to the blast. I

1 don't think the geometry of the monitoring has been very
2 well defined.

3 Mr. GUNTER MUECKE: And the model assumes
4 homogeneity?

5 Mr. NORMAN COCHRANE: Yes.

6 Mr. GUNTER MUECKE: As a geologist as
7 opposed to a geophysicist, I never look at a rock body and
8 think of it as being homogenous.

9 Mr. NORMAN COCHRANE: Certainly if there
10 are systematic refraction effects, then that could affect
11 the effective angle of incidents of the blast waves onto the
12 base of the water column, and the propagated energy into the
13 water column is very critically dependent upon that angle of
14 incidents.

15 Ms. JILL GRANT: We don't have time to
16 get into all of the, those species that are listed under
17 CEAA. We had a fair bit of time to talk about whales,
18 but... The right whale, but I wonder if you could endeavour
19 to come back with(sic) us with a summary table of the
20 species listed under CEAA that apply in the marine
21 environment in this Project, and identify the potential
22 effects on each, and whether the effects are likely, as
23 defined under CEAA... Whether the likely effects are
24 adverse, and whether they're mitigable, and whether a CEAA
25 permit would be required.

1 If you could do a summary table on that
2 for all of the species, that would be very helpful for us.

3 Mr. TED POTTER: We'll do it.

4 Ms. JILL GRANT: Thank you. By the 29th
5 is okay?

6 Mr. TED POTTER: [Inaudible].

7 Ms. JILL GRANT: Thank you very much.

8 THE CHAIRPERSON: Okay, I think...

9 Mr. PAUL BUXTON: Mr. Chair, I wonder...

10 THE CHAIRPERSON: Yes?

11 Mr. PAUL BUXTON: I think a new element
12 was introduced...

13 THE CHAIRPERSON: Yes.

14 Mr. PAUL BUXTON: ...and I think...

15 THE CHAIRPERSON: Yes, of course.

16 Mr. PAUL BUXTON: ...I must comment on
17 it. I don't believe that we've ever talked about a single
18 test blast. We reference in our document an initial blast.
19 In all our discussions, we've talked about whatever
20 information we need to do to test the model, and find out
21 what is happening, and I think that that would be our
22 commitment.

23 And I would also make the point here
24 that since 2002, when we first tried to, I guess, have a
25 blasting, an initial blast, and a test blast put in place,

1 at that time, we had a quarry on the site, a permitted
2 quarry. And hence we came under the Rules and Regulations
3 of Nova Scotia Department of Environment and Labour.

4 Later on we dropped the permit to that
5 quarry, and I would say that when the quarry ceased to be
6 there, we could have, in fact, had our test blasts on the
7 site. We were only prohibited from holding that test blast,
8 because we held a quarry permit.

9 And I think that what we have tried to
10 do here is to be very reasonable with the process, and not,
11 I suppose, be somewhat inflammatory by setting off test
12 blasts to get this empirical data which I think you will all
13 agree would have been very valuable to present to this
14 Panel.

15 But there has been nothing to stop us
16 setting off a blast on that site since we gave up the quarry
17 permit.

18 Now having said that, DFO will very
19 quickly remind you, and very correctly that had we killed a
20 fish, or had we harmed a mammal, we would be in very serious
21 trouble, but the fact of the matter is that we could have
22 conducted that sort of experiment, and chose not to do so.

23 So that I think it is wrong to leave it
24 out there that we are supposing that one test will do it,
25 and that's a fix, and we gain all the information. I don't

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1 believe that we've ever said that. We will do whatever we
2 need to do to gather the empirical data to establish the
3 accuracy of the models that we've run, and then we'll
4 proceed on that basis with our blasts. Thank you.

5 THE CHAIRPERSON: Thank you, Mr. Buxton.

6 Okay, we now... First, any questions that would come from
7 Government individuals, Federal or Provincial, to DFO?
8 None? Okay. Mr. Sharpe had his hand up first, I guess.
9 Quick off the mark.

10 **PRESENTATION BY THE DEPARTMENT OF FISHERIES AND OCEANS -**
11 **QUESTIONS BY THE PUBLIC**

12 Mr. ANDY SHARPE: I'd like to follow up
13 on a line of questioning from Dr. Muecke earlier on the
14 number and series of blasts as part of an overall explosion.

15 The DFO representatives made a number of
16 predictions of impacts on whales, fish and lobsters to
17 blasting. This morning we had a discussion on the amount of
18 the ANFO that would be used every two weeks. I think 20
19 tons was the number that was put forward.

20 A quick back at the envelope calculation
21 at 45 kilograms per charge suggests something in the order
22 of 400 charges per overall blast, so my question for the DFO
23 representatives would be do they feel there's any need to
24 modify their predictions for blasting on whales, fish and
25 lobsters, in light that there will be in the order of 400

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1 individual charges, particularly taking into account
2 behavioural and sub-lethal effects?

3 Mr. NORMAN COCHRANE: Well, I didn't
4 believe that there would be as many as 400 shot holes
5 detonated at once. I thought it was more of the order of
6 40, 50, 60, something of that order.

7 I think what we stated this morning
8 referred, or this afternoon, referred to one shot hole that
9 the predicted levels at 500 metres I think was... And I
10 think there was some other levels that were quoted, as well,
11 for closer distances. Those referred to the detonation of
12 one shot hole, and I personally believe that those probably
13 are not good estimates, if there would be multiple
14 detonations; that is an operational-type blast involving
15 many tens of shot holes.

16 However, I think it is one of the
17 reasons that we wanted to institute a monitoring program,
18 because this is somewhat of an unknown, and has not been
19 properly modelled.

