**IN THE MATTER OF AN ARBITRATION UNDER CHAPTER ELEVEN OF THE NORTH AMERICAN FREE TRADE AGREEMENT AND THE UNCITRAL RULES OF 1976**

**BETWEEN:**

**WILLIAM RALPH CLAYTON, WILLIAM RICHARD CLAYTON, DOUGLAS CLAYTON, DANIEL CLAYTON AND BILCON OF DELAWARE, INC.**

Claimants/Investors

**AND:**

**GOVERNMENT OF CANADA**

Respondent

---

# REPLY WITNESS STATEMENT OF

# DAN FOUGERE

---

August 18, 2017

## I. INTRODUCTION

1. This Witness Statement is supplemental to my Witness Statement dated December 12, 2016 ("my December Witness Statement") in these proceedings. I make this statement in response to the expert report of SC Market Analytics dated June 9, 2017 (the "SCMA report") and the expert report of Marsoft.

## II. NEW YORK CITY MARKET

2. I was the Administrative Manager of Martin Marietta's Auld's Cove Quarry (the "Auld's Cove Quarry") from 1998 to 2011.

3. I have read the SCMA report in which, at pages 10-12, the [redacted] and the [redacted] are referred to as "Actual & Potential" New York City Aggregate Sources.

## III. AULD'S COVE QUARRY AND BAYSIDE QUARRY

4. [redacted]

5. [redacted]

6. The SCMA report states [redacted]

[redacted]

7. Prior to the 2008 recession, the Auld's Cove Quarry's long haul marine transportation strategy, and production capacity, was dedicated to supplying Martin Marietta-owned or leased distribution yards at major ports along the Eastern Seaboard and Gulf Coasts from South Carolina to Texas.

8. Following the onset of the 2008 recession, the Auld's Cove Quarry had excess production capacity and explored new export market opportunities. As part of that search, in 2010 I travelled to Trinidad on the government supported trade mission referred to in my December Witness Statement.

9. [redacted]

10. [redacted]

11. [redacted]

12. [redacted]

13. [redacted]

[1] Supply Agreement between New York Sand & Stone and Martin Marietta Materials (***Investors' Schedule of Documents, Tab C1025***).

[redacted]

14. [redacted]

15. [redacted]

16. [redacted]

17. [redacted]

18. It was reported around the time of the Bayside Quarry expansion application that the proposed expanded operation would include 14.5 hectares of a watershed area known as the Chamcook Lake Watershed. The Chamcook Lake Watershed supplied the town of St. Andrews, New Brunswick.

19. It had also been reported in late 2005 and 2006 that the Bayside Quarry operators were found to be removing rock from the operating quarry and storing the waste material on the proposed expansion area. It was reported that the

waste material had a high level of arsenic in it that had leaked into the soil and possibly into the Chamcook Lake Watershed.

20. Ultimately, in April 2009, Bayside's expansion application was denied, largely because of the potential danger to Chamcook Lake Watershed, leaving the Bayside Quarry with only an estimated 12 million tons of mineable reserves.

21. An article about the Bayside Quarry in the Aggregates & Roadbuilding Magazine from the summer of 2000, titled "Full Steam Ahead for New Brunswick Coastal Quarry", [redacted]

22. Finished product needed to be manually hauled to the stockpile area by wheel loaders at the Bayside Quarry, [redacted]

Caterpillars were also used to manually load the ship loading conveyor at the Bayside Quarry, [redacted]

23. The article also indicates that the Los Angeles abrasion test for the Bayside Quarry showed "impressive numbers in the 13 to 15 per cent range".[5] [redacted]

---

[2] Aggregates and Roadbuilding Magazine Article – "Full Steam Ahead for New Brunswick Coastal Quarry" (**Fougere Reply Exhibit 1; *Investors' Schedule of Documents, Tab C1401***).

[3] Aggregates and Roadbuilding Magazine Article – "Full Steam Ahead for New Brunswick Coastal Quarry" (**Fougere Reply Exhibit 1; *Investors' Schedule of Documents, Tab C1401, p. 6***).

[4] Aggregates and Roadbuilding Magazine Article – "Full Steam Ahead for New Brunswick Coastal Quarry" (**Fougere Reply Exhibit 1; *Investors' Schedule of Documents, Tab C1401, pp. 6-7***).

[5] Aggregates and Roadbuilding Magazine Article – "Full Steam Ahead for New Brunswick Coastal Quarry" (**Fougere Reply Exhibit 1; *Investors' Schedule of Documents, Tab C1401, p. 6***).

[redacted]

[redacted]

24. [redacted]

25. [redacted]

26. [redacted]

27. [redacted]

28. [redacted]

---

6 Expert Report of Mercator Geological Services Limited (Michael Cullen) dated November 17, 2016, pp. 4, 66.

7 [redacted]
(**Fougere Reply Exhibit 2; *Investors' Schedule of Documents, Tab C1402***).

29. [redacted]

## V. AGGFLOW SOFTWARE PROGRAM

30. [redacted]

31. I am very familiar with the Aggflow software program which is an excellent tool for process simulation and is considered the "Industry Standard" software tool in the aggregate industry.

