

Minutes of Meeting of Community Liaison Committee

Nova Stone Exporters Inc/Global Quarry Products Inc

7.00 p.m. June 11, 2003

Rossway Community Hall

In attendance: Ms. Cindy Nesbitt, CLC Chairperson
Ms. Judith Carty, CLC Member
Ms. Christine Harnish, CLC Member
Mr. Mark Jeffrey, CLC Member
Mr. David Graham, CLC Member
Mrs. Linda Graham
Mrs. Marian Angrignon
Ms. Genie Wilkins
Ms. Marilyn Stanton
Mr. Harold Wilkins
Mr. Eugene Stanton
Mr. Bruce Cunningham
Mr. Shane Fralick
Mr. Wanda VanTassel
Mrs. Jill Klein
Mr. Rick Klein
Mr. Gordon Sloan
Mr. Steven Theriault
Mr. Kemp Stanton
Ms. Elizabeth Robbinns
Ms. Claire Carver, Mallet Research Services
Mr. Andre Mallet, Mallet Research Services
Mr. Dave Kern
Mr. Paul Buxton NSEI/GQPI
Ms. Betty MacAlpine NSEI/GQPI
Ms. Tammy Sanford NSEI/GQPI

Regrets: Mr. John Ivens, CLC Member; Mr. Brian Cullen, CLC Member

Ms. Nesbitt welcomed everyone and introduced Ms. Claire Carver and Mr. Andre Mallet of Mallet Research Services. She noted they would give a presentation on Ballast Water. She further noted this is an item of concern the CLC had wished to investigate further. Ms. Nesbitt asked Mr. Mallet and Ms. Carver what professional qualifications they hold. Ms. Carver replied she has a Masters Degree in Oceanography. She was asked to attend this meeting and talk about this particular study and that this is the only information that was

provided. She further noted it is her intent to provide the information and answer questions based on this study but she is unsure how this study is relevant to the interests of the CLC. It was asked who was the study done for and who paid the bill.

Ms. Carver replied Transport Canada.

It was asked if the study is available publicly.

Ms. Carver replied it is available in draft version upon request.

Mr. Mallet noted there had been two studies done for Transport Canada – Marine Safety and that the first preliminary study is available online.

A website address was requested.

Mr. Mallet replied this would be available at the end of the meeting.

Mr. Mallet noted the second larger scale study looked at the Atlantic Provinces where sites were sampled in Nfld, PEI, Northern NB and NS. He noted it is not yet available online but may be obtained from Transport Canada.

It was asked if it would require a request or is it generally available.

Mr. Mallet replied Transport Canada will provide copies at their discretion and noted it has been forwarded to a number of different people and agencies.

Mr. Mallet noted that Mallet Research Services is a private consulting business and he holds a PhD in Genetics. They have studied different aspects of aquaculture for 20 – 25 years and 90 – 95% of their business is doing science projects for private and government sectors.

Ms. Carver noted that Transport Canada asked them to do this study because they are developing Ballast Water Guidelines for Management of Ballast Water and more scientific data was needed to make more appropriate decisions on regulating and managing Ballast Water in Atlantic Canada. She noted the study was performed in the fall of 2001 (September 2001 – March 2002) and focused on Non-indigenous Phytoplankton and Zooplankton. She further noted that non-indigenous means non-native, something that is not found here normally and that foreign Phytoplankton and Zooplankton might have been introduced via Ballast Water.

Ms. Carver noted the entitled presentation Assessment of the Risk of Ballast Water - Mediated Introduction of Non-indigenous Phytoplankton and Zooplankton into Atlantic Canadian Waters and noted it is sponsored by Transport Canada, Marine Safety.

Ms. Carver noted the presentation outline covers the following items:

- Why the concern over Ballast Water?
- Ballast Water project - collection of samples. The criteria for ship selection, types of ships sampled, and the sampling techniques used.
- Description of Ballast Water samples. The geographic origin, Phytoplankton and Zooplankton diversity, cell abundance, and Non-indigenous and harmful taxa.
- Effectiveness of Ballast Water exchange.
- Development of Risk Management Strategies.

Ms. Carver noted Ballast Water is essential for the stability of a ship and that a ship carries a minimum amount of Ballast Water when it carries cargo. She noted that when a ship carries little cargo without Ballast Water the ship floats high in the water and it would be unstable. Ms. Carver noted concerns arise because the importation of Ballast Water is a possible vector for the introduction of Non-indigenous species such as *Gymnodinium catenatum* (a toxic Phytoplankton); *Mnemiopsis leidyi* (Zooplankton); *Codium fragile* (green seaweed); *Styela clava* (Club Tunkit); *Carcinus maenas* (Green Crab). She noted that these are the three main invasive species currently present in Atlantic Canada and the main importance of these

species is that they have a short-lived larval planktonic stage and most of their lifespan is on the bottom.

Ms. Carver noted although Ballast Water is associated with invasive species it is not necessarily responsible for all invasive species and there is no strong evidence that these species were introduced through Ballast Water.

It was asked where were their samples taken from.

Ms. Carver replied that his question will be answered throughout the presentation.

It was observed that the information she is referring to is for future reference and if this quarry takes place and there are ships coming in and out of a new area the organisms she is studying are from another dock or different area i.e. St. John harbour. He noted the numerous amount of ship traffic and asked what ports are her studies based upon.

Ms. Carver replied there were 15 ports examined which will be shown on a map.

Ms. Carver noted that Transport Canada is responsible for Ballast Water Procedures for Vessels Proceeding to ports on the East Coast of Canada - Annex V. (*see Appendix 1-April 9, 2003 CLC minutes.*) She noted they are trying to develop this document and need information to develop appropriate guidelines.

Ms. Carver noted the guidelines state all vessels arriving from outside Canadian waters must submit a Ballast Water Report Form. She noted this is mandatory and vessels must now report where their Ballast Water originated, whether they intend to discharge and where. She noted this has been documented for the past two years now.

It was asked if this is outside 200 miles.

Ms. Carver replied yes anything that is coming from outside that zone.

Ms. Carver noted all vessels should (voluntary at this point) undertake a Ballast Water exchange before entering Canadian waters, preferably in waters >2000 meters. She noted if you come from a coastal port (East Coast or US) and carry coastal species some of which may be undesirable the Ballast Water is exchanged in open ocean water before the vessel arrives in port. She further noted they were trying to discover what was actually in the water being exchanged and how effective was the exchange.

Ms. Carver noted the scope of the work done for the Ballast Water project (2001) as follows.

- Obtain Ballast Water samples from 98 ships arriving in 15 Atlantic Canadian ports (Nfld, NB, PEI, NS)
- Identify and enumerate Phytoplankton taxa - 235 samples – Mallet Research Services
- Identify and enumerate Zooplankton taxa - 59 samples – Sprytech Biological Services
- Duration: September 21, 2001 – March 31, 2002.

Ms. Carver noted the 6 ports in Nfld were Come-by-chance, Harbour Grace, Whiffen Head, Argentia, St. John's and Corner Brook; 5 ports in NS were Halifax, Hantsport, Pugwash, Little Narrows and Pt. Tupper; 2 ports in PEI were Charlottetown and Summerside; and 2 ports in NB were Dalhousie and Belledune. She noted the ships selected for sampling are representative of ship traffic at each port and ship selection was representative of foreign vessel traffic in 2000.

Ms. Carver noted the FAO Region is a way of zoning the ocean and we are located in what is referred to as Zone A, the Northwestern quarter of the Atlantic Ocean along with Northern US. Southern US is Zone G and includes the Caribbean. She noted the ships originated as follows:

- Zone A/G – USA, 61 ships
- Zone B – Netherlands, Germany, France, UK, Iceland, 20 ships
- Zone C – Spain, Malta, Mediterranean, 7 ships
- Zone G – Cuba, Central America, Caribbean Islands, 7 ships
- Zone F – Africa, 1 ship
- Zone H – Persian Gulf, 1 ship
- Zone D – Russia, Far East, 0 ships.

Ms. Carver noted all four provinces see ships originating from a variety of zones.

- Nfld – 32 ships
- NS – 48 ships
- PEI – 3 ships
- NB – 15 ships

Ms. Carver noted the four types of ships are known as Container, General Cargo (containers, bulk goods, steel), Bulk (Gypsum) and Tanker carriers. She noted that Tankers previously used the same hold for oil and water (oily ballast) but this is no longer permitted as they must have segregated tanks. She further noted the four types of ships as follows:

- Nfld – majority of ships - Tanker carriers with some General Cargo carriers
- NS – majority of ships – Bulk, Container, some General Cargo and Tanker carriers
- PEI – General Cargo carriers (agricultural traffic)
- NB – majority of ships were General Cargo carriers, some Bulk and Tanker carriers

Ms. Carver noted the average Ballast Water load by ship type (water brought in and discharged) as follows:

- General Cargo carrier – 31 sampled, average load – 3000 cubic meters; 10 discharged partial load (trimming – for stability) on arrival
- Bulk carrier – 21 sampled, average load - 8000 cubic meters; 21 discharged full load on arrival
- Container carrier – 17 sampled, average load – 9000 cubic meters; 7 discharged partial load on arrival
- Tanker carrier – 29 sampled, average load - 25,000 cubic meters; 29 discharged full load on arrival

It was asked trimming the cargo or trimming the Ballast Water.

Ms. Carver replied trimming the balance of the ship.

It was asked are they readjusting cargo or the Ballast Water.

Ms. Carver replied Ballast Water. She noted by comparison General Cargo and Container carriers discharged less Ballast Water than Tanker and Bulk carriers.

It was asked if the ships discharged Ballast Water prior to entering port.

Ms. Carver replied this varies and Transport Canada requests, weather permitting, Ballast Water be discharged outside port.

It was asked if Ms. Carver had to intercept ships offshore and was Ballast Water onboard.

Ms. Carver replied they had to catch them prior to the ship discharging the Ballast Water.

It was noted that this has been occurring for years and asked who is to say if anything has not come from those ships (Hantsport) as opposed to ships traveling past NS because the water turn around in this area is drastic.

Ms. Carver asked if he was referring to the salinity and how is it diluted. He asked if it dilutes itself.

Ms. Carver replied yes by discharging the Ballast Water early and not all in one zone this has some effect. She noted there are a lot of ships going to St. John traveling through here, which are probably discharging along the way and back.

It was noted that the Bay of Fundy is like a catch basin but we are fortunate to have such a large tide here that it creates a washbasin.

Ms. Carver replied there is a big exchange in this area.

Mr. Stanton asked if there is any evidence that diluting these species does any good. He noted if there are two they can reproduce and if there is an aggressive invasive species that is highly reproductive two could do just as much damage as 10 dozen of them.

Ms. Carver replied that this is the question, how many do you actually have to introduce for its population to develop and she noted there isn't very much known about the survival of a species. She noted a recent study done in Baltimore where they carried various Zooplankton species and on arrival in port live samples were removed from the Ballast Water and placed in buckets of Baltimore water to see what happened as they mimicked what happened while discharging the Ballast Water. She further noted none of the live samples survived.

Mrs. Klein noted that a bucket is not like the Chesapeake Bay.

Ms. Carver replied the point of this was that the salinity was not appropriate for those species.

Mr. Klein noted it didn't help when MSX came into Chesapeake Bay from Ballast Water and dramatically impacted the oyster harvest.

Ms. Carver replied that she has no information on that theory.

Mr. Klein noted that the MSX in Ballast Water has virtually destroyed that fishery.

Mrs. Klein noted Ms. Carver made a statement that a few invasive species, which were put in buckets of water died as if that is not going to be a problem.

Ms. Carver replied it means in that particular case the open ocean species brought in (30 parts per thousand) of which Baltimore is 20 parts per 1000 in that case none of the species exposed to that water survived. She noted it does not mean if you pulled up Ballast Water they would not have found something that survived but in that experiment they did not.

Mrs. Klein noted she did not feel this was a good analogy. She noted putting something in a bucket is like putting a lobster in a bucket of water where it will die as opposed to putting it in a special tank where it will live.

Ms. Carver replied it doesn't answer all of the questions it is an example of an experiment that was conducted.

Mrs. Klein asked is it a Canadian law or request that Ballast Water be exchanged out of port.

Ms. Carver replied it is a voluntary request.

Mrs. Klein asked if we have to depend on the goodwill of the ship.

Ms. Carver replied yes.

Mr. Mallet replied this is an item the study looked at to see if ships are complying with the request. To his knowledge there is no evidence nor is it known how MSX is propagated.

Ms. Carver replied she has never seen evidence of this but it may exist.

Mr. Klein replied there are reports that state MSX arrived directly from Ballast Water in the early 50's and then propagated.

Ms. Carver noted she would like to see that information.

It was noted that Ms. Carver stated they are now required by law to not mix oil and water but it could have been introduced by oil tankers then.

It was noted that it was requested that they file a report but that they don't have to do this.

Ms. Carver replied that Ballast Water Report is mandatory.

It was agreed but they could say they did or did not do an exchange.

Mr. Klein noted all they have to report is we did not exchange Ballast Water and this is a report.

Ms. Carver agreed that is right and it is not mandatory to do the exchange but it is mandatory to file a legitimate report.

Mr. Mallet noted part of the study was to validate some of these reports.

Ms. Carver noted the Ballast Water exchange by ship type as follows:

- General Cargo carrier – 68% exchanged, 23% no exchange, 10% questionable exchange
- Bulk carrier – 43% exchanged, 48% no exchange, 10% questionable exchange
- Container carrier – 76% exchanged, 24% no exchange
- Tanker carrier – 66% exchanged, 31% no exchange, 3% questionable exchange

Ms. Carver noted 60 – 70% of the General Cargo, Container and Tanker carriers were compliant with the request to undertake an open ocean exchange. She noted the Bulk carriers that did not do an exchange could have been partly due to the age and safety considerations of the vessel.

Mr. Klein asked if the final or interim destination of any of these vessels was the Great Lakes.

Ms. Carver replied this was not part of the information data. She noted the percentage of questionable exchanges may be inaccurate because there would be no way for them to detect the difference in salinity based on port waters for some ships.

It was asked if Ms. Carver knew the country of origin of these ships.

Ms. Carver replied no and it may not have been due to misreporting and it would be hard to argue it was a problem with the ship, it may have been a stability issue.

Mr. Mallet replied that on the other hand some ships would go to great extents to ensure that Ballast Water was exchanged several times.

Mr. Stanton asked what expense a ship would incur to exchange Ballast Water.

Ms. Carver replied on average it takes 24 – 36 hours to do a Ballast Water exchange.

Mr. Mallet replied it could cost \$3 – 4000 in maintenance costs for pumps, etc but for a higher-level treatment on a Bulk carrier it could range to \$40,000.

It was asked it cost that much to exchange Ballast Water. He noted he worked on ships and it would be just a matter of opening ports and valves.

Mr. Mallet replied you would still have to operate the pumps and there would be fuel costs.

It was noted there would be no fuel costs because they were hooked up to the main engine.

Ms. Carver noted Mr. Mallet was referring to wear and tear and she did not get the impression they did not do a Ballast Water exchange for that reason.

Mr. Klein noted what concerns him is the Ballast Water Management plans that these individual vessels were required to file.

Ms. Carver replied there is a statement on the Ballast Water Report Form asking if the ship has a Ballast Water Management Plan on board. She noted Container carriers that traveled into the US or Europe had volumes of forms but she was unsure whether a General Cargo ship traveling to Cuba did. She also noted the language barrier was

sometimes a problem and the Container carriers were carrying Ballast Water Management Plans because they are mandatory in some other countries.

Ms. Carver noted the Ballast Water sampling protocol as follows:

- Select ship based on country of origin/port of arrival
- Contact shipping agent – arrange boarding time
- Review Ballast Water history with Chief Officer (Ballast Water Report Form received from Transport Canada)
- Select three tanks based on water age/origin
- Obtain water samples from sounding pipes or ballast pump

Ms. Carver noted the preferred sampling method is the air-driven diaphragm pump with a sample being removed from the sounding pipes. She noted the alternate method used was the Ballast Water pump used on Container carriers. She further noted with this method there was a certain amount of doubt as to whether they had actually gotten the sample they requested. It was asked if they considered putting dye in the tank.

Ms. Carver replied no it meant with Container carriers there was a question as to the source.

Ms. Carver noted the Ballast Water samples were gathered by the following criteria:

- 50 liters filtered through 20-um mesh
- 235 samples for Phytoplankton analysis
- 59 samples for Zooplankton analysis
- water age – 1 to 289 days
- salinity – 1 to 36 0/00

Ms. Carver noted the origin of Ballast Water samples by FAO Region is where the water originated from not where the ship originated. She noted most samples came from Northeastern US zones and a lot of Open Ocean exchange occurred. She further noted the Tanker and Bulk carriers were traveling up and down the coast not overseas whereas the Container carriers are ocean going and most likely bringing this water.

Ms. Carver noted usually only a small amount of water is discharged. She noted they would request a sample of Ballast Water the ships were planning to discharge or a sample from what was actually discharged. She further noted if the ship was not planning to discharge they would request a sample based on something that may be of interest.

Ms. Carver noted the origin of Ballast Water samples collected were by type and that most of the Ballast Water samples originated from the US. Sample types collected were from Port, Coast <2000 meters and Ocean >2000 meters and the purpose was to compare what actually happened and what differences this made.

Ms. Carver noted the Phytoplankton taxa as follows:

- Total taxa – there are 423 species of Phytoplankton taxa
- Diversity – 43% >25 taxa/sample max 68 taxa/sample
- Abundance – 35% >10,000 cells/liter max 220,000 cells/liter

Ms. Carver noted the Phytoplankton abundance/diversity by origin on average was 4000 cells per liter with 25 different species from the zones noted. She noted most cells from the Indian Ocean (zone H) were dead.

Ms. Carver noted the Phytoplankton abundance/diversity by water type (Port, Coast, Ocean). She noted Port Ballast Water was not exchanged and contained more cells, on average 20 different species. She further noted the decline in species in Coast and Ocean Ballast Water, which was the expected result. The number of taxa (species) didn't decline but there were fewer cells.

Mr. Jeffrey asked if they retrieved a sample if the ship didn't discharge Ballast Water. Ms. Carver replied yes and a number of samples referred to was from water that was not discharged. She noted in the case of Tanker and Bulk carriers all of the Ballast Water was discharged into port. In the case of Container and General Cargo carriers, which did not discharge Ballast Water, they sampled water although it was not discharged into port. Ms. Carver noted the Decline in Phytoplankton abundance with age, which is a very important stage. She noted by six weeks 99% of the cells were dead. She further noted Phytoplankton produce cysts if the conditions are not pleasant that fall into the sediment and sit in the bottom of the ballast tank. This is a concern that should be looked at but was not done as part of this study.

Mr. Klein asked if they did silt sampling of Ballast Water.

Ms. Carver replied Mallet Research Services did not. She noted dropping a tube into the mud and sucking it up or by sending someone into the section to sample it. She further noted this would be a study in itself and could not be covered in six months.

Mr. Klein asked are the weeks referred to weeks in the tank.

Ms. Carver replied yes, water in the Tanker and Bulk carriers falls into that one-week category.

Mrs. Klein asked if the taxa retrieved was equivalent to Canadian species or different.

Ms. Carver replied that is a good question.

Mr. Stanton asked did you find the sediment stirred enough to get murky water after a ship made a rough passage instead of clear or did it not stir up the sediment.

Ms. Carver replied it is reported to do this but they did not actually notice or they were not made aware of whether a ship had a rough passage.

Mr. Stanton asked if some water was black and some clear they didn't notice it.

Ms. Carver replied some were dirty but they didn't know if it was because the port they came from was dirty.

Mr. Mallet noted at times if it was low tide on entry the water would be closer to the bottom and could pick up sedimentation, which would make the water murky, but this was a rare occurrence.

It was noted at most times the ballast tanks are quite clean.

Ms. Carver noted she has heard this. She noted one of the issues is the dry dock in Halifax harbour and when the tanks are flushed what happens to that sediment. She questioned does it go into the harbour or where does it go.

It was asked is there any sediment in it.

Ms. Carver replied bulk yards are continuously changing their water and questions where this water goes.

It was asked if it is from bilge pumps that are situated in the keel of the ship and oil or fuel in that area and is pumped into the ocean.

Ms. Carver agreed with him but she noted Ballast Water is totally separate from bilge.

He noted he had spent a lot of time in ballast tanks and they are basically very clean.

Ms. Carver replied she has heard his perspective and others. She noted hull inspectors have stated they wade in mud up to their knees. She further noted it probably depends on the route of the ship, where they take up water and how the tanks are cleaned out. It is very important that what comes out of the bottom of the tank is handled appropriately.

He noted not all ships are the same.

Ms. Carver agreed it depends on the ship.

Ms. Carver noted the Phytoplankton taxa – geographic affiliation and noted this is the answer to Mrs. Klein’s question is it a native or non-native species. From the 423 Phytoplankton taxa studies there were 187 Indigenous (native) with a possible 10% being harmful, 104 Non-indigenous (non-native) with a possible 13% being harmful and 132 Cryptogenic (unknown affiliation) with 17% being harmful. She noted of the Non-indigenous species most of them were warm water species but it is unknown whether they would survive because there is not a lot known about the survival of species introduced into our environment. She further noted of the Cryptogenic species there is not enough information known as to whether they are Indigenous or Non-indigenous as it was not listed in the Phytoplankton index or it could not be fully identified.

Ms. Carver noted she would now discuss the subgroups of harmful taxa (questionable percentages) from each of the four categories, which are as follows:

- Indigenous – Harmful taxa (IND-HARM)
 - Amnesic Shellfish Poisoning (ASP) such as *Pseudo-nitzschia fraudulenta*, *P. seriata*, *P. multiseriata*, *P. pseudodelicatissima*, *P. delicatissima*
 - Diarrhetic Shellfish Poisoning (DSP) such as *Dinophysis acuminata*, *D. norvegica*, *D. rotundata*, *D. tripos*, *D. punctata*
 - Fish-kills such as *Chaetoceros convolutus*, *C. concavicornis*, *Dictyocha speculum*
- Cryptogenic – Harmful taxa (CRYP-HARM)
 - Azaspiracid toxins such as *Protoperdinium crassipes*, *P. curtipes* (?)
 - Poalytic Shellfish Poisoning such as (PSP) *Alexandrium* spp (?)
 - Unidentified cysts and microzooplankton
- Non-indigenous – Harmful taxa (NIND-HARM)
 - ASP such as *Pseudo-nitzschia subpacifica*, *P. australis* (?)
 - DSP such as *Dinophysis acuta*, *D. caudate*, *D. fortii*, *D. mitra*, *D. pulchella*, *D. dens*, *Dinophysis* sp
 - PSP such as *Gonyaulax birostris*, *G. turbynaii*
- Non-indigenous taxa – (NIND – Risk?)
 - *Cymatosira lorenziana*
 - *Ceratium arietinum*

Ms. Carver noted the Non-indigenous category is divided into two groups. She noted of the Non-indigenous taxa – (NIND – Risk?) which most are warm water species and not actually known to be harmful but because they are non-native there is a question of whether they can become disruptive if introduced to the environment.

Ms. Carver noted the Non-indigenous taxa – (NIND – Risk?) are warm water non-native species, which do not have a reputation of being harmful. She noted there were live cells in the Ballast Water sampled but not if the water was 289 days old. She further noted in several instances they found open ocean species in Ballast Water but we don’t see them on the coast because they don’t survive there.

Ms. Carver noted the origin of Non-indigenous and/or harmful taxa was determined. She noted they are basically coming from the Northeast, our zone (Zone A). She further noted the bulk of the species sampled came from our zone and they divided the number of species by the number of samples for comparison to determine which zones may be of high risk.

Ms. Carver noted the same comparison on Non-indigenous and/or harmful taxa per sample was done on Ballast Water that had been exchanged and they compared Ballast Water from

the Port with Ballast Water that had been exchanged in the Open Ocean. She noted the results were surprising because it was believed the numbers of species would decrease with the Open Ocean exchange but in actual fact there was no decrease. She further noted it may have changed the type of species present but in terms of Phytoplankton you have not eliminated the risk of introducing potentially harmful taxa.

Ms. Carver noted they questioned the cells in the Open Ocean samples and it was determined that a mixed Bloom of multiple species of *Pseudo-nitzschia* spp (confirmed by SEM) had occurred in October off the Scotian Shelf where the exchanges were being done and picked up by ships traveling and discharging into Placentia Bay. She noted this is a concern because *Pseudo-nitzschia* will stay offshore and bloom but they are being carried into port and being discharged. She further noted the Bloom was happening at this time of the year and it may not happen at any other time but there is the consideration that the Bloom offshore wouldn't normally come inshore unless they were blown in on waves carried by Pacific winds. She noted some of the species were native and some were non-native species.

It was asked if these species were picked up in the Bay of Fundy.

Ms. Carver replied no, they were picked up offshore.

It was asked offshore where.

