



**ENVIRONMENTAL ASSESSMENT
REGISTRATION DOCUMENT**

NEWCRETE INVESTMENTS LIMITED PARTNERSHIP
PROPOSED QUARRY
BLACK MOUNTAIN WEST

Submitted by:

Newcrete Investments Limited Partnership
P.O. Box 8056, Station A
St. John's, NL
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June 2015

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APPENDIX 1

Black Mountain West Quarry Lease Application

- 1.0 NAME OF UNDERTAKING** Black Mountain West Quarry
- 2.0 PROPONENT**
- 2.1 Name of Corporate Body** Newcrete Investments Limited
Partnership
- 2.2 Address** PO Box 1083
St. John's, NL
A1C 5M5
- 2.3 Chief Executive Officer** Mr. Larry Puddister
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3.0 THE UNDERTAKING

3.1 Nature of the Undertaking

The proposed Black Mountain West site is 25.6 hectares in size and is located approximately 1.8 km southwest of Incinerator Road off the Foxtrap Access Road. Site access will be via Incinerator Road and Newcrete's existing private access road (~1.5 km), as well as a series of existing access roads developed within the current existing quarry (Lease 114308) and the proposed quarry. The proponent proposes to develop the area as a source of high-quality sand and gravel.

3.2 Purpose/Rationale/Need for the Undertaking

Newcrete, parent company of Capital Ready Mix Limited, is the Provincial leader in the concrete industry in Newfoundland & Labrador. With the ongoing rapid industrial and municipal expansion throughout the Northeast Avalon, and the development of various offshore concrete based oil structures, there is a steadily growing demand for concrete, which has become an integral component to this continued growth. However, new high quality concrete grade sand and gravel deposits have become much more difficult to locate and develop in recent years.

At present, Newcrete estimates that there is 6 - 10 years supply of the required high quality concrete grade sand and gravel at the current Black Mountain quarry site on the Avalon Peninsula near Foxtrap. The six year estimate is based on a projected increased demand and the ten year estimate is based on current demand. To address this endless demand for concrete aggregate, Newcrete is constantly looking for new sources of sand and gravel that meet the Canadian Standards Association specifications for concrete aggregate. Exploration efforts during 2013 were successful in identifying an additional aggregate resource adjacent to, and west of, the current Black Mountain Quarry Lease (Quarry Lease Number 114308). At current demand rates, this potential new aggregate source contains enough high-quality sand and gravel for approximately 7 years of operations. Taking into consideration a potential increase in demand, this number quickly reduces to a 4 year supply.

It is important to note that further expansion of this quarry will not be undertaken; a detailed test-pitting program has determined that the high quality grade sand and gravel required for concrete is not available outside of the current lease and this proposed quarry.

4.0 DESCRIPTION OF THE UNDERTAKING

4.1 Geographic Location

The proposed project is located in an area south of Black Mountain Pond and immediately west of Newcrete's current quarry operations (Lease 114308), near the Town of Foxtrap in Conception Bay South, Newfoundland. Please refer to Figure 1. Approximate Location of the Proposed Project Site, Figure 2. Proposed Quarry Location and Existing Quarry Lease, and Figure 3. Proposed Quarry Location (with Coordinates).

The proposed quarry site is not located within any municipal boundaries; it is undeveloped Crown Land. This Crown Land falls under the St. John's Urban Region Regional Plan, which previously designated the area as Public Open Space. This land contained an additional zoning under the Butterpot-Witless Bay Line Environs Development Control Regulations, which previously designated the area as Recreational Open Space.



Figure 1. Approximate Location of the Proposed Quarry



Figure 2. Proposed Quarry Location and Existing Quarry Lease

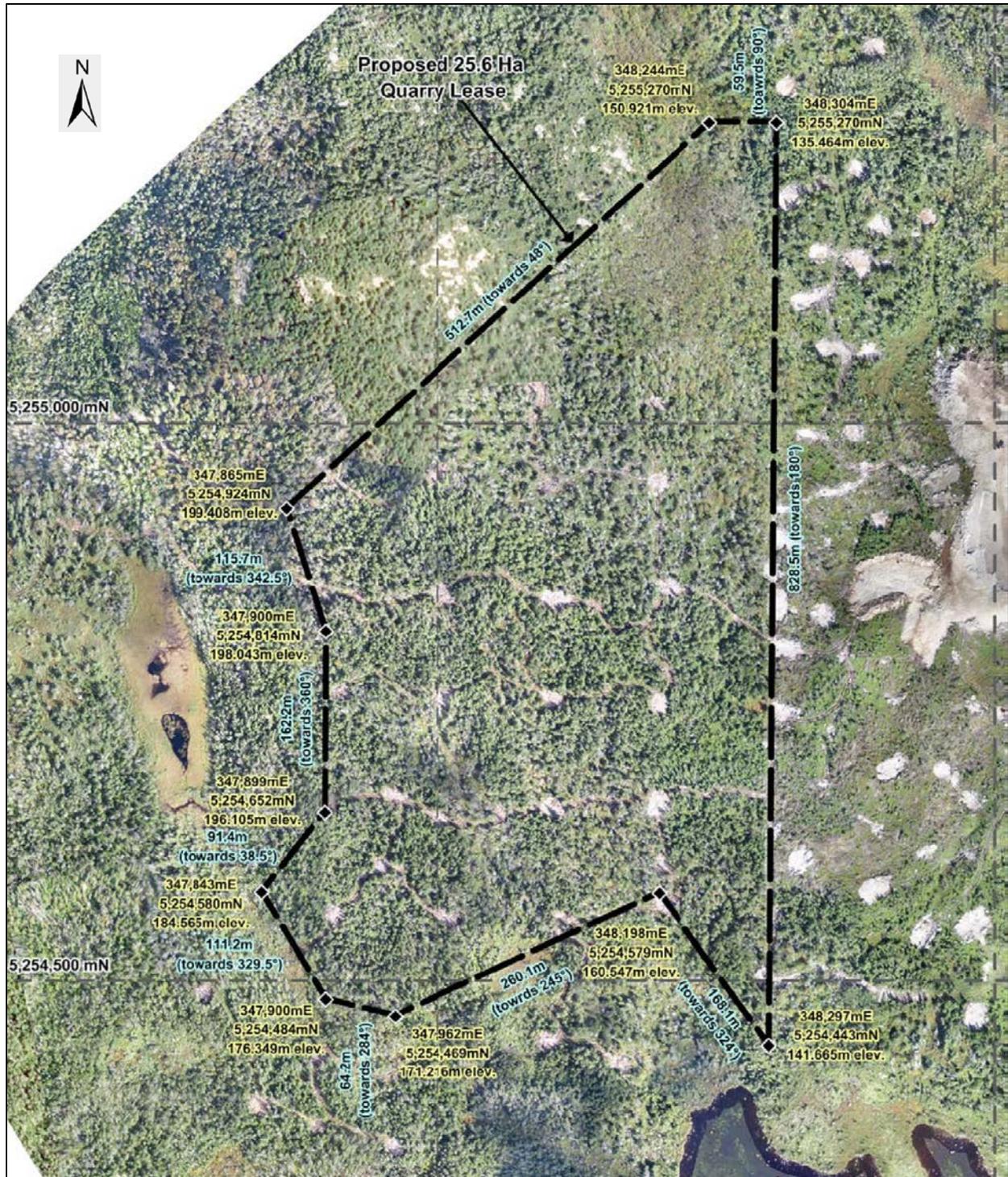


Figure 3. Proposed Quarry Location (with Coordinates)

An application in the form of a letter was made to the Minister of Municipal and Intergovernmental Affairs requesting that the land be rezoned as Rural in order to permit the development of a quarry. On December 4, 2014, Newcrete representatives made a presentation to the appointed commissioner (Mr. S. Clinton, MCIP) as a part of a Public Hearing to consider objections and submissions on St. John's Urban Region Regional Plan, 1976 Amendment No. 3, 2014. In April 2015, the area was rezoned as Rural, thus permitting the development of a quarry.

4.2 Physical Features

4.2.1 Project Site Description

The primary physical feature of this project will be the quarry itself. Access to the site will be via Newcrete's 1.5 km private access road (starting at the end of Incinerator Road), which enters the northeast corner of the current lease. Access roads will be constructed as required within the proposed quarry property during development and quarry operations.

4.2.2 Existing Biophysical Environment

Climatic conditions in the region are characterized by cool summers with frequent fog and strong winds. Winters are relatively mild with intermittent snow cover, particularly near the coastline. The annual precipitation exceeds 1250 mm.

The site is located within the Maritime Barrens Eco-region, which extends from the east coast of Newfoundland to the west coast through the south central portion of the island. A previous habitat and dominant species survey completed in the eastern region, in close proximity to the proposed quarry site, indicated the following habitat/species in the area: Bog/Fen (Mosses [Sphagnum spp.], Dwarf Birch [Betula Pumila], Ground Juniper [Juniperus communis], Creeping Savin [Juniperus horizontalis], Swamp Birch [Betula Pumila], Deer Grass [Scirpus cespitosus]; Heath - Eastern Larch [Larix laricina], Low Bush Blueberry [Vaccinium angustifolium], Widdy [Potentilla frusticosa], Black Spruce [Picea mariana], Bog Laurel [Kalmia polifolia], Sweet Gale [Myrica gale], Mosses [Sphagnum spp.], Lichens [Cladonia spp.], Mixed Forest - Black Spruce [Picea mariana], Eastern Larch [Larix laricina], Mosses [Sphagnum spp.], Mountain Alder [Alnus crispa], Fake Solomon's Seal [Smilacina trifolia], Labrador Tea [Ledum groenlandica]. No rare or endangered plants were identified in the previous survey.

A forest cataloging and density study (commissioned by Newcrete) within the proposed lease area, completed by, B.A. Roberts, a Registered Professional Forester, & Integrated Informatics Inc., has determined that the existing forest cover is composed primarily of balsam fir intermixed with minor tamarack and minor white birch, making up ~71% of the forest. The remainder of the forest area within the lease is composed of coniferous scrub, white birch, deciduous scrub and barren rock making up ~19%, ~8%, ~2% and <1%, respectively (see Section 4.7.2).

The surficial geology within the proposed quarry lease contains primarily a sandy and gravelly till, deposited as a result of a glacio-fluvial system present throughout the, generally, northwest-southeast trending Black Mountain valley. Observations through test pitting show that the aggregate is comprised primarily of sand, gravel and boulders. The composition is on average 10% boulders, 25% gravel, 45% sand and 20% silt. The boulders are typically <1.0 m in diameter and generally around 0.3 to 0.6 m. Overall the composition of the aggregate is granite derived and very locally mafic derived. The mafic derived aggregate is underlying the granite derived material and is more common near the western lease boundary.

The proposed site is south of Black Mountain Pond and immediately west of the current lease (Lease 114308). The proposed quarry area does not contain any brooks/streams/steadies. There isn't any obvious natural drainage features defined within the site, but runoff generally occurs from the west, which is upslope, to the east and south which is downslope. A 50 meter buffer zone between the quarrying area and all water bodies and streams that surround the lease will be maintained.

4.3 Construction and Operation

The proposed Black Mountain West site is 25.6 hectares in size. The construction phase of site development will consist of the following main components:

- Site access;
- Site Clearing; and
- Quarry development.

4.3.1 Site Access

Access to the site will be from temporary access roads within the existing quarry lease.

4.3.2 Site Clearing

Initially, trees within the lease area will be harvested both manually and utilizing mechanical equipment (i.e. a mulcher attached to an excavator). Merchantable timber will be salvaged through the use of a hand held chainsaw. This wood will be stacked in 6' to 8' lengths and subsequently removed from the site to be used primarily as firewood or it will be removed by an existing forest operator. Once all trees in the area have been harvested, the topsoil and grubbing will be removed and primarily stockpiled in the existing grubbing pile within the current quarry lease (Figure 2). Where permitted, the topsoil and grubbing will be windrowed along the perimeter of the lease, keeping the reclamation material closer to its end-use location.

4.3.3 Quarry Development

The limits of the proposed quarry site was defined by test pitting work, field observations of bedrock, and the general terrain in the area. Critical items that were taken into consideration were the depth of the aggregate material, the quality of the aggregate, and generally how saturated the sand was.

As per the “Black Mountain West Quarry Lease Application Development and Reclamation Plans”, submitted to the Department of Natural Resources Mineral Land Division (Appendix 1), the proposed site will be mined in four phases on a single 5 meter bench with the exception of areas where the aggregate thickness is greater. The mining phases are designed to correspond as closely as possible with the projected annual demand for concrete aggregate and the terrain within the lease area, i.e. each phase roughly corresponds to a production year, based on estimated demands.

Throughout the development and production phases of the proposed quarry, the crusher will be positioned in close proximity to the mining face in order to maximize productivity and will be moved as necessary to facilitate efficient production. However, the majority of the required processing equipment will be located within the current quarry lease. The wash plant, settling ponds, associated laydown areas, required storage/personnel trailers and onsite sieve lab operated by AMEC will remain in their current locations near the existing wash plant site (please see Figure 2).

Typical quarrying methods will be utilized to collect the overburden sand and gravel deposit at the site. The operation will include the excavation, crushing and loading of the sand and gravel materials at the working face of the quarry, and transportation of these materials to processing equipment, located within the current lease, as stated above.

As with current operations, process water will be directed to a series of settling ponds located adjacent to the process plant. The process water will be re-circulated from the settling ponds and re-used in the wash process. Silt in the settling ponds, generated from the washing process, will be removed from the ponds on a weekly basis during the operating season. At the end of the operating season, all silt will be removed from settling ponds to mitigate against the potential for a loss of silt during non-operating months (winter-spring). Process silts will be deposited in excavated/mined areas and used in site rehabilitation.

Materials will be processed into granular materials of required specifications, and stockpiled on site. Waste and oversized rock will also be stockpiled for future use.

On a demand-basis, aggregate will be trucked from this area to Newcrete’s batch plant on the Trans-Canada Highway, mega-projects on the island, and other Newcrete and Pennecon Limited affiliated companies and projects. A set of weigh scales are also located near the wash plant where the access road exits the current quarry operations.

4.4 Potential Sources of Pollution during Construction and Operation

The construction phase of the development will consist of earth-moving activities. The potential sources of pollution during these activities include site drainage, waste and litter, noise, air emissions, and potential releases of petroleum hydrocarbons.

An Erosion and Sediment Control Plan will be developed as a part of the site-specific Environmental Protection Plan (DRAFT EPP include with Black Mountain West Quarry Lease Application Development and Reclamation Plans, see Appendix 1). The objective of this Erosion and Sediment Control Plan (ESCP) will be to mitigate impacts from sediment-laden runoff due to construction activities which may have a negative effect on sensitive receptors associated with the proposed Black Mountain West Quarry. Through mitigation measures, best management practices, and monitoring of installed erosion and sediment control structures, this objective can be achieved.

Domestic waste generated during construction will be collected and disposed of at Robin Hood Bay landfill, per the Waste Material Disposal Act. Sewage will be handled by approved portable facilities during construction. Holding tanks will be pumped on an as-required basis.

Equipment on site will have appropriate emission-control equipment. Dust control measures, such as application of water, will be provided on an as-required basis. Noise levels associated with the work is not expected to increase over typical operations in the area.

The handling of petroleum products on site will comply with the Storage and Handling of Gasoline and Associated Products Regulations.

4.5 Potential Resource Conflicts

Potential resource conflicts include the potential use of the area by hunters or for access for recreational purposes (i.e. access to nearby ponds, hiking, etc). This conflict will be temporary (for the duration of the project), as Newcrete is committed to a comprehensive and progressive rehabilitation program (see Section 4.9 Reclamation and Closure).

4.6 Occupations

Site construction and operations for the proposed quarry will likely include the following occupations, classified as per *National Occupational Classification, 2006*, and equipment. All listed personnel are anticipated to be direct-hires, if available.

Site construction and operations for the proposed quarry will include the following occupations, classified per National Occupational Classification 2001:

Construction Phase

- 1 Site Foreman/Supervisor (7217)
- 2 Heavy Equipment Operators (7421)
- 2 Truck Drivers (7411)

Quarry Operations

- 1 Quarry Manager (0811)
- 1 Quarry Foreman/Supervisor (8221)
- 2 Heavy Equipment Operator - Loader/Excavator (7421)
- 2 Crushing Equipment Operator - Screening/Crusher (7421)
- 2 Truck Drivers (7411)
- 2 Quarry Laborer(7611).

Newcrete Investments Limited is committed to equity in employment and will encourage all qualified individuals to apply.

4.7 Reclamation and Closure

4.7.1 Reclamation Methods

Reclamation shall occur as per the “Black Mountain West Quarry Lease Application Development and Reclamation Plans”, submitted to the Department of Natural Resources Mineral Land Division (Appendix 1).

Progressive reclamation is a part of the standard conditions of any quarry lease. These terms require that a lease holder must slope mined-out areas, and preserve and re-spread the original organic material from the site.

Newcrete’s reclamation procedures extend well beyond the minimum requirements of a quarry lease. Initially, surficial soils, subsoil, and grubbing are stripped to the top of the aggregate to prepare each excavation phase. Some of this material is used to construct perimeter berms with the remainder being stockpiled for use when quarrying is completed and reclamation is being carried out. Sloping around the perimeter of the lease is achieved by leaving a buffer of sufficient aggregate in place along the lease boundary so that when re-contoured with a bulldozer, the pit-face of the mined out area can be sloped to the required 30 degree angle. Following this final sloping and the contouring of the pit floor, the preserved organic material and subsoil is spread, hydro-seeded with grass seed, and planted with tree seedlings native to the area. Based on results from Newcrete’s forest density and cataloging study (see below) within the proposed lease, sufficient numbers of representative species of tree seedlings will be planted to replicate current site conditions.

4.7.2 Forest Density, Forest Cataloging & Reclamation Study

Newcrete has completed a forest density study within the proposed lease and has determined that the existing forest cover is composed primarily of balsam fir intermixed with minor tamarack and minor white birch, making up ~71% of the forest. The remainder of the lease area contains coniferous scrub, white birch, deciduous scrub and barren rock making up ~19%, ~8%, ~2% and <1%, respectively. The forest density review was carried out by Integrated Informatics Inc. and a copy of their results is included in Appendix 1.

Subsequent to the study, the forest density report was provided to Mr. Bruce A. Roberts, a Registered Professional Forester. Mr. Roberts then completed several field visits to carry out a specific and detailed cataloging of the species present and to look for any rare or unique vegetation that may be present and require preservation. Mr. Roberts also considered the options for an optimal restoration of the area, which he indicated could be successfully done through direct seeding and planting by experienced tree planters. A copy of this report is provided as a part of Appendix 1.

It is also important to note that in 2013 the not-for-profit group Forests without Borders were engaged to aid Newcrete in developing a long term strategy to carry out forest restoration within exhausted quarry sites. The main objective of this exercise was to create the best possible environment with the correct combination of tree species, to facilitate the development of a free to grow forest for use by generations to come. Mr. William Clarke, a volunteer with Forests without Borders and the Ecosystem Manager with the Provincial Department of Natural Resources, Forestry - Ecosystem Management, and Mr. Cyril Lundrigan, a Research Silviculturist with the Provincial Department of Natural Resources, Forestry - Center for Forest Science & Innovation, have been extensively involved in this process. Mr. Clarke oversaw the planting of 10,000 trees within the current Black Mountain Quarry Lease area in 2014 and an additional 6,000 trees in 2015. Currently, a roughly 1.5 Ha area within the current Black Mountain Lease is prepared for a detailed comprehensive forest restoration study, to be completed by Mr. Clarke and Mr. Lundrigan. This study will include the planting of numerous tree plots and approximately 5,000 trees with varying species and substrates to aid in determining the best combination of grubbing/organics, silt, and tree species for forest regeneration in the area.

4.8 Project Options Considered

Consideration has been given to alternate project locations, however the current location was selected as the preferred site due to availability of acceptable aggregate resources and proximity to existing infrastructure, i.e. settling ponds, lay down areas, etc, as well as a more localized project footprint for future rehabilitation.

4.9 Project Related Documents

Please see “Black Mountain West Quarry Lease Application Development and Reclamation Plans”, submitted to the Department of Natural Resources Mineral Land Division (Appendix 1).

5.0 APPROVAL OF THE UNDERTAKING

The following is a list of the likely permits, licences and approvals required for this project, some of which are already in progress.

| APPROVALS/CERTIFICATE/PERMITS | REGULATORY AUTHORITY |
|--|--|
| NL Environmental Assessment Registration | NL Department of Environment and Conservation, Environmental Assessment Division |
| Lease / Permit to Occupy Crown Lands | NL Department of Environment and Conservation, Crown Lands Division |
| Preliminary Application to Develop Land | Service NL |
| Water Use Licence | NL Department of Environment and Conservation, Water Resources Division |
| Commercial Cutting Permit | NL Department of Natural Resources, Forestry and Agrifoods Agency |

6.0 SCHEDULE

| | |
|----------------------------------|----------------|
| Registration Document Submission | June 2015 |
| Government Review and Decision | August 2015 |
| Operations | September 2015 |

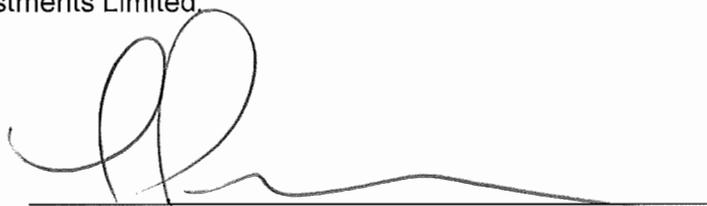
7.0 FUNDING

The approximate cost of the project will be 1.2 million CAD. The funding for this project will be provided by Newcrete Investments Limited.

8.0 SUBMISSION

June 23 '15

Date



Name: Mr. Larry Puddister
Position: CEO, Newcrete Investments Limited

APPENDIX 1

Black Mountain West Quarry Lease Application



**NEWCRETE INVESTMENTS LIMITED PARTNERSHIP,
BY ITS GENERAL PARTNER, NEWCRETE INVESTMENTS GP Ltd.
BLACK MOUNTIAN WEST QUARRY LEASE APPLICATION
DEVELOPMENT AND RECLAMATION PLANS**

FOR

**COMPLIANCE WITH THE QUARRY MATERIALS ACT AND REGULATIONS
GOVERNMENT OF NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF NATURAL RESOURCES
MINERAL LANDS DIVISION**

by

**Brad Dyke, P. Geo.,
Senior Project Geologist
Pennecon Limited
P.O. Box 8274, Station A
St. John's, NL
A1B 3N4**

for

**Newcrete Investments Limited Partnership,
by its general partner,
Newcrete Investments GP Ltd.
P.O. Box 8056, Station A
St. John's, NL
A1B 3M7**

July 2014

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1.0 INTRODUCTION

Newcrete, parent company of Capital Ready Mix Limited, is the Provincial leader in the concrete industry in Newfoundland & Labrador. With the ongoing rapid industrial and municipal expansion throughout the Northeast Avalon, and the development of various offshore concrete based oil structures, there is a steadily growing demand for concrete, which has become an integral component to this continued growth. However, new high quality concrete grade sand and gravel deposits have become much more difficult to locate and develop in recent years. Currently, Newcrete estimates there is between 6 and 10 years of supply at the current Black Mountain quarry site on the Avalon Peninsula near Foxtrap. This six year projection is based on increased demand and the ten year estimate is based on current demand. To address this endless and growing demand for concrete aggregate, Newcrete is constantly looking for new sources of sand and gravel that meet the Canadian Standards Association specifications for concrete aggregate. Exploration efforts during 2013 were successful in identifying an additional aggregate resource adjacent to, and west of, the current Black Mountain Quarry Lease (Quarry Lease Number 114308). This new aggregate source contains enough high-quality sand and gravel to meet the current demand for approximately 7 years. Taking into consideration the projected growth and demand this number quickly reduces to a 4 year supply.

This submission presents the rationale for the quarry application, how the quarry area was chosen based on exploration work, pit development, post development plans (i.e. reclamation & closure plans) and a Environmental Protection Plan for the site which are part of the requirements for the issuance of a Quarry Lease under the Quarry Materials Act.

2.0 SITE LOCATION AND DESCRIPTION

The proposed Black Mountain West site is 25.6 hectares in size and is located approximately 1.8 km southwest of Incinerator Road off the Foxtrap Access Road on NTS Map Sheet 1N/06 (**Figures 1 & 2**). The proposed quarry is located adjacent to the west boundary of existing Quarry Lease 114308 held by Newcrete. Quarrying will continue from within Lease 114308 along the western edge immediately into the proposed 25.6 Ha quarry. Access to the site will be via existing road infrastructure directly to the quarrying face. This will be achieved by utilizing Newcrete's 1.5 km private access road, starting at the end of Incinerator Road, which enters the northeast corner of the current lease. An access route through the quarry will then be used to reach the eastern boundary of the proposed lease (**Figure 2**).

There are no ponds or streams within the quarrying area of the proposed Black Mountain West lease. There are also no predominant natural drainage features defined within the site, but runoff generally occurs from the west, which is upslope, to the east and south which is downslope. A forest cataloging and density study within the proposed lease area, completed by, B.A. Roberts, a Registered Professional Forester, & Integrated Informatics Inc., has determined that the existing forest cover is composed primarily of balsam fir intermixed with minor tamarack and minor white birch, making up ~71% of the forest. The remainder of the forest area within the lease is composed of coniferous scrub, white birch, deciduous scrub and barren rock making up ~19%, ~8%, ~2% and <1%, respectively. A 50 meter buffer zone between the quarrying area and all water bodies and streams that surround the lease will be maintained. **Figure 3** depicts the quarry lease boundary and any water bodies that are in proximity to it.

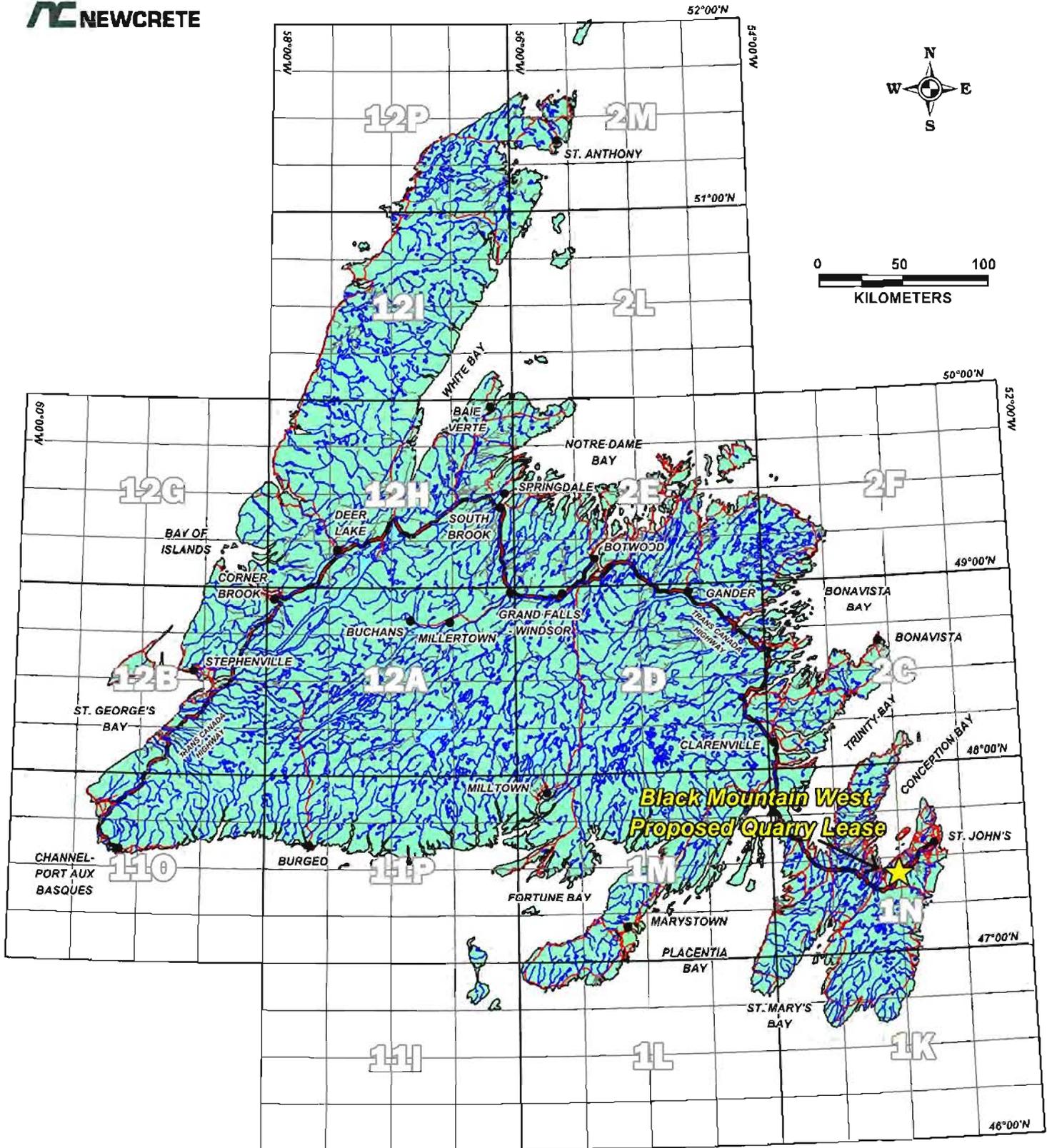
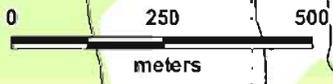
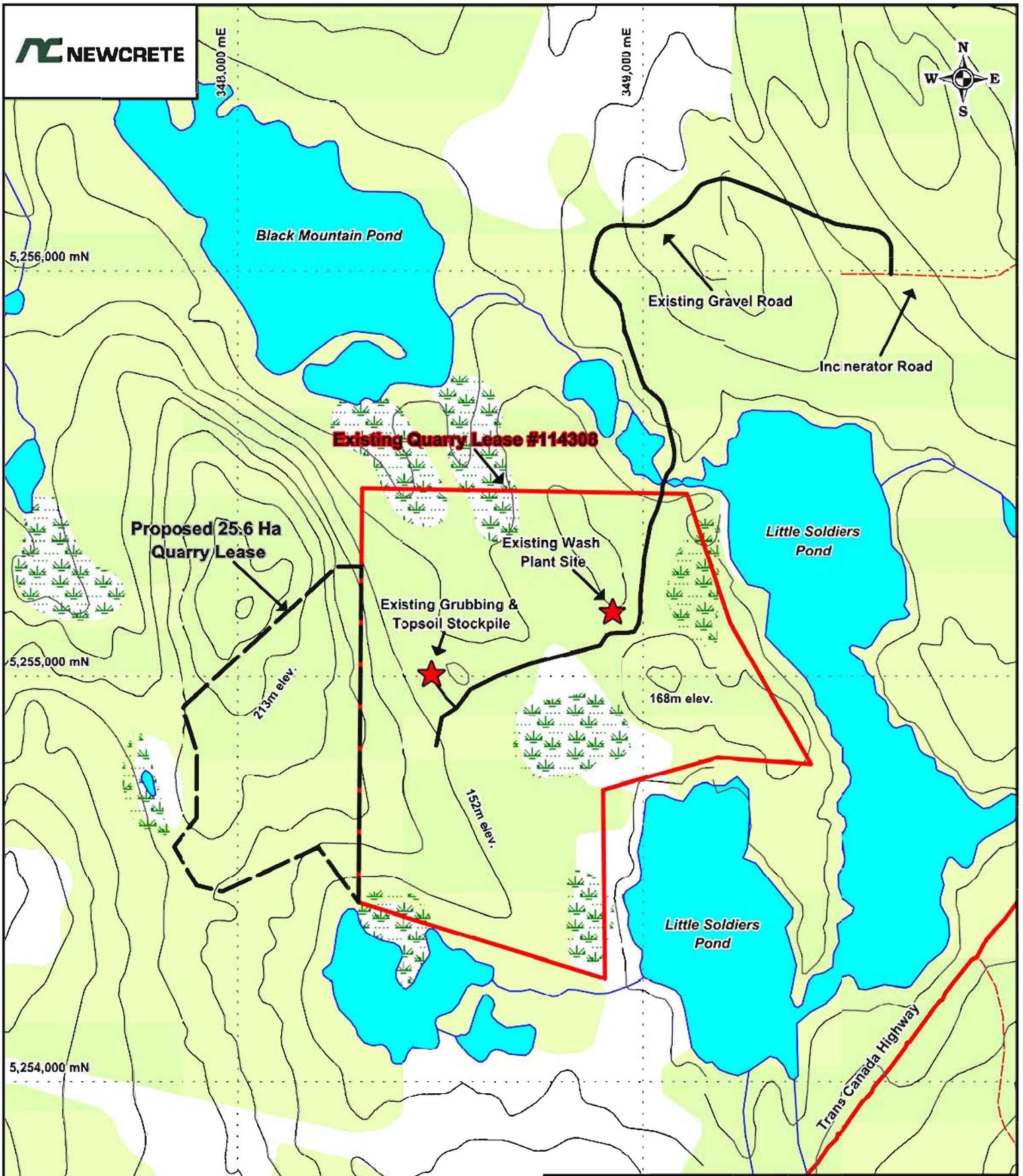


FIGURE 1: PROPERTY LOCATION MAP (BLACK MOUNTAIN WEST QUARRY; N.T.S. 1N/06).



