

From: Josephine Monk Lowry [josephinelowry@eastlink.ca]
Sent: Monday, April 07, 2008 8:08 AM
To: Adam Kay; Jonathan Morse; Sue Ki
Subject: Fw: Panel IR's Item 7 Blasting and Item 8 Community Liaison Committee

----- Original Message -----

From: [Josephine Lowry#ns.alianzinc.ca](mailto:Josephine.Lowry@ns.alianzinc.ca)
To: [Myles,Debra \[CEAA\]](#)
Sent: Friday, April 13, 2007 5:06 PM
Subject: Panel IR's Item 7 Blasting and Item 8 Community Liaison Committee

Hi Debra,

I have attached Bilcon's responses to IR-7 - Blasting and IR-8 - CLC Community Liaison Committee from the Panel's Information Requests of February 27th, 2007.

Regards,
Josephine

Josephine Monk Lowry
EIS Director
Bilcon of Nova Scotia
902 245-2567
www.bilcon.ca

From: [Myles,Debra \[CEAA\]](#)

To: [Josephine Lowry#ns.alianzinc.ca](mailto:Josephine.Lowry@ns.alianzinc.ca)
Sent: Tuesday, April 03, 2007 12:30 PM
Subject: RE: Panel's response

Thank you, Josephine!

Debra

From: Josephine Lowry#ns.alianzinc.ca [mailto:josephine.lowry@ns.alianzinc.ca]
Sent: Tuesday, April 03, 2007 10:54 AM
To: Myles,Debra [CEAA]
Subject: Re: Panel's response

Hi Debra,

I have attached Bilcon's responses to the Panel's Information Requests of February 27th, 2007. As discussed, Bilcon's responses to IR-7 - Blasting and IR-8 - CLC Community Liaison Committee will be forthcoming in due course.

Regards
Josephine

Josephine Monk Lowry
EIS Director
Bilcon of Nova Scotia
902 245-2567
www.bilcon.ca

----- Original Message -----

From: [Myles,Debra \[CEAA\]](#)
To: [Josephine Lowry#ns.alianzinc.ca](mailto:Josephine.Lowry@ns.alianzinc.ca)
Sent: Monday, April 02, 2007 12:10 PM
Subject: RE: Panel's response

Paul

This is to acknowledge receipt of your March 27, 2007 Email.

The Joint Review Panel has been clear about its motivation to move forward with the environmental assessment of the Whites Point Project and will schedule public hearings when it has sufficient information to ensure that the hearings may be conducted in an efficient and effective manner.

With regard to the Panel's February 27th IR-2, Coastal Conditions, I refer you to the EIS Guidelines and the deficiencies identified by Panel members, government reviewers and others in their response to the EIS. Many of those deficiencies remain unanswered and the February 27th IR is a second attempt at recovering information that the panel feels is critical to the review process.

In order to facilitate this process the Panel would appreciate your forwarding the requested response (along with others that remain outstanding) at the earliest possible date.

Debra Myles

Panel Manager

Whites Point Quarry and Marine Terminal Project Joint Review Panel
c/o Canadian Environmental Assessment Agency, 160 Elgin Street, Ottawa, ON K1A 0H3
Tel: 613-957-0626 Fax: 613-957-0941
Comments@WPQ-JointReview.ca

From: Josephine Lowry#ns.aliantzinc.ca [mailto:josephine.lowry@ns.aliantzinc.ca]

Sent: Tuesday, March 27, 2007 8:29 AM

To: Myles,Debra [CEAA]

Subject: Re:

Debra,

Thank you for your email dated March 23, 2007 and received March 26, 2007.

We would request that the Panel consider fixing the dates of Public Hearings upon receipt of IRs 1, 2, 3, 4, 5, 6 and 9, provided Bilcon provides responses to IRs 7 and 8 at least 2 weeks prior to Public Hearings.

If the Panel is not prepared to consider this then there seems to be little value in submitting our responses in two sections. I think this is an important issue which must be resolved because we have serious issues with at least one of the questions. We believe that the Panel is asking for information not required at this stage and which would be extremely expensive and time consuming to provide. I refer of course to IR2 – Coastal Conditions. My point with respect to Public Hearings is that if the Panel does not accept our responses to 1, 2, 3, 4, 5, 6 and 9, then there would seem to be little purpose in us dealing with IRs 7 and 8.

I would remind you of my comments during our last telephone conversation. Bilcon would certainly like to follow this process through to the end but Bilcon is not prepared to have this process continue with what we believe are demands for details which add nothing to an environmental assessment process.

I believe that we need to resolve this issue this week so that Bilcon can determine how best to proceed.

Paul Buxton

----- Original Message -----

From: Myles,Debra [CEAA]

To: Josephine Lowry#ns.aliantzinc.ca

Sent: Friday, March 23, 2007 5:04 PM
Subject: RE:

Paul,
Thank you for your note of yesterday which I have discussed with the Panel. The Panel offers the following response and direction:

1. Please submit your response to the Panel's February 27, 2007 information requests #1, 2, 3, 4, 5, 6 and 9 without delay.
2. Please submit your response to information requests 7 and 8 at the earliest possible date and in consideration of the following direction from the Panel.