Ms. Carver replied off the Scotian Shelf in the Gulf Stream float water.

It was asked if they are not off the Coast of Maine.

Ms. Carver replied no. She noted in that same period they did look at some samples from the Maine Coast and they also had a Bloom of *Pseudo-nitzschia*, which in some cases was being picked up and exchanged.

An earlier point being that the great exchange of water in the Bay of Fundy i.e. the high tides and asked if this really does not effect the Bloom.

Ms. Carver replied if there is a Bloom of *Pseudo-nitzschia* on the Maine Coast it may stay there or it could circulate around as well. She noted these things drift around and intense Blooms tend to occur offshore in zones that don't affect shellfish. She further noted ships may be picking them up and bringing them in on occasion. If shellfish are being monitored they should be aware that in Placentia Bay potentially there is a lot of Phytoplankton being dumped by those ships and there should be some monitoring.

Ms. Carver noted perhaps for the other 11 months of the year everything is fine. She noted these are scientific issues and it is something to keep in mind. Just because you do an Open Ocean exchange does not mean the problem may be reduced.

Ms. Carver noted the Zooplankton taxa as follows:

- Total taxa – there are 79 species of Zooplankton taxa
- Diversity – 24% >10 taxa/sample, max 17 taxa/sample
- Abundance – 44% >10 individuals/liter, max 732 individuals/liter

Ms. Carver noted 50 liters of Ballast Water was sampled and it is her opinion the number of Zooplankton taxa is underestimated. She noted more water was probably needed for sampling to determine the taxa. She further noted part of the problem is a net is needed to haul through the Ballast Water tank but to do this a hatch cover needs to be opened which is difficult depending on their condition. She noted because of this the numbers for the Zooplankton taxa are not as representative of species as the Phytoplankton taxa.

Ms. Carver noted the Zooplankton abundance by ship type as follows:

- Bulk carrier – 8.7 individual/liter
- Tanker carrier – 9.6 individual/liter

- Container carrier – 8.5 individual/liter
- General Cargo carrier – 7.5 individual/liter

Ms. Carver noted the Zooplankton abundance by origin tends to be higher in Zone A but in all the numbers are not high.

Ms. Carver noted the Zooplankton abundance by water type Port, Coast and Ocean. She noted port water was compared with exchanged water and the number of cells did not fall considerably. She further noted there are still a lot of live species found in that Open Ocean exchanged Ballast Water.

Ms. Carver noted the difference compared to the geographic affiliation of the Zooplankton taxa there were no non-native taxa observed. She noted of 79 Zooplankton taxa she found there were 68 Indigenous and 11 Cryptogenic taxa.

It was asked when you say she do you mean the company.

Mr. Mallet replied Mallet Research Services did the Phytoplankton study and Sprytech Biological Services did the Zooplankton study.

Ms. Carver noted that Zooplankton study is not her area of expertise and these are not her findings.

Mr. Stanton asked when they do these studies on Zooplankton if they find an egg what to they do. He noted they would not be able to classify it because it is hard to classify an egg.

Ms. Carver replied it would go into the Cryptogenic category because they would not be sure what it is.

Mr. Stanton asked if they didn't know what the egg was how would they know if it was native or non-native.

Ms. Carver replied this is true and she asks the same question.

Mr. Mallet replied that is why it is listed as unknown.

Mr. Stanton asked if you don't know what it is how do you know whether it's indigenous or not.

Ms. Carver replied she stated she did not see anything that she knew was Non-indigenous.

Mr. Stanton asked if that is why she just assumed this.

Ms. Carver replied that is correct. She noted it is possible that another analyst could take the same data and see a different classification.

Mr. Mallet replied from the 79 species that were looked at 11 of them were classified as unknown, which meant they were not found in their data bank.

It was noted that you can't identify something if you don't know what it is.

Mr. Stanton noted looking at this Zooplankton as far as he knows these are larva and one celled animals that move around the environment

Ms. Carver replied with the multi-cells, a lot of them are copepods.

Mr. Stanton asked if it hasn't got to the larval stage yet, is an egg do you classify it or do you say it isn't Zooplankton.

Ms. Carver replied it would be called fish egg by its size. She noted Mr. Stanton is right and this is part of the problem with Zooplankton. Often in early stages you cannot tell what it is and she would have to defend her classifications accordingly.

Mr. Klein asked if no Non-indigenous taxa were observed is it true to the point of her analysis that she did not necessarily know what she was looking at.

Ms. Carver replied this is correct.

Mr. Klein asked if she was not competent to make a judgment.

Mr. Stanton noted this is why she placed in it the unknown designation.

Ms. Carver replied no it does not mean this.

Mr. Klein replied she can't make a no known Indigenous if you don't know what the species are and 11 of 79 species is a significant percentage.

Ms. Carver replied he could certainly argue that point.

Mr. Klein replied it is not a question of arguing, that is the statement that was made.

Mr. Mallet suggested we return the discussion, to the previous topic. He noted in that case you would have native, non-native and unknown affiliations.

Mr. Klein replied he is concerned with the statement that was made, as it seems to be meaningless in light of the discussion.

Ms. Carver replied she did not see any species that she recognized as being non-native.

Mr. Klein asked if she saw species that she did not recognize would it end up in that classification.

Ms. Carver replied if she could not identify the species because it was a larvae, egg or some level where you can't determine the species it would be placed in the Cryptogenic category (unknown affiliation). She noted that this is why you need to know where the water came from and what exists at that port.

Mr. Klein noted that is why he asked the question.

Ms. Carver noted that is an important aspect and in that sense it was not done as part of the study. She noted these species may be a problem in other ports and they are aware of what it looks like at what stage and then specific risk concerns could be identified from that end.

Mrs. Klein asked is it she or the company Ms. Carver is referring to only her eyes that were looking at the slides.

Ms. Carver replied she was looking at the original sample, a fixed sample.

Mr. Mallet replied she did the analysis.

Ms. Carver replied she did the identification and she had a list that she would refer to.

Mrs. Klein noted she is trying to understand and asked is it a slide.

Ms. Carver replied it is an actual organism.

Mrs. Klein asked if the organism is still alive.

Ms. Carver replied no they are not alive. She noted they are fixed

Mrs. Klein asked if they are fixed live.

Ms. Carver replied they are fixed in fluid, in water.

Mrs. Klein asked if only one person was looking at these slides and in the case of Mallet Research Services two pairs of eyes were looking at the slides.

Ms. Carver replied yes.

Mr. Stanton asked how do you determine what is a harmful species. If it kills fish that is one thing but is it only harmful if it kills things or is it harmful if it displaces indigenous species.

Ms. Carver replied if it is disruptive that would be harmful. She noted their concern is if a species produces toxins or kill things.

Mr. Stanton noted there is certain species of fish that could be brought in that would eat all of the herring, then all the cod and then all the whales would die. He noted it wasn't really harmful to the cod but the effects of it killed the cod, it was a harmful species in a round about way.

Ms. Carver replied if there was any history, she would have had to keep a list of everything she saw and if she didn't know she would check the literature to see if there is any history of those species doing what Mr. Stanton stated. It would be asked does that species have any

history anywhere of being a problem and she noted it does not mean that you can't anticipate potential problems. It doesn't cover every eventuality.

Mr. Stanton asked if they have ever had the same problem as with African bees. He noted they brought bees here and it was stated they would never over winter in Canada but they bred with native bees and did over winter. He asked do you know how likely it is that a similar species for example from Australia can breed with species from Nova Scotia and produce a hybrid. He asked is it likely or is it extremely unlikely.

Ms. Carver replied she does not know.

Mr. Mallet replied the ecology of the species being introduced to the environment and how they actually develop is totally unknown.

Mrs. Klein replied in some cases it is not unknown. She noted the green crab would be an example of this and that it would not survive in our colder waters.

Ms. Carver replied she looked for green crab larvae in the samples, there were none found.

Mrs. Klein noted she believed the question Mr. Stanton was trying to make was are there species that we don't really know the impact of their evolution.

Mr. Klein noted beaver in their own environment are not harmful and would not be classified as such. He noted putting them in an environment other than where they normally are would cause problems. Identifying a species as harmful, he asked not harmful where.

Mr. Stanton replied Ms. Carver shouldn't feel we were picking on her because it is nice for somebody to say they don't know, as it would be suspicious of her if she said she did know.

Ms. Carver agreed this is the problem there is so much that they don't know. She noted this is not much analysis and she basically looked for things such as crab larvae because they are of concern along the US coast. She further noted the species list is in the report and she is not questioning her science. We don't know about a lot of species because there is no data and we can't make predictions.

Mr. Stanton noted there might be a new lobster disease in Eastern US and they have no idea what causes it but the lobster catch is declining and the lobsters are dying in that area. He noted the ships that will be coming here are picking up Ballast Water in that area and you probably couldn't tell us if this is a virus or whether it's in this water or not because they don't know what is causing the disease and we are afraid of what we don't know.

Ms. Carver replied diseases are difficult because often they don't know what to look for.

Mr. Mallet replied in the case of the oyster we know what it looked like when it manifested but we do not know what it looks like in its different stages.

Ms. Carver noted if they were looking for it in Ballast Water they wouldn't know what to look for because they don't know the life cycle of this disease.

Mrs. Klein noted as a layperson what your more interesting point is simply that the exchange of Ballast Water in the ocean, bringing it to shore is the same percentage as other harmful species.

Ms. Carver replied yes.

Mrs. Klein noted the fact that a tanker shows up and empties Ballast Water in port obviously has an effect on the local ecology.

Ms. Carver replied potential effect, yes.

Mrs. Klein replied that it has to have an effect.

Ms. Carver noted unless everything dies.

Mrs. Klein asked if this is in port.

Ms. Carver replied no, it could be live but for temperature and salinity conditions if you bring water in from Southern US.

Mrs. Klein replied off the coast of Maine one cannot assume that if the environment is slightly colder.

Ms. Carver replied the salinity is probably not much different. She noted it would depend where the ship is coming from and Tanker carriers move a lot of water around.

Mrs. Klein noted people doing a lot of business are not going to say I'm going to keep my boat offshore for 6 weeks so that everything dies.

Ms. Carver replied of course not commercial traffic has a tight schedule. She noted what has been shown about exchange might suggest that Open Ocean has no value but this is not what she is trying to say. She noted it is the only thing we have that may reduce the likelihood of moving an unknown organism.

Ms. Carver noted that the coastal water has a host of things in it.

Mrs. Klein replied but your own study doesn't support this.

Ms. Carver replied she has not spoken of a lot of the coastal species such as crab larvae. She noted the things you pick up offshore even though you may have the same number of species there can be different species present. She noted in her case she is speaking of toxic Phytoplankton and something the shellfish growers manage around but it's not the same level as speaking of disruption such as a disease like MSX where it has basically wiped out the whole industry. She further noted these issues are critical and all of the coastal species that we don't want to see. The only thing we have at this point until we have Ballast Water treatment technology is an Open Ocean exchange to try and reduce that risk. We don't have enough data at this point and it may be very effective at reducing or eliminating the risk of introducing species and diseases. That Open Ocean exchange is very important even though it may prove in the long run to not be that effective, it is our only ammunition at this point in time.

Mr. Stanton asked is there a way you could distribute the discharge of Ballast Water differently because it sounds to him as if when they are coming into Halifax, Nfld or anywhere around here and could they not dump this in one basic area around the world, mix it together and pick it back up again. He noted instead of having invasive species aboard ship from the US you have one from Australia, one from Japan mixed together in the warm water of the Open Ocean where they are likely to survive and who knows what will happen when you exchange Ballast Water from that big soup because you are dumping it in one spot.

Ms. Carver asked if he meant the harbour.

Mr. Stanton replied no when they come close to the 2000 meter mark and they start dumping the Ballast Water and if they circle from Europe they are coming into the mouth of this Bay by the same route as ships that are coming from down South. He noted they are all coming to the Open Ocean to drop their Ballast Water and pick up more.

Ms. Carver replied there is the issue of dilution in regards to the greater than 2000 meter depth. She noted he is saying they are all in one zone but if you actually worked out the chances of picking up Ballast Water from the last ship it is highly unlikely.

It was noted Ballast Water exchange occurs over a 40 – 50 mile distance.

It was noted the ship 50 miles behind him would then pick it up.

Ms. Carver replied she did not wish to comment; there is no data for that scenario.

Mr. Stanton noted the only thing he can go by is that a lobster carries eggs and dumps them, they float in the water column for 110 days and if other species can float and they are mixed

together and surviving on the surface for 110 days and if 200 ships take on Ballast Water it is likely they won't get many of them but is there some way to tell the ships to spread this out. He noted there is no way to do this if they are all coming into the same area to do Ballast Water exchanges.

Ms. Carver replied that this is some of the information they are trying to determine.

Mr. Stanton noted when the traffic hits the Bay of Fundy they are in the shipping lanes.

Mr. Mallet noted the issue of mid ocean exchange is contradictory and a lot of studies have shown mid ocean exchange does reduce the species. He noted the studies show it is the right thing to do and that when they did this study it was done in the fall, there was a big bloom seen on satellite which somewhat changed the nature of this study. He noted Open Ocean exchange is a positive thing to do.

Ms. Carver noted this is the reality of the study Mallet Research Services performed and she noted in terms of if you are monitoring shellfish for toxin you need to be aware where Ballast Water is discharged is potentially harmful and there are species that could bloom and be a problem but that doesn't mean that Open Ocean exchange is useless in that sense. She noted in some instances they are required to do Open Ocean exchange such as Vancouver and Australia. She further noted they spoke with scientists on the West Coast and looked at ships from Japan that did Open Ocean exchange and by the time they got here there was very little there. She noted it does work but the particular routes and time of year they were looking at we were seeing a risk for toxic Phytoplankton.

Mr. Stanton asked if this is plants.

Ms. Carver replied yes.

Mr. Stanton asked if they would not tend to be at the surface with their larval stage like a Zooplankton. He asked if they stay at the surface for all of their lifecycle.

Ms. Carver replied yes they are fully planktonic in that sense. She noted there is the perception that toxic Phytoplankton hang along the coast and offshore and that's fine but that is not the case and that is why we need to be aware. She noted with Zooplankton she felt that she was not seeing any high-risk species coming in the Ballast Water in the samples that she looked at. She further noted there is a lot of information that is not available.

Mr. Stanton noted a lot of those species might have been at a stage in their lifecycle where they would not be at the surface so at that time of year you would not get them in Ballast Water but at another time of the year they could be present.

Ms. Carver replied that was correct and that another study could be performed and there could be a number of species present that could potentially be a problem.

Mr. Stanton replied that it is a useful study but it needs more. He noted this is just a snapshot.

Ms. Carver noted when they applied for the contract they noted in order to do the study scientifically and appropriately with 100 ships that it should be done with 25 ships per season.

Mr. Klein asked if the methodology actually swayed the results.

Ms. Carver replied it is a snapshot of a specific period.

Mr. Klein asked if it is correct that this data is good only for the calendar period in which the study was done and no inferences about this data should be applied to any other part of the year.

Ms. Carver replied that is correct.

Mr. Klein asked if they were narrowed by the customer to perform say a one-month snapshot look with no inferences about any other period. He asked if that would be an appropriate comment for your report.

Ms. Carver replied she agrees with his comment but she does not want him to put words in her mouth however she is not stating that the customer constrained them.

Mr. Klein replied she just said the customer constrained them.

Ms. Carver replied she is aware of that but it was noted anecdotically. She noted this is how funding works and if they had had more control they may have done the study chronologically. She further noted for future studies it should be requested that they be done on a seasonal basis in order to get a better picture of what happens throughout the year.

Mr. Mallet noted the previous study was focused in a different time of year (July - August) and this study was from September – March.

Ms. Carver noted with the July – August study she did not see any Non-indigenous Phytoplankton. She noted again it is limited to that area and that future studies should learn from this study.

It was asked how did Mallet Research Services happen to make this presentation tonight.

Mr. Buxton replied they were requested to come here by Global Quarry Products because the Community Liaison Committee requested that the Proponent find someone to make a presentation because there have been questions at the CLC meetings in respect to Ballast Water. He noted they did research as to who could present the information not from a regulatory perspective but from a scientific perspective and Mallet Research Services were recommended.

Mrs. Klein asked if this is a paid presentation.

Mr. Buxton replied of course it is. He noted Mallet Research Services is a private company who are consultants and the Proponent is paying for them to be here at the request of the CLC.

Mr. Mallet noted much like they received a call from Transport Canada and were asked could they do the study.

Ms. Carver noted they were called to talk about the study and that is all that she is aware of.

Mr. Buxton noted they have not been told why or who is in this room, they have been asked only to make their presentation.

Mrs. Klein noted she was asking how they arrived at Rossway.

It was asked of the areas that they were asked to observe how long has shipping been going on.

Ms. Carver replied in the Halifax area since 1759.

He noted shipping has been going on for hundreds of years and that 11 of 79 species were determined as unknown. He felt that this was a very good number.

Ms. Carver replied this is in the Ballast Water. She noted this is not what is in the ocean.

He again noted shipping has been going on for that length of time and asked if 11 of 79 species determined as unknown is a good number.

Mr. Mallet replied this is what is in the ships not what is in the Port.

He asked it is in the Ballast Water itself.

Ms. Carver replied yes it is the survey of waters coming in.

He replied maybe he was after the exchange rate.

Ms. Carver noted this is the next step of the study the question being what happens when that water goes into the water around a ship.

He asked if this is the first kind of study like this that has been done.

Ms. Carver replied yes for our zone, for Atlantic Canada.

He asked if she would say that number is good for the amount of shipping that goes on here.

Ms. Carver replied that it only takes one bad species and if it was in that water that was discharged perhaps you could have a problem.

He asked wouldn't we have already seen that problem.

Ms. Carver replied if it survives Ballast Water. She noted it has to be picked up, survive going through the pump, survive transport in the tank and then it has to survive the winter. He noted you would think that in the number of years shipping has been going on that this would have been seen by now.

Mr. Mallet replied this is very hard to ascertain. He noted that there are Non-indigenous species that are showing up but it has not been ascertained how they were brought in. He further noted that you can't say that Ballast Water is responsible because it could have equally been a cruise ship that transported them as they traveled through the Chesapeake Bay. He asked how do you assign the risk and answered it is almost impossible to do this.

Mr. Stanton noted as was previously stated that tankers carried oil and water in the same tanks and the same species that survived now would not have survived then. He noted ships are faster now so we can't look behind and see what's accurately known.

Ms. Carver noted Mr. Stanton's point is correct. She noted there is greater concern because of the amount, volume and speed of shipping and as you can see age is critical to some species.

Ms. Carver noted the effectiveness of Ballast Water exchange as follows:

- At certain times Ballast Water exchange may increase the risk of introducing Non-indigenous Phytoplankton taxa as well as promote the dispersion of harmful Indigenous taxa
- although Ballast Water exchange did not reduce the abundance/diversity of Zooplankton, no Non-indigenous taxa were recorded.

Ms. Carver noted the risk management, documenting origin and volume of Ballast Water discharged with a compilation of data from Ballast Water Report Forms. See example table below. She noted the Ballast Water Report Form contains this information and it must be completed and the data is being compiled from this data. She noted cubic meter refers to 1000 meters. She further noted the origin of Ballast Water is just as important as the volume of Ballast Water and this information is coming together.

Compilation of data from Ballast Water Report Forms (example)

Location of port in Atlantic Canada	# Ships discharging	Types of Ships	Est. discharge (cubic meters)
Saint John, NB	262	Mixed	----
Come-by-Chance, Whiffen Head, Nfld	170	Tank	3,400,000
Halifax, NS	158	Mixed	----
Pt. Tupper, Port Hawkesbury, NS	134	Tank, Bulk	2,280,000
Hantsport, NS	119	Bulk	1,190,000

Ms. Carver noted the Risk Management, improving Ballast Water management guidelines as follows:

- discourage discharge of water originating south of Cape Cod in sensitive areas including Bay of Fundy, Bras D'Or Lakes, Gulf of St. Lawrence
- recommend release of all non-essential ballast prior to docking
- identify specific risks associated with uptake of Ballast Water in Atlantic Canadian ports (e.g. Phytoplankton species which causes PSP)

Ms. Carver noted Risk Management, education/research as follows:

- develop information package/guidelines for ships' crews to help in selecting which tank to discharge based on origin, age, etc.
- identify seasonal risk patterns (potential invasive species) associated with the uptake/discharge of water from various regions
- assess survival potential of organisms discharged into Atlantic Canadian waters
- encourage development of Ballast Water treatment technology.

Ms. Carver noted that we need to identify species and determine what are the chances of it making it if they are discharged into our waters. She noted at this point research money is going to the development of Ballast Water treatment technology and that any implementation takes time. She further noted that if they found a method that works to actually refit the ships or mandate and fit it on the ships it would take 10 years if not longer for all ships to be working on this.

It was asked if all ships would be refitted in ten years.

Ms. Carver replied it is highly unlikely, as they haven't yet found a technology they are happy with.

It was noted they need to try to find a solution.

Ms. Carver replied that this is recognized and there have been a number of trials but it is still in the submission stages.

Mr. Stanton asked if you could use poisons in the Ballast Water.

Ms. Carver replied you can't put poisons in the water.

Mr. Stanton noted that you don't know what you might be killing in the area.

Ms. Carver replied it would have to be environmentally friendly.

Mr. Stanton noted in the past there was something used to kill the lice on trout/salmon and it in turn killed the larva in the lobster. He noted that they would need to watch that if they fixed one problem not to create another.

Ms. Carver replied this is why we have these environment and treatment technologies. She noted water that has been treated with chlorine and neutralized, the cost has to be factored because it may not really be practical.

It was asked if there would be a way they could develop a filter that would filter that would catch those small organisms.

Ms. Carver replied you could probably catch a lot of organisms but you have these disease concerns and that's a very different concern.

Mr. Mallet replied they are looking at using a combination of filtration and UV treatments.

Ms. Carver noted another treatment they are looking at is onshore storage of clean Ballast Water and that the water could be treated there.

It was noted that this would be similar to an oil filter on a vehicle.

Ms. Carver noted these are combinations that are being looked at. She noted that this has addressed the concerns but these are the results of this study.

Ms. Nesbitt noted the reason they are here is because there is a potential development in Whites Cove, which is a quarry operation on the Bay of Fundy side, which is good lobster fishing grounds. She noted the concern is that the product being shipped between Whites Cove and New Jersey by Bulk carriers crossing the Bay of Fundy and what people are concerned about is that we don't want any harmful organisms or shell diseases brought to our area by their Ballast Water. She asked in your scientific opinion should there be red flags going up and she noted that this is why you are here. We were hoping to get answers to our questions.

Ms. Carver replied what she would want to know in your case is what is in that port in New Jersey, what sort of species are in that zone that you don't have.

Mr. Stanton noted that the lobsters are all dying off.

Ms. Carver replied that would be a concern and the more you know the better, but she can't say there should be red flags because she does not know where that water is coming from. She noted that is what she would want to find out.

Mrs. Klein asked what port is it coming from and does anyone in this room know the answer.

Mr. Buxton replied some but not all of the ships would be going to Perth Anvoy, others to NY.

Mrs. Klein asked NY harbour only.

Mr. Buxton replied they may go to other places but certainly no further south than that.

Ms. Carver noted there is a lot of information on invasive species and people working on them and they could talk to someone in that field or there is information on the web. She recommended they make contacts in those ports to get a profile of what the risks are and compile that information. She noted that is all she can recommend.

It was asked what website she would recommend.

Ms. Carver replied the Smithsonian has a website and she noted that she is not willing to speculate on what species are there. She noted this is not what they did and she is not a consultant per say she is a scientist so she can only talk about the results of what they did.

It was noted the Gulf of Maine route would be a good group to contact to look at hazards.

Mr. Stanton noted he had tried to get in touch with as many government agencies as he could to discuss this disease but none of them seem ready to comment on it but the fishermen's group he contacted in Massachusetts tell him that we don't want it. He noted that their catches are down in some cases by as much as 80%.

Mr. Mallet asked if he meant this year.

Mr. Stanton replied it started three years ago and has gotten worse.

Ms. Carver noted it is also a question of how these things are transferred.

Mr. Stanton replied we were thinking that if a ship went down there and picked up ballast and picked up diseased lobster larva and deposited it here it would not be good.

Ms. Carver replied it is something to think about.

Mr. Klein asked Mr. Buxton if it is the intention of the Proponent to have the shipping company publish their Ballast Water Management Plan for the individual vessels that are likely to be here along with any history of violations.

Mr. Buxton replied we will hire a properly licensed and certified shipper and they are required to comply with all regulations of marine transport.

Mr. Klein noted that doesn't answer his question and asked will you as the Proponent publish this.

Mr. Buxton replied no, we would have no jurisdiction to do this.

Mr. Klein replied you would hire these people to do work for you and yet you would not be able to compel them to publish what is a public document. He noted the guidelines for the control of Ballast Water to be discharged is a public document and what he is asking is would you require them to provide this document to the general public

Mr. Buxton replied no.