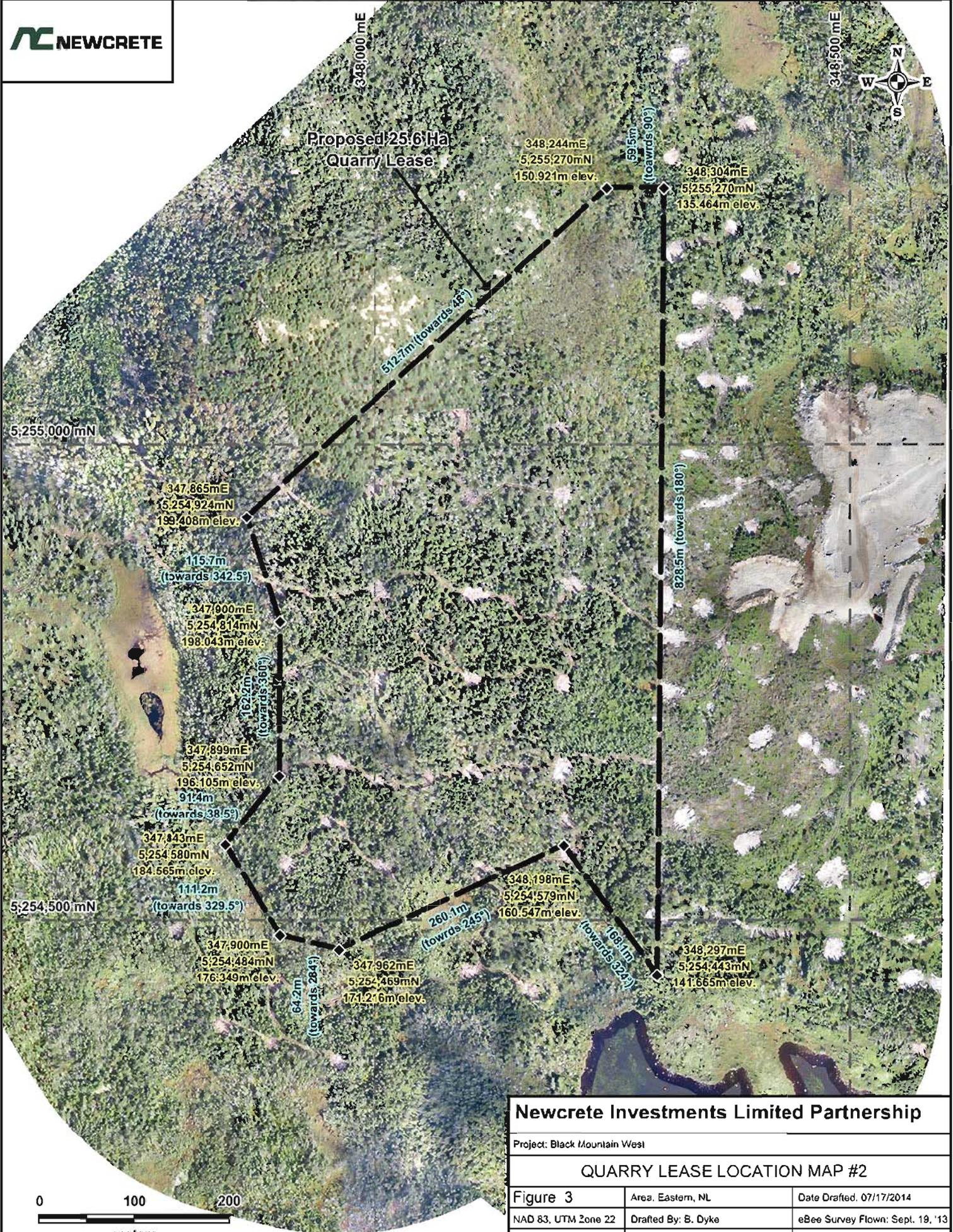
Newcrete Investments Limited Partnership

Project: Black Mountain West

QUARRY LEASE LOCATION MAP #1

| | | |
|---------------------|------------------------------|--------------------------|
| Figure 2 | Area: Eastern, NL | Date Drafted: 01/09/2014 |
| NAD 83, UTM Zone 22 | Drafted By: B. Dyke | Revised Date: 07/17/2014 |
| Scale: 1:12,500 | File: Lease Location Map.wor | NTS: 1N/06 & 07 |

Proposed 25.6 Ha Quarry Lease

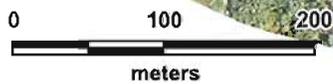


Newcrete Investments Limited Partnership

Project: Black Mountain West

QUARRY LEASE LOCATION MAP #2

| | | |
|---------------------|-------------------------------|----------------------------------|
| Figure 3 | Area: Eastern, NL | Date Drafted: 07/17/2014 |
| NAD 83, UTM Zone 22 | Drafted By: B. Dyke | eBee Survey Flown: Sept. 19, '13 |
| Scale: 1:5,000 | File: Con & Lease Loc Map.wor | NTS 1N/06 |



3.0 SURFICIAL GEOLOGY

The surficial geology within the proposed quarry lease contains primarily a sandy and gravelly till, deposited as a result of a glacio-fluvial system present throughout the, generally, northwest-southeast trending Black Mountain valley. Observations through test pitting show that the aggregate is comprised primarily of sand, gravel and boulders. The composition is on average 10% boulders, 25% gravel, 45% sand and 20% silt. The boulders are typically <1.0 m in diameter and generally around 0.3 to 0.6 m. Overall the composition of the aggregate is granite derived and very locally mafic derived. The mafic derived aggregate is underlying the granite derived material and is more common near the western lease boundary.

4.0 EBEE IMAGERY SURVEY

On September 19th, 2013 high resolution colour stereo imagery was acquired using an eBee UAS Drone. The imagery was acquired over a roughly 1.5 km square area from three flights flown. The survey covered the current lease, the proposed Black Mountain West lease and surrounding area. Each flight produced a series of color images with associated flight parameters such as altitude, orientation, etc. which were required for post processing. The stereo images captured from the aerial survey were processed using Postflight Terra 3D photogrammetry software to produce the ortho-imagery and the end product ortho-mosaic which covers the entire survey area. Ground control point information collected prior to the flights provided control and reference points for processing so that vertical and horizontal accuracies were maintained.

The digital elevation model data was derived from the stereo imagery using photogrammetric techniques which resulted in a point cloud of x,y,z data points. From this point cloud, ground surface elevations were derived and a resulting terrain surface created. In areas of dense vegetation, ground surface points were supplemented with elevation data from test pit survey points completed by Legge Surveys Limited using a Topcon Hiper Lite Plus differential GPS. Also, additional ground surface points were obtained from the Provincial Government Surveys and Mapping mass points data set and provided supplementary control for the terrain surface.

Targeted spatial resolution is in the range of 5-10 cm with an estimated precision of 10-15 cm. **Maps 1 and 2** display the ortho-imagery as a base layer and depict 2 meter elevation contours derived from the elevation data acquired from the eBee survey as explained above.

5.0 TEST PITTING

A comprehensive detailed test pitting program was completed during the summer of 2013. The exploration work was carried out under quarry materials exploration licence 705:1438 and under exploration permit QE13-7051438 (**Appendix A**). The primary objective of this survey was to as accurately as possible define a volume of concrete grade aggregate west of the current lease and outline a new proposed lease boundary. A total of 41 test pits were excavated of which 27 occur within the proposed lease boundary. The depths of the test pits within the lease were minimal along the west boundary, where in some cases bedrock was present, and up to 9.5 m in the southeast portion of the lease. The aggregate was typically composed of a granite derived sand and gravel similar to the aggregate present in the current quarry lease. **Appendix A** contains the test pit logs for all of the pits excavated west of the current lease, under Quarry Materials Exploration Licence 705:1438, to define the Black Mountain West Quarry Lease area. Also, **Table A1** contains the sieve analysis for these pits where samples were collected

(**Appendix A**). Test pits are plotted on **Map 2** and overlay the ortho-imagery base layer which was acquired after the test pitting exploration work was completed.

It is worth noting that the test pitting program has defined the limits of the aggregate in the immediate area. There are no additional aggregate resources north, west or south of the proposed lease boundary.

6.0 EXISTING SITE PLAN

In accordance with the requirements of pit development under the Quarry Materials Act, **Figure 3** and **Map 1** show the current topographic features as of Sept. 19th, 2013 and also display the boundary of the lease with related corner post UTM's (NAD 83) and elevations, including boundary line lengths and azimuth directions of each line segment in a clockwise rotation.

The quarry lease site is not located within any municipal boundaries but is within and surrounded by undeveloped Crown Land. This Crown Land falls under the St. John's Urban Region Regional Plan which designates the area as Public Open Space and also contains an additional zoning under the Butterpot-Witless Bay Line Environs Development Control Regulations which designates the area as Recreational Open Space. An application in the form of a letter has been made to the Minister of Municipal and Intergovernmental Affairs requesting that the land be rezoned as Rural Open Space in order to permit the development of a quarry. Also, a Preliminary Application to Develop Land has been submitted to Service NL. Copies of these applications are included in **Appendix B**. The most proximal residential or industrial development is roughly 1.3 km's to the northeast and is the Offshore Safety and Survival Centre operated by the Marine Institute.

The proposed lease boundary was defined by test pitting work, field observations of bedrock and the general terrain in the area. Critical items that were taken into consideration were the depth of the aggregate material, the quality of the aggregate and generally how saturated the sand was. The northern and western lease boundary was largely defined by exposed bedrock or test pits with a minimal thickness of aggregate overlying bedrock, but within close proximity to aggregate of mineable thickness. In the southwest and south there was a distinct drop off in elevation which bottomed out in fairly saturated aggregate. In these areas there were also significant large glacial boulders up to 5 meters in diameter. Taking into consideration the water table and the number of large boulders, the southern and southwestern lease boundary was defined. The eastern boundary is adjacent to current Quarry Lease 114308 and quarrying will extend from it into the new lease.

7.0 PIT DEVELOPMENT

7.1 Introduction

Maps 2 through **8** present the Quarry Development Plans. The lease will be mined in four phases on typically a single 5 meter bench except for in areas where the aggregate thickness is greater. The mining phases are designed to correspond as closely as possible with the projected annual demand for concrete aggregate and the terrain within the lease area.

7.2 Aggregate Resource Estimate

The aggregate resource for the proposed quarry is considered a measured resource, as a sufficient number of test pits have been excavated in a gridded manor in order to depict an accurate outline of the volume of material present. Also, sieve analysis data was used to determine which test pits contained the high quality sand and gravel required for concrete

aggregate. The following assumptions were made when determining the aggregate resource within this site:

1. Based on data collected from test pits excavated on site, the water table is assumed to be located well below the proposed pit floor. Considering the quarry will be located along the side of a hill and mining will occur from a low point up to a high point there should be no issues with the water table.
2. It is assumed that the aggregate quality between the 100 meter spaced test pits is consistent with that of the samples collected.
3. No dilution factors were applied to account for the estimated oversized or undersized material at the site.

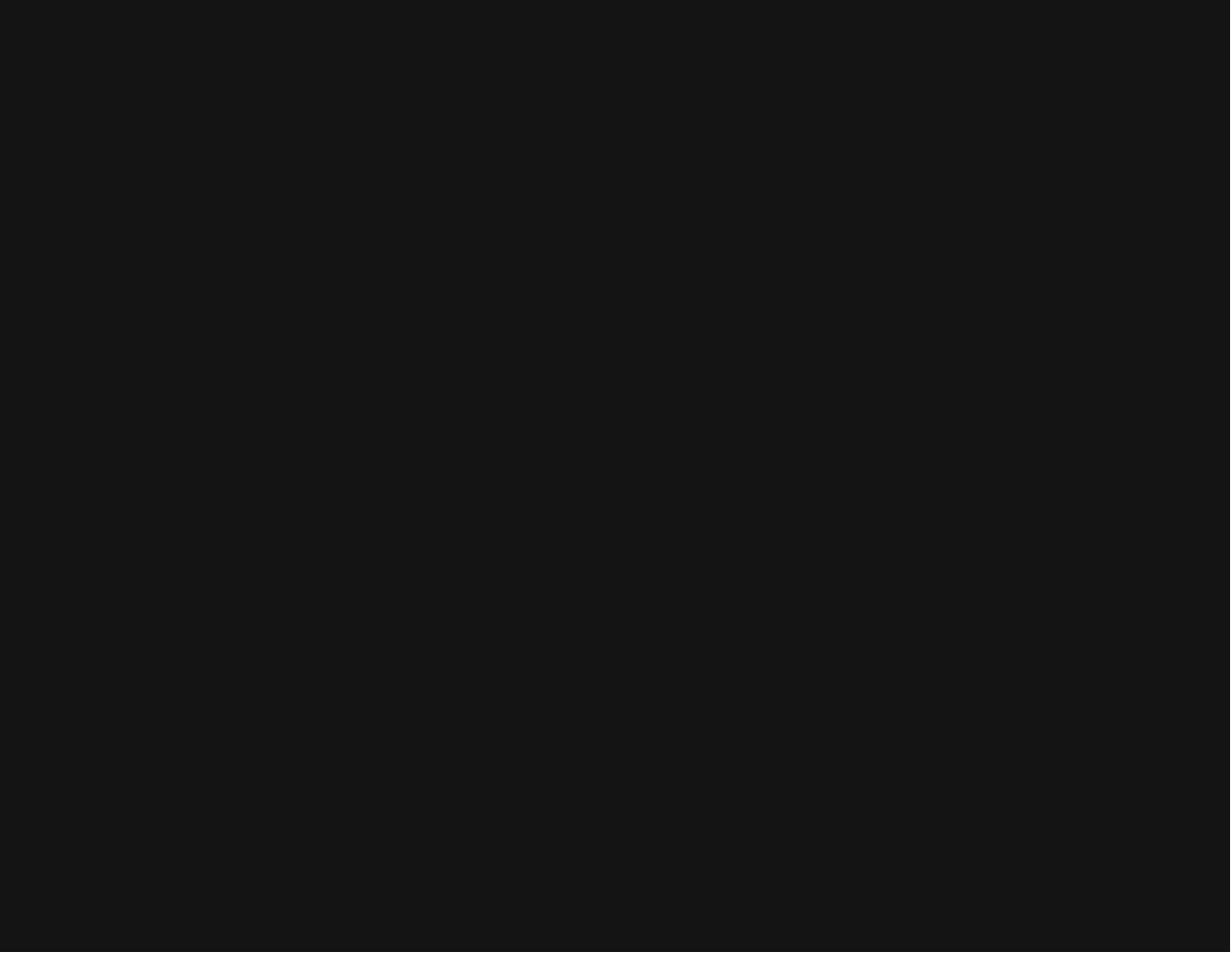
The calculated measured resource of sand and gravel within the proposed 25.6 Ha quarry lease, excluding the sloping buffer, is estimated to be 984,309 m³ (2,067,048 t). This volume was calculated by utilizing MapInfo[®] Discover 3D software and by generating a 3D model of the mineable aggregate. Subsequently, the total resource was also modelled in MapInfo[®] to generate the four mining phases (**Figure 4**). An assumption was made that the current demand for concrete will continue to increase and the present production of approximately 300,000 t per year will grow fairly quickly to 500,000 t per year. Hence, the quarry is divided into four roughly 500,000 t blocks. **Table 1** shows the aggregate resource subdivided on a per mining phase basis. Each mining phase is designed to equate to one year of production outlining a total of four mining years.

Table 1: Aggregate Resource per Mining Phase

| Mining Phase | Hectarage | Resource (m ³) | Resource (t) |
|--------------|-------------|----------------------------|------------------|
| 1 | 4.4 | 242,793 | 509,865 |
| 2 | 6.6 | 245,260 | 515,045 |
| 3 | 7.1 | 244,568 | 513,593 |
| 4 | 7.5 | 251,688 | 528,545 |
| Total | 25.6 | 984,309 | 2,067,048 |

7.3 Site Clearing

Initially, trees within the lease area will be temporarily harvested by utilizing mechanical equipment and manpower. The mechanical equipment used will be a mulcher attached to an excavator. Merchantable timber will be salvaged by utilizing a hand held chainsaw. This wood will be stacked in 6' to 8' lengths and subsequently removed from the site to be used primarily as firewood or removed by an existing forest operator. Once trees in the area has been harvested, then topsoil and grubbing will be removed and primarily stockpiled in the existing grubbing pile within the current quarry lease (**Figure 2**). Where permitted, the topsoil and grubbing will be windrowed along the perimeter of the lease keeping the reclamation material closer to its end use location. An estimate of the topsoil present is difficult to determine based on the test pitting, as typically the thickness varied greatly from nil to 0.2 meters with probably an average thickness of <0.1 meters and total volume of approximately 25,000 m³. Grubbing, on the other hand, was on average 0.98 meters thick and an estimate of 250,880 m³ are present within the lease.



7.4 Mining Method and Production

The quarry will start in the east central portion of the lease near the northern boundary of Phase 1 and development will move to the west, then south progressively until the phase is mined out over a season. Phase 2 will then start to be mined from its southern boundary in a northerly direction until the end of the year. Subsequently, Phase 3 will be mined starting in the southeast corner and working west and northwest until the season is finished. Finally Phase 4 will be mined from its northeast corner in a generally southwest direction until all of the aggregate material is removed. **Maps 2 & 3** depict each of the mining phases noted above and **Maps 5 to 8** show the progressive mining of each phase and pit floor contouring. Each phase noted above is designed to correspond with a mining season based on projected aggregate demand.

Cross sections are provided on **Map 4** with the traces being displayed on **Maps 2 & 3**. The cross sections were generated using MapInfo[®] Discover software and were cut in an east-west direction typically every 100 m with an additional two north-south sections spaced 200 m apart. These sections depict a clear image of the resource thickness and where it becomes thicker and thinner. Where the aggregate is greater than 5 meters, mining benches have been laid out whereby the top 5 m bench would be mined first and so on until reaching the pit floor level where the excavation would then continue on laterally at approximately a 5 meter height. The cross sections also show where the mining phase boundaries will occur, display the topography elevation sloping in the area, and depict where permanent and temporary 30 degree sloping will occur within each phase.

While quarrying, Newcrete intends to maintain the lowest pit floor possible above the water table. If ground water is encountered during pit development, then the pit floor will be adjusted accordingly. It is not anticipated that the water table will be a problem, as the mining will be upslope to the west and north and above it. Any seasonal surface water accumulation will be collected and directed along the natural drainage of the area. Also, the required annual update of the development plans will plot the mining progress of the production blocks explained above.

Based on the current operations at Black Mountain, within the existing lease, there is approximately 10 years of supply left at the current rate of demand and 6 years based on the projected demand. Taking this into consideration, the proposed quarry lease will have a life of 7 years at current demand and 4 years based on the projected demand. Based on the steady increase in the requirement for high quality concrete aggregate in residential, industrial and offshore development structures, it is critical that Newcrete continues to acquire significant supplies of quality concrete aggregate. We are requesting that this quarry lease be issued for a 20 year period based on the challenges when trying to accurately predict future demand and having 100% confidence in that projection. Slight changes can significantly adjust the quarries life one way or another by several years. Also, aggregate within the current lease must be mined first before the sand and gravel within the proposed lease can be accessed. This also makes it challenging to determine exactly when quarrying will start within the proposed lease.

From this quarry lease, Newcrete will produce all of its concrete sand and stone required on an annual basis. **Table 2** provides a breakdown of the monthly production rates based on previous production years in the current quarry.

Table 2: Estimated Production per Month

| Month | Average Production per Month (m ³) | Average Production per Month (t) |
|---|--|----------------------------------|
| January | 0 | 0 |
| February | 0 | 0 |
| March | 0 | 0 |
| April | 0 | 0 |
| May | 31,990 | 67,179 |
| June | 41,833 | 87,850 |
| July | 29,529 | 62,011 |
| August | 41,833 | 87,850 |
| September | 29,529 | 62,011 |
| October | 39,372 | 82,682 |
| November | 31,990 | 67,179 |
| December | 0 | 0 |
| Total | 246,077* | 516,762* |
| *it is important to note that the above numbers are production figures and do not reflect sales | | |

7.5 Equipment and Personnel

During the life of the quarry the majority of the required processing equipment will be located within the current quarry lease. The wash plant, settling ponds, associated laydown areas, required storage/personnel trailers and onsite sieve lab operated by AMEC will remain in their current locations near the existing wash plant site (**Figure 2**). Aggregate will be trucked from this area to Newcrete's batch plant, to offshore concrete gravity based structure projects on the island and other Newcrete and Pennecon affiliated companies and projects. A set of weigh scales are also located near the wash plant where the access road exits the quarry. The crusher will be positioned in close proximity to the mining face in order to maximize productivity and will be moved as dictated by the mining progress. A complete list of personnel and equipment required to keep the operation running smoothly is provided in **Table 3** below.

Table 3: Equipment and Personnel Requirements

| Equipment (Crushing Site) | Number Required | Personnel Required |
|---|-----------------|--------------------|
| 980 Cat Loader | 2 | 2 |
| 345 Cat Excavator | 1 | 1 |
| Jaw Crusher | 1 | 1 |
| Cone Crusher | 1 | 1 |
| Vertical Impact Crusher | 1 | 1 |
| 7x20 Feeder Screen Plant | 1 | 1 |
| 1000 kw Cat Generator | 1 | n/a |
| Parts Trailer & Lunch Room | 1 | n/a |
| Onsite Lab (AMEC) | 1 | 1 |
| Total (Crushing Site) | | 8 |
| Equipment (Wash Plant Site) | Number Required | Personnel Required |
| 972 Cat Loader | 2 | 2 |
| 936 Cat Excavator | 1 | 1 |
| 40 ton Volvo Rock Truck | 1 | 1 |
| 6x20 Metso Twin Screw Wash Plant | 1 | n/a |
| 400 kw Cat Generator | 1 | n/a |
| Parts Trailer & Lunch Room | 1 | n/a |
| Total (Wash Plant Site) | | 4 |
| Equipment/Personnel Offsite | Number Required | Personnel Required |
| Semi-Trailer Dump Truck | 14 | 14 |
| Garage | n/a | 2 |
| Office (Operations Manager, H&S, etc.) | n/a | 3 |
| Total (Offsite) | | 19 |
| Overall Total | | 31 |
| <i>It is important to note that throughout the various divisions of Newcrete that rely on the natural aggregate from Black Mountain a total of 130-150 people are employed during the peak season.</i> | | |

8.0 RECLAMATION AND CLOSURE PLANS

8.1 Introduction

It is a priority to Newcrete to restore any quarried area to natural conditions. This requires good sound base line information. The ortho-imagery acquired in September of 2013, along with the forest cataloging and density data, provides this base line reference information so that the reclamation is completed in a competent and complete manner.

8.2 Reclamation Method and Description

Progressive reclamation is a part of the standard conditions of any quarry lease. These terms require that a lease holder slope mined out areas and preserve and re-spread the original organic material from the site.

The Newcrete reclamation procedures extend well beyond the minimum requirements of a quarry lease. Initially surficial soils, subsoil and grubbing are stripped to the top of the aggregate to prepare each excavation phase. Some of this material is used to construct perimeter berms with the remainder being stockpiled for use at a later date when quarrying is completed and reclamation is being carried out. Sloping around the perimeter of the lease is achieved by leaving a buffer of sufficient aggregate in place along the lease boundary so that when re-contoured with a bulldozer, the pit-face of the mined out area can be sloped to the required 30 degree angle. Following this final sloping and the contouring of the pit floor, the preserved organic material and subsoil is spread, hydro-seeded with grass seed and planted with tree seedlings native to the area. Based on Newcrete's forest density and cataloging study (see below) within the proposed lease, an adequate number of tree seedlings of the correct original species will be planted to reforest the area back to current conditions.

Newcrete is currently in the process of developing a new Environmental Sustainability Policy that outlines "Sustainable Development" which is a globally accepted approach to sustaining economic growth without harming our planet or exhausting its resources, while improving the quality of life for its current and future inhabitants. This policy will dictate that Newcrete will continue to monitor how our operations impact the environment and strive for continuous improvements. It will also clearly state that the health and safety of our employees, clients, neighbors, and stakeholders are paramount, as is our continued stewardship of the environment.

8.3 Forest Density, Forest Cataloging & Reclamation Study

Newcrete has completed a forest density study within the proposed lease and has determined that the existing forest cover is composed primarily of balsam fir intermixed with minor tamarack and minor white birch, making up ~71% of the forest. The remainder of the lease area contains coniferous scrub, white birch, deciduous scrub and barren rock making up ~19%, ~8%, ~2% and <1%, respectively. The forest density review was carried out by Integrated Informatics Inc. and a copy of their results is included in **Appendix C**.

Subsequent to the study the forest density report was provided to Mr. Bruce A. Roberts a Registered Professional Forester. Mr. Roberts then completed several field visits to carry out a specific and detailed cataloging of the species present and to look for any rare or unique vegetation that may be present and require preservation. Mr. Roberts also considered the options for an optimal restoration of the area which he indicated could be successfully done through direct seeding and planting by experienced tree planters. A copy of this report is provided in **Appendix C**.

It is also important to note that in 2013 the not-for-profit group Forests without Borders were engaged to aid Newcrete in developing a long term strategy to carry out forest restoration within exhausted quarry sites. The main objective of this exercise is to create the best possible environment, with the correct combination of tree species, to permit growth and ultimately a free to grow forest for generations to come. Mr. William Clarke a volunteer with Forests without Borders and the Ecosystem Manager with the Provincial Department of Natural Resources,

Forestry - Ecosystem Management and Mr. Cyril Lundrigan a Research Silviculturist with the Provincial Department of Natural Resources, Forestry - Center for Forest Science & Innovation, have been extensively involved in this process. Recently Mr. Clarke oversaw the planting of 10,000 trees within the current Black Mountain Quarry Lease area. Currently a roughly 1.5 Ha area, within the Black Mountain Lease, is being prepared for a detailed comprehensive forest restoration study, to be completed by Mr. Clarke and Mr. Lundrigan. This study will include the planting of numerous tree plots with varying species and substrates to aid in determining the best combination of grubbing/organics, silt and tree species for forest regeneration in the area.

8.4 Schedule of Progressive Reclamation

Due to the design of this site and the topographic layout, reclamation will only be able to be completed on a partial progressive manner. This is because the mining will take place in an upslope manner, a somewhat steep slope in the northeast and the fact that Phase 3 & 4 have to be accessed via Phase 1 & 2. Considering these factors, a portion of each phase must be left un-rehabilitated until Phase 4 is mined out. It is important to clearly explain that after mining Phase 1 in season 1, the following year during season 2 reclamation will begin within Phase 1. This process will be repeated for each subsequent phase in this manner until all of Phase 4 is exhausted in season 4 and then in year 5 the quarry will be completely reclaimed. **Map 8** displays the final pit floor contours and **Map 9** depicts the progressive reclamation plan. The pit floor contours are typically 5 meters below the natural topography of the area and have been slightly re-contoured to provide a gentler natural slope to area.

Reclamation within Phase 1 will cover 2.1 Ha in the southeast corner, within Phase 2 it will cover 3.2 Ha in the northeast corner and within Phase 3 it will cover 5.8 Ha in the northwest corner with a portion of the 5.8 Ha covering part of the Phase 2 mining area. Once all of the aggregate is extracted from Phase 4 the remaining 14.5 Ha throughout the quarry lease will be reclaimed (**Map 9**).

At the end of the day a contoured pit floor will be created with 30 degree slopes around the perimeter and the mined area will be vegetated. The end result will be a safe, environmentally stable, reclaimed quarry that will blend with the surrounding area.

9.0 FINANCIAL ASSURANCE

Newcrete proposes that the reclamation liability for this site be secured by a Pit Reclamation Bond on a per hectare basis. The cost of reclamation includes sloping and spreading topsoil/grubbing/organics at \$7,000/ha, hydro-seeding at \$5,000/ha and tree planting at \$2,000/ha for a total of \$14,000/ha. The cost of reclamation on a per development phase basis is shown in **Table 4** below. The proposed reclamation plan outlines no reclamation work on Phase 1 until the following season due to the fact that it will be too late in the year to start any rehabilitation. This scenario will carry through until the end of the quarry life and thus a large portion of the reclamation work will not occur until after Phase 4, or year 4.

Table 4: Required Financial Assurance

| Pit After End of Development Phase | Hectares Disturbed | Required Security | Hectares Reclaimed | Value of Progressive Reclamation | Net Annual Security | Comments |
|------------------------------------|--------------------|-------------------|--------------------|----------------------------------|---------------------|---|
| 1 | 4.4 | \$61,600.00 | 0 | \$0 | \$61,600 | |
| 2 | 6.6 | \$92,400.00 | 2.1 | \$29,400 | \$124,600 | Phase 1 Reclamation in Year 2 |
| 3 | 7.1 | \$99,400.00 | 3.2 | \$44,800 | \$179,200 | Phase 2 Reclamation in Year 3 |
| 4 | 7.5 | \$105,000.00 | 5.8 | \$81,200 | \$203,000 | Phase 3 Reclamation in Year 4 |
| | | | 14.5 | \$203,000 | \$0 | Phase 4 Reclaimed After Finished Mining |

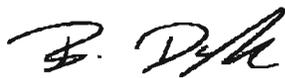
10.0 CONCLUSIONS

Newcrete has proposed the development of a new 25.6 Ha quarry adjacent to the current Black Mountain Quarry Lease (lease number 114308). This new lease is vital so that Newcrete can secure a sustainable volume of concrete aggregate as demand steadily increases.

This application contains the pertinent information related to the lease application. A detailed explanation of how the area was chosen, how the aggregate resource was defined and how the volume of aggregate was calculated has been provided. Also, the quarrying plan has been clearly explained and the rehabilitation and financial assurances are also laid out.

In **Appendix D** an Environmental Protection Plan for the site is presented and a recently received Environment Award from the Atlantic Concrete Association recognizing Environmental Leadership, Innovation and Achievement is also included. **Appendix E** contains the completed Quarry Lease Questionnaire. Also, Newcrete is in the process of developing a new Environmental Sustainability Policy to demonstrate our commitment to continually improving our ecological performance in accordance with industry best practices. This in conjunction with a forest density, forest cataloging study and a forest reclamation plan will allow Newcrete to restore the proposed lease area to natural conditions similar to the initial vegetation.

Respectfully submitted,



Brad Dyke, P. Geo.
Senior Project Geologist
Pennecon Limited

July 18, 2014



APPENDIX A

**QUARRY MATERIALS EXPLORATION LICENCE 2013 & 2014,
EXPLORATION PERMIT 2013 & 2014,
SIEVE ANALYSIS RESULTS
AND
TEST PIT LOGS**

EXPLORATION LICENCE

QUARRY MATERIALS

FILE NO: 705:1438

This licence entitles Pennecon Limited of St. John's, NL to carry out exploration work for Sand & Gravel on a 1025 hectare site situate Black Mountain and being more particularly shown on the map and description attached hereto.

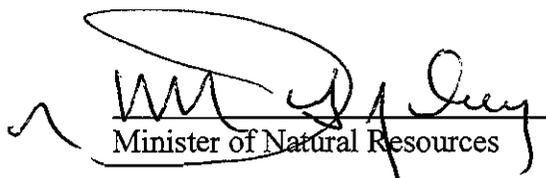
Subject to the Terms and Conditions of Section 4(2) of the Quarry Materials Regulations and the following Conditions:

- (1) This licence is valid only for exploration of quarry materials in areas where the quarry materials and the surface rights are vested in the Crown.
- (2) The licence holder is responsible for determining the status of the land to ensure no private property is involved.
- (3) No trees are to be cut except those necessary for the siting of the testing equipment.
- (4) No material is to be removed from the site except for samples necessary for analysis or testing.
- (5) All of the surface area disturbed by the exploration or sampling work is to be restored to as near its original condition as possible, and to the satisfaction of the Minister of Natural Resources.
- (6) The licence holder shall not interfere with nor pollute any waterbody or waterway.
- (7) This licence does not relieve the licence holder from obtaining any other permit or licence which may be necessary to conduct exploration or sampling activities.
- (8) A copy of the Geotechnical Data or any report generated shall be provided to the Department of Natural Resources before the expiry date of the licence.

Special Terms and Conditions in Addition to the above:

This licence excludes all areas within 100m of any current Quarry Permit/Lease and/or any existing pit(s), located within the bounds of this Exploration Licence.

This licence expires on ~~July 21, 2013~~ ^{March 21, 2014}

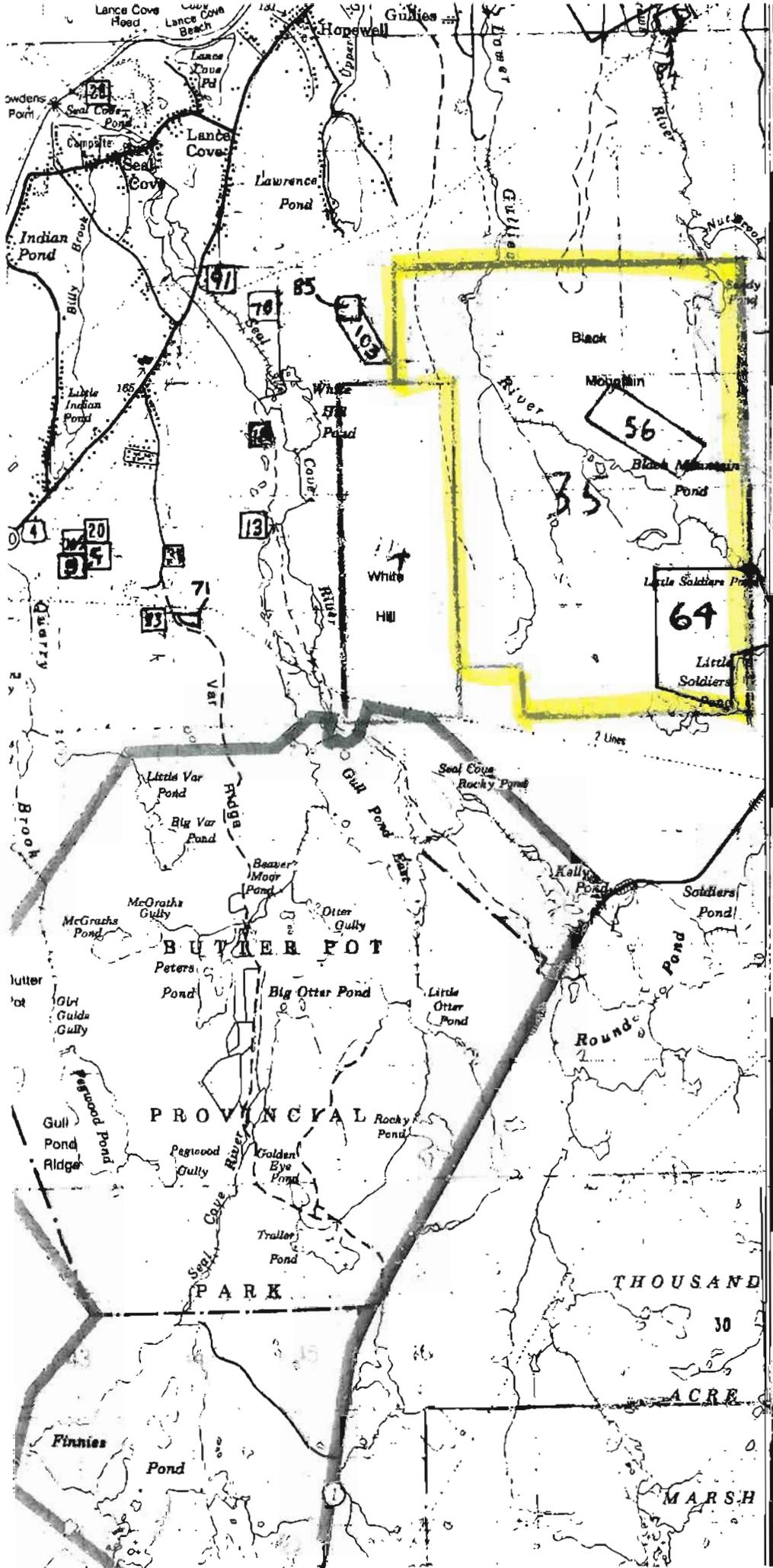


Minister of Natural Resources

2013.03.25

Date

MAP 01N/06



15. Eric Taylor Ltd. - 9302, Ref. 11/03/
16. Russell's Excavating Ltd. - 9342, R
17. Alltask Excavating - 9429, Ref. 11/
18. *HPC Construction Services*
19. Dept. T&W. 8878-121389 / 31 Dec.
20. Charlie Dawe & Michelle Dawe 752
21. Altask Excavating - 9430, Ref. 11/0
22. Hodgwater Excavating Ltd. 8749-
23. Tryus Ent. Ltd. - 9466, Ref. 11/07/2
24. *Philip Lisa Hume*
25. *Richard J. Hume*
26. *Richard J. Hume*
27. *Richard J. Hume*
28. Butler's Sand & Stone Co. Ltd. 5048
29. Buckle's Contracting 7922-118116 /
30. Jackie McGrath 8591-120006 / 31 D
31. *Jackie McGrath*
32. *Jackie McGrath*
33. Sandbox Construction Ltd. 8603-121
34. *Jackie McGrath*
35. *Jackie McGrath*
36. Sandbox Construction Ltd. 8602-121
37. *Jackie McGrath*
38. *Jackie McGrath*
39. Leo Haycs 7999-Ref. 07/07/04
40. *Jackie McGrath*
41. N/S Trucking - 9370, Ref. 11/05/21
42. *Jackie McGrath*
43. Patrick Grace 6774-112752 / 31 Dec
44. Pennecon Heavy Civil Ltd. 4036-122
45. Sandbox Construction Ltd. 8601-121
46. *Jackie McGrath*
47. *Jackie McGrath*
48. *Jackie McGrath*
49. Bernard Phillips 8151-117164 / 31 D
50. *Jackie McGrath*
51. Triple V Enterprises 7575-114657 / 3
52. Gushue's Services Ltd. 6785-111425
53. *Jackie McGrath*
54. Salmon Cove Excavating Ltd. 8126-
55. Eric Taylor Ltd. 6818-Ref. 03/06/11
56. Murphy's Services Inc. 8909- Ref. 1
57. Russell's Excavating Ltd. 4458-1226
58. Lionel Squires 8498-122655 / 31 De
59. Michael Harrigan 6905-121001 / 31
60. Municipal Construction Ltd. 6832-1
61. Fowler's Excavation 4323-103371 ?
62. *Jackie McGrath*
63. *Jackie McGrath*



\$115.00

Government of Newfoundland and Labrador
Department of Natural Resources
Mines Branch, Mineral Lands Division

APPLICATION FOR A QUARRY MATERIAL EXPLORATION LICENCE

The information you are providing will only be used for the purpose for which it has been provided.

