

CONFIDENTIAL

**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

INVESTORS' DAMAGES MEMORIAL

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“Aggregates are among the most widely used materials in our contemporary society. They are required in almost all residential, commercial and industrial building projects. They also form a major component of many public works projects such as highways, underground services, bridges, railroads, airports, hydro-electric dams and wharves.”

The Province of Nova Scotia, 2007¹

I. OVERVIEW

1. The aggregate industry is a historic mainstay of the economy of Nova Scotia. For decades, the policy of the Government of Nova Scotia has been to promote the development of quarries in the Province, and to actively attract investors to build quarries for the export of aggregates to the United States.
2. In 2002, the Claytons were invited and encouraged by the highest levels of the Nova Scotia Government to invest in the Whites Point Quarry. The Claytons had deep roots in the aggregates industry, with a proven track record of over 60 years' experience operating a multitude of successful businesses, involving three generations of the Clayton family.
3. The Clayton family thinks and plans for the long term, for the next generations of their family. [REDACTED]
As Bill Clayton Sr. confirmed to Minister Morash of Nova Scotia in 2003, the integration of [REDACTED]
[REDACTED]

¹ Mineral Resources in Our Lives, (*Investors' Schedule of Documents*, Tab C1081, p. 001652).

² Witness Statement of William Richard Clayton, dated December 15, 2016, para. 10; **Clayton Exhibit 4**.

[REDACTED]

4. Because of the extraordinary value of the Whites Point Quarry, the Claytons spared no expense in hiring the best and most experienced people to study it, build it and operate it, and spent [REDACTED] proving that the Quarry would meet the highest environmental standards.
5. The Claytons' commitment to the Quarry extended to making a major contribution to the economy and social well-being of the entire Whites Point community, through secure, high paying, sustainable jobs, and the use of local people and resources for construction, maintenance, and operation of the Quarry.
6. From a family and business perspective, the Whites Point Quarry was a singular opportunity. It had a 50 plus year supply of high quality aggregate, ideally located at the closest point in Nova Scotia to New Jersey and New York City. The Claytons had already established operating facilities there for selling aggregates into the largest metropolitan market in the US, where there was growing demand, and they had the added advantage of low cost transportation by ship.
7. In every respect, the Whites Point Quarry was an extraordinary value to the Claytons. It offered them, and indeed Nova Scotia, the exact benefits the Nova Scotia Government told them it would. The Whites Point Quarry was the brightest gem in the crown of Nova Scotia quarries. It was the best rock in the best location for export to the US. And the Claytons did everything the Governments of Nova Scotia and Canada asked them to do to build the Quarry, in exactly the way the governments asked them to do it.

8. While the Claytons were being compelled to undergo an unprecedented and unwarranted 5 year environmental assessment process, the Martin Marietta Quarry at Porcupine Mountain was doubling its aggregate production for export to the US, with Nova Scotia Government encouragement and approval. Indeed, in 2006, a Nova Scotia Government Information Circular featured the Martin Marietta Quarry on its cover, proclaiming:³

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.*

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 North Mountain area along the Bay of Fundy.*
9. Another Government of Nova Scotia publication in 2006, entitled “*Industrial Mineral Potential in Nova Scotia – Opportunities to Develop Deep-Water Aggregate Quarries*,”⁴ specifically featured the North Mountain as a particularly attractive location to establish a quarry for the export of aggregate. It proclaimed the “unlimited amounts of trap rock” available on the North Mountain and the

³ Appendix A.

⁴ Appendix B.

“Deep, Ice-free harbours provide Nova Scotia’s mineral products with [a] window on the world”.

10. The North Mountain is, of course, precisely where the Whites Point Quarry is located.
11. Today, there is no more vivid testimonial to the vitality of the on-going Nova Scotia Government policy of promoting quarries, and the great value of a Nova Scotia quarry, than the expeditious approval by the Governments of Canada and Nova Scotia of the Vulcan Materials’ mega-quarry at Black Point. Because of the major social and economic benefits of a quarry to the Province, the Government of Nova Scotia expedited the approval process and expropriated land for the Black Point Quarry.
12. If the Claytons had not been wrongfully deprived of the Whites Point Quarry, there can be no doubt it would have been a very successful decades-long business venture. The Claytons’ business plan was simple and clear, and it made compelling sense. Their loss is the loss of the profits they would have earned over the 50 year life of the Whites Point Quarry. The law is also simple and clear: the Investors are entitled to full reparation to wipe out all of the consequences of the wrong done to them.
13. Howard Rosen, CPA,CA,CBV, the internationally distinguished FTI Consulting valuator, has calculated the lost profits, on a fully discounted basis, to be in the amount of US\$298,166,906. Mr. Rosen has calculated the total loss, adjusted for tax equity to provide full reparation, to be in the amount of US\$443,350,772.
14. The Investors respectfully ask the Tribunal for the full reparation to which they are entitled by an award of damages in that amount.

II. THE AGGREGATES INDUSTRY

15. The aggregates industry is the largest mining industry in the world. In the United States alone, an estimated 2.32 billion tons of aggregate were consumed in 2015.⁵
16. Aggregates are used throughout the construction industry, including in the construction of buildings, roads and highways, bridges, railroad beds, dams, water and sewer systems and tunnels.⁶
17. Aggregate used for construction (“construction aggregate”) comprises any combination of crushed stone, sand and gravel.⁷
18. Crushed stone aggregate is blasted, excavated, and crushed in quarries. Sand (fine aggregate) and gravel are mined or excavated in pits or quarries.⁸ Crushed stone can be composed of limestone, granite, trap rock, or basalt, and is produced from large areas of consolidated stone deposits found at shallow depth.⁹
19. Two types of crushed stone are typically produced at a quarry: coarse aggregates and fines. Coarse aggregates are classified by their nominal maximum size, which is the largest that a stone can be for a particular application. Fines (also known as “grit”) are blended to create road building products or washed and screened to mix with fine aggregate (sand).¹⁰
20. The principal application of construction aggregate – both coarse and fine – is in the production of concrete and asphalt. Aggregate used in concrete and asphalt is combined with an adhesive mixture called a “binder”. Applications for aggregate

⁵ Expert Report of John T. Boyd Company (Michael Wick), dated December 5, 2016, pp. 3-1, 3-3.

⁶ Expert Report of Mineral Valuation & Capital, Inc. (John Lizak), dated November 30, 2016, pp. 9-10; Expert Report of John T. Boyd Company (Michael Wick), dated December 5, 2016, pp. 3-1, 3-3.

⁷ Expert Report of Mineral Valuation & Capital, Inc. (John Lizak), dated November 30, 2016, p. 9.

⁸ Expert Report of Mineral Valuation & Capital, Inc. (John Lizak), dated November 30, 2016, p. 9; Expert Report of John T. Boyd Company (Michael Wick), dated December 5, 2016, p. 3-1.

⁹ Expert Report of John T. Boyd Company (Michael Wick), dated December 5, 2016, p. 3-1.

¹⁰ Expert Report of Mineral Valuation & Capital, Inc. (John Lizak), dated November 30, 2016, p. 5; Expert Report of John T. Boyd Company (Michael Wick), dated December 5, 2016, pp. 3-2, 3-8.

that do not require a binder include railroad ballast, road base, fill, and unpaved road surfacing.¹¹

21. Concrete consists of Portland cement, which is a binder comprised of calcium compounds, coarse aggregates, fine aggregates, and water. Asphalt is typically a mixture of aggregate and asphalt cement.¹²
22. To be suitable for use in construction, aggregate usually consists of clean, uncoated particles with the proper size, gradation, shape, physical soundness, hardness, strength and chemical properties.¹³ Aggregate used in concrete and asphalt must be of superior strength and hardness and is subject to more stringent specifications.¹⁴
23. Because asphalt is used to surface roads and highways, the aggregate used in asphalt must have high friction attributes and toughness. Starting in the 1990s, the US government and most state governments adopted Superior Performing Asphalt Pavements (“Superpave”) requirements.¹⁵ Superpave is, in essence, a rigorous standard applied to the aggregate that is used in asphalt for road paving, and some applications of concrete.
24. The New York State Department of Transportation (“NYSDOT”) requires that the aggregate used in asphalt for roads and highways meet Superpave requirements. The aggregate must meet specific physical, chemical and petrographic requirements and be certified by a geologist.¹⁶
25. The production of coarse aggregate involves extracting large rock, usually through drilling or blasting, and crushing it into smaller rock. The crushed

¹¹ Expert Report of Mineral Valuation & Capital, Inc. (John Lizak), dated November 30, 2016, p. 9.

¹² Expert Report of John T. Boyd Company (Michael Wick), dated December 5, 2016, pp. 3-3 – 3-4.

¹³ Expert Report of Mineral Valuation & Capital, Inc. (John Lizak), dated November 30, 2016, p. 10.

¹⁴ Expert Report of Mineral Valuation & Capital, Inc. (John Lizak), dated November 30, 2016, p. 10; Expert Report of John T. Boyd Company (Michael Wick), dated December 5, 2016, pp. 3-3 – 3-4.

¹⁵ Expert Report of Mercator Geological Services Limited (Michael Cullen), dated November 17, 2016, p. 63.

¹⁶ Expert Report of Mineral Valuation & Capital, Inc. (John Lizak), dated November 30, 2016, p. 11.

- smaller rock is screened, may be washed, and ultimately becomes a finished product.¹⁷
26. The collection of equipment that crushes quarried rock and produces the sized aggregate is called a “crushing plant”.¹⁸ Typically, a crushing plant is comprised of hoppers, feeders, crushers, screens, washing facilities, and stockpiles, all of which are interconnected by conveyors.¹⁹
27. The size of the finished aggregate is basically a function of the crushing and screening process.²⁰ Different types and sizes of crushers are used to break rock into relatively larger or smaller pieces, while screens separate the different sizes of the crushed rock.²¹ A crushing plant can also produce and sort grits and sand.²²
28. Finished aggregate is typically stockpiled on the quarry site and then loaded into a truck, train or ship for market. The loading of aggregate can be automated through the use of conveyors or “stackers”, or it can be done manually with loaders and other types of vehicles.²³
29. Demand for aggregate is primarily driven by construction. The three sectors of the construction industry that consume construction aggregate are public works construction, commercial and industrial construction, and residential construction.²⁴

¹⁷ Expert Report of John T. Boyd Company (Michael Wick), dated December 5, 2016, pp. 3-2; Expert Report of LB&W Engineering Inc. (George Bickford) paras. 12-16.

¹⁸ Witness Statement of John Wall, dated December 8, 2016, para. 27.

¹⁹ Witness Statement of John Wall, dated December 8, 2016, para. 27.

²⁰ Witness Statement of John Wall, dated December 8, 2016, para. 32.

²¹ Expert Report of LB&W Engineering Inc. (George Bickford), dated December 8, 2016, paras. 13-15; Expert Report of John T. Boyd Company (Michael Wick), dated December 5, 2016, p. 3-2.

²² Expert Report of LB&W Engineering Inc. (George Bickford), dated December 8, 2016, para. 16.

²³ Expert Report of LB&W Engineering Inc. (George Bickford), dated December 8, 2016, paras. 15-18.

²⁴ Expert Report of Mineral Valuation & Capital, Inc. (John Lizak), dated November 30, 2016, pp. 13-14.

30. One of the largest U.S. metropolitan markets is New York City, including Manhattan and part of northern New Jersey, where construction spending has reached record levels in recent years.²⁵
31. Where no economically viable supply exists, aggregate must be imported. In the United States, stone imports have been growing at an average annual rate of roughly 8% since 1993. Areas that import aggregate include Florida, parts of New York (including Greater New York City) and California, and many eastern seaboard cities, with most of the stone imported into the Atlantic Coast region originating from the Canadian Maritime Provinces and the Caribbean.²⁶
32. Aggregate is a high bulk, low-cost commodity and transportation cost is the most significant component of delivered cost. Because of this, an aggregate supply is generally located near local markets.²⁷
33. Aggregates are transported by road, rail and water.²⁸ Trucking can be prohibitively expensive over longer distances or where there are toll roads or bridges. Where port facilities are available, shipping aggregates on water by bulk carrier is an efficient and comparatively low cost means of transporting aggregates.²⁹ The Government of Nova Scotia recognizes the strategic value of tidewater quarries, writing in a publication:

Some aggregate products are shipped as far as the Caribbean islands due to the scarcity of suitable materials in those locations and the favourable coastal position of some Nova Scotia aggregate deposits which have resulted in economic transportation costs.³⁰

²⁵ Expert Report of Mineral Valuation & Capital, Inc. (John Lizak), dated November 30, 2016, p. 15, fig. 1; Expert Report of John T. Boyd Company (Michael Wick), dated December 5, 2016, p. 5-1.

²⁶ Expert Report of Mineral Valuation & Capital, Inc. (John Lizak), dated November 30, 2016, p. 17.

²⁷ Expert Report of Mineral Valuation & Capital, Inc. (John Lizak), dated November 30, 2016, pp. 11-12.

²⁸ Expert Report of Mineral Valuation & Capital, Inc. (John Lizak), dated November 30, 2016, p. 12.

²⁹ Expert Report of Mineral Valuation & Capital, Inc. (John Lizak), dated November 30, 2016, p. 13.

³⁰ Mineral Resources in Our Lives (*Investors' Schedule of Documents, Tab C1081, p. 001644*).

Access to lower cost ocean transportation has made some of Nova Scotia's aggregate resources attractive as an export commodity.³¹

III. "INVEST IN NOVA SCOTIA"

A. NOVA SCOTIA PROMOTION OF AGGREGATE PRODUCTION AND EXPORT

34. For decades, the Nova Scotia Government has promoted mineral and aggregate exploration and development in the Province. Indeed, the *Mineral Resources Act* is expressly intended to "encourage, promote, and facilitate mineral exploration, development and production".³²

35. The Government has long recognized the importance of mineral and construction aggregate exploration and development to Nova Scotia's economy. In a publicly distributed brochure, the Government stated:

These operations contribute significantly to the provincial economy by increasing employment opportunities and adding value to locally produced geological resources.³³

...

Industrial minerals and construction aggregate production currently lead the industry and they have been steady, predictable sectors for several decades.³⁴

36. Historically, the aggregates industry has been a very important part of the Nova Scotia economy.³⁵ From 1925 to the present, aggregate production in Nova Scotia has followed a consistent upward trend³⁶ with over \$76,000,000 of crushed

³¹ Mineral Resources in Our Lives (*Investors' Schedule of Documents*, Tab C1081, p. 001652).

³² SNS 1990, c. 18 (*Investors' Schedule of Documents*, Tab C1087).

³³ Mineral Resources in Our Lives (*Investors' Schedule of Documents*, Tab C1081, p. 001646).

³⁴ Mineral Resources in Our Lives (*Investors' Schedule of Documents*, Tab C1081, p. 001643).

³⁵ Economic Impact of the Mineral Industry in Nova Scotia (2003) (*Investors' Schedule of Documents*, Tab C1032); Economic Impact of the Mineral Industry in Nova Scotia (2006) (*Investors' Schedule of Documents*, Tab C1033); Economic Impact of the Mineral Industry in Nova Scotia (2012) (*Investors' Schedule of Documents*, Tab C1034).

³⁶ Economic Impact of the Mineral Industry in Nova Scotia (2003), (*Investors' Schedule of Documents*, Tab C1032, p. 32); Economic Impact of the Mineral Industry in Nova Scotia (2006), (*Investors' Schedule of Documents*, Tab C1033, p. 32); Economic Impact of the Mineral Industry in Nova Scotia (2012), (*Investors' Schedule of Documents*, Tab C1034, p. 32).

stone being produced in Nova Scotia in 2006.³⁷ Mineral production is touted as a key economic benefit for the Province:

The estimated gross domestic product (GDP) contribution for both primary extraction and secondary processing was calculated to be over 400 million in 2003. The mining industry ranks second among resource industries in terms of contribution to GDP. Primary mining activity accounts for almost one quarter of a billion dollars in GDP in our province.

Along with employment benefits, a large portion of the economic spin-offs of mineral production is directly beneficial to the rural communities where many operations are situated. Positive economic benefits are realized as mineral producers purchase goods and services from local suppliers.³⁸

37. The Government of Nova Scotia has also specifically identified the North Mountain as a particularly attractive location for an aggregate quarry for the export of aggregate. Digby Neck is the western extension of the North Mountain, which is a volcanic ridge along the shore of the Bay of Fundy.³⁹
38. In a publication entitled *Industrial Mineral Potential in Nova Scotia – Opportunities to Develop Deep-water Aggregate Quarries*,⁴⁰ the Government championed the “unlimited amounts of trap rock” available at the North Mountain” and the “Deep, Ice-free harbours [that] provide Nova Scotia’s mineral products with [a] window on the world”.
39. In another publication, the Government proclaimed the excellent quality of the North Mountain Basalt for aggregate, saying that “[t]he depositional origin and

³⁷ Economic Impact of the Mineral Industry in Nova Scotia (2006), (*Investors’ Schedule of Documents, Tab C1033, p. 21*).

³⁸ Mineral Resources in Our Lives, (*Investors’ Schedule of Documents, Tab C1081, p. 001647*).

³⁹ Expert Report of Mercator Geological Services Limited (Michael Cullen), dated November 17, 2016, p. 9.

⁴⁰ *Industrial Mineral Potential in Nova Scotia – Opportunities to Develop Deep-water Aggregate Quarries*, (*Investors’ Schedule of Documents, Tab C1039*).

composition of the North Mountain Basalt has resulted in properties that give the rocks a high stone resource potential”:⁴¹

The North Mountain Basalt is an important component of the bedrock aggregate resource. Commonly called trap rock by the industry, it has been used to produce crushed stone for several decades, as witnessed by the presence of numerous active and abandoned quarries along the mountain length.⁴²

40. The Government publication concluded by highlighting the importance of quarrying on the North Mountain, saying that:

[I]ndustry, communities and individuals have a shared interest in continued quarrying on the North Mountain. These stone resources are vital to the development of the communities, employment and tax revenue in the region.⁴³

41. The North Mountain is, of course, precisely where Bilcon planned to build and operate the Whites Point Quarry in order to produce and export high quality aggregate, all of which was actively encouraged and promoted by the Government of Nova Scotia.
42. It was the Government of Nova Scotia’s practice to actively promote mineral exploration and development. As Dr. Daniel Kontak, Laurentian University Professor, and former Government of Nova Scotia geologist, explains:

a) The Province directed considerable effort towards assessing the development potential of industrial minerals and commodities, because of their importance to the Province in providing employment, royalties and tax revenue.⁴⁴

⁴¹ An Overview of the Industrial Mineral Potential of the North Mountain Basalt, (*Investors’ Schedule of Documents, Tab C1040, p. 86*).

⁴² An Overview of the Industrial Mineral Potential of the North Mountain Basalt, (*Investors’ Schedule of Documents, Tab C1040, p. 86*).

⁴³ An Overview of the Industrial Mineral Potential of the North Mountain Basalt, (*Investors’ Schedule of Documents, Tab C1040, p. 102*).

⁴⁴ Witness Statement of Daniel Kontak, dated December 13, 2016, para. 5.

- b) The Government undertook research and wrote papers specifically to promote Nova Scotia resources on an international scale. This included papers that Dr. Kontak wrote on the North Mountain in Digby Neck;⁴⁵
- c) The Government attended international mining conferences to promote Nova Scotia natural resources;⁴⁶
- d) The Government provided “free” consulting to private companies. The Province justified this because of its interest in ensuring natural resources were effectively exploited.

43. [REDACTED]

44. Government policy was echoed in “*Mineral Resources in Our Lives*,” which the Nova Scotia Government published in September 2007:

Continue the province-wide assessment of aggregate resources (both bedrock and surficial) to ensure their long-term availability with respect to acceptable quality and affordability of supply.

Promote the wise use of the aggregate resource to government and industry. Promote the concept of strategic aggregate resource protection to the planning community and other stakeholders.

Identify and promote opportunities to export aggregate deposits and other specialty stone.⁴⁸

...

The department also supports the development of mineral resources through its associated geoscience programs. Branch activities include generation and distribution of geological information, promotion of the

⁴⁵ Witness Statement of Daniel Kontak, dated December 13, 2016, paras. 6 – 7.
⁴⁶ Witness Statement of Daniel Kontak, dated December 13, 2016, paras. 8 – 9.
⁴⁷ Witness Statement of Daniel Kontak, dated December 13, 2016, paras. 11 – 14.
⁴⁸ Mineral Resources in Our Lives, (*Investors’ Schedule of Documents, Tab C1081, p. 001653*).

province's mineral resources, and administration of regulations pertaining to mineral exploration and mining.⁴⁹

...

The Resource Evaluation section conducts activities that support exploration for, and development of, mineral and non-renewable energy resources. Specific activities include the maintenance of comprehensive mineral occurrence databases, studies to characterize the geology and genesis of mineral and energy deposits, development of new deposit models to assist mineral and energy exploration, and studies of industrial mineral commodities and aggregates.⁵⁰

...

Development of an assistance program for Nova Scotia prospectors to market their mineral claims to an international audience at conferences such as the annual meeting of the Prospectors and Developers Association of Canada.⁵¹

B. GOVERNMENT POLICY AND PRACTICE IN ACTION

45. The Government of Nova Scotia has been very successful in attracting investment in Nova Scotia's aggregate industry for export purposes. Leading examples are the Martin Marietta Porcupine Mountain Quarry and the Vulcan Materials' Black Point Quarry.

1. Porcupine Mountain

46. The Porcupine Mountain Quarry is a tidewater quarry located in Auld's Cove, Nova Scotia,⁵² on the western shore of the Cabot Strait. In the early 1950s, 10 million tons of rock were quarried from Porcupine Mountain to construct the Canso Causeway, which is a 1.4-kilometer link between mainland Nova Scotia and Cape Breton Island.⁵³

⁴⁹ Mineral Resources in Our Lives, (*Investors' Schedule of Documents*, Tab C1081, p. 001684).