Mr. Klein replied thank you and stated that we would have no way of knowing what methods they are going to use or whether or not they have been cited for violations.

Mr. Buxton replied what we would know is what everybody else knows and that is whether or not they are complying with the regulations that are in place.

Mr. Klein noted if you are not going into the Gulf of St. Lawrence or the Great Lakes you can do with your Ballast Water in this area whatever you wish.

Mr. Buxton asked if anyone has expressed concern over the 119 ships going into Hantsport, which deliver within about 10 miles of the proposed discharge point for crushed rock. He noted the gypsum goes within 10 miles and perhaps even closer where there are 119 ships going in and out of Hantsport per year and have been for fifty odd years.

Mr. Stanton replied that we had no idea they were dumping that stuff but we are concerned now.

Mr. Buxton replied the point here is if you want the regulations to change or put in place then Transport Canada Marine Safety Division is the place to go.

Mr. Stanton replied we don't want any more ships until the regulations are changed.

Mr. Buxton replied unless the regulations are in place there is nothing he or anyone else can do.

Mr. Stanton replied they cannot give a permit out to the terminal and the ship can't come here.

It was noted the ships are already coming here.

Mr. Buxton replied there is nothing in the regulations that say ships cannot come in.

Mr. Stanton questioned ships are coming into Whites Cove, he fishes off there and would run them over. He noted they are not coming there yet because the terminal is not there.

Mr. Buxton replied they are going into Hantsport.

Mr. Stanton replied the Hantsport ships will not be coming into Whites Cove and he noted according to Mr. Buxton they are going to hire Canadian Steamships. He noted Canadian Steamships do not run ships there.

Mr. Buxton replied that he is saying that the gypsum from Hantsport is discharged within 10 miles of where gravel will be discharged in NY and New Jersey and he noted those ships have been going between Hantsport and those ports for well over 50 years.

Mr. Stanton noted this disease showed up 2 or 3 years ago and we don't want it.

Mr. Buxton replied you have to go to Transport Canada and deal with regulations.

Mr. Stanton replied then stop the problem.

Mr. Buxton replied Transport Canada does not look at specific ports.

Mr. Stanton asked if they don't care about the problem. He then left the meeting.

Mrs. Klein asked if what he is saying is that the Proponent is not responsible for something that Canadian Shipping does. She asked if it is ok because it is not part of the regulations.

Mr. Buxton replied what we are required to do and what we will do is we comply with every regulation that is in place whether it is with Transport Canada, DFO, and NSDOEL. He noted if people don't like the regulations what they have to do is to get the regulations changed or added to and then we must comply with those.

Mrs. Klein stated but Global Quarry Products is not interested in the environment.

Mr. Buxton asked why do you think we are going through a full environmental assessment or why do you think we are interested in having these meetings.

Mr. Klein replied he thinks the Proponent is just going through the motions. He noted he has read their application and they have said they are not going to let any silt go into the Bay and he has watched tons of it go in there in the last two weeks. He further noted that they can't seem to engineer a reasonable silt containment system for a small quarry operation much less as do anything as complicated as manage Ballast Water.

Mr. Buxton replied that we are not here to discuss that.

Mr. Klein noted that these are the kinds of things that are disturbing and their record of performance currently at the site is abysmal and he does not gain any confidence sitting here listening to Mr. Buxton dodge.

Mr. Buxton replied he would not comment on that. He asked if Mr. Klein would like to make a written statement

Mrs. Angrignon asked Mr. Klein where he is from.

Mr. Klein replied Sandy Cove.

Mrs. Angrignon asked where in Sandy Cove.

Mrs. Klein replied 2 Old Post Road.

Mrs. Angrignon noted they are new residents and not year round residents.

Mrs. Klein asked what is the implication of that question.

Mr. Klein asked if she thinks that his issues about health and safety in this area are excused because he is from the US.

Ms. MacAlpine asked if Mr. Klein is concerned about the project in Tiverton.

Mr. Klein replied not to the extent that he would be about having enough stone to cover this road at 12 feet leaving here every year. He noted the activity there is no comparison to container shipping. He noted he has seen what Vulcan Minerals has done in open pit quarries in his country.

Ms. MacAlpine asked if Mr. Klein is speculating.

Mr. Klein replied there are regulations in his country (US) that don't exist in Canada and the reason these companies are coming here is because they can't do what they would like to do here there.

Ms. MacAlpine noted we have our regulations and guidelines.

Mr. Klein replied you really don't. He noted that Canada has a swaying structure that in the US is lower than the fees for any given activity.

Mrs. Angrignon asked why do you find us attractive here.

Mr. Klein replied he likes the weather, the people generally and he likes (undistinguishable).

Ms. Nesbitt noted that we came to discuss other issues and noted we should move on.

Ms. Harnish asked in regards to Canadian regulations it is different in the US for Ballast Water.

Mr. Klein replied absolutely.

Ms. Harnish asked if ships from the NY area can take on Ballast Water in the harbour.

Mr. Klein replied they take on Ballast Water in the harbour although they may not dump their Ballast Water in the harbour. He noted the rules that are applicable for the Gulf of St. Lawrence and the Great Lakes have been globally applied.

Mr. Mallet asked Ms. Carver if she had an answer to that question.

Ms. Carver replied US guidelines for Open Ocean exchange is mandatory as opposed to voluntary and that is a key difference. She noted that if you are coming from Baltimore they request that you don't do an exchange in US waters but they prefer you do it in Canadian waters. She further noted ships have been doing it in an exchange zone in the Gulf of St. Lawrence that is causing some concern because the ships were not allowed to do their exchange in US waters and requested permission to do so in Canadian waters. We are trying to discourage that now but a lot of the shipping routes do not go into International waters and the problem being if everybody says that then no one is doing exchanges. She noted that the US are more active and Australia is very rigid because of problems.

Ms. Carver noted inter-coastal traffic is very difficult to come up with appropriate guidelines.

Ms. Harnish asked are there any other countries in Europe that have any type of treatment system.

Ms. Carver replied no they are not required but everybody is working on that.

It was noted as Mr. Buxton said we have to do something to change the regulations.

Ms. Carver replied that we could request that it be mandatory as it is in the US but where it is done is still an issue if you can't do it do they do it illegally or not at all.

It was noted by a guest that this presentation has opened his eyes because he was not aware that there was so much carried around.

Ms. Harnish replied we have no control over nature.

Mr. Klein noted an introduced species wiped out salmon.

Ms. Carver replied she is not sure if Ballast Water was the source of that problem.

Ms. Wilkins asked if Transport Canada told them why they were doing this study.

Ms. Carver replied in terms of risk assessment they need to know were there any Non-indigenous species or were a lot of crab larva coming from that Baltimore area, what is in that Ballast Water and what the potential risks are.

Ms. Wilkins was wondering if they gave her any hints as to their next step, their ultimate goal.

Mr. Mallet replied no because they will use this data to decide which way to go next. He noted that they are in the planning stages for the next study where they will board a gypsum ship and perform different ocean exchanges to see what happens. He noted that Transport Canada asked them to design the study and determine what types of questions needed to be answered.

It was asked if it is trial and error for them.

Ms. Carver replied yes they are learning along the way.

Ms. Wilkins was hoping that rather than have you come up with these studies so they can make more intuitive and knowledgeable suggestions that they were leaning more towards mandatory regulations.

Ms. Carver replied she thinks they are doing this in the long run and certainly Open Ocean exchanges is something they are working towards but there is the issue about where to do it.

Mr. Mallet noted that if the results had been that the minerals in the exchange had eliminated everything he thinks the result would have been that Transport Canada would say do the exchange. He noted that this study happens to be covering what most of the other studies are showing so they are left with the question of what to do next.

Ms. Carver noted what it did was prompt them to say that they need to put that energy into Ballast Water treatment because exchange is not sufficient it is not enough. She noted that she is not saying it is useless because the data supports it but at the same time there are risks associated with it given concerns about toxic Phytoplankton.

Ms. Carver noted there is not enough information for this area yet but there are groups working and researching.

Ms. Harnish asked if there was study of all the different ports in the Atlantic provinces of the harbour waters or bay waters and could they compare them to the different Ballast Water or bilge.

Ms. Carver replied that port surveys are becoming quite common in other areas of the world and they will get experts together where they do a survey and look at all the species that are there. She noted based on previous records from years previous they may have 20 new Non-indigenous species and then they look at Ballast Water patterns and see where and how species may have been introduced.

Ms. Nesbitt asked if there were any other questions.

Thanks is extended to Ms. Carver and Mr. Mallet.

Ms. Nesbitt noted prior to adjourning the meeting approval of the minutes of April 9 and April 30, 2003 needs to be addressed.

It was moved that these minutes be approved as distributed.

Mr. Klein addressed Mrs. Angrignon and he stated that she made a statement regarding those of us from away he replied that for every four households that come here we create one job and if you want to drive us off that's what you take with us. One job for every four households that come in here.

Meeting adjourned at 9:45 pm.

Next meeting date is to be determined and advised.

Minutes of Meeting of Community Liaison Committee

Nova Stone Exporters Inc/Global Quarry Products Inc

6:00 p.m. July 9, 2003

White's Point Quarry

Site Tour

In attendance: Cindy Nesbitt, CLC Chairperson
Christine Harnish CLC Member
Brian Cullen CLC Member
Mark Jeffrey CLC Member
Marian Angrignon
Elizabeth Robinns
Betty MacAlpine NSEI/GQPI
Paul Buxton NSEI/GQPI

Regrets: John Ivens CLC Member
Judy Carty CLC Member
David Graham CLC Member

The CLC Committee Members requested a tour of the White's Point Quarry to see how it was progressing.

Mr. Buxton gave us a group walk around of the site and explained in detail all the work that had been done.

People asked questions about the check dams and sediment ponds that had been put in place. Mr. Buxton answered these questions as they arose.

Ms. Nesbitt thanked Mr. Buxton for the tour and said it was very informative.

Minutes of Meeting of Community Liaison Committee

Nova Stone Exporters Inc/Global Quarry Products Inc

7.00 p.m. August 27, 2003

Rossway Community Hall

In attendance: Ms. Cindy Nesbitt, CLC Chairperson
Ms. Judith Carty, CLC Member
Ms. Christine Harnish, CLC Member
Mr. Mark Jeffrey, CLC Member
Mr. John Ivens, CLC Member
Mr. George Gavel
Ms. Judith Moorehouse
Mr. Eugene Stanton
Mr. Kemp Stanton
Ms. Genie Wilkins
Ms. Marilyn Stanton
Ms. Myrna Farnsworth
Ms. Debbie Smith
Miss. Mary McCarthy
Ms. Doreen Evenden
Mr. Fred Horner
Mr. Gordon Reid, NS Party
Mr. Lindsay Bagwell
Mrs. Marian Angrignon
Mr. Leroy Morrell
Mrs. Jill Klein
Mr. Rick Klein
Ms. Christie Bishop
Ms. Anne Ray/Stewart?
Mr. John A Johnson, landowner
Mr. Tim Wilson, CBC
Dr. Charles Watrell, Archeologist
Mr. Paul Buxton NSEI/GQPI
Ms. Betty MacAlpine NSEI/GQPI
Ms. Tammy Sanford NSEI/GQPI

Regrets: Mr. David Graham, CLC Member; Mr. Brian Cullen, CLC Member

Ms. Nesbitt welcomed those in attendance and introduced Mr. Wilson, an independent filmmaker under contract to CBC. She noted that Mr. Wilson is preparing a documentary about Digby Neck and the issues the community is currently facing.

Ms. Nesbitt asked if the CLC would accept the minutes of June 11, 2003 as printed.

Mr. Ivens motioned for their acceptance and all members in attendance agreed.

Ms. Nesbitt noted there is an outstanding issue that Ms. Stanton brought forward at the meeting in regards to a photo of siltation taken May 27, 2003 and asked if that could be addressed at this time.

Ms. Stanton replied she would like to have it addressed and that Mr. Klein brought the issue forward.

Ms. Nesbitt noted that the issue was not addressed and she believes there are those who would like to discuss the issue of containment and siltation. She noted people are concerned that if the quarry operation has not started and there is an issue of potential runoff what would it be like when the quarry operation does start.

Mr. Klein noted that the concern is water and silt runoff and if the existing pond is the primary pond the concern is once blasting begins there will be blast residue, nitrates and such which would be the components of nitric acid in a very dilute solution and this would leech into the ground water. He noted with the kind of rain we receive in the spring and fall seasons another blowout would take unsettled material straight into the Bay of Fundy and this area is part of Area 34, Lobster fishery.

Ms. Nesbitt asked if Mr. Buxton could respond to these questions.

Mr. Buxton replied that he had not responded to those questions at the previous meeting because that meeting had been dedicated to Mallet Research Services who came at significant expense to address a very specific issue. He noted this was at the request of the CLC and that the issue was Ballast Water. He further noted that he felt it was inappropriate to discuss other issues during their presentation.

Mr. Buxton noted in regards to May 25 - 26 there were complaints made to both DFO and NSDOEL that siltation was entering the Bay of Fundy. He noted on Monday, May 26 NSDOEL, Lovett Bladess, an inspection specialist from Yarmouth, came and examined the site and a culvert across the road. For the record the culvert is Nova Scotia Department of Transportation property. He further noted that Mr. Blades contacted him that afternoon and advised him there was not a problem with the quarry site but there was a problem with silt coming out of the culvert. On Tuesday May 27th DFO, Thomas Wheaton, Regional Manager for Habitat Management Division of Western Nova Scotia came out with Leslie Coollen, a Digby based fishery officer.

Mr. Buxton noted that there were discussions on the site and in particular Mr. Wheaton examined beach pools below and above high tide levels. He noted it was Mr. Wheaton's determination that there was siltation in the tide pools and on that basis there was an Inspector's Direction issued. He further noted subsequent to that and because the Proponent had concerns about the tide pools and how they would be regarded the Proponent engaged Dr. Brelinsky to study them, but this study was not available on June 11.

Mr. Buxton noted most of the tide pools debris is organic. He noted there is no evidence in the tide pools adjacent to the quarry that the material came from the quarry but there is abundant evidence that a very considerable amount of material has been coming down for a long period of time through the highway culvert. He further noted piles of gravel and silt are still there today.

Mr. Buxton noted since May 2002 the Proponent has been continuously monitoring the water coming out of the quarry onto the beach area. He noted the Proponent is allowed some limits under the terms of the quarry permit and they are: that no individual incident can produce siltation in excess of 50 mg/L and on a monthly basis the quarry cannot have an arithmetic mean in excess of 25 mg/L. He further noted copies of the permit had been distributed and those are the figures stated in the permit.

Mr. Buxton noted the maximum level from the quarry site either last year or this year is 33 mg/L on a single incident basis. He noted that for the highest month the arithmetic mean is 15 mg/L. In other words the limits set out in the quarry permit have not been exceeded. He further noted the CLC should be aware of and possibly set aside a meeting to discuss the total suspended solids referred to in the permit, 50 - single incident/25 - arithmetic mean total suspended solids (meaning everything that may be gathered at whatever stage the water has gone through from when it came down as rain until it enters the Bay of Fundy).

Mr. Buxton noted the Proponent was puzzled at some of the results when Dr. Brelinsky separated the total suspended solids in the tidal pools into organic and inorganic materials and interestingly in some pools the inorganic material was very small, 5 – 10%, in others it may have been as high as 40%. He noted they took samples from a stream along the north line of the quarry on the hillside where there has been no activity and found total suspended solids as high as 15 mg/L. He further noted it might be that if a result from the beach shows 20 mg/L that there is in fact 15-mg/L indigenous organic materials the stream has picked up on the way down to the beach.

Mr. Buxton noted monitoring has been stepped up in these other areas to get a better handle of the distribution of organic and inorganic material in the total suspended solid count.

Mr. Buxton noted that NSDOEL has visited the site on two occasions since and taken water samples and there is photographic evidence of them taking the water samples. He noted the Proponent has taken water samples at the same times and a comparison of the test results from the quarry and NSDOEL tests has shown that the results are extremely close. He further noted that PSC Analytical tested the Proponent's water samples that were taken within twenty minutes of NSDOEL samples.

Mr. Buxton noted the Proponent is following the Inspectors Directive on file, which requires twice a week monitoring of the site and it requires a monitoring report that is sent to DFO. He noted Leslie Coolen was down on one or two occasions in June and DFO has made no further comments on this issue. He further noted all the heavy rain at the beginning of August and in that time the settling pond has worked perfectly well with the water coming over the proper spillway and flowing through the three check dams. The results at the beach were far below the levels set out in the quarry permit.

Ms. Evenden understands this is a preliminary stage and that things will get more complicated regarding runoff and the type of runoff. She asked if Mr. Buxton is referring to tests being taken on a more complex type of runoff that might have nitrates or is this early stage runoff.

Mr. Buxton replied the question that was asked at the June 11 meeting was specific to that siltation runoff but he will answer her question. He noted the material coming from the areas that are cleared have a fairly significant amount of silt. He further noted for those who had walked the quarry site and saw rounded boulders coming out of the excavation this is a sign that this was a beach line and at some point in time the water level was much higher in the Bay of Fundy where the beach was probably below the basalt escarpment as it is seen today. There is

sand, silt and rounded boulders to a depth of 10 – 12'. In addition, the material scraped off the hillside (mostly 6" deep) and gullies had material that had significant amounts of silt.

Mr. Buxton noted the reason to be concerned is that silt is a lighter material capable of being easily transported by water. If the water is discolored it probably means you have a colloidal solution, discolored water with very little particulate matter in the water. For example, a large tank of water with a gallon of paint in it. Silt is the next heavier particle of material with clays being extremely fine, then silt, sands, gravels and rock, which are heavier. Silt is light enough to be transported by water. If you have a working platform in place with a crusher in operation and are transporting rock, washing material, etc. that material is now basalt dust which has a high specific gravity, it is heavier and that material settles fairly quickly. Crusher dust is a very valuable material and the sedimentation pond is there to stop particulate matter getting into the Bay of Fundy with a secondary function of collecting marketable material. He further noted when the settling ponds are cleaned out as required that material could be stacked in a containment area and can be shipped and sold.

Mr. Buxton noted the third point that Mr. Klein raised is what happens with non-combusted explosives. He is not an explosives expert and if the CLC would like to have an explosives expert speak he will arrange it. He noted his understanding from explosives experts is that the preparation of anfo as it is done today because of environmental restrictions and regulations means that you essentially get 100% consumption of the individual materials that make up the explosive and one is not allowed to contaminate the soil with that kind of material. He further noted that if they did contaminate the soil with that kind of material the Proponent would have very serious problems.

Miss McCarthy asked what is the filtration system within the dams that are placed in the ponds and are they permanent.

Mr. Buxton replied no, the spillway at the moment is a temporary spillway and the permanent spillway will be made of concrete. He noted the material that is there now is barrier material to collect any material that comes over the spillway to slow it down and get it to precipitate.

Miss McCarthy asked if they are filter dams.

Mr. Buxton replied he thought Miss McCarthy was talking about the material not on the check dams but in the spillway. He asked if she is talking about the check dams.

Miss McCarthy asked what is he referring to as check dams.

Mr. Buxton replied the check dams are the 3 small dams in the outlet trench.

Miss McCarthy asked what are the dams that are covered.

Mr. Buxton replied they are basically hay material in bales.

Mr. Klein asked if they are the ones that are actually off the 10-acre site. He noted if you were standing at the high tide line on the Bay of Fundy they would be facing the right.

Mr. Buxton replied that the quarry is not a square configuration.

Mr. Klein replied he is aware of where all of the property markers are.

Mr. Buxton noted they are temporary check dams that are simply put in place at this time because of the activity that is going on at the site. He noted that the permanent check dams would be designed slightly differently with different permanent materials. He further noted the permanent concrete spillway will have a weir across it to slow the water down over top that will be put in place at a later date and the settling pond will be lined with crushed rock.

Ms. Nesbitt asked if there were any other questions regarding the issues brought forward.

Mr. Klein replied he would like to remind people of the event that caused the complaint. He noted fishermen had observed a plume of mud exiting the left hand side of the site as per his description approximately ½ mile off the shoreline.

Mr. Buxton noted he had explained the technical process the Proponent went through and that that kind of allegation should not be discussed in this session. He noted if Mr. Klein wishes to make that sort of allegation he is free to do so. It was made in the newspapers and he noted the Proponent is in the process of a legal process with respect to those allegations and he cannot discuss those specific allegations at this meeting. If the Proponent decide to pursue a process Mr. Klein will have every opportunity to explain to other people his assessment and to make them in a different forum.

Ms. Nesbitt asked if there were any other questions.

Mr. Klein replied he would wait for the fall rains.

Ms. Nesbitt noted there was another concern in regards to the news coverage of a quarry accident in Halifax and people are concerned about the control of explosives. She asked how likely is that to happen here. She noted this is a concern of residents of the area and to the people who might be fishing along that shoreline.

Mr. Buxton replied that he is not aware of what the charges were in Halifax but he noted clearly someone made a major error. He noted that he couldn't speculate as to why that happened but no one wants a 100-pound rock coming through their living room wall, which is what he understands, happened. He further noted the charges that are contemplated for Whites Cove in order to keep within the guidelines for blasting in or near Canadian Fisheries waters are charges less than 100-pounds. He couldn't comment on the Halifax event because he does not know the distances, charges or whether the rock was thrown ¼ or ½ mile, as the article he read did not state this information.

Mr. Klein replied the article in the Chronicle Herald suggested the rock was 150 kilos and lobbed a mile over Hwy #102 into somebody's living room.

Mr. Buxton replied he was not aware of the amount of the charge or distance the rock was thrown.

Mrs. Klein asked could it cross Hwy #217 and land in Little River.

Mr. Buxton asked if this is from a 100-pound charge.

Mrs. Klein asked if he is saying it would only be a 100-pound charge.

Mr. Buxton replied the Proponent is not allowed to use any more than 100-pounds under the guidelines for blasting in or near fisheries.

Mrs. Klein asked if this is the guidelines for the 3.9 quarry.

Mr. Buxton replied under federal guidelines set out by DFO for blasting in or near Canadian Fisheries waters.

Ms. Nesbitt asked if this was regardless of the size of the quarry.

Mr. Buxton replied it has nothing to do with the size of a quarry. He noted anyone blasting in or near Canadian Fisheries waters has to meet guidelines that are set out very specifically. He further noted you are allowed to use larger charges as you move further away from water.

Mr. Klein asked if this is per hole.

Mr. Buxton asked for 100-pounds.

Mr. Klein replied yes.

Mr. Buxton replied yes, 100-pounds per hole, per delay.

Mr. Klein asked what is the total amount of the hole delay charge.

Mr. Buxton replied it depends on what you are doing at the time. He noted they could be 50, 60 or 70 pounds or if it is a tiny outcropping it could be 10 pounds.

Ms. Farnsworth replied we can't afford that situation in Little River; we don't get a second chance.

Mr. Buxton addressed the chair and noted he is surprised that no one seems particularly concerned about the village of Tiverton, the houses there are within 100 yards of recent blasting.

Ms. Farnsworth interrupted and stated not like the blasting planned for this quarry.

Mr. Buxton replied they were bigger blasts than what the Proponent plans.

Ms. Farnsworth disagreed with his statement.

Mr. Buxton noted they were bigger and that Ms. Farnsworth could check the blast sizes herself.

Ms. Farnsworth replied she has checked out a lot of things.

Mr. Buxton requested that she check the sizes of the blasts in Tiverton. He can assure her they were bigger blasts than what has been designed for the Proponent.

Ms. Farnsworth asked if the Tiverton quarry is as big as the quarry the Proponent intends to put in.

Mr. Buxton replied it has nothing to do with the size of a quarry. He noted we are talking about how close is a house. He noted when viewed from East Ferry you can see a group of houses in the village with a quarry amidst the houses, blasting rock and no one has said a word.

Ms. Farnsworth asked what is that rock for.

Mr. Buxton replied it doesn't make a difference what the rock is for.

Ms. Farnsworth replied it might not make a difference but it was for useful purposes, it was not going to the United States for no royalties.

Mr. Buxton replied that is not part of the argument and we are discussing technical issues here. He noted the fact of the matter is no one in the village of Tiverton complained about rock being blasted right among the houses in Tiverton.

Ms. Evenden replied two wrongs don't make a right.

Mr. Buxton replied he did not say they did but asked why weren't the same people sitting around this table asking these questions or calling DFO or NSDOEL saying why are you blasting in the village of Tiverton. He asked if anyone can answer that.

Ms. Evenden replied that people are becoming more aware of issues such as this.

Mr. Buxton noted the permit in Tiverton was issued approximately one year after Whites Cove permit.