The Panel requires clear concise overviews of the blasting and CLC information. The purpose is to consolidate the information and not simply to cut-and-paste it into a single document. The overviews are intended to address the confusion and, in some cases, inconsistencies around the blasting and CLC information that has been provided to the Panel to date. Part of the confusion is due to the scattered and repetitive presentation of information in the EIS and response to comments document.

The blasting overview must present the important issues, potential effects, mitigation, etc. as detailed in the Panel's information request. The CLC overview must also link the proposed activities to ongoing project management. The Panel anticipates that overviews with an appropriate level of detail should be less than 50 pages in length, each.

I trust that this response from the Panel will allow you to move forward with providing the required information.

Regards,

Debra Myles
Panel Manager
Whites Point Quarry and Marine Terminal Project Joint Review Panel
c/o Canadian Environmental Assessment Agency, 160 Elgin Street, Ottawa, ON K1A 0H3
Tel: 613-957-0626 Fax: 613-957-0941
Comments@WPQ-JointReview.ca

From: Josephine Lowry#ns.aliantzinc.ca [mailto:josephine.lowry@ns.aliantzinc.ca]
Sent: Thursday, March 22, 2007 10:54 AM
To: Myles,Debra [CEAA]
Subject:

Dear Debra,

Further to Mr. Fournier's letter to us of March 19th, 2007 and our telephone conversation of today's date, we can advise as follows:

1. With respect to Panel questions 1,2,3,4,5,6 and 9 I can advise that responses have been prepared and are currently in review.
2. With respect to questions 7 - Blasting and 8 - Community Liaison Committee, we are unclear as to what precisely is required. It is our current intent to extract the references on blasting from the EIS and the Response Documents and rearrange them generally and where possible into the bullets set out in question 7. We are not sure whether you are aware that this could be a 500 page document. With respect to question 8 - Community Liaison Committee, it would be our intent to assemble all the references to the CLC and then to provide some clarification as to how the CLC will be linked to management decision making - through the adaptive management strategy. Again, we believe this would be a 500 page document.

In the interests of timing, perhaps we could forward the responses to the 7 questions referred to in 1 above in the next few days and await further clarification on questions 7 and 8.

Regards,
Paul Buxton

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7. BLASTING

Information on blasting is widely dispersed throughout the materials provided. Some inconsistencies have been discovered. In order to properly understand blasting issues as well as to assure currency of information, the Panel requests that the Proponent consolidate all the material on the assessment of blasting into a single document. This document should include, among other concerns, the following topics:

- *known effects of blasting on relevant marine and terrestrial organisms*
- *blasting parameters during construction and production phases (averages and degree of variability)*
- *climatic conditions (fog, rain, snow, thermal inversions, ambient light) under which blasting will not occur and quantification of these conditions (also previously requested by DFO, Environment Canada, & the Panel)*
- *wildlife restrictions on blasting and specific information on their implementation*
- *physical environmental effects monitoring; marine and terrestrial*
- *biologic environmental effects monitoring; marine and terrestrial*
- *nature and monitoring of the initial test blast, refinement of the predictive impact model, duration and of model verification phase, role of the model*
- *mitigation measures related to blasting*
- *listing of conditions imposed by blasting regulations (provincial, federal)*

RESPONSE

Blasting is a routine activity associated with the quarry operation that has the potential to interact with a number of VECs, including many of the socio-economic, terrestrial and aquatic environments. In accordance with the EA Guidelines and standard practice in EAs, the EIS has been organized by VEC. Where applicable, for each VEC the effects of blasting have been analyzed, mitigation measures developed, and the residual effects evaluated. Another approach may have been the organization of the text by Project activity such as blasting, shipping, vegetation clearing, etc. Bilcon did not follow this approach in order to comply with the TOR.

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In response to the Panel’s request, to consolidate the material on the assessment of blasting into a single document, Bilcon has followed two approaches. All text from the EIS and all Information Requests (Panel, government agencies, interest groups and general public) that discuss “blasting” have been extracted from the EIS and Bilcon’s response document of February 9th, 2007 and consolidated into one document. An electronic copy of this document will be provided to the Panel under separate cover at the Panel’s request. In its second approach, Bilcon has assembled the following text on the issues for which the Panel requested additional information:

- Known effects of blasting on marine and terrestrial organisms;
- Blasting parameters;
- Climatic conditions;
- Wildlife restrictions;
- Physical environmental effects monitoring;
- Biologic environmental effects monitoring;
- Nature and monitoring of the initial test blast;
- Mitigation measures; and
- Conditions imposed by blasting regulations.

The paragraphs below briefly summarize key information on each one of these issues.