20 THE CHAIRPERSON: Thank you. Mr.
21 Morcocchio, and I go right down the list.

22 Mr. MIKE MURPHY: If I could, I think
23 it's... I'd like to follow up on Norman's point that we
24 really were suggesting that after the initial blast, the
25 initial test, the idea was to look at the predictions that

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1 had been made, and then evaluate the program and see what
2 type of mitigation measures should be put in place at that
3 stage.

4 I don't think we really said we
5 predicted a lot of things at this stage. The idea is to
6 have some safety zones set up, and have that initial
7 blasting, and then look at mitigation and where we are in
8 terms of the prediction, right?

9 Mr. NORMAN COCHRANE: Certainly if we did
10 have some field data from single shot hole detonations, it
11 would certainly give us a much better basis to determine
12 whether these levels would be significantly enhanced by
13 multiple shot hole detonations.

14 As I said earlier, this model is very
15 simplistic, and it depends upon interference effects in the
16 water column, in many cases, to shorten the effective length
17 of the acoustic pulse as measured within the water column,
18 itself. That may or may not be sufficient to prevent the...
19 May call stacking or accumulation of multiple acoustic
20 events, the pressure pulse, to very high levels.

21 And certainly if we had monitoring
22 results from single, a single shot or shots, it would give
23 us a better basis for knowing whether the... Inserting
24 simple delays between the shot holes, time delays, would be
25 sufficient to prevent the stacking and the accumulation of

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1 the acoustic energy.

2 Mr. BRUNO MORCOCCHIO: Bruno Morcocchio
3 of the Sierra Club of Canada. Document 1637 on the Public
4 Registry is the comments from the Sierra Club of Canada on
5 the adequacy of the EIS, and it refers, in part, to an
6 Environmental Assessment Best Practice Guide for Wildlife in
7 Canada, Canadian Wildlife Service, Environment Canada,
8 February 2004.

9 I'd like to read some of these best
10 practices that will help me frame the question that I have
11 about some of the interventions and recommendations that DFO
12 has made. It says:

13 "Describe project effects on wildlife
14 and risk with vigour and detail
15 reflecting the current understanding of
16 the ecology of the species. Use status
17 reports, recovery strategies, action
18 plans, and species management plans as
19 main information sources where
20 available, and consult with wildlife
21 experts, specialists and local and
22 Aboriginal communities. Consider all
23 direct, indirect and cumulative effects
24 in the analysis. Tolerance of risk
25 impacts should never be lower for

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1 wildlife at risk than for other species.
2 Uncertainty should not be used to allow
3 a project to proceed, but rather should
4 require further work to demonstrate that
5 the project will not affect the species
6 before it's allowed to proceed. Where
7 there is a threat of serious or
8 irreversible harm, that is significant
9 adverse effect to wildlife at risk, or a
10 threat of significant reduction or loss
11 of biological diversity, the
12 precautionary approach should be
13 applied, which means lack of full
14 scientific certainty should not be used
15 as a reason for postponing measures to
16 avoid or minimize such a threat.
17 Adaptive management is not a solution
18 where harm may be irreversible.
19 Adaptive management, also referred to as
20 adaptive resource management, is a
21 management and learning process
22 developed to meet the challenges of
23 managing resources in the face of
24 uncertainty, with a focus on monitoring
25 and assessing the outcomes of decisions

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1 to reduce the uncertainty in the future.

2 It can only be applied in cases where
3 harm is reversible, since it implies
4 that mid-course correction should be
5 made as required. The onus of proof
6 should be on the Proponent to
7 demonstrate to the satisfaction of the
8 decision maker that the adverse effects
9 on wildlife at risk, or biological
10 diversity are not significant. The
11 level of caution should be proportional
12 to the level of threat, recognizing that
13 in some situations, no risk is
14 acceptable, determine by factors such as
15 the following: Populations present, or a
16 number of individuals."

17 I think we can agree that the right
18 whale population certainly meets this test that would demand
19 the highest level of caution, and one would also expect that
20 DFO would have "operationalized" these best practices
21 principles in their assessment of the impacts of the
22 proposed quarry.

23 Yet many of the recommendations seem to
24 be adaptive management measures. You point out quite
25 rightly so, on slide one, that any additional shipping the

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1 Bay of Fundy increases the potential for collisions with
2 marine mammals, including right whales.

3 You point out on slide four that how
4 mitigation...

5 THE CHAIRPERSON: Mr. Morcocchio, is this
6 going to a question?

7 Mr. BRUNO MORCOCCHIO: Yes, it is, and...
8 Yes.

9 Troubling also is the uncertainty about
10 the impacts within the 500-metre range from the percussive
11 events and between 500 and beyond 500 metres, and it's
12 striking that with not being able to gauge the effects at
13 less than 500 metres, that with any degree of certainty
14 beyond 500 metres we can establish that only behavioural
15 effects will go on.

16 My point is that many of these
17 principles outlined don't seem to have been followed, and
18 will DFO undertake to review their assessment to comply with
19 these measures set out in these best practices that one
20 would hope for an endangered species as threatened as the
21 right whale would be the minimum amount of concern,
22 particularly the reverse onus, which doesn't seem to have
23 been applied here by DFO as the regulator.

24 Mr. MIKE MURPHY: I think we have upheld
25 what we've had to do under the terms of both the **Species At**

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1 **Risk Act**, the best practices that you've mentioned, and our
2 responsibilities as part of this process.

3 If you will notice through this, we
4 recommend that a lot of this initial, the initial blast
5 testing should only be done outside of the period when right
6 whales and inner Bay of Fundy salmon are present. That
7 gives us some information as to what the effect would be
8 without a possibility of harm to those endangered species.

9 So I don't really view that as adaptive
10 management in the sense that you're talking about. I view
11 it as collecting information that will allow us to see what
12 the effects could be when those animals are present.