Mr. K. Stanton noted he could explain this. He noted the society he belongs to is not supposed to go to the community and do anything until the community asks them to. He further noted the community asked them to look into the quarry site at Whites Cove. They did not ask them to look into the quarry site at Tiverton and that is why the people around this table are not concerned or asking questions about Tiverton. He noted his society was not asked by the community to do so.

Mr. Buxton asked why not.

Mr. Klein replied you would have to ask the people of Tiverton.

Mr. Buxton noted of course but you are asking me and I'm saying here's another quarry permitted a year after Whites Cove that has been blasting amongst the houses and you're asking me whether Whites Cove is unsafe, whether rocks are going to fly to Hwy #217.

Mr. Klein replied the concern is closer to where we live and people in Tiverton and East Ferry don't share those kinds of concerns. He noted they did not want to participate in a process that might have helped them stop it. He further noted that is their business but that is not the existing condition here.

Mr. Buxton suggested that Tiverton is closer to Whites Cove than Sandy Cove is to Whites Cove.

Mr. Klein noted that Mr. Buxton missed the point. If the people in Tiverton don't care they won't participate and if the people here do care show them how to participate.

Mr. Buxton replied he is not missing the point.

Mr. Morrell asked do the people in Little River pick and choose what they want to see. He noted he drove to the wharf in Little River and saw an excavator on the bank dumping dirt and gravel over to fill it in and he asked where is all that silt going. He asked why are the people of Little River not concerned about that because that silt is going into the ocean.

Ms. Farnsworth replied ask DFO.

Mr. Morrell asked why aren't the people of Little River concerned about it.

Mr. Klein replied the community was not supplied an opportunity.

Mr. K. Stanton replied the community did not ask his society to interfere.

Mr. Morrell replied because you are the community and you only do what you want to do.

Mr. Klein noted the community was not asked to participate in that process by DFO.

Mr. Ivens reminded Mr. Klein and Mr. Morrell that their questions have to go through the chair.

Miss McCarthy asked if the blasting in Tiverton is more than 800 meters from homes.

Mr. Buxton replied it is far less than that.

Miss McCarthy presumed the Proponent has permission to blast there.

Mr. Buxton replied the Proponent has nothing to do with that quarry.

Mr. Ivens noted there is also a big runoff of water there with no dams.

Mr. Buxton noted there is no sedimentation pond or silt fence and there are no environmental controls in the village of Tiverton. He noted the silt runs off in a red cloud every time it rains and no issues have been raised. He further noted there has to be a little bit of reasonableness here and if you are concerned about one quarry why aren't you concerned about another quarry.

Mr. Klein replied we have to know about the other.

Mr. Buxton asked if he did not know about the other.

Mr. Klein replied it is that simple and all we have to do is know that that is what's happening and we will make every attempt to bring those forces to bear.

Mr. Buxton asked Ms. Nesbitt if this part of the discussion is over as Dr. Watrell was in attendance and could we address his presentation and then reopen these issues afterward if needed.

Ms. Nesbitt apologized for not addressing this, as she was unaware of Dr. Watrell's attendance. She thanked him for his patience and noted the CLC was anxious to hear his report.

Mr. Buxton noted the CLC had previously discussed and made a request to have a report done on possible archeological events on the site and he indicated they were conducting comprehensive archeological studies through consultants and that the CLC asked if Dr. Watrell could come and tell them what was found on site. He noted Dr. Watrell's study has gone to NS Museums and has been accepted. He further noted Dr. Watrell could make a presentation of what he found on site and then have questions at the end of his presentation.

Dr. Watrell provided a synopsis of his credentials, which are a Bachelor, Masters and PhD in Anthropology and Archeology. He noted he has worked for State, Federal and Provincial governments, he has taught at the University of Regina, 32 years; Minnesota, 5 years; Ontario, 10 summers; and New York. He further noted he has approximately 30 years experience in both research archeology (when cultural questions are asked) and impact archeology (for development projects). Since WWII in North America 90% of the archeology done is with

regards to development projects. He noted some projects he has worked on are: an archeological survey on 1800 miles of right-of-way for a 4-lane freeway, Historic forts, prehistoric villages, preceramic villages, burials, modern cadavers for RCMP and a variety of other things. He further noted he has done fieldwork in New York, New Jersey, Minnesota, Alberta, Saskatchewan, Manitoba, Ontario and Nova Scotia.

Dr. Watrell noted in part this gives him an advantage in looking at the kinds of things that might be found on a property that is covered by a legislation.

Dr. Watrell noted in terms of contacting an archeologist a company would primarily go to the Provincial government, to a list of Archeologists kept at the Museum of Natural History. This list of archeologists includes people of qualified backgrounds who work at small museums, universities, private consulting companies, graduate students between their Masters and PhD. He noted only the people on that list (they are not all in Nova Scotia other Provinces are included) are qualified, they have the background necessary to do a historical and prehistoric impact study on a piece of development property. He noted only those people can get an archeological research permit.

Dr. Watrell noted that no one is allowed to pick up an arrowhead and it is illegal. He noted according to the latest development in Canada (1960's) through both Provincial and Federal legislation, the governments on both levels took possession of all prehistoric and historic artifacts in the ground on private and public property. He further noted that they own it all and gave no compensation for it and that means in terms of their property a company or individual doing a development project which is going to disturb that ground must hire an archeologist and a number of things must be done on that property. He noted that his job looks at human prehistoric and historic resources from a period and occasionally paleontological resources. Underwater archeology is a little more complicated because it involves Federal Fisheries and generally two levels of government.

Dr. Watrell noted that generally Archeologists do not do paleontological research because they work with human beings and Paleontologists work with dinosaurs. Dr. Watrell noted that he has a significant background in Paleontology.

Dr. Watrell noted in terms of those four types of resources that might be affected by development his job is to go to the property and assess what kind of project is being envisioned. He noted there is a very big difference between whether they are putting in a pipeline, a well, a cottage cabin, a quarry or a five-lane freeway and the impact varies in how much it will affect that piece of land. He further noted once the assessment of what the project is and what is going to be done is completed you need to identify those kinds of existing resources. Secondly an assessment of those is made: are they extensive, are they intact, has that site been dug already, a variety of things such as that and the condition and importance of those remains. Thirdly, recommendations are made.

Dr. Watrell noted that with 99.9% of all archeological and historical sites identified nothing is done and that of the .001% of sites that are excavated in North America the highest amount that has ever been excavated on any site is between 9 – 14% of the total land base of that site. He noted sites are very common and from his point of view cultural remains go from 10 – 12,000 years ago when human beings first entered this place to the average active dump. You can derive a lot of cultural information from dumps.

Dr. Watrell noted a company is required by law to hire an archeologist to do this kind of study and make recommendations but the archeologist is not an employee of the company nor is he an

employee of the government. He noted he simply turns in the report that shows the level of work and results that satisfies the permit demands of the legislation.

Dr. Watrell noted he is contracted and being paid by a company to do that report. He noted the first thing that has to be done is the preparation of an application for a permit and several permits are given each year in Nova Scotia. He further noted in that permit he has to tell the reviewers of that permit (Archeological staff at the Museum of Natural History in Halifax, Robert Ogilvie, Protector of Special Places) the condition of the land, the nature of the development project, and how much it is going to disturb. He must tell what kind of background research is going to be done in terms of archives, paperwork, interview situations, and how he will use museum facilities. Mr. Ogilvie reviews the permit and the final report alone and in consultation with other museum staff members.

Dr. Watrell noted files of sites are always being recorded so they investigate whether there is already a prehistoric or historic site on that land but the average individual does not have access to those files even though they may have a site on their property or they may have paid taxes for a publication for that property. He noted that this position is held simply because they think the general public will start digging up sites all over the province.

Dr. Watrell noted in that permit application he will advise who he is going to interview for what purpose, what his field work goals are, and how he is going to sample a piece of property. He noted the most common way, which is a basic labour intensive way of doing archeology is to walk over a piece of land and if you look at land that has been disturbed there are changes in topography or relief. If someone digs a hole in the woods it remains for a long period of time so you can tell if there has been previous human activity. He further noted you state in the permit application how many shovel tests will be made. On an initial impact statement a series of shovel tests are dug the width, height, and depth of a shovel. To access something for further scrutiny a one-meter pit is dug. If you find something and are told you must do something with it then a grid is laid over that piece of property. Generally a decision is made about how much sampling is going to be done sub-surface depending on the lay of the land and what is already known about it from archival research. In the permit application it is explained how much and what the nature of your sampling will be. How any artifacts found are going to be processed must also be included in the permit application.

Dr. Watrell noted although Global Quarry Products pays his salary to do the study and the Provincial government says it owns anything that is found GQP is required to process those artifacts, photograph, draw, catalogue them and pay for their storage now and in the future in the museum. He noted this raises an interesting sideline. If you have a bag of artifacts that your grandfather left you, you can't sell them, dispose of them or pass them onto your progeny nor does the museum want them for a donation. He further noted it is a very interesting kind of legal question.

Dr. Watrell noted for artifacts that might be found a museum trained conservator must be on call during that project so anything that might deteriorate once it is exposed can be stabilized and put into good museum condition prior to giving them to the museum.

Dr. Watrell noted one of the primary sources of archival resources is the Provincial site files (these vary in Canada from province to province). He noted some may be computerized CAD generated map files and some may be a series of paper files Xeroxed from the 40's – 60's stored in paper cartons in the corner of an office. He further noted to get a feeling of what might be found on a piece of property he didn't just ask are there any previous sites for that property. He went through all previously known sites recorded

from Yarmouth up one side of Saint Mary's Bay and all of Digby Neck and found that no sites were recorded within miles of this piece of property. He further noted sites found elsewhere told him about a pattern and even though the sample is small that pattern was already indicated. The majority of prehistoric sites are found on the south shore of Saint Mary's Bay where it is quieter, shallower and where you can get resources for hunting and gathering much more readily than standing on broken basalt rocks on the Bay of Fundy. It is a general rule that human beings whether it is 12,000 years ago or today do not want to live in swamps, do not want to walk 40 miles for water or be in a place where there are lots of mosquitoes. Unfortunately today that means cottages are built where prehistoric sites exist for those same reasons.

Dr. Watrell noted the data bank of what we know about archeology in this part of the world indicates a certain pattern and the spread in time from some prehistoric artifacts that have been found in the Bay of Fundy indicate a time period of 8500 BC – European contact. So even if you didn't have site files on your property and you found something there would be a database to compare it to. There is a dual purpose in going through the site files. He noted that other kinds of archival research includes going through existing maps, land grants, newspapers, obituaries, church records, and land titles. He further noted in terms of historic resources below the waterline GQP gathered information that he can assess in terms of historical remains. One place you look for archival material is a record of wrecks, Provincial and Federal lists of ships that went down, museum collections, and photographic documentation. There was a photograph in the Admiral Digby Museum that was useful because it showed a structure near Whites Cove. Dr. Watrell noted another major component of any kind of archeological field work is the use of informants and there are various kinds of informants such as Mr. Ogilvie who has reviewed more permits here and Dr. Christianson of the museum who are colleagues. He noted the second kind of individual is an ethnographer who studies the living aspects of different cultures. Dr. Watrell noted the ethnographer he spoke with is a specialist of the M'iqmaq cultural patterns and questions were asked about things that he would not have thought of. He noted in 1910's – 1920's certain M'iqmaq groups set up porpoise harvesting stations along the Bay of Fundy for the purpose of extracting oil from porpoises. He further noted that type of activity would be unique and that would be something you would look for in terms of evidence of large mammal bones near the shore lines. The third kind of informant he would have liked to have used more of was local community individuals. He noted that individuals in the community verbally and through letters to him and to the editorial page of the Chronicle Herald spoke of burials, cemeteries, the village of Whites Cove and aboriginal utilization of that piece of land. He further noted that area of gathering information has been very difficult with this project because very clearly community people had a political agenda and they have thrown out information that is not information.

Dr. Watrell noted as an archeologist he can only check out a particular kind of information, which is empirical information. He can not check out hearsay and certain kinds of information that people have received from their ancestors and friends that they believe to be true is sometimes not true. He further noted empirical evidence is sometimes 100% opposite of what people commonly believe to be true.

Ms. Evenden noted as an academic historian with a PhD and recent publication by Cambridge University Press she would like to point out the concept of oral history being labeled, as hearsay is completely outdated.

Dr. Watrell noted that historians are not scientists but he is.

Ms. Evenden replied that she is talking about cultural history.

Dr. Watrell noted the reason he is a scientist is because there is a difference and that difference is Empirical Science works towards not just assessing evidence that we consider empirical but toward a generation of exumatic principles. He noted that history has historically avoided the generation of exumatic principles; it is a basic premise of history. He further noted it doesn't say that oral history neither destroys nor would he say that oral history is unimportant. All history gives you is peoples world view, what they think of the universe, how they view it, how they see it, how they think about it is conditioned by their oral history but that is not the same as saying that information passed down orally is empirically correct.

Ms. Evenden noted many photographs that substantiate the evidence that Dr. Watrell would have collected by talking to people. She noted Dr. McCarthy offered to give him names of people who would have been happy to give him the type of oral history substantiated by photographs, maps and so on but Dr. Watrell did not respond to the offer. She asked how can he say that people in this area didn't cooperate.

Dr. Watrell asked if Dr. McCarthy was in attendance.

Miss McCarthy replied she was in attendance and noted she did not wish to string on about her credentials that are from across the globe. She noted if Dr. Moody found her research, a simple letter she wrote to the newspaper, valuable enough to quote three times in his supplementary historical report then she is sure Dr. Watrell would remember her call last November.

Dr. Watrell replied he did remember.

Miss McCarthy noted she offered to put Dr. Watrell in touch with local people including herself, she has not heard from Dr. Watrell. She noted she has a lot of oral history and information about the area. She further noted Dr. Moody found her research valuable enough to quote but she does take objection to the fact that Dr. Watrell did quote her research and for all intents and purposes when she reread it has been misrepresented, she has not been acknowledged as an academic in the end notes as she would expect from another academic.

Dr. Watrell replied yes we can discuss that and noted she was not the only individual who phoned him. He noted it was very clear in that conversation that she had a very large hostile chip on her shoulder and he would have responded very positively if something she had brought up in that conversation had been checkable by an archeologist. He further noted every sentence in her conversation was hearsay. "There are burials, there are cemeteries." He noted that is not checkable by an archeologist.

Dr. Watrell noted Miss McCarthy also wrote a letter to Dr. Ogilvie with regards to that conversation and her concerns and his assessment was exactly the same as Dr. Watrell. He noted that she brought up no specifics, which could have been checked in field by archeologists. He further noted that it is very clear that individuals in the community have been intimidated not to be informants.

Mrs. Klein asked couldn't Dr. Watrell just say that he didn't talk to people because they...

Mr. Klein interrupted and stated Dr. Watrell is making allegations.

Ms. Sanford reminded the chair that it is very difficult to record the minutes when individuals talk over top of the person who is speaking such as the guest speaker or when persons on the other side of the room carry on conversations because it is very difficult to hear one person when there are three or four conversations going on at the same time. She asked that this not occur and if someone had something to say to please wait until the person speaking is finished.

Dr. Watrell replied he would like to go through the results and noted the results that came out of the study are in this report, which is then submitted to the museum and reviewed. He noted they take his recommendations into consideration but can ask for further work on the development project.

Dr. Watrell noted the results that were found in the field (a map of the property lines was posted for viewing) and it is a very difficult piece of property in terms of physical access, it is not easy to walk over that land, so you make a decision of what areas will have the highest probability of finding prehistoric or historic artifacts. He noted anything along the shore becomes important because those are places where people could have prehistorically processed food and large slabs of basalt exist that could have been decorated with petroglyphs for ritual purposes. He further noted there is a beach erosion ridge, which gives you a subsoil exposure where there may be charcoal or shell artifacts. The relief of the land is that this is a narrow shelf that rises up and people don't like living in 60-degree angles so the chance of human habitation along one of those steep slopes is very limited.

Dr. Watrell noted that you would look for an intermittent stream area that may have ventured into the Bay of Fundy on flat areas where you could get access. He noted they walked and sampled the shore area, stream areas, and edges of roadway, property lines and the whole top area that was available because of clear cutting. He then asked what did we find and noted in terms of paleontological resources, fossils, nothing, which was not surprising because basalt is not the type of stone deposit that is conducive to fossilization. More importantly looking for paleontological resources it allowed him to look at the rock and determine if there were any other kinds of rocks there such as prehistoric people might have used for raw material for stone products and return to the site again over time but neither was true about this property. He noted in terms of prehistoric materials in walking over the land, looking at cut banks and putting in shovel holes no artifactual remains, charcoal, shell fish, large mammal remains, petroglyphs or pictographs were found.

Dr. Watrell states with a 97% degree of confidence that there are no prehistoric remains on this site. He noted he can't state this with a 100% degree of confidence because you never can until land is disturbed. He further noted that archeology is in part an unpredictable process, which doesn't mean that you won't find an arrowhead or that before Europeans arrived someone didn't walk over the land, but those are generally not things archeologists or the museums are concerned with. He noted they are interested in places and things where people did an activity and that stayed for a while because those are the kind that leave a lot of remains and allow us to find out about past life styles. Dr. Watrell noted in terms of marine research below high water line, one boat went down in Whites Cove and it was salvaged within two years so there is nothing there. Global Quarry Products arranged to have the bottom of Whites Cove videotaped, which we were able to review and they used side scan sonar to look for artifacts or historical remains but this came back negative.

Dr. Watrell noted in terms of historic remains the land itself was issued by a land grant from the King of England to Captain Barton in the late 1790's who fought in the American Revolution on the British side. He left New Jersey and came to Digby Neck with his wife and children where he applied for a land grant, which was payment for having been a veteran of that war. He put in an application for a land grant but before it was issued a tree he chopped down fell and killed him. His wife and children returned to New Jersey where they and their ancestors from this time on are US citizens. The Crown gave them the land grant so essentially the Crown gave US citizens a land grant for Digby Neck, which has since been subdivided, repurchased and has

gone through many divisions of ownership and titles. During this investigation evidence of structures were discovered on the property, fish shacks, at least one house and the remains of that house (a small pit in the ground and foundation stones). He noted they would date the house between 1880 – 1920 judging from its size, scale, nature and actual material nearby. He further noted pieces of the house had been sold off to other owners and this is an odd thing to follow through historic records. The house remains found in the field have been called the Hershey House. He noted in the report a field map was included showing the site.

Dr. Watrell noted as an archeologist he asked at what point does the province have no interest in certain historic remains. He noted as an anthropologist he has interest in a modern garbage dump because it has social history. But the museum is not interested in a modern garbage dump so the question was asked where is your cut off date. Their cut off date is 1865 unless there is a significant piece of historic architecture on the land, an important person was associated with that piece of land or an important function happened there, which would make a difference. He noted the Hershey house, what was found in the ground and how he assessed it was that it didn't meet any of those criteria. He noted it was post-1865, no existing architecture, nobody terribly important historically as the museum assessed it seemed to have lived there, and it had no special function. His recommendations were that he did enough to map it and test it. Mr. Ogilvie decided otherwise, changed the criteria and said that it was important so Global Quarry Products has isolated the house remains and intends to do no excavation there until further mitigation excavations, which may or may not occur.

Dr. Watrell noted in terms of cemeteries and burials there is one historic record of one individual from Whites Cove that is mentioned but he died in the States and is buried in the States. It has nothing to do with this piece of land.

Miss McCarthy apologized but stated she must interrupt because she may not get the chance later on as this presentation is dragging on a lot. She would like to ask Dr. Watrell why was Benjamin Goddard so important if he died off the land in Whites Cove and more than ten people died on the Whites Cove property. She noted the past editions of The Digby Courier, obituaries and such all add up to some extent so she is very puzzled as to why Adrian Goddard was so important.

Dr. Watrell replied the fact that he was important is that the historian had good records of him dying.

Miss McCarthy asked what of the records of the 10 plus people who died on the property.

Dr. Watrell replied that legally a cemetery that has no markers may be bulldozed after 20 years and there are no legal repercussions about doing so. Secondly we have no church records or maps that there was ever a cemetery at Whites Cove, no markers, stones or anything that there was a cemetery at Whites Cove. So essentially we have no archival material that says individuals were buried in Whites Cove and it is his personal interpretation that if over the other side of the mountain you have a village with churches that is where those individuals are going to be buried and not along a cove without an existing church. He noted that there are certainly many incidents where farmers or fishermen bury individuals on their property.

Miss McCarthy replied churches over the hill were later than some of the deaths, which occurred that she is aware of.

Dr. Watrell noted even if she is correct that a number of individuals can be documented for dying in Whites Cove there is no empirical way to find out where they were buried in Whites Cove or if they were buried in Whites Cove. He noted the data would lead one to believe that

they were not and all he could say is you could make that statement about every square mile in North America and no one would be able to do anything. He further noted that there are modern cemeteries where we know where the edges are because there are markers but because the burials were in the thirties with wooden crosses and the crosses are gone those cemeteries have now become quarries. There is no legal right against anything that is done to a cemetery after 20 years because it doesn't exist as a legal cemetery if there are no markers. He noted in this case we have no archival or field information that there were specifically graves there. He further noted there is information that there were structures there, information and photos of fish shacks, garbage dumps that are turn of the century behind and adjacent to, evidence of platforms and skid way that was built on the beach, a house pit and some non-provident artifacts that were close by and they are the ones that they have to make the recommendations about not what might be.

Dr. Watrell noted his recommendations in the report were that what we found and what we know about paleontological, prehistoric and historic resources is that no further archeological work needed to be done on this property. He noted this impact study in terms of biological, prehistorical and historical resources has been very adequate. He further noted that he has been in situations where the company he worked for wanted to cook the books and he stated he does not work for a company that cooks books. He works towards the evidence he finds in the ground and writes his recommendations. He noted that it has been fun working with Global Quarry Products and he noted they have done one of the more complete environmental impact statements he has ever come across in either the federal government in United States or Canada. It is unfortunate that certain conclusions have been drawn that is perhaps not correct.

Dr. Watrell noted they did make recommendations that the staff who work at the quarry get a basic education. If they see something they report it right away and give them information on the kind of evidence that they might see during the actual excavation so that you say stop the bulldozer. He noted in every archeological project that is part of it, the people who do the work have to be informed about something that you didn't find that they might find, so you educate them. He further noted that is in the recommendations. He further noted recommendations are also made about how Global Quarry Products follow very strict procedures in terms of any human remains. You notify the RCMP, the coroner, the museum and a number of procedures take place.

Dr. Watrell noted Global Quarry Products has taken their recommendations to isolate and rope off the house site even though it initially did not fit the criteria that were set out by the museum.

Dr. Watrell noted in closing he wanted to say one thing about what he finds curious as an archeologist. He noted the original land grant given to Captain Barton says specifically that if the land is suitable for agriculture he was required to clear a certain amount and build structures to gain ownership of that. If the land was unsuitable for agriculture he must start a quarry. That is what the King of England said and it is stipulated it specifically how many individuals must be employed in that quarry per hectare.

Miss McCarthy noted that was a stipulation for the whole of Digby County not just for Digby Neck so that is nothing spectacular it was standard.

Dr. Watrell replied it may be standard but the point is that that is the text of the land grant. He noted if there were any questions he would be happy to answer them.

Miss McCarthy asked if he could define an important person.

Dr. Watrell replied that was not his term. He noted that the museum personnel use that term. As an anthropologist he is interested in social information regardless of what strata of society they

come from but in terms of the museums verbal direction that was given about where their interests stopped they used the term “an important historical person.”

Miss McCarthy referred to his conclusion 7.3 “no significant historical personages or events seem to be associated with any of the Whites Cove structures.”

Dr. Watrell replied he knew as an anthropologist that is the kind of statement, to be blunt, that would piss off people in a community because it is saying that their ancestors were unimportant. He noted those are not his words but in terms of how he has to report the individuals at the museum use the term “important historical personage” and by that they generally mean a person who is economically wealthy or who held a high political position or something like that.

Miss McCarthy asked how would he categorize a gentleman who has a plaque erected to him in Acadia University and a wing dedicated to him and it is written there “Dr. Harvey Denton, a distinguished Nova Scotian”. She noted he owned the property in Whites Cove for 50 odd years. Dr. Watrell asked did he live there.

Miss McCarthy replied that he lived there in the summer and there were Baptist meetings there and some photographs are available. She added to that The Chronicle Herald June 10, 1989 in an anniversary edition did a spread of this family and talked about how he became known as one of Eastern Canada’s best known Baptist clergymen and so on.

Dr. Watrell replied in terms of their perception of importance not just that the person was born there, owned title of the land or went swimming there in the summer time but that he did something important there, he was born there, he died there, he was buried there or something like that. He noted by her definition Chretien’s summer cabin is going to be an historical site.

Miss McCarthy replied it probably will be.

Dr. Watrell noted we’ve paid for it.