32. [redacted]

33. From my experience at the Auld's Cove Quarry, I believe that AggFlow is a more sophisticated and professional tool than Excel calculations used to simulate analysis of product yields.

## VI. FREIGHT AND SHIPPING COSTS

34. I have had the benefit of reviewing the Expert Report of Mr. Wayne Morrison (Tamarack Resources) dated December 9, 2016 and comment as follows.

35. I consider Mr. Morrison's descriptions and conclusions [redacted]

36. [redacted]

37. [redacted]

38. [redacted]

[redacted]

39. [redacted]

[redacted]

40. [redacted]

41. [redacted]

42. [redacted]

43. [redacted]

44. [redacted]

45. [redacted]

## VIII. BLACK POINT

46. Vulcan's Black Point Quarry was approved by the Canadian Environmental Assessment Agency on April 26, 2016 after a relatively short Comprehensive Study. On the same day, the Nova Scotia Minister of Environment issued a letter of approval complete with Black's Point's operating terms and conditions.[8]

47. Vulcan is the largest distributor of aggregates in the United States and anticipates a market requirement between six and eight million tons annually from its Black Point Quarry to accommodate growing customer demand.

48. I have reviewed Vulcan's 2016 Annual Report,[9] which includes Vulcan's 10-k filing for the fiscal year ending December 31, 2016.

49. Notably, there are no references to market opportunities in New York City or New Jersey and, like Martin Marietta, Vulcan does not appear to have distribution yards in New York and New Jersey. Further, the Report mentions Vulcan's "high-growth markets" and references their "coast-to-coast footprint" reflected in a map which does not include New York and New Jersey.

---

[8] Letter from Margaret Miller, Minister of Environment to Frank Lieth re: Black Point Environmental Assessment (**Fougere Reply Exhibit 3; *Investors' Schedule of Documents, Tab C1091***).

[9] Vulcan 2016 Annual Report, Available Online at: <http://www.annualreports.com/HostedData/AnnualReports/PDF/NYSE_VMC_2016.pdf> (***Investors' Schedule of Documents, Tab C1403***).

[redacted]

50. [redacted]

51. [redacted]

52. [redacted]

53. I refer for explanatory purposes to the photograph of the Auld's Cove Quarry shown on the front page of Nova Scotia's 2006 promotional brochure entitled "Opportunity for Export Aggregate".[11] [redacted]

[redacted]

[10] SCMA report, para. 94 and Appendix IV; p. 41.
[11] Opportunity for Export Aggregate (**Fougere Reply Exhibit 4; *Investors' Schedule of Documents, Tab C1038***).

[redacted]

54. [redacted]

55. [redacted]

56. [redacted]

57. [redacted]

58. The SCMA report further claims that it is "customary in the aggregates industry to calculate operating and capital expenditures on the basis of the quarry's total production".[12] This is incorrect. It is industry practice to calculate per ton costs on the basis of marketable aggregate.

Dated: August 18, 2017

Dan Fougere

**DAN FOUGERE**

[12] SCMA report, p. 41.

# EXHIBIT 1

# REPLY WITNESS STATEMENT OF DAN FOUGERE

AGGREGATES & ROADBUILDING MAGAZINE

Canada's *"Rock to Road"* Magazine




A crushed stone operation at the southern tip of New Brunswick has become a significant player in the marine aggregates business, supplying major markets on the U.S. eastern seaboard, the Caribbean and Central America after just three years in operation. Demand for its granite aggregates has so far doubled each year. This very success has created operational challenges in a developing facility where space is at a premium.

*Aggregates & Roadbuilding* recently visited the site and found that the owners had met these challenges through innovative solutions in several areas including drilling, high capacity portable production spreads, material handling and ship loading systems.

Located at the Bayside Marine Terminal in St. Andrews, N.B., the aggregate operation is a joint venture between Jamer Materials Ltd. and Atlantic Coast Materials Inc. Under the current business structure, Jamer Materials has responsibility for the operational side of the business, while Atlantic Coast Materials handles product sales and distribution. This spring, Jacksonville-based Florida Rock Industries Inc. acquired 50 per cent ownership of both Jamer and

Atlantic Coast.

The operation produces a full range of aggregates to American Society for Testing and Materials (ASTM) specifications. Shipments totalled some 400 000 tonnes in 1998, with about 200 000 tonnes of granite from the quarry and a similar amount of product from the company's speciality sand and gravel operation located some 20 km away. The total increased to 800 000 in 1999, with about 500 000 tonnes of granite and 300 000 tonnes of sand and gravel. Atlantic Coast Materials president Mike Power projects that this year's shipments will rise to 1.5 million tonnes, with 1 million tonnes of granite products together with 500 000 tonnes of sand and gravel.