13 I think we've been pretty stringent in
14 ensuring that it is the Proponent that comes forward and
15 tells us what they're going to do. We haven't been telling
16 the Proponent that this is the minimum standard. We've been
17 telling the Proponent: "These are our concerns. It's up to
18 you to develop measures, to develop processes that will give
19 us comfort that we can uphold the standards that we are
20 supposed to uphold, according to the law."

21 So it... I think I answered it.

22 Mr. BRUNO MORCOCCHIO: I don't think many
23 of the questions, particular with respect to applying those
24 principles, have been answered. But I'll move on.

25 I have a particular question about

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1 the...

2 THE CHAIRPERSON: Mr. Morcocchio, one
3 question in follow-up.

4 Mr. BRUNO MORCOCCHIO: Oh.

5 THE CHAIRPERSON: So if it's not a
6 follow-up to this, then we're going to move on. I mean, the
7 time is late, and I'm sorry to cut you off, but...

8 Mr. BRUNO MORCOCCHIO: We've been
9 exceptionally patient so far all day today.

10 THE CHAIRPERSON: Mr. Muir, are you...
11 No, I think Mr. Mullin had his hand up. Yes, please.

12 Mr. DON MULLIN: I'll try to make this
13 really quick. It's regarding comments that Dr. Smedbol
14 made, and it has to do with some work done by John Lean
15 (ph), a Professor Emeritus at Memorial Univeristy, and it
16 was the same situation that we were discussing in terms of
17 location.

18 And he published, peer reviewed, in peer
19 reviewed journals, as well as non-peer-reviewed
20 publications, indicating that the blasting didn't have an
21 immediate effect on the whales' behaviour, and he said that
22 that was the wrong dependent measure to be using to test the
23 effects of blasting.

24 However, his subsequent work suggested
25 strongly that what happened is in the area where blasting

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1 occurred, the next season the whales did not return to that
2 location. So I just want verification of that because Dr.
3 Lean has retired and no longer practices, so I can't ask him
4 for verification. But I wonder if I could get a comment
5 from DFO, and if that's true, what's the implication of
6 blasting for whale-watching activities in the Bay of Fundy.

7 Mr. KENT SMEDBOL: I'm only familiar,
8 actually, with one publication by John on that particular
9 topic, and it does relate to a change in occupancy in
10 Belleoram area following... During construction phase. So
11 that I can, that I can confirm.

12 The rest of it, I'm afraid I'm a little
13 distant from that literature. I'd have to get back to the
14 Panel.

15 I think, though, in any evaluation of
16 behavioural impacts to a human activity or to any stimulus,
17 it's necessary to consider both short and long-term impacts
18 in that analysis. So if I was designing or, you know, I
19 think a properly-designed study would not limit the analysis
20 to a very short-term post-stimulus response.

21 These animals, particularly white
22 whales, but all large cetacean, their migration routes and
23 patterns are learned. So there is a fair bit of individual
24 input, input from the individual to where and when they are
25 in time and space. So it is not, it's not like doing tests

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1 on worms. You definitely have to think in multiple temporal
2 and spatial scales.

3 THE CHAIRPERSON: Thank you. Mr. Moir,
4 Mr. Hunker, and Ms. Peach.

5 Mr. ANDY MOIR: It's Andy Moir. I hope
6 this is going to be very, very brief.

7 I just, we've seen a couple of times
8 now, both from the Proponent and a couple of other slides,
9 showing this distribution of whales in the Bay of Fundy, and
10 I guess my question is how do you figure out where those
11 whales are? Is it based mostly on what the whale boat
12 watchers report plus some of your own surveys?

13 And the reason I ask this, I guess, is
14 I'm fairly familiar with at least the whale watch aspect of
15 this, and I know well that if one whale boat sees a whale,
16 there'll be no less than seven or eight sort of steaming to
17 the same area, so you may in fact... And I don't know if
18 this happens with that, because I'm not a scientist, but you
19 might have sort of skewed results on where these whales are,
20 because all of a sudden you're getting a lot of reports from
21 different whale watch boats that have gone to the same place
22 because that's where the whales are, or perhaps they're find
23 a couple of humpbacks off of Beautiful Cove in Freeport, and
24 because that is so close to where a lot of the whale boats
25 are, they go and look at those whales, and then they steam

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1 back and get their next group of 35 people to go and look at
2 the same whales.

3 So I guess I'm curious, is there a
4 chance that the very data that you have collected as to
5 where whales are in the Bay of Fundy may be skewed.

6 Mr. KENT SMEDBOL: I can address that
7 question. The answer is yes. But the databases, I assume
8 most of the information that's been evaluated here has been
9 provided from the right whale consortium, of which DFO is a
10 member, but so are many NGOs and Universities and such. And
11 that database is built from contributions from a number of
12 sources.

13 But there are various levels of sources,
14 if you will. There are opportunistic sources, such as one
15 example is from contributions from the whale watch
16 companies, and we have some of that information yourself,
17 we're very lucky to get that information. But also
18 information or sightings that are collected from
19 standardized line transect surveys.

20 So I would make the distinction, and I
21 haven't generated the plots that have been shown here today,
22 but I would make the distinction between those two types of
23 data. For instance, the plots that both the proponent and
24 one of the presenters today showed talked about sightings
25 per unit effort, which was that kind of density plot. That

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1 information, if it came from the Right Whale Consortium,
2 which is the holder of that information, and has not been
3 altered, is based solely on formal line transect surveys.

4 Scatter plots may include all
5 opportunistic data, so I can't comment on the second series
6 of plots that were shown, but what we call the SPUE, the
7 sightings per unit effort, the information that was used to
8 evaluate the lane change, information that is used to
9 evaluate right whale density and aggregation, that is based
10 on formal transect methods.

11 THE CHAIRPERSON: I think Mr. Hunka is
12 next.

13 Mr. ROGER HUNKA: Good afternoon. I'm
14 Roger Hunka, with the Native Council of Nova Scotia. I have
15 a series of questions, but I'll restrict it to one and come
16 back.