Mr. K. Stanton asked where did he get the assumption that Indians just lived on flat land because that does not sound very scientific to him. He noted that he knows they lived at French Beach and the Passage because there were so many fish that went through there and a canoe was found in Westport, buried there or at least aliens didn’t bring it there. He further noted it was not good farming land and a few mosquitoes and they did live on Digby Neck he believes.

Dr. Watrell replied the way people mostly lived is in a somewhat statistical patterns. He noted what he did say was that when they went through the known records of archeological sites the majority of them are not on the Fundy side of Digby Neck but are at the other side off the headlands in Saint Margaret’s Bay and on the south shore.

Mr. K. Stanton said the south side of the Bay of Fundy, Saint Mary’s Bay and he asked is Dr. Watrell talking about the south side of Digby Neck.

Dr. Watrell replied he is talking of both. He noted there are more sites on the south side of Digby Neck and on the other shore of Saint Margaret’s Bay. He further noted that he did not say that people only live on flat land; he said the pattern of sites we already know about, their records show more clustering of sites in those kinds of environments than in the kind of environment the quarry site is located in.

Mr. K. Stanton noted that Mr. Buxton told us there was a beach that the water level was a lot higher at one time at Whites Cove because all those rocks and stuff that are now well above sea level on the beach and he asked would you expect to find archeological evidence on the land if the water level was higher at one time.

Dr. Watrell replied that is a very good question because during one piece of fieldwork it was found that a bump that runs across the prairie that is 3’ wide by 8” high which is a beach ridge from a glacial age. He noted there is no glacial age there now it is just flat farmland. He further

noted in this case when that water was elevated, when that beach ridge was there is prior to human habitation in Nova Scotia and the furthest we can go back in terms of the archeological material we know is about 12,000 years.

Mr. K. Stanton thought that was about the time people arrived here.

Dr. Watrell agreed that it is about that time but that doesn't mean that it couldn't have been a little before and certainly by the evidence we have you are talking about possibly ten sites in the province and in most cases those sites are really not sites but just one artifact was found.

Mr. K. Stanton asked if it would be hard for Dr. Watrell to say with any certainty that there were aboriginal people there or there weren't or how many houses were there or not, you are just going by what can be proven absolutely.

Dr. Watrell replied no he is going by previous sites that are known in the area.

Mr. K. Stanton asked Dr. Watrell to explain what he means by empirical evidence.

Dr. Watrell replied the difference between empirical and hearsay is tough but basically if you can't measure, weigh, count it and reproduce it then it is probably not empirical. He noted if you say I feel something or this cup is pretty, that is not empirical. He further noted they did a fairly intensive surface examination and testing procedures on the upland in the flat areas, along the property lines and beach area and there is no evidence that there was any aboriginal utilization of the property. It is not just by the sites that are recorded it is also combined with the fieldwork that we did on the property.

Mr. K. Stanton noted he was in the Harvey Denton building in the 60's before it burnt and he asked Dr. Watrell if he couldn't find the building that was there and evidence is still there that he didn't find how would he expect to find a place that was there in the late 1700 - 1800's. He asked if you couldn't find something that was there forty years ago how can you find something that was there two hundred years ago.

Dr. Watrell replied in some cases we can't we have to wait till that road grader goes through and that bulldozer pulls up 20,000 year old bison bones. He noted that is the nature of archeology as a discipline.

Mr. K. Stanton noted you had to ask someone who could have given you advice and we would have shown you the Harvey Denton place but you didn't want our help. He noted that wasn't a stupid old fisherman thinking about things that may have happened years ago, he stood in a room, he touched the walls, he burned his hand on the stove, you could have asked. He further noted if he couldn't show you the building or knock you down in it then you could have said it isn't empirical.

Dr. Watrell replied that would have been useful and he noted that Mr. Stanton could have also informed him of that or written that information in a letter to the museum and it would have been checkable but you didn't.

Mr. K. Stanton replied Miss McCarthy did inform him.

Miss McCarthy noted it was done.

Dr. Watrell replied not in the letter he saw.

Ms. Wilkins asked during what time period did his evaluation takes place.

Dr. Watrell replied that it was not all done in one block.

Ms. Wilkins asked when did he first begin.

Dr. Watrell replied he began in September – October 2002 and they did work until winter and more in early summer.

Ms. Wilkins asked at that point where you began doing your work had any of the land been disturbed in any way by Global Quarry.

Dr. Watrell replied yes, on the top flat area clear cutting had begun and in terms of work along the property line paths were cleared for survey purposes to allow access.

Ms. Wilkins asked if there had been excavation of any kind.

Dr. Watrell replied no.

Ms. Wilkins asked if he was sure.

Dr. Watrell replied yes. He noted because it went from last September till the final report was submitted there was some minor work being done but not when we began.

Ms. Wilkins asked if there was any work done near the shoreline before his final report.

Dr. Watrell replied no.

Ms. Smith noted that she does not live here full time but does own a family home on Digby Neck and spent all of her childhood listening to stories about Whites Cove, learning about her ancestors. She asked if when he was looking for artifacts did he look behind the stone wall that separated the meadow from the pastureland. She further noted her mother was not an historian but loved to dig in dumps and told her one of the best ways to look for artifacts was to look in areas behind stone walls.

Dr. Watrell replied that there is no doubt that behind every structure where you don't have a municipal dump you may find tin cans and garbage. It is certainly true in terms of illicit archeological activities in the province the common target is dumps behind houses where people used to live. He noted the primary perpetrators of that are bottle collectors. He further noted the real question becomes how do you do triage even if you know that a site was occupied and we know that Whites Cove was occupied and that there were structures there and we know that there are some dumps there but the question is when you make recommendations about what to do about it you have to do triage and say this site is unique, has never been excavated, in contrast to house hold garbage which may not rank as high in terms of the dollars involved. In every community he has ever worked people have a long list of things that are critical to them as a community or as individuals but you can't dig them all. He noted what he had said earlier and that is that 99% of all known sites are not looked at again and when you do 1200 miles of roadway you find a lot of sites and you can't dig them all. He noted he has stopped a bulldozer and shifted roads, which costs them millions of dollars. It has to be really important historically or in uniqueness. As an anthropologist doing archeology he would love to do dump sites including Whites Cove but that is not the same as saying that these sites are unique or will produce cultural information about how people lived there. He noted by comparison the excavation on the waterfront near Halifax they found 20,000 objects a day dating back into the 1700's but who is going to pay for that excavation. That is not his job, his job is to say this is the kind of dump it is, this is the kind of time period it is. It is his assessment to say it is not unique enough to do something about it and the museums job to say he is wrong even though they said the cut off date is 1865 for a house. In the case in point he recommended not doing anything but they have said rope it off. He noted that's how the procedure works.

Ms. Smith noted all she was asking was if he found the wall and looked behind it. She noted it is very difficult for her to see from what Whites Cove looks like now and as she did when she was 8 years old, the land has changed and is very hard to explain where the wall would have been.

Dr. Watrell noted it is not hard for her to explain why it's of concern to her, that he understands, your personal ties to land and property and he did find evidence of garbage piles. He noted in terms of a research archeologist he would enjoy digging up all the garbage dumps and finding out a little bit about local history if you and your friends are willing to put up \$20,000 per summer. He noted that is not what the job is nor what the legislation requires, he is to find as

much on the land and in the records, tell the museum about that and what he thinks and they can accept or reject it. He further noted in this case except for the isolation of the Hershey house they accepted his report.

Ms. Smith understands his point of view but as a child she visited a grave with her grandparents and she can't tell where it is.

Dr. Watrell asked if she had no idea of how to find that spot again.

Ms. Smith replied she has tried to find it but because she was a child it looks different.

Dr. Watrell noted that if we accept that this is true, that there was a grave there and there was an individual there, unless you or someone else that was with you can say it was within one acre it is virtually impossible to find.

Ms. Smith noted it is her feeling, her duty to the people that lived there, that she knows lived there, she knows the people that came from there, her grandfather was one of them, and this needs to be recorded, it needs to be preserved in the history on Digby Neck and the beauty because she is moving back to retire so she hopes we don't sell it all for rocks.

Mr. K. Stanton noted he looked through the report and the only timeframe for the study he could find is November 22 – December 31, 2002. He noted this is what the permit was for.

Dr. Watrell replied there were a few days in January that he was on the property.

Mr. K. Stanton asked it was basically just over a month.

Dr. Watrell replied there was as much time spent in terms of archival work off the property as on the property. He noted in comparison with other properties it was not a quickie or slow job.

Mr. K. Stanton asked if this was for the whole 300 acres.

Dr. Watrell replied as much as he could get access to.

Mr. K. Stanton noted he wanted people to realize that it was winter months and he fishes that area and never noticed anyone there but maybe he just didn't see Dr. Watrell. He noted that time of year it's wet, rough and cold and the area is hard to get into.

Dr. Watrell replied it was wet but he was still able to get shovel in ground.

Mr. K. Stanton noted he expected that it would have been done in the summer when it is much more pleasant.

Dr. Watrell replied in some cases when more vegetation is down you can see the lay of the land and from a personal comfort point of view the cooler season is better.

Ms. Wilkins asked are you now saying you were only on the property from November to January.

Dr. Watrell replied the majority of research was done from September till the second week of January.

Ms. Wilkins noted as she remembers the weather conditions, snow and sometimes very heavy snow from a couple days before winter officially started till after winter ended without a break.

Dr. Watrell replied there were days when he could get at the dirt.

Ms. Wilkins noted the lay of land looks entirely different in winter and it was a bitterly cold winter so how did he get the shovel in the ground to begin with.

Dr. Watrell replied it wasn't cold at all. He noted the conditions in Saskatchewan.

Ms. Wilkins replied she lived in Alaska.

Dr. Watrell noted he did not consider it a cold winter and there were breaks where he could get a day or half a day to do shovel tests although most of the shovel tests were done in the fall.

Miss McCarthy asked if he did shovel testing in the area of this house.

Dr. Watrell replied yes.

Miss McCarthy asked if they used any remote sensors in the area where there was the possibility of graves.

Dr. Watrell replied no.

Ms. Smith asked if the quarry owns the property next door.

Dr. Watrell noted she should ask Mr. Buxton that question.

Mr. Buxton replied the quarry property is shown on map and he pointed out the boundary lines.

Dr. Watrell asked if anyone else had any other questions.

Mrs. Klein asked from where did Dr. Watrell receive his degree.

Dr. Watrell replied he received his Masters and PhD at the University of Minnesota in 1973 or 1974. He noted when you are put on archeological list for the province they put your curriculum vita but he is not aware of whether the public has access to that.

Mr. Morrell noted he worked at Whites Cove and he was told to watch very closely at the machinery and if we found any signs of bones to report it to Mr. Buxton but we never found any remains. He asked if anyone knows if any of the gentlemen from Little River that have walked through found anything.

Dr. Watrell noted in terms of finding skeletal material and if he's working on the property and finds something he informs Mr. Buxton who calls the RCMP, the provincial coroner and himself because he can very quickly inform the police whether it is cow bones faster than the RCMP can.

Ms. Evenden noted it is highly unlikely that people walking around would find bones lying there but if you are digging then yes they may but she doesn't think there is much point in asking if bones were found.

Mr. Morrell asked did the men from Little River find any evidence of bones on that property.

Ms. Evenden asked did they say they found any.

Mr. Morrell replied no, not to him.

Ms. Evenden asked who were these men and what point is he making.

Mr. Morrell noted he is wondering where these graves are.

Ms. Evenden replied not where you're digging right now.

Miss McCarthy noted the cultural history and the remains that have been buried there are important but she also thinks that the human occupation of Whites Cove is important and if we obliterate the history of Whites Cove as it was in the 1800's then we are wiping out a large percentage of the Digby County because people moved on in the 60's. She noted this is another one of her concerns.

Dr. Watrell replied he does not dispute that but it is your provincial regulators of the legislation that stipulated that 1865 was the cut off date.

Miss McCarthy noted that they were there before 1865 and his son, Charles Hershey who has his name on the church bell.

Dr. Watrell replied perhaps that is part of the reason the museum has asked them to isolate the house.

Miss McCarthy noted that what she is saying is that a lot of people from Digby will be blotted out if we forget about Whites Cove. She noted one of the Whitehall girls married into the Snow family in Digby and Frederick William Wallace; an historian has devoted pages to the Snow family. She further noted he has talked about another Hershey man from Whites Cove, Joseph Hershey. She further noted an elderly gentleman had told her about him and that is why she thinks the oral tradition is very important and has been proved to her. This particular Joseph Hershey fell off the Dorothy & Smarth that was struck by a wave in Yarmouth four men were

lost. Joseph held a knife that he stuck into a table that went overboard and was able to save himself and others. She noted she did not make note of this in her notes but later read it documented in print, it was published.

Miss McCarthy noted the Hershey family has had an impact on the area and there were 15 families according to census reports. She asked if Dr. Watrell consulted the census reports where the house and families are numbered.

Dr. Watrell replied yes the historian did that part of the archival research.

Miss McCarthy noted that is the way she feels that if we obliterate this history of Whites Cove we are wiping out a portion of the history of Digby.

Dr. Watrell agrees with Dr. McCarthy that a small community's local history is mostly nineteenth century but all he can say is that in the main for all archeological sites in the province the museum and legislation has very little interest in things after 1865 unless they fit this criteria of importance. He noted that he might disagree with that criteria and she may disagree with it as well but that is the way the legislation is being applied.

Miss McCarthy replied that these families were there before 1865.

Ms. Smith noted the reason she was asking these questions is that on trips she took to Whites Cove with her grandfather one of things that they did was walk the beaches and look for buoys that came ashore. When they went to Little Cove (next to Whites Cove) he told her a story of when he was a child walking down the bank there were probably M'iqmaq people that would come there every summer to fish and he heard footsteps behind him and saw what he assumed was the chief. Her grandfather explained how he got away and as he was running he looked back and saw that old gentleman bent over with laughter. She asked if Little Cove was an area that was looked at.

Dr. Watrell replied in terms of M'iqmaq investigation as he said in the report and tonight's presentation he spent time consulting with a M'iqmaq Ethnologist. He noted that this is a portion of the study that he does not do so there will be aboriginal consultants involved and from what he gathers. If it is difficult to find people interested in the project at a Provincial level, it would then be referred to Bear River Reserve. From what he understands there has been some difficulty in finding someone in Nova Scotia but that process is going forward and there will be an aspect of M'iqmaq consultation in it. He noted it had nothing to do with what he did.

Ms. Nesbitt asked if there were any other questions.

Ms. Wilkins noted that she was very disturbed when Dr. Watrell said that locals that may have actually been to Whites Cove had a political agenda. She noted that she does not think a 90-year-old woman has a political agenda. She thinks it just is home.

Dr. Watrell disagrees and has a clipping of every letter that was written in the paper and they clearly had political agendas.

Ms. Wilkins replied that he has not spoken with the people that she has spoken of.

Dr. Watrell noted he only worked on one other project in Montana where the level of informant difficulties existed as it exists here and he does not think it is ever necessary. He noted that there is a give and a take, development will take place, and the attitude of not in my backyard is political. He further noted that development happens all over the place and if it is done responsibly and he thinks in this case it has been done responsibly by addressing concerns as best you can, as serious professionals. There are things that modify that development but not just saying no, that is political.

Ms. Wilkins replied that she does not think any of us are just saying no without preponderance of at least what we consider evidence but time will tell. She noted we would rather err on the side of caution.

Dr. Watrell noted the most common trait that he found in the objections in letters to the editors and people who are not in the community is racism against US citizens.

Ms. Wilkins replied that is not racism.

Dr. Watrell replied yes it is.

Ms. Wilkins noted that may be nationalism.

Dr. Watrell replied when you lump together and speak as that woman did at the beginning of this meeting that's racism. Those comments she made were racist.

Ms. Wilkins noted that she must be racist against her own country.

Dr. Watrell replied that we all are to a certain degree but that has been the most common response. Not objectives based on environmental or historical impact but on where the stones are being sold.

Ms. Evenden noted that she was not the woman that said that and she asked that he not confuse her with the woman that did.

Dr. Watrell replied he heard what she said at the beginning of the meeting and it was racist.

Ms. Evenden asked what did she say.

Dr. Watrell replied she said Americans.

Ms. Evenden replied she did not say that and she does not want it on record that she did.

Ms. Nesbitt noted that the comments are on tape.

Dr. Watrell noted he is saying that the most common public response from people who don't know any of the details has been that and that is not a healthy situation.

Ms. Wilkins replied she thought it was Myrna Farnsworth who made that comment.

Ms. Nesbitt asked if there were any other questions.

Ms. Nesbitt noted that she for one would like to thank Dr. Watrell for his presentation.

Dr. Watrell replied that if anyone else has questions with regards to this he will talk with them when he is available to do so.

Ms. Nesbitt asked if there were any other questions.

Mr. Buxton noted that people reading various press articles with respect to the quarry process will have observed that the comprehensive study review which commenced on January 6 which we talked about at meetings has apparently been terminated and in June the Minister for Fisheries and Oceans requested of the Minister of Environment that he conduct a panel review. He noted the panel review process has commenced and a draft Memorandum of Understanding between the federal and provincial government is available on the CEAA website and public comment can be made till September 18, 2003. He noted it sets out the responsibilities of the federal and provincial governments on the joint review. He further note under the previous process of the comprehensive study review the Environmental Assessment would have been reviewed internally although some documentation would have been put up on the public registry. He noted the difference with this process is that essentially a three member panel appointed by the federal and provincial government will be taking evidence on the environmental assessment and the general public can make a request to make presentations to the panel. He further noted people interested in the process can follow the progress on the CEAA website and as these documents come forward they will be put on the website for public comment. Mr. Buxton noted that process if probably a year process from beginning to end so the CLC might be sitting for awhile yet. He noted that CEAA is now the lead agency managing

the process whereas under the comprehensive study review process DFO had appointed themselves the manager of the process. The management of the process has now switched from DFO to CEAA and all this information will now be on the website. www.ceaa.gc.ca

Mr. Reid asked if there was a representative here from Mr. Harold Theriault's office.

Ms. Nesbitt replied not that she is aware of.

Ms Harnish noted the last meeting was the presentation on Ballast Water and she noted there was no newsletter that went out to the public, nothing posted anywhere and she thinks these meetings are quite important and that more people would attend if they were made aware.

Mr. Buxton replied he thought we did post the presentation on the Ballast Water.

Ms. Harnish noted only in The Digby Courier.

Mr. Buxton replied we put ads in The Digby Courier for two weeks running.

Ms. Harnish noted that there have only been three newsletters go out and she thinks that a lot of people read them.

Mr. Buxton agreed that another copy of the newsletter should have been have done but that we have not because for about four months we have been in the dark as to how the process is evolving. He noted it appeared in May that DFO was backing off the process and we could not come to the CLC and say that the process was changing because we didn't know. In fact if you read the newspaper on June 26 or 27 that was when he found out about the process. He further noted for a considerable period of time we were somewhat out of the loop and the Memorandum of Understanding released ten days to two weeks ago and it was out on the news wire before the company was advised so we have been in the odd position the we have not been able to advise CLC as to what's happening in the process really until tonight.

Mr. Buxton noted that is primarily the reason why there has been no newsletter go out but he thought we had advertised the presentation on Ballast Water for two weeks in advance.

Ms. Harnish replied that not all the people read the paper.

Mrs. MacAlpine noted that the committee members all knew that there would be a presentation on Ballast Water and could they not get the information out to the public.

Ms. Nesbitt replied it is difficult for the committee to do that because they are not a committee that meets outside of these meetings. She noted they are a diverse range of interests and different communities and that this is where they get a lot of their information. She further noted that Mrs. MacAlpine had told her that Dr. Watrell would be here this evening and she had informed other people and then she had told her that he wouldn't be here.

Mrs. MacAlpine replied that she had said it was not confirmed.

Ms. Nesbitt replied that she was not aware Dr. Watrell would be here and that is why she opened the meeting with a general agenda.

Mr. Buxton reminded the committee that the CLC is their committee and that the company does not run the meetings. He noted that he is required to attend as per the NSDOEL as a representative of the company. He further noted this is a committee, which is a community committee and we do not operate it. He is obliged to provide you with a secretary and she reports the minutes to you and they are reviewed by you prior to being forwarded to the committee members. He noted we talked about advertising meetings at length and the company is obligated to carry out advertising if you request it. The

company takes direction from the committee and it was discussed at a meeting that there was a concern about getting 200 people in the room and every meeting becoming a slamming match. The committee took it under advisement and said we will think about widely advertising the meetings. Certainly if the committee wants better advertising in what ever way, you have to make the policy and advise him but he won't advertise on his own because it is not his committee. He is simply obligated to provide functions for you the committee. He noted he has to provide a secretary, minutes, and copies of the minutes, provide the hall, refreshments but it is not our committee and you have to tell me what it is you want. For example if you say somebody for blasting and you want two weeks of ads for that call Betty MacAlpine and it will be done. Mr. Buxton can't administer the committee.

Ms. Harnish requested that another issue of the newsletter be produced. She noted they are effective.

Mr. Buxton replied they could do that now because we are meeting with the senior officials from CEAA and with provincial officials to get the CEAA process underway. That will provide a good idea for sequence of events, when a panel might be put in place and we can put that into a newsletter and we can put that out.

Ms. Harnish noted another point is that when you speak of the liaison committee or when something is published it says the committee for the quarry so people are under the impression that this committee is for the quarry when we are not.

Ms. Nesbitt replied we are a group of concerned citizens the same as everyone else.

Mr. Buxton replied that one newsletter stated very clearly what the CLC is and what its function is. It is not a spokes group for the quarry, it is a group of a people who have agreed to get information out to the public and enable the public to get information. To ask the company to bring in people such as Dr. Watrell, the Ballast Water people, the hydro geological people etc. that's what it's for and if we need to repeat we will do so.

Ms. Harnish replied yes we do need to repeat this.

Ms. Smith asked if there were terms and conditions for this committee.

Ms. Nesbitt replied yes it is put out by the NSDOEL and we would welcome anyone interested in joining.

Mr. Buxton replied it has been circulated and if she wants a copy it can be made available.

Ms. Smith replied that would be difficult.

Mr. Wilson noted he would like to thank you all for allowing him to film in your midst tonight and he knows how unnerving it can be. He noted that he takes his responsibility especially as a representative of a public corporation with a reputation like CBC very seriously to represent points of view fairly and he will do his best to do that as you all have seen enough television to know how woefully little of what you say makes it into final cut which makes his responsibility that much more onerous but he will do his best.

Ms. Nesbitt replied that we would very much appreciate it if he could let someone know when his piece will be on the air.

Mr. Ivens asked if he is going to do it from one meeting or is he going to come to other meetings.

Mr. Wilson replied he would be happy to come back to other meeting. He noted the deadline will probably be the third week in September.

Mr. Ivens noted it would be hard to get the feel from one meeting.

Mr. Wilson replied this is not the first meeting only one aspect.

Ms. Nesbitt noted it will be interesting to see Mr. Wilson's presentation. She asked if people would be interested in hearing from a blasting expert.

Ms. Wilkins asked if she knew when that would take place.

Ms. Nesbitt replied Mr. Buxton would arrange for that person to come and then we would go from there.

Mr. Buxton noted it is sometimes difficult to fix a meeting date and then get someone to come in. He noted he could get somebody and then announce the meeting.

Ms. Nesbitt noted if there is something else we should be looking at from another aspect.

Ms. Harnish replied Mr. Stanton was concerned about disease at the last meeting and asked is there some other aspect we should be looking at there.

Mr. Buxton replied we probably went as far as we can go with Mallet Research because they are the only studies done on Ballast Water in the Atlantic region. There may be more from DFO in the winter and if there is more information we could bring them back but there aren't any other studies. This is new for DFO.

Ms. Nesbitt noted we will wait to see or hear when the next meeting will be.

Mr. Ivens noted that blasting is of 100% concern and someone should come for that.

Mr. Buxton replied he would be happy to get Dynonoble or one of the companies that do their own research that manufacture and carry out their blasting.

Mr. Klein noted they are the company that lobbed the stone over Hwy #102.

Mr. Ivens replied if they are here we can ask them.

Ms. Sanford noted that Ms. Wilson requested that she be put on the regular mailing list for the approved minutes.

Ms. Nesbitt replied that is fine as far as she is concerned and asked if the other committee members were okay with that.

Mr. Ivens replied that would be fine.

Ms. Nesbitt asked if there were any other questions.

Meeting adjourned at 10:05 pm.

Next meeting date is to be determined and advised.