The concrete and asphalt aggregates are in demand in the 20 million tonnes/y New York City market and are competitive with traditional sources in New Jersey and upstate New York. Other markets include South Carolina, Georgia, Florida and the Caribbean, while a recent order for 250 000 tonnes of railway ballast was shipped to Panama. The current principal carriers for the Bayside Quarry are Canada Steamship Lines Inte-national Inc., Montreal, Que. and Tovald Klaveness & Co A/S, Oslo, Norway. Canada Steamship Lines handles approximately 60 per cent of the shipments. During *Aggregates & Roadbuilding*'s quarry visit, CSL's Sheila Ann (named after Federal Finance Minister Paul Martin's spouse), a Panamaxclass self-unloader was being loaded with 46 000 tonnes of aggregates for a split delivery to Jacksonville and Nassau, Bahamas.

**Svedala H6000 Hydrocone operating as the secondary crusher for plant No. 1.**

## Production challenge

For Jamer Materials president and general manager Miller Esson and operations manager Mark Clark, this rapid growth meant that choosing the right processing equipment was critical and had to

combine high production capacity and product flexibility with full portability. Production space at the operation is currently limited to developing the extraction area that covers less than ten acres, while the dock area below provides only temporary storage space for finished product prior to shipment.

Their successful solution consists of two new fully portable spreads with a combined capacity of no less than 1000 tonnes/h, utilising a total of nine crushers. The two plants comprise two jaws, one gyratory and six cone crushers teamed with eight screening plants.

The spread makes extensive use of equipment designed and constructed by Miramichi, and N.B.-based MFE Esson Built Aggregate Equipment Ltd., including trailers for the crushing and screening plants as well as all process and stockpile conveyors.

These multi-million dollar spreads are supported by a fleet of five late-model production and stockpile wheel loaders. There are no haul trucks utilised in this operation, reflecting the short haul distances in all material handling areas including primary haul, finished product stockpiling and ship loading.

**Quarry development**

The first step in the production process is overburden removal. This task is carried out by a Hitachi EX300 excavator with 1.1 m 3bucket, removing typically 1 m to 1.5 m of material, although there are occasional thicker lenses.

The quarry is currently worked in two benches with an upper bench about 13.8 m high and a 10.7 m lower bench. Drilling and blasting is subcontracted to Archibald Drilling and Blasting (1986) Ltd. of Musquodoboit, N.S. Archibald is employing a Komatsu PC120-6 excavator fitted with a down-the-hole (DTH) drill attachment that was designed and manufactured at the contractor's shop. The versatile drill system can reach inaccessible hole positions on rough terrain and is capable of drilling holes ranging from 114 mm to 165 mm in diameter. At Bayside, it is drilling 140 mm diameter holes on 3.8 m x 3.8 m square pattern. Its 4.2 m feed and automatic rod changer give a hole depth capacity of 27.4 m, using 114 mm diameter drill rods with 89 mm diameter API thread. Air for the DTH drill is supplied by a truck-mounted 900/350 Ingersoll-Rand compressor.

The Secoroc 127 mm hammer utilises 140 mm flat-faced bits that require sharpening after every 91.5 m in this abrasive rock, with a

total life ranging from 762 m to 915 m. Production rates average between 244 m and 274 m per shift.

After drilling, the bottom of each hole is charged with double Orica primers, followed by a full column charge of a 60 per cent emulsion/40 per cent ANFO explosives blend to deal with any wet holes, capped with a 1.8 m collar. Initiation is non-electric, with blast sizes ranging between 30 000 tonnes and 100 000 tonnes. All blasts are monitored by seismographs, and although there are no residents in the neighbourhood, the warehousing and shipping companies in the dock development are currently only about 250 m from the active faces.

**Layout of plant No. 2 with a Cat 988F feeding a Svedala 32x42 primary jaw crusher.**

## Processing operations

Top bench shot rock is carried about 7 m by a Caterpillar 992C fitted with a toothed spade nose bucket and dumped over the lower bench. From there, it is recovered by wheel loaders and fed to the portable spreads that are set up on the quarry floor near the active face of the lower bench. When *Aggregates & Roadbuilding* visited the site in late July, this material was being recovered as feed for plant No. 2, while the smaller plant No. 1 was being fed with shot rock from a recent shot in the lower bench. Plant No. 1 was making two products: ASTM concrete coarse aggregate #57 (25 mm x 4.75 mm) and 6 mm x 0 asphalt fine aggregate. Con-currently, plant No. 2 was turning out the same two products as well as #8 chips (9.5 mm x 2.36 mm), also for asphalt production.

Plant No. 1 is fed by a Caterpillar 980G, carrying the 610 mm minus shot rock just 30 m to a 5.5 m Simplicity single-stage grizzly feeder. The feeder works with a 1999 Svedala 32x42 primary jaw crusher that reduces the shot rock to 150 mm minus. The crusher runs discharges on to a 1066 mm conveyor, feeding a 1999 Svedala H6000 Hydrocone that further reduces the material to 64 mm minus. Material then goes forward to a twin Tyler horizontal screening plant, with two 6x20 triple-deck screens. The first screen is fitted

with screen cloth sizes of 51 mm, 25 mm and 6.4 mm on the top, middle and bottom decks, respectively. Material retained on the bottom deck, as well as screenings passing the same deck are taken out of the circuit as finished products. The 64 mm minus to 25 mm plus stones retained on the middle and top decks are discharged into a 1998 Svedala H6000 Hydrocone which crushes the material to 38 mm minus. The 38 mm minus is conveyed to the second Tyler screen, fitted with 32 mm, 25 mm and 6.4 mm screen cloths.