17 You weren't here Saturday or Monday, and
18 it's a similar question as far as consultation goes. We
19 heard from the Proponent that Nova Scotia Department of
20 Environment and Labour did not give them instructions to
21 discuss this project or consult with aboriginal people.
22 Neither did the Nova Scotia Department of Natural Resources.

23 I ask the question of the Department of
24 Fisheries and Oceans, who's aware of the Aboriginal peoples
25 in the area, did you provide any instructions to the

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1 Proponent in your many meetings since 2002 to consult with
2 them about their fisheries, be they food fisheries or
3 commercial fisheries?

4 Mr. TED POTTER: Well, I'll provide two
5 parts in response. One is, we've directed the Proponent
6 should discuss interactions with all users in the area, and
7 that included people involved in the fisheries, and the
8 fisheries is made up of a number of different sectors,
9 including Aboriginal fisheries. So in a general sense, yes,
10 we have.

11 In the Federal fiduciary aspect of
12 consultation, letters have gone to Native Council, the 13
13 Chiefs and Councils here in Nova Scotia, and the Mi'kmaq
14 Rights Initiative, the KMK.

15 Mr. ROGER HUNKA: So in a general way,
16 but as a follow-up, when you read the Environmental Impact
17 Statement, it's silent on food fisheries and Aboriginal
18 commercial fisheries. Is that... Whose fault is that?
19 Can't blame the Proponent, if you were general about it, and
20 you have a fiduciary.

21 Mr. TED POTTER: It's, the information
22 and the discussions with interactions between various
23 industries, including the fishing industry, and the
24 Proponent should be led by the Proponent.

25 With regard to our consultation, our

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1 letters have gone out as of late December offering to sit
2 down and meet with the various Aboriginal groups throughout
3 the Province at a time and in a forum that's convenient to
4 them, requesting a response back to, at the time, our acting
5 manager for major projects, Environmental Assessments and
6 Major Projects.

7 We've had some informal discussions,
8 including with yourself, but there has been no formal
9 consultations.

10 Mr. ROGER HUNKA: So there is no
11 consultations.

12 Mr. TED POTTER: It's been offered.
13 We've sent out a letter that's requested that, and at the
14 convenience of the...

15 Mr. ROGER HUNKA: Well, I don't want to
16 argue with you, but I'm going to the EIS. Are you satisfied
17 that regardless of whether it was in 2002 or December of
18 2005 or 2006, whenever your letters went out, that there is,
19 within the Impact Statement, a paragraph or a sentence
20 indicating that there Aboriginal food fisheries occurring,
21 and as well as communal commercial fisheries, in the area.
22 Do you feel satisfied?

23 Mr. TED POTTER: There could be a lot
24 more information provided on the interaction for all
25 fisheries, including Aboriginal food fisheries and any

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1 ceremonial or recreational fisheries, yes.

2 Mr. ROGER HUNKA: So is it sufficient or
3 deficient?

4 Mr. TED POTTER: It could be added to
5 substantially.

6 THE CHAIRPERSON: Mr. Hunka, thank you.

7 Mr. ROGER HUNKA: Alright. I have
8 another question later on.

9 THE CHAIRPERSON: There's only one round
10 tonight. I mean, we're running out of... It's already
11 quarter to five, and we've got two more speakers that were
12 supposed to go. Mr. Dittrick, no, you're sharing off with
13 Mr. Marcocchio for Sierra Club. You're...

14 Mr. MARK DITTRICK: I have a point of...

15 THE CHAIRPERSON: Ms. Peach is next, and
16 we're not going another round either, so I'm sorry.

17 Ms. JUDITH PEACH: I just have a question
18 about the idea of tipping point.

19 The marine environment is obviously very
20 stressed, like Mr. Buxton pointed out, from various sources,
21 and all these at-risk species get stresses from various
22 sources, mostly human.

23 I'm wondering if the DFO or scientists
24 have any sort of modelling for incremental increases in
25 stress. So when do you know when you've pretty much

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1 admitted the last ship that is going to kill the last whale
2 that makes that species viable? Because there's so many
3 species in the marine environment that seem to be at risk,
4 compared to the terrestrial environment, I wonder if there's
5 any sort of modelling to say how do you know when you've
6 reached that sort of tipping point for that environment,
7 considering how inter-related it is?

8 THE CHAIRPERSON: Looks like it's you,
9 Mr. Smedbol. I heard the word "whale".

10 Mr. KENT SMEDBOL: Well, I actually don't
11 think the question was specific to whales. It sounded to me
12 a bit more to the marine environment, or the marine
13 community, if you will, community of species, and the
14 questioner put her finger on what might be one of the most
15 difficult things to model, and that is community dynamics.
16 Especially changes or influences on community dynamics.

17 We have some simple energy flow models,
18 state flow models, of community structure within, say, the
19 larger Gulf of Maine, but what the questioner has asked for
20 is probably beyond our ability to give a strong answer for.
21 It is extremely difficult. We're dealing with non-linear
22 dynamics and flexion points of severe knowledge gaps on the
23 inter-relationships between species.

24 THE CHAIRPERSON: Ms. Peach, it sounds
25 like your question is pushing the envelope, so I think...

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1 Okay. One last question. Mr. Stanton,
2 and then I'm going to wrap it up, I think, so that we can
3 move on.

4 Mr. KEMP STANTON: I think there's been a
5 study done in Cape Breton on seismic testing concerning
6 crabs, and the test found, preliminarily, anyway, that most
7 of the damage done to the crabs by the seismic testing was
8 to the ovaries of the female crabs. It didn't kill any of
9 the crabs and it didn't much affect the males.