1 Known effects of blasting on marine and terrestrial organisms

The proposed blasting activities have the potential for affecting a number of VECs. Table 1, presented at the end of this response text lists the VECs for which a potential for direct effects has been identified. Table 2 below provides references to discussions of effects on marine and terrestrial organisms. The EIS provides extensive information on these issues. Rather than repeating the information, a bullet point listing of the effects addressed in the EIS is provided below.

**Table 2:
Discussion of Effects of Blasting on Terrestrial and Aquatic Organisms in the EIS**

VEC	Discussed in EIS Volume and Section	Page	Comments
Terrestrial Ecology			
Wildlife including resident birds, mammals, reptiles	Volume VI; Section 9.2.1.2 (Analyses)	Page 31	Some startle behaviour can be expected in wildlife using habitat adjacent to quarry property; no further discussion of specific blasting

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VEC	Discussed in EIS Volume and Section	Page	Comments
			effects on wildlife due to: <ul style="list-style-type: none"> • Infrequent occurrence (about one explosion every one to two weeks); • Short duration (less than 1 second); and • Location (within cleared quarry zone)
Migratory birds	Volume VI; Section 9.2.1.1.1.3 (Flora and Fauna)	Page 25 (Migratory Birds); Page 26 (Migratory Land Birds at Risk);	Some startle behaviour can be expected in migratory birds using habitat adjacent to quarry property; further discussion of specific blasting effects on migratory birds for same reasons as listed above.
Aquatic Ecology - Freshwater			
Fish habitat and species	Volume VI; Section 9.2.2 (Aquatic Ecology – On-site Freshwater)	Page 43	No specific discussion of blasting effects on freshwater fish due to: <ul style="list-style-type: none"> • Lack of freshwater fish habitat on-site • General discussion of sudden changes in hydrostatic pressures on fish covered under Section 9.2.9.1
Aquatic Ecology – Marine			
Marine fish habitat and species	Volume VI; Section 9.2.9 (Fish Habitat); Section 9.2.9.1	Page 112	General discussion of effects of sudden changes in hydrostatic pressures on fish (valid for marine and freshwater): <ul style="list-style-type: none"> • Lethal damage • Sub-lethal damage • Damage to incubating eggs • Behavioural changes
Marine mammals	Volume VI; Section 9.2.11 (Blasting – Marine Mammals); 9.2.11.1 (Research); 9.2.11.2 (Analysis) – Marine Mammals)Blasting – Marine Mammals)	Page 118 Page 121 Page 122	<ul style="list-style-type: none"> • Possible lethal effects • Auditory damage • Behaviour changes

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VEC	Discussed in EIS Volume and Section	Page	Comments
Lobster	Volume VI; Section 9.2.10 (Blasting – American Lobster) Section 9.2.10.1 (Research); 9.2.10.2 (Analysis)	Page 115	<ul style="list-style-type: none"> • Behaviour changes • Production of triploid eggs
Waterbirds	Volume VI; Section 9.2.12 (Blasting - Waterbirds)	Page 126	<ul style="list-style-type: none"> • Physiological effects on auditory system • Other physical damage (ear drum rupture; lung haemorrhage, liver and kidney damage)
Marine Species at Risk (marine fish, marine mammals, marine reptiles)	<p>Volume VI; Section 9.2.5 (Fish – Endangered); Section 9.2.5.2 (Analysis) ; Section 9.2.5.5 (Impact Statements; IBOF Salmon – Blasting);</p> <p>9.2.11 (Blasting – Marine Mammals); 9.2.11.1 (Research); 9.2.11.2 (Analysis) – Marine Mammals) Blasting – Marine Mammals)</p> <p>9.2.8 (Marine Reptiles – Endangered Species); 9.2.8.1 (Research); 9.2.8.2 (Analysis)</p>	<p>Page 98</p> <p>Page 118 Page 121 Page 122</p> <p>Page 109 Page 110</p>	<p>Focus of discussion is on understanding of iBoF migration and avoidance of interaction with Project;</p> <p>Discussion on effects of sudden changes in hydrostatic pressures on fish in Section 9.2.9 (Fish Habitat) equally apply;</p> <p>Statements on Marine mammals equally apply.</p> <p>No information exists on effects of blasting on marine reptiles; text focuses on discussion of potential for Project activities to contribute to known threat factors</p>

2 Blasting parameters

The size and configuration of the blast holes and weight of explosives will vary depending on

- Type of explosive used;
- Production requirements;
- Time of year;
- Proximity to Bay of Fundy;

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- Proposed set backs from:
 - Fish habitat;
 - Marine waterfowl;
 - Marine mammals;
 - Marine species at risk; and
 - Adjacent residences.

Blast geometry will vary depending on production and site location. Pre-blast surveys will be conducted in accordance with the requirements set forth by NSDEL (see also discussion under Item 6 below). Blasting will not be conducted during specific atmospheric conditions (see discussion under Item 3 below).

3 Climatic conditions

Blasting is not proposed:

- During precipitation (rain or snow) events;
- During the presence of blast-site fog conditions;
- Between the hours of 1600 and 1100; and
- If a thermal atmospheric inversion is present at the site as identified by Environment Canada Weather Service.