Again, clear and fine granular product goes forward, while the 25 mm plus material retained on the middle and upper decks, goes back to the second H6000 in a closed circuit.

The plant has an average production rate of 375 tonnes/h in this configuration.

Plant No. 2 is fed by a Caterpillar 988F discharging into a 6.4 m long Simplicity single-stage grizzly feeder positioned ahead of a 1998 Svedala 44x48 primary jaw crusher. A 1219 mm belt, fitted with an Eriez 1066 mm wide magnet, conveys material to a 6x20 Simplicity double-deck inclined screen that is a recent addition to the circuit. This heavy-duty scalping screen has punch plate on the top deck with 89 mm openings and 51 mm wire cloths on the middle deck, dividing the 254 mm minus material from the jaw into 254 mm x 51mm and 51 mm minus fractions. The larger material is conveyed to a 1998 Svedala S4000 gyratory crusher that reduces the material to 89 mm minus. Product from the gyratory is then re-combined with the 51 mm minus material passing through the bottom deck of the scalping screen.

All of the material is then fed by a variable frequency drive plate feeder onto a 1066 mm discharge belt with deep trough idlers in order to carry the plants 590 tonnes/h. The average throughput sometimes ex-ceeds 635 tonnes/h.

**To produce final products, Plant No. 2 uses twin Nordberg HP400 tertiary**

**cone crushers and a Simplicity 6x20 triple-deck horizontal screen plant.**

Material then discharges onto a 1999 Simplicity 6x20 triple-deck horizontal screen fitted with 51 mm, 38 mm and 8 mm screen cloths that separate the material into three fractions. Material larger than 38 mm (retained on the top and middle decks) is fed to a matched pair of Svedala H4000 Hydrocone crushers, while material retained on the bottom deck (38 mm x 8 mm) goes to a matched pair of Nordberg HP400 cone crushers.

Each pair of crushers is set up in closed circuit with twin finishing screens. Product from the H4000 cones discharges onto a 1999 Simplicity 6x20 triple-deck horizontal screen plant where oversize is returned to the crushers in closed circuit. Likewise, the HP400's are set up in a closed circuit with a 2000 Simplicity 6x20 triple-deck horizontal screen plant. Crusher settings and screen cloth sizes in these circuits are adjusted to suit product demand. In late July, the H4000 cones were producing ASTM #57 and 6 mm minus while the HP400 machines were turning out ASTM #8 and 6 mm minus.

Each spread is controlled from a trailer van featuring an El–Russ hydraulically raised control tower, and both have conventional push button controls and interlocks on key components.

A Caterpillar 3412 engine teamed with a Cat 800 kW generator provides power for plant No.1 while plant No. 2 is powered by three Caterpillar 3412 engines driving 635, 685 and 725 kW generators. Fuel storage for all this generating power includes 400 gallons in each generator set trailer and a separate 250 gallon reserve tank. Bulk diesel is delivered to both plants on a daily basis.

Miller Esson points out that the very hard, abrasive nature of this rock was a factor in crusher selection and layout. His experience in dealing with the highly variable geology of the Maritime region suggested that jaw, gyratory and cone crushers would be more effective than impact or roll crushers in this application.

Micro-Deval tests for abrasion loss yield results below 4 per cent compared to, forinstance, the maximum loss of 13 per cent allowed for aggregates used in concrete pavement by Ontario's OPSS 1001. Results for the Los Angeles abrasion test show equally impressive numbers in the 13 to 15 per cent range. Samples of this rock also frequently yield a Petrographic Number (PN) of 100, the best possible score, while a PN number of 102, still an excellent result, is the least favourable on record. While certainly good for business, these numbers also mean high equipment wear rates for the

operations team, with Esson reporting 400 hours as the typical wear life for crusher liners as an example.

Other process equipment on site includes a portable Ortner wash plant, utilized when customers require washed #8's or washed screenings. Mobile support equipment includes a Caterpillar 235 excavator fitted with a Teledyne TB1425X breaker for relieving jaw plugs and a Thomas 135S skid steer loader on clean up duty.

**Pant leg feeds Svedala H4000 secondary cone.**

Environmental measures include a tree screen that effectively shields the operation from observers looking across the Passamaquoddy Bay from either New Brunswick or Maine. In addition, fugitive dust generation is minimised by spray bars fitted to the screens as well as water sprays in the primary jaw crushers.

Finished product is hauled to the edge of the extraction area and stockpiled against the dock's back wall by a fleet of wheel loaders including a Caterpillar 988F and two 980G's. In the days before loading, inventory is built up here and in the dock area itself.

Once the vessel arrives, speed is essential to minimise loading costs and avoid demurrage (penalty charges) for loading delays. Two Caterpillar 992's, with 9.2 m 3 buckets, load material at an average rate of 1500 tonnes/h, while a third 992 is kept on standby. Product is fed to three 40 tonne capacity hoppers with divided sections to facilitate multiple product loading, as well as a drive-over underground hopper with grizzly bars. These hoppers discharge onto a 1219 mm x 30 m dock conveyor linked to the 1371 mm x 52 ship-loading conveyor. Extra dock conveyors are added to reach all parts of the vessel. This year, the loading process will be repeated some 40 to 45 times on vessels carrying an average of 35 000 tonnes.