⁵⁰ Mineral Resources in Our Lives, (*Investors' Schedule of Documents*, Tab C1081, p. 001716).

⁵¹ Mineral Resources in Our Lives, (*Investors' Schedule of Documents*, Tab C1081, p. 001717).

⁵² Witness Statement of Dan Fougere, dated December 12, 2016, para. 3.

⁵³ Witness Statement of Dan Fougere, dated December 12, 2016, para. 13.

47. After lying dormant until 1978, Nova Construction Co. Ltd. of Antigonish, Nova Scotia bought the Porcupine Mountain Quarry to supply road building materials for the Provincial highway system.⁵⁴ In 1995, Martin Marietta Materials purchased the quarry, “recognizing its potential to supply aggregates to the eastern sea-board of the United States, using low-cost marine transportation”.⁵⁵
48. Martin Marietta’s former Administrative Manager of the Porcupine Mountain Quarry, Dan Fougere, describes the quarry this way:

[REDACTED]

[REDACTED]

49. Shortly before the Investors invested in Whites Point, the Nova Scotia Government actively supported and facilitated Martin Marietta’s expansion of the Porcupine Mountain Quarry. Mr. Fougere explains:

In 2000, with the encouragement and support of the Government of Nova Scotia, the Porcupine Mountain Quarry began increasing crushed stone production. The increase was achieved by improving operating efficiency, increasing the workforce, and increasing the plant’s operating hours.⁵⁸

By 2008, the Porcupine Mountain Quarry had approximately doubled its production to over 3.7 million tons annually, putting the operation among Canada’s top aggregate producers.⁵⁹

⁵⁴ Witness Statement of Dan Fougere, dated December 12, 2016, para. 14.
⁵⁵ Witness Statement of Dan Fougere, dated December 12, 2016, para. 14.
⁵⁶ Witness Statement of Dan Fougere, dated December 12, 2016, para. 15.
⁵⁷ Witness Statement of Dan Fougere, dated December 12, 2016, para. 16.
⁵⁸ Witness Statement of Dan Fougere, dated December 12, 2016, para. 7.
⁵⁹ Witness Statement of Dan Fougere, dated December 12, 2016, para. 8.

50. The production increase was accomplished with the full support of the Nova Scotia Government without any additional environmental assessment requirements. Mr. Fougere notes:

The increase in production of approximately 2 million tons per year from 2000 to 2008 was done with the support of the Government and without any additional environmental assessment requirements. Government approval to extend the operations permit for the Quarry for another 10 years was also granted in 2011 without any additional environmental assessment requirements.⁶⁰

2. Black Point

51. In 2016, Vulcan Materials Company, North America's largest aggregate producer, was granted approvals by the Governments of Canada and Nova Scotia to construct and operate a tidewater quarry and marine terminal at Black Point, in Guysborough County, Nova Scotia. The Black Point Quarry will crush up to 7.5 million tons of rock per year,⁶¹ for export by ship to the United States and the Caribbean.⁶²

52. [REDACTED]

Vulcan's environmental assessment for Black Point was expedited and Government approvals were granted in 14 months.⁶⁴

⁶⁰ Witness Statement of Dan Fougere, dated December 12, 2016, para. 10.
⁶¹ Black Point Environmental Impact Statement – Table of Concordance and Summary Report, February, 2015 (*Investors' Schedule of Documents, Tab C 1092, p. 9*).
⁶² Black Point Environmental Impact Statement – Table of Concordance and Summary Report, February, 2015 (*Investors' Schedule of Documents, Tab C 1092, pp. 1 – 2*).
⁶³ Expert Report of Mineral Valuation & Capital, Inc. (John Lizak), dated November 30, 2016, p. 25.
⁶⁴ Letter from Margaret Miller to Frank Lieth, dated April 26, 2016 (*Investors' Schedule of Documents, Tab C1091*); Black Point, Environmental Impact Statement, February, 2015 (*Investors' Schedule of Documents, Tab C1092*).

53. Indeed, governmental support for Black Point went so far as to include the expropriation of private, historic land to ensure the Quarry's construction.⁶⁵ The famous property, known as "Fogarty's Cove", had been owned by the same local family since 1858 and is the subject of an iconic Canadian folk song.⁶⁶
54. In an affidavit sworn in support of the expropriation, Barry Carroll, Chief Administrative Officer of the Municipality of the District of Guysborough, attested to the government's motivation.⁶⁷ Summarizing Black Point's benefits to his community, Mr. Carroll said:
- Black Point Development is of enormous importance to the MODG in terms of the employment it will create both directly and indirectly during the construction and operation of the undertaking as well as the property tax and royalty revenue it will generate.⁶⁸
55. Quarries also continue to be supported and approved on Digby Neck. The Seabrook Quarry Expansion Project was recently approved to expand the existing 3.95 hectare quarry to approximately 90.5 hectares.⁶⁹ The proponents applied for the expansion on March 8, 2016, and received environmental approval from the Minister on April 20, 2016. The entire process took only 7 weeks.⁷⁰
56. Through policy, practice and direct action, the Government of Nova Scotia has historically recognized and continues to recognize the importance of quarrying to

⁶⁵ Affidavit of Barry Carroll, dated September 14, 2014 (*Investors' Schedule of Documents, Tab C1088, para. 22*).

⁶⁶ Josh O'Kane, "The Ballad of Fogarty's Cove" *The Globe and Mail*, April 18, 2016 (*Investors' Schedule of Documents, Tab C1094*).

⁶⁷ Affidavit of Barry Carroll, dated September 14, 2014, (*Investors' Schedule of Documents, Tab C1088, paras. 14-16*).

⁶⁸ Affidavit of Barry Carroll, dated September 14, 2014 (*Investors' Schedule of Documents, Tab C1088, para. 13*).

⁶⁹ See the outline of the proposed undertaking, Seabrook Notice – Registration of Notice for Environmental Assessment (*Investors' Schedule of Documents, Tab C1093, p. 3*).

⁷⁰ Seabrook Notice – Registration of Notice for Environmental Assessment (*Investors' Schedule of Documents, Tab C1093*); Letter from Margaret Miller to Gary Rudolph, dated April 20, 2016 and Environmental Assessment Approval (*Investors' Schedule of Documents, Tab C1090*).

the provincial economy, and the commercial value of Nova Scotia stone for construction aggregate production and export.

C. WHITES POINT LOCATION AND GEOLOGY

57. Whites Point is located on the northwest coast of Digby Neck, Nova Scotia. The site consists of approximately 380 acres of undeveloped land, with approximately 2.6 kilometers of coastline.⁷¹ The coastline abuts an international shipping lane, which connects to ports along the United States Eastern Seaboard.

58. [REDACTED]

59. [REDACTED]

60. [REDACTED]

⁷¹ Expert Report of Mercator Geological Services Limited (Michael Cullen), dated November 17, 2016, p. 9.
⁷² Expert Report of Mercator Geological Services Limited (Michael Cullen), dated November 17, 2016, pp. 19-20.
⁷³ Expert Report of Mercator Geological Services Limited (Michael Cullen), dated November 17, 2016, p. 1.
⁷⁴ Expert Report of Mercator Geological Services Limited (Michael Cullen), dated November 17, 2016, p. 67, Table 14.7.

[REDACTED]

61. [REDACTED]

[REDACTED]

62. [REDACTED]

[REDACTED]

[REDACTED]

63. The Whites Point basalt deposit is of premium quality, contains substantial quantity and is amenable to extraction using conventional quarrying techniques. The Whites Point location on the Bay of Fundy provides direct access to international shipping lanes with ready access to major U.S. ports. It is a very valuable deposit.

⁷⁵Expert Report of Mercator Geological Services Limited (Michael Cullen), dated November 17, 2016, p. 73.
⁷⁶Expert Report of Mercator Geological Services Limited (Michael Cullen), dated November 17, 2016, p. 78.
⁷⁷Expert Report of Mercator Geological Services Limited (Michael Cullen), dated November 17, 2016, p. 64.

IV. CLAYTON FAMILY INVESTMENT IN WHITES POINT

A. CLAYTON FAMILY AGGREGATES BUSINESSES

1. Past and Present

64. The Clayton family's involvement in the aggregate business began in the 1950s, when Bill Clayton Sr. built their first plant, in Lakewood, New Jersey. He built it "from scratch".⁷⁸ He personally shovelled and washed sand and gravel to separate it, put the sand and gravel into concrete, and sold the concrete. He worked 16-18 hours a day, seven days a week.⁷⁹
65. Over the next 60 years, the Clayton Group became the largest ready-mix concrete supplier in New Jersey, with 11 plants throughout the State. The Clayton Group has almost 600 employees, about 250 of which drive the 500 trucks throughout the Group's distribution network.⁸⁰ Today the Clayton Group supplies high-quality aggregate products in New York, New Jersey, and Pennsylvania.
66. The Claytons have built a strong reputation for reliability and quality and grew their business based on that reputation.⁸¹ The Claytons have earned a loyal customer following over decades of exemplary customer service.⁸²
67. Their concrete has been used in many award-winning projects, including Route 70s Freedom Bridge, the Route 52 Causeway, and both State highways in New Jersey. They were recently honoured at the 52nd Annual New Jersey Concrete Awards for their work on the Newark Bay Bridge.⁸³

⁷⁸ Witness Statement of William Ralph Clayton, dated December 15, 2016, paras. 1-2.

⁷⁹ Witness Statement of William Ralph Clayton, dated December 15, 2016, para. 3.

⁸⁰ Witness Statement of William Ralph Clayton, dated December 15, 2016, para. 12.

⁸¹ Witness Statement of William Ralph Clayton, dated December 15, 2016, para. 11.

⁸² Witness Statement of William Ralph Clayton, dated December 15, 2016, paras. 14-15.

⁸³ Witness Statement of William Ralph Clayton, dated December 15, 2016, para. 10.

2. Amboy Aggregates

68. Building on the Clayton family's involvement in fine aggregates, in 1989 Ralph Clayton & Sons Materials entered into a joint venture to form "Amboy Aggregates". Amboy Aggregates dredged sand from the bottom of the Ambrose Channel entrance to the New York City harbor for use in the construction industry.
69. During the 1990s, Amboy Aggregates became the largest natural sand supplier in New Jersey.⁸⁴ From its marine terminal at South Amboy it sold to customers in New York City, Northern New Jersey and Connecticut.⁸⁵
70. In the mid-1990s, Amboy Aggregates' dredged sand had become too fine on its own to meet the requisite specifications and, to meet those specifications, Amboy Aggregates added a crushed stone product known as "grit" to its sand.⁸⁶ Initially, Amboy Aggregates purchased grit from the New Jersey quarry market, but its demand for grit eventually exceeded supply. In the later 1990s, Amboy Aggregates sourced grit through New York Sand LLC. That grit came from a quarry in Bayside, New Brunswick.⁸⁷
71. In the mid 1990s, the Clayton Group also acquired an interest in the Riverdale Quarry in New Jersey, which extended their business in fine aggregates to a direct involvement in quarrying coarse aggregates.⁸⁸ The Riverdale Quarry produced approximately [REDACTED] tons of stone annually, with approximately 20% of its production sold into the [REDACTED] market.⁸⁹ The Riverdale Quarry also had an asphalt plant. It was at the Riverdale Quarry that the Claytons met Tom Dooley and John Wall.

⁸⁴ Witness Statement of Tom Dooley, dated December 9, 2016, para. 29.

⁸⁵ Witness Statement of Tom Dooley, dated December 9, 2016, para. 28.

⁸⁶ Witness Statement of Tom Dooley, dated December 9, 2016, paras. 29-30.

⁸⁷ Witness Statement of Tom Dooley, dated December 9, 2016, paras. 30-31.

⁸⁸ Witness Statement of Joe Forestieri, dated December 13, 2016, para. 10.

⁸⁹ Witness Statement of Joe Forestieri, dated December 13, 2016, para. 10.

3. New York Sand & Stone (NYSS)

72. In 1998, Amboy Aggregates and New York Sand LLC formed New York Sand & Stone, LLC, [REDACTED]
[REDACTED]
73. Amboy Aggregates took the lead role in managing NYSS and, in 1999, hired Tom Dooley as NYSS' Sales and Marketing Manager.⁹¹
- a) **Tom Dooley**
74. Tom Dooley is a graduate of Georgetown University with extensive experience in both the concrete and aggregates industries.⁹² From 1977 to 1984, he worked in sales and management for ready-mix concrete plants in Texas, where he developed expertise in concrete products and production processes.⁹³
75. Mr. Dooley became the General Manager of a ready-mix plant in Longview, Texas, where he was responsible for the overall financial performance of the plant.⁹⁴ He also managed the sourcing and supply of coarse aggregates, and was involved in developing technical applications for concrete products.⁹⁵
76. In 1991, Mr. Dooley became the Sales Manager of the Riverdale Quarry.⁹⁶ He expanded Riverdale's sale of aggregate into the New York City and Long Island markets, and acquired experience with the complexity and cost of transporting aggregate to those markets.⁹⁷ While he worked at the Riverdale Quarry, Mr.

⁹⁰ Witness Statement of Tom Dooley, dated December 9, 2016, para. 32.

⁹¹ Witness Statement of Tom Dooley, dated December 9, 2016, para. 32.

⁹² Witness Statement of Tom Dooley, dated December 9, 2016, para. 1.

⁹³ Witness Statement of Tom Dooley, dated December 9, 2016, para. 2.

⁹⁴ Witness Statement of Tom Dooley, dated December 9, 2016, paras. 9-10.

⁹⁵ Witness Statement of Tom Dooley, dated December 9, 2016, para. 12.

⁹⁶ Witness Statement of Tom Dooley, dated December 9, 2016, para. 18.

⁹⁷ Witness Statement of Tom Dooley, dated December 9, 2016, para. 21.

Dooley worked closely with John Wall, Riverdale's Vice President who oversaw the Riverdale Quarry and asphalt production facility.⁹⁸

b) [REDACTED]

77. [REDACTED]

78. [REDACTED]

79. [REDACTED]

80. [REDACTED]

⁹⁸ Witness Statement of Tom Dooley, dated December 9, 2016, para. 23.

⁹⁹ Witness Statement of Tom Dooley, dated December 9, 2016, para. 34.

¹⁰⁰ Witness Statement of Tom Dooley, dated December 9, 2016, paras. 28, 56.

¹⁰¹ Witness Statement of Tom Dooley, dated December 9, 2016, para. 34.

¹⁰² Witness Statement of Tom Dooley, dated December 9, 2016, para. 21.

¹⁰³ Witness Statement of Tom Dooley, dated December 9, 2016, para. 57.

¹⁰⁴ Witness Statement of Tom Dooley, dated December 9, 2016, para. 38.

81. [REDACTED]

82. [REDACTED]

83. [REDACTED]

84. [REDACTED]

85. [REDACTED]

¹⁰⁵ Witness Statement of Tom Dooley, dated December 9, 2016, para. 37.
¹⁰⁶ Witness Statement of Tom Dooley, dated December 9, 2016, para. 40.
¹⁰⁷ Witness Statement of Tom Dooley, dated December 9, 2016, para. 40.
¹⁰⁸ Witness Statement of Tom Dooley, dated December 9, 2016, para. 42.
¹⁰⁹ Witness Statement of Tom Dooley, dated December 9, 2016, para. 43.
¹¹⁰ Witness Statement of Tom Dooley, dated December 9, 2016, para. 46.
¹¹¹ Witness Statement of Tom Dooley, dated December 9, 2016, para. 46.
¹¹² Witness Statement of Tom Dooley, dated December 9, 2016, para. 46.

[REDACTED]

86.

[REDACTED]

B. JOHN LIZAK AND THE CHOICE OF WHITES POINT

87. The Claytons had researched the investment climate in Nova Scotia and discovered that the Government of Nova Scotia was aggressively seeking out companies willing to invest in quarries there.¹¹⁶

88. In March 2002, the Claytons retained their expert geologist and mineral appraiser John Lizak to investigate, assess, and report on potential quarry sites in Nova Scotia.¹¹⁷ Mr. Lizak had experience in hundreds of geoscience, mining and environmental projects throughout the world.¹¹⁸

89. Because the Clayton Group was focused on the New York City market, Mr. Lizak was engaged specifically to “conduct a geotechnical assessment of the construction materials deposit” and prepare a “Geologic Source Report”¹¹⁹ [REDACTED]

90. In April 2002, Mr. Lizak met with experts in the Nova Scotia and New Brunswick Natural Resource Departments, and he received information on potential sites, including an NSDNR multi-year Study of the North Mountain region. One of the

¹¹³ Witness Statement of Tom Dooley, dated December 9, 2016, para. 43.

¹¹⁴ Witness Statement of Tom Dooley, dated December 9, 2016, para. 44.

¹¹⁵ Witness Statement of Tom Dooley, dated December 9, 2016, para. 45.

¹¹⁶ Witness Statement of William Richard Clayton, dated July 25, 2011, para. 8.

¹¹⁷ Witness Statement of John Lizak, dated July 8, 2011, para. 8.

¹¹⁸ Witness Statement of John Lizak, dated July 8, 2011, para. 3.

¹¹⁹ Expert Report of Mineral Valuation & Capital Inc. (John Lizak), dated November 30, 2016, p. 25.

¹²⁰ Expert Report of Mineral Valuation & Capital Inc. (John Lizak), dated November 30, 2016, Appendix 4.

Nova Scotia Government officials he met and worked with was Dr. Dan Kontak, a very experienced and capable geologist who had been with the NSDNR for fifteen years. As Dr. Kontak, the author of the Study, explains in his Witness Statement:

Importantly the bottom and top flows consist of massive, very hard or durable and very fresh rock ideal for aggregate production.¹²¹

91. Based on Mr. Lizak’s meetings and discussions with Dr. Kontak and many other Government of Nova Scotia officials, Digby Neck became “a priority location” in Mr. Lizak’s regional study.¹²² In April and May 2002, holes were drilled on the Whites Point property to obtain comprehensive information on the geology of the site.¹²³

92. [REDACTED]

93. In his report dated December, 2002, Mr. Lizak wrote:

Physical lab tests, chemical lab tests, and examination of the core samples and outcrop exposures indicate that the Whites Cove site contains an advantaged, large reserve of high quality construction aggregate. The site contains in excess of 200 million tons (English) of in-place stone, which is ideally suited for quarrying, processing, shipping, and construction.¹²⁵

¹²¹ Witness Statement of Daniel Kontak, dated December 13, 2016, para. 8.

¹²² Expert Report of Mineral Valuation & Capital Inc. (John Lizak), dated November 30, 2016, p. 25.

¹²³ Witness Statement of John Lizak, dated July 8, 2011, para. 6; **Lizak Exhibit 1**.

¹²⁴ Expert Report of Mineral Valuation & Capital Inc. (John Lizak), dated November 30, 2016, p. 25, Table 2.

¹²⁵ Witness Statement of John Lizak, dated July 8, 2011, para. 6; **Lizak Exhibit 1**.

94. [REDACTED]

95. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

96. [REDACTED]

97. Somewhat ironically, Vulcan Materials received its environmental approvals to construct the Quarry at Black Point within a mere 14 months from the date of the filing of its EIS. Vulcan's Black Point Quarry will produce up to 7.5 million tons of crushed stone annually for export to the United States.¹³⁰

¹²⁶ Expert Report of Mineral Valuation & Capital Inc. (John Lizak), dated November 30, 2016, p. 25.
¹²⁷ Expert Report of Mercator Geological Services Limited (Michael Cullen), dated November 17, 2016, p. 3.
¹²⁸ Expert Report of Mercator Geological Services Limited (Michael Cullen), dated November 17, 2016, p. 4.
¹²⁹ Expert Report of Mineral Valuation & Capital Inc. (John Lizak), dated November 30, 2016, p. 25.
¹³⁰ Letter from Margaret Miller, Minister of Environment to Frank Lieth re: Black Point Environmental Assessment, dated April 25, 2016 (*Investors' Schedule of Documents, Tab C1091*).

C. NYSS SYNERGY WITH THE WHITES POINT QUARRY

98. [REDACTED]

99. [REDACTED]

100. [REDACTED]

[REDACTED]

D. CLAYTON FAMILY COMMITMENT TO WHITES POINT

101. As the Tribunal concluded in the merits phase of this arbitration, the Investors relied on specific encouragements by the Nova Scotia authorities to develop a quarry at Whites Point.¹³⁵ The official support included a letter from Minister Balser to the Claytons:

¹³¹ Witness Statement of Tom Dooley, dated December 9, 2016, para. 47.
¹³² Witness Statement of Tom Dooley, dated December 9, 2016, para. 47.
¹³³ Witness Statement of Tom Dooley, dated December 9, 2016, para. 52.
¹³⁴ Witness Statement of Tom Dooley, dated December 9, 2016, para. 49.
¹³⁵ Award on Jurisdiction and Liability, para. 448.

I hope that you and your company will continue to move the project forward as I feel it has the potential to benefit both you and our area.¹³⁶

102. [REDACTED]
[REDACTED] Bill Clayton, Jr., summarized the family's view of [REDACTED]
[REDACTED]

[REDACTED]
[REDACTED] we saw it as an opportunity to do for the next generation of our family what my Dad had done for us.