Instructions:

- Please type or print clearly
- Mail completed form including a site location map
- Use additional sheets if necessary

DATE: March 14/2013

In accordance with section 6 of the *Quarry Materials Act, 1998, SNL1998*, application is hereby made for a **Quarry Material Exploration Licence** with respect to 1150 ha within the area described below. The location of the Licence is shown on the plan attached hereto being part(s) of N.T.S. Map Sheet(s): N/B.

Material Type: Gravel/Sand

DESCRIPTION

Beginning at the northeast corner of the herein described parcel of land and said corner having U.T.M. coordinates of 349000 Easting 5258000 Northing; of zone 22 thence

South 4000 meters
 West 2000 meters
 North 500 meters
 West 1000 meters
 North 3500 meters

→ ~~to~~ East 3000 meters to the point
 of Beginning. All bearings
 refer to the UTM grid NAD
 1927

RECEIVED this 21 day of March
2013 at 11:00 o'clock A M

Forest
QUARRY MATERIALS

Pennecan Ltd
 Applicant (please print)
1309 Topsail Road
 Address
St. John's NL
A1B 3N4
Robert Mervin
 Signature of Applicant

Agent of Applicant (where applicable)
 Address
 Signature of Agent

July 18, 2013

QE13-7051438 (previously issued June 13; amended to update expiry date)

Rod Mercer
Pennecon Limited
1309 Topsall Road
P.O. Box 8274, Station A
St. John's NL
A1B 3N4

Dear Mr. Mercer:

**Quarry Exploration Approval (Test Pitting, Trail Cutting) for
Pennecon Limited on the
Black Mountain Property,
NTS 1N/06,
Quarry Exploration Licences 705:1438**

Your proposed exploration program submitted in compliance with Section 5(4) of the *Mineral Act* has been reviewed and approved. The following conditions apply:

1. The Proponent, its employees, agents and subcontractors ("Proponent") shall comply with the *Mineral Regulations*, in particular sections 41 - 45 and section 46 which is referring to the document "Environmental Guidelines for Construction and Mineral Exploration Companies" located at: <http://www.nr.gov.nl.ca/nr/department/environment.pdf>
2. This approval may be cancelled or suspended by the Minister if the Proponent fails to comply with any condition in this approval or as a result of a failure to comply with the *Mineral Act*, *Mineral Regulations* or any other provincial law or regulation. Upon cancellation or suspension of this approval the Proponent shall immediately cease all exploration activities.
3. The Proponent shall comply with any other Provincial and federal act or regulation, and obtain all permits that may be required in connection with the exploration activity.
4. As required by Section 42 of the *Mineral Regulations*, the Proponent shall notify the Mineral Lands Division of any significant changes to the approved exploration plan, and shall not proceed with exploration work, preparatory work or site access that deviates substantially from the approved exploration plan or deviates from the approved exploration plan in a manner which may significantly impact the environment without first receiving written authorization from the Mineral Lands Division.
5. The Proponent shall provide the Mineral Lands Division with:

- a) 24 hour prior notification of mobilizing equipment to the project area;
 - b) two day prior notification of completion of the exploration activity;
 - c) a brief monthly update of the progress of the exploration program;
 - d) a brief update of the status of the exploration program when it is completed.
6. If exploration work is to take place on lands not vested in the Crown, as per section 12(2) of the *Mineral Act*, the licensee shall obtain prior written permission and forward copies to the Department.
7. The Proponent shall maintain a buffer of minimum 15 m width from the high water mark of all bodies of water showing on the 1:50,000 scale NTS map including streams, ponds, and wetlands. Development activities (including fording, cutting, diamond drilling, trenching, or off-road vehicle access) within this buffer shall not proceed until a permit is issued under the *Water Resources Act* if so required by the Water Resources Management Division of the Department of Environment and Conservation.
8. If harmful alteration, disruption, or destruction of fish habitat occurs as a result of a change in the information which has been provided without prior DFO consultation, then prosecution under the *Fisheries Act* may be initiated.
9. Petroleum product spills into a waterbody and petroleum product spills greater than 70 litres (or of an uncertain volume) on land must be reported without delay to Service NL by calling the Canadian Coast Guard Environmental Emergency 24-hour line at 772-2083 or 1-800-563-9089. In order to ensure that a quick and effective response to a spill event is possible, spill response equipment and absorbent materials should be readily available on-site.
10. The Proponent shall comply with the *Forestry Act* and regulations. The Proponent is advised to contact the nearest office of the Forest Services Branch of the Department of Natural Resources to obtain the following permits as required:
- a) a cutting permit before the start of the exploration program if trees have to be cut for access to exploration sites;
 - b) an operating permit if operations are to take place on forest land during the forest fire season;
- Regional Forestry offices are listed at:
<http://www.nr.gov.nl.ca/nr/departement/contact/forestry/forestry.html#region>
11. All access routes shall be planned before starting work. The Proponent shall preferentially use existing woods roads.
12. The Proponent is advised of the following provisions of the *Historic Resources Act* for protecting archaeological sites, artifacts and significant fossils, and the procedures to be followed in the event that either are found:
- a) A person who discovers an archaeological object or significant fossil in, on or forming part of the land within the province shall report the discovery forthwith to the Minister (responsible for the *Historic Resources Act*) stating the nature of the object, the location where it was discovered and the date of discovery;
 - b) No person other than one to whom a permit has been issued under this Act, who discovers an archaeological object or significant fossil shall move, destroy, damage, deface, obliterate, alter, add to, mark or in any other way interfere with, remove or cause to be removed from the province that object or fossil;

- c) The property in all archaeological objects or significant fossils found in, on or taken from the land within the province, whether or not these objects or fossils are in possession of the Crown is vested in the Crown.

Should any archaeological remains be encountered, such as stone, bone or iron tools, concentrations of bone, charcoal or burned rock, fireplaces, house pits and/or foundations, activity in the area of the find must cease immediately and contact shall be made with the Provincial Archaeologist in St. John's (709-729-2462) as soon as possible. Copies of the *Historic Resources Act* and information on archaeology in the province may be obtained from the Provincial Archaeology Office upon request.

13. Pursuant to Section 106 of the *Wildlife Regulations*:

- a) A person shall not operate an aircraft, motor vehicle, vessel, snow machine or all-terrain vehicle in a manner that will harass any wildlife;
- b) You are advised that helicopter supported exploration programs must be conducted in a manner that does not disturb, harass or harm any animal life that you encounter. This can easily be accomplished by avoiding concentrations of wildlife by rescheduling the planned activities for another day.
- c) Under no circumstances should nesting raptors be approached, not even for a "harmless" look. The startle effect that helicopters have on nesting raptors can be detrimental and therefore either a 600 m horizontal buffer from cliff faces or an altitude of 300 m must be observed.

14. This approval is due to expire on March 21, 2014 (the expiration date of Quarry Exploration Licence 705:1438).

If you have any questions concerning this, please contact Stephen Hinchey, Mineral Exploration Site Inspector, at (709) 729-5634 or stephenhinchey@gov.nl.ca.

Regards,



Jim Hinchey, P. Geo.
Director, Mineral Lands Division

Copy to:

- Ges Nunn, Quarry Rights
- Kirsten Miller, Wildlife
- Martha Drake, Historic Resources
- Charles MacLean, Environmental Canada
- Brent Keeping, Environmental Assessment
- David MacDonald, Service NL

EXPLORATION LICENCE

QUARRY MATERIALS

FILE NO: 705:1438

This licence entitles Capital Ready Mix Limited of St. John's, NL to carry out exploration work for Sand & Gravel on a 1025 hectare site situated at Black Mountain to Little Soldiers Pond and being more particularly shown on the map and noted in the description attached hereto.

Subject to the Terms and Conditions of Section 4.(2) of the Quarry Materials Regulations and the following Conditions:

- (1) This licence is valid only for exploration of quarry materials in areas where the quarry materials and the surface rights are vested in the Crown.
- (2) The licence holder is responsible for determining the status of the land to ensure no private property is involved.
- (3) The licence holder shall obtain a letter of approval for exploration from the Mineral Lands Division prior to commencement of that exploration.
- (4) No trees are to be cut except those necessary for the siting of the testing equipment.
- (5) No material is to be removed from the site except for samples necessary for analysis or testing.
- (6) All of the surface area disturbed by the exploration or sampling work is to be restored to as near to its original condition as possible, and to the satisfaction of the Minister of Natural Resources.
- (7) The licence holder shall not interfere with nor pollute any waterbody or waterway.
- (8) This licence does not relieve the licence holder from obtaining any other permit or licence which may be necessary to conduct exploration or sampling activities.
- (9) A copy of the 'geotechnical data' or of any report generated shall be provided to the Department of Natural Resources before the expiry date of the licence.

Special Terms and Conditions in Addition to the above:

This licence excludes all areas within 100 m of any current Quarry Permit or Quarry Lease and/or any existing pit(s) located within the bounds of this Quarry Materials Exploration Licence.

This licence expires on March 21, 2015



Minister of Natural Resources

2014.04.30

Date

MAP 01N/06



Fee \$102.50

RECEIVED 29 APR 2014 10:30 o'clock
QUARRY MATERIALS

705:1438
Block 35

Government of Newfoundland and Labrador
Department of Natural Resources
Mines Branch, Mineral Lands Division

expiry 2015/03/21

APPLICATION FOR A QUARRY MATERIAL EXPLORATION LICENCE

The information you are providing will only be used for the purpose for which it has been provided.

→ Licence to be issued for a full year
↳ exploring for concrete aggregate
for large scale & long term use.

Instructions:

- Please type or print clearly
- Mail completed form including a site location map
- Use additional sheets if necessary

DATE: Apr. 28, 2014

In accordance with section 6 of the *Quarry Materials Act, 1998, SNL1998*, application is hereby made for a Quarry Material Exploration Licence with respect to 1025 ha within the area described below. The location of the Licence is shown on the plan attached hereto being part(s) of N.T.S. Map Sheet(s): 1N106.

Material Type: Gravel / Sand

DESCRIPTION

Beginning at the northeast corner of the herein described parcel of land and said corner having U.T.M. coordinates of 399,000 m Easting 5,258,000 m Northing; of zone 22 thence (NAD 27)

South 4,000 m
 West 2,000 m
 North 500 m
 West 500 m
 North 2,500 m
 West 500 m

North 1,000 m
 East 3,000 m to the point of beginning

All bearings refer to the UTM grid, NAD 27

Capital Ready Mix Limited
Applicant (please print)

1309 Topsail Road
Address
P.O. Box 8274, Station A

St. John's, NL A1B 3N4

B. Pugh
Signature of Applicant

Agent of Applicant (where applicable)

Address

Signature of Agent

May 13, 2014

QE13-7051438

Mr. Brad Dyke
Pennecon Ltd.
1309 Topsail Road
P.O. Box 8274, Station A
St. John's, NL A1B 3N4

Dear Mr. Dyke:

**Quarry Exploration Approval (35 Test Pits, Trill Cutting, ATV Use) for
Pennecon Ltd. on the
Black Mountain property,
NTS 1N/06,
Quarry Materials Exploration Licence (QMEL) 705:1438**

Your proposed exploration program on quarry materials exploration licence (QMEL) 705:1438 has been reviewed and approved. The following conditions apply:

1. The Proponent, its employees, agents and subcontractors ("Proponent") shall comply with the conditions of QMEL 705:1438.
2. This approval may be cancelled or suspended by the Minister if the Proponent fails to comply with any condition in this approval or in QMEL 705:1438 or as a result of a failure to comply with the *Quarry Materials Act, 1998* or any other provincial law or regulation. Upon cancellation or suspension of this approval the Proponent shall immediately cease all exploration and preparation activities.
3. The Proponent shall comply with any other Provincial and Federal act or regulation, and obtain all permits that may be required in connection with the exploration activity.
4. The Proponent shall provide the Mineral Lands Division with:
 - (a) a brief notice immediately before beginning the work;
 - (b) a brief update of the status of the exploration program when it is completed.Notices and updates should be sent to StephenHinchey@gov.nl.ca
5. If exploration work is to take place on lands not vested in the Crown then the licensee shall obtain prior written permission and forward copies to the Mineral Lands Division.
6. Exploration work shall not be carried out on ground for which the quarry rights or mineral rights are held by another party unless permitted by an agreement registered with the Mineral Claims

Recorder's office or unless written permission from the other party has been forwarded to the Mineral Lands Division.

7. The Proponent shall comply with the *Forestry Act* and its regulations. The Proponent is advised to contact the nearest office of the Forestry Services Branch of the Department of Natural Resources to obtain the following permits as required:
 - (a) a cutting permit before the start of the exploration program if trees have to be cut for access to exploration sites.
 - (b) an operating permit if operations are to take place on forest land during the forest fire season (May-September);Regional Forestry offices are listed at:
<http://www.nr.gov.nl.ca/nr/department/contact/forestry/forestry.html#region>
8. Petroleum product spills into or near a waterbody and petroleum product spills greater than 70 litres (or of an uncertain volume) on land must be reported without delay to Service NL by calling the Environmental Emergency 24-hour line at 772-2083 or 1-800-563-9089. In order to ensure that a quick and effective response to a spill event is possible, spill response equipment and absorbent materials should be readily available on-site.
9. The Proponent shall ensure that all waste materials are placed in suitable refuse containers without undue delay and removed to a waste disposal site approved by Service NL to accept the type(s) of waste being disposed of. Service NL Government Service Centres are listed at:
<http://www.servicenl.gov.nl.ca/department/contact.html#locations>
10. ATV use (including tracked-vehicle use) is subject to the *Motorized Snow Vehicles and All-Terrain Vehicles Regulations* whereby ATV use is fully permitted in "approved areas" such as forested land underlain by mineral soil and woods roads, and shall be subject to the following conditions specific to this exploration approval:
 - (a) ATV routes shall be planned to avoid bogs, marshes or barrens wherever possible;
 - (b) ATV use on bogs, marshes or barrens shall be kept to a minimum with the operator avoiding excessive acceleration and braking. ATV use in these areas shall be restricted to shift changes and geologist visits. Samples, core, supplies, and equipment shall only be transported during shift changes and geologist visits unless extenuating circumstances require otherwise. As required by the regulations, any trailers used must be equipped with low pressure bearing tires;
 - (c) ATV travel across bogs and marshes shall be by the driest route present;
 - (d) If ATV use on bogs, marshes or barrens proceeds to the extent that ruts begin to form then corduroy, brush-matting, or planks shall be applied to the affected sections of trail without delay and in the amounts necessary to prevent rutting;
 - (e) ATV access trails shall maintain a single lane of passage and no wider than necessary to permit safe passage and shall not be unnecessarily bifurcated, looped or branched;
 - (f) If it is necessary to operate extensively over a long period of time outside an "approved area" under the *Motorized Snow Vehicles and All-Terrain Vehicles Regulations* then the Proponent shall contact the Crown Lands Division, Department of Environment and Conservation to obtain a licence under the *Lands Act*.
11. The Proponent is advised on the provisions of the *Historic Resources Act* for protecting archaeological sites, artifacts and significant fossils, and the procedures to be followed in the event that either are found:
 - (a) A person who discovers an archaeological object or significant fossil in, on or forming part

of the land within the province shall report the discovery forthwith to the Minister (responsible for the *Historic Resources Act*) stating the nature of the object, the location where it was discovered and the date of discovery;

- (b) No person other than one to whom a permit has been issued under this Act, who discovers an archaeological object or significant fossil shall move, destroy, damage, deface, obliterate, alter, add to, mark or in any other way interfere with, remove or cause to be removed from the province that object or fossil;
- (c) The property in all archaeological objects or significant fossils found in, on or taken from the land within the province, whether or not these objects or fossils are in possession of the Crown is vested in the Crown;

Should any archaeological remains be encountered, such as stone, bone or iron tools, concentrations of bone, charcoal or burned rock, fireplaces, house pits and/or foundations, activity in the area of the find must cease immediately and contact shall be made with the Provincial Archaeologist in St. John's (709-729-2462) as soon as possible.

Copies of the *Historic Resources Act* and information on archaeology in the province may be obtained from the Provincial Archaeology Office upon request.

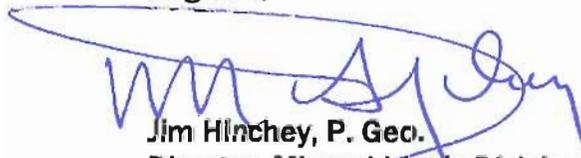
12. Pursuant to Section 106 of the *Wildlife Regulations*:

- (a) A person shall not operate an aircraft, motor vehicle, vessel, snow machine or all-terrain vehicle in a manner that will harass any wildlife;
- (b) You are advised that helicopter supported exploration programs must be conducted in a manner that does not disturb, harass or harm any animal life that you encounter. This can easily be accomplished by avoiding concentrations of wildlife by rescheduling the planned activities for another day.
- (c) Under no circumstances should nesting raptors be approached, not even for a "harmless" look. The startle effect that helicopters have on nesting raptors can be detrimental and therefore either a 600 m horizontal buffer from cliff faces or an altitude of 300 m must be observed.

13. This approval is due to expire on March 21, 2015 (the expiry date of QMEL 705:1438).

If you have any questions concerning this, please contact Stephen Hinchey at (709) 729-6408 or stephenhinchey@gov.nl.ca.

Regards,



Jim Hinchey, P. Geo.
Director, Mineral Lands Division

Copy to:

- Gerald Kennedy, Quarry Rights Section
- Ges Nunn, Quarry Rights Section
- Martha Drake, Provincial Archaeology Office
- Kirsten Miller, Wildlife Division
- Jana Fenske, Wildlife Division
- Jason Glode, Forestry Services Branch
- Brent Keeping, Environmental Assessment Division
- David MacDonald, Service NL
- Gerard Doran, City of St. John's

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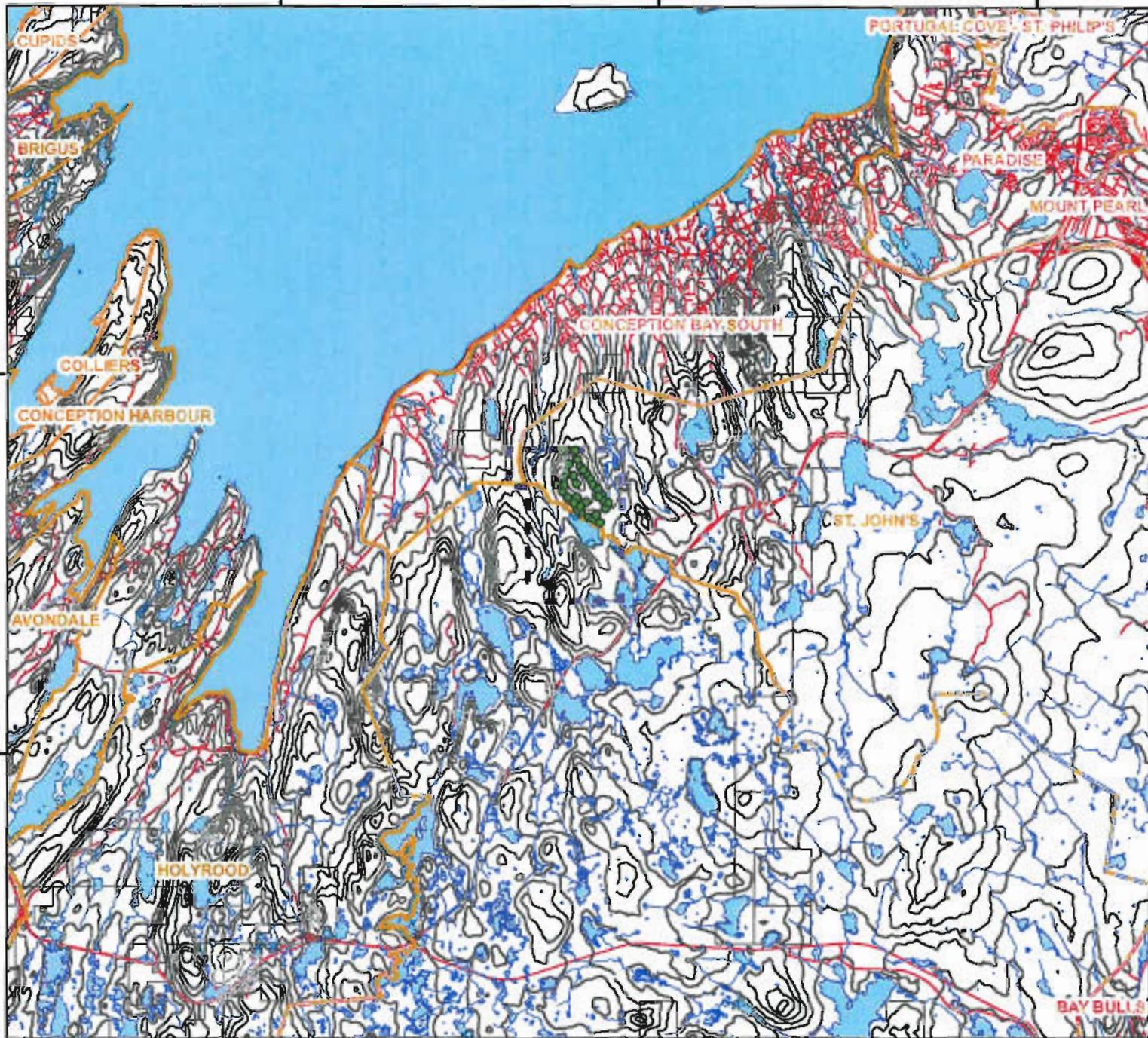
Quarry Exploration Approval (35
Test Pits, Trail Cutting, ATV Use)
for Pennecon Ltd. on the Black
Mountain property, NTS 1N/06,
Quarry Materials Exploration
Licence (QMEL) 705:1438

5260000

5250000

5260000

5250000



Legend

-  test pit
-  QMEL (property)
-  Municipal Planning Area

NOTE: See the map on the last
page of the application for more
detail and for the location of
existing access routes

QE14-7051438

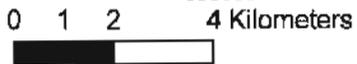
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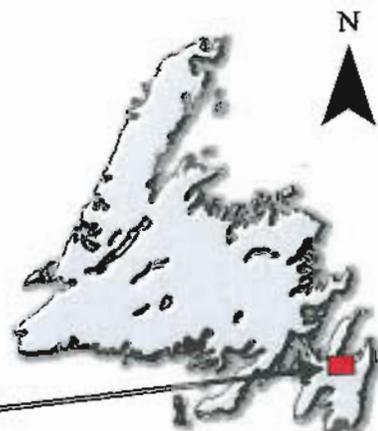
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GeoReference
UTM NAD 27 Zone 22

1:150,000



NTS sheet
location(s)



Black Mountain Resource Test Pit Program 2013

AMEC Job # : TF1330125

Analysis Type: Sieve Analysis

Project Engineer : Yvette Hughes

Specifications: CSA A23.2-2A, A23.2-5A

Material Type : Test pit material

| Sample ID | Bulk Sample Size (kg) | Date Sampled | Date Received | Date Completed | Analysis By | Reviewed By | Cumulative Percent Passing | | | | | | | | | | | | | | Percent of Material Passing 10mm | | | | | | | | | | |
|-------------|-----------------------|--------------|---------------|----------------|-------------|-------------|----------------------------|-------|-------|------|------|------|------|------|------|------|------|-------|-------|-------|----------------------------------|-------|------|-------|------|-------|-------|-------|-------|------|------|
| | | | | | | | 112 | 80 | 56 | 40 | 28 | 20 | 14 | 10 | 5 | 2.5 | 1.25 | 0.630 | 0.315 | 0.160 | 0.080 | 10 | 5.0 | 2.5 | 1.25 | 0.630 | 0.315 | 0.160 | 0.080 | | |
| BMW-13-001 | 49.9 | 30-Jul-13 | 31-Jul-13 | 1-Aug-13 | MF | DOK | 100.0 | 98.3 | 96.9 | 95.9 | 92.7 | 87.8 | 78.8 | 77.1 | 72.0 | 65.3 | 57.8 | 48.6 | 38.2 | 28.2 | 19.9 | 100.0 | 93.4 | 84.7 | 75.0 | 63.0 | 49.5 | 36.6 | 25.8 | | |
| BMW-13-002 | 51.6 | 30-Jul-13 | 31-Jul-13 | 1-Aug-13 | MF | DOK | 100.0 | 100.0 | 99.2 | 96.7 | 94.2 | 90.6 | 84.5 | 83.3 | 76.0 | 69.2 | 61.5 | 52.4 | 42.1 | 31.2 | 22.4 | 100.0 | 91.2 | 83.1 | 73.8 | 62.9 | 50.5 | 37.5 | 26.9 | | |
| BMW-13-003 | 51.2 | 30-Jul-13 | 31-Jul-13 | 1-Aug-13 | MF | DOK | 100.0 | 100.0 | 94.8 | 87.2 | 80.8 | 76.2 | 70.6 | 67.7 | 59.4 | 51.7 | 43.5 | 34.1 | 23.7 | 14.7 | 9.1 | 100.0 | 87.7 | 76.4 | 64.3 | 50.4 | 35.0 | 21.7 | 13.4 | | |
| BMW-13-004 | 56.2 | 31-Jul-13 | 1-Aug-13 | 2-Aug-13 | JP | MF | 100.0 | 100.0 | 99.3 | 97.9 | 95.0 | 92.0 | 89.0 | 87.8 | 83.6 | 77.4 | 69.8 | 60.4 | 49.3 | 36.5 | 27.0 | 100.0 | 95.2 | 88.2 | 79.5 | 68.8 | 56.2 | 41.6 | 30.8 | | |
| BMW-13-005 | 46.4 | 31-Jul-13 | 1-Aug-13 | 2-Aug-13 | JP | MF | 100.0 | 100.0 | 98.6 | 95.8 | 92.4 | 87.9 | 84.2 | 82.1 | 76.8 | 70.2 | 62.1 | 53.1 | 43.1 | 28.9 | 25.2 | 100.0 | 93.5 | 85.5 | 75.6 | 64.7 | 52.5 | 35.2 | 30.7 | | |
| BMW-13-007 | 42.7 | 1-Aug-13 | 2-Aug-13 | 3-Aug-13 | JP | MF | 100.0 | 100.0 | 98.1 | 93.3 | 86.0 | 78.0 | 69.0 | 65.4 | 57.8 | 50.3 | 44.0 | 38.1 | 32.4 | 27.1 | 22.4 | 100.0 | 88.4 | 76.9 | 67.3 | 58.3 | 49.5 | 41.4 | 34.3 | | |
| BMW-13-010 | 47.5 | 1-Aug-13 | 2-Aug-13 | 3-Aug-13 | JP | MF | 100.0 | 96.5 | 95.6 | 92.9 | 88.5 | 85.5 | 80.7 | 77.5 | 68.8 | 59.6 | 50.0 | 39.0 | 28.0 | 18.3 | 11.5 | 100.0 | 88.8 | 76.9 | 64.5 | 50.3 | 36.1 | 23.6 | 14.8 | | |
| BMW-13-012A | 56.9 | 20-Aug-13 | 21-Aug-13 | 22-Aug-13 | JP | MF | 100.0 | 100.0 | 100.0 | 97.0 | 91.8 | 86.6 | 80.0 | 78.4 | 72.1 | 65.2 | 57.4 | 48.5 | 38.7 | 29.1 | 21.1 | 100.0 | 92.0 | 83.2 | 73.2 | 61.9 | 49.4 | 37.1 | 26.9 | | |
| BMW-13-012B | 54.6 | 20-Aug-13 | 21-Aug-13 | 22-Aug-13 | JP | MF | 100.0 | 100.0 | 100.0 | 98.1 | 94.7 | 90.4 | 86.2 | 83.0 | 77.9 | 70.9 | 63.0 | 57.5 | 51.2 | 43.7 | 35.2 | 26.8 | 19.7 | 100.0 | 92.8 | 84.7 | 75.4 | 64.4 | 51.8 | 39.5 | 29.0 |
| BMW-13-013 | 59.5 | 21-Aug-13 | 22-Aug-13 | 23-Aug-13 | DR | MF | 100.0 | 98.6 | 96.2 | 89.7 | 83.0 | 76.5 | 69.5 | 66.9 | 60.2 | 52.7 | 44.3 | 36.2 | 28.0 | 20.4 | 14.5 | 100.0 | 90.0 | 78.8 | 66.2 | 54.1 | 41.9 | 30.5 | 21.7 | | |
| BMW-13-014 | 51.8 | 21-Aug-13 | 22-Aug-13 | 23-Aug-13 | DR | MF | 100.0 | 100.0 | 100.0 | 96.2 | 89.1 | 82.7 | 76.0 | 74.4 | 67.4 | 58.8 | 49.9 | 40.8 | 31.7 | 23.3 | 16.8 | 100.0 | 90.6 | 79.0 | 67.1 | 54.8 | 42.6 | 31.3 | 22.6 | | |
| BMW-13-018 | 45.8 | 22-Aug-13 | 23-Aug-13 | 26-Aug-13 | MH/JP | MF | 100.0 | 100.0 | 100.0 | 98.1 | 94.3 | 90.2 | 85.5 | 82.2 | 76.2 | 70.1 | 62.1 | 52.9 | 42.0 | 31.3 | 23.0 | 100.0 | 92.7 | 85.3 | 75.5 | 64.4 | 51.1 | 38.1 | 28.0 | | |
| BMW-13-019A | 50.4 | 22-Aug-13 | 23-Aug-13 | 26-Aug-13 | MH/JP | MF | 100.0 | 100.0 | 100.0 | 96.2 | 91.4 | 87.1 | 82.1 | 79.8 | 74.5 | 68.3 | 60.7 | 51.4 | 40.6 | 30.1 | 21.6 | 100.0 | 93.4 | 85.6 | 76.1 | 64.4 | 50.9 | 37.7 | 27.1 | | |
| BMW-13-019B | 49.8 | 22-Aug-13 | 23-Aug-13 | 26-Aug-13 | MH/JP | MF | 100.0 | 100.0 | 100.0 | 96.9 | 94.3 | 90.4 | 84.2 | 81.1 | 75.2 | 68.3 | 59.7 | 49.9 | 38.6 | 27.7 | 19.2 | 100.0 | 92.7 | 84.2 | 73.6 | 61.5 | 47.6 | 34.2 | 23.7 | | |
| BMW-13-020 | 46.3 | 22-Aug-13 | 23-Aug-13 | 26-Aug-13 | MH/JP | MF | 100.0 | 100.0 | 97.7 | 95.0 | 89.7 | 85.1 | 79.8 | 76.8 | 70.6 | 64.8 | 57.3 | 48.5 | 38.3 | 28.1 | 20.6 | 100.0 | 91.9 | 84.4 | 74.6 | 63.2 | 49.9 | 36.6 | 26.8 | | |
| BMW-13-022A | 51.3 | 26-Aug-13 | 27-Aug-13 | 27-Aug-13 | MH/JP | MF | 100.0 | 98.6 | 96.3 | 90.6 | 86.0 | 82.6 | 79.4 | 77.0 | 72.5 | 65.4 | 56.9 | 47.1 | 35.5 | 23.8 | 14.9 | 100.0 | 94.2 | 84.9 | 73.9 | 61.2 | 46.1 | 30.9 | 19.4 | | |
| BMW-13-022B | 57.0 | 26-Aug-13 | 27-Aug-13 | 27-Aug-13 | MH/JP | MF | 100.0 | 100.0 | 99.3 | 96.6 | 94.2 | 90.8 | 86.0 | 83.4 | 76.7 | 69.5 | 61.4 | 52.0 | 40.6 | 28.1 | 20.8 | 100.0 | 92.0 | 83.3 | 73.6 | 62.4 | 48.7 | 33.7 | 24.9 | | |
| BMW-13-023 | 49.0 | 27-Aug-13 | 28-Aug-13 | 29-Aug-13 | ML | MF | 100.0 | 100.0 | 99.1 | 93.3 | 90.9 | 84.8 | 80.9 | 78.6 | 72.1 | 65.1 | 56.7 | 47.3 | 36.9 | 26.7 | 18.8 | 100.0 | 91.7 | 82.8 | 72.1 | 60.2 | 46.9 | 34.0 | 23.9 | | |
| BMW-13-024A | 44.2 | 26-Aug-13 | 27-Aug-13 | 27-Aug-13 | MH/JP | MF | 100.0 | 98.4 | 95.2 | 90.2 | 84.7 | 80.6 | 77.5 | 75.9 | 70.4 | 64.7 | 57.7 | 49.3 | 39.2 | 28.3 | 21.4 | 100.0 | 92.8 | 85.2 | 76.0 | 65.0 | 51.6 | 37.3 | 28.2 | | |
| BMW-13-024B | 47.4 | 26-Aug-13 | 27-Aug-13 | 27-Aug-13 | MH/JP | MF | 100.0 | 100.0 | 95.6 | 93.4 | 88.2 | 83.1 | 76.6 | 74.5 | 66.5 | 59.3 | 50.7 | 42.3 | 33.1 | 24.4 | 17.3 | 100.0 | 89.3 | 79.6 | 68.1 | 56.8 | 44.4 | 32.8 | 23.2 | | |
| BMW-13-026 | 47.2 | 27-Aug-13 | 28-Aug-13 | 29-Aug-13 | ML | MF | 100.0 | 100.0 | 95.6 | 92.5 | 88.8 | 84.7 | 80.4 | 78.7 | 72.5 | 64.1 | 54.6 | 44.7 | 34.6 | 25.1 | 18.0 | 100.0 | 92.1 | 81.4 | 69.4 | 56.8 | 44.0 | 31.9 | 22.9 | | |
| BMW-13-027 | 48.9 | 27-Aug-13 | 28-Aug-13 | 29-Aug-13 | ML | MF | 100.0 | 100.0 | 95.7 | 92.7 | 85.7 | 81.2 | 75.4 | 72.0 | 63.9 | 55.7 | 47.2 | 38.4 | 29.1 | 20.5 | 14.5 | 100.0 | 88.8 | 77.4 | 65.6 | 53.3 | 40.4 | 28.5 | 20.1 | | |
| BMW-13-028 | 47.6 | 28-Aug-13 | 29-Aug-13 | 29-Aug-13 | SP | MF | 100.0 | 100.0 | 97.9 | 94.4 | 90.0 | 83.8 | 76.8 | 74.9 | 66.3 | 57.6 | 48.2 | 38.9 | 28.8 | 19.2 | 12.3 | 100.0 | 88.5 | 76.9 | 64.4 | 51.9 | 38.5 | 25.6 | 16.4 | | |
| BMW-13-029 | 42.8 | 28-Aug-13 | 29-Aug-13 | 29-Aug-13 | SP | MF | 100.0 | 100.0 | 100.0 | 97.3 | 90.4 | 84.4 | 76.4 | 73.3 | 62.9 | 53.1 | 43.7 | 35.1 | 26.7 | 19.1 | 13.6 | 100.0 | 85.8 | 72.4 | 59.6 | 47.9 | 36.4 | 26.1 | 18.6 | | |
| BMW-13-031 | 47.8 | 29-Aug-13 | 30-Aug-13 | 3-Sep-13 | MH/CO | MF | 100.0 | 100.0 | 98.4 | 92.8 | 83.5 | 74.1 | 64.6 | 58.7 | 46.6 | 37.9 | 30.4 | 23.7 | 17.6 | 12.5 | 8.8 | 100.0 | 79.4 | 64.6 | 51.8 | 40.4 | 30.0 | 21.3 | 15.0 | | |
| BMW-13-032 | 43.6 | 29-Aug-13 | 30-Aug-13 | 3-Sep-13 | MH/CO | MF | 100.0 | 100.0 | 99.3 | 94.9 | 90.0 | 84.1 | 76.7 | 72.7 | 63.5 | 55.1 | 46.8 | 38.9 | 31.0 | 23.9 | 18.3 | 100.0 | 87.3 | 75.8 | 64.4 | 53.5 | 42.6 | 32.9 | 25.2 | | |
| BMW-13-033 | 50.4 | 29-Aug-13 | 30-Aug-13 | 3-Sep-13 | MH/CO | MF | 100.0 | 100.0 | 99.2 | 95.8 | 91.8 | 86.6 | 82.1 | 80.1 | 73.1 | 65.5 | 56.8 | 47.2 | 37.2 | 27.7 | 20.4 | 100.0 | 91.3 | 81.8 | 70.9 | 58.9 | 46.4 | 34.6 | 25.5 | | |
| BMW-13-034 | 44.5 | 29-Aug-13 | 30-Aug-13 | 3-Sep-13 | MH/CO | MF | 100.0 | 100.0 | 99.1 | 95.4 | 90.5 | 84.5 | 78.0 | 74.5 | 65.9 | 57.7 | 48.1 | 38.3 | 28.4 | 19.4 | 12.7 | 100.0 | 88.5 | 77.4 | 64.6 | 51.4 | 38.1 | 26.0 | 17.0 | | |
| BMW-13-035 | 46.9 | 29-Aug-13 | 30-Aug-13 | 3-Sep-13 | MH/CO | MF | 100.0 | 97.8 | 95.9 | 91.5 | 87.3 | 80.8 | 75.4 | 70.9 | 61.6 | 53.3 | 44.8 | 36.0 | 26.6 | 18.2 | 12.3 | 100.0 | 86.9 | 75.2 | 63.2 | 50.8 | 37.5 | 25.7 | 17.3 | | |
| BMW-13-038 | 45.2 | 3-Sep-13 | 4-Sep-13 | 5-Sep-13 | MH/CO | MF | 100.0 | 100.0 | 95.8 | 91.0 | 88.2 | 83.7 | 79.7 | 77.1 | 70.9 | 64.6 | 56.7 | 46.9 | 35.0 | 22.8 | 14.6 | 100.0 | 92.0 | 83.8 | 73.5 | 60.8 | 45.4 | 29.6 | 18.9 | | |
| BMW-13-039 | 36.3 | 3-Sep-13 | 4-Sep-13 | 5-Sep-13 | MH/CO | MF | 100.0 | 100.0 | 100.0 | 98.6 | 96.0 | 90.4 | 85.2 | 81.9 | 74.6 | 67.8 | 59.7 | 50.8 | 41.0 | 31.4 | 23.9 | 100.0 | 91.1 | 82.8 | 72.9 | 62.0 | 50.1 | 38.3 | 29.2 | | |
| BMW-13-040 | 45.7 | 3-Sep-13 | 4-Sep-13 | 5-Sep-13 | MH/CO | MF | 100.0 | 100.0 | 99.2 | 95.1 | 88.0 | 80.4 | 77.3 | 70.9 | 56.3 | 45.7 | 34.6 | 26.8 | 20.8 | 15.7 | 11.8 | 100.0 | 79.4 | 64.5 | 48.8 | 37.8 | 29.3 | 22.1 | 16.6 | | |
| BMW-13-041 | 43.7 | 3-Sep-13 | 4-Sep-13 | 5-Sep-13 | MH/CO | MF | 100.0 | 100.0 | 97.6 | 93.1 | 86.5 | 79.4 | 70.4 | 65.3 | 51.6 | 41.0 | 32.4 | 26.3 | 21.3 | 17.3 | 14.2 | 100.0 | 79.0 | 62.8 | 49.6 | 40.3 | 32.6 | 26.5 | 21.7 | | |