Minutes of Meeting of Community Liaison Committee

Nova Stone Exporters Inc/Global Quarry Products Inc

7.00 p.m. October 8, 2003

Rossway Community Hall

In attendance: Ms. Cindy Nesbitt, CLC Chairperson
Ms. Christine Harnish, CLC Member
Mr. Brian Cullen, CLC Member
Mr. John Ivens, CLC Member
Ms. Genie Wilkins
Ms. Marilyn Stanton
Mrs. Marian Angrignon
Mrs. Jill Klein
Mr. Rick Klein
Ms. Myrna Farnsworth
Ms. Carol Mahtab
Mr. Eugene Stanton
Mr. Jason Smith, The Digby Courier
Mr. Dave Kern
Mr. Scott Carr, B.Eng., Jasco Research Ltd. scott@jasco.com
Mr. John Wall, Quarry Manager
Mr. Paul Buxton NSEI/GQPI
Ms. Betty MacAlpine NSEI/GQPI
Ms. Kristy Bishop NSEI/GQPI
Ms. Tammy Sanford NSEI/GQPI

Regrets: Mr. Mark Jeffrey, CLC Member; Ms. Judith Carty, CLC Member;
Mr. David Graham, CLC Member

Ms. Nesbitt welcomed those in attendance and noted Mr. Scott Carr of Jasco Research Ltd. would provide a presentation on the effects of blasting noise. She noted before Mr. Carr's presentation that Mr. Klein asked for some time to address several issues arising from the previous meeting.

Mr. Klein noted at the previous meeting Mr. Buxton made a thinly veiled threat of litigation alleging some sort of defamation and he wished to explain what that meant. He noted that the common practice in the US is a Strategic Lawsuit Against Public Participation (SLAPP) suit and it is generally characterized by an allegation of defamation and further characterized by the defendant having no real desire to get to court. The purpose is to intimidate and to chill the atmosphere and it is paramount to throwing alligators in the swamp and when your up to you're a@\$ in alligators it's pretty difficult to recognize that your original task was to clear the swamp.

Mr. Klein noted that Global Quarry Products is not a company that can be defamed, as it has no reputation. Its reputation is what it will gain in the travesty it is perpetrating in Whites Cove. It is simply not something that can be defamed. He noted that Mr. Buxton may be defamable, that would be a matter of opinion but Global Quarry Products certainly isn't. He further noted it exists primarily to provide a shield for owners against liability and to ultimately go bankrupt when they are done, that is their purpose.

Mr. Klein advised them to bring on their lawsuit.

Mr. Wall noted that he represents the Clayton's and is from New Jersey. He noted they have every intention of going to court, that this is not frivolous and the Clayton's have been around for 50 years. He further noted they are not looking to come to Nova Scotia and go bankrupt.

Mr. Klein noted the next issue he would like to respond to was a comment made by Dr. Wattrell alleging racism. He noted in the last century the US, Britain and South Africa pretty much defined what racism is for the world. The definition involves the exercise of power and there also has to be some sort of a racial difference. He further noted that neither seems to apply to these circumstances unless there is a racial difference between those people in Canada that would be called Traitors and Tories or in the US, Patriots and Traitors. There is no racial difference. In the US that kind of clear unsubstantiated charge of racism falls into the category of fighting words and is often actionable. He further noted it is terribly inappropriate in this environment.

Mr. Klein noted that the only people in the room who were likely to be racist were people like himself, Americans and that was hardly the case. He noted that does not fall into the category of community liaison, to throw those kinds of outrageous charges at individuals who simply come to these meetings to be informed and to inform. He further noted that he commented on the comment on the blasting remark to see whether or not it is dealt with during the presentation.

Mr. Ivens noted the CLC did not make that remark and that they ask anyone who comes here to explain what they did.

Mr. Klein replied that he did not allege that the liaison committee made the remark and that he had specifically referred to Dr. Wattrell.

Mr. Ivens noted that he wanted to make sure that was clear.

Mr. Klein replied at the beginning he made it clear whom he was speaking of. He noted that even though Dr. Wattrell did not know when he graduated or what his degree was in, it was anthropology not archeology and he graduated in 1976 not 1974. He further noted that he has nothing more to add.

Ms. Nesbitt noted that we would proceed to the presentation and asked if Mr. Carr could tell us about the presentation this evening.

Mr. Carr noted that he would be giving an oral presentation on noise and noise impact. He noted that he is with a company called Jasco Research Ltd and he would tell a bit about the company and then discuss some of the terminology of noise.

Mr. Carr noted that his background is in acoustics and that he used to be in the military and did a lot of work on under water acoustics. He noted that Jasco has been around for about 20 years and traditionally did a lot of work in under water acoustics for the military as well. He further noted that around 1996 they became involved in the environmental acoustics side.

Mr. Carr's presentation is entitled Assessing Noise Impacts and will look at some of the terminology associated with noise and he will discuss noise impact. He noted again that his background is acoustics and that he is not a biologist and he is not an expert looking at the

response of different mammals to sound. He further noted that he will try to respond to questions.

Mr. Carr noted that Jasco works very closely with LGL and that LGL employs marine biologists. He noted that Jasco works with the acoustics and with LGL and looks at the guidelines that are set out by the government in order to view the whole picture. He further noted they had hoped to have someone here from LGL but it didn't work out but there may be an opportunity in the future to have someone from LGL come to a meeting for the behavioural response to noise.

Mr. Carr noted that Jasco is a group of scientists mainly from the fields of physics and engineering with one biologist on staff who is currently on maternity leave. He noted Jasco is starting to expand their expertise more on the biology side in order to get the overall picture of environmental acoustics. He further noted that they have been involved with numerous environmental noise impact studies both land base studies and underwater studies from coast to coast.

Mr. Carr noted that Jasco is based in Victoria, BC and he has recently moved to Wolfville and is setting up an East Coast office with the company because they are doing more work with the oil and gas industry and defense. He noted Jasco's specialties include computational acoustic modeling, which looks at using models to model the sound fields from different sources ahead of time. He further noted they quite often use field measurement programs to validate the results.

Mr. Carr noted the monitoring program looks at putting together the whole monitoring design in terms of what should be monitored, how the gear will be set up, and where it will be placed so they can obtain the best results. He noted that they have also worked on equipment design because as they are asked to do certain projects they find in some cases the instrumentation they want doesn't exist or is not available. I.e. Monitoring sound levels from oil and gas activity on the Scotian Shelf where he noted it is easy to measure near the surface and the bottom of the ocean but more difficult in deep water while trying to get gear in mid-column depth.

Mr. Carr noted they are looking at a system they can deploy that will actually take measurements, recover it so it can be downloaded. He noted once all the information is collected they must do a data analysis and this is not a simple procedure as you need to understand what you're looking at and how to get the right results. He further noted that there are guidelines to follow for this.

Mr. Carr noted they have modeled an individual air-gun signature for acoustic modeling and the actual sound propagation. He noted that once you can model the source of sound you can then model how it propagates through the air or water depending on what is being looked at.

Mr. Carr noted they have modeled blast impact forecasting. He noted field measurements are done in near and far field sound level measurements, which look at directivity effects. He noted that as soon as you have an array of sources you get a directivity effect. He further noted that they look at the ambient sound levels, which is general background noise (any noise other than what you are interested in).

Mr. Carr noted that they have also done modeling of ship signatures and more recently they have been looking at marine mammal vocalization. He noted in May they looked at the actual seismic sources and while they were doing this study they took recordings of whales and focused on high frequency areas where not a lot of data has been gathered in the past.

Mr. Carr noted they design effects monitoring programs, which may have been triggered by an Environmental Assessment or they may have been referred by DFO. He noted they have done

some work with biologists on the overall environmental impact assessments. He further noted they have provided design and technology addressed to specific research needs, field measurements, data analysis and providing expertise for public consultations.

Mr. Carr noted a number of different hydrophones and microphones are used for these studies depending on whether they are in the air or on water. He noted they have built several specialized scopes, amplifiers, and sub-sea cables to decrease the strumming noise in the cables so they can focus on a signal of interest. He further noted they have digital acquisitions systems, recorders, and CTV profilers, which collect data on the conductivity and temperature in depths of the ocean, which is very important to understanding how the sound will propagate.

Mr. Carr noted with data analysis they look at calculating source levels and the characteristics of the source, which is called source spectral analysis. He noted any given sound signal is composed of multiple frequencies and they look at how the amplitude varies with different frequencies for that given source. He further noted that another big piece of this is looking at critical safety ranges for marine mammals.

Mr. Carr noted that DFO has set the guidelines for whales at 180 dB and for seals, etc. it is approximately 190 dB. He noted given a sound source and a specific area, they will model that and determine what those ranges are.

Mr. Carr noted they have worked with clients in the oil and gas industries, environmental research companies, Canadian and American Departments of National Defense, DFO and various others. He noted the work that has been done for the oil and gas companies is dictated by DFO. He further noted some past projects. In the arctic in the winter they looked at vibration noise from activity associated with the oil fields such as blasting, building ice roads, and operating heavy equipment on the ice where they were interested in hearing the noise and vibration levels inside a polar bear den. The biologists had suggested that if a polar bear is flushed out of his den he may not go back again so they were interested in what the levels were. He noted that they built replica dens nearby in order to perform these tests.

Mr. Carr noted in looking at the oil and gas industries the impact of actual air gun signatures were modeled and measured. He noted on the West Coast they tagged and tracked salmon. In Alberta they have worked with the military looking at the effects of explosives and the effects on structures. In Gagetown, NB they have developed an expert system that will allow the military to lay out specific activities for the next day in terms of training. It may involve gunfire, explosives or projectile flight where the system will select an activity, take the predicted weather forecast from Environment Canada, input ground cover and ground elevation data and model the sound field. This allows the military to look at the given conditions and determine if the levels will be exceeding the guidelines set by DFO and others. He further noted this is an ongoing project as well as other offshore seismic surveys.

Mr. Carr noted this information is about source path receiver models. He noted that it is a picture of the whole process from the time you have some sort of sound signal that is transmitted through a medium whether it is air or water to a receiver that detects the sound.

Mr. Carr noted this model recognizes any hearing process involving source sounds of particular characteristics, the frequency and amplitude of the sound and the duration of the actual signal. He noted that there is then a change in the sound characteristics as the sound propagates away from the source out into the water or air. He further noted that transmission attenuates as it propagates out, there is absorption and refraction, possibly diffraction and there is a receiver, which could be you, a marine mammal, a bird, etc.

Mr. Carr noted when looking at the source they look at frequency, amplitude and the duration of the signal and the path. He noted the path may actually be a multiple path for a given signal getting to the same point. I.e. In the ocean there is a direct path from the source to the receiver and the signal will likely hit the surface of the water and bounce then arrive at the receiver at a later time. This is the same for a signal on the ground that bounces off the ocean bottom and continues on to arrive at the receiver. He further noted the receiver is seeing a complex sound field, a mix of all these multiple paths arriving. He noted here you may get reflections off steep cliff faces that will lead to multiple propagation meaning the main signal followed by a smaller amplitude as in an echo.

Mr. Carr noted understanding characteristics of the receiver is very important when you are looking at impacts on both humans and marine mammals or other land based animals. He noted that we generally hear sounds between 20 – 20,000 hertz. He further noted that there is evidence that certain animals can actually hear ultrasonic frequencies and others such as whales can hear infrasonic which is < 20 hertz and ultrasonic is > 20 kilohertz.

Mr. Carr noted that it is very important to understand this concept when you are looking at the effects of sounds. You have to know what the receiver is and what it can actually hear. He noted that in regards to the receiver you have to know what its' hearing sensitivity is in terms of what amplitudes it can distinguish. He further noted that around the receiver there is background noise. If there is a signal arriving that is actually a lower amplitude than the ambient noise that already exists the receiver will not know that the sound is there because it is lower than the existing noise.

Mr. Carr noted that sound is defined as the propagation of pressure waves from a lasting medium such as air, water, a seabed, etc. He noted sound is measured with pressure sensitive instruments such as hydrophones in water and microphones in air. He further noted that most sound receivers are sensitive to sound pressure.

Mr. Carr noted that peak pressure is the maximum instantaneous pressure of a pulse signal. He noted that RMS (root/means/square) pressure means the duration of the pulse, which looks at an average level. He further noted that Energy Flux Density is the RMS amplitude of the signal that yields the same total energy as a one second duration. It may also be referred to as the sound exposure level.

Mr. Carr noted noise is defined as any loud, discordant or disagreeable sound or sounds. He noted that sounds may startle us, interrupt our sleep, cause psychological distress, or contribute to physiological distress and when sustained and loud enough contribute to temporary or permanent loss of hearing. He further noted that this would be the same for any marine mammal.

Mr. Carr noted any sound that is unwanted by definition is considered noise.

Mr. Carr noted a decibel is simply a ratio between two quantities that are proportional to power. He noted it is commonly used for measuring sound pressure levels and is based on a logarithmic scale. He further noted that sound levels have a very large range and the logarithmic scale allows you to look at this in an easier way. A decibel (dB) is defined as 10 log of the power ratio and the power is the force of the pressure so it also written as 20 log of pressure. (10 of the power or 20 of the pressure). He noted that it is a convenient unit for variables with a wide range of values. I.e. The human hearing scale.

Mr. Carr noted some examples of increases in sound pressure and decibels. He noted any increase in a sound pressure in a decibel that is < 5 dB for humans is considered to be un-noticed – tolerable. He further noted anything in between 5 – 10 dB would be considered

intrusive, 10 – 15 dB would be very noticeable, 15 – 20 dB would be objectionable and > 20 would be very objectionable – intolerable.

Mr. Carr noted if there are two sources of decibels you cannot add them together to get a new level. I.e. If you have 50 dB plus 50 dB it does not equal 100 dB, it is equal to about 53 dB.

Mr. Carr noted a decibel is a ratio and when looking at pressure, it is a pressure to a reference. He noted that if he said something is 20 dB we don't know what that means until we know how the reference chart works. In water one micro Pascal is used as a reference and in air 20 micro PASCAL's are used. He further noted that 50 dB in the air is not 50 dB in water and this is why you have to know what that reference pressure is.

Mr. Carr noted another thing seen with the dB unit is it is written as dBA or dBC. He noted dBA is quite often used for human hearing and they look at the frequencies that fall within human hearing sensitivity and weight those more than sounds that fall outside the band because you can't hear the sound outside the band. He noted something written, as dBA means there has been a weighting applied to each frequency band in regards to human response. He further noted something written, as dBC is lower frequencies and are weighted more heavily.

Mr. Carr noted it is important when reading information to know what the reference pressure is and what the weighting is on the scale.

Mr. Carr noted another important characteristic of sound is frequency. He noted sound waves oscillate between crests and troughs and high frequencies are characterized by rapid oscillation, sharp sounds such as whales clicks and whistles while low frequencies would be characterized by slow oscillation, deep sounds such as whale moans or heartbeats. He further noted that generally sounds do not consist of a single frequency but rather they consist of a combination of frequencies and sound levels will vary with frequencies.

Mr. Carr noted sound spectrum is sound levels versus frequency. He noted spectral levels are often divided into bands providing band levels. He further noted that sound levels are often frequencies' way to reflect the receiver sensitivity and it is quite often used for human reaction to sound.

Mr. Carr noted in regards to sound propagation, once you have characterized the source of the sound and are looking at the impacts of sound you have to look at where you are relative to the source of the sound. I.e. A source of 100 dB means that generally the person is 1 meter from the source of the sound. He noted you must look at the distance away from the sound and then calculate the losses between that source and where the receiver of the sound is. He further noted that the sound levels will decrease as the distance from the source increases due to the spreading attenuation.

Mr. Carr noted the spreading loss is essentially a geometric spreading and is a log function of the distance from the source depending on how it is spreading. He noted that generally in the air there is a spherical spreading loss ($20 \log R$) and in the water it may be cylindrical spreading loss ($10 \log R$).

Mr. Carr noted attenuation loss is a function of distance from source and the properties of the water or the air. He noted when we look at the receiver the sound level that arrives at the receiver location is the source level minus the spreading loss and minus the attenuation loss.

Mr. Carr noted factors that affect geometric spreading are water depth, distance from source and sound speed. He noted sound speed depends on temperature, salinity and pressure and temperature or pressure changes in the water or the air will change the speed of sound and changes in the speed of sound will actually cause it to change direction. He noted that water sound levels are affected by interaction with both the surface and the bottom as in when the

sound hits the surface of the water there is a reflected wave and part of it will be reflected back to the surface and part of it will be transmitted into the air. He further noted this is the same as with the ocean bottom sound where part of it will be transmitted into the ocean bottom and part of it will be bounce off.

Mr. Carr noted in regards to dB a decrease in the level of sound means if you have a sound source that is a 50 dB sound source at 100 meters, at 200 meters essentially what happens is you get a halving of the sound pressure and for every doubling of distance you can decrease the sound source level by one half. He noted this is a good way to get a rough estimate of what kind of level you will have at a given range.

Mr. Ivens asked if this is for both air and water.

Mr. Carr replied yes. He noted that is assuming that you have spherical spreading. He further noted that in the air you will definitely have spherical spreading and in most deep-water cases you will have spherical spreading. In shallow water after a certain range you will have slightly cylindrical spreading.

Mr. Carr noted in deep water there is more rapid attenuation and in shallow water less rapid attenuation.

Mr. Ivens asked what would you consider deep water.

Mr. Carr replied that depends on the frequency that you are looking at; the wavelength is related to the frequency of your source. He noted it is a relative term depending on what frequencies you are looking at.

Mr. Klein asked where is the noise, is it at the surface, is it mid point between the surface and the bottom, and is it on the bottom. He asked where is the noise emanating from for this distribution.

Mrs. Klein asked where is the source.

Ms. Bishop replied that would depend on where the source of the noise is.

Mr. Klein asked if the source of the noise is in the rock would the distribution and attenuation be the same as if it were just in water.

Mr. Carr replied no. He noted attenuation depends on the medium through which it is passing.

Mr. Klein asked if the material is more dense would the attenuation be less rapid.

Mr. Carr replied yes.

Mr. Carr referred to acoustic modeling and noted they are trying to predict the propagation of acoustic energy and account for properties such as geometric spreading, absorption refraction at the ocean bottom or on land. He noted these are things that are considered when running the model. He further noted there is a variety of models available and it depends on the situation and what you are trying to model when choosing the appropriate model to suit the circumstances.

Mr. Carr noted water transmits sound more efficiently than air.

Mr. Carr noted marine mammals use sound to communicate, locate prey and navigate and they have frequency dependent hearing abilities. He noted when you are looking at the impact of sound on marine mammals you have to look at frequency and the spectrum of the source.

Mr. Carr noted he could provide Ms. Wilkins a copy by email.

Mr. Carr noted permanent versus temporary threshold shift in regards to humans but this would also apply to any type of bird or marine mammal. He noted a temporary threshold shift is when you are exposed to a strong noise source even for a brief period it may cause temporary elevation in your hearing threshold meaning there is some loss of hearing ability for a short

period of time and once the strong noise is removed you will recover your original hearing sensitivity.

Mr. Carr noted in regards to permanent threshold shift recovery doesn't happen.

Mr. Carr noted in looking at the impact on mammals you have to look at what its detection ability is. He noted if it does detect a sound what does it actually mean because there is a lot of concern about other behavioural effects on mammals and the significance of what that disturbance is. He further noted that in this field there is not a lot known nor is there a lot of research available.

Mr. Carr noted if a whale has to change course for a day does that have any impact long term and this is where the biologists are focusing their studies. He noted if there is some sort of disturbance you have to keep in mind what is the significance in terms of behavioural responses. He further noted that there are not a lot of good answers available and this is an area where further research is needed.

Mr. Carr noted several other issues would be what are the effects on man, what are the effects on marine mammals fish, and birds. He noted he is not a specialist in terms of effects on them. He further noted they work with the guidelines produced by DFO and other regulating agencies and work to those criteria.

Mr. Carr noted other issues are longer-term effects. He noted it is well known that source levels of some sounds may be a problem and he noted there has been coverage on the high frequency sonar activities in the US and the relationship to stranding whales. He further noted there is a lot more work being done in regards to this and if there is some kind of concern what ways are there to reduce the impacts on environment.

Mr. Carr noted the permitted sound levels that were established for the quarry are different for day, evening and nighttime activities. He noted they are applying a penalty to the sound levels in recognition that people are generally in the evening and at night more disturbed by noise.

Ms. Wilkins asked if the numbers 2300 to 0700 were correct.

Mr. Carr replied 2300 to 0700 is nighttime.

Ms. Nesbitt noted the last item is ground vibration and that he had talked about compression and the different sound levels and she asked what does that mean.

Mr. Carr replied that ground vibration is looking at displacement of the ground at a given location.

Mr. Carr asked Mr. Kern if this refers to the nearest structure.

Mr. Kern replied yes.

Mr. Carr noted that ground vibration measured at that point cannot exceed 12.5 millimeters per second.

Mr. Carr noted when you look at any activity whether it is a quarry or not that is going to take place Jasco will try to model that ahead of time and characterize what we think the effects are going to be and compare that to the established numbers that are in the permit. He noted based on our modeling and our best knowledge we will advise whether they will meet or not meet those numbers. He further noted if they are not going to meet them then they have to go back and look at ways of reducing the sound levels or the vibration levels. I.e. They could use a smaller charge or techniques to reduce sounds from machinery.

Mr. Carr noted that models are great but they are trying to build confidence in the models. He noted after they complete the modeling there are measuring programs to validate those levels. He further noted they have done a study and the study has shown based on their best knowledge the permitted sound levels will not be exceeded at the Whites Point Quarry. However, the

intention will be to go and do a measurement program when the initial blast occurs and every blast after to monitor and validate that the modeling was correct or incorrect.

Mr. Carr noted in regards to monitoring they are monitoring sound levels but there is other monitoring looking for visual impacts such as fish floating in the Bay. He noted we may record the sound level was within what DFO said it should be yet there may have been an effect. He further noted if that is the case we have to go to DFO and look at why this effect happened.

Mr. Ivens asked in the past when you have done modeling how close have you come to the actual measurements.

Mr. Carr replied pretty close. He noted the work we've done especially with the oil and gas industry has been overseen by DFO and our measurement programs afterwards have been close to what we expected. He further noted that you must realize a model is a model and you do your best to model a situation but you can never be exact and that is the reason we monitor so we can validate the model. He noted Jasco has had very good success to date.

Mr. Carr noted two useful references on marine mammals and noise. The best is Marine Mammals and Noise by W. John Richardson and Charles Green and Ocean Noise and Marine Mammals by National Research Council.

Mr. Carr noted he would take any questions at this time. He noted if he could not answer them now he would get an answer.

Mr. Buxton asked if he could describe how the model was made or what parameters were put into the model and how the answer was extracted from that.

Mr. Carr replied some modeling work was done for the quarry in regards to the initial blast and he described how this model was done. He noted they have to model the actual physical explosion in the ground. He further noted they used a model called Conweb and that this model was developed by the US army for weapons effects and is well regarded internationally. He noted it is an effective tool to look at peak pressures versus range in the bedrock or in the ground here.

Mr. Carr noted the tool takes input such as the amount of explosive, the type of explosive, and distances to where you want to look at the pressures, and the geometry and geology of the area that you are looking at. He noted when they run a model they are using the best knowledge available of the actual site. He further noted they then figure out what the pressures are at the different ground water interfaces and fall back to DFO's guidelines to do the transmission of sound from the rock into the water and from there they use other models to look at how the sound propagates through the water to different locations of interest. They then figure out where the worse locations would be and the worse possible scenario and model sound at those points.

Mr. Buxton asked what would be the difference generically between conducting a model analysis where you have the parameters and conducting a model analysis where you don't have the parameters such as you don't know what type of rock. He asked if it is significant.

Mr. Carr replied it is significant because here you are using the actual parameters of the area and you'll expect a difference between that and one that doesn't use the parameters. He noted it is site specific and is not a general approximation for a random set of parameters.

Mr. Buxton asked how different, can it make 100% difference or 50% difference.

Mr. Carr replied it is hard to quantify the difference as it depends on the given situation.

Mr. Buxton asked can it be significantly different.

Mr. Carr replied it can be, yes.

Ms. Nesbitt asked if his findings have been relative to this site.

Mr. Carr replied the model they have done to date has been looking mainly at the DFO guidelines and the impacts for the water. He noted based on the model they have done and the information given the levels are well within the limits that DFO has set in the guidelines for explosives near waters at the Whites Point site.

Mr. Carr noted there are some differences between what Jasco has predicted and what DFO has predicted. He noted they have yet to see how DFO obtained their information and he would argue that because Jasco's predictions are based on site specific information they are likely more accurate.

Mr. Wall asked as they move back from the water's edge and move up in elevation what will the effects on the sound.

Mr. Carr replied in terms of sound transmitted into the water obviously as you move away from the water you are increasing the distance from the water so the sound levels will fall off dramatically. He noted the worse case in terms of the water is when you are closest to the water.

Mr. Wall asked if as they move back the readings and the impacts will decrease progressively.

Mr. Carr replied absolutely.

Mr. Klein asked what will the rate of decrease be in rocks. He noted the same lava flow that is going to be mined goes down into the Bay of Fundy as a bare shelf.

Mr. Carr asked if he could repeat his question.

Mr. Klein asked as you are blasting rock on the ground and that rock is attached to the same rock that is a bare shelf underneath what will be the rate of attenuation in rocks.