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

103. Thus, the Clayton family committed themselves to Whites Point and, in the words of Minister Balser, they “moved the project forward.” Paul Buxton was hired to manage the Whites Point Project and lead the regulatory approval process.¹³⁹

104. Mr. Buxton was exceptionally qualified to support the Clayton's Whites Point commitment. He is a Consulting Engineer who had lived and worked in the Annapolis/Digby area for more than 25 years,¹⁴⁰ and who had extensive experience managing many local environmental and economic projects, including the restoration of the historic town of Annapolis Royal.¹⁴¹

105. The Clayton family's commitment to Whites Point never wavered. As work proceeded and the Whites Point Project was placed into a Joint Review Panel, the

¹³⁶ Witness Statement of William Clayton, Jr., dated December 15, 2016, para. 7; **Clayton Exhibit 3**.

¹³⁷ Witness Statement of William Clayton, Jr., dated December 15, 2016, para. 10.

¹³⁸ Witness Statement of William Clayton Jr., dated December 15, 2016, at paras. 18-19.

¹³⁹ Witness Statement of Paul Buxton, dated December 13, 2016, para. 2; Witness Statement of John Wall, dated December 8, 2016, para. 21.

¹⁴⁰ Witness Statement of Paul Buxton, dated December 13, 2016, para. 34.

¹⁴¹ Witness Statement of Paul Buxton, dated December 13, 2016, paras. 34, 37.

Claytons remained focused on the importance of sourcing a new supply of high-quality stone.¹⁴² Mr. Buxton recalls:

The Claytons directed that I was to make every effort to bring the project to completion. I remember very well Bill Clayton Sr. instructing me that I was to spare no expense to get the quarry approved.¹⁴³

V. THE WHITES POINT QUARRY

A. OVERVIEW

106. The design of the Whites Point Quarry was substantially completed by 2006. The crushing plant had been design-engineered, a design-build contractor had been engaged for the marine terminal, and most of the required equipment had been identified and sourced. An initial construction schedule had been prepared, with construction to commence in 2008 upon receipt of expected environmental approval.

107. [REDACTED]

B. JOHN WALL IS QUARRY MANAGER

108. In early 2002, the Claytons hired John Wall to design and oversee the construction of the Whites Point Quarry and to be the Quarry's General Manager.¹⁴⁴

¹⁴² Witness Statement of Paul Buxton, dated December 13, 2016, para. 29.

¹⁴³ Witness Statement of Paul Buxton, dated December 13, 2016, para. 29.

¹⁴⁴ Witness Statement of John Wall, dated December 8, 2016, para. 17.

109. At that time Mr. Wall had over 25 years of experience in the construction and aggregate industries. He had managed aggregate quarries for Peckham Industries Inc., Tilcon New York Inc., Aggregate Industries, Mount Hope Rock Products Company, Braen Stone Industries Inc., Negev Airbase Constructors in Israel, as part of the Camp David Accord, and the Riverdale Quarry in New Jersey. Under Mr. Wall's management, the Mount Hope Rock Products' quarry in Wharton, New Jersey, became the tenth-largest hard-rock quarry in the United States.¹⁴⁵
110. In 2001, Mr. Wall founded Aggregate Solutions, LLC, which sold equipment and provided consulting services to the aggregate industries in the northeastern United States, including New York and New Jersey.¹⁴⁶
111. The Claytons knew Mr. Wall from the Riverdale Quarry¹⁴⁷ and later, in 2002, they bought equipment from Aggregate Solutions.¹⁴⁸ The Claytons were very familiar with, and respected Mr. Wall's extensive experience and background managing quarry operations.
112. In early 2002, Bill Clayton Jr. asked Mr. Wall to work with the Claytons to develop the quarry at Whites Point. Mr. Wall was familiar with their excellent reputation and was very interested in designing and building a new quarry from scratch.¹⁴⁹
113. [REDACTED]

¹⁴⁵ Witness Statement of John Wall, dated December 8, 2016, paras. 2-6.

¹⁴⁶ Witness Statement of John Wall, dated December 8, 2016, para. 8.

¹⁴⁷ Witness Statement of John Wall, dated December 8, 2016, para. 9.

¹⁴⁸ Witness Statement of John Wall, dated December 8, 2016, para. 9.

¹⁴⁹ Witness Statement of John Wall, dated December 8, 2016, paras. 9-10.

¹⁵⁰ Witness Statement of John Wall, dated December 8, 2016, paras. 13-14.

114. In April 2002, Mr. Wall visited Whites Point, and other potential quarry locations in Nova Scotia and Newfoundland. He inspected borehole samples from the Whites Point site, toured the site and noted its many advantages, [REDACTED]

115. Mr. Wall concluded that Whites Point was an excellent location for a quarry and agreed to be the General Manager of the Whites Point Quarry. His responsibilities included designing and overseeing construction of the Quarry and managing all aspects of quarry operations.¹⁵²

C. PAUL BUXTON IS PROJECT MANAGER

116. In May 2002, on his second visit to Nova Scotia, Mr. Wall met with Paul Buxton, the Project Manager, and they began their close collaboration.¹⁵³ Mr. Wall and Mr. Buxton worked together for almost six years on the development of the Whites Point Quarry.¹⁵⁴

117. As Mr. Wall and Mr. Buxton began planning the Quarry, they met with a Cabinet Minister in the Government of Nova Scotia, the Hon. Gordon Balsler,¹⁵⁵ who toured Mr. Wall around the local Digby Neck area, introduced him to community members and repeatedly expressed his strong support for the development of the Quarry.¹⁵⁶

¹⁵¹ Witness Statement of John Wall, dated December 8, 2016, para. 15.

¹⁵² Witness Statement of John Wall, dated December 8, 2016, paras. 15, 17.

¹⁵³ Witness Statement of John Wall, dated December 8, 2016, para. 19; Witness Statement of Paul Buxton, dated December 13, 2016, para. 7.

¹⁵⁴ Witness Statement of John Wall, dated December 8, 2016, para. 21; Witness Statement of Paul Buxton, dated December 13, 2016, para. 39.

¹⁵⁵ Witness Statement of John Wall, dated December 8, 2016, para. 22; Witness Statement of Paul Buxton, dated December 13, 2016, para. 9.

¹⁵⁶ Witness Statement of John Wall, dated December 8, 2016, para. 22; Witness Statement of Paul Buxton, dated December 13, 2016, para. 9.

118. In the Spring of 2002, Bill Clayton Sr. and Bill Clayton Jr. travelled to Digby Neck, met with Minister Balsler, and also toured the site and the community.¹⁵⁷ Minister Balsler continued to encourage the Claytons to invest in the Whites Point Quarry and the Claytons were highly enthusiastic.¹⁵⁸
119. In July 2002, Mr. Buxton established a Quarry office in Conway, close to the town of Digby.¹⁵⁹ This office became the headquarters for Bilcon of Nova Scotia and served as Mr. Wall's base when he worked in Nova Scotia.¹⁶⁰ Mr. Wall travelled regularly there on a bi-weekly basis and, from 2002 onwards, Mr. Wall and Mr. Buxton worked closely together to design, plan for and obtain the necessary authorizations to construct the Whites Point Quarry.¹⁶¹ In 2006, Mr. Wall moved his family to Digby where they lived for the next two years, all in the doubtless expectation that the Quarry would be approved and proceed to construction and operation.¹⁶²

D. THE DESIGN OF THE WHITES POINT QUARRY

120. The Whites Point Quarry was conceptually Mr. Wall's design, with Mr. Buxton's input. Mr. Wall hired LB&W Engineering Inc. to assist with the design of the land aspect of the Quarry and obtained a "design-build" proposal for the marine terminal from Seabulk Systems Inc.

1. John Wall's Design of the Whites Point Quarry

121. Mr. Wall examined the Whites Point site and considered the key elements of the land as he and Mr. Buxton planned the Quarry, [REDACTED]

¹⁵⁷ Witness Statement of Paul Buxton, dated December 13, 2016, para. 12.

¹⁵⁸ Witness Statement of Paul Buxton, dated December 13, 2016, para. 12.

¹⁵⁹ Witness Statement of John Wall, dated December 8, 2016, para. 24; Witness Statement of Paul Buxton, dated December 13, 2016, para. 13.

¹⁶⁰ Witness Statement of John Wall, dated December 8, 2016, paras. 24-25.

¹⁶¹ Witness Statement of John Wall, dated December 8, 2016, paras. 21, 25-26; Witness Statement of Paul Buxton, dated December 13, 2016, para. 39.

¹⁶² Witness Statement of John Wall, dated December 8, 2016, para. 26.

[REDACTED]

122. Various sizes of crushers and screens were required to meet the Claytons' production objectives.¹⁶⁵ [REDACTED]

[REDACTED]

123. [REDACTED]

124. [REDACTED]

125. [REDACTED]

¹⁶³ Witness Statement of John Wall, dated December 8, 2016, paras. 30-31.
¹⁶⁴ Witness Statement of John Wall, dated December 8, 2016, para. 29.
¹⁶⁵ Witness Statement of John Wall, dated December 8, 2016, para. 32.
¹⁶⁶ Witness Statement of John Wall, dated December 8, 2016, para. 33.
¹⁶⁷ Witness Statement of John Wall, dated December 8, 2016, para. 35.
¹⁶⁸ Witness Statement of John Wall, dated December 8, 2016, para. 37.
¹⁶⁹ Witness Statement of John Wall, dated December 8, 2016, para. 38.
¹⁷⁰ Witness Statement of John Wall, dated December 8, 2016, para. 64.

- [REDACTED]
- [REDACTED]
126. [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
127. During the course of 2002, Mr. Buxton assembled data on the land and marine aspects of the site and engaged consultants for the environmental assessment process.¹⁷³ He met with the Nova Scotia Department of Environment and Labour, and the Federal Department of Fisheries and Oceans, and he developed plans that, by the end of 2002, resulted in *Navigable Waters Protection Act*¹⁷⁴ approval for the marine terminal.
128. In early January 2003, Federal and Provincial regulators advised Mr. Buxton that Bilcon would likely be required to carry out a Comprehensive Study Environmental Assessment, as was typically required for a quarry with a marine terminal.¹⁷⁵ Mr. Buxton told Mr. Wall that a conceptual description of the quarry and marine terminal would be required for the comprehensive study, and that a detailed design would be required at the subsequent Industrial Approval stage.¹⁷⁶
129. Mr. Wall identified the equipment that would be required to produce [REDACTED].¹⁷⁷ He assembled information from equipment manufacturers and used his knowledge and

¹⁷¹ Witness Statement of John Wall, dated December 8, 2016, para. 64.

¹⁷² Witness Statement of John Wall, dated December 8, 2016, para. 66.

¹⁷³ Witness Statement of Paul Buxton, dated December 13, 2016, para. 15.

¹⁷⁴ Witness Statement of Paul Buxton, dated December 13, 2016, para. 17 (*Investors' Schedule of Documents, Tab C1027*).

¹⁷⁵ Witness Statement of John Wall, dated December 8, 2016, para. 39.

¹⁷⁶ Witness Statement of John Wall, dated December 8, 2016, para. 40.

¹⁷⁷ Witness Statement of John Wall, dated December 8, 2016, para. 42.

experience in the aggregate industry to identify the types and sizes of the necessary crushing, screening and conveying equipment.¹⁷⁸ He also determined the precise location and specifications of the crushing plant on the Whites Point site.¹⁷⁹

130. Mr. Wall engaged an engineering firm to develop the detail and schematics of the crushing plant and to prepare design drawings for construction.¹⁸⁰ [REDACTED]

2. Engagement of LB&W Engineering

131. In 2003, Mr. Wall was referred to LB&W Engineering in Allentown, Pennsylvania, to assist in engineering the crushing plant. LB&W had an excellent reputation and had designed numerous crushing plants, including plants with elevated conveyors and structures.¹⁸²
132. From its inception in 1992, LB&W had specialized in minerals processing engineering, including aggregate plant design and material handling.¹⁸³ By 2003, LB&W had designed over 20 aggregate crushing plants large and small.¹⁸⁴ It also had extensive experience in procuring and supplying equipment and providing construction management services.¹⁸⁵
133. LB&W was founded by three professionals, one of whom was George Bickford.¹⁸⁶ Mr. Bickford was LB&W's President and by 2003, had 40 years of engineering

¹⁷⁸ Witness Statement of John Wall, dated December 8, 2016, para. 42.

¹⁷⁹ Witness Statement of John Wall, dated December 8, 2016, para. 40.

¹⁸⁰ Witness Statement of John Wall, dated December 8, 2016, para. 43.

¹⁸¹ Witness Statement of John Wall, dated December 8, 2016, para. 67.

¹⁸² Witness Statement of John Wall, dated December 8, 2016, para. 44.

¹⁸³ Expert Report of LB&W Engineering Inc. (George Bickford), dated December 8, 2016, paras. 6-7.

¹⁸⁴ Expert Report of LB&W Engineering Inc. (George Bickford), dated December 8, 2016, para. 10.

¹⁸⁵ Expert Report of LB&W Engineering Inc. (George Bickford), dated December 8, 2016, para. 8.

¹⁸⁶ Expert Report of LB&W Engineering Inc. (George Bickford), dated December 8, 2016, para. 6.

experience, including with Bethlehem Steel.¹⁸⁷ Mr. Bickford also had extensive experience and expertise in mineral processing methods and aggregate plant design and construction.¹⁸⁸

134. [REDACTED]

135. [REDACTED]

[REDACTED]

136. [REDACTED]

3. The Whites Point Crushing Plant

137. LB&W typically does its engineering work in stages, which include conceptual and detail design, equipment procurement, creation of engineering drawings, and

¹⁸⁷ Expert Report of LB&W Engineering Inc. (George Bickford), dated December 8, 2016, paras. 3, 6-7, 11.

¹⁸⁸ Expert Report of LB&W Engineering Inc. (George Bickford), dated December 8, 2016, para. 4.

¹⁸⁹ Expert Report of LB&W Engineering Inc. (George Bickford), dated December 8, 2016, para. 33; Witness Statement of John Wall, dated December 8, 2016, para. 45.

¹⁹⁰ Expert Report of LB&W Engineering Inc. (George Bickford), dated December 8, 2016, paras. 36-37.

¹⁹¹ Expert Report of LB&W Engineering Inc. (George Bickford), dated December 8, 2016, para. 36.

¹⁹² Witness Statement of John Wall, dated December 8, 2016, para. 46; Expert Report of LB&W Engineering Inc. (George Bickford), dated December 8, 2016, para. 38.

¹⁹³ Expert Report of LB&W Engineering Inc. (George Bickford), dated December 8, 2016, para. 38.

¹⁹⁴ Expert Report of LB&W Engineering Inc. (George Bickford), dated December 8, 2016, para. 39.

construction management.¹⁹⁵ The conceptual and detail design stage involves defining a design, preparing “flow sheet” diagrams that depict the scheme of the plant, and, once the concept is approved, preparing “small scale general arrangement” drawings.¹⁹⁶ These drawings define the configuration and profile and can be used for permits and project financing.¹⁹⁷

138. [REDACTED]
- [REDACTED]
 - [REDACTED]
 - [REDACTED]
 - [REDACTED]
 - [REDACTED]
 - [REDACTED]

¹⁹⁵ Expert Report of LB&W Engineering Inc. (George Bickford), dated December 8, 2016, para. 19.
¹⁹⁶ Expert Report of LB&W Engineering Inc. (George Bickford), dated December 8, 2016, paras. 20-27.
¹⁹⁷ Expert Report of LB&W Engineering Inc. (George Bickford), dated December 8, 2016, para. 23.
¹⁹⁸ Expert Report of LB&W Engineering Inc. (George Bickford), dated December 8, 2016, para. 50.
¹⁹⁹ Expert Report of LB&W Engineering Inc. (George Bickford), dated December 8, 2016, paras. 51-55.

■ [REDACTED]

■ [REDACTED]

■ [REDACTED]

139. In December 2004, Mr. Wall received a copy of [REDACTED]
[REDACTED]
[REDACTED]

140. Mr. Wall also received from LB&W a copy of an [REDACTED]
[REDACTED]
[REDACTED]

141. Through 2005 and into 2006, Mr. Bickford and Mr. Wall corresponded and met to discuss the quarry design.²⁰⁴ Among the various changes they discussed, Mr. Wall requested that [REDACTED]
[REDACTED]
[REDACTED]

²⁰⁰ Witness Statement of John Wall, dated December 8, 2016, para. 48.

²⁰¹ Witness Statement of John Wall, dated December 8, 2016, para. 48.

²⁰² Witness Statement of John Wall, dated December 8, 2016, para. 49.

²⁰³ Witness Statement of John Wall, dated December 8, 2016, para. 49.

²⁰⁴ Letters of Transmittal from LB&W to John Wall (*Investors' Schedule of Documents, Tabs C1065-C1072*); Witness Statement of John Wall, dated December 8, 2016, para. 50.

²⁰⁵ Witness Statement of John Wall, dated December 8, 2016, para. 50; Expert Report of LB&W Engineering Inc. (George Bickford), dated December 8, 2016, para. 56.

142. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

- [REDACTED]
- [REDACTED]
- [REDACTED]
[REDACTED]
- [REDACTED]
- [REDACTED]

143. [REDACTED]
[REDACTED]

- [REDACTED]
- [REDACTED]
[REDACTED]
- [REDACTED]
- [REDACTED]

144. Mr. Wall concluded that [REDACTED]
[REDACTED]
[REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

²⁰⁶ Witness Statement of John Wall, dated December 8, 2016, para. 51.

²⁰⁷ Witness Statement of John Wall, dated December 8, 2016, para. 51; Expert Report of LB&W Engineering Inc. (George Bickford), dated December 8, 2016, paras. 57-58.

[REDACTED]

145. Having substantially completed a workable design, LB&W prepared a construction schedule for the Quarry²⁰⁹ which assisted Mr. Wall with planning, and addressed site preparation and the procurement of materials. LB&W also obtained proposals and specifications from a range of equipment manufacturers or suppliers.²¹⁰ As a result of all the preparatory work, construction was set to start as soon as regulatory approval was received.²¹¹
146. In preparing for the construction of the Quarry, Mr. Wall looked into the capability of local companies to assist with the fabrication and erection of the crushing plant. He determined that facilities in [REDACTED]
[REDACTED]
[REDACTED] As a result, Mr. Wall and Mr. Buxton decided that [REDACTED]
[REDACTED]
[REDACTED]
147. Mr. Wall and Mr. Buxton also planned to hire Nova Scotia contractors for the overall construction of the Quarry which would both support much needed local employment and reduce construction costs.

²⁰⁸ Witness Statement of John Wall, dated December 8, 2016, para. 55.

²⁰⁹ Witness Statement of John Wall, dated December 8, 2016, para. 52; Expert Report of LB&W Engineering Inc. (George Bickford), dated December 8, 2016, para. 62.

²¹⁰ Quotation BD07-1806-108 from Kolman to LB&W re Radial Stacker Options (*Investors' Schedule of Documents, Tab C1058*); Fax to LB&W from Hoover Conveyor & Fabrication Corp. re. Quote (*Investors' Schedule of Documents, Tab C1059*); Quote from Deister Machine Company to LB&W for Deister Vibrating Equipment (*Investors' Schedule of Documents, Tab C1061*); Contech Construction Quote to LB&W (*Investors' Schedule of Documents, Tab C1062*); Document Package re. Spare Parts for 110' – 190' Telescoping Conveyors (*Investors' Schedule of Documents, Tab C1063*).

²¹¹ Witness Statement of John Wall, dated December 8, 2016, para. 52.

²¹² Witness Statement of John Wall, dated December 8, 2016, para. 53.

²¹³ Witness Statement of John Wall, dated December 8, 2016, para. 53.

4. The Marine Terminal

148. [REDACTED]

149. [REDACTED]

150. Mr. Wall then travelled to Sechelt, British Columbia [REDACTED]

151. Mr. Wall was impressed with [REDACTED] work, and concluded that [REDACTED]

²¹⁴ Witness Statement of John Wall, dated December 8, 2016, para. 64.
²¹⁵ Witness Statement of John Wall, dated December 8, 2016, para. 67.
²¹⁶ Witness Statement of John Wall, dated December 8, 2016, paras. 67-68.
²¹⁷ Witness Statement of John Wall, dated December 8, 2016, para. 68.
²¹⁸ Witness Statement of John Wall, dated December 8, 2016, para. 69.
²¹⁹ Witness Statement of John Wall, dated December 8, 2016, para. 69.
²²⁰ Witness Statement of John Wall, dated December 8, 2016, para. 70.

5. The Mobile Equipment

152. [REDACTED]

153. [REDACTED]

E. OPERATION OF THE WHITES POINT QUARRY

1. Operating Hours and Personnel Requirements

154. The Whites Point Quarry would operate for [REDACTED]

155. [REDACTED]

[REDACTED] The Claytons were committed to hiring from the local community and to offering competitive industry wage rates and benefits program.²²⁶

²²¹ Witness Statement of John Wall, dated December 8, 2016, para. 60.
²²² Witness Statement of John Wall, dated December 8, 2016, para. 60.
²²³ Witness Statement of John Wall, dated December 8, 2016, paras. 55, 77; Witness Statement of Paul Buxton, dated December 13, 2016, para. 22.
²²⁴ Witness Statement of John Wall, dated December 8, 2016, para. 77; Witness Statement of Paul Buxton, dated December 13, 2016, para. 22.
²²⁵ Witness Statement of John Wall, dated December 8, 2016, para. 78.
²²⁶ Witness Statement of John Wall, dated December 8, 2016, para. 78.