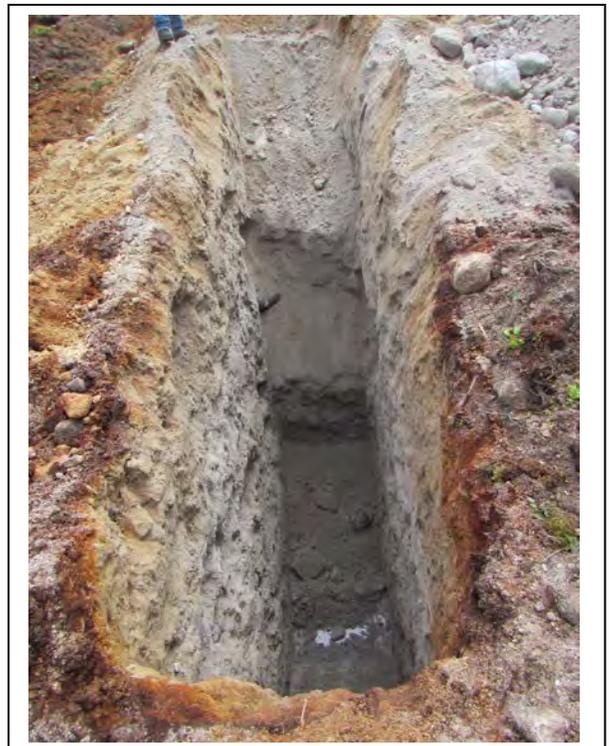
Table A1: Sieve Analysis Results

TEST PIT: BMW-13-001
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 348,203.32mE (UTM Z22 - NAD 83)
NORTHING: 5,254,854.35mN (UTM Z22 - NAD 83)
ELEVATION: 186.32m
DATE: July 30, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 0.8 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <1.6m)
- 0.8 to 5.8 meters: 90% granite derived sand/gravel with 10% cobble & boulders @ <0.35 m
- hole stopped at 5.8 m because of water, resource continues

Top Photo: sample
Middle Photo: material
Bottom Photo: pit



TEST PIT: BMW-13-002
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 348,191.48mE (UTM Z22 - NAD 83)
NORTHING: 5,254,950.01mN (UTM Z22 - NAD 83)
ELEVATION: 190.99m
DATE: July 30, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 0.5 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <0.8m)
- 0.5 to 4.8 meters: 90% granite derived sand/gravel with 10% cobble & boulders @ <0.60 m
- hole stopped at 4.8 m because of significant water

Top Photo: sample
Middle Photo: material
Bottom Photo: pit



TEST PIT: BMW-13-003
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 348,192.48mE (UTM Z22 - NAD 83)
NORTHING: 5,255,019.54mN (UTM Z22 - NAD 83)
ELEVATION: 193.19m
DATE: July 30, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 0.5 meters: grubbing (organics and/or topsoil and/or peat and/or boulders)
- 0.5 to 4.5 meters: 80% granite derived sand/gravel with 20% cobble & boulders @ <1.00 m
- hole stopped at 4.5 m because of water, resource continues

Top Photo: sample
Middle Photo: material
Bottom Photo: pit



TEST PIT: BMW-13-004
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 348,094.22mE (UTM Z22 - NAD 83)
NORTHING: 5,254,947.55mN (UTM Z22 - NAD 83)
ELEVATION: 200.39m
DATE: July 31, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 0.8 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <2.5 m)
- 0.8 to 4.6 meters: 95% granite derived sand/gravel with 5% cobble & boulders @ <0.20 m
- hole stopped at 4.6 m because of water, extremely saturated material; note: sand/gravel is possibly intermediate in composition

Top Photo: sample
Middle Photo: material
Bottom Photo: pit



TEST PIT: BMW-13-005
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 348,085.43mE (UTM Z22 - NAD 83)
NORTHING: 5,255,036.20mN (UTM Z22 - NAD 83)
ELEVATION: 207.64m
DATE: July 31, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.0 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <1.0 m)
- 1.0 to 4.8 meters: 95% granite derived sand/gravel with 5% cobble & boulders @ <0.30 m
- hole stopped at 4.8 m because of bedrock

Top Photo: sample
Middle Photo: material
Bottom Photo: pit



TEST PIT: BMW-13-006
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 348,003.64mE (UTM Z22 - NAD 83)
NORTHING: 5,255,042.76mN (UTM Z22 - NAD 83)
ELEVATION: 213.08m
DATE: July 31, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.0 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <2.0 m)
- 1.0 to 2.0 meters: sand/gravel is intermediate in composition
- hole stopped at 2.0 m because of bedrock, very dirty sand, no sample

Top Photo: pit ID
Middle Photo: material
Bottom Photo: pit

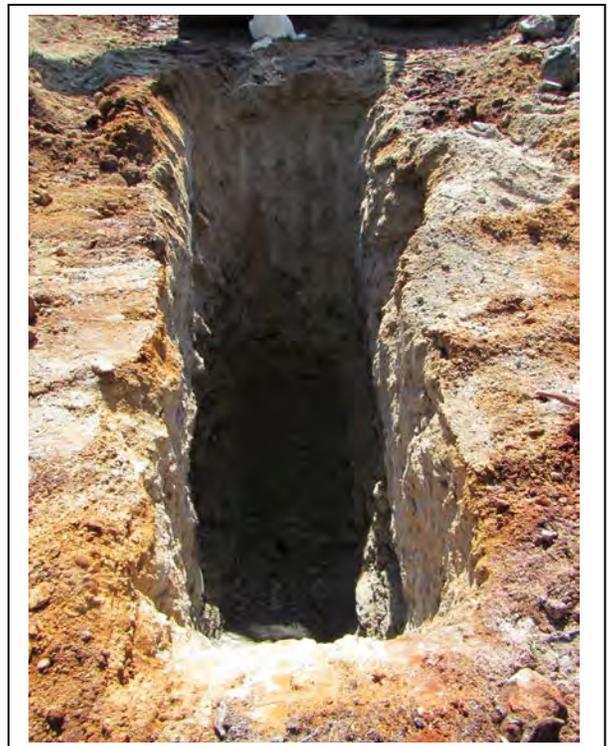


TEST PIT: BMW-13-007
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 347,998.05mE (UTM Z22 - NAD 83)
NORTHING: 5,254,954.08mN (UTM Z22 - NAD 83)
ELEVATION: 207.49m
DATE: August 1, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 0.5 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <1.5 m)
- 0.5 to 4.5 meters: 80% mafic derived sand/gravel with 20% cobble & boulders @ <1.0 m
- hole stopped at 4.5 m because of water, resource continues but bedrock is close

Top Photo: sample
Middle Photo: material
Bottom Photo: pit



TEST PIT: BMW-13-008
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 347,895.28mE (UTM Z22 - NAD 83)
NORTHING: 5,254,960.58mN (UTM Z22 - NAD 83)
ELEVATION: 207.58m
DATE: August 1, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.0 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <2.0 m)
- 1.0 to 1.3 meters: material is mafic in composition
- hole stopped at 1.3 m because of bedrock, no sample

Top Photo: pit ID
Middle Photo: material
Bottom Photo: pit



TEST PIT: BMW-13-009
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 347,805.58mE (UTM Z22 - NAD 83)
NORTHING: 5,254,943.10mN (UTM Z22 - NAD 83)
ELEVATION: 187.64m
DATE: August 1, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 0.5 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <2.0 m)
- 0.5 to 1.5 meters: material is intermediate in composition
- hole stopped at 1.5 m because of bedrock, sand/gravel is dirty and saturated, no sample

Top Photo: pit ID
Middle Photo: material
Bottom Photo: pit

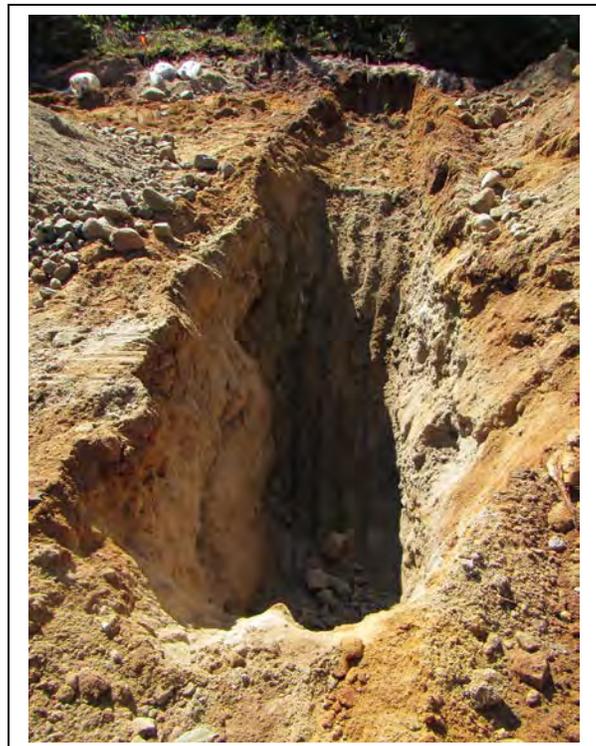


TEST PIT: BMW-13-010
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 347,711.39mE (UTM Z22 - NAD 83)
NORTHING: 5,255,004.99mN (UTM Z22 - NAD 83)
ELEVATION: 175.27m
DATE: August 1, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.0 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <1.0 m)
- 1.0 to 3.0 meters: 90% granite derived sand/gravel with 10% cobble & boulders @ <0.3 m
- hole stopped at 3.0 m because of bedrock

Top Photo: sample
Middle Photo: material
Bottom Photo: pit

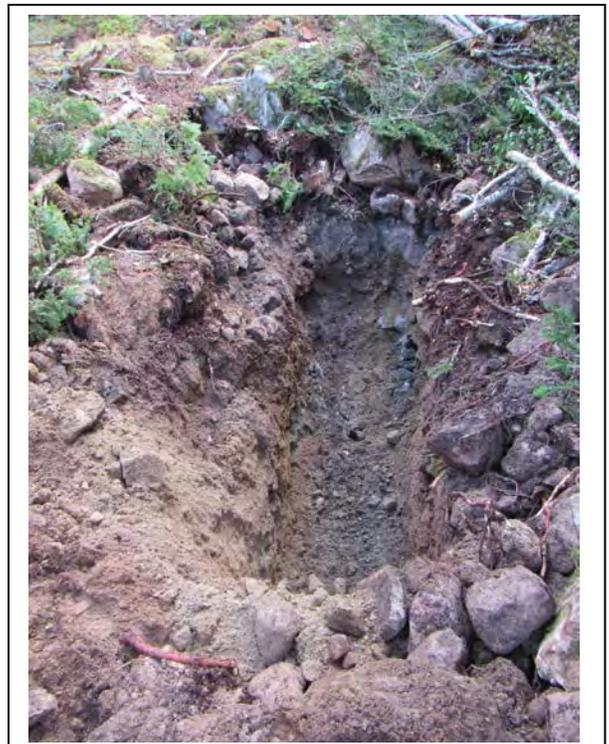


TEST PIT: BMW-13-011
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 347,793.58mE (UTM Z22 - NAD 83)
NORTHING: 5,255,031.36mN (UTM Z22 - NAD 83)
ELEVATION: 183.10m
DATE: August 2, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.5 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <2.0 m)
- 1.5 to 3.0 meters: granite derived material
- hole stopped at 3.0 m because of bedrock, very saturated sand/gravel, no sample

Top Photo: pit ID
Middle Photo: material
Bottom Photo: pit



TEST PIT: BMW-13-012A
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 348,097.08mE (UTM Z22 - NAD 83)
NORTHING: 5,254,843.90mN (UTM Z22 - NAD 83)
ELEVATION: 194.04m
DATE: August 19, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.0 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <1.5 m)
- 1.0 to 6.0 meters: 95% granite derived sand/gravel with 5% cobble & boulders @ <0.35 m
- hole benched down, see BMW-13-012B log

Top Photo: sample
Middle Photo: material
Bottom Photo: pit



TEST PIT: BMW-13-012B
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 348,097.08mE (UTM Z22 - NAD 83)
NORTHING: 5,254,843.90mN (UTM Z22 - NAD 83)
ELEVATION: 194.04m
DATE: August 19, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- hole benched down from BMW-13-012A (no grubbing)
- 6.0 to 8.5 meters: 90% granite derived sand/gravel with 10% cobble & boulders @ <1.0 m
- hole stopped because of water, slightly saturated material

Top Photo: sample
Middle Photo: material
Bottom Photo: pit



TEST PIT: BMW-13-013
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 348,003.73mE (UTM Z22 - NAD 83)
NORTHING: 5,254,850.64mN (UTM Z22 - NAD 83)
ELEVATION: 200.30m
DATE: August 20, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.5 meters: grubbing (organics and/or topsoil and/or peat)
- 1.5 to 6.5 meters: 90% granite derived sand/gravel with 10% cobble & boulders @ <0.70 m
- hole stopped at 6.5 m because of water, resource possibly continues

Top Photo: sample
Middle Photo: material
Bottom Photo: pit



TEST PIT: BMW-13-014
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 347,899.46mE (UTM Z22 - NAD 83)
NORTHING: 5,254,846.36mN (UTM Z22 - NAD 83)
ELEVATION: 199.65m
DATE: August 21, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 0.5 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <4.0 m)
- 0.5 to 2.5 meters: 95% granite derived sand/gravel with 5% cobble & boulders @ <0.20 m
- hole stopped at 2.5 m because of bedrock

Top Photo: sample
Middle Photo: material
Bottom Photo: pit



TEST PIT: BMW-13-015
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 347,808.07mE (UTM Z22 - NAD 83)
NORTHING: 5,254,851.38mN (UTM Z22 - NAD 83)
ELEVATION: 190.16m
DATE: August 21, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.0 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <2.0 m)
- 1.0 to 1.5 meters: sand/gravel composition unknown
- hole stopped at 1.5 m because of bedrock, dirty sand/gravel, no sample

Top Photo: sample
Middle Photo: material
Bottom Photo: pit



TEST PIT: BMW-13-016
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 347,673.29mE (UTM Z22 - NAD 83)
NORTHING: 5,254,902.04mN (UTM Z22 - NAD 83)
ELEVATION: 187.88m
DATE: August 21, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 0.2 meters: grubbing (organics and/or topsoil and/or peat)

- hole stopped at 0.2 m because of bedrock, no sand or gravel

Top Photo: pit ID
Bottom Photo: pit



TEST PIT: BMW-13-017
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 347,609.10mE (UTM Z22 - NAD 83)
NORTHING: 5,254,846.32mN (UTM Z22 - NAD 83)
ELEVATION: 196.84m
DATE: August 21, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 0.5 meters: grubbing (organics and/or topsoil and/or peat)

- hole stopped at 0.5 m because of bedrock, no sand or gravel

Top Photo: pit ID
Bottom Photo: pit

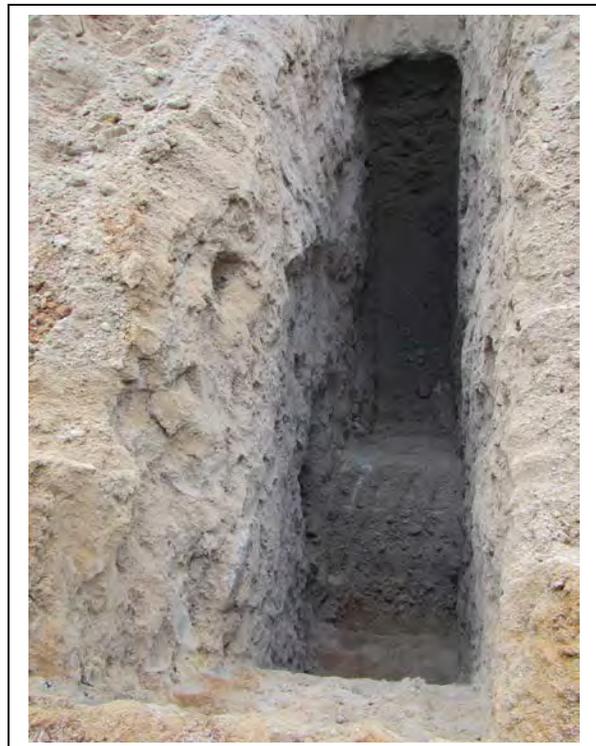


TEST PIT: BMW-13-018
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 348,197.22mE (UTM Z22 - NAD 83)
NORTHING: 5,254,752.07mN (UTM Z22 - NAD 83)
ELEVATION: 183.35m
DATE: August 22, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.2 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <1.0m)
- 1.2 to 6.2 meters: 90% granite derived sand/gravel with 10% cobble & boulders @ <0.70 m
- hole stopped at 6.2 m because of water, also possible bedrock or a large boulder

Top Photo: sample
Middle Photo: material
Bottom Photo: pit

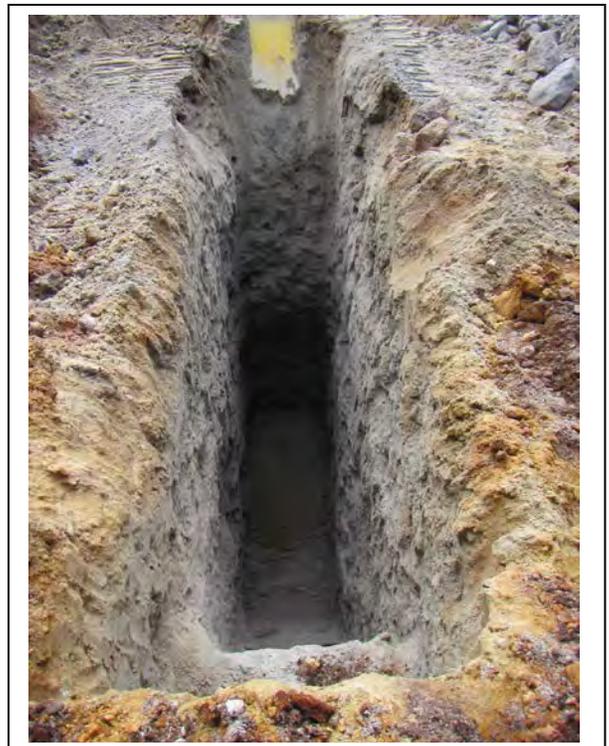


TEST PIT: BMW-13-019A
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 348,099.45mE (UTM Z22 - NAD 83)
NORTHING: 5,254,757.08mN (UTM Z22 - NAD 83)
ELEVATION: 187.78m
DATE: August 22, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.5 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <1.5 m)
- 1.5 to 6.5 meters: 90% granite to intermediate derived sand/gravel with 10% cobble & boulders @ <0.30 m
- hole benched down, see BMW-13-019B log

Top Photo: sample
Middle Photo: material
Bottom Photo: pit

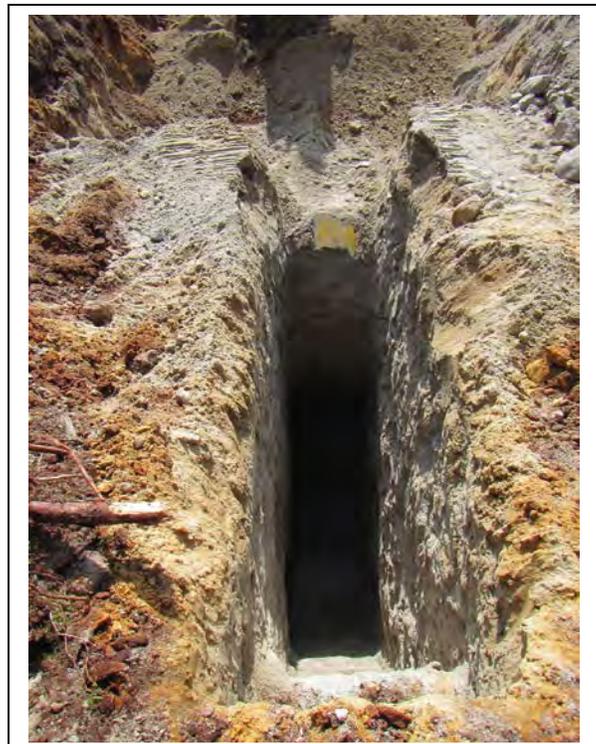


TEST PIT: BMW-13-019B
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 348,099.45mE (UTM Z22 - NAD 83)
NORTHING: 5,254,757.08mN (UTM Z22 - NAD 83)
ELEVATION: 187.78m
DATE: August 22, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- hole benched down from BMW-13-019A (no grubbing)
- 6.5 to 8.0 meters: 90% granite to intermediate derived sand/gravel with 10% cobble & boulders @ <0.3 m
- hole stopped because of significant water, end of resource

Top Photo: sample
Middle Photo: material
Bottom Photo: pit

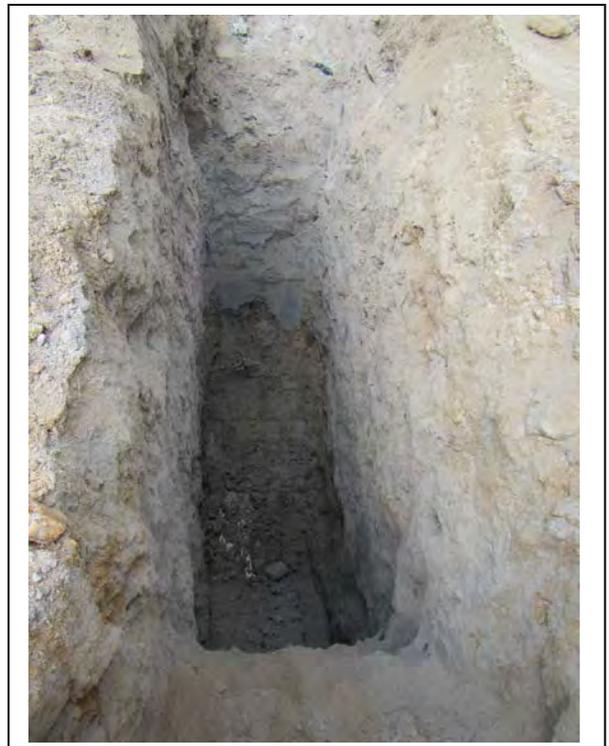


TEST PIT: BMW-13-020
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 348,006.47mE (UTM Z22 - NAD 83)
NORTHING: 5,254,755.34mN (UTM Z22 - NAD 83)
ELEVATION: 192.95m
DATE: August 22, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.0 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <2.0m)
- 1.0 to 5.5 meters: 85% granite derived sand/gravel with 15% cobble & boulders @ <1.0 m
- hole stopped at 5.5 m because of water and leached layer at bottom

Top Photo: sample
Middle Photo: material
Bottom Photo: pit



TEST PIT: BMW-13-021
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 347,912.14mE (UTM Z22 - NAD 83)
NORTHING: 5,254,758.01mN (UTM Z22 - NAD 83)
ELEVATION: 197.59m
DATE: August 22, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.0 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <2.0 m)

- hole stopped at 1.0 m because of bedrock, no sand or gravel, also very large boulders in general area @ <4.0 m

Top Photo: pit ID
Bottom Photo: pit

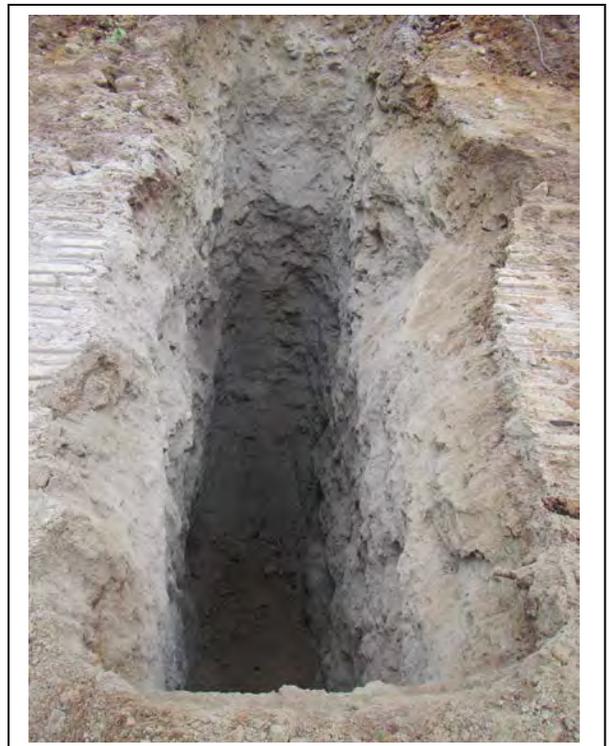


TEST PIT: BMW-13-022A
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 348,201.09mE (UTM Z22 - NAD 83)
NORTHING: 5,254,665.16mN (UTM Z22 - NAD 83)
ELEVATION: 176.65m
DATE: August 23, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.0 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <2.0 m)
- 1.0 to 6.0 meters: 80% granite derived sand/gravel with 20% cobble & boulders @ <1.0 m
- hole benched down, see BMW-13-022B log

Top Photo: sample
Middle Photo: material
Bottom Photo: pit



TEST PIT: BMW-13-022B
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 348,201.09mE (UTM Z22 - NAD 83)
NORTHING: 5,254,665.16mN (UTM Z22 - NAD 83)
ELEVATION: 176.65m
DATE: August 26, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- hole benched down from BMW-13-022A (no grubbing)
- 6.0 to 10.5 meters: 85% granite derived sand/gravel with 15% cobble & boulders @ <0.4 m
- hole stopped because of significant water

Top Photo: sample
Middle Photo: material
Bottom Photo: pit

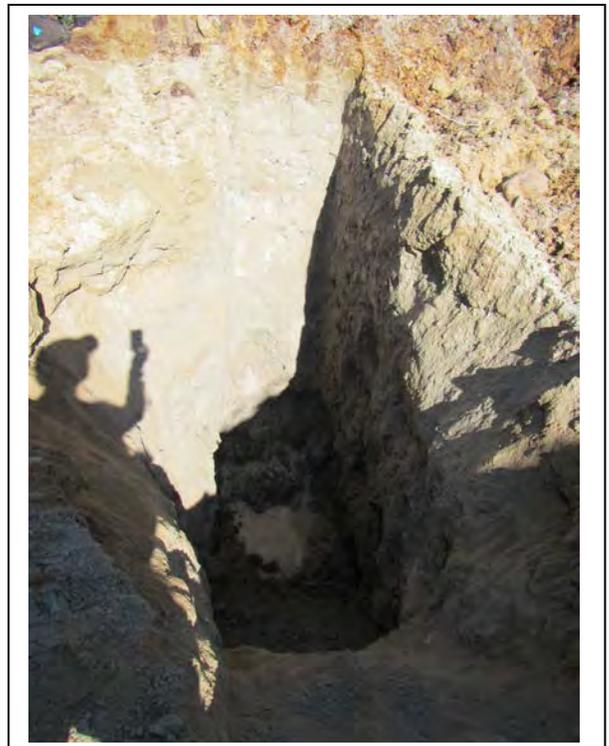


TEST PIT: BMW-13-023
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 348,009.52mE (UTM Z22 - NAD 83)
NORTHING: 5,254,655.38mN (UTM Z22 - NAD 83)
ELEVATION: 178.95m
DATE: August 27, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.0 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <1.0m)
- 1.0 to 4.2 meters: 80% granite derived sand/gravel with 20% cobble & boulders @ <0.8 m
- hole stopped at 4.2 m because of significant water and leached layer at bottom

Top Photo: sample
Middle Photo: material
Bottom Photo: pit

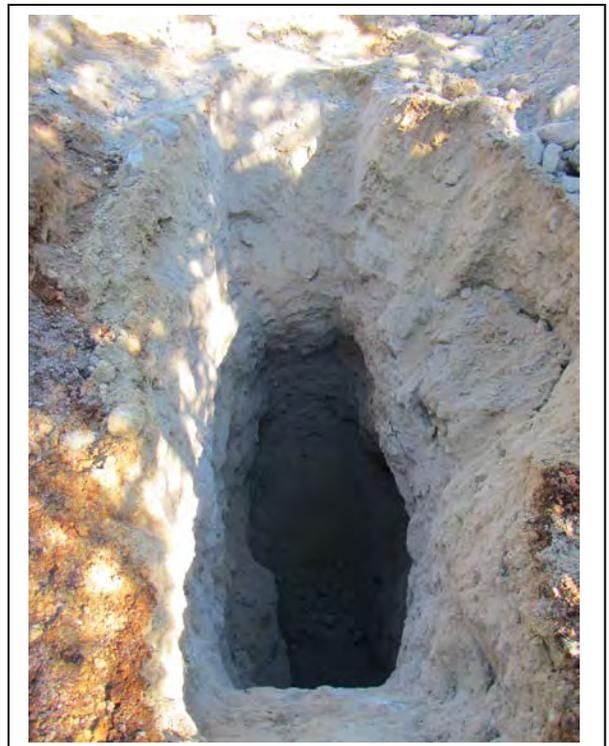


TEST PIT: BMW-13-024A
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 347,999.49mE (UTM Z22 - NAD 83)
NORTHING: 5,254,648.24mN (UTM Z22 - NAD 83)
ELEVATION: 184.59m
DATE: August 26, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.0 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <1.0 m)
- 1.0 to 6.0 meters: 85% granite to intermediate derived sand/gravel with 15% cobble & boulders @ <1.0 m
- hole benched down, see BMW-13-024B log

Top Photo: sample
Middle Photo: material
Bottom Photo: pit

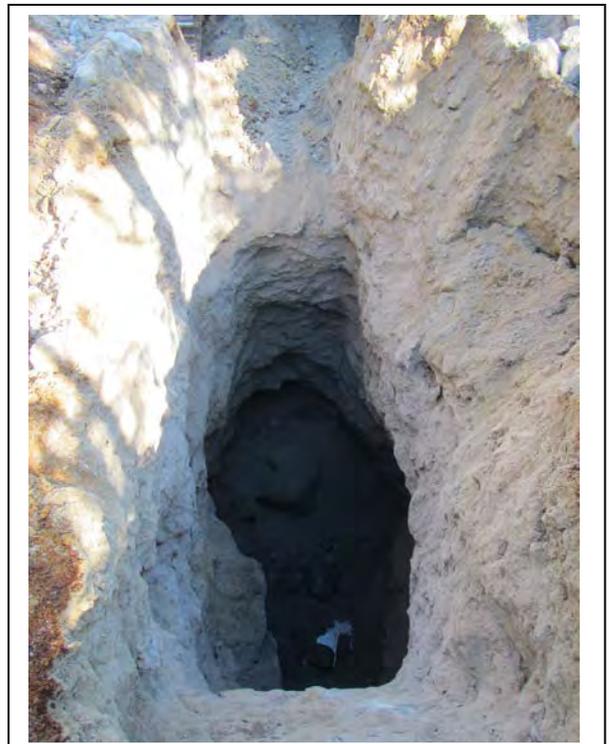


TEST PIT: BMW-13-024B
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 347,999.49mE (UTM Z22 - NAD 83)
NORTHING: 5,254,648.24mN (UTM Z22 - NAD 83)
ELEVATION: 184.59m
DATE: August 26, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- hole benched down from BMW-13-024A (no grubbing)
- 6.0 to 7.5 meters: 85% granite to intermediate derived sand/gravel with 15% cobble & boulders @ <1.0 m
- hole stopped because of water, saturated material