Bilcon is not aware of any accepted quantitative criteria/thresholds regarding climatic conditions versus blasting. Bilcon intends to employ certified, licensed blasters to conduct blasting activities at the Whites Point quarry. Industry blasters generally rely on qualitative data from both primary (on-site) observation and secondary (weather service) data to decide whether or not to blast under prevailing climatic conditions. This approach adheres to normal industry practice and relies on qualitative professional judgement. Professional judgement is recognized as an accepted practice in environmental decision making especially when accepted thresholds do not exist.

Further, Bilcon intends to adhere to the proposed performance guideline criteria established by the NSDEL and DFO for blast concussion and ground vibration. As prescribed by the blasting protocol, each blasting event will be recorded. This will include a record of climatic conditions and of the blast design. These records, together with monitoring of sound levels and ground vibration at the site perimeter and various under water locations will build a data base, which will help to determine the site-specific relationship between weather conditions and effect levels. The database will provide information upon which to refine and base future blasting activities.

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4 Wildlife restrictions

Wildlife restrictions on blasting have been proposed for:

- Marine mammals (Whales, porpoise and dolphins, seals);
- Marine species at risk (fin, blue or North Atlantic right whales, iBoF salmon, Leatherback Turtle); and
- Waterbirds (marine).

Specifics are listed in Table 1 in context of mitigation and monitoring measures.

5 Physical and biologic environmental effects monitoring

A comprehensive monitoring program has been proposed to verify the predicted effect levels and to confirm the effectiveness of the proposed mitigation measures (Bilcon's response document of February 9th 2007, Section 11.0 Environmental Management Table 1: Follow-up and Monitoring Programs – Summary, p.48ff). A summary of the proposed monitoring directly relevant to blasting is presented below in Table 1

6 Nature and monitoring of the initial test blast

Bilcon intends to conduct and monitor an initial test blast. The parameters of the initial blast would be the same as those modeled. Four monitoring locations from the detonation site are proposed in the marine environment.

- In the tidal zone at the waters edge (high tide)
- In the near-shore waters 118m from the detonation site
- In the near-shore waters 164m from the detonation site, and
- In off-shore waters at the edge of the North Atlantic right whale conservation area

Three monitoring locations from the detonation site are proposed in the terrestrial environment:

- At the nearest residence;
- Adjacent to the quarry property line; and
- On-shore at Whites Point.

The intent of conducting and monitoring the initial blast is to determine the accuracy of the predictive models using actual site conditions. Based on actual site monitoring results,

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refinements of inputs into the mathematical models would be made. These refinements would be used as a basis for future blast designs.

Bilcon proposes a one-year (four season) marine environment verification period to be conducted during quarry site preparation and construction. Bilcon's research and monitoring commitment for the one-year verification period follows (as presented in Bilcon's response document (February 9th 2007, Section 9.1.7 Noise and Vibration, p.16):

- 1) If the results from the initial blast monitoring validate the predicted results, Bilcon proposes calibrated blast sound measures in near and far field locations during the first year of construction.
 - Measure the underwater blast sound levels at the edge of the tidal zone, and at 170m, 500m, 1000m, 2500m and at the margin of the right whale conservation area. This monitoring would be conducted during the first year of construction over 4 seasons.
 - Schedule the first blasting shot prior to or after right whales are expected to be present.
 - Marine mammal monitoring by trained observers should occur prior to and during blasting, as proposed, but the observer should use at least 7x50 binocular on a pedestal to ensure the ability to better detect marine mammals at greater distances.
- 2) Visual observation of seal behaviour before, during, and after construction blasting – especially of seal aggregations, i.e., during seal pupping.
- 3) Testing of effectiveness of visual observations methods at 2500m from the blast site including determination of the average site visibility conditions.
- 4) Consideration of opportunities to link up with other research initiatives, e.g., university research

A similar one-year (four season) terrestrial verification period is proposed to verify application of the terrestrial predictive model.

The role of the model is to confirm the effectiveness of the proposed mitigation measures and to provide data for future blast designs. Specifically, by confirming the degree of accuracy of the DFO and the CONWEP models using actual on-site blast monitoring. If on-site blast monitoring verifies the accuracy of the models, this data would be used as a basis for future blast designs. If data indicates mitigation measures are not as effective as expected, adaptive management options would then be considered.

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7 Mitigation measures

A series of mitigation measures have been developed for implementation during the construction, operation and decommissioning/abandonment phase of the Project. These mitigation measures have been presented in Bilcon's response document of February 9th 2007 (Section 11.0 Environmental Management Table 1: Follow-up and Monitoring Programs – Summary, p.48ff). A summary of the proposed mitigation directly relevant to blasting is presented below in Table 1.

8 Conditions imposed by blasting regulations

Regulations and guidelines that are directly relevant to the use of explosives near fisheries include:

- Wright, D.G., and G.E. Hopky. 1998. Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters (prepared for Canadian Department of Fisheries and Oceans); and
- NSDEL. 1999. Pit and Quarry Guidelines.