While at sea, these travel at about 15 knots, giving a travel time of

two days to New York in normal weather conditions. Overall, the future looks bright for this business, combining accessibility to major markets, a high quality natural deposit and a versatile approach to production.

By Andy Bateman

**Aggregates and Roadbuilding Magazine**
4999 St Catherine Street West. Suite 315
Westmount, Quebec H3Z 1T3
Tel: (514) 4879868 Fax: (514) 4879276
EMail: rocktoroad@sympatico.ca

# EXHIBIT 2

# REPLY WITNESS STATEMENT OF DAN FOUGERE

# EXHIBIT 3

# REPLY WITNESS STATEMENT OF DAN FOUGERE

NOVA SCOTIA
Environment
Office of the Minister

PO Box 442, Halifax, Nova Scotia, Canada B3J 2P8 • www.novascotia.ca/nse

Our File number:
40100-30-232
10700-40-50076

APR 2 6 2010

Mr. Frank Lieth, Vice President
1200 Urban Centre Drive
Birmingham, Alabama
USA 35242

Dear Mr. Lieth:

Re: Environmental Assessment – Black Point Aggregates Inc.
Black Point Quarry Project, Guysborough County, NS

The environmental assessment of the proposed Black Point Quarry Project in Guysborough County, Nova Scotia has been completed.

This is to advise that I have approved the above project in accordance with Section 40 of the *Nova Scotia Environment Act*, S.N.S., 1994-95 and subsection 13(1)(b) of the Environmental Assessment Regulations, N.S. Reg. 348/2008, made under the Act. Following a review of the information provided by Black Point Aggregates Inc., and the information provided during the government and public consultation of the environmental assessment, I am satisfied that any adverse effects or significant environmental effects of the undertaking can be adequately mitigated through compliance with the attached terms and conditions.

This approval is subject to any other approvals required by statute or regulation, including but not limited to, approval under Part V of the *Environment Act* (Approvals and Certificates section).

If you have any questions regarding the approval of this project, please contact Peter Geddes, Director, Policy and Planning, at (902) 424-6250 or via email at Peter.Geddes@novascotia.ca.

Sincerely,

Margaret Miller, MLA
Minister of Environment

Encl.
c: Peter Geddes

# Environmental Assessment Approval

**Approval Date:** APR 2 6 2016

## Black Point Quarry Project
## Black Point Aggregates Inc., Approval Holder
### Guysborough County, Nova Scotia

---

The Black Point Quarry Project (the "Undertaking"), proposed by Black Point Aggregates Inc. (the "Approval Holder"), Guysborough County, Nova Scotia is approved pursuant to Section 40 of the *Environment Act* and Section 13(1)(b) of the Environmental Assessment Regulations. This Approval is subject to the following conditions and obtaining all other necessary approvals, permits or authorizations required by municipal, provincial and federal acts, regulations and by-laws before commencing work on the Undertaking. It is the responsibility of the Approval Holder to ensure that all such approvals, permits or authorizations are obtained before commencing work on the Undertaking.

This Environmental Assessment Approval is based upon the review of the conceptual design, environmental baseline information, impact predictions, and mitigation presented in the Registration Document.

---

## Terms and Conditions for Environmental Assessment Approval

### 1.0 General Approval

1.1 The Environmental Assessment Approval for the Undertaking is limited to the project as described in the Registration Document. Any proposal by the Approval Holder for expansion, modification or relocation of any aspect of the Undertaking from that proposed in the Registration Document must be submitted to the Environmental Assessment Branch for review and may require an environmental assessment (EA).

1.2 The Approval Holder must, within two years of the date of issuance of this approval, commence work on the Undertaking unless granted a written extension by the Minister.

1.3 The Approval Holder must not transfer, sell, lease, assign or otherwise dispose of this approval without the written consent of the Minister. The sale of a controlling interest of a business or a transfer of an approval from a parent company to a subsidiary or an affiliate is deemed to be a transfer requiring consent.

1.4 The Approval Holder must implement all mitigation and commitments in the Registration Document, unless approved otherwise by Nova Scotia Environment (NSE).

## 2.0 Surface Water Resources

2.1 The Approval Holder must not undertake any quarry related activities within 30 metres of a watercourse unless otherwise approved by NSE. No development or removal of vegetation within this 30 metre buffer is permitted unless otherwise approved by NSE.

2.2 The Approval Holder, as part of the application for the Part V Approval under the *Environment Act*, must submit to NSE for review and approval:

a) a surface water monitoring plan including sampling locations, parameters and frequency of sampling. Based on the results of the monitoring programs as proposed, the Approval Holder must make necessary modifications to mitigation plans and/or operations to the satisfaction of NSE;

b) an erosion and sediment control plan;

c) a stormwater management plan including details regarding the plans for monitoring, maintenance and upgrading of the flow retention/siltation treatment areas. Design criteria must recognize increased likelihood of more intense precipitation events in coming decades and meet discharge criteria per NSE requirements ; and

d) details of pre- and post-development water quality and quantity monitoring program. Sampling methods and/or protocols must be provided to the satisfaction of NSE.