Top Photo: sample
Middle Photo: material
Bottom Photo: pit



TEST PIT: BMW-13-025
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 347,899.16mE (UTM Z22 - NAD 83)
NORTHING: 5,254,651.65mN (UTM Z22 - NAD 83)
ELEVATION: 196.58m
DATE: August 27, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.0 meters: grubbing (organics and/or topsoil and/or peat)

- hole stopped at 1.0 m because of bedrock, no sand or gravel

Top Photo: pit ID
Middle Photo: material
Bottom Photo: pit

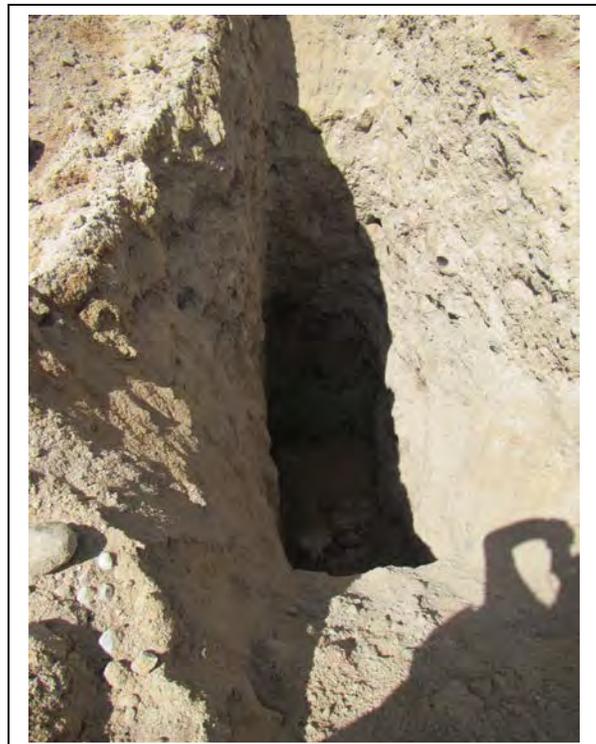


TEST PIT: BMW-13-026
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 348,004.41mE (UTM Z22 - NAD 83)
NORTHING: 5,254,555.67mN (UTM Z22 - NAD 83)
ELEVATION: 176.21m
DATE: August 27, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.0 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <2.0m)
- 1.0 to 5.0 meters: 75% granite derived sand/gravel with 25% cobble & boulders @ <1.5 m
- hole stopped at 5.0 m because of water and leached layer at bottom

Top Photo: sample
Middle Photo: material
Bottom Photo: pit

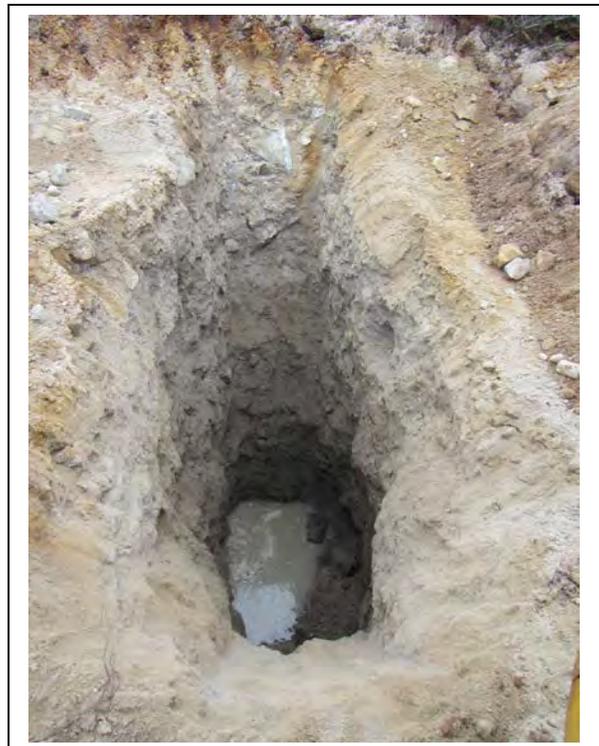


TEST PIT: BMW-13-027
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 347,910.41mE (UTM Z22 - NAD 83)
NORTHING: 5,254,560.37mN (UTM Z22 - NAD 83)
ELEVATION: 186.12m
DATE: August 27, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.0 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <0.4m)
- 1.0 to 5.5 meters: 80% intermediate derived sand/gravel with 20% cobble & boulders @ <1.5 m
- hole stopped at 5.5 m because of significant water and mafic derived sand/gravel at the bottom

Top Photo: sample
Middle Photo: material
Bottom Photo: pit

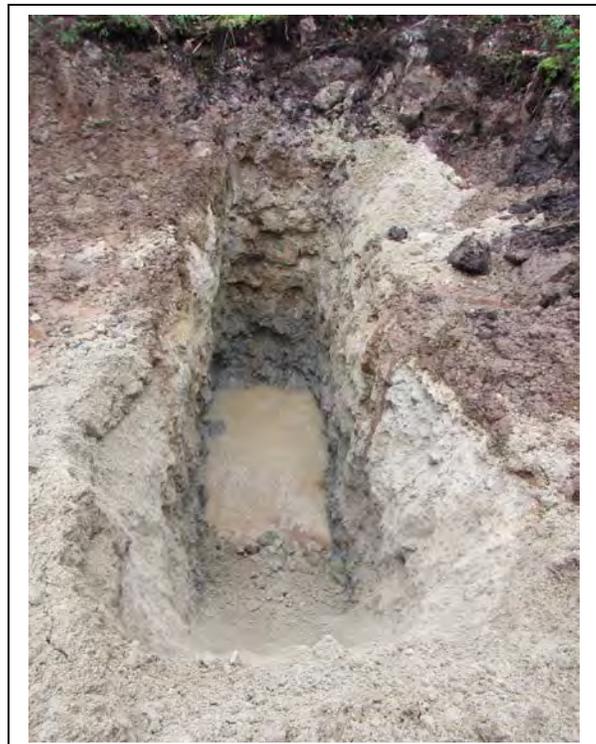


TEST PIT: BMW-13-028
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 347,791.35mE (UTM Z22 - NAD 83)
NORTHING: 5,254,484.24mN (UTM Z22 - NAD 83)
ELEVATION: 190.35 m
DATE: August 28, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.5 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <0.6 m)
- 1.5 to 4.0 meters: 85% granite and mafic derived sand/gravel with 15% cobble & boulders @ <0.4 m
- hole stopped at 4.0 m because of very significant water; not mineable

Top Photo: sample
Middle Photo: material
Bottom Photo: pit

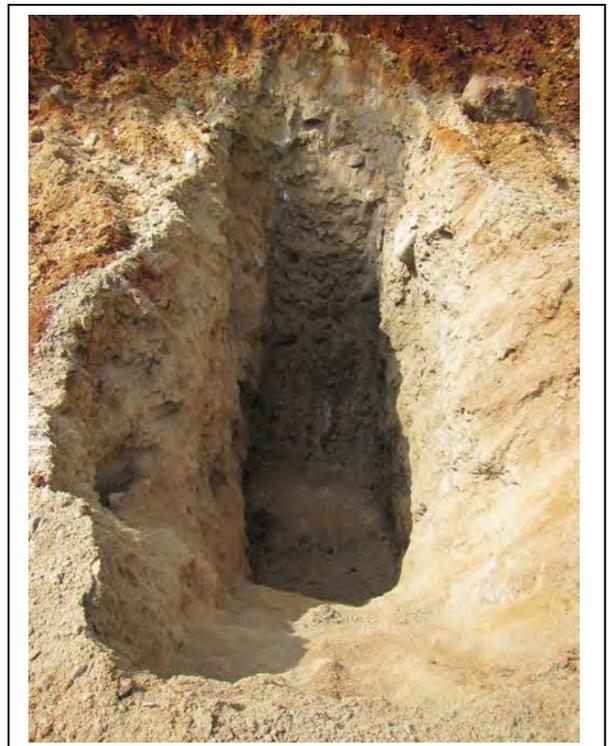


TEST PIT: BMW-13-029
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 347,836.90mE (UTM Z22 - NAD 83)
NORTHING: 5,254,384.76mN (UTM Z22 - NAD 83)
ELEVATION: 185.87 m
DATE: August 28, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.0 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <0.3 m)
- 1.0 to 3.5 meters: 85% granite and mafic derived sand/gravel with 15% cobble & boulders @ <0.8 m
- hole stopped at 3.5 m because of water and bedrock; not mineable

Top Photo: sample
Middle Photo: material
Bottom Photo: pit



TEST PIT: BMW-13-030
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 348,198.26mE (UTM Z22 - NAD 83)
NORTHING: 5,254,578.83mN (UTM Z22 - NAD 83)
ELEVATION: 160.63 m
DATE: August 28, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.0 meters: grubbing (organics and/or topsoil and/or peat and boulders @ >2.0 m)
- 1.0 to 2.0 meters: 85% granite derived sand/gravel with 15% cobble & boulders @ <0.8 m
- hole stopped at 2.0 m because of water and possibly bedrock; no material

Top Photo: sample
Middle Photo: material
Bottom Photo: pit

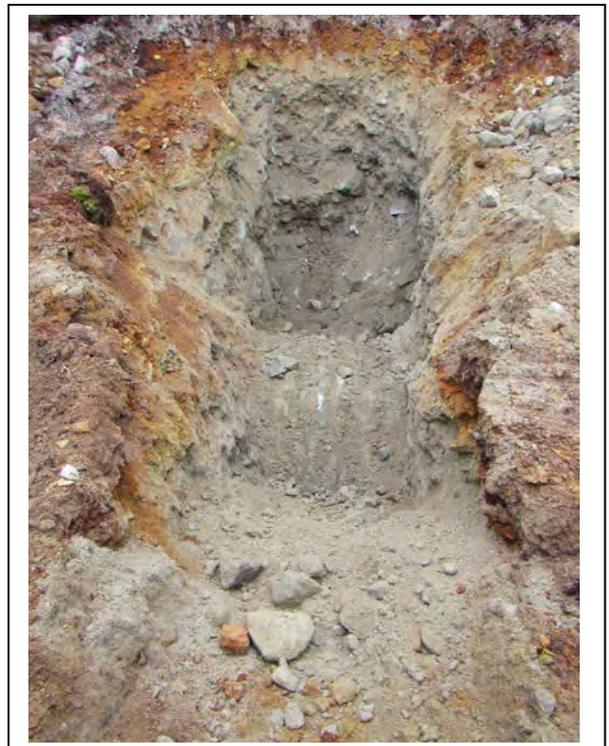


TEST PIT: BMW-13-031
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 348,110.11mE (UTM Z22 - NAD 83)
NORTHING: 5,254,558.51mN (UTM Z22 - NAD 83)
ELEVATION: 165.92 m
DATE: August 29, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.0 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <2.0 m)
- 1.0 to 3.0 meters: 75% granite derived sand/gravel with 25% cobble & boulders @ <1.5 m
- hole stopped at 3.0 m because of large boulders or possibly bedrock; sand/gravel at bottom of pit is damp

Top Photo: sample
Middle Photo: material
Bottom Photo: pit



TEST PIT: BMW-13-032
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 348,158.55mE (UTM Z22 - NAD 83)
NORTHING: 5,254,428.18mN (UTM Z22 - NAD 83)
ELEVATION: 151.86 m
DATE: August 29, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 0.5 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <2.0 m)
- 0.5 to 3.0 meters: 70% granite derived sand/gravel with 30% cobble & boulders @ <1.5 m
- hole stopped at 3.0 m because of water; resource possibly continues but boulders

Top Photo: sample
Middle Photo: material
Bottom Photo: pit

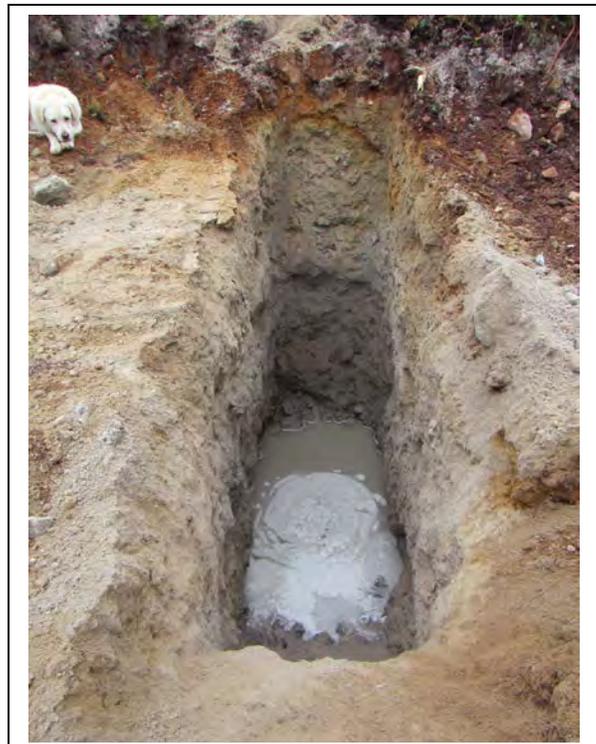


TEST PIT: BMW-13-033
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 348,095.34mE (UTM Z22 - NAD 83)
NORTHING: 5,254,443.18mN (UTM Z22 - NAD 83)
ELEVATION: 161.37 m
DATE: August 29, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.0 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <1.0 m)
- 1.0 to 4.0 meters: 95% granite derived sand/gravel with 5% cobble & boulders @ <0.25 m
- hole stopped at 4.0 m because of water

Top Photo: sample
Middle Photo: material
Bottom Photo: pit



TEST PIT: BMW-13-034
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 347,996.50mE (UTM Z22 - NAD 83)
NORTHING: 5,254,417.19mN (UTM Z22 - NAD 83)
ELEVATION: 165.74 m
DATE: August 29, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.0 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <2.0 m)
- 1.0 to 2.5 meters: 90% granite derived sand/gravel with 10% cobble & boulders @ <0.40 m
- hole stopped at 2.5 m because of water; leached layer at bottom

Top Photo: sample
Middle Photo: material
Bottom Photo: pit



TEST PIT: BMW-13-035
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 347,890.27mE (UTM Z22 - NAD 83)
NORTHING: 5,254,424.78mN (UTM Z22 - NAD 83)
ELEVATION: 177.56 m
DATE: August 29, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.0 meters: grubbing (organics and/or topsoil and/or peat)
- 1.0 to 2.7 meters: 90% intermediate derived sand/gravel with 10% cobble & boulders @ <0.60 m
- hole stopped at 2.7 m because of extremely significant water; not mineable

Top Photo: sample
Middle Photo: material
Bottom Photo: pit



TEST PIT: BMW-13-036
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 347,889.53mE (UTM Z22 - NAD 83)
NORTHING: 5,254,370.62mN (UTM Z22 - NAD 83)
ELEVATION: 177.44 m
DATE: August 30, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.5 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <1.5 m)
- 1.5 to 3.5 meters: 90% intermediate derived sand/gravel with 10% cobble & boulders @ <0.60 m
- hole stopped at 3.5 m because of significant water; saturated and dirty material

Top Photo: sample
Middle Photo: material
Bottom Photo: pit

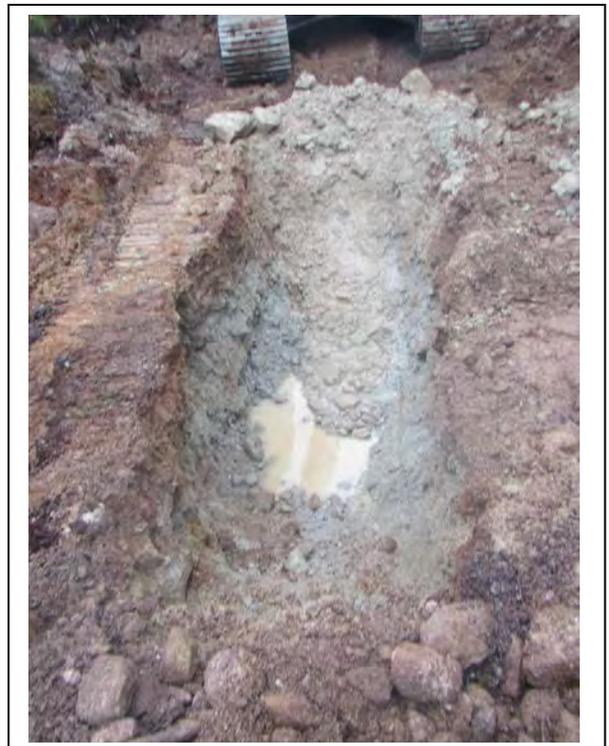


TEST PIT: BMW-13-037
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 347,958.04mE (UTM Z22 - NAD 83)
NORTHING: 5,254,356.12mN (UTM Z22 - NAD 83)
ELEVATION: 172.65 m
DATE: August 30, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.0 meters: grubbing (organics and/or topsoil and/or peat and boulders @ >2.0 m)
- 1.0 to 2.0 meters: 90% mafic (?) derived sand/gravel with 10% cobble & boulders @ <0.60 m
- hole stopped at 2.0 m because of water; not mineable

Top Photo: sample
Middle Photo: material
Bottom Photo: pit

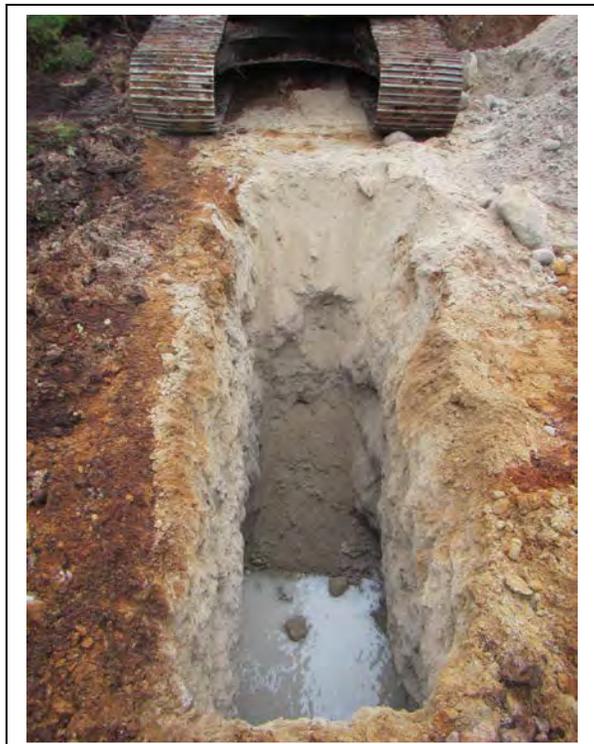


TEST PIT: BMW-13-038
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 348,199.10mE (UTM Z22 - NAD 83)
NORTHING: 5,254,609.45mN (UTM Z22 - NAD 83)
ELEVATION: 165.58 m
DATE: September 3, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.5 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <2.0 m)
- 1.5 to 5.0 meters: 90% granite derived sand/gravel with 10% cobble & boulders @ <0.40 m
- hole stopped at 5.0 m because of significant water

Top Photo: sample
Middle Photo: material
Bottom Photo: pit



TEST PIT: BMW-13-039
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 348,058.01mE (UTM Z22 - NAD 83)
NORTHING: 5,254,654.06mN (UTM Z22 - NAD 83)
ELEVATION: 181.46 m
DATE: September 3, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.0 meters: grubbing (organics and/or topsoil and/or peat)
- 1.0 to 3.0 meters: very dirty and extremely saturated material
- hole stopped at 3.0 m because of water

Top Photo: sample
Middle Photo: material
Bottom Photo: pit

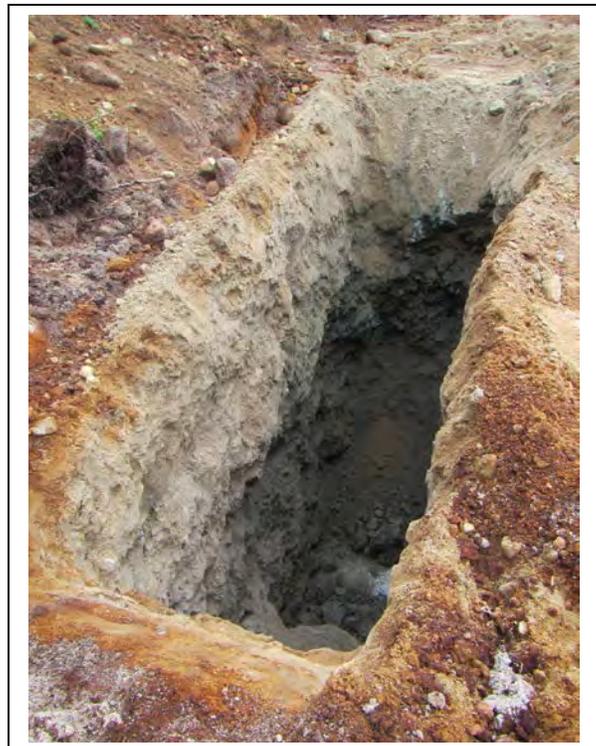


TEST PIT: BMW-13-040
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 347,955.93mE (UTM Z22 - NAD 83)
NORTHING: 5,254,666.16mN (UTM Z22 - NAD 83)
ELEVATION: 190.43 m
DATE: September 3, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.0 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <2.0 m)
- 1.0 to 5.5 meters: 80% mafic derived sand/gravel with 20% cobble & boulders @ <0.40 m
- hole stopped at 5.5 m because of significant water; some granite derived material in top of pit

Top Photo: sample
Middle Photo: material
Bottom Photo: pit

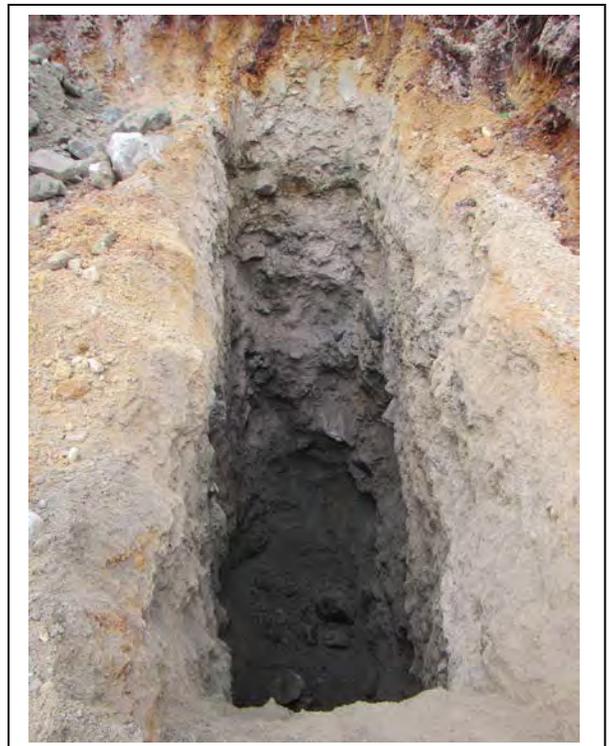


TEST PIT: BMW-13-041
LOCATION: Black Mountain West
LICENCE #: 705:1438
EASTING: 347,948.07mE (UTM Z22 - NAD 83)
NORTHING: 5,254,607.90mN (UTM Z22 - NAD 83)
ELEVATION: 188.04 m
DATE: September 3, 2013
LOGGED BY: B. Dyke

DESCRIPTION:

- 0.0 to 1.5 meters: grubbing (organics and/or topsoil and/or peat and boulders @ <1.0 m)
- 1.5 to 6.5 meters: 80% mafic to intermediate derived sand/gravel with 20% cobble & boulders @ <0.80 m
- hole stopped at 6.5 m because of possible bedrock; bottom of pit is damp

Top Photo: sample
Middle Photo: material
Bottom Photo: pit



APPENDIX B

CORRESPONDANCE REGARDING LAND REZONING & A PRELIMINARY APPLICATION TO DEVELOPE LAND

- Letter to Mr. Dan Crummell, Minister of Municipal and Intergovernmental Affairs
- Letter to Mr. Stan Blackmore, Regional Support Supervisor, Service NL



July 18, 2014

**Honorable Mr. Dan Crummell
Minister, Department of Municipal and Intergovernmental Affairs
Government of Newfoundland & Labrador**

Re: Application for Land Rezoning to Permit Quarry Development

Dear Mr. Crummell:

Please accept this letter as a formal request for land rezoning in the Foxtrap area on the Avalon Peninsula. This application is being made under Newcrete Investments Limited Partnership, by its general partner, Newcrete Investments GP Ltd., parent company of Capital Ready Mix Limited. The rezoning is requested to allow a quarry lease application to proceed. The quarry lease application has been submitted to the Department of Natural Resources, Mineral Lands Division. The area in question is a 25.6 Ha piece of land adjacent to Newcrete's current 89.8 Ha quarry lease number 114308. The accompanying map presents the location of the current quarry lease and the proposed 25.6 Ha quarry lease.

The area identified for rezoning falls under the St. John's Urban Region Regional Plan (Regional Plan) which designates the area as Public Open Space and also further falls under the Butterpot-Witless Bay Line Development Control Regulations (Development Control Regulations) which designates the land as Recreational Open Space. Newcrete, by way of this letter, is making two separate applications, one under the Regional Plan and the other under the Development Control Regulations simultaneously. The applications are for the rezoning of the 25.6 Ha area to Rural in order to permit quarry development.

Several years ago a request was made by Capital Ready Mix Limited to amend the above noted land use zoning. The amendment was granted and Newcrete is currently quarrying in the area.

It is Newcrete's understanding that the land use designation changes fall under the Urban and Rural Planning Act, under the Municipal & Intergovernmental Affairs Department. Therefore application is being made to the Honorable Mr. Dan Crummell as the land use rezoning, is at the discretion of the Minister. A Preliminary Application to Develop Land has been submitted to Service NL but is on hold until the land rezoning is completed.

This application is being made as it is critical to Newcrete to maintain an adequate source of high quality sand and gravel.

Newcrete is in the process of developing a new Environmental Sustainability Policy that outlines "Sustainable Development" which is a globally accepted approach to sustaining economic growth without harming our planet or exhausting its resources, while improving the quality of life for its current and future inhabitants. Some of the first steps in implementing this policy include a forest density, forest cataloging of tree species and a comprehensive restoration plan for the



proposed quarry area which had been completed by B.A. Roberts an independent Registered Professional Forester. Beyond this base line study Mr. William Clarke a volunteer with Forests without Borders and the Ecosystem Manager with the Provincial Department of Natural Resources, Forestry - Ecosystem Management and Mr. Cyril Lundrigan a Research Silviculturist with the Provincial Department of Natural Resources, Forestry - Center for Forest Science & Innovation, are in the process of completing a scientific based tree planting study within the current lease area at Black Mountain to determine which tree species will regenerate the forest in the area most effectively for generations to come. Documentation of this work is included in the quarry lease application submitted to the Department of Natural Resources, Mineral Lands Division.

This rezoning application is a request for a temporary rezoning and when Newcrete is finished removing the high quality sand and gravel from the area and have reclaimed the area then the land would be rezoned back to its original designation as noted above

Thank you for your consideration. If you have any questions or require any additional information please contact me at your convenience. Newcrete looks forward to hearing from the Dept. of Municipal & Intergovernmental Affairs regarding the next step in this rezoning procedure.

Sincerely,

A handwritten signature in black ink, appearing to read 'B. Dyke'.

Brad Dyke, P. Geo.

Aggregate & Mineral Resources, Senior Project Geologist
Pennecon Limited

Direct: 709-782-5027 | Office: 709-782-3404 | Cell: 709-685-1800

Email: brad.dyke@pennecon.com | Web: www.pennecon.com

FIGURE 1: QUARRY LEASE LOCATION MAP





July 18, 2014

Mr. Stan Blackmore
Regional Support Supervisor
Government Service Center
Service NL
Government of Newfoundland & Labrador

Re: Preliminary Application to Develop Land

Dear Mr. Blackmore:

Please find accompanying this letter a completed Preliminary Application to Develop Land form with two figures. Figure 1, showing the general location of the 25.6 Ha quarry lease being applied for and the other, Figure 2, showing the detailed location of the quarry lease boundary including UTM's, elevations, etc.

It is important to note that the land in question is currently zoned Public Open Space under the St. John's Urban Region Regional Plan and zoned Recreational Open Space under the Butterpot-Witless Bay Line Development Control Regulations. Taking this into consideration Newcrete (parent company of Capital Ready Mix Limited) has made an application to the Minister of Municipal and Intergovernmental Affairs to have this land rezoned to Rural to permit quarry development. This would be a temporary rezoning and once reclaimed the land would be converted back to its original zoning designation.

I have also included a report completed by B.A. Roberts a Registered Professional Forester. This report provides a cataloging of the existing tree species present in the proposed quarry area and a restoration plan. Newcrete has also engaged Mr. William Clarke a volunteer with Forests without Borders and the Ecosystem Manager with the Provincial Department of Natural Resources, Forestry - Ecosystem Management and Mr. Cyril Lundrigan a Research Silviculturist with the Provincial Department of Natural Resources, Forestry - Center for Forest Science & Innovation to complete a scientific based tree planting study to ensure the proposed quarry area is restored to its natural state when Newcrete is finished removing the aggregate.

It is my understanding that this application will be noted as received on the above date and **NOT** sent out to referrals until the land rezoning has been completed.

If you have any questions or require any additional information please contact me at your convenience.

Sincerely,

A handwritten signature in black ink, appearing to read 'B. Dyke'.

Brad Dyke, P. Geo.

Aggregate & Mineral Resources, Senior Project Geologist
Pennecon Limited

Direct: 709-782-5027 | Office: 709-782-3404 | Cell: 709-685-1800

Email: brad.dyke@pennecon.com | Web: www.pennecon.com

**Preliminary Application
to Develop Land**

For Office Use Only

File No. _____
People RSN _____
Property RSN _____

This area falls under the St. John's Urban Region Regional Plan 2010

Please place a check in the box to indicate the area for which you are making application

1

| | |
|---|---|
| Protected Road Zoning Regulations <input type="checkbox"/> | Gander River Protected Area Regulations <input type="checkbox"/> |
| Butterpot - Witless Bay Line Environs Development Control Regulations <input checked="" type="checkbox"/> | Marble Mountain Protected Area Land Use Zoning Regulations <input type="checkbox"/> |

Location

2

Location
348, 115m E / 5, 254, 835m N (UTM NAD 83 222)

Give distance from prominent landmark to nearest tenth of kilometre
1.8 km's southwest of the end of Incinerator Road (Eastrop) + the Marine Institute offshore safety & survival training center.

Marking of site (describe)
No physical markings have been placed in the field yet. Waiting to confirm that a lease will be issued for this piece of land.

Applicant Information

3

Name
Newcrete Investments Limited Partnership, by its general partners, Newcrete Investments GP Ltd.

Address City/Town Postal Code
PO Box 8056, Station A St. John's, NL A1B 3M7

Telephone Fax
(709) 782-3404 (709) 782-0129

If submitted by an agent or person other than applicant

Name of Agent
Brod Dyke (Pannecan Ltd.) *address all correspondence to Brod Dyke*

Address of Agent Telephone
1309 Topsoil Road, St. John's, NL A1B 3M4 (709) 782-5027

Type of Development

4

Residential Cottage Commercial Extension Accessory Building Access Other *Quarry Lease*

Describe proposed development

5

Describe proposed development
Quarry Lease to extract sand/gravel aggregate to be trucked to a batch plant at another location where concrete/cement is produced.

Approximate cost _____

If extension, size of existing building *n/a*

Width _____ Length _____ Height _____ Set back from road centre _____

Use of Proposed Buildings

(a) Use _____ Size _____ X _____ Set back from road centre _____

(b) Use _____ Size _____ X _____ Set back from road centre _____

(c) Use _____ Size _____ X _____ Set back from road centre _____

List any Buildings to be Demolished *n/a*

Size of Land Development

6

Area Frontage Side
25.6 Ha or 256,000 m² _____ m/ft _____ m/ft

Land Ownership

7

Crown Land Private Applicant's Interest in Land
Leasee Owner Prospective Leasee or Owner

Area of Adjacent Land in Same Ownership, if any
Quarry lease 114308
99.81ha or 898,000 m²

Present Uses of Adjacent Land (residential, Commercial, Unused, Etc.)

8 Used as a quarry as described above for this application
 Side _____ Slide _____ Rear _____ Opp. Side of Road _____

Services

9 Existing Services
 Water Supply NONE Sewage Disposal The required services already exist within the active quarry lease (114308)
 Proposed Services
 Water Supply NONE Sewage Disposal _____

Type of Vegetation → see attached report completed by B.A. Roberts a Registered Professional Forester

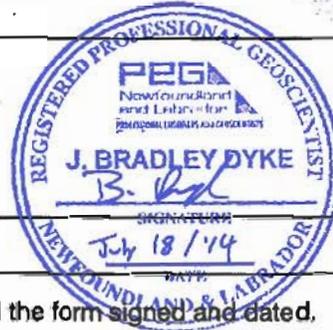
10 Type of Vegetation (Forest, Scrub, Barren, Cleared, etc.)
Primarily Dulon Fir with a mix of minor white birch, hardwood & scrub & softwood scrub. Also there are cleared areas.

Describe Proposed Means of Access to Site (Give number of vehicular accesses proposed)

11 Access to the site as follows: Incinerator Road (Foxtrap) onto newcrete's private 1.5km road, then ~1.1km through the existing lease haul road to the proposed 25.6ha quarry lease.

Applicant's Signature

12 Applicant's Signature B. Dyke Date (YYYY-MM-DD) 2014/07/18



Notes on Completion of Form

13

1. This form is not valid unless all questions are answered correctly and the form signed and dated.
2. This form must be accompanied by two copies of a location plan sufficiently detailed so as to enable ready identification of the site.
3. It is essential that the proposed site be marked with corner posts or stakes with the applicant's name or some means of identification such as a colored flag, etc. Type of marking must be stated in Section 1 of this form.
4. Where appropriate, applicant should specify whether measurements are imperial or metric.

This is **NOT** an application for lease or grant of Crown Land. A separate application must be made.