Bilcon is committed to operate the Whites Point Quarry in accordance with the provisions and guidelines established by these documents. Table 3 outlines key requirements/ conditions together with information on how Bilcon proposes to meet these stipulations.

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**Table 3:
Summary – Relevant Key Requirements of Provincial and Federal Conditions Pertaining to the
Use of Explosive**

Guideline	Key Requirements/ Recommendations/ Condition	Bilcon Proposal
Guidelines for Use of Explosives in or Near Canadian Fisheries Waters		
Separation distances	No explosives to be detonated within 500m of any marine mammal	Bilcon will use a separation distance of 2500m for marine mammals at risk and 500m for all other marine mammals; initial blast monitoring and model verifications will be used to adjust the distances if required.
Peak particle velocity	No explosive is to be detonated that produces, or is likely to produce a peak particle velocity greater than 13mm/s-1 in a spawning bed during the period of egg incubation.	The CONWEP Model predicts 13mm/sec at a range of 73 m, 4.9 mm/sec at a range of 118 m, and 2.5 mm/sec at a range of 164 m.
Instantaneous pressure change	Maximum 100 kPa in nearest water column	CONWEP model predictions: 25 kPa in nearest water column; initial blast monitoring and model verifications will be used to adjust the blast design if required.
Nova Scotia Pit and Quarry Guidelines		
Separation distances for quarry operations	No person responsible for the operation of a quarry shall permit any blasting on site to exceed the following limits: A. 30 m of the boundary of the public or common highway unless the person has written consent from the Department of Transportation and Public Works; B. 30 m of the bank of any water course or the ordinary high water mark; C. 800 m of the foundation or base of a structure	Included in Project design

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Guideline	Key Requirements/ Recommendations/ Condition	Bilcon Proposal
	<p>located off site. Structure includes but is not limited to a private home, a cottage, an apartment building, a school, a church, a commercial building, a treatment facility associated with the treatment of municipal sewage, industrial or landfill effluent, an industrial building or structure, a hospital, nursing home etc.*</p> <p>D. 15 m of the property boundary when a structure on the abutting property is not involved.</p> <p>*NOTE: the separation distance is measured from the working face and point of blast to the foundation or base of the structure. This distance can be reduced with written consent from all individuals owning structures within 800m.</p>	
Blasting	Concussion (Air Blast) 128 dBA within 7m of nearest structure not located on the property where the blasting occurs or other locations as directed by the Minister or Administrator.	Blast design to ensure that levels of concussion remain well within guideline; Initial blast monitoring will be used to adjust the blast design if required.
	Ground Vibration 0.5 in./sec. (12.5mm/s) Peak Particle Velocity measured below grade or less than 1 m above grade in any part of the nearest structure not located on the property where the blasting occurs.	Blast design to ensure that levels of ground vibration remain well within guideline; Initial blast monitoring will be used to adjust the blast design if required.
	Monitoring of concussion and ground vibration.	Included in monitoring program.
	No blasting on Sunday, on a statutory holiday prescribed by the Province, or on any day between 1800 hours and 0800 hours.	Blasting to be limited to 1100 and 1600 hours.
	Technical blast design prepared by a qualified person who ensures that ground vibration and air concussion limits (see above) are met.	Bilcon will contract certified, licensed blaster.
	Pre-blast survey of all structures within 800m of point of blast.	Included in project design.

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Guideline	Key Requirements/ Recommendations/ Condition	Bilcon Proposal
	No blasting if thermal inversion is anticipated.	Included in Blasting Protocol; responsibility of implementation with contracted blaster.

Table 1: Blasting – Environmental Effects, Mitigation, Monitoring

	Relevant VECs	Socio-Economic – Property Value; Quality of Life	Noise and Vibration	Terrestrial Ecology Migratory birds	Aquatic Ecology - Freshwater Fish habitat and species	Aquatic Ecology – Marine				
						Fish habitat and species	Marine mammals	Lobster	Waterbirds	Marine Species at Risk
1	Blast frequency and design:									
	<ul style="list-style-type: none"> • Infrequent blast frequency: approximately once every two weeks during production for a duration of less than one second per blast event • 	•	•	•	•	•	•	•	•	•
2	Consideration of Climatic conditions:									
	<ul style="list-style-type: none"> • To minimize sound propagation blasting will not be conducted during times of <ul style="list-style-type: none"> ○ thermal inversion ○ foggy, cloudy or overcast days 	•	•	•			•	•	•	
3	Set back distances:									
	<ul style="list-style-type: none"> • No blasting within 800 m of residential structures not located on quarry property without written permission of the property owner 	•								
	<ul style="list-style-type: none"> • Adherence to 3x designated setback indicated in “Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters” from the blast to fish habitat during times of the year when inner Bay of Fundy Atlantic salmon could be present in these coastal waters (May to October) 									•
	<ul style="list-style-type: none"> • Blasting as close to low tide as possible to maximize setback distance 					•	•	•	•	•
	<ul style="list-style-type: none"> • No blasting if marine mammal species at risk (fin, blue or North Atlantic right whales) observed within 2500m of the detonation site 						•			•
	<ul style="list-style-type: none"> • No blasting if marine mammals (whales, porpoise or dolphins) are observed within 500m of the detonation site 						•			
	<ul style="list-style-type: none"> • No blasting if seals are observed within 170m of the detonation site 						•			
	<ul style="list-style-type: none"> • No blasting if water birds are observed within 170m of the detonation site 								•	