2.3 All surface water protection and management programs must be updated/revised to reflect the progressive development of the quarry. This is to take place over the lifetime of the Undertaking, at a schedule acceptable to NSE, and revised as approved by NSE.

## 3.0 Wetlands

3.1 The Approval Holder must provide GIS shape files and metadata for all wetlands that were delineated for this Undertaking, and for compensation purposes, to NS Department of Natural Resources (NSDNR)-Wildlife Division and the NSE Wetland Specialist.

3.2 The Approval Holder must not undertake any quarry related activities within 30 metres of a wetland unless otherwise approved by NSE. No development or removal of vegetation within this 30 metre buffer is permitted.

3.3 The Approval Holder must provide cross-drainage (not a single culvert) under roads through wetlands so that hydrologic linkages on both sides of the road are maintained.

3.4 Prior to application for a wetland alteration approval, the Approval Holder must develop a Wetland Compensation Plan. The Wetland Compensation Plan and associated reporting requirements must be developed to the standards as defined by NSE and establish specific objectives intended to prevent the net loss of wetlands in accordance with the Nova Scotia Wetland Conservation Policy.

Based on the results of the measures taken to offset losses of wetland and or wetland functions and services, the Approval Holder must make necessary modifications to compensation plans, and/or site operations, to the satisfaction of NSE.

3.5 The Approval Holder must implement and adhere to the Wetland Compensation Plan once finalized and approved by NSE.

3.6 Following the development of the Wetland Compensation Plan and prior to any wetland alteration, the Approval Holder must obtain an approval in accordance with the Activities Designation Regulations and the Approval and Notification Procedures Regulations.

3.7 The Approval Holder must develop and implement a wetland monitoring plan to be approved by the NSE Wetland Specialist.

## 4.0 Groundwater Resources

4.1 The Approval Holder, as part of the application for the Part V Approval under the *Environment Act*, must submit to NSE for review and approval:

a) a groundwater monitoring program including the location of monitoring wells and monitoring parameters. This program must be designed to evaluate potential impacts to both groundwater levels and groundwater quality. Based on the results of the monitoring programs, the Approval Holder must make necessary modifications to mitigation plans and/or quarry operations, if required, to prevent unacceptable environmental effects, to the satisfaction of NSE. This program shall be updated upon application for amendments to the Part V approval or other frequency as determined by NSE; and

b) a monitoring program to determine the potential for and extent of sulphide bearing material and plan to manage any exposed acid generating material and associated drainage (in consultation with NSE).

4.2 The Approval Holder must not excavate below mean sea level, unless otherwise approved by NSE.

4.3 The Approval Holder must replace, at their expense, any water supply which has been lost or damaged as a result of quarrying operations to the satisfaction of NSE.

## 5.0 Flora and Fauna

5.1 The Approval Holder must develop a lighting plan for the Undertaking area that minimizes and manages lighting impacts on migratory birds and breeding birds. The lighting management for operations should consider fog impacts exacerbated by lighting during mid-May through June 10th which is an especially sensitive window in spring migration. Any mortality of Leach's Storm Petrels must be reported to NSDNR-Wildlife Division and Canadian Wildlife Services immediately.

5.2 Prior to blasting, the Approval Holder must submit a blasting management plan developed in consultation with NSDNR-Wildlife Division, to NSE. This plan is to

optimize blasting and align a monitoring approach to determine impacts in relation to nesting seabirds.

5.3 The Approval Holder must maximize the coastal buffer (i.e. between the coastal shore side of the project and the Project components) to the satisfaction of NSE and NSDNR-Wildlife Division. The buffer must be a minimum of 30 metres in the plant operations areas and 75 metres in all other areas, except where needed for the access road; to install and maintain erosion and sediment discharge control measures; for the ship loading conveyor; and for the marine terminal. Native vegetation within the coastal buffer must not be disturbed.

5.4 Clearing and grubbing of vegetation must be conducted outside of the breeding season for most bird species (April 15 to August 15), unless otherwise approved by NSE.

5.5 Prior to construction, the Approval Holder must provide NSDNR-Wildlife Division with digital way points and shape files revealing precise locations for all S1, S2 and S3 Atlantic Canada Conservation Data Center listed species, identified during field work within the development area. The Approval Holder must report to NSE that the files have been provided to NSDNR-Wildlife Division.

## 6.0 Noise and Dust

6.1 The Approval Holder, as part of the application for the Part V Approval under the *Environment Act*, must provide for review and approval, a blasting plan. The plan must include a pre blast survey for structures and water supplies within 800 metres of the blast area, a detailed blast monitoring plan, and a full blast damage response policy as required by NSE.

6.2 The Approval Holder must develop and implement an air quality and/or dust monitoring plan, at the request of NSE. This plan must include but not be limited to sampling locations, parameters, monitoring methods, protocols and frequency. Based on the results of the monitoring programs as proposed, the Approval Holder must make necessary modifications to mitigation plans and/or operations as required by NSE.