156. In 2004, Mr. Wall and Mr. Buxton prepared a “Quarry Employment Schedule”, which identified the required positions and associated hourly rates.²²⁷ They later prepared an information document for the local community that contained more detail about personnel requirements and compensation. Bilcon received hundreds of formal job applications and verbal job inquiries for the Quarry positions.²²⁸

2. Shipping the Aggregate to Market

157. The Claytons planned to ship the crushed stone produced at the Whites Point Quarry to New York City and New Jersey using a bulk carrier.²²⁹ The ship loader

[REDACTED]

158. [REDACTED]

²²⁷ Witness Statement of John Wall, dated December 8, 2016, para. 75; **Wall Exhibit 6; (Investors’ Schedule of Documents, Tab C1003, p. 1).**

²²⁸ Witness Statement of John Wall, dated December 8, 2016, para. 76; **Wall Exhibit 7; (Investors’ Schedule of Documents, Tab C1008);** Witness Statement of Paul Buxton, dated December 13, 2016, paras. 21-23; **Buxton Exhibit 2; (Investors’ Schedule of Documents, Tab 1029).**

²²⁹ Witness Statement of John Wall, dated December 8, 2016, para. 56.

²³⁰ Witness Statement of John Wall, dated December 8, 2016, paras. 63, 70.

²³¹ Witness Statement of Tom Dooley, dated December 9, 2016, paras. 53-54.

159. [REDACTED]

F. COST OF THE WHITES POINT QUARRY

1. Capital Costs

a) Plant and Infrastructure

160. In 2016, LB&W's Vice President and co-founder, Michael G. Washer, prepared detailed costings for the plant and infrastructure for the Whites Point Quarry.²³³

161. Mr. Washer is a Professional Engineer licensed in 17 U.S. states. He is a member of the American Institute of Steel Construction (AISC) and American Society of Civil Engineers (ASCE). He is the Engineer of Record for LB&W. [REDACTED]

162. Mr. Washer based his Whites Point Quarry costing estimate on the "Revision D" design, taking into account the subsequent changes to that design which Mr. Bickford and Mr. Wall had made²³⁵ and concluded the total cost for plant and infrastructure was [REDACTED]

b) Mobile Equipment

163. Mr. Washer also prepared a costing of the mobile equipment required for operating the Whites Point Quarry.²³⁷

²³² Witness Statement of John Wall, dated December 8, 2016, para. 65; Witness Statement of Paul Buxton, dated December 13, 2016, para. 16.

²³³ Expert Report of LB&W Engineering Inc. (Michael G. Washer), dated December 8, 2016, paras. 1, 4, 10.

²³⁴ Expert Report of LB&W Engineering Inc. (Michael G. Washer), dated December 8, 2016, paras. 2, 4, 8.

²³⁵ Expert Report of LB&W Engineering Inc. (Michael G. Washer), dated December 8, 2016, para. 10.

²³⁶ Expert Report of LB&W Engineering Inc. (Michael G. Washer), dated December 8, 2016, para. 11; **Washer Exhibit 1; (Investors' Schedule of Documents, Tab C1011).**

²³⁷ Expert Report of LB&W Engineering Inc. (Michael G. Washer), dated December 8, 2016, para. 12; **Washer Exhibit 2; (Investors Schedule of Documents, Tab C1012).**

164. To determine the required mobile equipment, Mr. Washer referred to information from Mr. Wall and his own extensive experience in quarry design²³⁸ and concluded that the total mobile equipment cost was [REDACTED]

c) **Marine Terminal**

165. In March 2006, Seabulk delivered a "Construction Cost Estimate," which estimated the total construction cost for the ship loading facility at [REDACTED]

166. In its expert report, SNC-Lavalin confirmed that [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

167. [REDACTED]
[REDACTED]

d) **Total Capital Cost**

168. [REDACTED]
[REDACTED]

2. **Operating Costs**

169. Mr. Wall and Mr. Buxton determined the personnel requirements and expected wages and salaries for the operation of the Whites Point quarry.

²³⁸ Expert Report of LB&W Engineering Inc. (Michael G. Washer), dated December 8, 2016, para. 12.

²³⁹ Expert Report of LB&W Engineering Inc. (Michael G. Washer), dated December 8, 2016, para. 12; Witness Statement of John Wall, dated December 8, 2016, para. 62; **Washer Exhibit 2; (Investors' Schedule of Documents, Tab C1012).**

²⁴⁰ Witness Statement of John Wall, dated December 8, 2016, para. 71; **Wall Exhibit 4; (Investors' Schedule of Documents, Tab C1005).**

²⁴¹ Expert Report of SNC-Lavalin Inc. (Christopher Fudge and Ryan MacPherson), dated November 16, 2016.

²⁴² Witness Statement of Bill Clayton, Jr., dated December 15, 2016, para. 25.

²⁴³ Expert Report of FTI Consulting (Howard Rosen), dated December 15, 2016, para. 5.42.

170. The positions and the associated hourly wage rates for the years 2011 to 2015 are set out in a table attached to Mr. Wall's Witness Statement²⁴⁴ which summarizes the total projected personnel costs for the years 2011 to 2015.
171. Mr. Wall and Mr. Buxton confirm that, in their experience, these and other costs to operate the Quarry, as summarized in the tables attached to their Witness Statements as Whites Point Operating Costs, are a reasonable projection of the actual costs that would have been incurred in the operation of the Whites Point Quarry as designed.²⁴⁵
172. LB&W Engineering analysed the maintenance and repair costs associated with the plant and mobile equipment, and SNC-Lavalin estimated the maintenance and repair cost associated with the marine terminal [REDACTED]

3. Shipping Costs

173. The Investors planned to ship the crushed stone produced at the Whites Point Quarry to New York City and New Jersey [REDACTED]
174. [REDACTED]

²⁴⁴ Witness Statement of John Wall, dated December 8, 2016, para. 79; **Wall Exhibit 8; (Investors' Schedule of Documents, Tab C1009).**

²⁴⁵ Witness Statement of John Wall, dated December 8, 2016, para. 80; **Wall Exhibit 9; (Investors' Schedule of Documents, Tab C1010);** Witness Statement of Paul Buxton, dated December 13, 2016, para. 40; **Buxton Exhibit 5; (Investors' Schedule of Documents, Tab C1010).**

²⁴⁶ Expert Report of LB&W Engineering Inc. (Michael G. Washer), dated December 8, 2016, para. 13; **Washer Exhibit 4; (Investors' Schedule of Documents, Tab C1013),** Report of SNC-Lavalin Inc. (Christopher Fudge and Ryan MacPherson), dated December 2, 2016.

²⁴⁷ Witness Statement of John Wall, dated December 8, 2016, para. 56; Witness Statement of Tom Dooley, dated December 9, 2016, paras. 53-54.

²⁴⁸ Expert Report of Tamarack Resources Inc. (A. Wayne Morrison), dated December 9, 2016, p. 15.

[REDACTED]

175. [REDACTED]

4. Total Projected Operating Costs: Statement of Operations

176. Dan Fougere, CPA,CA, a chartered accountant with 40 years' experience and former Administrative Manager of Martin Marietta's Porcupine Mountain Quarry, prepared a Pro Forma Statement of Operations that includes the projected costs, revenues, income and taxes for the Whites Point Quarry for the years 2011 to 2015.²⁵²

VI. THE MARKET FOR AGGREGATE FROM THE WHITES POINT QUARRY

A. NYSS DEMAND FOR WHITES POINT AGGREGATE

177. [REDACTED]

²⁴⁹ Expert Report of Tamarack Resources Inc. (A. Wayne Morrison), dated December 9, 2016, p. 2.
²⁵⁰ Expert Report of Tamarack Resources Inc. (A. Wayne Morrison), dated December 9, 2016, pp. 9-10.
²⁵¹ Expert Report of Tamarack Resources Inc. (A. Wayne Morrison), dated December 9, 2016, pp. 11-12.
²⁵² Witness Statement of Dan Fougere, dated December 12, 2016; **Fougere Exhibits 11-14; (Investors' Schedule of Documents, Tabs C1002, C1010, C1046 and C1047).**

2012, and 2 million tons annually from 2013 to 2020, increasing to sales of 2.4 million tons in 2025.²⁵³

178. [REDACTED]

179. [REDACTED]

180. [REDACTED]

181. [REDACTED]

²⁵³ Witness Statement of Tom Dooley, dated December 9, 2016, paras. 95-96.
²⁵⁴ Witness Statement of Tom Dooley, dated December 9, 2016, paras. 58-59.
²⁵⁵ Witness Statement of Tom Dooley, dated December 9, 2016, para. 60.
²⁵⁶ Witness Statement of Tom Dooley, dated December 9, 2016, para. 60.
²⁵⁷ Witness Statement of Tom Dooley, dated December 9, 2016, para. 55.
²⁵⁸ Witness Statement of Tom Dooley, dated December 9, 2016, paras. 55-56.
²⁵⁹ Witness Statement of Tom Dooley, dated December 9, 2016, paras. 63-64.
²⁶⁰ Witness Statement of Tom Dooley, dated December 9, 2016, para. 64.
²⁶¹ Witness Statement of Tom Dooley, dated December 9, 2016, para. 65.

[REDACTED]

182. [REDACTED]

183. [REDACTED]

184. [REDACTED]

[REDACTED]

²⁶² Witness Statement of Tom Dooley, dated December 9, 2016, para. 79.

²⁶³ Witness Statement of Tom Dooley, dated December 9, 2016, para. 67.

²⁶⁴ Witness Statement of Tom Dooley, dated December 9, 2016, paras. 70-71.

²⁶⁵ Witness Statement of Tom Dooley, dated December 9, 2016, paras. 58, 68; New York Sand & Stone Financial Statements (*Investors' Schedule of Documents, Tab C1018*).

²⁶⁶ Witness Statement of Tom Dooley, dated December 9, 2016, para. 49.

²⁶⁷ Witness Statement of Tom Dooley, dated December 9, 2016, paras. 50-51.

185. [REDACTED]

186. [REDACTED]

187. In early 2009, when NYCDOT changed its contract terms to require that its aggregate supplier be responsible to supply all of the required crushed stone products,²⁷⁰ [REDACTED]

188. [REDACTED]

²⁶⁸ Witness Statement of Tom Dooley, dated December 9, 2016, para. 53.

²⁶⁹ Witness Statement of Tom Dooley, dated December 9, 2016, para. 78.

²⁷⁰ Witness Statement of Tom Dooley, dated December 9, 2016, para. 74.

²⁷¹ Witness Statement of Tom Dooley, dated December 9, 2016, para. 74.

²⁷² Witness Statement of Tom Dooley, dated December 9, 2016, para. 79.

²⁷³ Witness Statement of Tom Dooley, dated December 9, 2016, paras. 80-81.

²⁷⁴ Witness Statement of Tom Dooley, dated December 9, 2016, para. 81.

189. [REDACTED]

[REDACTED]

190. [REDACTED]

191. On the heels of the 2008 global economic crisis, 2010 and 2011 were difficult years for the construction industry in North America.²⁷⁷ [REDACTED]

192. [REDACTED]

193. [REDACTED]

[REDACTED]

²⁷⁵ Witness Statement of Tom Dooley, dated December 9, 2016, para. 83, **Dooley Exhibit 1; (Investors' Schedule of Documents, Tab C1025)**.

²⁷⁶ Witness Statement of Tom Dooley, dated December 9, 2016, para. 83.

²⁷⁷ Witness Statement of Tom Dooley, dated December 9, 2016, paras. 85-86.

²⁷⁸ Witness Statement of Tom Dooley, dated December 9, 2016, para. 86.

²⁷⁹ Witness Statement of Tom Dooley, dated December 9, 2016, para. 90.

²⁸⁰ Witness Statement of Tom Dooley, dated December 9, 2016, para. 91.

²⁸¹ Witness Statement of Tom Dooley, dated December 9, 2016, para. 93.

[REDACTED]

194. [REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

195. [REDACTED]

[REDACTED]

²⁸² Witness Statement of Tom Dooley, dated December 9, 2016, para. 95.
²⁸³ Witness Statement of Tom Dooley, dated December 9, 2016, para. 97.
²⁸⁴ Witness Statement of Tom Dooley, dated December 9, 2016, para. 95; **Dooley Exhibit 3; (Investors' Schedule of Documents, Tab C1002).**
²⁸⁵ Witness Statement of Tom Dooley, dated December 9, 2016, para. 97.
²⁸⁶ Witness Statement of Tom Dooley, dated December 9, 2016, para. 96.

196. [REDACTED]

B. [REDACTED]

197. [REDACTED]

198. [REDACTED]

199. [REDACTED]

[REDACTED]

200. [REDACTED]

²⁸⁷ Expert Report of John T. Boyd Company (Michael Wick), dated December 5, 2016, pp. 4-1 – 4-3.

²⁸⁸ Expert Report of John T. Boyd Company (Michael Wick), dated December 5, 2016, p. 1-1.

²⁸⁹ Expert Report of John T. Boyd Company (Michael Wick), dated December 5, 2016, p. 5-3, 7-2.

²⁹⁰ Expert Report of John T. Boyd Company (Michael Wick), dated December 5, 2016, p. 5-2.

[REDACTED]

201. [REDACTED]

202. [REDACTED]

203. [REDACTED]

[REDACTED]

204. [REDACTED]

[REDACTED]

²⁹¹ Expert Report of John T. Boyd Company (Michael Wick), dated December 5, 2016, p. 5-6.
²⁹² Expert Report of John T. Boyd Company (Michael Wick), dated December 5, 2016, p. 3-2.
²⁹³ Expert Report of John T. Boyd Company (Michael Wick), dated December 5, 2016, p. 7-2.
²⁹⁴ Expert Report of John T. Boyd Company (Michael Wick), dated December 5, 2016, p. 7-2.
²⁹⁵ Expert Report of John T. Boyd Company (Michael Wick), dated December 5, 2016, p. 7-2.
²⁹⁶ Expert Report of John T. Boyd Company (Michael Wick), dated December 5, 2016, p. 7-7.

205. [REDACTED]

206. Mr. Wick also concluded that Bilcon would have sold large volumes of grit, and that its relationship with Amboy Aggregates would have enabled it “to dominate with little competition”³⁰¹.

C. DEMAND FOR WHITES POINT AGGREGATE FROM U.S. EAST COAST MARKETS

207. Bilcon could also have shipped and sold Whites Point aggregate into the Atlantic and Gulf Coast port markets south of New York City, and to centres like Baltimore, Norfolk, Charleston, Savannah, Mobile, Tampa, New Orleans, Port Arthur, and Houston.

208. Since the 1970s, ports along the Atlantic and Gulf Coasts (referred to by the United States Geological Survey as the “South Atlantic” geographic region) have been receiving shipments of crushed stone from Nova Scotia. In 2015, the South Atlantic markets accounted for more than 2 million tons of crushed stone from the Canadian Maritimes. The states in the South Atlantic are also among the fastest growing in the US, supporting a steady growth in aggregate sales.³⁰²

209. John Lizak analysed the market potential of the South Atlantic U.S. for Whites Point aggregate.³⁰³ He reviewed Vulcan Materials’ forecasts of annual sales from its new quarry at Black Point, Nova Scotia into the South Atlantic region:

[A]s previously noted Vulcan Materials Company forecasts that the average annual sales from its Black Point Quarry to the Atlantic and Gulf

²⁹⁷ Expert Report of John T. Boyd Company (Michael Wick), dated December 5, 2016, p. 8-1.

²⁹⁸ Expert Report of John T. Boyd Company (Michael Wick), dated December 5, 2016, p. 8-1.

²⁹⁹ Expert Report of John T. Boyd Company (Michael Wick), dated December 5, 2016, p. 8-1.

³⁰⁰ Expert Report of John T. Boyd Company (Michael Wick), dated December 5, 2016, p. 8-2.

³⁰¹ Expert Report of John T. Boyd Company (Michael Wick), dated December 5, 2016, p. 9-2.

³⁰² Expert Report of Mineral Valuation & Capital, Inc. (John Lizak), dated November 30, 2016, pp. 27-28

³⁰³ Expert Report of Mineral Valuation & Capital, Inc. (John Lizak), dated November 30, 2016, p. 4.

Coasts of the United States will be 5 million tons (Vulcan, 2015). It is likely that Bilcon would capture a larger portion of the subject market than Vulcan because the stone quality at Whites Point is superior to that at Black Point, and the shipping costs from Whites Point should be much lower than the shipping costs from Black Point. [REDACTED]

[REDACTED]

210. Whites Point’s superior stone quality and lower shipping costs would have given Bilcon a significant competitive edge.³⁰⁵

211. In view of the nature and extent of the U.S. South Atlantic markets, the location of Whites Point, and the quality of Whites Point aggregate, Mr. Lizak concludes that Bilcon could have sold significant volumes of crushed stone into the region:

The regional U.S. market for crushed stone from Bilcon’s Whites Point quarry is vibrant and it offers significant opportunities for growth in sales volume, prices, and profits. [REDACTED]

[REDACTED]

212. A robust market beyond the New York City and New Jersey areas exists for Whites Point aggregate, with corresponding opportunities for growth and enhanced profitability.

D. VULCAN MATERIALS’ BLACK POINT QUARRY

213. The 2016 approval of Vulcan Materials’ Black Point Quarry highlights the reality of the U.S. demand for aggregate. Vulcan has specifically identified the target market for Black Point Quarry aggregate as the U.S. eastern and Gulf coasts:

³⁰⁴ Expert Report of Mineral Valuation & Capital, Inc. (John Lizak), dated November 30, 2016, pp. 29-30.

³⁰⁵ Expert Report of Mineral Valuation & Capital, Inc. (John Lizak), dated November 30, 2016, p. 29.

³⁰⁶ Expert Report of Mineral Valuation & Capital, Inc. (John Lizak), dated November 30, 2016, p. 6.

The purpose of the Black Point Quarry Project is to supply construction aggregate to markets predominantly on the eastern and Gulf coasts of the United States.³⁰⁷

214. The large permitted size of the Black Point Quarry further highlights the value of the U.S. aggregate markets that Vulcan Materials is targeting.

VII. REGULATORY COMPLIANCE

215. But for the breaches of Articles 1102 and 1105 of the NAFTA, the Whites Point Quarry would have received environmental approval. The JRP Report identified only “community core values” as an adverse environmental effect,³⁰⁸ and the Tribunal has concluded that is not a factor to be considered under either provincial or federal statutes:

Mr. Estrin and Mr. Rankin both testified, however, that “community core values” as used by the JRP were not within the scope of environmental assessment contemplated by the Nova Scotia as well as federal Canada statute. They were matters of philosophical belief, not effects that could be assessed and mitigated. Although the point about the Nova Scotia statute is not decisive in the present case, the Tribunal agrees. The statutes are concerned with effects on actual biophysical and socioeconomic conditions rather than with matters of political or philosophical belief, such as that a local community should have a veto over a project even if the law does not so provide.”³⁰⁹

216. As Prof. Rankin noted in his expert report, the JRP could not legally proceed to do anything outside the four corners of the applicable legislation or the specific Terms of Reference under which the review took place.³¹⁰
217. Because the JRP offered no other reason to reject the project, the JRP would otherwise have logically been compelled to recommend approval of the Whites Point Quarry.

³⁰⁷ Expert Report of Mineral Valuation & Capital, Inc. (John Lizak), dated November 30, 2016, p. 23.

³⁰⁸ Award on Jurisdiction and Liability, para. 535.

³⁰⁹ Award on Jurisdiction and Liability, para. 528.

³¹⁰ Expert Report of Murray Rankin, dated December 21, 2012, para. 10.

218. The environmental assessment of the WPQ Quarry satisfied all of the relevant requirements of the federal and Nova Scotia EA processes. Most importantly, it demonstrated that with ordinary mitigation there would have been no significant adverse environmental impacts. If “core community values” were properly excluded as a relevant criterion, there would have been no reasonable basis to conclude that all EA requirements had not been satisfied. At that point, the statutory decision makers, the federal and the Nova Scotia Environment Ministers, would have had no reasonable basis for refusing to accept the results of the EA process with ordinary conditions, and the Quarry would have proceeded to the permitting stage in the usual course.
219. After receiving the JRP Report, the Federal Minister of the Environment and the Nova Scotia Minister of the Environment, each had to consider whether to approve the Quarry. The authority to make the decision is conferred by the *Canadian Environmental Assessment Act* (CEAA) and the *Nova Scotia Environment Act* (NSEA), respectively.³¹¹
220. There are, however, stringent legal constraints on the Ministers’ lawful exercise of their authority.³¹² Most fundamentally, both Ministers were constrained by the foundational principle of the rule of law.³¹³
221. As Dean Sossin observes, since the landmark case of *Roncarelli v. Duplessis*, the exercise of all discretionary authority “must be understood as bounded and limited by its statutory terms.”³¹⁴ And the authority must be exercised in accordance with the rule of law.³¹⁵

³¹¹ Expert Report of Lorne Sossin, dated December 10, 2016, para. 14, 16.

³¹² Expert Report of Lorne Sossin, dated December 10, 2016, para. 15.

³¹³ Expert Report of Lorne Sossin, dated December 10, 2016, para. 15.

³¹⁴ Expert Report of Lorne Sossin, dated December 10, 2016, para. 17.

³¹⁵ Expert Report of Lorne Sossin, dated December 10, 2016, para. 17.

222. In *Reference re Secession of Quebec*,³¹⁶ the Supreme Court of Canada described the fundamental constitutional bedrock the rule of law:

70 The principles of constitutionalism and the rule of law lie at the root of our system of government. The rule of law, as observed in *Roncarelli v. Duplessis*, [1959] S.C.R. 121, at p. 142, is "a fundamental postulate of our constitutional structure". As we noted in the *Patriation Reference*, supra, at pp. 805-6, "[t]he 'rule of law' is a highly textured expression, importing many things which are beyond the need of these reasons to explore but conveying, for example, a sense of orderliness, of subjection to known legal rules and of executive accountability to legal authority". At its most basic level, the rule of law vouchsafes to the citizens and residents of the country a stable, predictable and ordered society in which to conduct their affairs. It provides a shield for individuals from arbitrary state action.