	Relevant VECs	Socio-Economic – Property Value; Quality of Life	Noise and Vibration	Terrestrial Ecology Migratory birds	Aquatic Ecology - Freshwater Fish habitat and species	Aquatic Ecology – Marine					
						Fish habitat and species	Marine mammals	Lobster	Waterbirds	Marine Species at Risk	
	<ul style="list-style-type: none"> No blasting if Leatherback turtle is observed within 2500m of the detonation site 										•
4	General noise abatement										
	<ul style="list-style-type: none"> Maintenance of a 30m wide (minimum width) vegetated environmental preservation zone around the quarry perimeter to further reduce sound levels by absorption 	•	•	•			•		•		•
5	Compliance with Regulatory Guidelines and Bilcon Protocols										
	<ul style="list-style-type: none"> Noise and vibration from blasting will meet the requirements set forth in the NSDEL “Pit and Quarry Guidelines” 	•	•	•	•	•	•	•	•	•	•
	<ul style="list-style-type: none"> Bilcon of Nova Scotia Corporation’s Blasting Protocol 	•	•	•	•	•	•	•	•	•	•
	<ul style="list-style-type: none"> DFO Guideline for the Use of Explosives in or Near Canadian Fisheries Waters 		•		•	•	•	•	•	•	•
6	Other										
	<ul style="list-style-type: none"> Application of passive acoustic technology for marine mammal detection and / or deterring devices (if proven and approved by DFO) 						•				•
	<ul style="list-style-type: none"> Consideration of new information on the protection of Species at Risk (e.g., results of Allowable Harm Assessment for right whale; recovery strategy for iBoF salmon) throughout the life of the Project; implementation into management if feasible 										•
	<ul style="list-style-type: none"> Regular consultation with regulatory agencies to ensure Project remains in compliance with SARA 										•
	<ul style="list-style-type: none"> Periodic training of marine mammal observer (s) 						•		•		•
	<ul style="list-style-type: none"> Coordination during initial and subsequent one year monitoring phase with DFO on details of monitoring program for CONWEP model verification and finalization of safety zone distances 					•	•	•	•		•

	Relevant VECs	Socio-Economic – Property Value; Quality of Life	Noise and Vibration	Terrestrial Ecology Migratory birds	Aquatic Ecology - Freshwater Fish habitat and species	Aquatic Ecology – Marine				
						Fish habitat and species	Marine mammals	Lobster	Waterbirds	Marine Species at Risk
	<ul style="list-style-type: none"> • Discussion of need and options for adjustment of operation and mitigation approaches with CLC, if blasting-related issues are identified 	•	•	•	•	•	•	•	•	•
7	Monitoring									
	<ul style="list-style-type: none"> • Concussion and ground vibration levels at site perimeter 	•	•	•						
	<ul style="list-style-type: none"> • Sound levels at site perimeter 	•	•	•						
	<ul style="list-style-type: none"> • Underwater blast sound levels (CONWEP model verification) 					•	•	•		•
	<ul style="list-style-type: none"> • Underwater background noise and vessel arrival noise levels for assessment of cumulative effects with blasting 					•	•	•		•
	<ul style="list-style-type: none"> • Recording of visual observations: fog, cloud cover, ceiling, visibility; recording of EC weather service predictions for presence of inversion 	•	•				•		•	•
	<ul style="list-style-type: none"> • Testing of effectiveness of observation methods; adjustment of work boat usage if required 						•		•	•
	<ul style="list-style-type: none"> • Monitoring of an initial blast is proposed to verify modeling procedures with results from this initial blast being used to further define mitigative setback distances from the detonation to a marine mammal 									
	<ul style="list-style-type: none"> • Monitoring of complaint records (complaints from residents) 	•	•							
	<ul style="list-style-type: none"> • Marine mammal behaviour in particular observation of seal colony (incl. video documentation) in consultation with DFO 						•			•
	<ul style="list-style-type: none"> • Presence of marine mammals and Leatherback turtle prior to blasting: <ul style="list-style-type: none"> ○ Routine inspection from work boat within 2500 m of project site during morning hours of blast event ○ Inspection from work boat within 2500 m of project site before blasting event during times of poor visibility (rough waters) 						•			•

	Relevant VECs	Socio-Economic – Property Value; Quality of Life	Noise and Vibration	Terrestrial Ecology Migratory birds	Aquatic Ecology - Freshwater Fish habitat and species	Aquatic Ecology – Marine				
						Fish habitat and species	Marine mammals	Lobster	Waterbirds	Marine Species at Risk
	○ One hour before blasting event from observation station on ship loader									
	● Whale sightings as reported by Fundy Traffic and others (e.g., tour boat operators)						●			●
	● Monitoring/auditing of Bilcon staff education and training related to the blasting protocol and associated environmental mitigation measures	●	●	●	●	●	●	●	●	●

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8. COMMUNITY LIAISON COMMITTEE

The role of the CLC remains unclear to the Panel. Material referring to the role of the CLC is distributed throughout the reports received. Consolidate the information on the CLC from various documents. Clarify the way in which the activities of the CLC will be linked to management decision-making through the adaptive management strategy.