10 My concern is, if that is so, and
11 there's damage done at Whites Cove by the first few blasts,
12 how many years would it be before you would be able to
13 detect that damage by examining the population dynamics?
14 Because if the ovaries were destroyed, you wouldn't see the
15 effects for five to eight years.

16 Mr. JOHN TREMBLAY: Yeah, the study you
17 mentioned is somewhat controversial in that there was a
18 control site and an experimental site. Crabs were exposed
19 to seismic noise at both sites, and there were some sub-
20 lethal effects, as mentioned, some damage to the ovary, in
21 the test site.

22 But a kind of rigorous review of the
23 experimental design found that the two sites were not really
24 close enough, similar enough. There were differences
25 between the two sites such that you couldn't really say for

1 sure whether the effects seen were due to the differences
2 between the control and the experimental site, or due to the
3 seismics.

4 So there has been some further work on
5 snow crab. My understanding is that that is, I haven't...
6 I wasn't at that review meeting, but it's still in review.
7 Again, there's some controversy as to interpretation of the
8 results. They're certainly not clear, but there is some
9 uncertainty about the effects of noise, such as seismic and
10 probably blasting, on the eggs of decapod crustaceans.

11 THE CHAIRPERSON: Okay. That brings to
12 the end the DFO portion of this. I'd like to thank you
13 gentlemen. It has been extremely useful to us and very
14 valuable, and we do have a couple of undertakings, I
15 believe, so we'll look forward to seeing those on the 29th.

16 Thank you once again.

17 We'll take about a minute or two, just
18 to get, allow our colleagues here to move off, and then we
19 have two presentations, actually, one by Jerry Ackerman and
20 a second one by Leslie Wade and Linda O'Neil.

21 --- Pause

22 **PRESENTATION BY JERRY ACKERMAN**

23 THE CHAIRPERSON: As I indicated, we have
24 two presentations. The first will be by Gerry Ackerman.

25 Mr. JERRY ACKERMAN: I thank the panel

1 for this opportunity. I want to make my compliments to the
2 Panel and to the process that has been suggested.

3 I ask that the closing remarks from my
4 Upper Valley Neighbours may be submitted in writing on the
5 final days of these hearings. Is that acceptable?

6 THE CHAIRPERSON: Would you say that
7 again?

8 Mr. JERRY ACKERMAN: The closing comments
9 as they were for the hearing, I have some of those but I
10 would like to submit those in writing, including the
11 reaction of the Valley neighbours.

12 THE CHAIRPERSON: You would like to read
13 them into the record?

14 Mr. JERRY ACKERMAN: I would like to do
15 that on a subsequent day, Friday or Saturday of next week if
16 I could?

17 THE CHAIRPERSON: The closing session
18 will be on Saturday afternoon, on the 30th.

19 Mr. JERRY ACKERMAN: Yes. Can I submit
20 something in writing at that time?

21 THE CHAIRPERSON: Yes. You can submit
22 them in writing and certainly they will be included, yes.
23 Yes.

24 Mr. JERRY ACKERMAN: Okay. I'll confine
25 myself today to my personal observations, analysis,

1 experience and pointed opinion.

2 I first visited Annapolis Royal 30 years
3 ago and I was struck by the elements of authentic history
4 still very much evident and by the natural beauty of where
5 the river meets the ocean for an 8-metre handshake twice a
6 day.

7 Five years later, I managed to invest my
8 personal energies and available entrepreneurial capital in
9 the area.

10 My subsequent actions included the
11 acquisition and development of a campground at the Bay Shore
12 of Delaps Cove.

13 The 1888 octagonal barn property in
14 Upper Granville, the only chef-designed restaurant in
15 Allain's Creek, an abandoned Acadian residence in Moschelle,
16 a central in town residence-home business property that had
17 been rebuilt after the 1921 fire, and the 1950s motel, no
18 longer royal except in name.

19 Each property was begging for attention,
20 renovation, preservation and purposeful development. The
21 town population at that time, in 1981, was 633.

22 I was not alone in visualizing the once
23 Nova Scotia capital town's potential as a first-class
24 tourist destination.

25 While the amount of my financial

1 involvement still stands as the largest sum from a private
2 source, numerous other entrepreneurs took a turn at
3 upgrading the town businesses and residences.

4 Funds from the several levels of
5 government have impacted significantly. Three that I will
6 mention are the town infrastructure via by the Development
7 Commission, \$7 million; the Upper Clements Theme Park, \$26
8 million, and the Tidal Power Plant, which was \$56 million.
9 Mr. Buxton was very much involved in the first two.

10 What has become of these investments and
11 personal energies? On the plus side, our town has won both
12 Provincial and Federal Bloom Awards and has been proclaimed
13 as the most livable tiny town in the world, a U.N.
14 competition.

15 Yes, Annapolis Royal is truly a fine
16 place to live, as long as you bring your pension money with
17 you. On the down side, business successes have been few and
18 far between.

19 For example, no industrial or
20 manufacturing ventures have survived. For example, the
21 service businesses paying all costs, including investment
22 capital, management and staff include only the banks, one
23 hardware store, one food store, a pub (thanks to their
24 VLTs), one drugstore and one eating place (temporary and a
25 long ago). I don't have data on the government liquor

1 store.

2 Salvage values for these government
3 impacted, the ones I mentioned, I'd have to say that
4 infrastructure can't be really salvaged and no one has made
5 an offer for the Tidal Power Plant because it's probably
6 negative, and the Theme Park was sold last month for a
7 dollar.

8 Also on the downside, we have
9 entertained two environmental disasters, one is the Tidal
10 Power Plant and the second is the Parker Mountain Basalt
11 Pit.

12 The former interests only the occasional
13 curious tourist who wonders about the suds on the river.
14 The latter constitutes a permanent disturbance to its
15 adjoining residence and an eye sore when viewed from
16 anywhere in town, not just from my front porch.