Mr. Carr replied again that generally as you increase distance you decrease pressure.

Mr. Klein asked if the rate of decrease is substantially slower the denser the material.

Mr. Carr replied yes but in terms of attenuation it will be mainly in the range and doubling the range will decrease it. He noted there are two things to look at, the attenuation, which is strictly spreading as a range and there is the smaller absorption or attenuation factor of the actual material. The other is the geometric spreading, which will always dominate. He advised Mr. Klein that he does have the numbers pertaining to his question and he will provide the to Mr. Klein after the meeting.

Mr. Buxton asked if he could provide some information on the array effects where there is a single blast and then a sequence of blasts and what might be a cumulative effect from a string of delays in one charge.

Mr. Carr replied if you have multiple sources where one source detonates with sounds propagating from it and another with sounds propagating you will have interference between the two and in some cases it will be additive or in other cases it will actually cancel the other one out. He noted you would look at the charge spacing in relation to the width of the pulse from the actual explosion and in some cases where the distance between two charges is less than the actual width of the pulse you may get some accumulative effects, an increase in the pressure. In other cases you won't get the actual increase but when one pulse arrives at a location before the other there is no overlap or very little overlap. He further noted that instead of increasing the pressure you are prolonging the pulse. He noted it will depend on any given area and you will have either an increase or decrease in pressure and the length of the pulse.

Mr. Buxton noted that Mr. Carr did say he was not an expert in the biological effects and he asked if there is a different effect between a single noise and a continuous noise. I.e. The air shots from seismic against a blast used to dislodge rock.

Mr. Carr replied a blast and an air gun's pulse eruption are very similar in that they are of relatively short duration of sound but there is a difference between that sound and a running

generator, which is a continuous noise source. He noted with a generator there is not any physical damage but there may be more of a disturbance effect because of the continuous noise. Mr. Buxton asked how would you monitor the effects at a later date to test the model, what would you do.

Mr. Carr replied if they are going to do a blast at the quarry Jasco will install hydrophones in the water in a number of areas at a given depth that correspond with the model and areas that are of interest. He noted when the actual shock goes off they record the actual acoustic signal and do a full analysis on the different arrivals of peak pressure. He noted it is similar in air but microphones will be set up at various locations. He further noted that they are interested in the noise effect in the nearby community so they will have a monitoring station there and because there are limits in place for a nearby property there will be a station there as well.

Mr. Carr noted that you want data that is going to validate the model and data that will be of interest to the public.

Ms. Wilkins asked if anyone else is feeling as she is. She noted she appreciates Mr. Carr coming and she knows that he knows what he's talking about and that someone with a technological background knows what he is talking about but all she has heard with her limited knowledge is how you do what you do. She noted she has heard very little on the effects of anything and the way it is presented she would have a very difficult time understanding even if he went into that. She further noted that she was hoping to get more specific information on how it's effecting whales, how it would effect the houses nearby and there are lots of questions they could have come up with if we had understood better. She noted that she says 'we' meaning her and that she is assuming there are others in the same boat as she and for her this was kind of a wasted evening.

Mr. Carr replied he would try to sum up the main points and he apologized. He noted that he tried to keep it away from technical but it is hard to keep from technical when trying to understand certain things. He further noted that what he is trying to say is when you are looking at the effects of sound you have to understand several things. You have to understand the characteristics of what is producing the sound and those are generally the amplitude of sound versus....

Ms. Wilkins replied that she got the general points but for her it was not what she was looking for.

Mr. Carr asked if she was looking for the impacts.

Ms. Wilkins replied yes.

Mr. Carr noted if you are talking about marine mammals he suggested do the reading and he noted there has been certain research done on specific types of marine mammals and certain animals so there are bits and pieces known about certain whales in terms of what their hearing sensitivities are. He noted the key to judging impact is you have to know and understand know what the animal hears and how it is going to react to sound and a lot of that isn't known. He further noted this is ongoing research.

Mr. Carr noted based on the best research that has been done to date threshold levels have been set which are 180 decibels for whales and 190 decibels for seals. He noted that those are the safety criteria so if you are below those levels the body of knowledge says that you are probably not doing any physical damage to whales. He further noted that is not to say that you might not be disturbing them but how do you quantify a disturbance to something.

Mr. Carr noted for example if you are walking down the street and there is a jackhammer that is quite loud on the side you are walking on you would cross the street walk down a block and

cross back over and proceed to where you are going. He noted it had disturbed you but at the end of the day was it significant. He further noted that is the kind of thing you have to look at. Mr. Carr noted if you are looking at hearing loss and mortality those are easy to quantify but some of the other things we are looking at such as disturbance and behaviour there is a lot of research being done on that.

Ms. Wilkins replied in regards to his example if she was prone to shopping in a certain area and I knew they were going to have a jackhammer going for the next three weeks and it was bothering her hearing she would not come back to that area until the noise was gone. She noted in that case you could say that maybe it just disturbed the whales and bothered them but will they come back. She further noted that there is evidence of whales leaving the area and not coming back and she would assume that it would be the same for the fish.

It was asked what effect will it have on the water table.

Mr. Carr replied he can't answer that, as it is not his area of expertise.

Mr. Wall asked does the Whites Point blasting plan conform to the DFO guidelines.

Mr. Carr replied the modeling they have done says yes.

Mr. Wall asked if it fits comfortably within the guidelines.

Mr. Carr replied yes it is within DFO levels.

Mr. Wall noted that DFO has determined what they feel can reasonably be handled by the whales on a biological level on whether they decide to cross the street and shop somewhere else.

Mr. Carr noted DFO has set their guidelines and his assumptions are based on what those guidelines are based on, which is the best knowledge out there. He noted in terms of the model done there is not a problem with sound levels.

Ms. Wilkins asked Mr. Buxton if he is going to have experts to deal with biology and the effects of blasting on the water table. She noted that she thought this would be the whole package not just sound.

Mr. Buxton replied it is difficult to find an expert that is an expert in three or four fields but the answer is yes. He noted it was hoped that one from LGL would be here tonight but he was not sure what happened or whether there were some scheduling difficulties.

Mr. Carr replied that it didn't work out for tonight and that they generally work with LGL.

Ms. Wilkins asked what is LGL.

Mr. Carr replied LGL is an environmental company that Jasco Research Ltd. works with and they have a marine biologist on staff. He noted Jasco works closely with them on projects but Jasco does the acoustic work and then work with their biologist where they will assess the impact. He further noted Jasco can model the impact based on the guidelines and LGL are the experts on what the effects might be based on research.

Ms. Bishop noted that LGL has been heavily involved in almost everything in the offshore with regards to the explorations that have been done on the offshore. She noted they have been basically the lead biologic in those investigations.

Mr. Carr noted their head biologist is John Richardson

Ms. Bishop noted he was involved with Hibernia.

Mr. Carr noted that most of the projects they have worked on in the past few years have been done in partnership with LGL.

Mr. Buxton noted Global Quarry Products has engaged LGL.

Ms. Wilkins asked if she could make a suggestion. She asked if from now on when they have the experts here could he have them use more laymen's terms.

Mr. Buxton replied he would make note of this again. He noted when Global Quarry Products gets a request from the CLC to find an expert on a particular subject and asks them if they would come and make a presentation they are given a general outline of what the CLC is interested in. He further noted that he has no idea what they are going to say nor is he going to influence what they are going to say. He noted that he had met Mr. Carr for the first time this evening.

Ms. Wilkins replied that is not really influencing what they are going to say. She noted if you were a lawyer it would be like getting rid of some of the legal speak so that people could more easily understand what they were talking about. She further noted it is hard to ask an intelligent question when you don't know what is being said.

Mr. Buxton noted that this is a scientific operation.

Ms. Wilkins agreed with that.

Mr. Buxton noted that this is not quasi-science or little bits that one picks up here or there. He noted if they were to do that then why waste money to hire experts like Mr. Carr, LGL and the others. He further noted that Mr. Carr may have a thousand times the knowledge that he has on this particular topic and he assumed that the CLC wanted to talk to an expert, as it is a scientific subject.

Ms. Wilkins asked of what value is it to the CLC if they are not fully able to understand what is being said.

Mr. Buxton replied that he can't influence what the experts say.

Mr. Carr noted that he tried to present this in a way it could be understood. He noted if you find in future presentations that you are not grasping what is being said or it is a bit too technical stop the person and ask if they can put it in simpler terms and they are quite often happy to do that. He further noted they may not be able to but quite often they will try.

Ms. Nesbitt asked if there were any other questions.

Mrs. Klein asked if there is a copy of your model available.

Mr. Carr replied that multiple models were used.

Mrs. Klein asked if this did not apply to Whites Cove.

Mr. Carr replied again that they used different models for different pieces of the equation and we then compared all the models.

Mrs. Klein noted that she did not mean a model per se but as it applied to Whites Cove and she asked if that model was available.

Mr. Carr asked if she meant the results.

Mrs. Klein replied yes.

Mr. Carr replied that in Whites Cove they are going through the full process and all the results will be Provincially public documents.

Mrs. Klein asked did he say the model is according to blasting that will be done.

Mr. Carr replied yes. He noted this is a draft of what we did and it will be incorporated into the biological stuff.

Mrs. Klein replied what she meant was and what she is asking is that there was no blast at Whites Cove.

Mr. Wall replied that Mrs. Klein had been going to meetings and asked her if she did not get it.

Mrs. Klein replied no she did not get it.

Ms. Wilkins noted that is very unprofessional.

Mr. Wall replied that the quarry has been delayed for a year getting the blasting permit.

Mrs. Klein asked then how could you do a model without actual blasting.

Mr. Carr replied that is the whole idea of modeling. He noted we do a model based on what is going to happen and when you measure it is measured on what has happened. He further noted the models are based on science and there are multiple models for different things.

Mrs. Klein noted what she is getting at is that there would be no empirical model.

Mr. Carr and Mr. Buxton both replied not until the blast.

Mr. Buxton noted that you can't until you blast and that the model is computer simulated.

Mr. Carr noted this is a simulation of what will happen. He noted until they have done the blast they do not have any actual data from the blast. He further noted they may have data from other blasts but you have to ask how well are they because they may have different bedrock.

Mrs. Klein asked do you know about the bedrock. She asked if Mr. Carr is aware of what kind of bedrock is there.

Mr. Carr replied yes and all of that information went into the model.

Mrs. Klein asked if he actually has that paper with the product of his work.

Mr. Carr replied yes.

Mrs. Klein asked if it is available.

Mr. Buxton replied no it is not right now but it will be made available to the CLC.

Mrs. Klein replied that is what she was getting at and that she thinks that was pretty obvious.

Ms. Nesbitt asked if there were any other questions.

Mr. Carr noted that there are certain biological impacts that you will be interested in and he suggested they should get that information in and the presenter can address those issues when he does the presentation.

Ms. Wilkins replied that we only found out about the meeting on Monday. She noted that it is pretty hard to prepare any questions on such short notice.

Ms. Nesbitt asked if there were any other questions.

Mr. Klein noted that he would like to make a comment in regards to the minutes of the last meeting but he does not wish to take up more of Mr. Carr's time.

Ms. Nesbitt noted that she would like to thank Mr. Carr for his presentation and that we appreciate his coming out to advise us on sound and models very much.

Mr. Carr hopes that he was able to provide something so if a biologist does make a presentation and they are talking about some of these things it will make sense in terms of what they talk about.

Ms. Nesbitt moved that the minutes of August 27, 2003 be approved.

Mr. Ivens noted the CLC should wait for the next meeting, as the members had not had a chance to review the minutes.

Ms. Nesbitt asked if there were any other questions.

Mr. Klein noted on page 4 of the August 27, 2003 minutes and going back to his concern in regards to non-combusted explosive materials Mr. Buxton states after saying he was not an explosives expert "He noted his understanding from explosives experts is that the preparation of anfo as it is done today because of environmental restrictions and regulations means that you essentially get 100% consumption of the individual materials...." and so on. He noted that didn't sound very reasonable to him. He further noted that he did a little bit of research and off of the FBI federal government headquarters lab site there is a discussion of Explosive Residue Origins and Distributions published in Forensic Science and Communications in April 2002. He noted that he would read one paragraph.

Mr. Buxton addressed the chair and asked is it not inappropriate to discuss the minutes before they are approved.

Mr. Klein continued to read from the article but it has not been recorded in the minutes, as his comments were not distinguishable from the comments being made by others at the same time. Mr. Klein noted that the way the quarry is going to detonate 60 or 100 small hundred pound charges would create a substantial amount of residue. He noted again his question goes back to how is that residue going to be contained and prevented from getting into the ground water. Mr. Buxton replied that our experts advise us; these are people who do this on a continuous basis, that there will be no residue. He noted if Mr. Klein has evidence to the contrary by all means bring it forward.

Mr. Klein replied that he has a paper that seems to indicate that there is no possible explosive that is detonated without residue.

Mr. Buxton replied that is fine.

Mr. Klein asked if he should submit it to the CLC to be included with the minutes.

Mr. Buxton replied that he does not operate the CLC and that Mr. Klein would have to ask the chair.

Ms. Nesbitt replied that she would like to have a look at it.

Mr. Wall noted that he would like to add that that we are making every effort to blast within the guidelines that are set out by the appropriate agencies and that we are using reputable contractors. He noted that you can probably find some science that says dribs and drabs of this and that everywhere but we are meeting your laws and proposing to blast when we obtain the permit within full accordance of these guidelines.

Ms. Sanford noted that the minutes of August 27, 2003 that Ms. Nesbitt had advised were ok to hand out at the meeting were distributed as unapproved. She noted that if they are copied or forwarded that they should be aware that they are not yet approved.

Ms. Nesbitt replied that she wanted to address page 22 of the minutes in regards to others being added to the regular mailing list. She noted that the minutes should be approved by the CLC and mailed to the members and then once approved they may be mailed to the others.

Ms. Sanford made note of this.

Ms. Nesbitt asked if there were any other questions.

Mr. Buxton noted that he assumes that everyone is aware of and has been following the website with respect to the progress of the panel review.

Ms. Nesbitt replied if Mr. Buxton could give us an update that would be great.

Mr. Buxton noted there is very little change and that the first part of the process, the completion of the Memorandum of Understanding between the Provincial and Federal government, he believes was posted on the website on August 11th for a 45 day public input phase to September 18th, has been revised to October 22nd because CEAA made an error in the original notice. He noted that is as far as the process has gone at this date. He further noted that whether the other processes will be delayed by that an equal twenty days it is not known. The panel review process is still in that first stage looking for comments on the Memorandum of Understanding between the Provincial and Federal partnership.

It was asked what other process is underway.

Mr. Buxton replied there should be and he assumes that if the steps are being done in sequence they should be preparing a Scoping Document that was due to be released for public comment on October 7th. He noted that he can't say whether it will be released but he assumes that it may not be released until after October 22nd. He further noted that you will probably know at the same time he does by looking on the CEAA website when the Scoping Document will be released and there will be a 45 day period for public input on the Scoping Document.

Ms. Nesbitt asked if there were any other questions.
Meeting adjourned at 8:45 pm.
Next meeting date is to be determined and advised.

Minutes of Meeting of Community Liaison Committee

Bilcon of Nova Scotia

7.00 p.m. November 24, 2004

Conway Place, Digby

In attendance: Ms. Cindy Nesbitt, CLC Chairperson
Ms. Christine Harnish, CLC Member
Mr. John Ivens, CLC Member
Mrs. David Graham
Mr. Paul Buxton, Bilcon of Nova Scotia
Ms. Kristy Bishop, Bilcon of Nova Scotia
Ms. Tammy Sanford, Secretary to CLC

Regrets: Mr. Brian Cullen, CLC Member; Mr. Mark Jeffrey, CLC Member; Ms. Judith Carty, CLC Member; Mr. David Graham, CLC Member

Mr. Buxton advised the committee that Global Quarry Products ceased to exist several months ago. He noted that the Proponent of the Whites Cove Quarry is Bilcon of Nova Scotia which is wholly owned by Clayton Concrete, Block and Sand of Lakewood, New Jersey.

Mr. Buxton noted that the permit for the 3.9 hectare quarry under which this CLC came into being was not transferred from Nova Stone Exporters to Bilcon of Nova Scotia by request.

Mr. Buxton noted that the lease for the entire property is now held by Bilcon of Nova Scotia and that Nova Stone Exporters no longer has any interest in the property and therefore, automatically the 3.9 hectare permit is dead.

Mr. Buxton noted under the terms of the 3.9 hectare permit Nova Stone Exporters was required to establish a Community Liaison Committee. He noted that from the beginning the committee members and Nova Stone Exporters agreed to discuss all of the elements of a larger quarry as the members chose to raise them.

Mr. Buxton thanked the CLC for its efforts in gathering information to relay to the public and congratulated them for a job well done. He noted that Bilcon of Nova Scotia would like to continue to provide secretarial support and a meeting place and although the committee is not now a requirement to do so would be a good idea.

Mrs. Graham asked if the Nova Scotia Department of Environment and Labour think it a good idea.

Ms. Harnish asked if the Nova Scotia Department of Environment and Labour do not require it.

Mr. Buxton replied that there is no permit in place and this committee was essentially mandated under the terms and conditions of the 3.9 hectare permit. He noted there was a clause that stated if asked to do so a community liaison committee must be set up.

Mr. Buxton asked members if they would be prepared to sit for approximately six months to continue to ask questions and distribute information to the public.

Mr. Ivens replied he has no problem continuing as a CLC member.

Ms. Harnish replied she has no problem continuing as a CLC member.

Mr. Buxton noted that if the CLC continues Ms. Nesbitt was welcome to continue as chair of the committee and that a location, secretary and any other information would be provided by Bilcon of Nova Scotia.

Mr. Buxton proceeded to update the committee on the status in the overall process. He noted that Bilcon of Nova Scotia is the sole proponent and that a new lease has been negotiated for a 90 year period which is held by Bilcon of Nova Scotia. He further noted that at the last committee meeting the committee would be called for a meeting when the process was further along and there was more information to report.

Mr. Buxton noted that it had taken quite a long time to get the Memorandum of Understanding between the Provincial and Federal governments partnership signed. He noted that it was signed approximately 5 weeks ago.

Mr. Ivens asked if it took almost a whole year to get signatures.

Mr. Buxton noted that it is a four page document and when it was posted on the website in August 2003 there was an error in the address for the Provincial Department of Environment. Three weeks into the process it had to be re-posted. He noted there was a huge amount of comments for a four page document all of which are available for review at the Bilcon of Nova Scotia office.

Mr. Buxton noted that the Federal/Provincial partnership reviewed these comments prior to signing the Memorandum of Understanding. He noted that during the redrafting and signing process of the Memorandum of Understanding the Federal/Provincial partnership were also working on the draft copy of the Scoping Document for which the Proponent was told would come in a timely manner. He further noted that document can be accessed on the CEAA website or a copy can be reviewed at Bilcon of Nova Scotia.

Mr. Buxton noted that it is a 37 page document and it describes what the Proponent has to do to prepare the Environmental Impact Statement.

Mr. Ivens asked if most of these requirements are standard or did they come from the comments received.

Mr. Buxton replied there have been no comments for the Environmental Impact Statement and that the Proponent is now in the commentary period for the Scoping Document. He noted that anyone can forward their comments to Steve Chapman, the project administrator until January 21, 2005

Mr. Buxton noted that a three person panel was named after the Memorandum of Understanding was signed. He noted the panel members in place are the Chair, Bob Fournier and Dr. Gunter Muecke, who are scientists and Jill Grant who is a planner and that they intend to hold hearings in this area in December 2004 with respect to the Scoping Document. The hearing dates will be announced.

He noted this will allow for everyone to be able to read the Scoping Document and make suggestions by the end of the January 21, 2005 period. The panel will then review the comments and determine what changes are required to be made to the draft document and a final Scoping

Document or as it will be called the Guidelines for the Environmental Impact Statement will be issued. He noted this will become the final blueprint for what Bilcon of Nova Scotia has to submit to the panel. The panel will then start hearings.

Mr. Buxton noted in the next newsletter issue there is a chart (see Appendix E) which purports to set out the process. He noted that it is the responsibility of Bilcon of Nova Scotia to submit the Environmental Impact Statement to the panel. There is a documentary process to follow in order to set out and set up the Environmental Impact Statement with all the research reports annotated and separate volumes, etc. The panel will review this information and hear the comments and possibly hold hearings because the Environmental Impact Statement will again go on the website and it will be available in the Annapolis Royal and Digby libraries for people to review and make comments.

Mrs. Graham asked if this is all a normal procedure.

Mr. Buxton replied that this is not a normal procedure for a quarry and to his knowledge it had not been done before.

Mrs. Graham noted that Mr. Buxton informed them there is a 90 year lease on the land and she asked who owns the land.

Mr. Buxton replied that the Johnson's and Lineberger's still own the property and it is leased from them for exclusive use to remove rock for 90 years.

Mr. Buxton noted that when the panel has heard all the comments they will make a series of recommendations to the Ministers and they will review and make a decision.

Mr. Ivens asked if Bilcon of Nova Scotia is comfortable with the panel members.

Mr. Buxton replied the Proponent is comfortable that the panel members understand the science.

Mrs. Graham asked if any of the groups and individual's research and findings that were presented to the committee would be used by the panel or does everything have to start from scratch.

Mr. Buxton replied that the Proponent feels they are pretty much finished with the process.

Mr. Ivens noted that information would go into the Environmental Impact Statement.

Mrs. Graham noted that all of this information has been gathered and she asked if it is required again.

Mr. Buxton replied no and that the Proponent started this process two and a half years ago. He noted that there is a massive compilation and writing job to be prepared but the technical aspects are complete. He further noted that the Proponent has been advised that the Environmental Impact Statement should be a concise, brief document hopefully 200 – 300 pages but it is more likely to be 500 – 600 pages. He noted the appended volumes will be several thousand pages and it will be a very extensive document.

Mr. Buxton noted that whether it is a comprehensive study report or a panel review any government department can declare itself to be a responsible authority. For example, we are going to build a marine terminal so Department of Fisheries and Oceans can declare itself a responsible authority. He noted that initially on the Federal side the Department of Fisheries and Oceans was the sole responsible authority but since that time Transport Canada has declared itself a responsible authority. There has been a shift in the position of Navigable Waters protection people and the Coast Guard. He further noted that because of this some elements have fallen under the Department of Transport's jurisdiction.

Mr. Ivens noted that this is confusing because the Department of Fisheries is the Coast Guard.

Mr. Buxton replied that there has been a reassignment of responsibility.

Mr. Buxton noted that the Proponent has found that the Federal government since the Memorandum of Understanding has been signed has been more open and willing to meet. He noted they recently met with the Department of Fisheries and Oceans and they are prepared to discuss issues such as blasting and seem willing to conduct a responsible scientific process.

Mrs. Graham asked if they were not willing to meet prior to the signing of the Memorandum of Understanding.

Mr. Buxton replied they would not meet with the Proponent.

Mr. Ivens asked if this was because the Memorandum of Understanding had not been signed.

Mr. Buxton replied that was their position that there was no project until there was a Memorandum of Understanding.

Mr. Buxton noted that this is Bilcon's status in the process at this time and it has been their intention to continue with the process and they have no intention of discontinuing with the process now. He noted one thing to emerge from further work on this project is the realization that staff levels will probably increase slightly and the capital cost has gone up considerably, to approximately 35 million dollars to get this project underway. He further noted that much of the money being spent is in the province of Nova Scotia.

Mr. Buxton noted that there has been nothing that has changed dramatically since the last CLC meeting and that it is still estimated that the quarry will produce 2 million tons per year with approximately 40 – 45 ships per year. He noted the Canadian dollar has increased considerably in the last year which makes a huge difference.

Mr. Ivens asked if this would affect the feasibility of the project.

Mr. Buxton replied not necessarily but it changes the parameters. He noted that we have observed that the Chinese market continues to progress by 10% per year and that many bulk carriers proceed to China with copper, zinc, lead, aluminum, scrap iron, etc. He further noted that when this project began the first discussion on the cost to charter a ship it was \$14,000.00 per day but today it would cost \$55,000.00 per day.

Mr. Buxton noted that the problem at this moment is that virtually every country has banned single hull tankers carrying oil products which mean that single hulled tankers will be banned.

Mr. Ivens replied they would be banned whether they carried oil or not.

Mr. Buxton replied that bulk cargo is ok but noted that there is a frantic rush for shipyards to build double hull tankers and the slips are booked 3 years in advance.

Ms. Herron noted by request of the CLC the Proponent held a series of focus groups with fishermen who are affected and fish in Whites Cove. She noted that names were suggested by the chair and by Bruce Theriault and a member of the CLC who has an interest in fishing. She noted that there were some very interesting views. She further noted they don't like the idea of a quarry but have become used to it.

Ms. Herron noted that contingency measures, shipping routes and other aspects were discussed in order to help facilitate a mutual beneficial co-existence between the fishermen and the quarry.