[Emphasis added]

223. Prof. Rankin also discussed the rule of law in his expert opinion in the merits phase:³¹⁷

Administrative law is itself the natural outcome of the rule of law and the transcendent idea it encompasses: those exercising public authority must act within the scope of the authority granted to them by legislation. As expressed by the Supreme Court of Canada:

The theoretical basis of this idea is therefore unimpeachable (...): any grant of jurisdiction will necessarily include limits to the jurisdiction granted, and any grant of a power remains subject to conditions.³¹⁸

224. As Dean Sossin amplified, Canadian administrative law requires that all relevant factors must be considered in the lawful exercise of authority, with the corollary that all irrelevant factors must be excluded from consideration.³¹⁹

³¹⁶ [1998] 2 SCR 217 (*Investors' Schedule of Documents, Tab C816*).

³¹⁷ Expert Report of Murray Rankin, dated December 21, 2012, para. 27.

³¹⁸ *UES, Local 298 v. Bibeault*, [1988] 2 S.C.R. 1048, para. 118 (*Investors' Schedule of Documents, Tab C818*).

³¹⁹ Expert Report of Lorne Sossin, dated December 10, 2016, para. 22.

225. In the result, acting fairly and reasonably, regardless of the JRP's recommendation, there was no lawful basis in the circumstances on which Ministers could lawfully deny environmental approval.
226. Environmental approval would typically include conditions that Bilcon comply with the commitments it made in the environmental assessment process,³²⁰ and the usual quarry conditions with which Bilcon would have easily and readily complied.³²¹
227. Following environmental approval, Bilcon would have applied for and received industrial permits. Industrial approval ("IA") is granted by the Nova Scotia Ministry of the Environment under the *Environment Act*,³²² and relates primarily to terrestrial components. As Peter Oram, a Professional Geoscientist, explains:

The IA typically details the regulatory requirements associated with monitoring key aspects of a project's operations such as liquid effluent from settling ponds, air emissions and groundwater and surface water quality. For aggregate operations, an IA will also typically specify requirements associated with blast monitoring, air quality, species at risk monitoring, and other components of the project identified through an EA process as needing monitoring.³²³

228. During the JRP hearings, the Government of Nova Scotia provided an Undertaking that it had "no record of any project that had received an Environmental Assessment approval, but was subsequently denied approval under Part V [Industrial Permits] of the Environment Act."³²⁴ In its document production in this case, Canada also made the following stipulations:

Request 37: Canada stipulates that it has no examples where a proponent of a project which received environmental assessment

³²⁰ Expert Report of GHD Limited (Peter Oram), dated December 6, 2016, p. 7.

³²¹ Expert Report of GHD Limited (Peter Oram), dated December 6, 2016, p. 7.

³²² *Nova Scotia Environment Act*, 1998 (*Investors' Schedule of Documents*, Tab C258); Expert Report of GHD Limited (Peter Oram), dated December 6, 2016, p. 3.

³²³ Expert Report of GHD Limited (Peter Oram), dated December 6, 2016, p. 3.

³²⁴ List of Undertakings, Public Hearings of June 16 to June 30, 2007 (*Investors' Schedule of Documents*, Tab C550); Expert Report of GHD Limited (Peter Oram), dated December 6, 2016, p. 5.

approval from the Government of Canada (under the version of the Canadian Environmental Assessment Act applicable to the Whites Point EA), and applied to the Department of Fisheries and Oceans, Transport Canada, or Natural Resources Canada for any permits, licences or authorizations required for the operation of the project, was denied those permits, licenses or authorizations.

Request 38: Canada stipulates that it has no examples where a proponent of a project which received Nova Scotia environmental assessment approval, and completed applications for Part V approval and/or other relevant permits, licences or authorizations required for the operation of the project, was denied that approval or those permits, licences or authorizations.

229. There can be no doubt that Bilcon would, in the ordinary course, have obtained the industrial permits necessary to operate the Quarry.³²⁵ It would have taken approximately 6-12 months to obtain the permits,³²⁶ at a cost in the range of \$170,000 to \$200,000.³²⁷ It would have cost approximately \$100,000 a year to comply with ordinary EA conditions, and \$80,000 per year to comply with ordinary IA conditions.³²⁸
230. Bilcon would have also obtained authorization to operate the marine terminal. On January 10, 2006, Transport Canada, issued an approval letter indicating Bilcon had satisfied the technical requirements of the *Navigable Waters Protection Act* and the *Fisheries Act*,³²⁹ and Bilcon would have easily obtained the remaining Watercourse Allocation permits and permits under the *Nova Scotia Submerged Crown Lands Act*.³³⁰
231. Bilcon would have secured these approvals in approximately 6 – 8 months from EA approval, at a cost approximately \$75,000.

³²⁵ Expert Report of GHD Limited (Peter Oram), dated December 6, 2016, p. 4.

³²⁶ Expert Report of GHD Limited (Peter Oram), dated December 6, 2016, p. 6.

³²⁷ Expert Report of GHD Limited (Peter Oram), dated December 6, 2016, p. 8, Appendix 2.

³²⁸ Expert Report of GHD Limited (Peter Oram), dated December 6, 2016, p. 8, Appendix 2.

³²⁹ Letter from Jon Prentiss, dated January 10, 2006 (*Investors' Schedule of Documents, Tab C1027, p. 0236*).

³³⁰ Expert Report of SNC-Lavalin (Christopher Fudge and Ryan MacPherson), dated December 13, 2016.

VIII. FULL REPARATION FOR LOSS

232. The Tribunal has held that Canada breached the international minimum standard of treatment (Article 1105) and the national treatment standard (Article 1102) of NAFTA.³³¹

A. THE CHORZÓW FACTORY PRINCIPLE

233. The fundamental principle of international law for assessing the loss to the Investors is that the state must make “full reparation” to compensate for the loss caused by its conduct.³³² The simple purpose of reparation is to undo the harm caused by the breach and to restore the Investors to the position they would have been in if Canada had not breached its obligations under the NAFTA.

234. The classic expression of this basic principle of international law is clearly expressed in the *Case Concerning the Factory at Chorzów*, where the Permanent Court of International Justice said: ³³³

The essential principle contained in the actual notion of an illegal act is that reparation must, as far as possible, wipe-out all the consequences of the illegal act and reestablish the situation which would, in all probability, have existed if that act had not been committed. Restitution in kind or, if this is not possible, payment of a sum corresponding to the value which a restitution in kind would bear; the award, if need be, of damages for loss sustained which would not be covered by restitution in kind or payment in place of it—such are the principles which should serve to determine the amount of compensation for an act contrary to international law.

235. Article 31 of the International Law Commission’s *Articles on State Responsibility*³³⁴ codifies the *Chorzów Factory* principle. It provides:

³³¹ Award on Jurisdiction and Liability, paras. 446 – 453 and 731.

³³² *S.D. Myers, Inc. v. Government of Canada*, UNCITRAL, First Partial Award, 13 November 2000 (“*Myers*”), (*Investors’ Authorities*, Tab CA313, paras. 311-313); See also Meg N. Kinnear, Andrea K. Bjorklund, et al., *Investment Disputes under NAFTA: An Annotated Guide to NAFTA Chapter 11*, Supplement No. 1, March 2008 (Kluwer Law International 2006), (“*Kinnear*”) (*Investors’ Authorities*, Tab CA311, p. 1135-16); and Patrick Dumberry, *The Fair and Equitable Treatment Standard: A Guide to NAFTA Case Law on Article 1105* (Kluwer Law International 2013) (“*Dumberry*”) (*Investors’ Authorities*, Tab CA312, p. 300-301).

³³³ *Case Concerning the Factory at Chorzów (Germany v. Poland)*, 1928 P.C.I.J (ser. A) No. 17 (September 13, 1928) (*Investors’ Authorities*, Tab CA327, p. 47).

Reparation

1. The responsible State is under an obligation to make full reparation for the injury caused by the internationally wrongful act.
2. Injury includes any damage, whether material or moral, caused by the internationally wrongful act of a State.

236. The *Chorzów Factory* standard has been adopted by tribunals determining NAFTA claims,³³⁵ and is accepted as authoritative. For example, the Tribunal in *ADC Affiliate Ltd. v. Republic of Hungary* noted:

There can be no doubt about the present vitality of the *Chorzów Factory* principle, its full current vigor having been repeatedly attested to by the International Court of Justice.³³⁶

237. In applying the *Chorzów Factory* principle, tribunals also universally adopt what Professor Dumberry describes as the “differential method” of assessing damages:

[B]y hinging on the PCIJ's famous *dictum* in the *Chorzow Factory* case, tribunals have often used the ‘differential method’ to calculate damages for non-expropriatory acts. As succinctly putted [sic] by the *Lemire* tribunal, ‘the purpose of the compensation must be to place the investor in the same pecuniary position in which it would have been if respondent had not violated the BIT’. This differential method consists of examining the investor's actual financial situation and comparing it with ‘the one that would have prevailed had the act not been committed’. In other words, the comparison is made with the situation which would have hypothetically prevailed using a ‘but for’ scenario.³³⁷

[Emphasis added]

238. In applying the “but-for scenario” to the calculation of full reparation, tribunals typically adopt the Discounted Cash Flow (“DCF”) valuation method for calculating the loss of future profits.³³⁸ It is particularly appropriate in this case,

³³⁴ *Draft Articles on Responsibility of States for Internationally Wrongful Acts*, adopted by the International Law Commission at its fifty-third session (2001), Article 31 (*Investors’ Authorities*, Tab CA314).

³³⁵ *Myers* (*Investors’ Authorities*, Tab CA313, para. 311).

³³⁶ ICSID Case No. ARB/03/16, September 27, 2006 (*Investors’ Authorities*, Tab CA323, para. 493).

³³⁷ Dumberry (*Investors’ Authorities*, Tab CA312, pp. 300-301).

³³⁸ Borzu Sabahi, *Compensation and Restitution in Investor-State Arbitration, Principles and Practice*, (Oxford: Oxford, 2011) (*Investors’ Authorities*, Tab CA324, p. 118).

because when Canada deprived the Investors of the Whites Point Quarry, they lost the profits they would have earned from the Quarry [REDACTED]

239. Howard Rosen, CPA, CA, CBV, has calculated the profit lost by the Investors as a result of Canada's breaches of the NAFTA:

Lost profits from the Whites Point project, which comprise:

(i) Past lost profits (from 1 January 2008 to 31 December 2016), which represent the cash flows that would have been generated from the Whites Point project from inception to the current date; and

(ii) Future lost profits (from 1 January 2017 onward), which represent the future cash flows that would have been reasonably expected from the Whites Point project beyond the current date. The future cash flows were discounted to their present value using a discount rate that reflects the risk of realizing the future cash flows.³³⁹

240. Tribunals apply the DCF method where the future cash flow is reasonably ascertainable and not purely speculative.³⁴⁰ By any measure, the evidence in this arbitration shows that the Investors' future cash flow is fully ascertainable.

241. In this regard, the Tribunal in *Crystallex* said:

879. Furthermore, gold, unlike most consumer products or even other commodities, is less subject to ordinary supply-demand dynamics or market fluctuations, and, especially in the case of open pit gold mining as in Las Cristinas, is an asset whose costs and future profits can be estimated with greater certainty. The Tribunal thus accepts that predicting future income from ascertained reserves to be extracted by the use of traditional mining techniques—as is the case of Las Cristinas—can be done with a significant degree of certainty, even without a record of past production.

880. In short, the Claimant has established the fact of future profitability, as it had completed the exploration phase, the size of the deposits had been established, the value can be determined based on

³³⁹ Expert Report of FTI Consulting (Howard Rosen), dated December 15, 2016, para. 4.3.

³⁴⁰ *Crystallex International Corporation v. Bolivarian Republic of Venezuela*, ICSID Case No. ARB(AF)/11/2, April 4, 2016 (“Crystallex”), (*Investors’ Authorities*, Tab CA317, para. 874); *Compañía de Aguas del Aconquija S.A. and Vivendi Universal v. Argentine Republic*, ICSID Case No. ARB/97/3, Award, August 20, 2007 (“Vivendi”) (*Investors’ Authorities*, Tab CA320).

market prices, and the costs are well known in the industry and can be estimated with a sufficient degree of certainty.³⁴¹

[Emphasis added]

242. Similarly, in *Gold Reserve Inc. v. Bolivarian Republic of Venezuela*, the State cancelled the investor's construction permits to develop a gold and copper mine and ultimately terminated its mining concessions.³⁴² Although at the time the concessions were terminated the Investor only held mining rights to the undeveloped lands, it was nonetheless awarded substantial damages for loss of future profits.³⁴³
243. In this case, an award of lost profits is the most complete and appropriate measure of damages. But for Canada's breaches, the Whites Point Quarry would have proceeded, and the Investors would have earned the profits generated by the Quarry [REDACTED]
244. There can be no doubt that the Investors were building the Whites Point Quarry. They spent millions of dollars in good faith on the environmental assessment process, and retained experienced and skilled professionals to evaluate, design, build and operate the Quarry.
245. From the beginning, the Investors knew Whites Point had a deposit of 100 to 200 million tons of high quality basalt, and they had all the expertise and resources to successfully develop and operate the Whites Point Quarry. The Claytons are sophisticated and highly successful business people. They have a decades long record of operating profitable business enterprises, from starting with nothing, to building a network of businesses in the aggregates industry with annual sales of [REDACTED]. Their businesses in the industry have for decades employed

³⁴¹ *Crystallex, (Investors' Authorities, Tab CA317, paras. 879-880).*

³⁴² *Gold Reserve Inc. v. Bolivarian Republic of Venezuela*, (ICSID Case No. ARB(AF)/09/1), September 22, 2014 ("Gold Reserve") (*Investors' Authorities, Tab CA316*).

³⁴³ *Gold Reserve (Investor's Authorities, Tab CA316, paras. 690 – 91, 863).*

hundreds of people, and they have over 60 years' experience developing and operating quarries and aggregate mining operations.

246. Through their affiliate, New York Sand & Stone, the Claytons were already distributing aggregate into their New York City and New Jersey markets. They were already importing large quantities of aggregate from Bayside, New Brunswick. They were deeply familiar with every aspect of bringing and selling aggregate to the New York and New Jersey markets, from plant construction and aggregate production, through marine shipping, to sales and distribution.
247. As in *Crystallex*, the Whites Point Quarry involved the uncomplicated extraction of a mineral from an ascertained reserve. Although aggregates are not an exchange traded commodity, they are a fully fungible product, and the Government of Nova Scotia itself recognizes the predictability and stability of the aggregate market:

*“Industrial minerals and construction aggregate production currently lead the industry and they have been steady, predictable sectors for several decades”.*³⁴⁴

248. Michael Wick's expert report confirms the Nova Scotia Government's assessment of the opportunities for exporting aggregates to the New York City and New Jersey markets, and the readily available data for establishing their price and value. It is clear too, that the upward trend of the demand for aggregates will continue. As the Government of Nova Scotia proudly proclaims:

*“Aggregates are among the most widely used materials in our contemporary society. They are required in almost all residential, commercial and industrial building projects. They also form a major component of many public works projects such as highways, underground services, bridges, railroads, airports, hydro-electric dams and wharves.”*³⁴⁵

³⁴⁴ Mineral Resources in Our Lives, (*Investors' Schedule of Documents*, Tab C1081, p. 001643).

³⁴⁵ Mineral Resources in Our Lives, (*Investors' Schedule of Documents*, Tab C1081, p. 001652).

249. As with the governments in *Crystallex* and *Sapphire*, the Nova Scotia Government completely understood the value of aggregates generally, and the value of North Mountain basalt in particular. In 2006, at the same time the Whites Point Quarry was being assessed by the Joint Review Panel,³⁴⁶ the Government of Nova Scotia continued to extoll the great mining potential of the North Mountain. Indeed, a key purpose of the Nova Scotia Department of Natural Resources has been throughout to promote mineral development, so that the Province would reap the benefits of increased employment and increased tax revenue.
250. The Nova Scotia Government's recognition of the profitability of quarries is amplified by its recent approval of the Black Point Quarry, which Vulcan is developing at a cost of \$80-110 million,³⁴⁷ In court proceedings contesting the Government's decision to expropriate private property to facilitate the Black Point Quarry, the Government justified its decision on the basis of economic benefits.³⁴⁸

³⁴⁶ An Overview of the Industrial Mineral Potential of the North Mountain Basalt (*Investors' Schedule of Documents, Tab C1040*).

³⁴⁷ Black Point Environmental Impact Statement – Table of Concordance and Summary Report, February 2015 (*Investors' Schedule of Documents, Tab C1092, p. 5*).

³⁴⁸ Affidavit of Barry Carroll, dated September 14, 2014 (*Investors' Schedule of Documents, Tab C1088, para. 13*).

B. CALCULATION OF DAMAGES

251. Howard Rosen's calculation of the Investors' loss shows the loss the Investors suffered as a result of Canada's breaches of the NAFTA, adjusted for tax equity to achieve full reparation by taking into account the tax treatment of a lump sum damages award:³⁴⁹

(in US\$)	Past Lost Profits	Future Lost Profits	Total
Lost Profits	27,015,331	271,151,575	298,166,906
Gross-up	13,142,593	131,911,577	145,054,170
Pre-award interest	129,696	-	129,696
Damages	40,287,620	403,063,152	443,350,772

1. Interest

252. The Investors are also entitled to pre and post-Award interest. Because interest rates have been low, there is in the circumstances no material difference between simple and compound interest,³⁵⁰ and Mr. Rosen has used the interest rate on United States 1-year government treasury yield to calculate the pre-Award interest.³⁵¹

2. Costs

253. NAFTA Article 1135(1) and Articles 38 to 40 of the *UNCITRAL Arbitration Rules*, grant the Tribunal broad discretion to award costs. Accordingly, the Investors respectively request that the Tribunal order the Respondent to reimburse the Investors for all of their costs and expenses related to this arbitration.

³⁴⁹ Expert Report of FTI Consulting (Howard Rosen), dated December 15, 2016, para. 8.1.

³⁵⁰ Expert Report of FTI Consulting (Howard Rosen), dated December 15, 2016, para. 7.5.

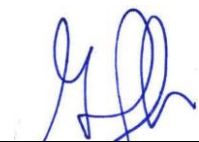
³⁵¹ Expert Report of FTI Consulting (Howard Rosen), dated December 15, 2016, para. 7.4.

254. The Investors respectfully reserve the right to submit additional information regarding their related costs and expenses, including:
- a. All legal fees and disbursements;
 - b. All other professional fees, including the fees and disbursements of experts;
 - c. Administrative and overhead costs, including the cost of management time;
 - d. The fees and expenses of the Tribunal; and
 - e. The costs of the PCA.


IX. RELIEF SOUGHT

255. The Investors respectfully request:
- a) An order that Canada pay the Investors full reparation damages of US\$443,350,772;
 - b) All legal fees and disbursements, and the costs of this arbitration.

ALL OF WHICH IS RESPECTFULLY SUBMITTED THIS 10th DAY OF MARCH 2017.



Gregory J. Nash



Brent R.H. Johnston



Chris Elrick

Appendix A - Opportunity for Export Aggregate

Appendix B - Industrial Mineral Potential in Nova Scotia

Appendix C – Addendum to VII: Regulatory Compliance

APPENDIX A - CONFIDENTIAL OPPORTUNITY FOR EXPORT AGGREGATE

NOVA SCOTIA

The potential is here.



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

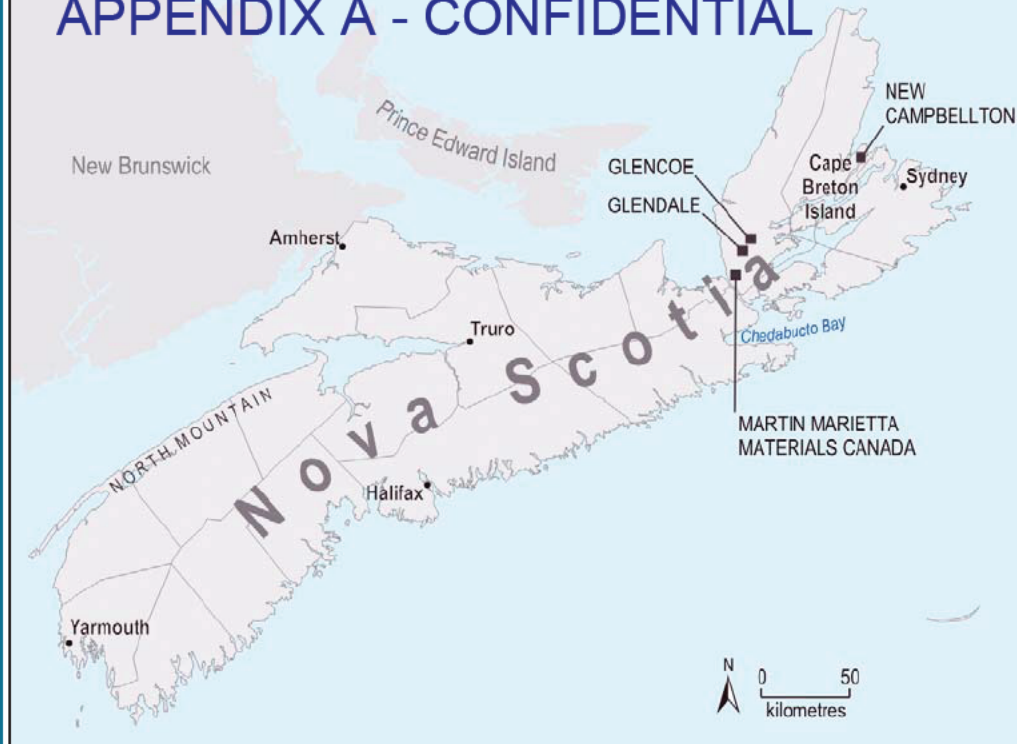
- For more than two decades Nova Scotia has been an industry leader in the marine transport of high quality stone products using bulk carriers and barges.
- Martin Marietta Materials Canada on the Strait of Canso is one of the largest tidewater stone quarries in North America, capable of loading 70 000 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 Caribbean.
- 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





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.