17 The Tidal Power Plant in 1981, the
18 Memtec Consultants imagined no serious erosion or
19 environmental damage, but such has not been the case.

20 Upstream property owners filed a total
21 of five dozen lawsuits to force the scaling back of the
22 intended usefulness of the plant.

23 The unexpected fish kill from the
24 turbine requires significant corrective mitigating measures.
25 The trivial power generated by the twice-daily outflow fit

1 into the grid may well be the most expensive source of
2 electricity in the province or the continent.

3 Privatizing the power company without
4 adding the multi-million dollar assessment to the town's tax
5 base did nothing for our ability to upgrade and maintain the
6 infrastructure of the town.

7 Persistent pressure has partially
8 improved the power companies' tax contributions over the
9 recent five years.

10 The pit on Parker Mountain Road, not a
11 quarry because blasting not allowed and it's less than 4-
12 hectares, so no environmental assessment and no public
13 hearing required.

14 This development, or desecration as some
15 of the neighbours perceived it, of the North Mountain was
16 initiated in secret with assistance from the county reeve
17 and his counterpart at the Department of Environment. A
18 major funding came from ACOA.

19 The Council itself was taken by surprise
20 when confronted by the immediately adjoining residence whose
21 safety, comfort and peaceful enjoyment was being removed
22 permanently.

23 The dozen jobs created have continued.
24 Blasting has happened, although it wasn't supposed to, and
25 somewhere since I have left the area, one was bought out by

1 the company.

2 Improvements to the community have
3 remained invisible. What has happened to the population of
4 this best-bloomed, most-livable tourist destination?

5 From 1981 to 2000, there was a 20-year
6 decline of 13 percent. From 2001 to 2006, a five-year
7 decline of 19 percent. These are Stats Canada figures.

8 Present prospects for reversing this
9 decline are extremely limited. We experience less tourist
10 business each season. For example, seven bed and breakfasts
11 are now listed for sale.

12 I understand Mr. Buxton's property has
13 been on the market for years.

14 Removal of the ferries looms as a major
15 and constant threat. October of this year is the current
16 deadline.

17 Hardly a success story for the "come
18 from away" investor-residence seeking to help rebuild our
19 community.

20 I conclude by announcing to the Panel
21 that my seasoned observations hold out no positive
22 expectations for the residents, fishermen and tourist
23 operators of Digby Neck were the Mega-Quarry development to
24 proceed.

25 THE CHAIRPERSON: Thank you Mr. Ackerman.

1 Ms. JILL GRANT: Mr. Ackerman, you said
2 that there had been a 19 percent decline in the population
3 of the Annapolis Royal over the last five years? Did I get
4 that correct?

5 Mr. JERRY ACKERMAN: I'm sorry, I'm not
6 quite hearing you.

7 Ms. JILL GRANT: Did you say that there
8 had been a 19 percent decline in the population in five
9 years? Is that correct?

10 Mr. JERRY ACKERMAN: Yes, 19 percent in
11 the last five years. Those are official figures.

12 Ms. JILL GRANT: So your perception is
13 that tourism is under threat in Annapolis Royal?

14 Mr. JERRY ACKERMAN: There are no
15 tourists there now for this year, next to none, and there's
16 no indication that that's going to change in the next two
17 months or subsequent to this year. Tourism will be
18 minuscule.

19 Ms. JILL GRANT: What factors do you
20 attribute that decline to? What factors do you attribute
21 that decline to?

22 Mr. JERRY ACKERMAN: I'm sorry, I still
23 don't hear you.

24 Ms. JILL GRANT: What factors are
25 responsible for the decline---

1 Mr. JERRY ACKERMAN: What factors?

2 Ms. JILL GRANT: ---in tourism?

3 Mr. JERRY ACKERMAN: It's easy to blame
4 somebody at a distance, and I could go down a long list.
5 Tourism has never been fully respected during this last 25
6 years that I've been here, in this Province.

7 It's not seen as a high-profile job and
8 income generator, that's one factor. Another is the 9-11
9 conspiracy as what explained. It means that you can't fly
10 and you can't cross the border and so on without serious
11 restrictions. So I think this is a factor.

12 THE CHAIRPERSON: If I understood you
13 correctly, you weren't saying that the quarry or pit or
14 whatever was responsible for the decline, you are saying it
15 simply didn't save the town, that's all.

16 Mr. JERRY ACKERMAN: I'm not saying that
17 all. I'm only saying that anyone who saw the quarry open
18 and said: "We've got a dozen jobs that we didn't have
19 before", that will change the direction of our community and
20 it will bring us a sense of prosperity we didn't have
21 before.

22 THE CHAIRPERSON: Yes, thank you. Mr.
23 Buxton, do you have anything you would like to say?

24 Mr. PAUL BUXTON: No, thank you Mr.
25 Chair. No comments.

1 THE CHAIRPERSON: Any questions from the
2 audience? If not, then thank you Mr. Ackerman.

3 That brings us to the last presentation,
4 and actually there are two names listed here, Leslie Wade
5 and Linda O'Neil.

6 **PRESENTATION BY Ms. LESLIE WADE**

7 Ms. LESLIE WADE: Hello. My name is
8 Leslie Wade. I'm going to make this brief. Everyone is
9 tired, and...

10 I'm speaking as a private citizen and
11 land owner who is deeply concerned about the environment.
12 It grieves me to witness what is happening to our
13 magnificent province as I continue to fight land use issues
14 in my own area.

15 Despite Kings County being the only
16 county in the protect prime agricultural land, the municipal
17 bylaws lack the teeth of provincial legislation, resulting
18 in the county being hit with proposals to change their
19 planning strategy.

20 Our agricultural region, the economic
21 crutch for the Annapolis Valley with the best farmland in
22 Eastern Canada, is on the fast track to disappearing.