Routing Information

14 Send ALL completed copies to Government Service Centre, Service NL at the office location nearest you:

| | | |
|--|---|--|
| MOUNT PEARL Motor Registration Building 149 Smallwood Drive P. O. Box 8700 Mount Pearl, NL A1B 4J6 | CLARENVILLE 8 Myers Avenue Clareville, NL A5A 1N2 | GANDER Fraser Mall P. O. Box 2222 Gander, NL A1V 2N9 |
| GRAND FALLS-WINDSOR 9 Queensway Grand Falls-Windsor, NL A2A 1W9 | CORNER BROOK Sir Richard Squires Building P. O. Box 2006 133 Riverside Drive Corner Brook, NL A2H 6J8 | HAPPY VALLEY-GOOSE BAY Thomas Building P. O. Box 3014, Str. B 13 Churchill Street Happy Valley-Goose Bay, NL A0P 1E0 |

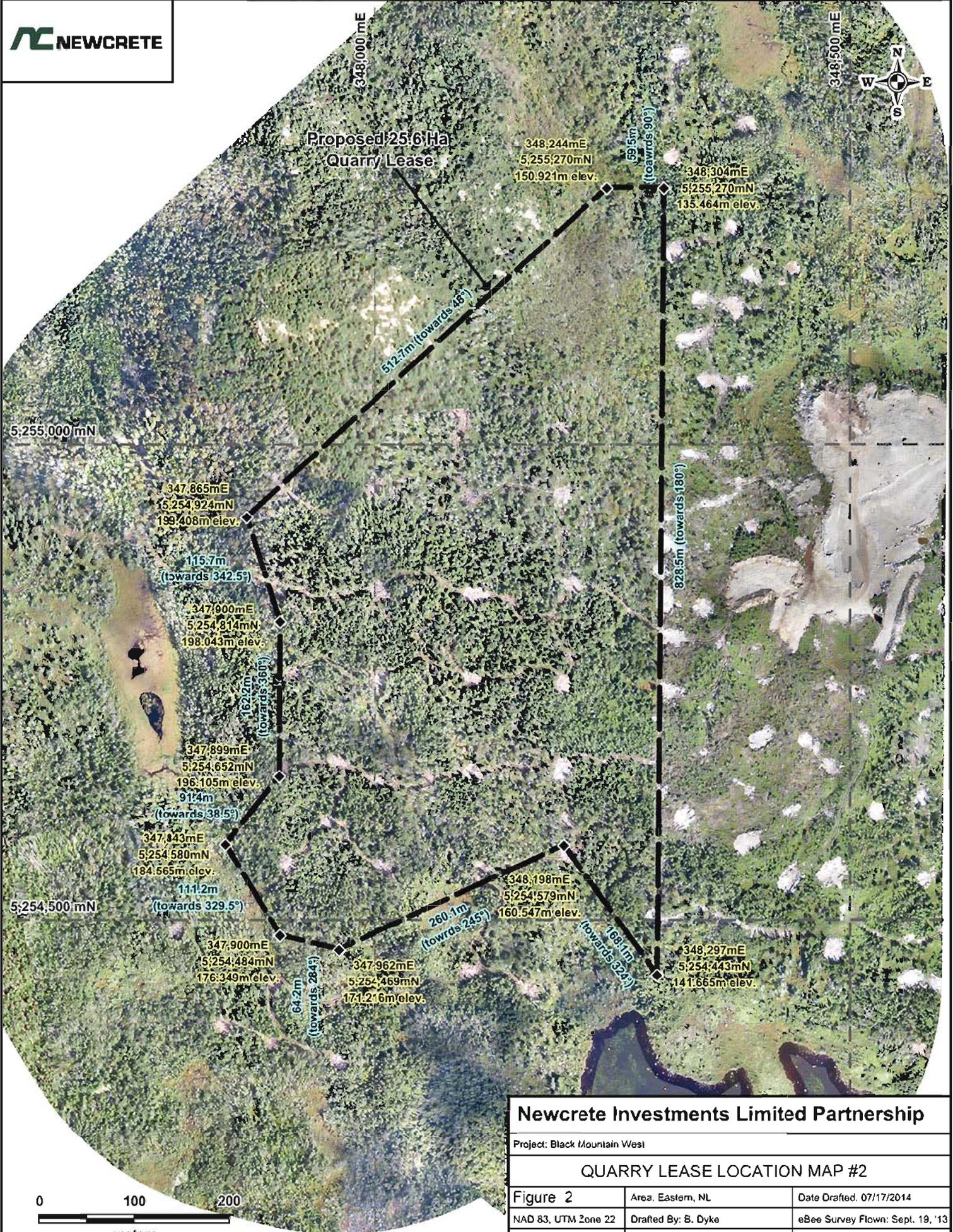
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FIGURE 1: QUARRY LEASE LOCATION MAP



**Proposed 25.6 Ha
Quarry Lease**

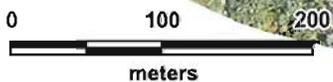


Newcrete Investments Limited Partnership

Project: Black Mountain West

QUARRY LEASE LOCATION MAP #2

| | | |
|---------------------|-------------------------------|----------------------------------|
| Figure 2 | Area: Eastern, NL | Date Drafted: 07/17/2014 |
| NAD 83, UTM Zone 22 | Drafted By: B. Dyke | eBee Survey Flown: Sept. 19, '13 |
| Scale: 1:5,000 | File: Con & Lease Loc Map.wor | NTS 1N/06 |



APPENDIX C

**FOREST DESITY STUDY (INTEGRATED)
AND
FOREST CATALOGING STUDY & RECLAMATION PLAN (B. A. ROBERTS, R.P.F)**



February 6, 2014

Brad Dyke
Project Geologist
Pennecon Limited
1309 Topsail Road
P.O. Box 8274, Station A
St. John's, NL

Re. Black Mountain Forest Resource Inventory

Mr. Dyke:

Below is a summary of Forest type, age, height and density for the proposed Black Mountain lease area as depicted in Figure 1.0.

Forest Resource Inventory (FRI) GIS data was obtained from Newfoundland and Labrador's Department of Natural Resources, Forestry Branch. The GIS data was clipped to the proposed lease area boundary and the resulting polygon areas were recalculated to account for clipping. Table 1.0 shows the detailed breakdown of the FRI data with the Map ID column identifying the specific FRI polygon shown in Figure 1.0. The species composition describes the cover type within each polygon. Polygons with multiple vegetation types are listed in order of abundance.

Table 1.0 Detailed Breakdown of Forest Resource Inventory Data

| <i>Map ID</i> | <i>Species Composition</i> | <i>Age (years)</i> | <i>Height (m)</i> | <i>Density (%)</i> | <i>Area (m2)</i> | <i>Percentage of Lease Area (%)</i> |
|---------------|-------------------------------------|--------------------|-------------------|--------------------|------------------|-------------------------------------|
| 11 | Balsam Fir / Tamarack | 21 - 40 | 6.6 - 9.5 | 51 - 75 | 77856 | 30.29 |
| 12 | Balsam Fir / Tamarack | 21 - 40 | 6.6 - 9.5 | 26 - 50 | 832 | 0.32 |
| 10 | Balsam Fir / Tamarack / White Birch | 21 - 40 | 3.6 - 6.5 | 51 - 75 | 47628 | 18.53 |
| 9 | Balsam Fir / Tamarack / White Birch | 41 - 60 | 6.6 - 9.5 | 51 - 75 | 47965 | 18.66 |
| 2 | Balsam Fir / White Birch | 1 - 20 | 0 - 3.5 | Indeterminate | 2497 | 0.97 |
| 8 | Balsam Fir / White Birch | 41 - 60 | 9.6 - 12.5 | 51 - 75 | 4502 | 1.75 |
| 4 | Coniferous Scrub | N/A | N/A | N/A | 50064 | 19.48 |
| 6 | Deciduous Scrub | N/A | N/A | N/A | 5859 | 2.28 |
| 1 | Rock Barren | N/A | N/A | N/A | 16 | 0.01 |
| 7 | White Birch | 21 - 40 | 3.6 - 6.5 | 51 - 75 | 19311 | 7.51 |
| 5 | White Birch / Balsam Fir | 41 - 60 | 6.6 - 9.5 | 51 - 75 | 494 | 0.19 |

The lease area is predominantly covered by Balsam Fir forest (~71 %) within the 21 to 40 year and 41 to 60 year age classes. The dominant height class for the Balsam Fir forest is 6.6 m to 9.5 m tall with some stands as tall as 12.5 m. Predominant density for the Balsam Fir forest is 51 % – 75 %. Most of the Balsam Fir stands are intermixed with small amounts of White Birch and Tamarack. The remainder of the lease area is covered by Coniferous Scrub (~19 %) with a small amount of White Birch (~8%) and Deciduous Scrub (~2%) and a negligible amount of Rock Barren (< 1%). White Birch stands are in the same age, height and density class as that of the Balsam Fir stands.



Figure 1.0 Map of Forest Resource Inventory within proposed lease area.

Integrated Informatics Inc.

6 LeMarchant Road • St. John's, NL • A1C 2G5
709.631.0869 • sarowe@integrated-informatics.com



If you have any questions regarding this summary or would like to discuss further, please do not hesitate to contact me at 709-631-0869.

Sincerely,

Stephen Rowe B.Sc.

Senior GIS Consultant | Integrated Informatics Inc. | 709.631.8069
sarowe@integrated-informatics.com



Forest Cataloging Study Proposed Black Mountain West Quarry Site
B.A. Roberts R.P.F, Wildland Associates Limited, P.O. Box 5729, St. John's, NL, A1C5X3.

Forest Cataloging Study

Proposed Black Mountain West Quarry Site

B.A. Roberts R.P.F

Wildland Associates Limited

P.O. Box 5729

St. John's, NL, A1C5X3

July 15, 2014

Bruce A Roberts R.P.F. is a senior research ecologist with over 35 years of experience as a research scientist. He is a recognized expert on the Boreal Vegetation of Newfoundland and Labrador. He is also the author of over 200 papers on aspects of forest site ecology, pollution and the effects of forest cutting and burning and a member of the Canadian Institute of Forestry, Forest Without Borders Program.

Field Site Ecology

After an initial meeting on February 13, 2014 the Black Mountain Proposed Quarry site was visited on February 26 to get an idea of wind and snow conditions and how that might affect forest regeneration. The site is moderately exposed and snow in the winter of 2014 was over one meter in depth. After obtaining mapping of the site on March 19 aerial photos were obtained for the area and the initial forest inventory figures evaluated. Two site visits were made after the snow cover melted on May 05 & May 13. On the ground photos were taken of all vegetation and forest types as well as photos of succession stages and evidence of wildlife browsing and use of the site. The field trips confirmed the site has had a fairly complex vegetation succession history. The field visits also confirmed that the forest inventory tree species listed (Table 1, Integrated Informatics Inc.) are quite accurate but more recent changes not shown by the mapping exercise for the site were evident. On Wednesday 03 June 2014 a one day, (two persons with known expertise) search for the globally rare Boreal Felt Lichen (BFL) was conducted and on Tuesday 17 June, a check on Larch foliage & White Birch leaf emergence confirmed that most standing species were alive and crown closure was as stated in the site inventory. Dead trees observed were mainly balsam fir.

Some of the important field observations are as follows:

- Although balsam fir was one of the dominant species many were dead from insect kill in the 1980ies.
- There was extensive blow-down 30-50% of mature balsam fir, white spruce, black spruce and eastern larch, some were perhaps from recent hurricane Igor but some leaning trees were still alive. Granite rocks, boulders and erratic's on the surface contributed to shallow rooting even though deposits were deep. There was also evidence of tree stem ice-load -breakage related to the site exposure.
- The understory balsam fir was severely browsed by moose & snowshoe hare since the insect outbreak days and many 30 year old regenerating trees were only 1-2 meters in height.
- There was evidence of past wildfire in the white birch areas confirmed with charcoal in the forest humus/upper mineral soil horizon and on some blow down tree stumps.
- There were some old trails and evidence of previous cutting.
- Because there are significant quantities of white birch in the area natural seeding on mineral soil will be common as white birch seed is the lightest of the main tree species and travels long distances by wind. Therefore no planting of White Birch should be needed. With the white birch leaf emergence survey on June 17, 2014 the leaves and

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understory plants were out and living stems of white birch and eastern larch exceeded 95%. *Rhododendron canadense* (in flower) was about 30% of the ericaceous shrub understory.

Vegetation History

A list of all Forest Types for the Avalon region was compiled and shows that the central Avalon forest has greater than 300 species of vascular plants (about 1/4 of the flora), more than 50 species of mosses and more than 20 different forest types as well as 10 heathland vegetation types (Meades 1983,1986) making it one of the most interesting and diverse in the Boreal, see Table 2. The only possible species of concern in the Black Mountain area prior to the June surveys was the Boreal Felt lichen (BFL) that could have been present in two peat land sites in the west and north of the area but outside the boundaries.

A one day search for the Boreal Felt Lichen (BFL), *Erioderma pedicellatum* (Hue) P.M. Jørg, (2 person, 2 hours each site, with experienced & recognized by Department of the Environment as having the necessary expertise) was conducted of the two peat land complexes adjacent to but not inside the proposed quarry lease boundaries on Wednesday, June 03, 2014. In earlier work regarding the forest vegetation, the conditions at these sites were judged to have potential for this world rare lichen which grows mainly on slow growing balsam fir often on edges of peat complexes that have had some cutting including old portage/ winter hall roads that were present at both locations- see Roberts 2012 for BFL ecology in Newfoundland and Labrador and Table 2 for the listing of Forest types with the greatest potential for having the species present and Figure 1 from Ringius 1997, Roberts 2012)). Table 2 shows in color the major forest types that support BFL(Green) and the forest types that are enhanced as BFL habitat as a result of forest cutting (Red) and Forest types that might contain BFL if sites are wet enough in mid-summer Blue).

The search of both peat lands did not reveal any BFL or any of the common indicators of rare lichens eg. (*Coccocarpia palmicola*). The area was documented with lots of pictures and notes re vegetation and the old portage roads were evident in both areas. It was good to check as the potential was there especially along those old hall roads where cut black spruce succeeded to balsam fir- the main host tree in a wet environment.

BFL and relationship to leafy liverwort *Frullania tamarisci* spp. *Asagrayana*, is usually seen as a first stage to hold BFL spores was only present on a very few balsam fir trees but no *Coccocarpia palmicola* a more common companion lichen species was not present at either

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site. If BFL is present on an Avalon site, *Coccocarpia* is always present usually in profuse quantities.

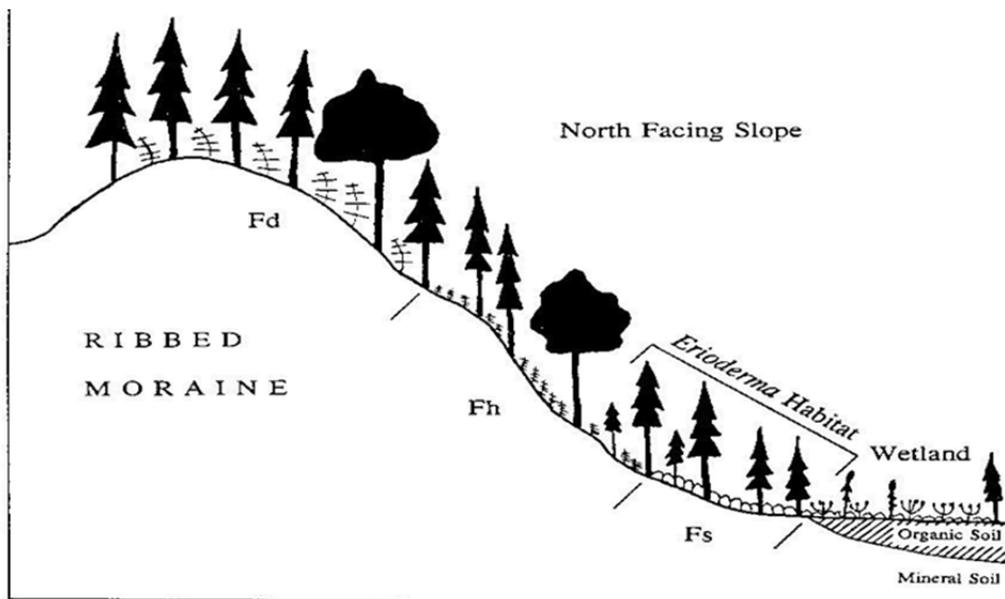


Figure 1. Site ecology of Ribbed Moraine complex (Ringius 1997) showing typical Erioderma Habitat from Ringius, Gordon S. 1997. Evaluation of potential impacts of development on *Erioderma pedicellatum* in eastern Newfoundland. Report prepared for Canadian Forest Service. 52 pp.

Roberts in 1977, 1980, described a shrub forest composed of larch, balsam fir & black spruce with almost equal numbers of each species in this type. The 1977 location was from nearby Trailer Pond Area part of Butter Pot Provincial Park and the 1980 location at Long Harbor. This forest in both locations was the result of cutting & burning of denser balsam fir & black spruce mixed moss forests.

Choice of Native Species For Planting

Eastern Larch

Eastern larch is one of the best and easiest Boreal conifers to establish on exposed & moderately exposed sites in eastern Newfoundland. There are 7 ecological types (2 on peatlands) 3 with *Alnus* understory) Ericaceous Larch which is stable (returns to the same species) on well drained sites and on better quality sites larch with a Herb & Moss understory

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(Roberts & van Nostrand, 1995). The main type at the Black Mt. site is the Ericaceous Larch type the most common in eastern Newfoundland. The ground vegetation is dominated by *Kalmia angustifolia*, *Ledum groenlandicum*, *Rhododendron Canadensis* and *Vaccinium* spp. This type of ground cover will easily form in developing stands and Eastern larch growth and regeneration is not affected but seed germination development of black and white spruce is and regeneration a slow process if ground cover of *Kalmia* is dense . The main site treatment to get spruces back on these sites would be heavy scarification- ie very similar to planting on exposed mineral soils. If replace overburden has enough organic matter for water holding capacity and with the addition of silt the planting of the site with this material is actually enhanced over natural conditions. A test study on adjacent ground is currently being evaluated.

White Spruce

Planting white spruce which is common on the site today is not browsed by moose and its hardy nature and growth in old fields and roadside edges where it is wind and salt resistant and can tolerate most form of understory vegetation and shade.

Black Spruce

Black Spruce is seldom browsed by moose and is a planting species that can grow on drier sections especially on exposed mineral soils. It will also regenerate from layering in open grown conditions filling in gaps and openings.

Table 2. A list of Forest Types for the Avalon (Roberts 2012)

1. Fern Forests- *Erioderma pedicellatum* Main limitation- site are too rich and not wet enough in mid- summer. A very small percentage of the quarry proposed sites has understory *Dryopteris* ferns in the understory.

- *Dryopteris*- bF*
- *Dryopteris* moist*
- *Bazzania*-*Dryopteris*- bF
- ***Osmunda* black spruce**

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2. Herb and Moss Forests- *Erioderma pedicellatum* Main limitation- sites are too rich and not wet enough in mid- summer. About a third of the site has understory dominated by herb & mosses and the main forest type is a *Larix/Abies/Picea* Herb/Moss forest.

- *Hylocomium* on Podzol and Gleyed Podzol
- *Hylocomium* with Seepage Gleysols
- *Hylocomium*-bF*
- *Rubus* –bF
- *Rubus-Vaccinium**
- *Balsam Fir* on Muck* stagnate end only
- *Rubus* –bF
- *Carex*- bF
- *Clintonia* bF*
- *Clintonia Sphagnum* bS*
- *Carex Sphagnum* bS*
- *Larix/Abies/Picea* Herb/Moss

3. Moss Forests- *Erioderma pedicellatum* preferred site with slow growing bF and wet enough in mid- summer.

- *Pleurozium* bF*
- *Dicranum* –*Nemopanthus* bF*
- *Sphagnum black spruce**
- *Sphagnum*- bF
- *Sphagnum-Taxus**
- *Sphagnum girgensohnii**

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4. Dwarf Shrub and Lichen Forests- Cutting in these sites can increase *Erioderma pedicellatum* numbers and potential habitat. About half the proposed quarry site has an understory dominated by dwarf shrubs mainly *Kalmia*.

- *Vaccinium* – bF
- *Kalmia* bS
- *Sphagnum* –*Kalmia*-bS
- *Nemopanthus*-*Kalmia* bS
- *Nemopanthis* /*taxus*-*Kalmia* bS
- Alder *Sphagnum*-bS*
- Alder Thickets
- Pin Cheery – Birch

5. Heath types – 10 on Avalon (Meades 1983). Some small potential in wet bF patches.

Those forest types that have potential for finding *Erioderma pedicellatum* on a fairly consistent basis are in Green bold, rarely have a presence are in blue italics and if cutting occurs in the black spruce types in Red bold italics there is a potential for slow growing balsam fir to develop and provide *Erioderma pedicellatum* habitat.

Site Restoration

Planting of seedlings and direct seeding are two options for re-vegetation and returning the site to the forest types prior to gravel removal. Both techniques should be employed. It is recommended that a knowledgeable group such as Forest Without Borders or Tree Canada be retained to conduct the seeding and seedling planting.

Direct Seeding

- The direct seeding of Eastern Larch, eL, Black Spruce, bS, White Spruce, wS, White Birch, wB is a great option for the site. Seed can be broad cast on snow in late spring or on mineral soil as soon as overburden is replaced on the site.
- Black spruce tops & branch slash from tree harvesting to burn near the site to create conditions & release seeds especially near the perimeter of the site.

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- Cut & patch burn bring slash back to the site after stem only harvesting from adjacent perimeters.
- Leaving strips of exposed mineral soil mixed with organic matter to encourage wB regeneration from adjacent sites- this can be enhanced by slash / patch burning and with the addition of silt size mineral matter. Eastern larch will also develop on exposed mineral soil turnover from seed which is abundant in the area.
- A nurse crop of *Alnus crispa* (green alder) from seed will help stabilize the site from frost churning and produce soil Nitrogen and organic matter on the site. Larch perform well on sites with alder dominated understory forming 3 different types (see Roberts & van Nostrand 1995)

Planting

- Direct planting of mixed conifer stock, eL, bS, wS in approximately equal numbers 1.8m X 1.8m (6ft. X 6ft.) 2990 per ha. Balsam fir will develop in the understory and from seed in nearby stands but is likely to be heavily browsed if current moose populations remain high nearby. See McLaren et al 2004, for succession patterns. White Spruce is never browsed and black spruce very seldom browsed. This mixed coniferous site with some white birch will approximate conditions that are currently observed on the site.

In the most exposed conditions eastern Larch has the most promise for survival and growth. Eastern larch will also grow in areas with *Kalmia* and other Ericaceous shrubs that will invade the understory (Roberts & van Nostrand 1995) so this species should be planted with a 2X number of trees over black and white spruce.

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General Site shots in May and June with White Birch in Leaf



Bug killed balsam fir with white birch, large conifers are white spruce

Prominent white spruce



**Black spruce, larch, white birch
and bug killed balsam fir**



Ericaceous understory plants are mainly Kalmia and Rhododendron in flower mid June



Soil is a typical well drained Ferro- Humic Podzol with discontinuous ortstein hardpan and Ericaceous understory plants



Larch not yet leafed out, prominent white spruce & white birch from top of hill



Bug killed balsam fir withy open grown white spruce and white birch



Blow down 30-50% of all balsam fir and common with other species

**Blow down over surface boulders
large larch & bug killed balsam fir**



**Blow down over surface boulders
small & large larch**



All three species of conifers have recent blow-down but white spruce the least

Large greater than 15 m white spruce

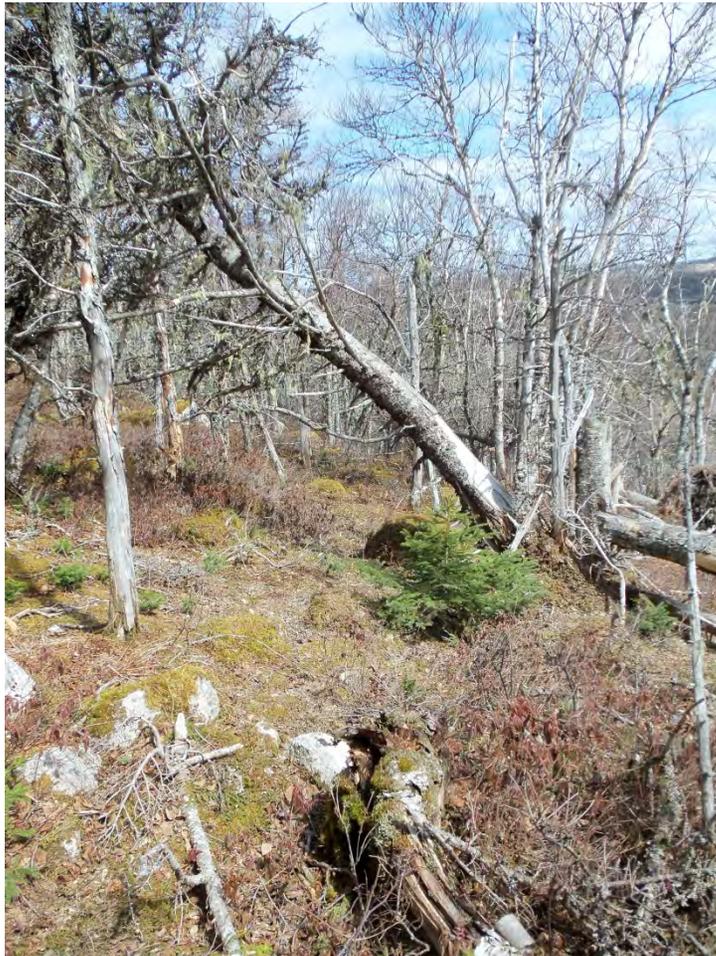


White Spruce blow down and standing live

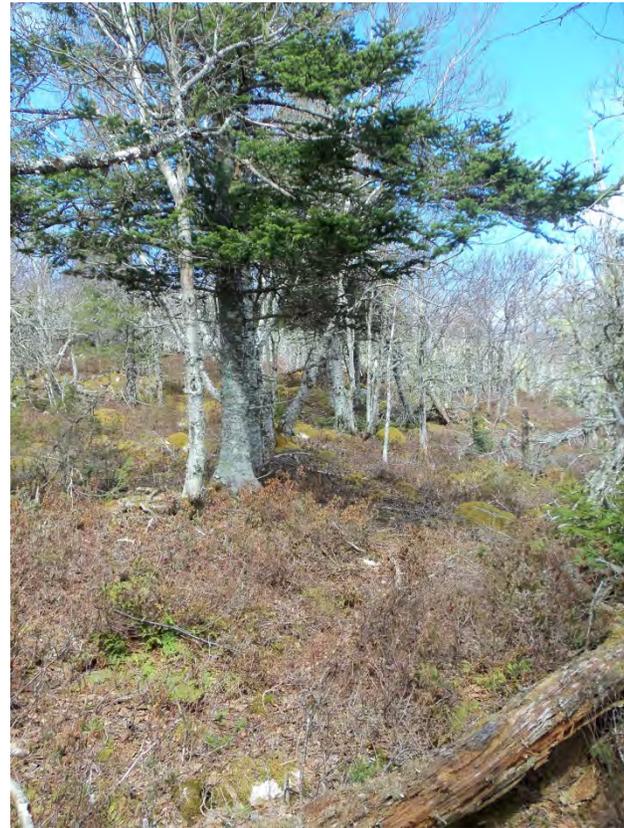


Live leaning balsam fir, with white spruce (never moose browsed)
regeneration most balsam fir regeneration is moose browsed

Live leaning balsam fir



Balsam fir standing showing high browsed line



Many moose pellet groups indicates a high moose population and most balsam fir regeneration was severely browsed

Moose pellets



Severely moose browsed balsam fir



Peat Land Edges- Checked for the presence of Boreal Felt Lichen (BFL)

North End general shot



Area with most potential for BFL



Sphagnum balsam fir forest type typical habitat for the Boreal Felt Lichen there were none present and companion species were also absent from both peat land sites

Sphagnum wet balsam fir peat land edges



Sphagnum (peat moss) balsam fir understory



APPENDIX D

**ENVIRONMENTAL PROTECTION PLAN
&
ATLANTIC CONCRETE ASSOCIATION ENVIRONMENT AWARD**



Atlantic
Concrete
Association

Association
béton
Atlantique

**ACA
2013
ENVIRONMENT AWARD**

Recognizing
Environmental Leadership,
Innovation and Achievement

Presented to

Capital Ready Mix Ltd.

February 21, 2014

**BLACK MOUNTAIN WEST
ENVIRONMENTAL PROTECTION PLAN
(EPP)**



Submitted by:

Capital Ready Mix Limited
P.O. Box 8056, Station A
St. John's, NL A1B 3M7

Submitted to:

Government of Newfoundland and Labrador
Department of Natural Resources
Mineral Lands Division

JULY 2014



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1.0 INTRODUCTION

This Environmental Protection Plan (EPP) was prepared by Capital Ready Mix Limited for the **Black Mountain West** Project.

Capital Ready Mix Limited (CRM), a wholly owned subsidiary of Newcrete Investments Limited Partnership, is currently operating an approximately 90 hectare quarry in the area of Black Mountain and is proposing to develop an additional 25.6 hectares, Black Mountain West, immediately adjacent to existing operations. Like the current operations, Black Mountain West will be a quarry operation for the mining and processing of sand and gravel aggregate for use in CRM's concrete batching plant operations.

This EPP aims to address known and potential environmental issues associated with typical quarry operations, and was developed in compliance with environmental legislation and regulatory requirements, as well as CRM's Environmental Policy.

An EPP is a living document and may not address all of the environmental situations that arise on an individual project. Revisions and upgrades may be made during the course of the Project to reflect unforeseen circumstances or improvements as the result of a process review.

This EPP demonstrates CRM's commitment to environmental protection, prevention of pollution, and mitigation of potential adverse environmental effects. CRM has prepared this EPP to communicate this commitment to staff, contractors, regulatory agencies, and the public. This plan is intended for use during the development and operation of the Black Mountain West Quarry.

1.1 Objectives

The main objectives of this EPP are to 1) Identify proposed activities associated with the Project that could adversely affect the environment, and 2) Outline measures CRM intends to implement to prevent and/or minimize environmental impacts.

In addition, this EPP will:

- Clearly state CRM's Environmental Policy;
- Ensure environmental considerations are part of the CRM decision making process; and
- Ensure compliance with applicable regulatory requirements, guidelines, and contractual conditions.



1.2 Roles and Responsibilities

Capital Ready Mix Limited's General Manager will be the primary person responsible for all aspects of the Project, including environmental issues. Specific environmental responsibilities of the Project Manager include:

- ensuring adequate plans and resources are in place to achieve CRM's commitments to minimize environmental impacts;
- ensuring compliance with relevant regulations, authorizations, permits and protocols; and
- reviewing incident reports as they are submitted and ensuring the proper course of action is taken to manage unexpected environmental conditions or events.

Primary responsibility for the implementation of this EPP rests with CRM's Aggregate and Mineral Resources Manager, who will:

- review the EPP as required;
- ensure revisions are appropriately distributed;
- ensure EPP holders and their staff are familiar with the EPP and its procedures;
- meet with the Project Manager and site crew to assess the adequacy of the EPP and its implementation, as well as to identify opportunities for improvement;
- provide orientation sessions for project personnel and staff as needed;
- ensure the reporting to all appropriate agencies incidents of non-compliance.
- ensure ongoing communication with appropriate regulatory agencies and other interested parties on behalf of CRM.

The Black Mountain West Operations Manager will be primarily responsible for site environmental issues during Project operations, including:

- monitoring project work to ensure that all provisions of the EPP and government approvals/authorizations are adhered to;
- determining drainage discharge locations, as required;
- verification of buffer zone maintenance; and
- responsibility for determining the requirements of erosion control measures.



2.0 ENVIRONMENTAL POLICY



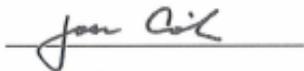
Environmental Policy

It is the primary and continuing objective of Capital Ready Mix Limited (CRM) that, in the conduct of its activities, it will endeavor to limit adverse effects on the physical environment through the respectful use of our natural resources.

As part of its commitment, CRM will meet and exceed applicable laws, regulations, and other requirements. CRM will incorporate environmental considerations into project planning and operating practices and will promote sustainable development through pollution prevention, waste minimization, and recycling, wherever possible. CRM believes that through heightened environmental awareness and action, these objectives can be accomplished. We also believe that excellence and continuous improvement in environmental practices are in the best interests of all stakeholders.

This Environmental Policy reflects the commitment of CRM's senior management to ensuring that environmental objectives, targets, and policies are communicated and adhered to by all employees, suppliers, and sub-contractors.

I trust that you will join me in a personal commitment to making environmental awareness and preservation a way of life.



Jason Coish
General Manager,
Capital Ready Mix Limited

Date: July 16/14



3.0 DESCRIPTION OF THE UNDERTAKING

3.1 Project overview

Capital Ready Mix is proposing to develop a sand and gravel pit immediately adjacent to an existing development in the Black Mountain Pond area of Newfoundland to supply aggregate for CRM's concrete batching plant operations. The proposed site is 25.6 Ha in size and is located approximately 1.8 km southwest of Incinerator Road off the Foxtrap Access Road (see Figure 1). The proposed development is situated immediately adjacent to the western boundary of existing Quarry Lease 114308. If approved, quarrying will continue from within Lease 114308 into the proposed area.

There aren't any ponds or streams within the proposed Black Mountain West project area and there are no predominant natural drainage features defined within the site; runoff is generally from the west, which is upslope, to the east and south, which are downslope.

3.2 Quarry Development

The proposed lease will be mined in four phases and on a series of approximately 5 m benches to correspond to the projected annual production for the site, starting with Phase 1 in year 1 (See Figure 2).

3.3 Mining Method and Production

The operation's yearly production will be mined by run-of-the-pit removal on a series of approximately 5 m benches. Operations at Black Mountain West will take advantage of existing infrastructure and facilities at the adjacent development (Quarry Lease #114308); aggregate will be trucked to CRM's current processing area immediately adjacent to the newly developed site (see Figure 3. Proposed and existing quarry lease locations, Existing Wash Plant Site) and grubbing and topsoil will be primarily stockpiled and covered in the existing location (see Figure 3. Proposed and existing quarry lease locations, Existing Grubbing and Topsoil Stockpile). Additionally, the existing product-laydown area, as well as the wash plant, including the cyclone, settling tank, and settling ponds, will remain in the current location for use. The crusher will be moved as required and will be located near the mining face.

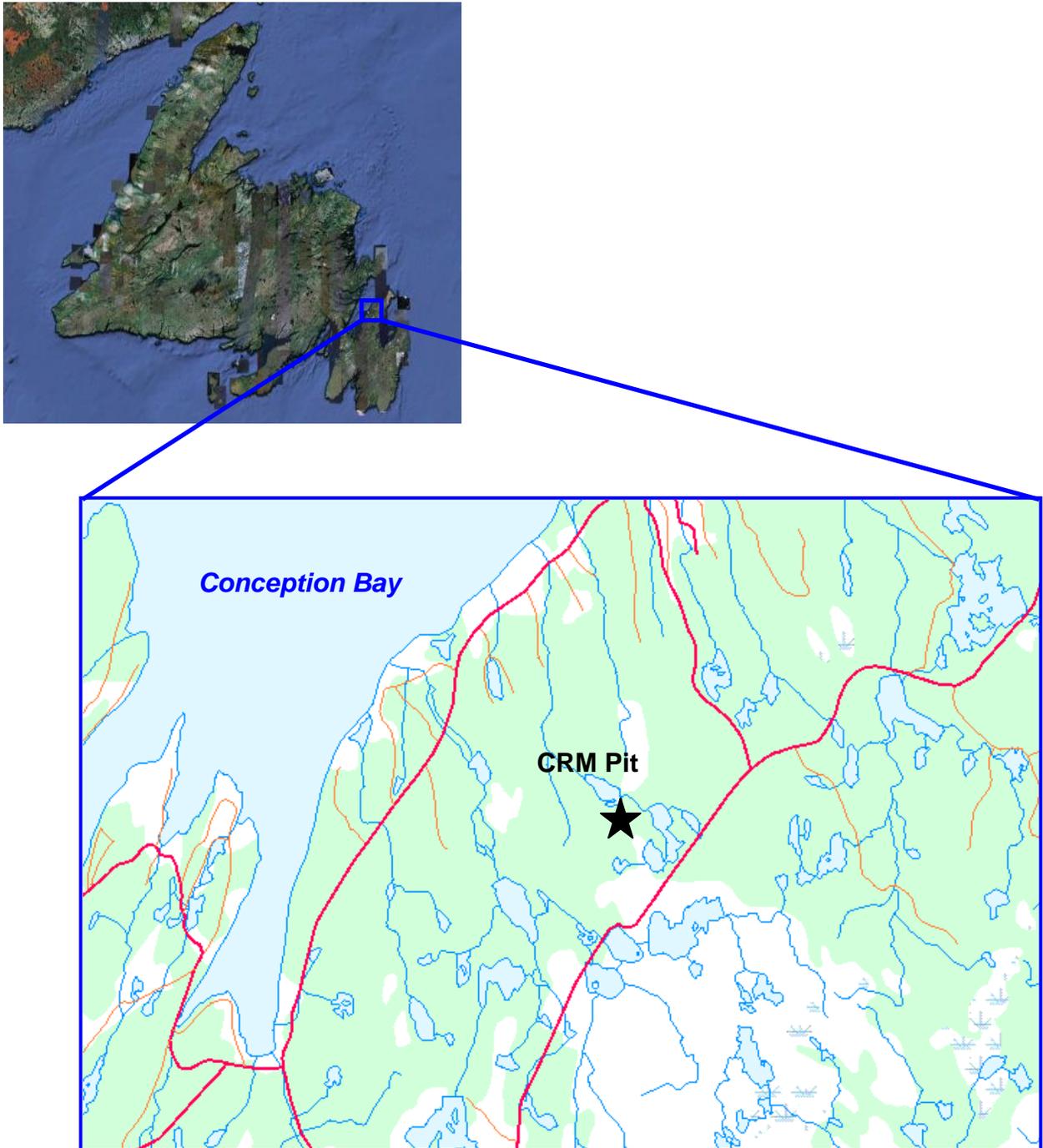


Figure 1. Approximate location of the proposed quarry.