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>



Natural Resources
Economic Development



NOVA SCOTIA MINING SOCIETY AGM

JUNE 01 – 02, 2006

MINING – CLEANING UP THE PAST; PREPARING FOR THE FUTURE

Technical Program

Thursday June 01, 2006 – Afternoon Session

Theme: Mining and Environment

- | | |
|-------------|--|
| 1:30 – 2:00 | Tar Ponds Remediation Project
Frank Potter , P.Eng., Acting Director, Sydney Tar Ponds Agency |
| 2:00 – 2:30 | Solidification/Stabilization of Mine Sites
Colin Dickson , P.Eng., Cement Association of Canada |
| 2:30 – 3:00 | Nova Scotia Power Air Emissions Study
Graeme MacKenzie , P.Eng., Project Manager, NSPI |
| 3:00 – 3:20 | ----- Break ----- |
| 3:20 – 3:50 | NS Mining Society Business Meeting No. 1 |
| 3:50 – 4:20 | CBDC Site Closure Program
Bob MacDonald , P.Eng., Director General Property and Development Cape Breton Development Corporation |
| 4:20 – 4:50 | Industrial Mineral Potential in Nova Scotia, Opportunities for Deep Water Aggregate Quarries
Bob Ryan, Phil Finck and Garth Prime , NS Department of Natural Resources |
| 4:50 – 5:00 | ----- Session Closure ----- |

Friday June 02, 2006 – Morning Session

Theme: Resurgence of Coal in Nova Scotia

- | | |
|-------------|--|
| 8:30 – 9:00 | International Coal Pier Characteristics
Robert Kazamel , General Manager, Logistec |
|-------------|--|

Industrial Mineral Potential in Nova Scotia

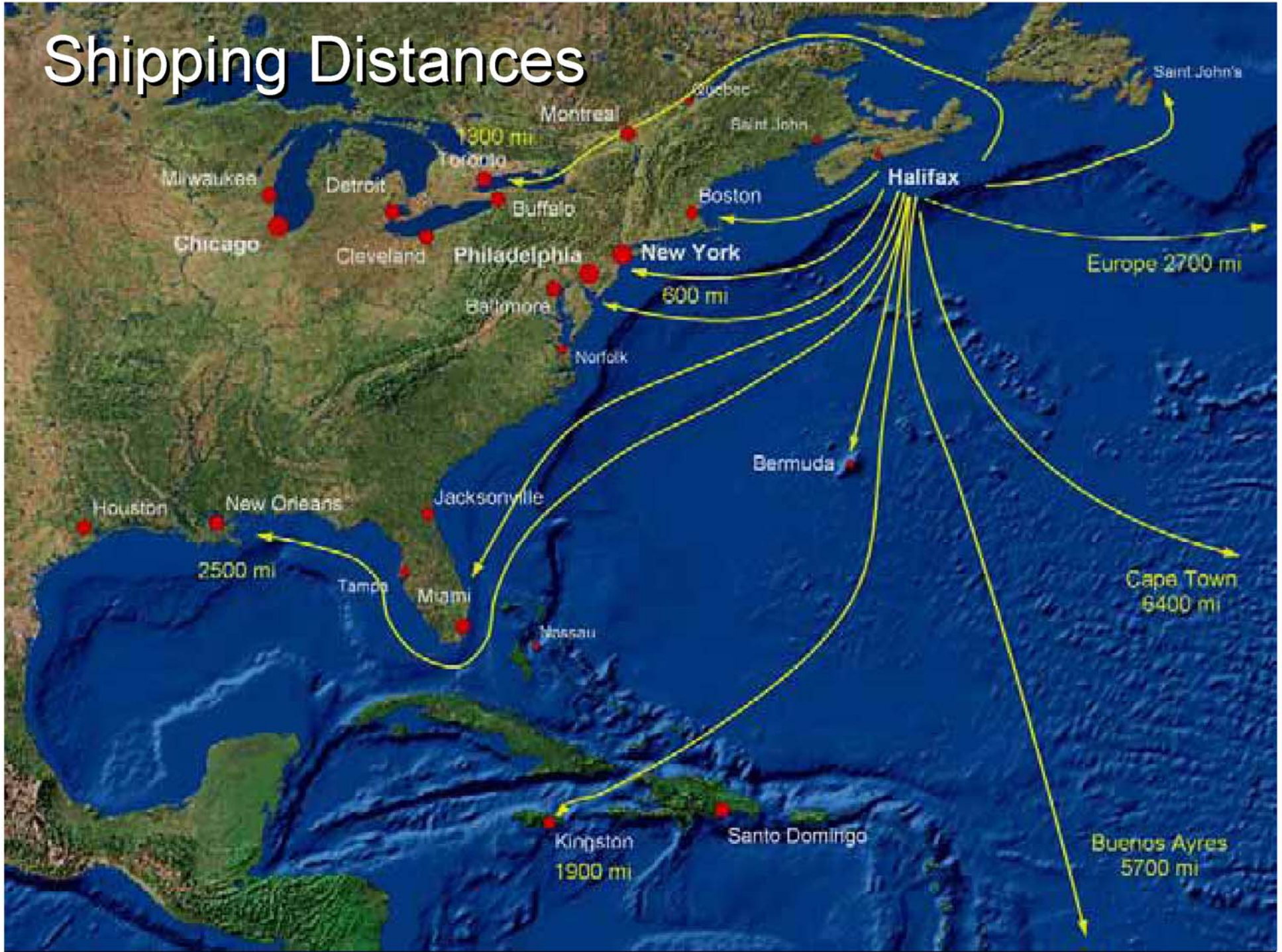
Opportunities to Develop Deep-water Aggregate Quarries

P. Finck

Natural Resources

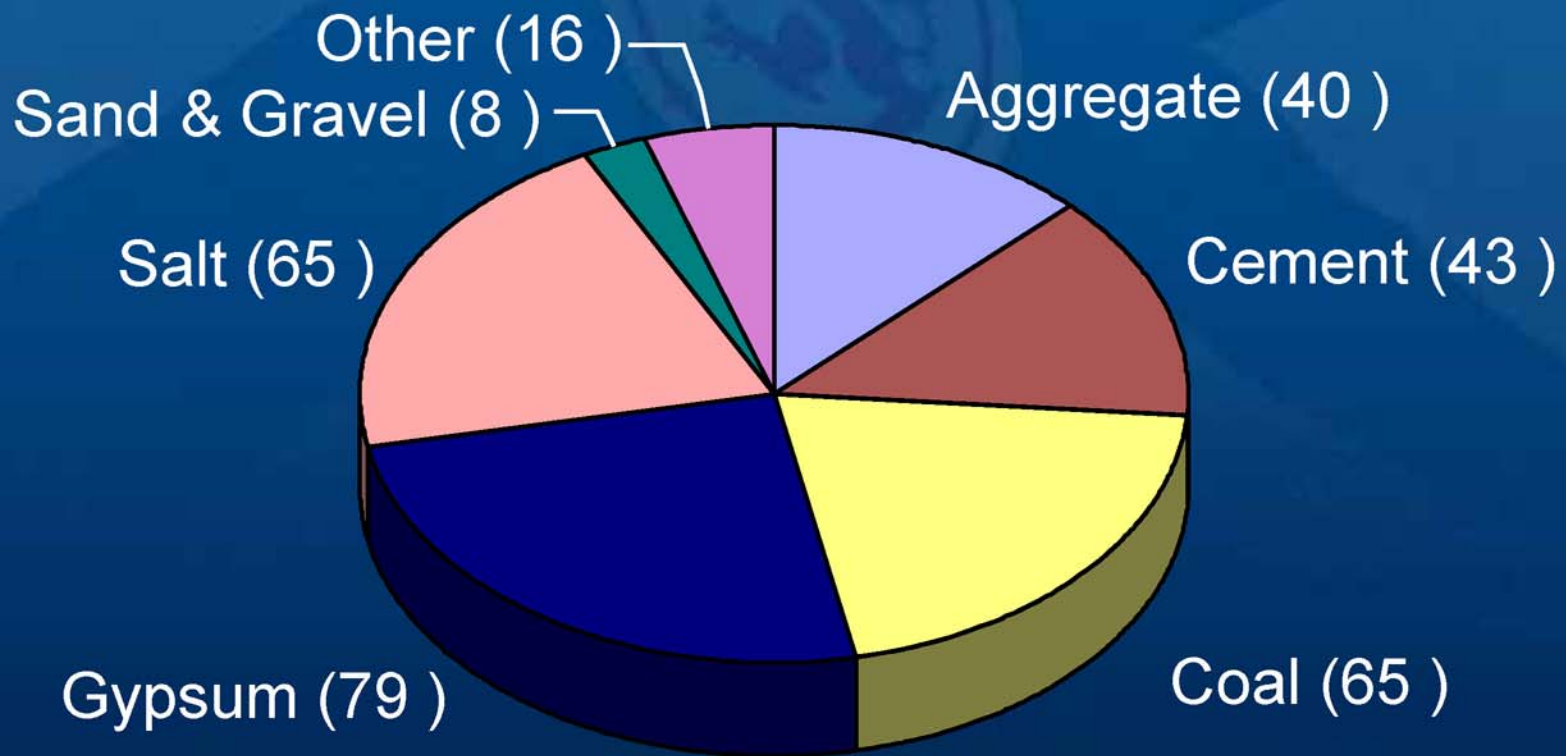


Shipping Distances



Mineral Production by Commodity, 2001

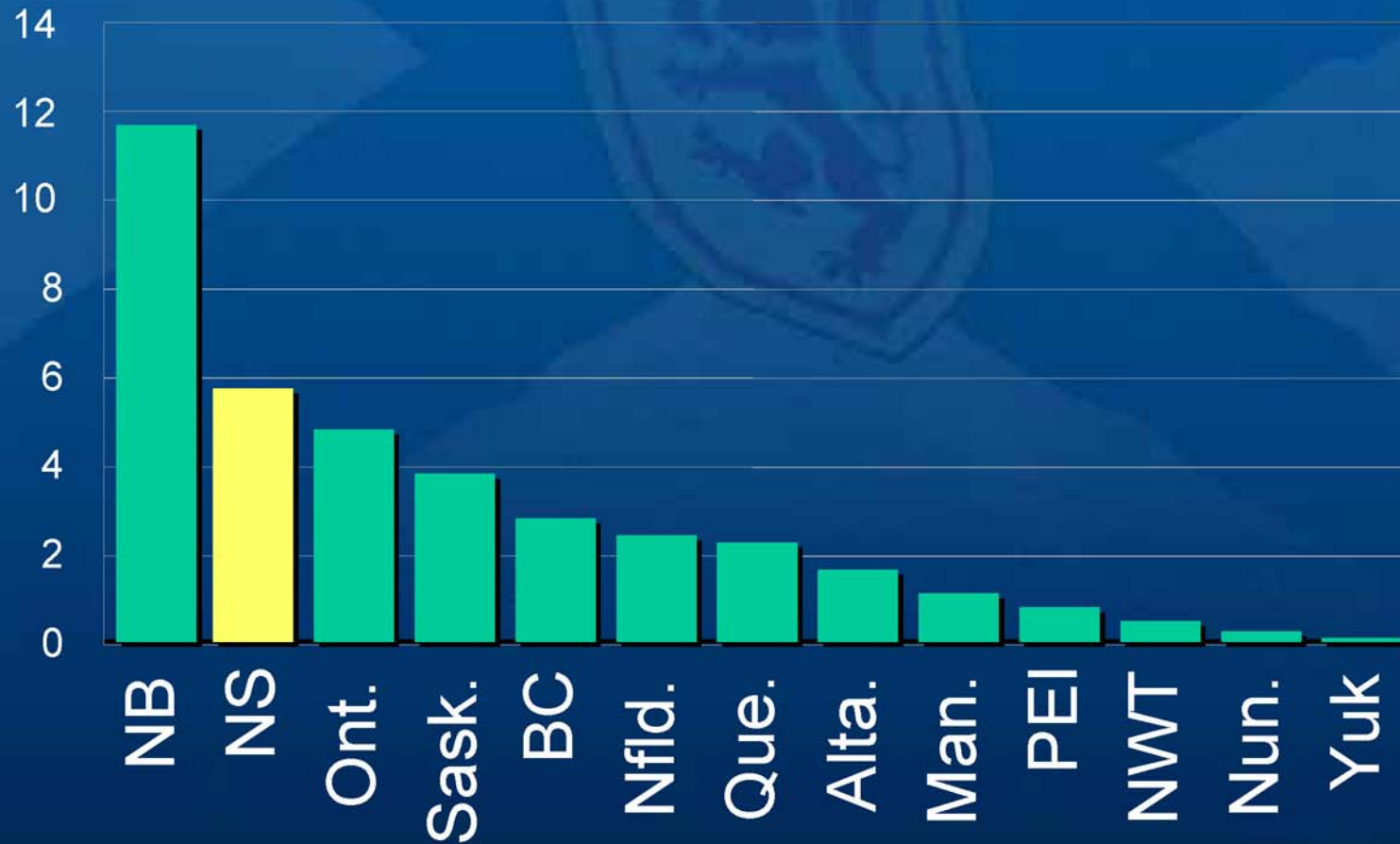
\$316 Million



Natural Resources



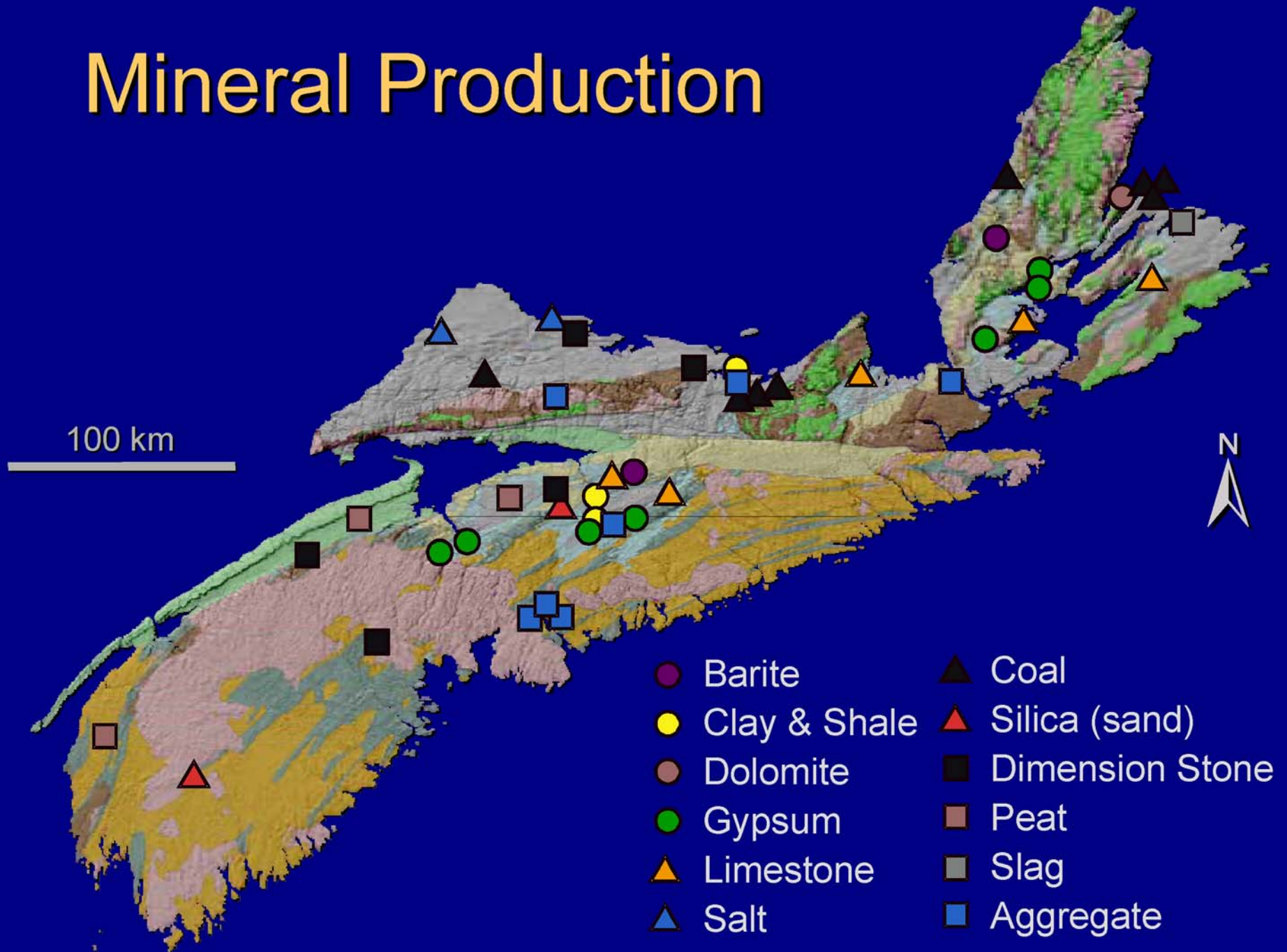
Avg. Value of Mineral Production / km²



Natural Resources



Mineral Production



Nova Scotia Mineral Production

Industrial Minerals	Amount (tonnes)	Value (\$000)
Anhydrite	180,000	
Barite	600	
Gypsum	7,200,000	
Limestone & Dolomite	700,000	
Peat	9,300	
Salt	900,000	
Silica	49,000	
<i>Total</i>		140,000
Structural Materials		
Building - Ornamental Stone	2000	
Clay Products	25,400	
Crushed Stone	7,800,000	
Sand & Gravel	2,750,000	
Cement	331,000	
<i>Total</i>		96,060
Total Mineral Production		236,060

Troy Quarry

- total production
10 M tones
- metasediment
& granite



Natural Resources



Conrad Brothers (Dartmouth)

- 7.5 M tonnes (domestic)
- 2.5 M tonnes (export)
- adequate supply



Offshore Markets

- Martin Marietta
- operating near capacity
- exporting to the Gulf, East Coast & Caribbean