23 There are three huge proposals in the
24 wings, 300 houses on 47 acres of prime land in Weston;
25 residential and commercial development of 400 acres west of

1 Wolfville and a proposal in waiting for 200 houses near Port
2 Williams.

3 And these projects are on protected
4 agricultural land, so we can only imagine what is happening
5 elsewhere in the Province.

6 The lack of adequate legislation to
7 protect our natural resources has resulted in David and
8 Goliath scenarios whereby small communities are against
9 giant corporations.

10 The very qualities that bind us to this
11 area are at the risk of being destroyed, along with our
12 capacity to be self-sustaining.

13 Nova Scotia is under siege. The forests
14 are being over-harvested being sustainable levels, risking
15 the same faith as our fisheries.

16 Our air quality has been diminished with
17 the funnelling of carbon emissions from the States resulting
18 in smog-alert days.

19 Nitrate levels exceed the standards in
20 some valley wells, and the situation could get worse
21 according to some experts.

22 In this area, our beautiful shoreline is
23 being targeted for a rock quarry to build roads in the U.S.
24 and like a bad disease, if this gets approval, it has the
25 potential to spread further along the Bay of Fundy and

1 threaten the already struggling fishery along with the
2 impact on quality of life and tourism.

3 The Avon Peninsula faces a similar
4 threat with a 1,200 gypsum quarry which could ruin the
5 watertable as well.

6 Then there is the aggregate industry
7 exploiting our soils with so little control that areas under
8 10 acres can be extracted anywhere without an environmental
9 assessment, and a biased assessment for over 10 acres with
10 a Proponent hiring the environmental consultant. Under four
11 acres, one doesn't even need a permit.

12 We have the largest pit east of Quebec
13 in Colebrook, Kings County, and it keeps on expanding. It's
14 at least over 100 acres at the moment.

15 There are at least seven other pits in
16 the same area and it's one of the fastest growing
17 residential communities in the valley.

18 One has to be concerned about the impact
19 on the watertable. At least 30 percent of the pits in Nova
20 Scotia are not monitored. The Department of Environment
21 lacks adequate trained personnel to supervise the operations
22 they are aware of. There are many that they are not aware
23 of, and they rely on the public for feedback.

24 The question has to be asked based on
25 past history of the Department in monitoring aggregate for

1 compliance, how well will they cope with an operation as
2 huge as the Whites Point Quarry?

3 There are many ironies around the
4 environmental issue. Agricultural land is under municipal
5 jurisdiction for protection, yet sand can be extracted from
6 prime farmland with the topsoil being temporarily set aside
7 because aggregate is under provincial jurisdiction with
8 little controls.

9 The process of removing the sand
10 according to soil experts is very destructive to soil
11 structure and its future capacity to grow crops.

12 The lack of vision by the Province has
13 resulted in millions being spent to twin the 101 so that
14 more traffic can move more quickly, use more gas, produce
15 more carbon emissions, develop more farmland when it's
16 expected that in 40 years, the oil reserves will be gone
17 along with the fish.

18 The Province is focussing on
19 environmental protection laws for wilderness areas, but
20 ignoring legislation to protect farmland and hinds our
21 future food source we can't afford to import.

22 The time is now for the Province to
23 generate the will and the courage to develop better
24 protection for all our natural resources before it is too
25 late.

1 With the present policies, once approval
2 is given for one proposal, the door is open for further
3 developments. We have witnessed this in every area of our
4 resources.

5 Global warming is threatening our very
6 survival on the planet. It is time to express our outrage
7 at the environmental destruction as companies continue to
8 extract, exploit, deplete, pollute and pave over our natural
9 resources, all in the name of progress.

10 When do we wake up and smell the sewer?

11 Thank you.

12 THE CHAIRPERSON: Ms. Wade, you have a
13 specific comment or a suggestion for us relative to this
14 particular initiative that we're here for?

15 In other words, you've provided a
16 general overview of your feelings, but what about this
17 Project?

18 Ms. LESLIE WADE: Well, I guess I would
19 hope that the recommendation... I mean, I don't... I'm
20 deeply concerned about this Project and the impact on the
21 environment, and it's another example of big companies
22 coming in and stripping resources and leaving destruction
23 behind, and I don't see it as beneficial to the community in
24 the long term in terms of self-sustaining.

25 So my hope would be that the Panel will

1 take the recommendations of the public concerned about this
2 to recommend against this.

3 THE CHAIRPERSON: Do you have any
4 mitigating suggestions, any way in which this Project could
5 go forward, but with some mitigation?

6 Ms. LESLIE WADE: No, I don't feel...
7 From everything that I read and my awareness of how the
8 Department of Environment operates, having experienced it in
9 my own area...

10 One particular issue was a baltzar's
11 bog, which is under the aggregates, part of the aggregate
12 industry, and the problems involved there, the lack of
13 monitoring, the inappropriate permits and so on, that does
14 not give me confidence that if this Project were to go
15 through, that it would be properly monitored.

16 THE CHAIRPERSON: Thank you. Do we have
17 anything else? Ms. O'Neil?

18 **PRESENTATION BY Ms. LINDA O'NEIL**

19 Ms. LINDA O'NEIL: I wish to begin by
20 expressing my gratitude to the Panel and to the Federal and
21 Provincial Governments in their part for facilitating these
22 two weeks of public hearings.

23 It is indeed a solid sign that we do
24 live in a part of the world where democracy, its principles
25 and policies, continue to survive and thrive.

1 I speak today as a concerned citizen.
2 Neither an expert, nor experienced in public speaking, but
3 as someone who cannot find peace within through silence.

4 The Project up for discussion is
5 something that concerns me deeply, although not directly, at
6 least not yet.

7 I live in an area some 150 kilometres to
8 the west where the ribbon of basalt stretches to and beyond.
9 This explains the selfish part of my motivation for being
10 here today.