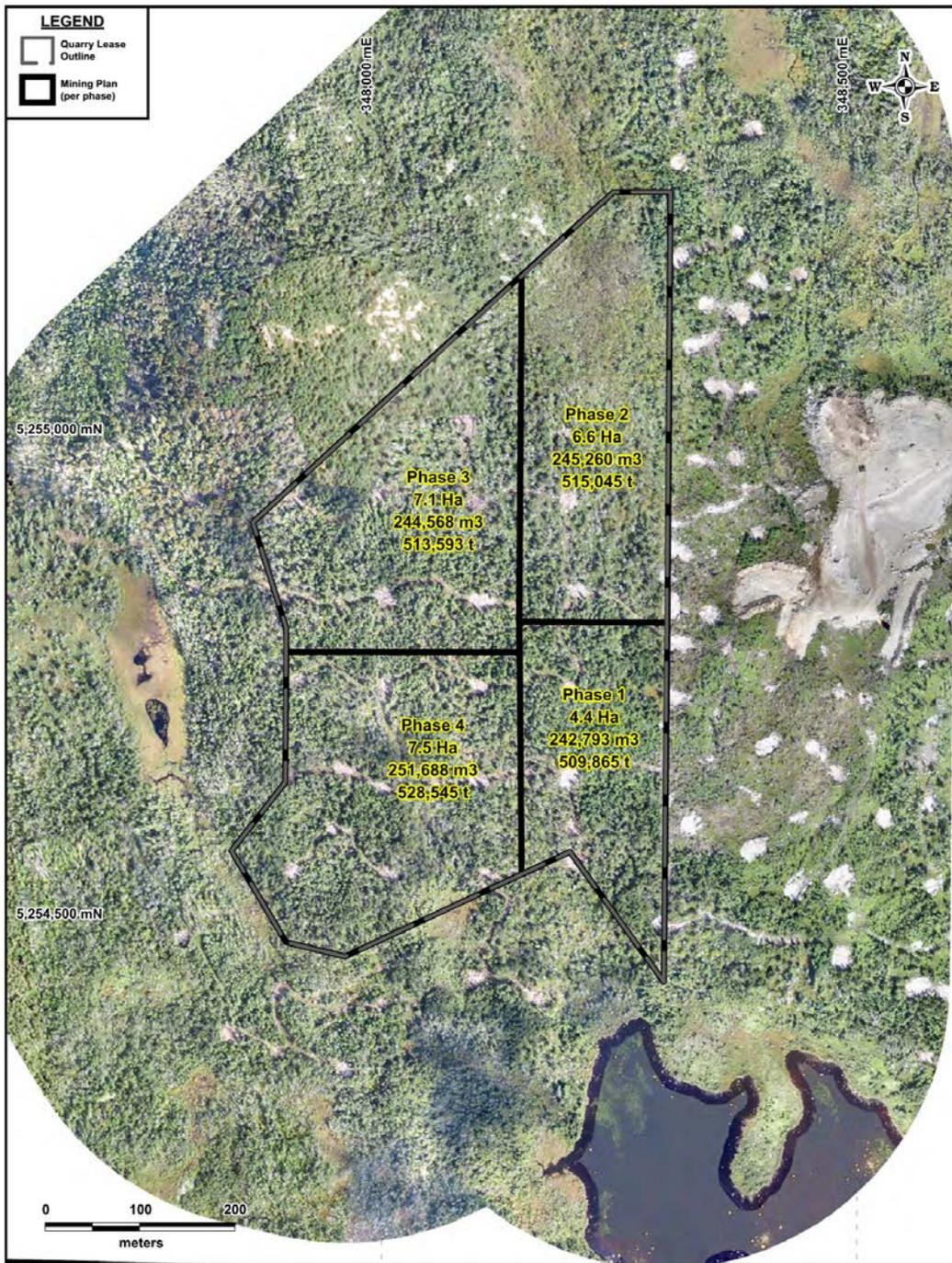


Figure 2. Quarry Phases.

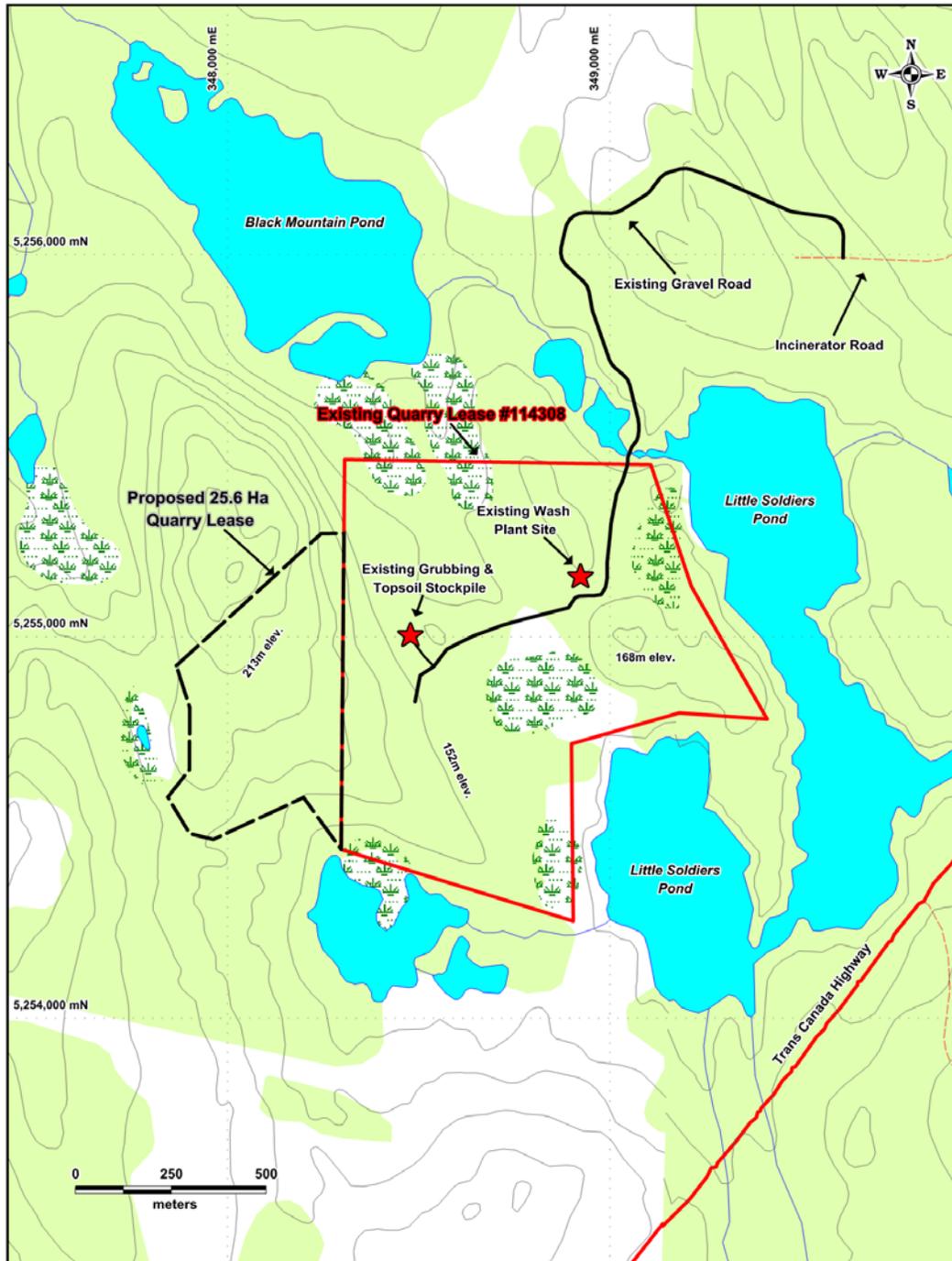


Figure 3. Proposed and existing quarry lease locations.



3.4 Reclamation and Closure Plan

Progressive reclamation is part of the standard conditions of the quarry lease. These terms require that lease holders slope mined-out areas, and preserve and re-spread the original organic material from the site.

As a result of the design of this site (*i.e.* progressive development over a series of mining phases), reclamation will also be completed in a progressive manner. Once Phase 1 of the quarry is exhausted and Phase 2 is in use, reclamation will begin on Phase 1. Successive reclamation of each exhausted phase will continue throughout the life of the Project, leaving only the area required for safe and acceptable access to the next phase for reclamation until the end of the quarry life. Initial reclamation efforts for Phase 1 are anticipated to occur in year 2 and cover approximately 2.1 Ha in the southeast corner, while 3.2 Ha of Phase 2, and 5.8 Ha of Phase 3 will be reclaimed in years 3 and 4, respectively. Once all of the aggregate is extracted from Phase 4, the remaining 14.5 Ha throughout the quarry lease will be reclaimed.

CRM's plan for reclamation exceeds the requirements of the lease. Surficial soils, subsoil, and grubbing will be stripped to prepare each excavation phase. These materials will be stockpiled until needed for cover in reclaimed areas. The sloping requirement will be achieved by leaving a buffer of aggregate in place along the lease boundary containing a sufficient volume that, when re-contoured with a dozer, the pit-face of the mined out area can be sloped to the required 30 degree angle. Following final sloping, the stockpiled material and subsoil will be spread, hydro-seeded with grass seed, and finally, planted with tree seedlings. It is important to note that CRM has completed a forest density study within the proposed lease area and has determined that the existing forest cover is composed primarily of balsam fir intermixed with minor tamarack and minor white birch, making up ~71% of the forest. The remainder of the lease area contains coniferous scrub, white birch, deciduous scrub and barren rock making up the remaining ~19%, ~8%, ~2% and <1%, respectively. This study provides an adequate baseline for determining replanting efforts, with an aim to reforestation back to current conditions.

CRM's reclamation plan as described above will result in a gently sloping, vegetated area that is a safe, environmentally stable, visually-pleasing area that will blend with the surrounding ecosystem.



4.0 PERMITS AND APPROVALS

The conduct of the work is subject to various regulatory controls. Listed below are the applicable legislation and regulations potentially related to the project.

Table 1 Permits required for activities at the Black Mountain West Quarry

| Department/Agency | Applicable Legislation | Authorization | Project Element |
|--|---|--|---|
| Provincial Government Requirements | | | |
| Mines and Energy Division, Department of Natural Resources | <i>Quarry Materials Act, 1998</i> and Regulations | Quarry Lease | Pit construction and operation |
| Department of Environment and Conservation | <i>Environmental Protection Act, 2002</i> | Release from the EA process | Quarry project |
| Forestry Division, Department of Natural Resources | <i>Forestry Act and Timber Cutting Regulations</i> | Commercial Cutting Permit | Land clearing |
| Pollution Prevention Division, Department of Environment and Conservation | Used Oil Control Regulations | Certificate of Approval | Storage of used oil |
| Environmental Protection Division, Government Services Centre | <i>Environmental Protection Act, Fire Prevention Act and Storage and Handling of Gasoline and Associated Products Regulations, 2003</i> | Certificate of Approval for Storage and Handling Gasoline and Associated Products | Storage, handling and transportation of fuel products |
| Federal Government Requirements | | | |
| Transport Canada | <i>Transportation of Dangerous Goods Act, 1992</i> | Permit to store, handle and transport dangerous goods | Storage, handling and transportation of fuel and chemicals |



5.0 ENVIRONMENTAL PROTECTION MEASURES

An environmental impact is a change to the environment, positive or negative. For the purposes of this EPP, negative impacts resulting from CRM activities are the primary concern.

CRM site staff and crew possess an understanding of the sensitive site components that could be impacted as a result of development and operations activities, including, but not limited to:

- Vegetation; and
- Wildlife and wildlife habitat, including migratory and breeding birds.

The environmental protection procedures outlined in the following subsections shall be followed, together with conditions of all permits and approvals. In the case of a conflict between these, the order of priority shall be: 1) permit/approval conditions; followed by 2) this EPP.

5.1 Storage, Handling and Transfer of Fuel/Hazardous Materials

Hazardous substances that may be used on site include the following:

- Gasoline, diesel fuel, grease, motor oil, hydraulic fluids;
- Propane;
- Explosives;
- Acetylene;
- Paints;
- Concrete additives;
- Antifreeze;
- Cleaners and solvents.

The primary concern with respect to hazardous substances is an uncontrolled release to the environment, i.e. a spill. Subsequent adverse effects may include contamination of terrestrial and aquatic environments, as well as groundwater quality and human health concerns.

Environmental Protection Measures

Only persons qualified in the handling of fuel and other hazardous materials as stated in government laws and regulations will handle fuel and other hazardous materials.



Transport of fuel and other hazardous materials

- The transport of fuel and other hazardous materials will be undertaken in compliance with the *Transportation of Dangerous Goods Act*. All goods entering the site will be inspected to ensure that the appropriate placards or labels and manifest are in place and the security of the product is assured. All persons handling dangerous goods must show proof of certification of training in the transportation of dangerous goods as required under the Act.

Storage of fuel and other hazardous materials

- Waste oils, lubricants and other used oils shall be reused, recycled or disposed of at an approved licensed waste management facility in accordance with the *Used Oil Control Regulations*.
- Drums of petroleum products or hazardous wastes shall be tightly sealed against corrosion and rust and surrounded by an impermeable barrier in a dry, water-tight building with an impermeable floor.
- Petroleum storage tanks shall be registered with Government Services and all leaks/spills shall be reported to that department.

Equipment refueling

- Equipment refueling is to comply with the *Storage and Handling of Gasoline and Associated Products Regulations, 2003*.
- Refueling and lubrication of equipment shall occur in such a manner as to minimize the possibility of contamination to soil or water, *i.e.* 50 m from any water body and on level terrain.
- When refueling equipment, operators shall:
 - use leak-free containers and reinforced rip and puncture-proof hoses and nozzles;
 - be in attendance for the duration of the operation; and
 - seal all storage container outlets except the outlet currently in use.
- Regular inspections shall be made of hydraulic and fuel systems on machinery. Leaks shall be repaired immediately.
- Fuelling attendants shall be trained in the requirements under the spill contingency plan.
- Any soil contaminated by small leaks of oil or grease from equipment will be disposed of in accordance with the *Environmental Protection Act* and the *Used Oil Control Regulations*.



Hazardous materials

- Hazardous materials shall be used only by personnel who are trained and qualified in the handling of these materials and only in accordance with manufacturers' instructions and government regulations.
- The Workplace Hazardous Materials Information System (WHMIS) Regulations under the *Occupational Health and Safety Act* will apply to all handling of hazardous materials. Material Safety Data Sheets (MSDS) will be readily available on site for all hazardous materials.
- A complete inventory of the hazardous materials on site shall be maintained according to the WHMIS and shall be made available to regulatory agencies upon request.
- All hazardous materials shall be removed and disposed of in an acceptable manner in accordance with government regulations and requirements.

Spills of fuels and hazardous materials

- Precautions will be taken to prevent and reduce the spill of fuel and other hazardous materials. In the event of a spill on land or in the freshwater environment, the **Environmental Emergencies 24 Hour Report Line** will be contacted (709 – 772 – 2083 or 1-800-563-9089).
- Every effort will be made to immediately control the source of the leak or spill and clean up the contaminated area.
- There shall be appropriate spill clean-up equipment on site and personnel will be knowledgeable about response equipment locations, as well as response procedures (See Section 7.1).

Disposal of hazardous wastes

- All hazardous waste will be handled according to the provincial *Environmental Protection Act*. Waste classified as "hazardous" or "special" that can not be disposed of in regular landfill sites will be sent for disposal at a licensed hazardous waste management company.
- All necessary precautions will be taken to prevent and reduce the spillage, misplacement or loss of fuels and other hazardous materials.
- Hazardous waste materials will only be handled by persons who are qualified and trained in handling these materials as stipulated in government laws and regulations.
- Waste accumulated on site prior to disposal will be confined, so that it does not pose an environmental or health hazard.
- Waste material will not be disposed of on-site or in a body of water.



- Burning of waste is not permitted.
- Where hazardous waste materials are to be stored outdoors, a designated area will be established, graded, and fitted with an impermeable membrane, covered with local soil and surrounded by an earth berm.
- Waste oils, lubricants, and other used oil will be retained in a tank or closed container, and disposed of in accordance with the *Used Oil Control Regulations*.
- Any soil contaminated by small leaks of oil or grease from equipment will be disposed of by an approved treatment facility. Small amounts of contaminated soil will be temporarily stored in a leak proof container prior to sending to a treatment facility.

5.2 Equipment Operations, Use, and Maintenance

A variety of vehicles and heavy equipment will be used throughout the pit site, including heavy equipment, generators, pumps, etc. Environmental concerns associated with operating, using and maintaining such equipment includes air emissions, accidental spills, noises, and chronic leaks that may contaminate on-site water bodies.

Environmental Protection Procedures

- All approvals, authorizations, and permits for project activities shall be strictly adhered to.
- All noise control devices will be maintained in good operating condition.
- All equipment will meet the requirements of the provincial *Air Pollution Control Regulations, 2004* under the *Environmental Protection Act*. All equipment will have exhaust systems regularly inspected and mufflers will be operating properly.
- Regular maintenance inspections for leaks will be made on all equipment. If problems are identified, the equipment will be taken out of service and corrective action taken to prevent release of hydrocarbons into the environment.
- Drip pans shall be placed under pumps and generators. Absorbent material will be kept at all sites where pumps and generators are in use.
- All hydrocarbon leaks shall be reported to the Environmental Manager. Upon detection of a leak, the equipment is to be shut down and corrective action taken to repair the leak and clean up any contamination.
- Hoses and connections on equipment will be inspected routinely for leaks and drips.
- Equipment maintenance and fueling activities will be performed at designated sites and in compliance with applicable regulations. All heavy equipment will be maintained and operated as outlined in the Occupational Health and Safety legislation.



- Only minor repairs and maintenance (eg. lubrication) of 'non-mobile' equipment will be performed on-site. All major repairs are to be performed at a location outside the pit site.
- Fuel shall not be stored near generators or located adjacent to water bodies.
- All fuel and hazardous materials will be handled according to procedures outlined in Section 5.1.

5.3 Dust Control

The environmental concerns associated with dust include human health effects (eg. dust inhalation) and potential effects on aquatic ecosystems, waterfowl, and vegetation (eg. contaminant uptake).

Environmental Protection Procedures

The following measures shall be taken to mitigate potential effects of dust:

- Dust from road and in-pit travel shall be controlled where possible by using frequent applications of water.

5.4 Dewatering Work Areas and Site Drainage

The primary concern with site dewatering and drainage is the potential for sedimentation and the potential associated effects on water quality, aquatic ecosystems and sensitive habitats.

Environmental Protection Procedures

- Seasonal surface water accumulation will be managed using standard erosion and sediment control measures, including filter fabric fences and/or hay bales, as required.
- Monitoring site run-off at the quarry will be conducted as per provincial requirements to ensure effluent quality standards.

5.5 Waste Disposal

Waste (e.g., domestic wastes, paper, cardboard and wood), if not properly controlled and disposed of, will be unsightly and could cause human safety and health concerns. It could also attract wildlife.

Environmental Protection Procedures



CRM shall establish “washcars” (portable trailers modified as washroom facilities) on site with temporary holding tanks; sewage shall be pumped out on regular basis.

The accidental release of untreated sewage is a concern to human health, drinking water quality, and freshwater and marine ecosystems. CRM is aware of these concerns and shall adhere to the following environmental protection procedures:

- All sewage disposal activities shall comply with Newfoundland and Labrador’s *Health and Community Services Act, 1997* and the *Environmental Control Water and Sewage Regulations, 2003* under the *Water Resources Act, 2003*.
- The health inspector with the DGS is the approval authority for sewage flows under 1000 gallons. The general sanitization of the site is under the jurisdiction of the health inspector who shall perform periodic inspections.
- Portable washrooms and toilets installed/used by CRM shall be routinely inspected and properly maintained. Sewage sludge removed from the facilities shall be transported off site for approved treatment and disposal. All human sanitary waste shall be contained and disposed of in a manner that meets all environmental and health requirements.
- All solid waste will be handled according to the provincial *Environmental Protection Act*.
- All solid waste materials shall be considered, prior to disposal, for reuse, resale, or recycling. Solid waste produced by site personnel and operations will be regularly collected and disposed of at Robin Hood Bay.
- Waste accumulated on site prior to disposal will be confined, so that it does not pose an environmental or health hazard.
- Work areas will be kept clear of waste and litter to reduce the potential for attracting wildlife and reducing potential interactions with wildlife.
- Any organic waste that may attract animals (i.e., food) will be stored in covered, wildlife-proof containers.
- Burning of waste is not permitted.
- All hazardous wastes generated will be handled according to the procedures for handling fuel and hazardous materials (Section 5.1).

5.6 Clearing of Vegetation

Vegetation clearing (eg. trees and shrubs) will be required for site development. Potential environmental concerns include the loss of habitat, sedimentation of watercourses, uncontrolled burning of slash, stockpiling vegetation in or near watercourses, and disturbance or destruction of historic resources.



Environmental Protection Procedures

- Clearing activities will be limited to required areas and will comply with applicable permits, including the Cutting Permit from the Department of Natural Resources, Forestry Services Branch, as required.
- If the nest of any migratory bird is encountered during vegetation clearing, Capital Ready Mix will adhere to measures set out in Section 7.2.
- Vegetation will be cleared manually (using chain saws or other hand-held equipment) or mechanically, i.e. through the use of an excavator with a mulcher attachment. All chainsaw operators will be equipped with an adequate fire extinguisher during the fire season, as well as shovels and axes.
- A 50 m buffer zone of undisturbed vegetation will be maintained between operational areas and all water bodies, watercourses, and ecologically sensitive areas. This buffer zone will ensure water bodies and all potential fish habitat are left undisturbed. Maintenance of buffer zones will be verified by the Operations Manager.
- Merchantable or usable timber will be removed under permit of an existing forest operator.
- Cleared vegetation will be used to restore habitat where practical.
- Where possible, timber will be felled inward toward the work area to avoid damaging any standing trees.

5.7 Grubbing, Stripping and Materials Excavation

Grubbing is the removal of the vegetation mat and associated debris, while stripping is the removal of topsoil. All other soil material is removed by excavation. The principal concerns associated with grubbing, stripping and excavation are the potential adverse effects on terrestrial ecosystems and water quality, including:

- destruction of terrestrial habitat; and
- potential for sedimentation, erosion and run-off.

Environmental Protection Procedures

- Grubbing of the organic vegetation mat and/or the upper soil horizons will be restricted to the minimum area required.
- The organic vegetation mat and upper soil horizon material that has been grubbed will be stockpiled until required for use during reclamation. Any topsoil encountered shall be stockpiled separately and buried to prevent erosion and loss of nutrients.



- Measures will be implemented to reduce and control runoff of sediment-laden water during grubbing. Erosion control measures will be implemented in areas prone to soil loss (Section 5.8).
- Grubbing activities will adhere to the buffer zone requirements (50 m).
- During grubbing, care will be taken to ensure that grubbed material will not be pushed into areas that are to be left undisturbed.

5.8 Sedimentation and Erosion Prevention

Quarry activities, including clearing, grubbing and excavation, have the potential to cause erosion and sedimentation problems. Eroded material may cause sedimentation in water bodies and, subsequently, decrease suitable habitat for aquatic and terrestrial animals.

Environmental Protection Procedures

The possibility of detrimental effects from runoff and erosion is a concern with any quarry operation and is addressed by adequate planning and operation.

- All work in the vicinity of the quarry will be conducted in accordance with conditions set out in applicable permits, approvals and/or authorizations.
- A 50 m buffer zone of undisturbed natural vegetation between operational areas and all waterbodies will be maintained. This buffer zone will ensure water bodies and all potential fish habitat are left undisturbed. Maintenance of buffer zones will be verified by the Operations Manager.
- Erosion control structures (i.e. silt curtains, hay bales, sediment fences, ditching, swales, sediment ponds, etc.) will be constructed as necessary prior to beginning any activities involving disturbance of the site.
- Soil disturbance will be reduced by limiting the area exposed at any one time, stabilizing exposed soil with anti-erosion devices (i.e. rip rap, filter fabrics, gravel or wood chips), and progressive reclamation/re-vegetation of disturbed areas.
- Stormwater will be directed to sedimentation ponds or vegetated areas as appropriate within the project boundaries, which will filter any potential suspended solids.
- Black Mountain West operations will utilize infrastructure already in place at the existing quarry, including industry approved settling ponds for the collection of wash water to allow suspended solids to precipitate out. Wash water will be recycled from these existing settling ponds back into the operations for reuse in aggregate washing and dust suppression. The wash plant and associated infrastructure will remain at its current location.



- Primary means for controlling erosion will be to avoid activity that contributes to erosion; the disturbance of new areas will be minimized.
- All areas of exposed erodible soil will be stabilized by back-blading, grading and/or compacting to meet engineered slope requirements.
- If an environmental inspection reveals that sediment is entering nearby waterbodies, further mitigative measures (eg. temporary drainage ditches, settling ponds, ditch blocks/check dams or sediment dam traps) will be implemented to intercept run-off. The necessary or appropriate measures will be field-determined to ensure appropriateness and effectiveness.
- Erosion control structures will be monitored for excessive accumulation of sediment; accumulated sediment will be removed from control structures to ensure the effectiveness of the systems.

5.9 Buffer Zones

Buffer zones are vegetated boundaries maintained along water bodies, roadways, wetlands, etc.. Without adequate buffer zone vegetation, streams, ponds and lakes can become laden with sediment from run-off. Vegetation also provides cover for fish.

Environmental Protection Procedures

- A 50 m buffer zone of undisturbed natural vegetation shall be maintained between excavation areas and all waterbodies, watercourses, and ecologically sensitive areas.
- This buffer zone will ensure water bodies and all potential fish habitat are left undisturbed.
- Maintenance of buffer zones will be verified by CRM's Operations Manager.
- Erosion control measures will be constructed "upstream" of the buffer zone when required to control runoff from areas of exposed soils towards the buffer zone.
- Both the Operations Manager and the Environmental Manager will inspect silt fences and buffer zones on a regular basis to ensure sediment is not migrating into or through the buffer zone.

5.10 Surveying

Surveying activity may include the following activities: vegetation removal, traversing, and establishing targets, permanent benchmarks, and transponder stations. Surveying activities may disturb vegetation, wildlife, etc.

Environmental Protection Procedures



Vegetation Removal

- Width of survey lines will be limited to that which is absolutely necessary for line of sight and unobstructed passage.
- Whenever possible, cutting lines to the edge of open areas will be avoided.
- Wherever possible, trees and shrubs will be cut flush with the ground; stumps will not exceed 15 cm.
- Cutting of survey lines will be kept to a minimum.
- No attempt to harass or disturb wildlife will be made by any person.
- Vehicles will yield the right-of-way to wildlife.

Traversing

- All terrain vehicles will not be allowed off the right-of-way except as approved by the Environmental Manager.
- Wildlife will not be disturbed or harassed by any personnel.
- Motorized vehicles will not be permitted to enter sensitive areas without notification and approval of the Environmental Manager.
- The extent of activities in sensitive areas will be minimized.

Establishing Targets, Permanent Benchmarks and Transponder Locations

- A driven T-bar will be used to readily identify each benchmark location.
- Wildlife will not be disturbed or harassed by any personnel.
- Access to sensitive areas is to be approved by the Environmental Manager.
- Standard iron bars and sledge hammers are to be used to establish benchmarks.
- Heavy equipment will not be used to access sensitive areas.

5.11 Linear Developments

Linear developments include a range of construction related activities that are standard operations for most project types. Construction of access roads, ditching, right-of way clearing and grubbing are examples. CRM recognizes the potential for linear developments to cause disturbance to both terrestrial and aquatic habitat, particularly with respect to soil erosion and sedimentation.

Environmental Protection Procedures

- Access roads shall be adequately ditched where necessary to allow good drainage.
- Wherever possible, ditches shall be kept at the same gradient as the road.



- Culverts shall be marked for easy location during snow removal or if they fill in from debris accumulation.
- Ditching shall proceed in the upslope direction and wherever possible, ditches shall be kept at the same gradient as the road.
- Natural drainage shall be maintained whenever practical.
- Ditches shall not empty into any natural wetland or watercourse.
- Rip-rap or an erosion control blanket designed for high flows shall be used to line the bottom of ditches that have steep gradients and/or excessive erosion.
- Erosion/sedimentation control measures shall be installed and maintained as required.
- Work shall not be undertaken on easily erodible materials, or during or immediately following heavy rainfalls.

5.12 Light and Noise Levels

During both the construction and operations phase of the project there will be an increase in noise levels due to increased vehicle traffic. Noises and lights associated with quarrying activity can cause behavioural changes in wildlife, including avoidance behaviours, distribution changes, etc.

Environmental Protection Procedures

- All vehicles shall follow a designated project route and shall be properly maintained to minimize noise. All vehicles and generators shall have exhaust systems regularly inspected and mufflers shall be operating properly.

5.13 Vehicle and Heavy Equipment Traffic

Direct physical disturbances as a result of vehicles can adversely affect both terrestrial and aquatic environments. Heavy equipment has the potential to impact aquatic ecosystems and water quality, as well as environmentally sensitive areas. A variety of equipment is required for the various stages of the project. This equipment includes bulldozers, excavators, large trucks, crushers, etc.

Environmental Protection Procedures

- Equipment and vehicles shall only operate on the access road and areas designated for construction activities.
- Erosion control measures shall be implemented as required and monitored during development and operations. Repairs shall be completed as required.



6.0 COMPLIANCE MONITORING

CRM will be responsible for environmental compliance monitoring on-site and will instruct staff and contractors on project-associated environmental issues and expectations. Routine inspections and monitoring will ensure implementation of environmental protection measures specified in this document and applicable contracts, permits, approvals and authorizations.

Compliance monitoring will include, but will not be limited to, the condition and stability of the access road used for the existing development, buffer zone maintenance, erosion and sediment control measures, fuel storage facilities, etc, as well as the presence and/or mortality of migratory birds, wildlife, etc.

In addition, a water quality sampling program will be implemented to verify water bodies outside the 50 m buffer zone are not affected by CRM activities. Sampling will be conducted on a quarterly basis during operational months; analyses will include general chemistry, metals, TSS and TPH/PAH. Sampling locations will include settling ponds and associated discharges. Results will be submitted within 30 days of testing to the Director of the Pollution Prevention Division, Department of Environment, for review.



7.0 CONTINGENCY PLANS

Contingency plans have been developed to address accidents and unplanned incidents. These contingency plans will be modified as required throughout the life of the project.

The following contingency plans have been developed for this project:

- Fuel and Hazardous Materials Spills
- Migratory Bird and Wildlife Encounters
- Forest Fires

Capital Ready Mix Ltd. supports preventative measures as the first line of defense against the possibility of accidents.

7.1 Fuel and Hazardous Material Spills

Fuel and hazardous materials can be damaging to vegetation, soil, surface water, ground water, wildlife, aquatic organisms, historic resources and human health and safety.

Environmental Protection Procedures

In the event of a fuel or hazardous material spill, the following procedures will apply:

1. The individual who discovers the leak or spill shall make a reasonable attempt to immediately stop the leakage and contain the flow.
2. Spill location, type of fuel or hazardous material, volume, and terrain conditions at the spill site shall be determined and reported immediately to the Environmental Manager.
3. All spills 70 litres or greater are required to be reported, in accordance with provincial regulations.
4. Any spill on land, regardless of size, that may enter a waterbody frequented by fish shall be reported immediately to the spill line (709) 772-2083 or (800) 563-9089, as required by the *Fisheries Act*. Required pertinent information includes:
 - a. name of reporter and phone number;
 - b. time of spill or leak;
 - c. time of detection of spill or leak;
 - d. type of product spilled or leaked;
 - e. amount of product spilled or leaked;
 - f. location of spill or leak;
 - g. source of spill or leak;



- h. type of accident - collision, rupture, overflow, other;
 - i. owner of product and phone number;
 - j. if the spill or leak is still occurring;
 - k. if the spill or leaked product is contained, and if not, where it is flowing;
 - l. wind velocity and direction;
 - m. temperature;
 - n. proximity to water bodies, water intakes, and facilities; and
 - o. snow cover and depth, terrain, and soil conditions.
5. The Environmental Manager shall act as the "On-Scene-Commander" (OSC) for the purposes of cleaning up a fuel or hazardous materials spill and shall be trained in spill clean-up procedures and how to mobilize the clean-up equipment.
 6. The cleanup equipment present shall include spill kits. Drum spill kits shall be placed strategically around site. Portable spill kits shall be present in all equipment operating on site.
 7. In reaching decisions on containment and clean-up procedures, the safety of staff will be a priority, followed by protection of water supplies and minimizing damage to waterbodies.
 8. The OSC shall:
 - a. act in consultation with the regulating authorities to assess site conditions and environmental impacts of various cleanup procedures;
 - b. deploy on-site staff to assist in clean-up, as required;
 - c. take all necessary precautions to ensure that the incident does not recur;
 - d. prepare all reports and provide to regulators as required.

7.2 Migratory Bird and Wildlife Encounters

Migratory birds may be impacted by construction activities in a number of ways, including: dust, noise (disturbances to nesting or feeding), reduction in water quality, destruction of habitat, etc.

Wildlife encounters pose a risk for stress or injury to wildlife as well as site personnel. Control measures and environmental protection procedures have been put in place to reduce the risk to wildlife and humans.

Environmental Protection Procedures

Migratory Birds

- All conditions under the *Migratory Birds Convention Act* and Regulations shall be adhered to.



- Capital Ready Mix staff shall be aware that migratory birds, their eggs, nests, and young are protected under the *Migratory Birds Convention Act*.
- If the nest of any migratory bird is encountered during vegetation clearing, the nest site and neighbouring vegetation will be left undisturbed until nesting is completed and construction activities be minimized in the immediate area until nesting is completed.
- No person shall disturb, destroy, or take the nest or egg of a migratory bird.
- Staff shall avoid disturbances to all birds in and near the project area; concentrations of birds shall not be approached.
- Site and working areas shall be kept clean of food scraps and garbage. Waste shall be collected for disposal at an approved landfill site.

Wildlife Encounters

- Project personnel are prohibited from hunting, trapping, or fishing on site.
- Site and working areas will be kept clean of food scraps and garbage.
- Waste will be collected for disposal in appropriate containers. Waste will be transferred to the local landfill routinely as needed.
- No attempt shall be made by any person at the project site to chase, catch, divert, follow, or otherwise harass wildlife by vehicle or on foot.
- Equipment and vehicles will yield the right-of-way to wildlife.
- No personal pets, domestic or wild, shall be permitted on site.
- When nuisance animals are identified in the project area, Capital Ready Mix staff will consult with the Department of Environment and Conservation; all actions will comply with Wildlife Division regulations and permits.
- Under provincial wildlife regulations, the displacement and release of any animal is the sole jurisdiction of the Department of Environment and Conservation, and is to be undertaken only under appropriate supervision.
- If the nest of any raptor or other bird is encountered, activity in the vicinity of the nest is to be curtailed until the Wildlife Division is contacted and appropriate mitigation is applied.
- No attempts to chase, catch, divert, follow or otherwise harass wildlife by ATV, aircraft, vehicle, or on foot shall be made by any person at the Project Site.
- Equipment and vehicles shall yield the right-of-way to wildlife.