Natural Resources



Sites of Interest

1. Kelly's Mountain

2. Maritime Stone

3. Rhodena Rock

4. Queensport

5. Eastern Shore

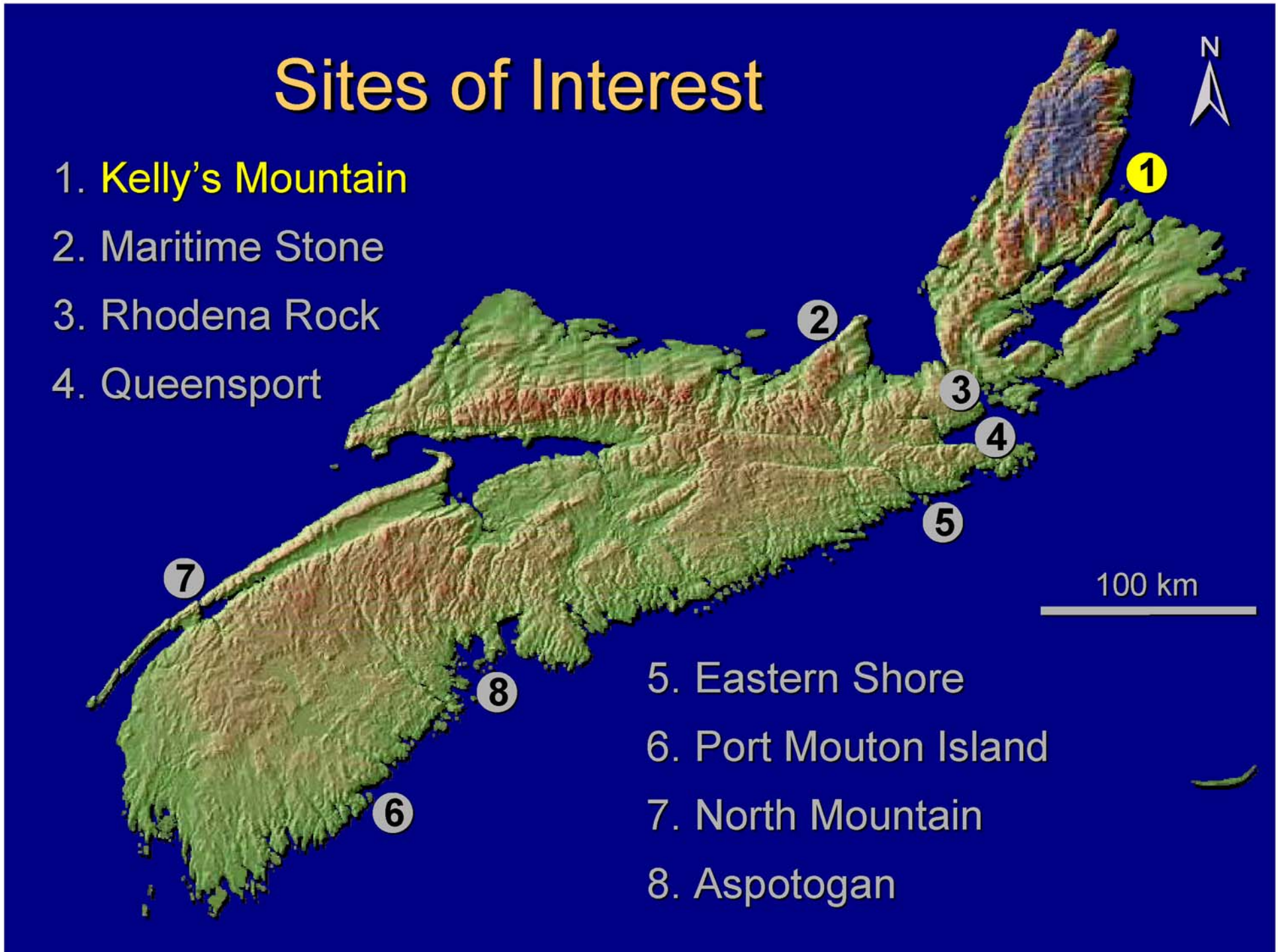
6. Port Mouton Island

7. North Mountain

8. Aspotogan

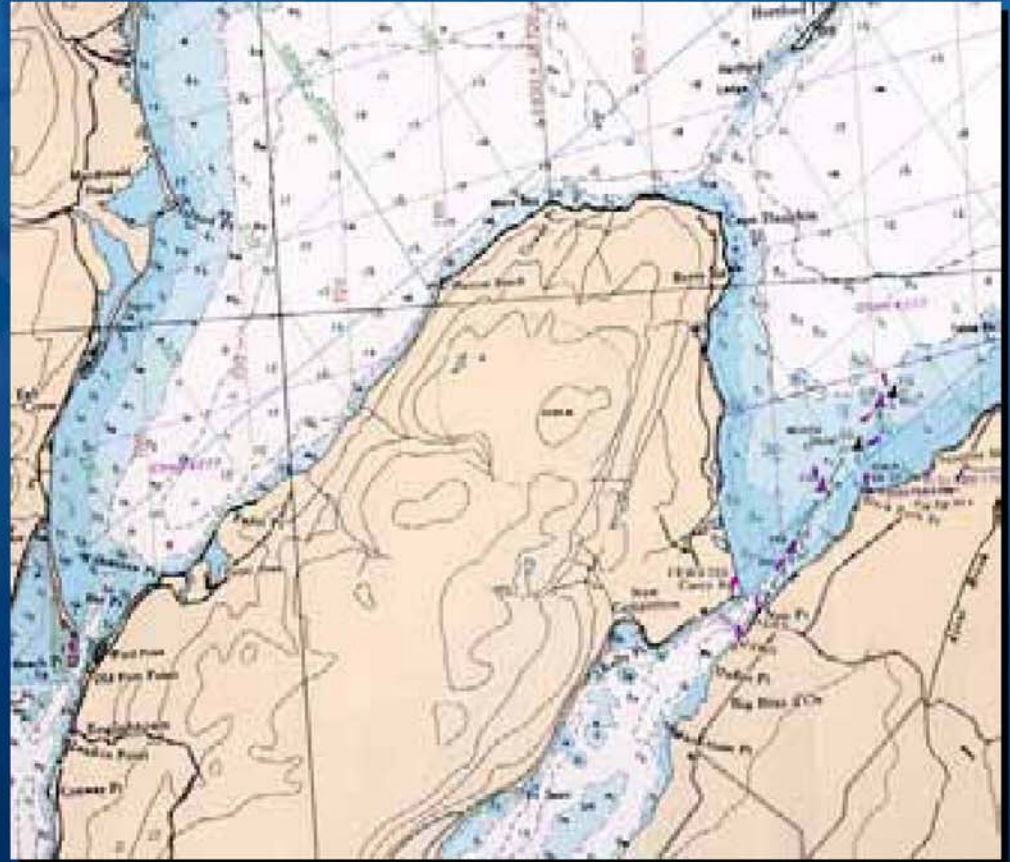


100 km



Kellys Mountain Area

- water depth
 - > 45 feet north side
 - < 30 K south channel
- elevation up to 300 m
- unlimited tonnage



Natural Resources



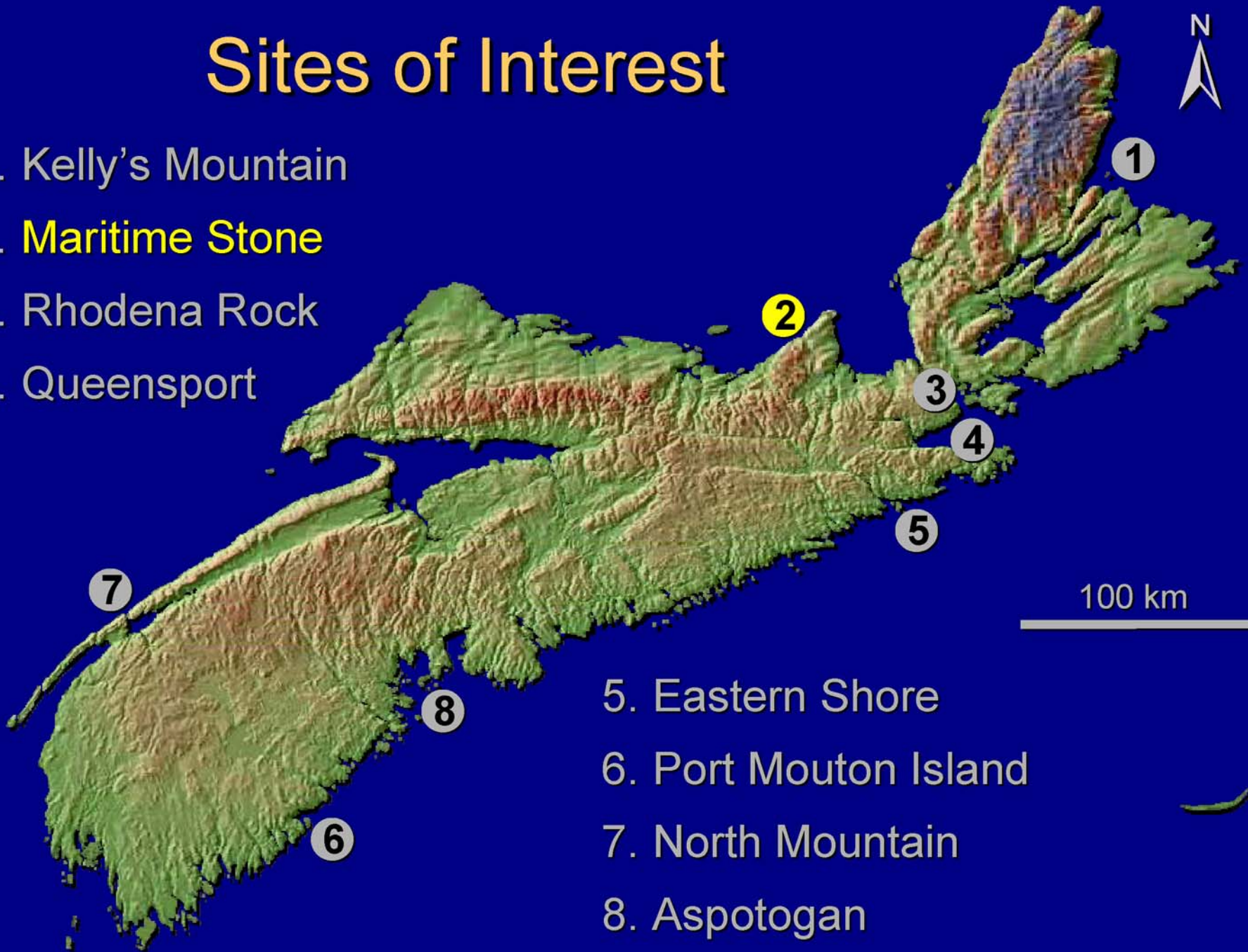
Kellys Mountain Area

- Crown Land Areas (North side)
- Scotia Limestone mining lease (south side)
- red granite, LA abrasion of 22
- unlimited tonnages



Sites of Interest

1. Kelly's Mountain
2. **Maritime Stone**
3. Rhodena Rock
4. Queensport



5. Eastern Shore
6. Port Mouton Island
7. North Mountain
8. Aspotogan

Maritime Rock Quarry

- access to deep water
- ice free mid-March to January
- relatively isolated



Natural Resources



Shipping

- 30 K tonne through Canso Causeway
- north around Cape Breton Island



Natural Resources



Resource

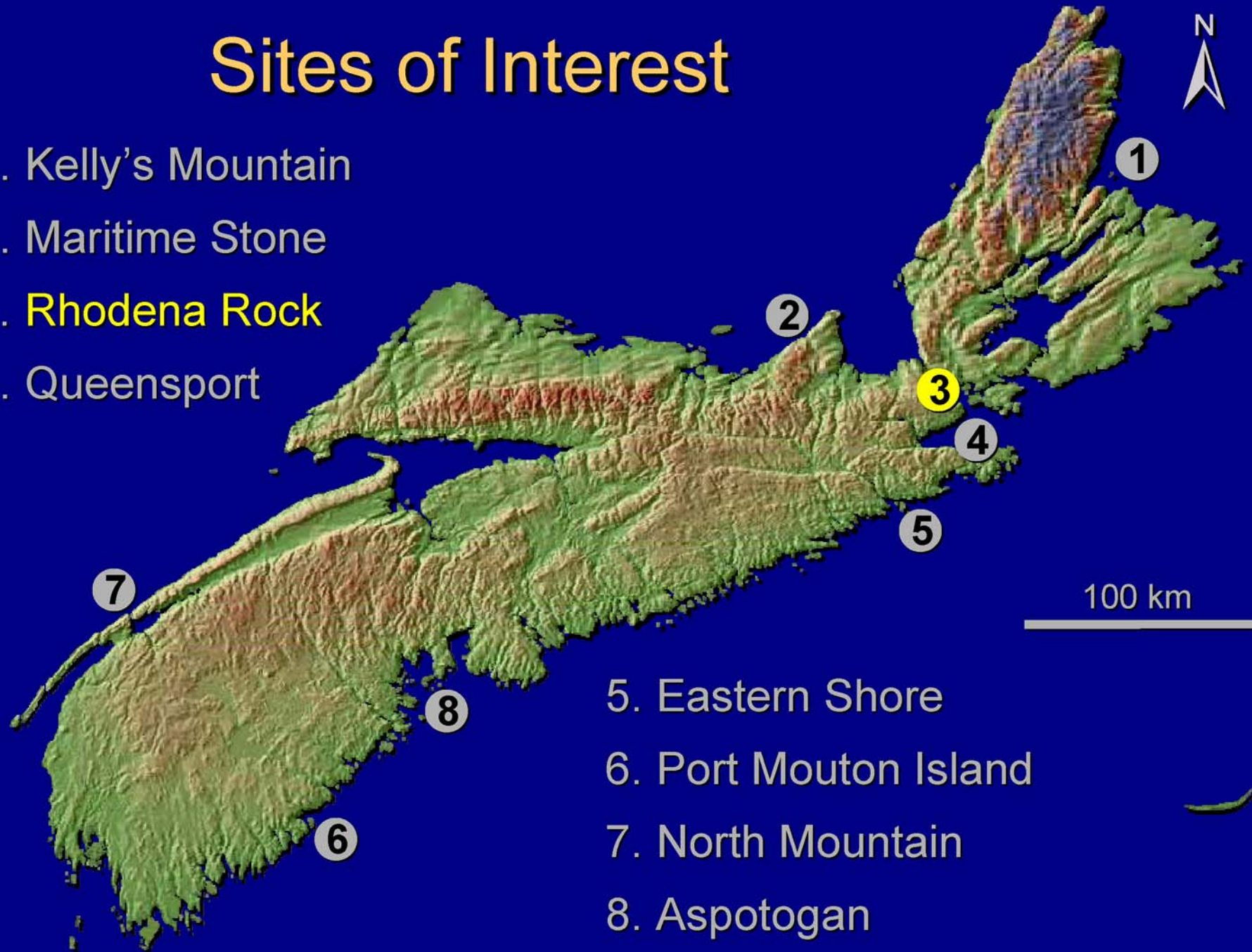
- mafic granite
- LA abrasion of 17
- existing 4 hectare permit



Sites of Interest

1. Kelly's Mountain
2. Maritime Stone
3. Rhodena Rock
4. Queensport

5. Eastern Shore
6. Port Mouton Island
7. North Mountain
8. Aspotogan



Rhodena Rock



Located beside Martin Marietta's operation at Canso

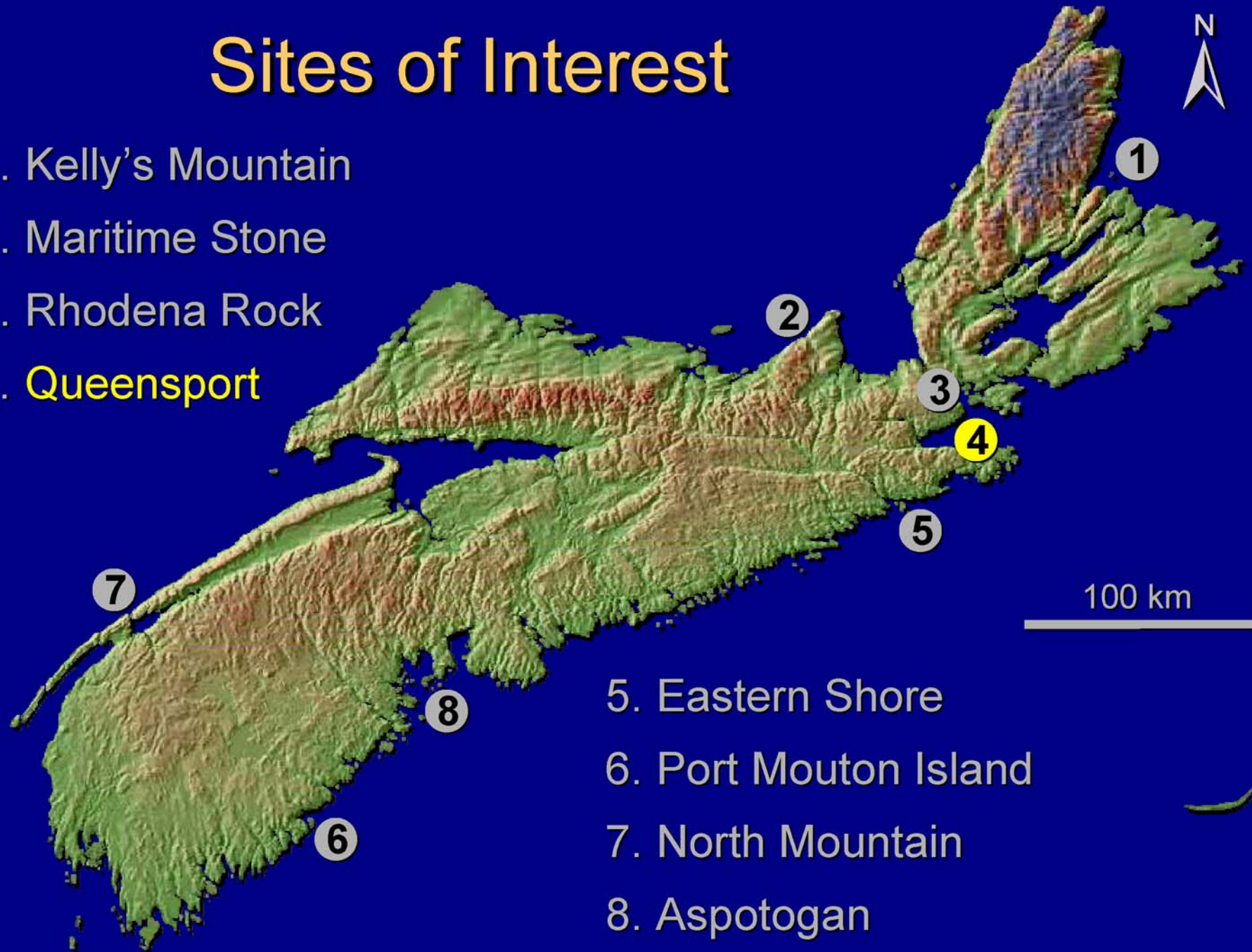
Rhodena Rock

- mixed volcanics & granites
- deep water access by conveyor
- truck to Mulgrave
- high quality stone
- optioned by Lafarge
- tonnage?



Sites of Interest

1. Kelly's Mountain
2. Maritime Stone
3. Rhodena Rock
4. Queensport



Queensport Shore

(South of Martin Marietta)

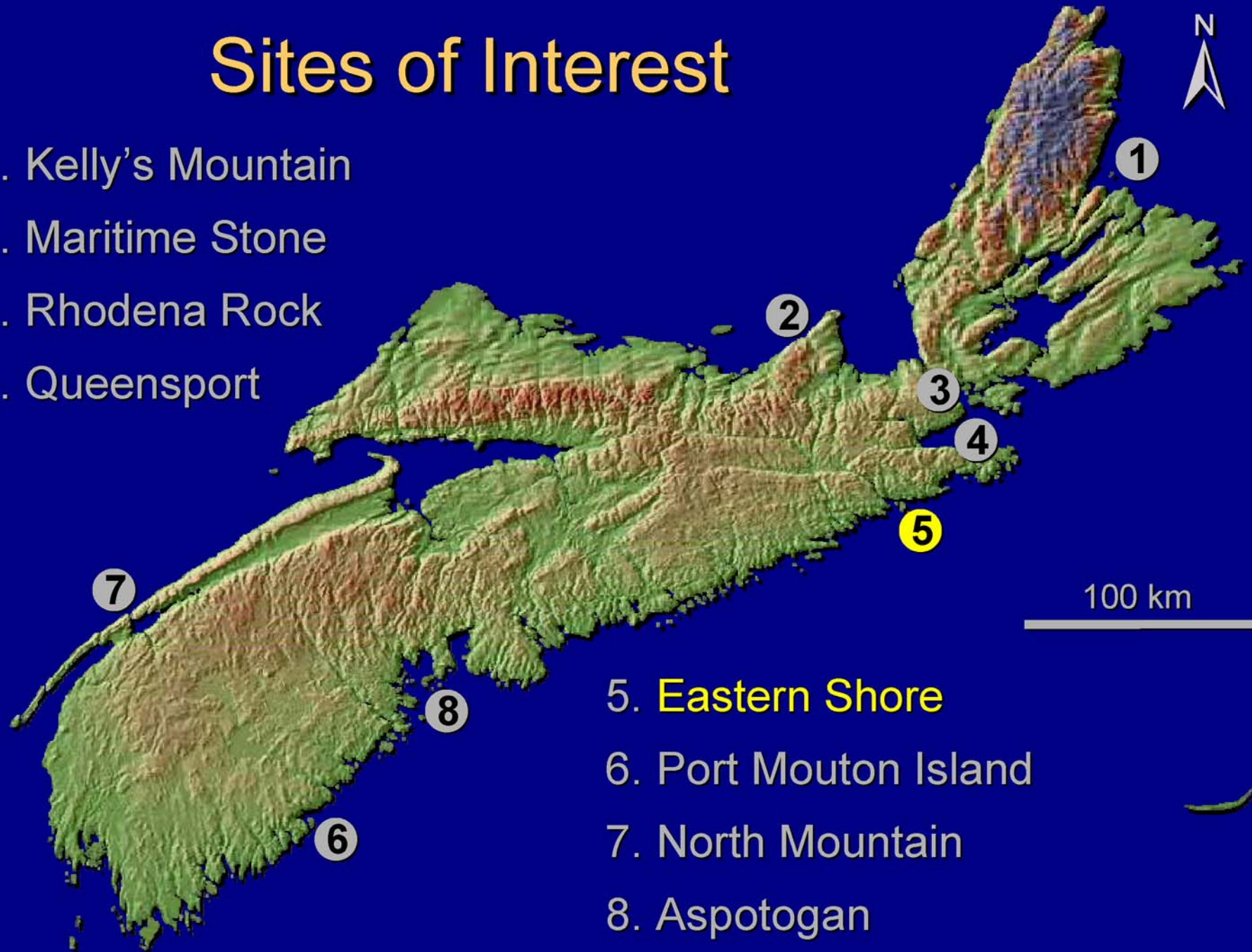
- deep water
- no overburden
- unlimited tonnage
- grey granite, LA abrasion in low 20's
- very strong local support