11 Clearly, I would not want the quarrying
12 of basalt to begin here and then, inevitably, move into an
13 expansion mode, creeping along and digging up the North
14 Mountain.

15 I would not want it in my backyard, for
16 the same reasons that many of the citizens of this region do
17 not want it, for the same reasons that the scientists, the
18 environmentalists, the fishermen and all who have explored
19 and informed themselves of the potential negative impacts do
20 not want it.

21 The potential for cumulative negative
22 effects are overwhelming and must not be ignored to satisfy
23 the voracious appetite of Clayton Concrete of New Jersey.

24 For those 34 residents, plus or minus,
25 who would hope to be employed by the Proponent company, I am

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1 sympathetic, but quarrying along the Neck is not the right
2 way.

3 You, along with everyone else who lives
4 within range of this Project, will be vulnerable to the most
5 immediate of the negative consequences, for example noise
6 and air pollution, threats to the natural ecosystems of the
7 region, as well as the consequent impact on tourism.

8 The main point I wish to raise before
9 the Panel today is my concern about the amount of weight
10 that will ultimately be given by Government to the results
11 of these public hearings.

12 I understand that the Federal
13 Government's Department of Fisheries and the Provincial
14 Governments Department of the Environment are ultimately
15 responsible to give the final go or no to the Proponent's
16 Project.

17 Are these two ministries, coming from
18 different levels of government, ready, willing and able to
19 hear the voices of the people?

20 Those voices are those of the
21 scientifically, environmentally educated and informed, as
22 well as those of the local citizens who live here and will
23 be most impacted by the Project.

24 I do not expect an answer today, that
25 will come some time in the future.

1 I raise this point because I recently
2 attended and I've been following a few public participation
3 hearings from the municipal level of governments, hearings
4 which are dealing with requests to give permits to develop
5 housing projects on farmland.

6 The responsive trend by municipal
7 democratically elected officials is currently appearing to
8 be one which is ignoring the public's voice.

9 As well, I am aware through the media
10 that public voices are arising, asking to be heard by
11 politicians at the Provincial and Federal levels over issues
12 concerning our environment, our health, our quality of life,
13 to name a few.

14 So are our governments, who hold the
15 power of yes or no, ready and willing to give substantial
16 weight to the voices of the people? Are they in fact able
17 to do so?

18 This questions comes to mind following a
19 recent meeting held in Wolfville when Mark Parent, Nova
20 Scotia's Minister of the Environment, who was invited to
21 answer questions of concern coming from the public.

22 While Mr. Parent was forthright and
23 honest in his responses, the answer he gave to the question
24 about how independent he is to influence the Government on
25 environmental issues startled me.

1 He described his Department of the
2 Environment as one that cuts across many other departments,
3 for example Health, Agricultural, Natural Resources. All
4 this sounded very reasonable to me.

5 However, he went on to say that because
6 government departments tend to work in silos, they are
7 separate vertical units which work up. There is little
8 cross contact between departments.

9 Startled by such an image? You bet I
10 am. How can one grasp the bigger picture if one works in a
11 silo, a windowless, airless structure surrounded by many
12 other silos with limited communication lines between?

13 I wish to close today with three things.
14 Number one, a question. Will the governments, Federal and
15 Provincial, give more than token response to the
16 presentation being made through the public participation
17 component of this Review Panel?

18 Number two, a belief that the Whites
19 Point Quarry Project as proposed by Bilcon of Nova Scotia is
20 not about progress, but about destruction.

21 And finally three, a thank you for
22 allowing me the opportunity to speak today.

23 THE CHAIRPERSON: Thank you Ms. O'Neil.
24 I think I heard you say, correct me though, but I think you
25 said that the Minister of Fisheries? It's actually the

1 Minister of Environment nationally, who is the responsible
2 Minister, and the Minister of Environment and Labour in this
3 Province. So it's the two Ministers of Environment, and
4 here it is Environment and Labour, not fisheries, okay?

5 Ms. LINDA O'NEIL: Thank you. I was not
6 properly informed, thank you.

7 THE CHAIRPERSON: You're welcome.

8 Ms. JILL GRANT: You suggested that...
9 One of your last questions was about Government. Obviously,
10 we can't necessarily transmit this to Government. I presume
11 they will read the transcripts of the sessions and hear the
12 kinds of concerns voiced, but thank you for bringing them to
13 our attention.

14 THE CHAIRPERSON: Any questions?

15 Mr. PAUL BUXTON: Thank you, no
16 questions Mr. Chair.

17 THE CHAIRPERSON: Any questions from the
18 audience? No? Okay. Thank you very much ladies.

19 There's one final thing. I think Mr.
20 Dittrick wanted to read something into the record, and I
21 gave him my word we would let him do that.

22 Mr. MARK DITTRICK: Just a point of
23 correction, I have actually talked to the DFO person
24 involved, and it's settled as far as DFO was concerned, but
25 there was a correction made on the Right Whale fatalities in

1 2006, and he said that it was 2005. He again repeated that
2 it was 2005 later on.

3 That fatality, in fact, that whale was
4 brought in at Campobello on July the 24th, in 2006, and it
5 was 11 days before the deadline for the comments on the EIS
6 from 2006, and I indicated that to him and he saw that and
7 he said: "Well you know, you can make mistakes."

8 So I just wanted, for the record, and
9 for the fact that somebody from the Panel was corrected on
10 that, that that fatality was indeed in July of 2006.

11 THE CHAIRPERSON: Thank you for that
12 correction Mr. Dittrick. I believe unless there's anything
13 else, we are adjourned until tomorrow morning at 9:00.
14 --- Whereupon the matter concluded at 5:26 p.m. to be
15 resumed on Thursday, June 21, 2007, at 9:00 a.m.