RESPONSE

In response to the Panels request for consolidated information on the role of the CLC, Table 1 (below) has been generated. The table provides a description of such aspects as the CLC's objectives, role, membership, and link to other management tools and activities of the proposed Project. The information has been compiled from the various sections of the EIS Report as well as responses provided by Bilcon to previous Information Requests (February 9th, 2007). Supplementary new information is also included in order to further clarify Bilcon's vision for the CLC and Bilcon's commitment to on-going dialogue, public involvement and transparency throughout all Project phases.

It is of note that the following will serve as a draft Terms of Reference for the establishment and operation of the CLC. Finalizing the TOR will occur during the early stages of the CLC's work and will involve consultation and input from the CLC itself.

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Table 1: Community Liaison Committee (CLC)

#	Issues	Description	Documented in
	Objectives	<p>The CLC is intended to be an on-going advisory body to Bilcon as the quarry operator and to provide a mechanism for Bilcon to:</p> <ul style="list-style-type: none"> • Provide an ongoing opportunity for consultation between Bilcon and the residents of the area potentially affected by the Project on the <ul style="list-style-type: none"> ○ Final design; ○ Construction; ○ Operation; and ○ Decommissioning and abandonment. • Consult with the residents of the area on <ul style="list-style-type: none"> ○ Issues related to the potential, actual and perceived environmental effects of the Project during the various project phases; ○ The effectiveness of the mitigation measures; ○ Options for adjustments of mitigation measures and environmental management practices (if required). • Present monitoring reports and results of environmental audits to the public and to discuss options for improvement. • Establish a forum for ongoing dialogue between the quarry operator and area representatives for consideration of any issues of public concern. • Ensure that the community is made aware of the effectiveness of mitigation measures. 	EIS, Section 11.0.1 p.4; and Bilcon response to WP 1452 Joint Review Panel IR on 8.2 Public Consultation p.3
	Members	<ul style="list-style-type: none"> • Members of the CLC will be chosen from individuals or groups representing the geographic area which may be impacted by the Project. • Representatives of the community will include but not be limited to the following groups and should consist of no less than ten and no more than 16 	Bilcon response to WP 1452 Joint Review Panel IR on 8.2 Public

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#	Issues	Description	Documented in
		<p>members with an equal representation of men and woman:</p> <ul style="list-style-type: none"> ○ Local government ○ Education ○ Business ○ Environment ○ Social and community welfare ○ Safety and protection ○ Fishing industry ○ Tourism industry ○ Immediate neighborhood ○ Youth ○ Senior citizens <ul style="list-style-type: none"> ● Bilcon in consultation with the CLC may decide to select additional members. ● Individuals will be appointed for a three-year term. 	<p>Consultation p.3</p>
	<p>Selection of Members</p>	<ul style="list-style-type: none"> ● Members will be appointed by an independent body consisting of three representatives: one from Bilcon, one from the Municipality of the District of Digby and one from the Digby and Area Board of Trade. 	<p>Bilcon response to WP 1452 Joint Review Panel IR on 8.2 Public Consultation p.2</p>
	<p>Chairperson</p>	<ul style="list-style-type: none"> ● The selection of the chairperson will be Bilcon's responsibility. This may be achieved through <ul style="list-style-type: none"> ○ An election by CLC members, ○ The appointment of Co-chairs, ○ The selection of an impartial third party, or through another process chosen by Bilcon. 	
	<p>TOR</p>	<ul style="list-style-type: none"> ● The final TOR will be established in consultation with the CLC during the first meetings. ● The mandate and membership of the Committee will be reviewed by the CLC on an annual basis. ● The CLC may choose to establish additional terms of reference that address specific issues of interest to the community. 	