Sites of Interest

1. Kelly's Mountain
2. Maritime Stone
3. Rhodena Rock
4. Queensport

5. Eastern Shore
6. Port Mouton Island
7. North Mountain
8. Aspotogan



Eastern Shore

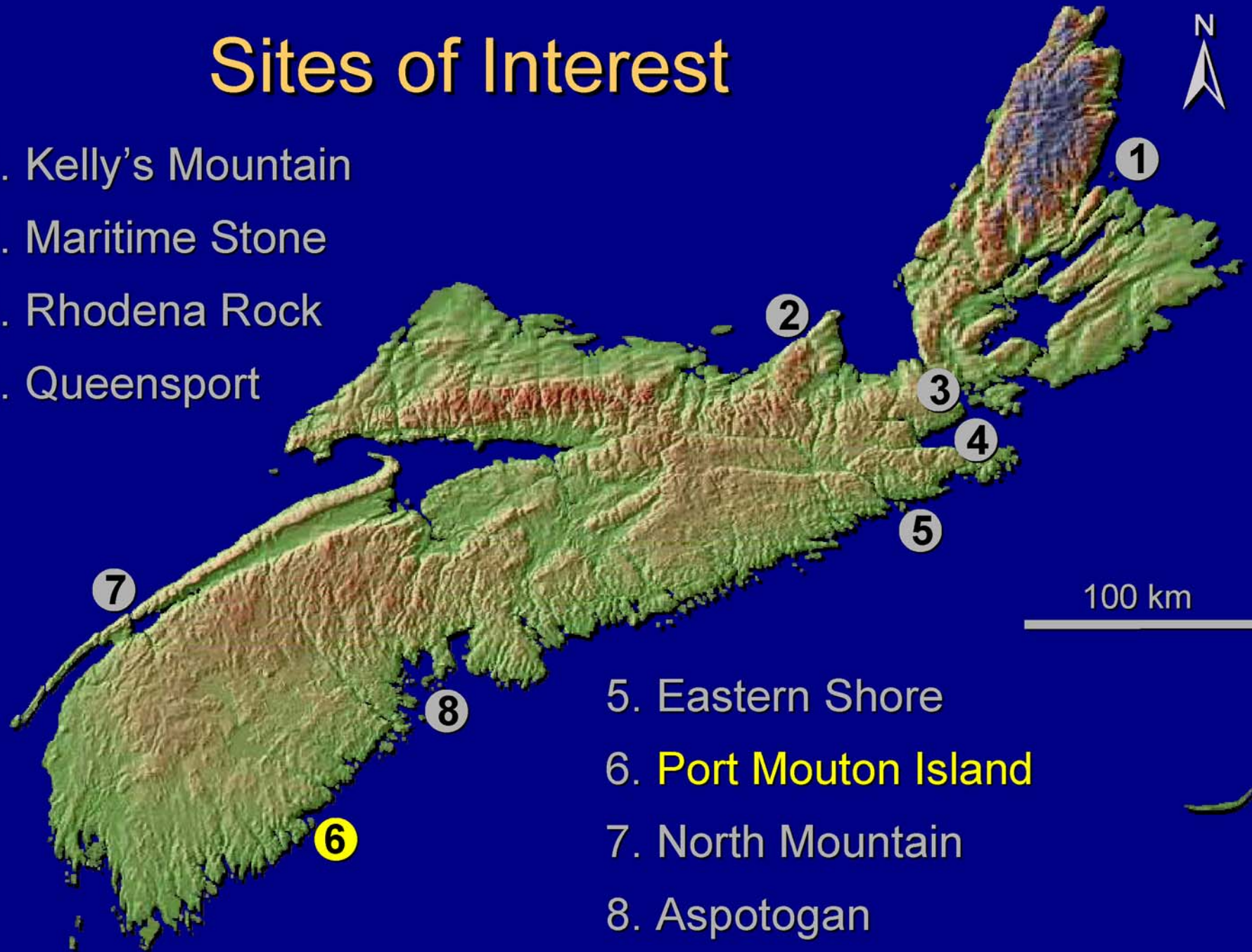
- grey metasediment
- variety of locations with deep water
- LA abrasion 17 - 20
- alkali reactivity



Sites of Interest

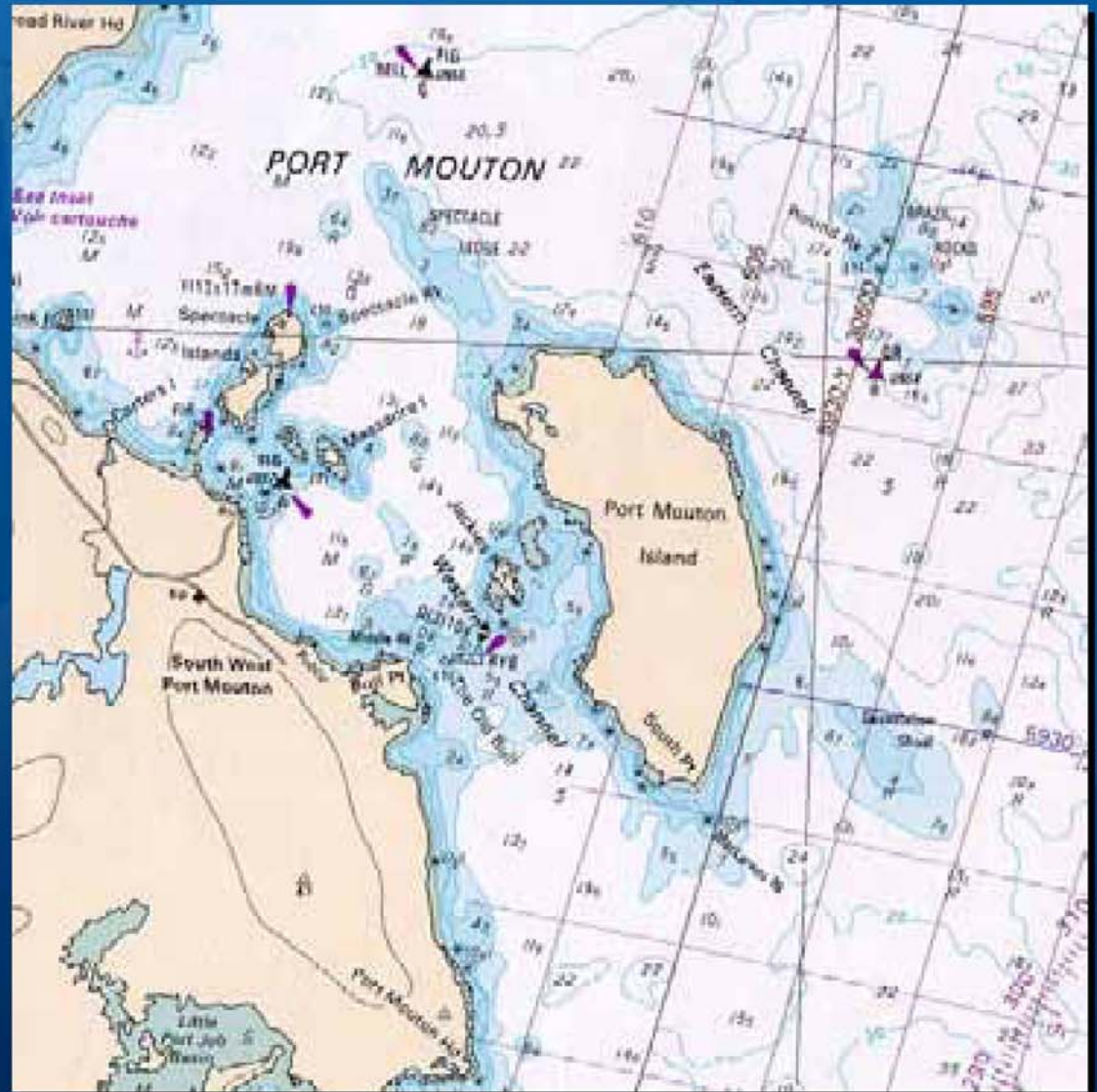
1. Kelly's Mountain
2. Maritime Stone
3. Rhodena Rock
4. Queensport

5. Eastern Shore
6. **Port Mouton Island**
7. North Mountain
8. Aspotogan



Port Mouton Island

- reasonably deep water



Natural Resources

Port Mouton Island

- elevation up to 50 m
- fine grained grey granite
- LA abrasion in mid-20's



Port Mouton Island

- 100% Swiss owned
- available
- an island?
- beside a Federal Park
- require a different way of thinking



Port Mouton Island

- closer to US than other sites
- make it a park?

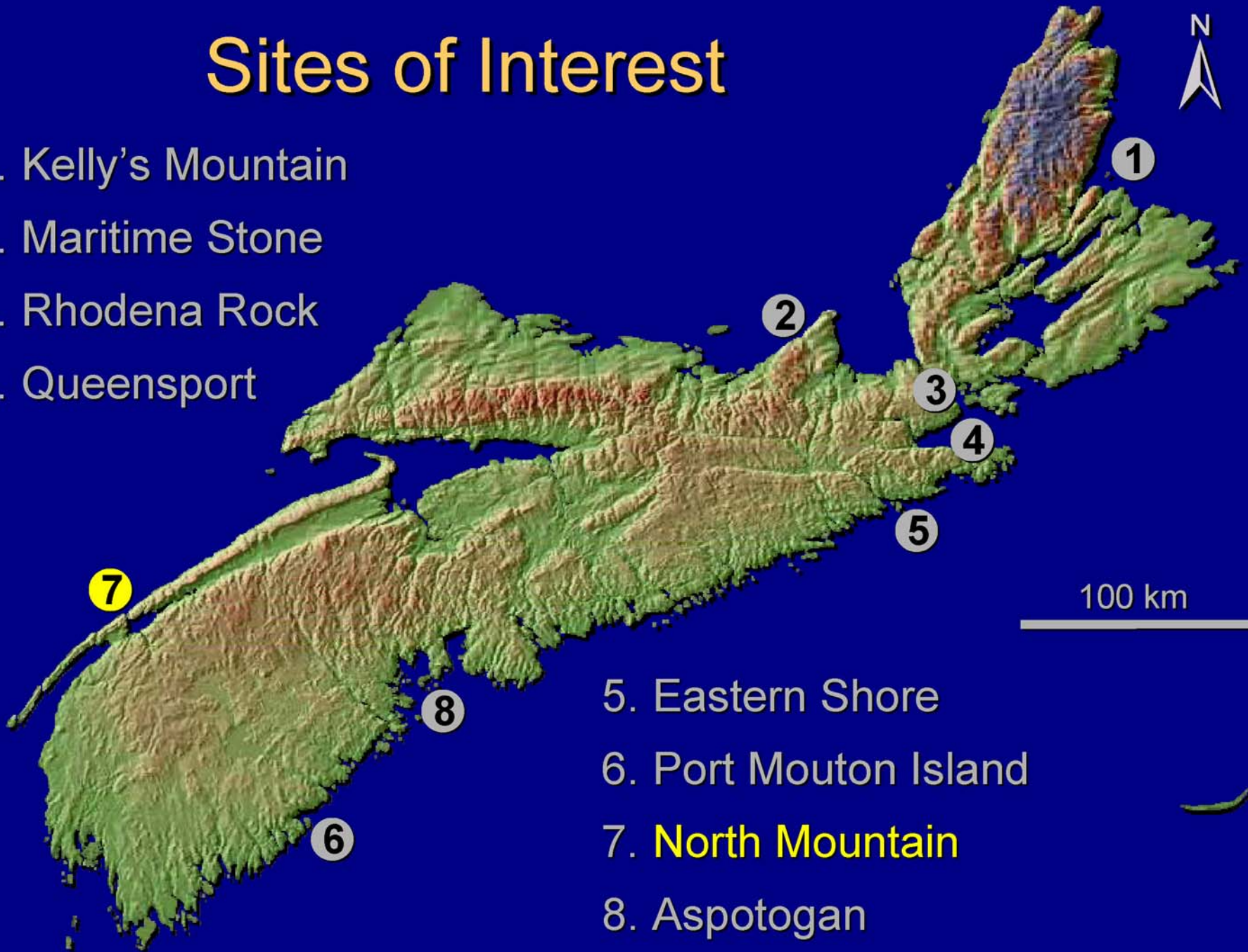


Natural Resources



Sites of Interest

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8. Aspotogan

North Mountain - Digby Area

- unlimited amounts of trap rock



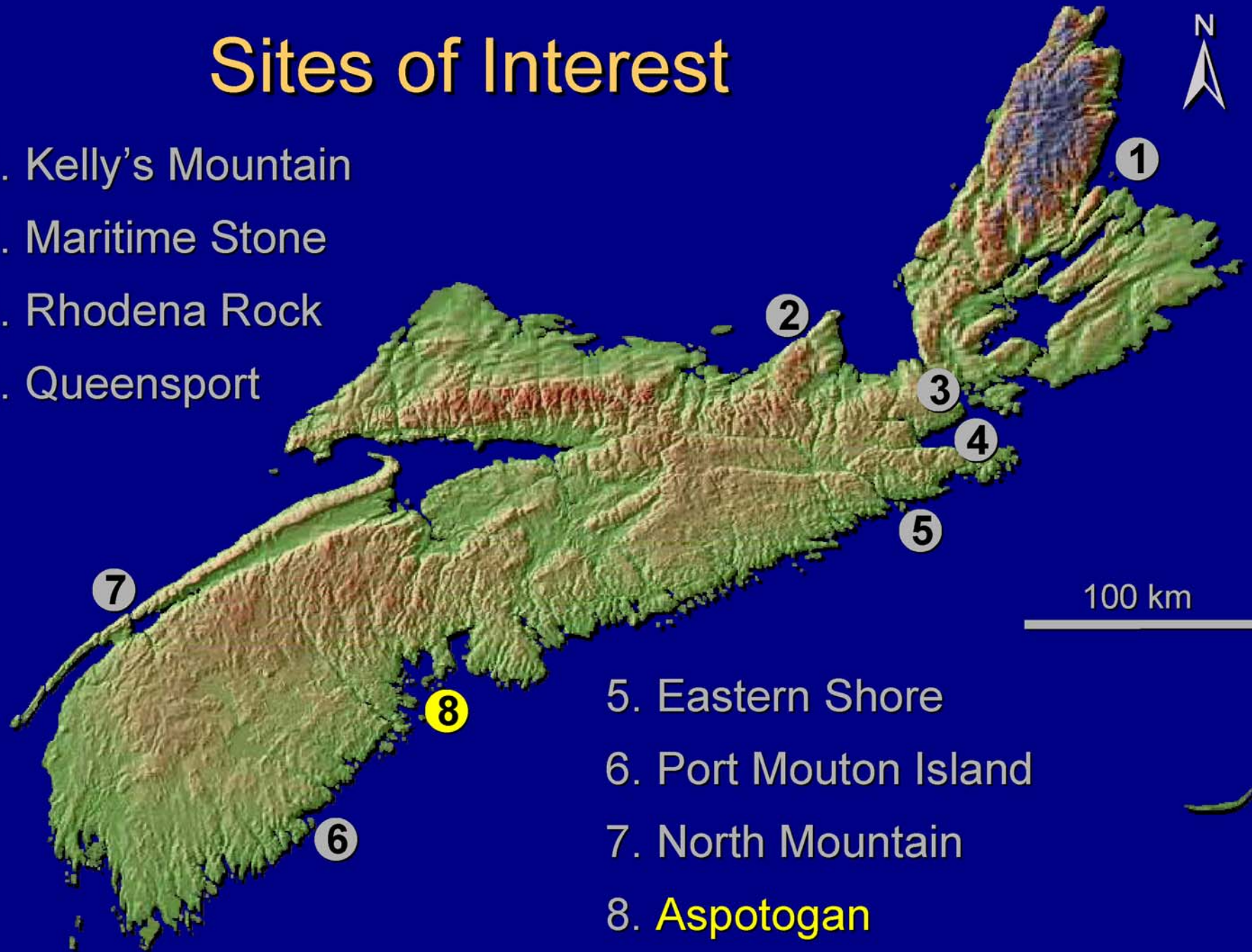
Natural Resources



Sites of Interest

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8. **Aspotogan**



Aspotogan - The Lodge

- grey - buff granite
- deep water
- LA abrasion in low 20's
- impossible to permit



Can you permit a quarry in Nova Scotia?



Black Bull Resources

- Silica mine
- 100 m wide zone
- bounded by kaolinized granite
- mining to within 5 m of protected area
- permitted 27 Apr/04

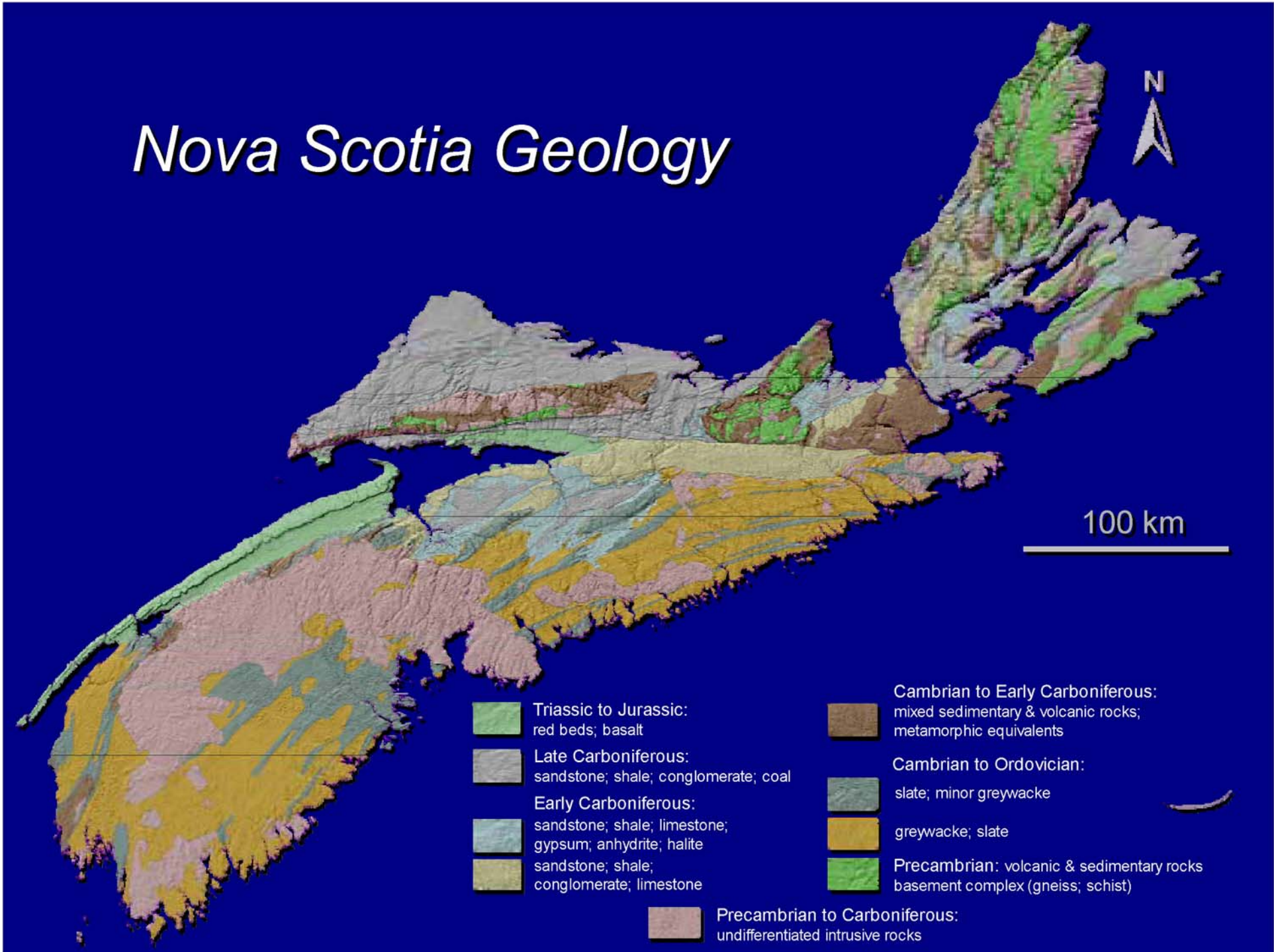


Destinations for Nova Scotia Mineral Products



Deep, Ice-free harbors provide Nova Scotia's mineral products with window on the world.

Nova Scotia Geology



APPENDIX C - CONFIDENTIAL

ADDENDUM TO PART VII: REGULATORY COMPLIANCE

1. The expert report of David Estrin makes clear that if the environmental assessment of the Whites Point Quarry was fairly and reasonably conducted, and did not take improper factors into account, the Quarry would have received environmental approval.¹
2. The Tribunal has already found that “community core values,” the JRP’s sole reason for not recommending approval of the Quarry is outside the scope of both the CEAA and the NSEA.² The environmental assessment of the Whites Point Quarry demonstrated that, with ordinary mitigation measures, the Quarry would be in full compliance with both the CEAA and the NSEA.³ The JRP therefore had no lawful basis to not recommend approval of the Quarry, and was instead lawfully compelled to recommend its approval.⁴ It also especially noteworthy that at no time did any government official advise the JRP that the Quarry ought not to be approved.⁵
3. Mr. Estrin also reviewed a number of comparator projects, which the Tribunal found were relevant in the merits phase of the arbitration, as well as the recent approval of the mega quarry at Black Point, Nova Scotia.⁶ It is obvious that these types of projects always were, and continue to be, routinely approved by both Canada and Nova Scotia.⁷ Indeed, much larger projects like the Blake Point Quarry, which involves the destruction of nearly 3 acres of the ocean floor, and 57 hectares of wetlands, received environmental approval.⁸ In short, as Mr. Estrin

¹ Expert Report of Gowling WLG (David Estrin), dated March 8, 2017, paras. 6, 115, 121 and 131 – 136.

² Expert Report of Gowling WLG (David Estrin), dated March 8, 2017, paras. 116 – 118; Liability Award, paras. 508, 525, 528 and 535.

³ Expert Report of Gowling WLG (David Estrin), dated March 8, 2017, paras. 43 – 48 and Appendix “D.”

⁴ Expert Report of Gowling WLG (David Estrin), dated March 8, 2017, paras. 508, 525, 528 and 535.

⁵ Expert Report of Gowling WLG (David Estrin), dated March 8, 2017, paras. 49 – 54.

⁶ Expert Report of Gowling WLG (David Estrin), dated March 8, 2017, paras. 16 – 18.

⁷ Expert Report of Gowling WLG (David Estrin), dated March 8, 2017, para. 130.

⁸ Expert Report of Gowling WLG (David Estrin), dated March 8, 2017, paras. 92, 95, 127 and 130.

APPENDIX C – CONFIDENTIAL

4. puts it, “*Since at least 2000, Nova Scotia never met a quarry or marine terminal project it did not like and approve.*”⁹
5. In the result, the statutory decision makers, the federal Governor in Council and the Nova Scotia Minister of Environment, had no reasonable basis in the circumstances to lawfully deny approval of the Whites Point Quarry. There was no statutory basis to reject the project.¹⁰ They were advised the environmental assessment was flawed, and quarries and marine terminals have always been routinely approved by both governments.¹¹

⁹ Expert Report of Gowling WLG (David Estrin), dated March 8, 2017, para. 33.

¹⁰ See *supra* note 2.

¹¹ Expert Report of Gowling WLG (David Estrin), dated March 8, 2017, paras. 11 and 114 – 115.