6.3 The Approval Holder must monitor noise levels, at the request of NSE. Based on the results of monitoring program as proposed, the Approval Holder must make necessary modifications to mitigation plans and/or operations as required by NSE.

## 7.0 Archaeological and Heritage Resources

7.1 Prior to construction, the Approval Holder must develop and implement a Cultural Resource Management Plan and complete required additional archaeology work to the satisfaction and approval of Nova Scotia Department of Communities, Culture and Heritage.

7.2 The Approval Holder must cease work and contact the Special Places Coordinator, Cultural Heritage and Development Division, Nova Scotia Department of Communities, Culture and Heritage immediately upon discovery of an archaeological site or artifact unearthed during any phase of the

Undertaking. If the find is of suspected or certain Mi'kmaq origin, the Approval Holder must also contact the Executive Director of the Kwilmu'kw Maw-klusuaqn Negotiation Office and the Chief of Sipekne'katik First Nation.

## 8.0 Public Engagement

8.1 The Approval Holder must operate the Community Liaison Committee (CLC) for the duration of the Undertaking and until released in writing by NSE.

8.2 At the request of NSE, the Approval Holder must provide records of the CLC including meeting minutes, complaints and associated actions.

8.3 The Approval Holder must develop a complaint resolution plan to address all concerns associated with the Project. The Approval Holder must appoint a contact person designated to deal with complaints, and must provide the contact information to NSE.

## 9.0 First Nation and Aboriginal Engagement

9.1 The Approval Holder must develop and implement a Mi'kmaq Engagement Strategy for the Undertaking, which will include a process for a communicating project details and seeking input from the Mi'kmaq community.

## 10.0 Contingency Plans

10.1 The Approval Holder, as part of the application for the Part V Approval under the *Environment Act*, must submit to NSE for review and approval a contingency plan that meets NSE's Contingency Planning Guidelines and addresses (including but not limited to):

a) accidental occurrences, and includes the location of spill equipment kept on-site and emergency phone numbers;

b) training to be delivered to staff, including contractors;

c) procedures for responding to incidents occurring during times when the facility is not staffed (e.g. evenings, weekends, holidays);

d) impacts to watercourses and water resources and domestic water supplies;

e) releases of dangerous goods or waste dangerous goods;

f) potential fire at the facility (to be reviewed and approved by the local fire and emergency service providers);

g) petroleum and hazardous material spills and surface water control structure failure;

h) impacts on birds and associated habitats on which they depend. The marine oil spill emergency measures plan and petroleum products management on the Undertaking site should be developed with NSE, Environment Canada-Canadian Wildlife Service and Fisheries and

Oceans Canada; and

i) such other information as required by NSE.

10.2 Contingency plans must be updated/revised to reflect the progressive development of the quarry. This is to take place over the lifetime of the Undertaking, at a schedule acceptable to NSE, and revised as approved by NSE.

10.3 Refuelling must not be conducted within 100 metres of any surface water resource, unless otherwise approved by NSE.

## 11.0 Quarry Development and Reclamation

11.1 The Approval Holder, as part of the application for the Part V Approval under the *Environment Act*, shall provide for review and approval a preliminary reclamation plan that includes progressive reclamation and details of future land use.

11.2 Reclamation plans must be updated/revised to reflect the progressive development of the quarry. This is to take place over the lifetime of the Undertaking, at a schedule acceptable to NSE, and revised as approved by NSE.

11.3 Quarry operations must be completed and reclaimed to the satisfaction of NSE, NSDNR and other appropriate regulatory departments.

Margaret Miller, MLA
Minister of Environment

# EXHIBIT 4

# REPLY WITNESS STATEMENT OF DAN FOUGERE

NOVA SCOTIA

The potential is here.

# OPPORTUNITY FOR EXPORT AGGREGATE

**Are transportation costs and stone quality concerns making life difficult for you as an aggregate supplier, concrete producer or road builder?**

**Are you concerned about the security of your aggregate supplies for the future? Nova Scotia has a lot to offer:**

## A Proven Track Record

- For more than two decades Nova Scotia has been an industry leader in the marine transport of high quality stone products using bulk carriers and barges.
- Martin Marietta Materials Canada on the Strait of Canso is one of the largest tidewater stone quarries in North America, capable of loading 70 000 tonne Post-Panamax vessels.
- Currently more than 3 million tonnes of aggregate are being exported annually to destinations such as Savannah, Houston, Bermuda and the Ascension Islands.