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#	Issues	Description	Documented in
	Frequency of Meetings	<ul style="list-style-type: none"> • Meetings will be held at a minimum of once a month upon Project approval and no less than four times a year once operational. • One of the meetings must be held with local residents on an annual basis (Community Forum). 	Bilcon response to WP 1452 Joint Review Panel IR on 8.2 Public Consultation p.3
	Meeting Place	<ul style="list-style-type: none"> • Bilcon will be responsible for the provision of meeting space. 	
	Community Forums	<ul style="list-style-type: none"> • The CLC will hold one public meeting with local residents per year. Objectives of this meeting will be to : <ul style="list-style-type: none"> ○ Report on the work of the CLC; ○ Solicit input from the general public on the Project’s environmental performance; and ○ Identify and discuss other issues of concern that the public would like the CLC to address. 	Bilcon response to WP 1452 Joint Review Panel IR on 8.2 Public Consultation p.4
	Communication/ Reporting/ Transparency/ Disclosure/ Information Dissemination	<ul style="list-style-type: none"> • As part of the TOR, the Committee will ensure that the views of the Committee are made available to the public in an appropriate manner. This could include the posting of minutes in a public place near or at the quarry site, in a public space in the community (e.g., library), the provision of minutes to interested parties via mail outs or e-mail, or the posting of the minutes on Bilcon’s web site. • The Committee will be made known to the residents and the community at large; the notification will include a list of Committee members. • Bilcon will be responsible for copying of minutes and the dissemination of copies to regulatory agencies and other interested parties; if applicable, this will include minutes of the annual meeting (Community Forum) and an annual report. 	Bilcon response to WP 1452 Joint Review Panel IR on 8.2 Public Consultation p.4
	Monitoring of Consultation	<ul style="list-style-type: none"> • Bilcon will monitor all public consultation activities; this includes the monitoring of the CLC 	Bilcon response to

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#	Issues	Description	Documented in
	Activities	with respect to: <ul style="list-style-type: none"> ○ Meetings; ○ Participation; ○ Issues raised and discussed; ○ Complaints/grievances by CLC members or brought to attention of CLC; ○ Monitoring report reviews; ○ Adjustments of mitigation or environmental management procedures; and ○ CLC information dissemination (e.g., meeting minutes, annual reports). 	WP 1452 Joint Review Panel IR on 8.2 Public Consultation p.4
	Conflict resolution	<ul style="list-style-type: none"> • Purpose of the CLC is to avoid conflicts through early discussion of issues and concerns among CLC members, Bilcon management representatives, and members of the public and to arrive at mutually agreeable solutions. • For issues that are not resolved through the routine involvement of the CLC, Bilcon’s public grievance procedure will be applied. This procedure outlines options for reporting of a grievance, the actual grievance procedures (i.e., steps undertaken to acknowledge, register, process, and resolve the grievance), and assurance of confidentiality and anonymity. 	Bilcon response to WP 1452 Joint Review Panel IR on 8.2 Public Consultation p.4
	Link to Issues Management System	<ul style="list-style-type: none"> • Objective of the Issues Management System is to ensure that issues related to the environmental performance of the quarry operation are registered, brought to the attention of the responsible manager, and that appropriate follow up action (if required) is implemented within an adequate time frame. • Bilcon’s Issues Management System represents an electronic data base that records environmental issues and concerns raised; the group or individual raising the issue; the date the issue was brought to the attention of Bilcon/the CLC; the required follow-up and its implementation. • The role of the CLC with respect to the Issues Management System is to contribute to the 	Discussion of IMS: EIS, Section 8.2; p.14

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#	Issues	Description	Documented in
		<p>identification and recording of issues, tracking adequate responses and ensuring follow up activities.</p> <ul style="list-style-type: none"> It is envisaged that the Issues Management System will be managed by Bilcon with the CLC routinely reviewing the issues list and the status and type of response/ follow-up activities. 	
	Link to Adaptive Management Process	<ul style="list-style-type: none"> Adaptive management has been defined by Bilcon as “<i>a systematic approach for improving environmental management and building knowledge by learning from management outcomes</i>”. The role of the CLC in the Adaptive Management Process is to critically review the project operation, identify issues and concerns and to participate in identifying and implementing approaches to improved environmental management. Environmental audits, monitoring reports, and issues identified by the general public and/or the CLC will be the basis for a critical review of the effectiveness of the environmental management and the Project’s environmental performance. Non-compliance with regulatory standards and permits will be immediately investigated by Bilcon. In consultation with the CLC, adjustments to the operation and /or environmental management will be developed and implemented (= adaptive management process). Similarly, complaints and issues and concerns raised with respect to the Project’s general environmental performance will be investigated. In consultation with the CLC, options for adjustments to the operation and /or environmental management will be explored and implemented (= adaptive management process) to the extent practical. 	
	Link with Communications	<ul style="list-style-type: none"> The CLC represents a key component within the Project’s overall Communications Plan in that it 	

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#	Issues	Description	Documented in
	Plan	<p>provides the implementation mechanism for on-going dialogue with the community and for conflict prevention and resolution. (See objectives of CLC stated above).</p> <ul style="list-style-type: none"> • Bilcon will review its Communications Plan with the CLC and obtain input on its components, activities, and implementation; this includes a discussion as to what degree the CLC should be involved in individual activities. As such, the CLC is both, an implementation mechanism for communications and a means for shaping the content of the Communications Plan. • Other activities and tools addressed in the Communications Plan involve: <ul style="list-style-type: none"> ○ Media relations/ press releases ○ Community involvement ○ Corporate web site ○ Annual Reports ○ Environmental auditing reports ○ Monitoring reports ○ Special events (open house events; guided site tours) ○ On-going dialogue with First Nations 	