Mr. Ivens noted that he felt once they realize that once they get to the stage when they can go ahead whether fishermen fish there or not the quarry can still go ahead. He noted that it would be better for them to sit with the Proponent now and come to some sort of agreement then to have the quarry just go ahead.

Mr. Buxton noted that where this is not a formal committee any longer that when they go through specific and pertinent information he would suggest that it be done in an open verbatim discussion and that minutes be less formal with comments not attributed to individuals. This is to be able to understand all the aspects of the project. He noted this may induce much more

frank and specific comments. He further noted that general discussions can be recorded as topics discussed.

Mr. Ivens agreed that there is no need for detailed minutes.

Mr. Buxton noted that the fishermen want the Proponent to sail a prescribed route in and out and they want it placed on the charts. He noted that the Proponent is prepared to make funds available to a committee or association so that if traps are lost to fisherman that fish in the area they would be compensated.

Mr. Ivens replied that they would get into a battle if they say there is a fund available for lost traps.

Mr. Buxton replied that the money would be turned over to a committee or association and they would be responsible for its administration. The fishermen would approach the administrator and make application to them for their loss. The Proponent would have no way of knowing who does or does not have traps there but they are prepared to place money in a fund for this.

Ms. Herron noted that Bruce Theriault had suggested that the Lobster Association may administer the fund.

Mr. Buxton noted that they were very positive meetings with the fishermen and he felt there would be another meeting in 2 – 3 months to ensure the Proponents understanding of their concerns.

Mr. Buxton noted that another issue looked at in the last year was blasting. He noted that DFO cited the issue of the Inshore Bay of Fundy Salmon.

Mr. Ivens asked why they would comment on that as blasting has occurred behind his home all summer and no one has made any comments about the Inshore Bay of Fundy Salmon.

Ms. Harnish asked if there is Bay of Fundy Salmon out there.

Mr. Buxton replied that the Proponent engaged Jasco Research Ltd and LGL who provided a presentation to the committee to do a very site specific computer model of blasting which showed that the Proponent is well within the guidelines for blasting.

Mr. Buxton noted they have proceeded to research the inshore Bay of Fundy Salmon and this was carried out by Mike Dadswell.

Mr. Buxton noted that they are dealing with the issue, they will tackle it scientifically and they will get the best people to get results.

Mr. Buxton noted that Gardener Pinfold is beginning to conduct a Socio Economic study on the effects of the quarry. He noted the Proponent has provided background data obtained from Stats Canada. He noted Gardner Pinfold would do an input output model to determine what the real economic benefits of the quarry are.

Mr. Buxton noted that this would probably be available in January 2005 and that this is the last major piece required and that the Proponent hopes to complete their document by the end of March 2005.

Ms. Herron noted they would be sending out a monthly newsletter and showed a draft copy that will be mailed in early December. She noted that Bilcon of Nova Scotia will be holding an open house on December 7 – 8, 2004.

Ms. Herron noted that the Nova Scotia Department of Natural Resources and the Chamber of Mineral Resources will be forwarding material which will also be available.

Ms. Harnish asked if there would be someone from the Nova Scotia Department of Environment and Labour attending.

Mr. Buxton replied they would certainly advise them of the open house.

Ms. Harnish noted that Jacqueline Cook would be attending both dates.

Ms. Nesbitt asked if the review panel reviews the EIS and make their report to the Minister what is there to stop them from saying no you cannot go ahead with the quarry.

Mr. Buxton replied you can refer to the Canadian Environmental Assessment Act and the verbiage that goes with it. He noted it is available on the web site or the Proponent has a copy. It essentially says that the Canadian Environment Assessment Agency is to ensure that projects are carried out in an environmentally safe manner. He further noted it does not say that CEAA will determine whether or not a project will go ahead.

Mr. Buxton noted this project is a legal project and there is nothing in law to prevent this project from going ahead. He noted there are hoops to jump through and satisfy to obtain permits but there is nothing to say that the quarry can't proceed at Whites Cove. Our reading is that the panel and the Minister will decide how stringent the mitigating measures are in the operation of that quarry.

Mr. Buxton noted that the Voise Bay assessments were assessments to determine what the Proponent had to do to keep the environment and the public safe. He noted that is how they read this process and if you look at what our opponents are saying then the Minister should reject this quarry either Federally or Provincially before hearings. He further noted if the Minister had that power then he would also have the power to sign a paper and they could start blasting tomorrow.

Mrs. Graham asked who said there had to be a review panel.

Mr. Buxton replied that it was a request by Mr. Robert Thibault to the Federal Minister of Environment.

Mrs. Graham asked who decided who would sit on the panel.

Mr. Buxton noted that it had already been agreed that there would be a joint review so it became a joint review Panel between the Federal and Provincial governments. He further noted that the Memorandum of Understanding determined how the panel would be put together. The Federal government nominated two members and all three members are Nova Scotian. The chair, Bob Fournier has been on several other panel reviews in the past and is very well respected.

Ms. Herron noted the chair participated in the Sable Gas Panel and he chaired the Deep Panuke Seismic Study in Cape Breton, and is a radio personality for CBC and an oceanographer. Jill Grant is an urban planner and a lot of her work has been done on what is termed "gated communities". Gunter Muecke is an earth scientist and has been involved in review panels in particular Kelly's Mountain. She further noted that all 3 are current Dalhousie professors and are competent and are respected in their fields.

Mrs. Graham asked if they were not picked by the quarry.

Ms. Herron replied they were not.

Mr. Buxton noted if they had the option to choose they may well have chosen these professionals.

Ms. Nesbitt noted that it sounds like a well rounded panel.

Ms. Herron noted that it is well known in the community that Bilcon of Nova Scotia is responsible to cover the cost of the panel and they will be paying for the panel review.

Ms. Harnish noted that the public looks at that and thinks you are paying them too.

Ms. Herron replied that this is what's out there and just as we were required to pay for your secretariat for the CLC the CLC is not our committee. Nor is this panel our panel. She noted that the Proponent is paying for it but they have no say over it.

Ms. Herron noted that what has been heard coming from the community, from some of the quarry opponents is that obviously since the Proponent is paying for it that we got to pick the

panel and since we are paying for it it's a done deal. She further noted that it has to be made very clear that yes Bilcon of Nova Scotia is responsible for the cost not the tax payers but they have no say in how the panel is operated.

Mr. Buxton noted that interested parties are eligible for a \$100,000 fund to engage consultants and cover costs. He noted they can apply for funds up to \$25,000 in the first stage for the Scoping Document and in the next stage when the Environmental Impact Statement is submitted \$75,000.

Mr. Buxton noted that the CLC could apply for status to have their own scientific adviser for CLC.

Mr. Buxton noted that by the time this process is complete it will have cost the Proponent \$2.5 million.

Ms. Nesbitt asked if the CLC minutes will be part of the process.

Mr. Buxton replied yes.

Ms. Herron noted that the minutes are now available on CD and that they are fascinating to go through, the detail is phenomenal.

Mr. Buxton noted that the Proponent will provide a copy of the Draft Scoping Document to the CLC and that if any member of this group wants specific detailed information the Proponent will provide it. He noted that they feel they hired the best scientists in the Maritime Provinces. He further noted if the scientific documents are made available to the general public at this time they may be deliberately misquoted. They are willing to have neutral open minded people who are willing to come sit and read these documents so that they can say to either a supporter or opponent that this is what the evidence has shown. That is all that is asked of the Committee is to get accurate information out to the public.

Mr. Buxton noted that after the draft Scoping Document there will be a final Scoping Document which will probably arrive in March 2005.

Ms. Herron noted that as per the Panel Process description (see Appendix E) there is a specific timeline that must be met within the context of the regulation. She noted the worst case scenario is this time next year they are breaking ground in Whites Cove.

Ms. Nesbitt asked what the best case scenario is.

Mr. Buxton replied July – August 2005.

Mr. Buxton noted that if the Proponent had chosen to not start the scientific work until the final Scoping Document was produced it would take an additional 2 – 2 ½ years to do this. He noted that if we had not done all the scientific work prior to the Scoping Document this would be a 4 year process. He further noted that no one would want to perform a 5 year process for development work or exploration in Nova Scotia.

Ms. Herron noted that the Sable offshore project may not even happen for this reason. She noted that Deep Panuke has asked for a modification of its approval to decrease the size of the field it was going to investigate and they were advised that it would be a 3 – 5 year regulatory process. She further noted that for EnCana, Shell, and Mobil who have deep pockets the money is not the particular issue it is the length of time to get something in production whereas they can go elsewhere to the North Sea for example, where the assessment process is established and timely.

Ms. Herron noted that for every well, every hole there has to be a total assessment related to the area around it. You can't permit a particular geographic area for as many wells as you want to drill you have to permit each individual well which is a 3 – 5 year process.

Mr. Buxton noted that the Proponent would also provide copies of drafts of Bills 88 and 118 to the CLC which have both gone through the House for first reading.

Mrs. Graham asked what the difference between mining gold and quarrying basalt is.

Mr. Buxton replied that one requires a mining permit for gold and Bill 118 deals with mining. He noted that those two bills would basically stop quarrying and mining in the province of Nova Scotia.

Ms. Nesbitt asked who introduced these bills.

Mr. Buxton replied they were introduced by the Liberals who have said that government regulation is destroying the economy of Nova Scotia. He noted that the NS Chamber of Mineral Resources has determined that if these bills go through that essentially it will seriously hinder quarrying and mining in the province of Nova Scotia.

Mr. Buxton noted that Nova Scotia produces \$1.25 billion in mining and quarrying and that fish is below \$1 billion. He noted that some groups want to stop the exporting of rock, stop mining, quarrying and pits. When asked where will you get rock from they say import it. He further noted some groups state there is no rock in New Jersey but there is more rock there than in the whole of Nova Scotia.

Ms. Nesbitt noted the work done on the wharf in Tiverton and that there was no problem at all for the fishing community.

Ms. Herron noted that there is an observation deck in Hantsport to watch the ships loading.

Ms. Nesbitt asked Mrs. Graham where they had gone in British Columbia and paid to go to a tourist attraction.

Mrs. Graham replied that it was an old mine with a gift shop and they had a huge truck on display that you could go around the area.

Mr. Buxton noted that the reality is that you can't live in our society and have roads and buildings without quarrying.

Mrs. Graham replied you don't have a job either without industry.

Ms. Nesbitt noted that a community can't survive without a diverse backbone. If you don't have people working you don't have young people and how do you run a community, schools, and a volunteer fire department without jobs. Employment Insurance is not a viable solution nor is Old Age Security.

Mr. Buxton noted that you can have diversity and the other things as well - they are not mutually exclusive. He noted that his favorite area of the world is the Peak District where you can walk for miles of hills and dales which are beautiful but off to one side there are 3 or 4 cement mills. So you have industry and a beautiful area hand in hand.

Mrs. Graham asked where was the quarry that celebrated its 50 or 60 years and the whole community came out to celebrate.

Mr. Buxton replied that was a gypsum plant, National Gypsum. He noted they celebrated 50 years and the Minister was there and people went into open pits and terraces etc. it was a wonderful celebration.

Ms. Herron noted that they have observation decks to watch ships load and that they have been mining and transporting gypsum for over 100 years.

Mr. Buxton noted the Martin Marietta quarry in Auld's Cove is 40 plus years old and it is an in your face quarry and Cape Breton is a tourist attraction.

Ms. Harnish asked what their setback point there is for blasting.

Mr. Buxton replied he is not aware of what it is.

Ms. Herron noted that she had been talking with the Chair of the Port Hawkesbury Chamber of Commerce and asked for a formal statement on the benefits of Martin Marietta to their

community and how he felt. She noted that Martin Marietta is being used for other things besides aggregate.

Mr. Buxton noted they ship approximately 2 ½ million tons per year

Ms. Nesbitt noted the concerns about siltation and that there seems to be nothing heard about whether it has affected the lobster catch in the area.

Mr. Buxton replied the silt there was because of the causeway construction and not the quarry.

Ms. Herron noted that the Proponent has been approached by other fishermen's groups for possible uses of our facility.

Mr. Buxton noted that they expect to load in 10 – 12 hours so there would be 156 hours per week the terminal would not be used so if anyone has a useful purpose we may be happy to accommodate them.

Ms. Harnish asked if there is shelter there.

Mr. Buxton replied there is little as the marine terminal is dolphins on pipe piles rather than a breakwater.

Mr. Buxton noted that if fishermen come to us we will discuss possible use of our facility.

Meeting adjourned at 9:15 pm.

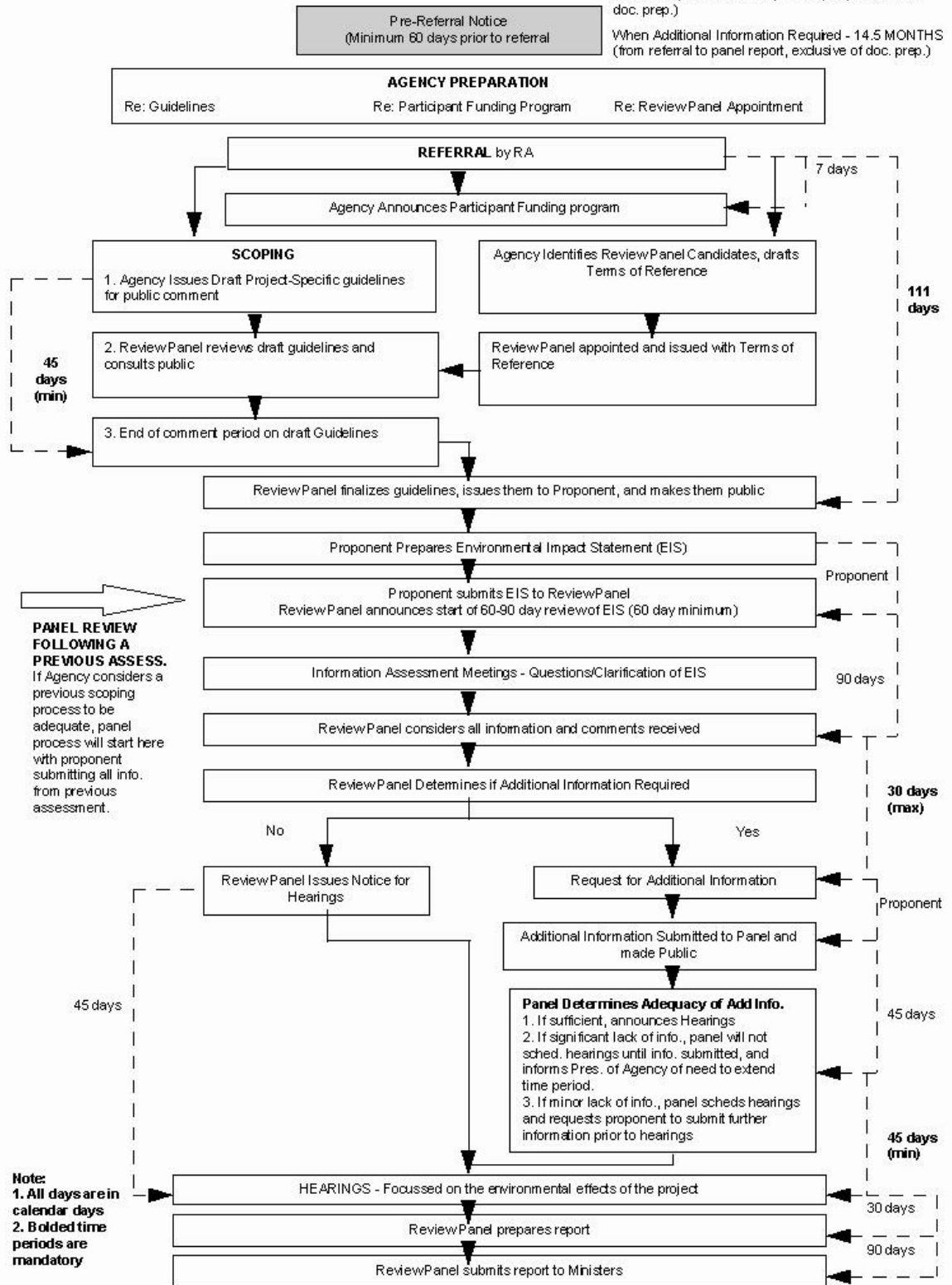
Next meeting date is to be determined and advised.

This graphic representation from the CEAA website is a description of the Panel Process

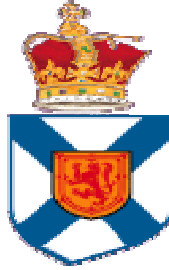
APPENDIX E - Process for Assessment by a Review Panel

When No Additional Information Required - 13 MONTHS (from referral to panel report, exclusive of doc. prep.)

When Additional Information Required - 14.5 MONTHS (from referral to panel report, exclusive of doc. prep.)



BILL NO. 88
(as introduced)



*1st Session, 59th General Assembly
Nova Scotia
53 Elizabeth II, 2004*

Private Member's Bill

Protection from Quarries Act

Manning MacDonald
Cape Breton South

[First Reading](#): September 23, 2004

Second Reading:

Third Reading:



An Act to Protect Residential Communities from Quarries

Be it enacted by the Governor and Assembly as follows:

1 This Act may be cited as the Protection from Quarries Act.

2 In this Act,

- (a) "Director" means the Director of Mines in the Department of Natural Resources;
- (b) "Minister" means the Minister of Natural Resources;
- (c) "municipality" means a regional municipality, incorporated town or municipality of a county or district;
- (d) "quarry" means any opening or excavation in the ground for the purpose of searching for or removing earth, clay, sand, gravel, rock, building stone, limestone, marble, gypsum or marl, and includes all pits, works, machinery, plant, buildings and premises below or above ground belonging to or used in connection with a quarry;
- (e) "residential zone" means an area that has been zoned residential pursuant to a municipal land-use by-law.

3 In the event of a conflict between this Act and the Metalliferous Mines and Quarries Regulation Act or another Act of the Legislature, this Act prevails.

4 After the coming into force of this Act, no new quarry shall be permitted that is within one kilometre of a residential zone.

5 A municipality may take measures necessary to prevent the breach of Section 4.

6 All reasonable expenses taken by the municipality to ensure compliance with a Section 4 may be recovered from the owner of a quarry in breach of that Section.

7 No action shall be maintained against a municipality or against any agent, servant or employee of a municipality for anything done pursuant to this Act.

8 Where authorized

(a) by the council or by the chief administrative officer of a municipality, the clerk or development officer of the municipality, in the name of the municipality; or

(b) by the Minister, the Director, in the name of the Province,

may apply to the Supreme Court of Nova Scotia for any or all of the remedies provided by this Act.

9 The Supreme Court of Nova Scotia may hear and determine the matter at any time and, in addition to any other remedy or relief, may make an order of an offence

(a) restraining the continuance of an offence or repetition of an offence in respect of the same property;

(b) directing the removal or destruction of any structure or part of a structure that contravenes Section 4 and, where an order is not complied with, authorizing the municipality or the Director to enter upon the land and premises with necessary workers and equipment and to remove and destroy the structure, or part of it, at the expense of the owner;

(c) respecting the recovery of the expense of removal and destruction and for the enforcement of this Section and for costs as is deemed proper,

and an order may be interim, interlocutory or final.

10 Where, after the action or proceeding is commenced, it appears that

(a) the offence that was the subject of the action or proceeding may have been done or committed by a person other than the defendant;

(b) the title to the property, or part of or any interest in it, that vested at the commencement of the action or proceeding, has since become vested in a person other than the defendant; or

(c) there has been a fresh offence by the same person or by another person with respect to the same property,

it is not necessary to bring another application and the original application may be amended from time to time and at any time before final judgment to include all parties and all offences and the whole matter of the offences shall be heard, dealt with and determined, notwithstanding that the offences may be offences against different orders, land-use by-laws, development agreements, regulations or statements of provincial interest.

11 Where the owner of any property where an offence is taking place or has taken place cannot be found, the municipality or the Director may post a notice of the offence and of the application upon the property.

12 (1) A person authorized by the Minister or by the council of a municipality has the right to enter at all reasonable times in or upon any property within the municipality, without a warrant, for the purposes of an inspection necessary to administer an order, land-use by-law, development agreement, regulation or statement of provincial interest.

(2) The authorized person shall not enter any place actually being used as a dwelling without the consent of the occupier unless the entry is made in daylight hours and written notice of the time of the entry has been given to the occupier at least twenty-four hours in advance of the entry.

(3) Where a judge of the Supreme Court of Nova Scotia is satisfied, on evidence under oath, that the entry is refused or no person is present to grant access, the judge may by order authorize entry into or on the property during reasonable hours set by the judge.

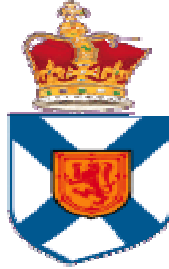
(4) Any order made by a judge shall continue in force until the purpose for which entry is required is fulfilled.

13 This Act comes into force on such day as the Governor in Council orders and declares by proclamation.



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BILL NO. 118
(as introduced)



*1st Session, 59th General Assembly
Nova Scotia
53 Elizabeth II, 2004*

Private Member's Bill

Protection from Strip Mines Act

Russell MacKinnon
Cape Breton West

[First Reading](#): October 1, 2004

Second Reading:

Third Reading:



**An Act to Protect Residential Communities
from Strip Mines**

Be it enacted by the Governor and Assembly as follows:

1 This Act may be cited as the *Protection from Strip Mines Act*.

2 In this Act,

- (a) "Director" means the Director of Mines in the Department of Natural Resources;
- (b) "Minister" means the Minister of Natural Resources;
- (c) "municipality" means a regional municipality, incorporated town or municipality of a county or district;
- (d) "residential zone" means an area that has been zoned residential pursuant to a municipal land-use by-law;
- (e) "strip mine" means a mine worked by removing surface material in successive parallel strips, or in a similar manner, to expose the material being mined, and includes any kind of open-pit mine other than a quarry.

3 In the event of a conflict between this Act and the Metalliferous Mines and Quarries Regulation Act or another Act of the Legislature, this Act prevails.

4 After the coming into force of this Act, no new strip mine shall be permitted that is within one kilometre of a residential zone.

5 A municipality may take measures necessary to prevent the breach of Section 4.

6 All reasonable expenses taken by the municipality to ensure compliance with a Section 4 may be recovered from the owner of a strip mine in breach of that Section.

7 No action shall be maintained against a municipality or against any agent, servant or employee of a municipality for anything done pursuant to this Act.

8 Where authorized

(a) by the council or by the chief administrative officer of a municipality, the clerk or development officer of the municipality, in the name of the municipality; or

(b) by the Minister, the Director, in the name of the Province,

may apply to the Supreme Court of Nova Scotia for any or all of the remedies provided by this Act.

9 The Supreme Court of Nova Scotia may hear and determine the matter at any time and, in addition to any other remedy or relief, may make an order of an offence

(a) restraining the continuance of an offence or repetition of an offence in respect of the same property;

(b) directing the removal or destruction of any structure or part of a structure that contravenes Section 4 and, where an order is not complied with, authorizing the

municipality or the Director to enter upon the land and premises with necessary workers and equipment and to remove and destroy the structure, or part of it, at the expense of the owner;

(c) respecting the recovery of the expense of removal and destruction and for the enforcement of this Section and for costs as is deemed proper,

and an order may be interim, interlocutory or final.

10 Where, after the action or proceeding is commenced, it appears that

(a) the offence that was the subject of the action or proceeding may have been done or committed by a person other than the defendant;

(b) the title to the property, or part of or any interest in it, that vested at the commencement of the action or proceeding, has since become vested in a person other than the defendant; or

(c) there has been a fresh offence by the same person or by another person with respect to the same property,

it is not necessary to bring another application and the original application may be amended from time to time and at any time before final judgment to include all parties and all offences and the whole matter of the offences shall be heard, dealt with and determined, notwithstanding that the offences may be offences against different orders, land-use by-laws, development agreements, regulations or statements of provincial interest.

11 Where the owner of any property where an offence is taking place or has taken place cannot be found, the municipality or the Director may post a notice of the offence and of the application upon the property.

12 (1) A person authorized by the Minister or by the council of a municipality has the right to enter at all reasonable times in or upon any property within the municipality, without a warrant, for the purposes of an inspection necessary to administer an order, land-use by-law, development agreement, regulation or statement of provincial interest.

(2) The authorized person shall not enter any place actually being used as a dwelling without the consent of the occupier unless the entry is made in daylight hours and written notice of the time of the entry has been given to the occupier at least twenty-four hours in advance of the entry.

(3) Where a judge of the Supreme Court of Nova Scotia is satisfied, on evidence under oath, that the entry is refused or no person is present to grant access, the judge may by order authorize entry into or on the property during reasonable hours set by the judge.

(4) Any order made by a judge shall continue in force until the purpose for which entry is required is fulfilled.

13 This Act comes into force on such day as the Governor in Council orders and declares by proclamation.



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