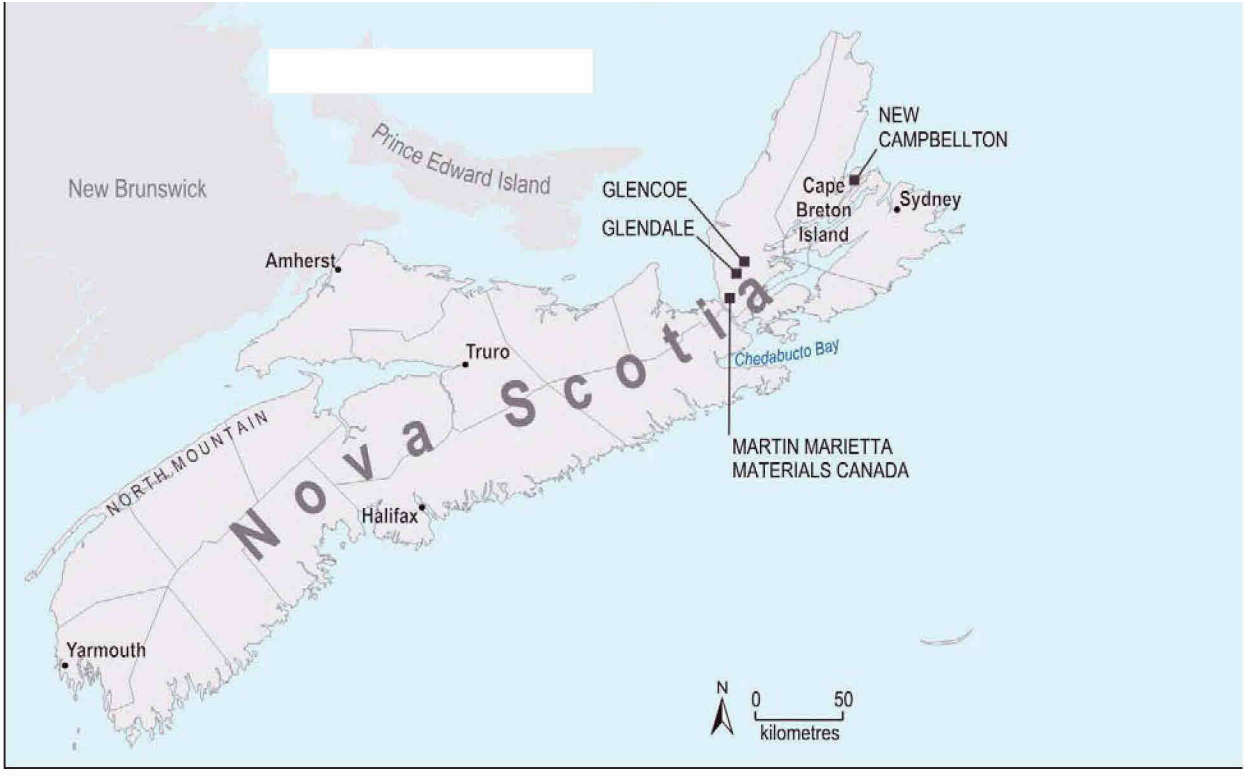
## The Maritime Advantage

- Nova Scotia's location on the Atlantic coast is 80 kilometres from the Northeastern United States with the capability of competitive shipping to the Gulf Coast and the Carribean.
- 7400 kilometres of rugged coastline include sheltered harbours and water depths amenable to docking and loading large vessels.
- A moderate, coastal climate permits year-round shipping.
- Diverse geological resources along the coast are capable of producing high quality construction aggregate.

*The Martin Marietta quarry on the Strait of Canso*

NOVA SCOTIA
Natural Resources
Mineral Resources Branch

2006
Information Circular ME 65




*Map of Nova Scotia showing the sites discussed in text*

## Opportunities

- Nova Scotia has undeveloped sites, near suitable tidewater, that are capable of producing high quality granite, limestone and traprock aggregate.
- Potential sites include the south shore of Chedabucto Bay, New Campbellton on the Bras d'Or Lakes and the North Mountain area along the Bay of Fundy.
- Some sites have the potential for stone reserves of several hundred million tonnes.
- An established and knowledgeable stone industry may offer opportunities for partnerships in new stone export ventures.
- There may be the opportunity for the co-production of limestone aggregate and cement grade carbonate at Glencoe and Glendale on Cape Breton Island.

## A Welcoming Business Climate and Supportive Government

Nova Scotia and the Strait of Canso area have an excellent record in permitting new quarries and heavy industrial projects. New gypsum, coal, silica and crushed stone quarries have been permitted in Nova Scotia within the last five years. The Sable Offshore Energy Project, including offshore gas wells, sub-sea pipelines, a gas plant and the Maritimes & Northeast gas pipeline to Boston area markets have been approved.

In December, 2005, Anadarco received federal and provincial environmental permits to proceed with the construction of an LNG regasification plant at Bear Head, part of the Strait of Canso Super Port.

The Province of Nova Scotia is open for business and you are invited to contact us for further information.

NOVA SCOTIA
Natural Resources
Mineral Resources Branch

1701 Hollis Street
Halifax, Nova Scotia
B3J 2T9 Canada

For more information contact:
R. J. (Bob) Ryan
Manager, Resource Evaluation
phone: 902-424-8148
E-mail: rjryan@gov.ns.ca
or visit our website:
http://www.gov.ns.ca/natr/meb

NOVA SCOTIA
Natural Resources
Economic Development

Inverness County • Port Hawkesbury • Richmond County
Strait - Highlands
Regional Development Agency

C1038-002