7.3 Fire

Activities related to site development have the potential to result in fire, which could spread to the surrounding area.

Environmental Protection Procedures

Capital Ready Mix shall take all precautions necessary to prevent fire hazards when working at the site. These include, but are not limited to:

- Proper disposal of all flammable waste on a regular basis.
- CRM shall make available, in proper operating condition, sufficient fire fighting equipment to suit its labour force and fire hazards. Such equipment shall comply with and be maintained to the manufacturer's standards. CRM shall train its personnel in the use of such equipment as required.
- In the event of a brush fire, staff shall take immediate steps to contain or extinguish the fire.
- Fires shall be reported immediately to the Operations Manager, or other manager as available, who will report the fire as per provincial requirements:

Provincial Forest Fire Communications Centre

Contact Information - Regular Hours

709 637 2328 or 709 637 2653

Fax: 709 637 2403

Contact Information - After Hours

709 637 2328 or 709 632 1154

1-866-709-FIRE(3473)

The following information shall be provided:

- name of the reporter and phone number;
- time of detection of the fire;
- size of the fire; and
- location of the fire.
- The RCMP and closest fire department shall also be notified immediately through the emergency response system (911).



8.0 CONTACT LIST

| TITLE | NAME | CONTACT INFORMATION |
|---|--|--|
| CRM Personnel | | |
| General Manager | Jason Coish | Office: 709 364 5008 Cell: 709 6924965 JCoish@capitalreadymix.ca |
| Operations Manager | Leonard Warfield | Office: 709 365 5008 Cell: 709 687 2263 LWarfield@capitalreadymix.ca |
| Aggregate and Mineral Resources Manger | Roderick Mercer | Office: 709 782 3404 Cell: 709 689 1801 RMercer@newcrete.ca |
| Regulators | | |
| NL Department of Environment and Conservation | - | 709 729 4211 1 800 563 6181 |
| 24 hr Environmental Emergency Line | - | 709 772 2083 1 800 563 9089 |
| 24 hr Forest Fire Emergency Line | Department of Forest Resources and Agrifoods Fire Patrol | 1 800 898 4528 |
| Discovery of Contaminated or Hazardous Material | Government Service Centre | 709 729 2550 |

APPENDIX E

QUARRY LEASE QUESTIONNAIRE

QUARRY LEASE QUESTIONNAIRE

The information you are providing will only be used for the purpose for which it has been provided.

Instructions:

- Please type or print clearly
- Mail completed form
- Use additional sheets if necessary

1. I/We Brad Dyke, P. Geo., Senior Project Geologist
no quarry permit exists, work was done under QMEL 705:1438
 hereby make application for a QUARRY LEASE pursuant to QUARRY PERMIT NO. 11a
 under the terms and conditions of the QUARRY MATERIALS ACT 1998, SNL1998.

Company represented Newcrete Investments Limited Partnership, by its general partner, Newcrete Investments GP Ltd.

Position in Company Senior Project Geologist

Address of Company (applicant if no company involved)

P.O. Box 8056, Station A, St. John's, NL, A1B 3M7
Please address correspondence to P.O. Box 8274, Station A, St. John's, NL, A1B 3N4

Postal Code: see above Telephone No. (709) 782-3404

Lease to be issued to: Newcrete Investments Limited Partnership, by its general Partner, Newcrete Investments GP Ltd.

2. This lease is for the purpose of removing: (please tick appropriate spaces)

- | | |
|---|--|
| <input type="checkbox"/> Rock | <input type="checkbox"/> Topsoil |
| <input checked="" type="checkbox"/> Sand | <input type="checkbox"/> Fuel Peat |
| <input checked="" type="checkbox"/> Gravel | <input type="checkbox"/> Horticultural Peat |
| <input type="checkbox"/> Borrow, fill or ballast material | <input type="checkbox"/> Other (specify) _____ |

3. The operation will involve: (please tick appropriate spaces)

- | | |
|--|--|
| <input type="checkbox"/> Drilling & Blasting | <input checked="" type="checkbox"/> Washing |
| <input type="checkbox"/> Ripping | <input type="checkbox"/> Screening |
| <input type="checkbox"/> Pit Run Removal | <input type="checkbox"/> Other (specify) _____ |
| <input checked="" type="checkbox"/> Crushing & Screening | |

4. Quarry material is for direct sale from stockpile or pit face as: (please tick appropriate spaces)

- | | |
|---|--|
| <input type="checkbox"/> Class A. aggregate | <input type="checkbox"/> Rip Rap material |
| <input type="checkbox"/> Class B. aggregate | <input type="checkbox"/> Topsoil |
| <input type="checkbox"/> Mixed unclassified aggregate | <input type="checkbox"/> Fuel Peat |
| <input checked="" type="checkbox"/> Sand for concrete | <input type="checkbox"/> Horticultural peat |
| <input type="checkbox"/> Fill or ballast | <input checked="" type="checkbox"/> Other (specify) <u>3/4" stone for concrete</u> |

5. Secondary processing and manufacturing operations on site will be:

- () Ready Mix concrete
- () Asphalt plant
- () Cement plant
- () Brick manufacture
- () Other (specify) NONE

6.0. Is the sale of material dependent upon: (please tick appropriate spaces)

(a) () Contract; Specify:

Company or department: N/A

Address: _____

Contact Number: _____

or

(b) (✓) Avuton Peninsula Local demand (specify area) The amount of aggregate quarried & sold is dictated by the local residential & industrial demand for concrete.

(c) () Regional demand outside local district (specify) There maybe contracts that become available outside of the local demand noted above

or

(d) (✓) Other (specify) The amount of aggregate mined & sold will also be dictated by the number of concrete based gravity structures being built.

7.0. Historical information:

7.1 Number of quarry permits previously or currently held by the applicant on this site, and the annual production obtained.

| <u>Quarry Permit#</u> | <u>Year</u> | <u>Type of Material</u> | <u>Production (state units)</u> |
|--|-------------|-------------------------|---------------------------------|
| <u>No previous quarry permits have been held for this site.</u> | | | |
| <u>The adjacent quarry lease 114308 had production of sand & gravel @ 275,000+ in 2012</u> | | | |
| | | | |
| | | | |

7.2 Estimated amount of topsoil and/or organics (tonnes or m³) stockpiled at site, if none indicate reasons:

No previous quarrying has been completed within the proposed quarry lease boundary.

8.0 Resource assessment and documentation.

8.1 Details of exploration work undertaken to assess the reserves detailed in 9. (attach copies of geotechnical or engineering reports and maps)

| Boring or Drilling | Trenches | | Testpits | | Total Cost | See Appendix A |
|--|--|-----------|------------|-----------|------------|----------------|
| | # of Holes | Av. Depth | # of Holes | Av. Depth | | |
| Prior to quarry permit | 41 | 3.0m | | | | |
| ↳ only 29 occur within the proposed lease boundary & are up to 9.5m deep | | | | | | |
| Exploration permit date: | 2013 | | 06 | | 10 | QE13-7051438 |
| Quarry Materials Exploration Licence → 705:1438 | | | | | | |
| During quarry permit tenure | NO quarry permit has been issued for the proposed quarry lease | | | | | |
| Q.P. # | | | | | | |

8.2 Name of company and supervisor conducting exploration program

Pennecon Ltd.
Brad Dyke, D. Geo.

8.3 Exploration program(s) proposed during tenure of Quarry Lease

No exploration programs are proposed as all the necessary exploration work has been completed to define the proposed quarry outline.

9.0 Summary of Reserve Materials

| | Average Thickness (m) | Calculated Reserves (specify tonnes or m ³) | Estimated Production/yr | Estimated Life |
|--------------------------|-----------------------|---|--|----------------|
| Rock in place | | | | |
| Broken rock | | | | |
| Sand & gravel material | ~5m but up to 9.5m | 984,309 m ³ | 140,616 m ³ to 246,099 m ³ | 4 to 7 years |
| Sand | | | | |
| Fill or borrow | | | | |
| Topsoil | | | | |
| Horticultural Peat | | | | |
| Fuel Peat | | | | |
| Other Material (specify) | | | | |

Requesting that the lease be issued for 20 years as annual production may vary & can be somewhat hard to predict.

will be quarried after the sand/gravel in the current quarry lease 114308 is exhausted.

10.0 Development Proposal

The issuance of a QUARRY LEASE will be subject to the submission of acceptable development proposals, which shall consist of the following maps and plans, using the prescribed scales as applicable and accompanied by descriptive texts, as directed below:

10.1 Location Map (no descriptive text required)

Whole or part of an NTS Sheet (1:50,000 Scale) indicating the location of the area under application.

10.2 Surrounding Landuse Map

10.2.1 An airphoto enlargement (approx. scale 1:2500) on a transparent film (not a sepia) is to be submitted showing the surrounding land use extending at least 300 m beyond each boundary line.

10.2.2 The following major features to be outlined and labelled on this plan would include but not be limited to:

| | |
|----------------------------------|--------------------------------|
| Heavily and lightly wooded areas | roads, trails, etc. |
| Water bodies and water courses | bridges, culverts |
| Existing pits and quarries | buildings and other structures |
| Other land uses - specify | utilities (hydro & telephone) |
| Water mains or sewers - specify | |

10.3 Boundary Survey

This application must be accompanied by a legal survey and a copy of the original survey field notes.

10.4 Plans of Existing Site

10.4.1 A plan on a transparent film, (not a sepia) or computer digital files and description (scale 1:500), prepared by a registered professional acceptable to the Manager, Quarry Materials Administration, is to be completed for the area specified in the quarry lease application.

10.4.2 The location of all corner posts boundary lines and line marker post (at 50 m intervals), with coordinates referred to a suitable fixed local datum or the 3 degree Transverse Mercator Projection System, as advised by the Manager, Quarry Material Administration, shall also appear on the plan.

10.4.3 The plan shall also include the elevations, referenced to a suitable datum, of the following:
 (i) all corner posts (ii) all line marker posts

10.4.4 Contours, referenced to the above mentioned datum, at 2 m intervals in areas which are deemed to be lightly wooded and spot heights, referenced to the same datum, in areas which are deemed to be heavily wooded shall also form part of the plan of the existing site.

10.4.5 This plan shall also indicate the existing features of the area and would include but not be limited to:

| | |
|---------------------------------|-------------------------------|
| Heavily or lightly wooded areas | roads, trails, etc. |
| Water bodies and water courses | bridges, culverts |
| Existing pits and quarries | utilities (hydro & telephone) |
| Other land uses (specify) | watermain or sewers - specify |

10.5 Development Plans and Program

The development plans together with the preceding information shall form part of the basis of acceptance or refusal of any quarry lease development proposal. Therefore it is to the advantage of the applicant to ensure that they contain as much data and information as possible, particularly in regards to the development and the measures the applicant propose to take to mitigate against possible impacts of the development i.e. prevention of pollution, noise and dust disturbances to nearby land uses and the reclamation of the disturbed land area during the period of the operation i.e. progressive rehabilitation of depleted quarry areas.

10.5.1 The various phases of the quarry development taking into account the annual rate of production and the life expectancy of the quarry operation and incorporating as much data and information as possible, shall be indicated on one or more plans (scale 1:500) and supported by a descriptive text.

Example:

Phase 1 - Beginning to end of year 1 of operation
 Phase 2 - Operation years 2 to 5
 Phase 3 - Operation years 6 - 10
 Phase 4 - Operations beyond 10 years.

10.5.2 In addition, the development plan(s) shall indicate the various locations or outlines indicate the various locations or outlines of working faces, benches, dumps, bush clearing, stripping areas, streams and ponds, settling ponds, stockpiles, the location of plant, quarry or access roads, equipment workshop or storage areas, office and parking, electrical installations, weigh scales, explosive magazines, buildings topsoil stockpiles, areas of reclamation, berms and tree screens etc. during each successive phase of the operation.

10.5.3 The descriptive text would describe:

- (a) Any of the above which could not be shown on the site map.
- (b) The methods of mining, processing and secondary processing (if applicable). A listing of equipment must be included.
- (c) Rate of production estimates, monthly and annually.
- (d) Manpower requirements.
- (e) The methods of clear cutting, stripping, topsoil clearing and the proposed methods of stockpiling and preservations of topsoil materials and the disposal or disposition of any waste quarry materials.

10.6 Post-Development Plan

This map (scale 1:500) together with the descriptive text to accompany it shall describe in detail the proposed appearance of the site after the completion of quarry working together with a description of a proposed final land-use. The steps taken progressively throughout the development to reclaim the quarried areas to this designated land use shall be compatible with the surrounding land use or those that may be designated on any municipal or regional land use plans.

The plan (scale 1:500) shall show the following:

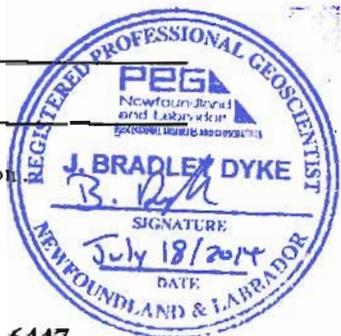
- 10.6.1 Corner posts, boundary lines and line marker posts, the elevation of the corner posts and marker posts, any spot heights of points determined in any of the above plans that will be undisturbed by the quarry development, the elevation of the normal level of any water bodies on the site plus depth of water.
- 10.6.2 Proposed contours at 2 m intervals in all quarried or disturbed areas as referenced to the original "Plan of the Existing Site".
- 10.6.3 The location of any or all of the following that will remain at the site:
 - Waterfilled areas (indicating depth of waters)
 - Streams buildings or other structures
 - Roads, trails, etc. utilities or services etc.
 - Bridges, culverts, etc.

11.0. I submit this application and plans having completed the questionnaire requirements to the best of my ability.

Signed (Applicant): B. Dyke

Date: July 18, 2014

12.0. Attach maps and additional texts to the back of this application



Completed Application Forms are to be mailed to:

**Mineral Lands Division
Department of Natural Resources
P.O. Box 8700
St. John's, NL
A1B 4J6**

Contacts:

**Fred Kirby - (709)729-6447
Joanne Janes - (709)729-4044
Fax - (709)729-6782
fredkirby@gov.nl.ca
jjanes@gov.nl.ca
www.nr.gov.nl.ca/mines&en/**



Elevation Contours at 2 meter Intervals (contours labelled in meters)

Proposed 25.6 Ha Quarry Lease

Grubbing & Topsoil Stockpile

348,244mE
5,255,270mN
150.921m elev.

348,304mE
5,255,270mN
135.464m elev.

347,865mE
5,254,924mN
199.408m elev.

347,900mE
5,254,814mN
198.043m elev.

347,899mE
5,254,652mN
196.105m elev.

347,843mE
5,254,580mN
184.565m elev.

347,900mE
5,254,484mN
176.349m elev.

347,962mE
5,254,469mN
171.216m elev.

348,198mE
5,254,579mN
160.547m elev.

348,297mE
5,254,443mN
141.665m elev.



Capital Ready Mix Limited

Project: Black Mountain West

ELEVATION CONTOUR MAP

| | | |
|---------------------|-----------------------|---------------------------------|
| Map 1 | Area: Eastern, NL | Date Drafted: 01/14/2014 |
| NAD 83, UTM Zone 22 | Drafted By: B. Dyke | eBee Survey Flow: Sept. 19, '13 |
| Scale: 1:1,500 | File: Contour Map.wor | NTS: 1N/06 |



Elevation Contours at 2 meter Intervals (contours labelled in meters)



Proposed 25.6 Ha Quarry Lease

Mining Phase Boundaries

Cross Section Line Trace

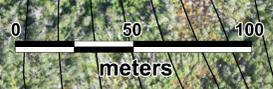
Grubbing & Topsoil Stockpile

Phase 2
6.6 Ha
245,260 m³
515,045 t

Phase 3
7.1 Ha
244,568 m³
513,593 t

Phase 4
7.5 Ha
251,688 m³
528,545 t

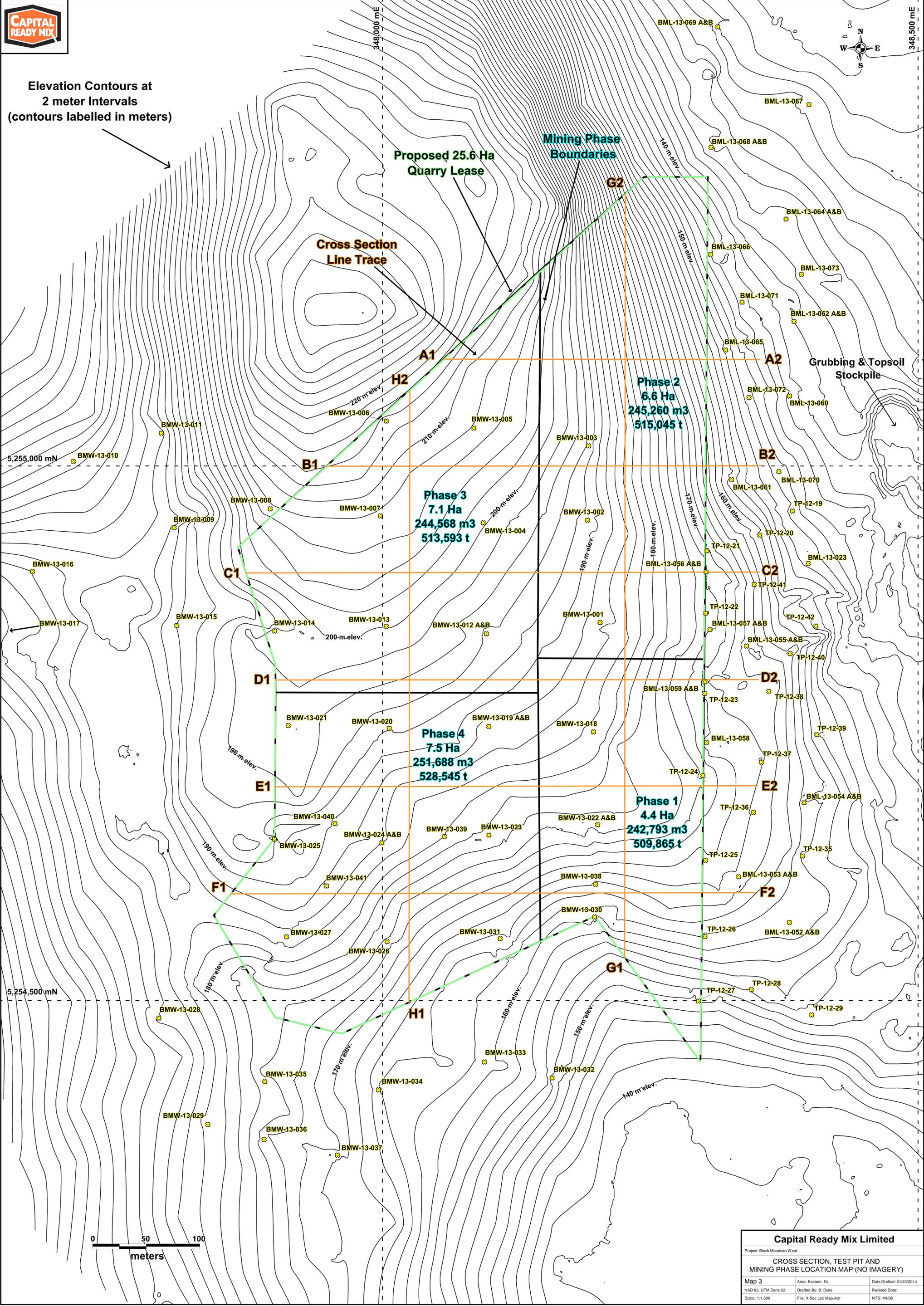
Phase 1
4.4 Ha
242,793 m³
509,865 t



| | | |
|--|-------------------------|---------------------------------|
| Capital Ready Mix Limited | | |
| Project: Black Mountain West | | |
| CROSS SECTION, TEST PIT AND MINING PHASE LOCATION MAP | | |
| Map 2 | Area: Eastern, NL | Date Drafted: 01/10/2014 |
| NAD 83, UTM Zone 22 | Drafted By: B. Dyke | eBee Survey Flow: Sept. 19, '13 |
| Scale: 1:1,500 | File: X Sec Loc Map.wor | NTS: 1/106 |



Elevation Contours at 2 meter Intervals (contours labelled in meters)



Proposed 25.6 Ha Quarry Lease

Mining Phase Boundaries

Cross Section Line Trace

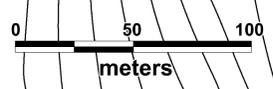
Grubbing & Topsoil Stockpile

Phase 2
6.6 Ha
245,260 m³
515,045 t

Phase 3
7.1 Ha
244,568 m³
513,593 t

Phase 4
7.5 Ha
251,688 m³
528,545 t

Phase 1
4.4 Ha
242,793 m³
509,865 t

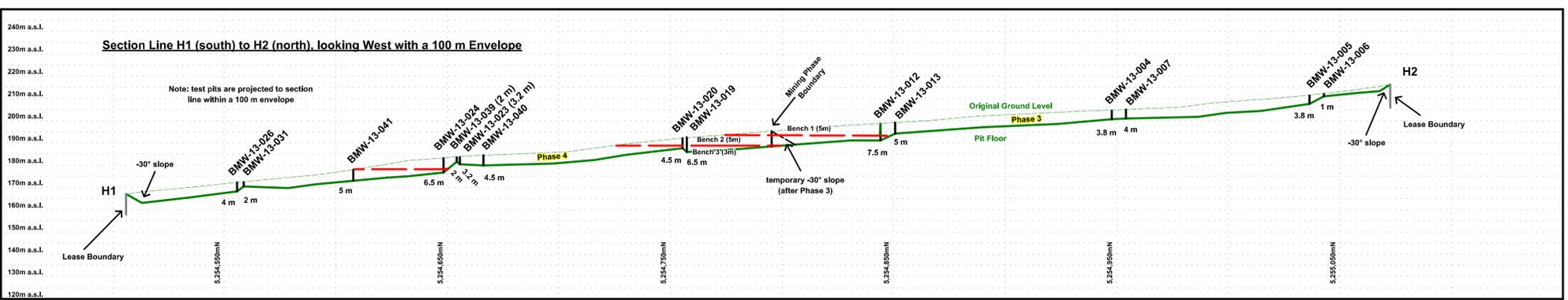
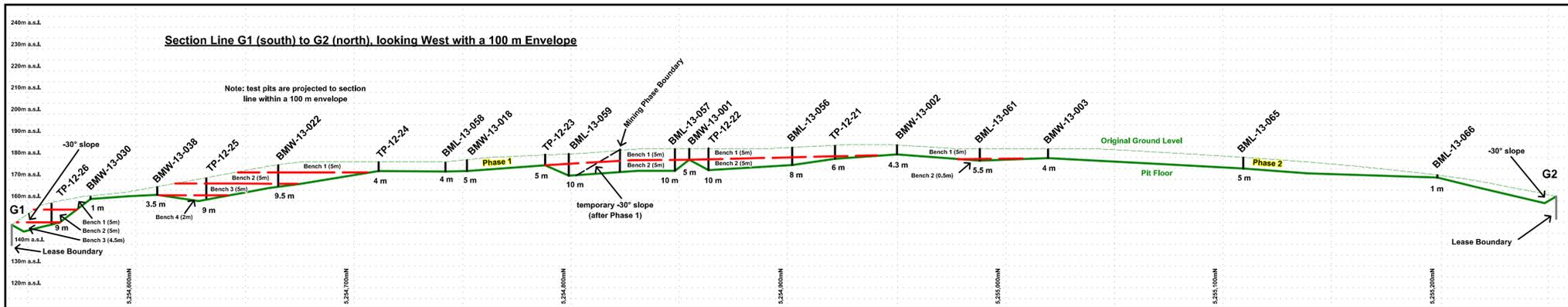
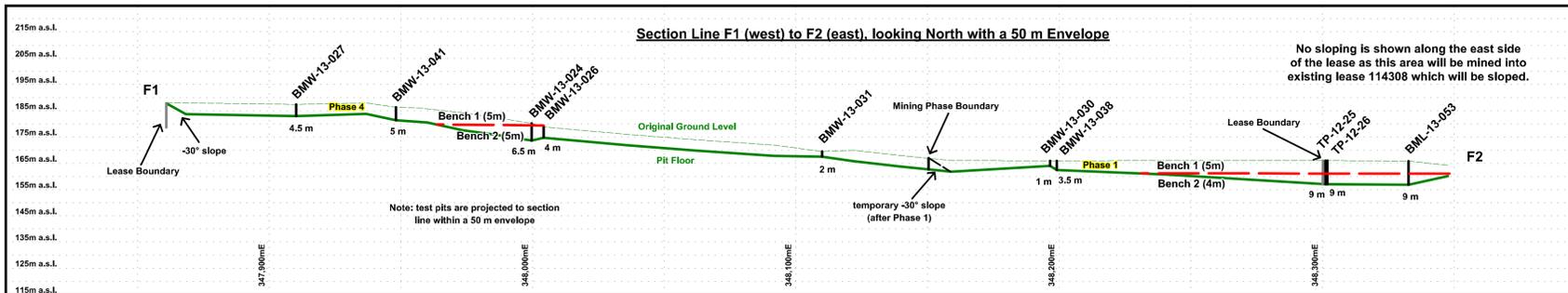
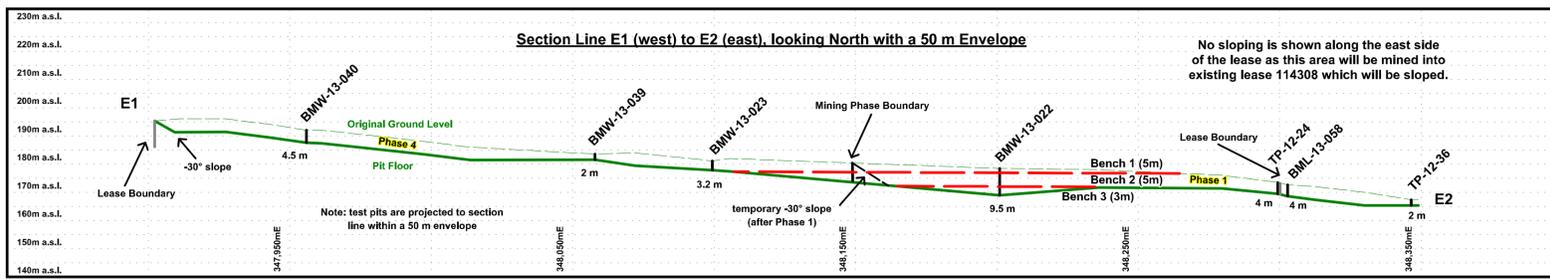
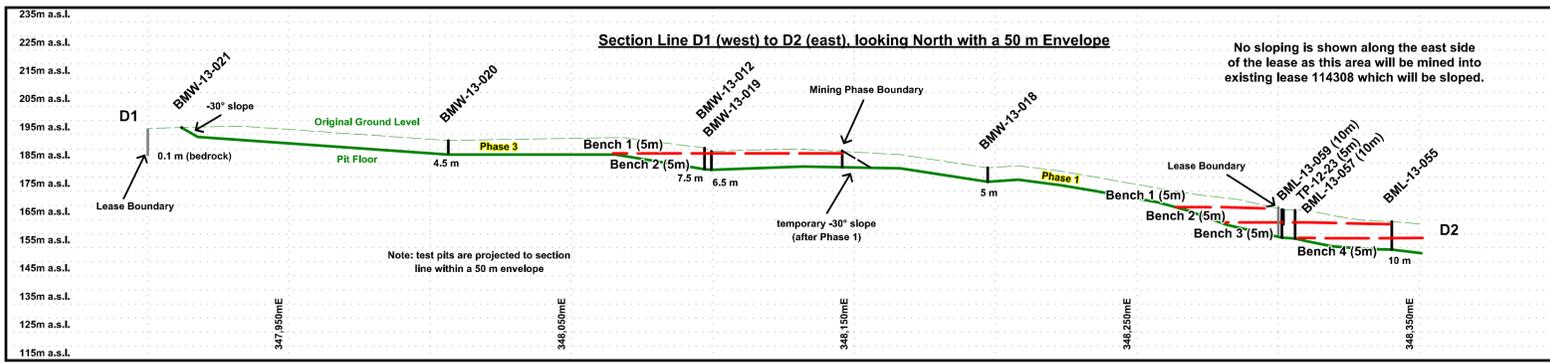
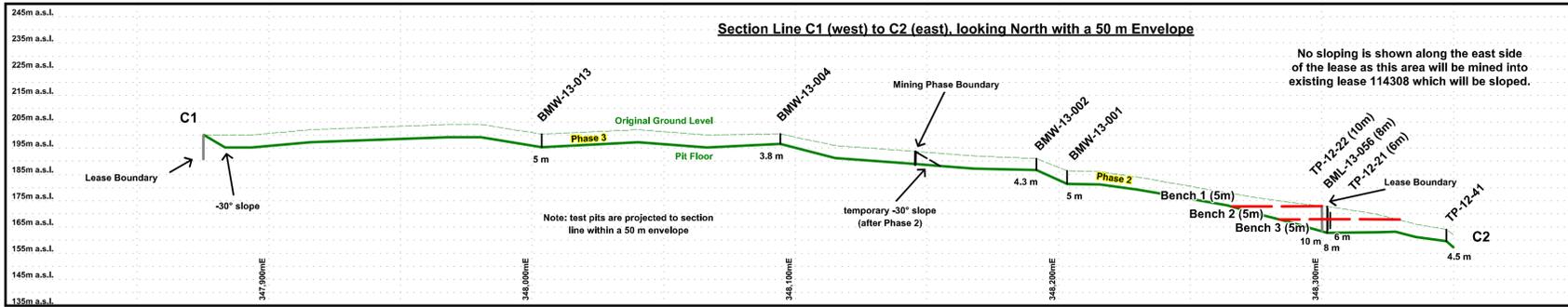
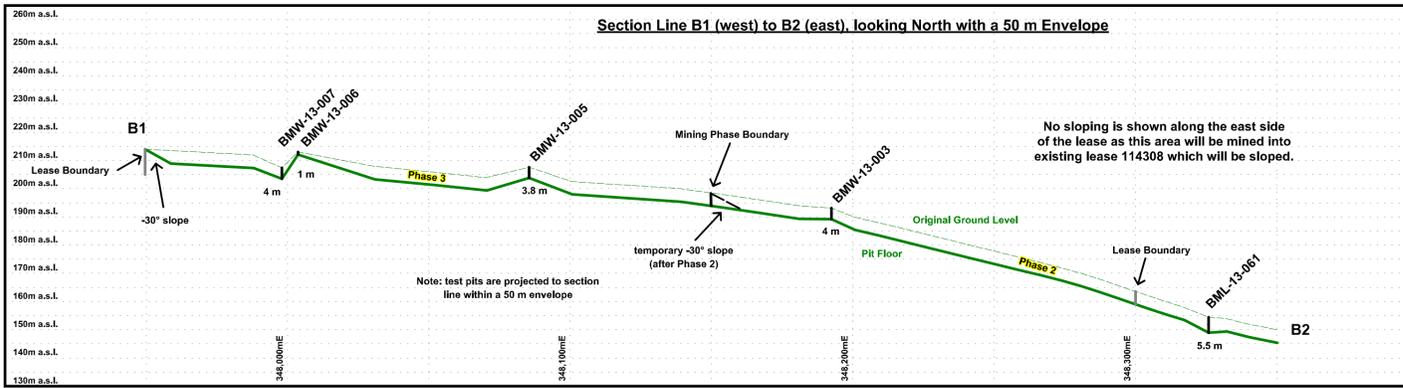
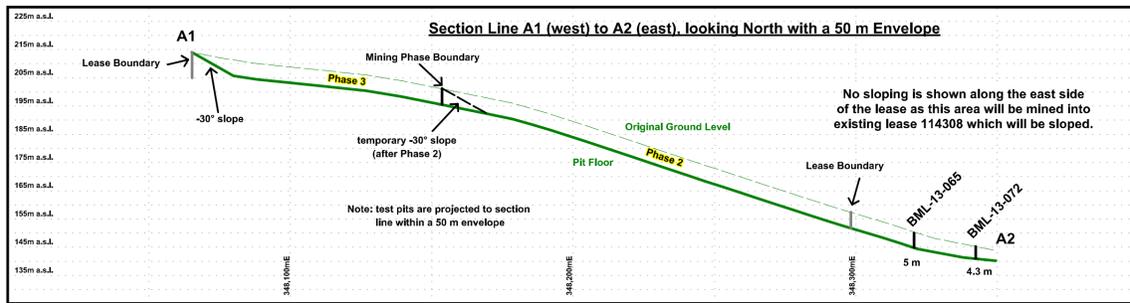


| | | |
|--|-------------------------|--------------------------|
| Capital Ready Mix Limited | | |
| Project: Black Mountain West | | |
| CROSS SECTION, TEST PIT AND MINING PHASE LOCATION MAP (NO IMAGERY) | | |
| Map 3 | Area: Eastern, NL | Date Drafted: 01/23/2014 |
| NAD 83, UTM Zone 22 | Drafted By: B. Dyke | Revised Date: |
| Scale: 1:1,500 | File: X_Sec Loc Map.wor | NTS: 1N/06 |

| | | |
|------------------------------|-------------------------|--------------------------|
| Project: Black Mountain West | | |
| CROSS SECTIONS (A TO H) | | |
| Map 4 | Area: Eastern, NL | Date Drafted: 01/16/2014 |
| NAD 83, UTM Zone 22 | Drafted By: B. Dyke | Revised Date: |
| Scale: 1:1,250 | File: X Sec Loc Map.wor | NTS: 1N/06 |



NOTE: Refer to Map 2 & 3 for Cross Section Trace Locations





Elevation Contours at 2 meter Intervals (contours labelled in meters)

Proposed 25.6 Ha Quarry Lease

Phase 2
6.6 Ha
245,260 m³
515,045 t

Phase 3
7.1 Ha
244,568 m³
513,593 t

Phase 4
7.5 Ha
251,688 m³
528,545 t

Grubbing Stockpile

Mining Phase Boundary's

Pit Floor Elevation Contours

Temporary -30° Slope

Temporary -30° Slope

Toe of slope Phase 1

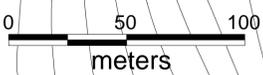
-30° Slope

5,255,000 mN

5,254,500 mN

346,000 mE

346,500 mE



Capital Ready Mix Limited

Project: Black Mountain West

MINING PLAN TO END OF PHASE 1

| | | |
|---------------------|--------------------------------------|--------------------------|
| Map 5 | Area: Eastern, NL | Date Drafted: 01/22/2014 |
| NAD 83, UTM Zone 22 | Drafted By: B. Dyke | Revised Date: |
| Scale: 1:1,500 | File: Mining Plan Map_All Phases.wor | NTS: 1N/06 |



Elevation Contours at 2 meter Intervals (contours labelled in meters)

Proposed 25.6 Ha Quarry Lease

Toe of slope Phase 2

-30° Slope

Grubbing Stockpile

Phase 3
7.1 Ha
244,568 m³
513,593 t

Mining Phase Boundaries

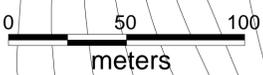
Phase 4
7.5 Ha
251,688 m³
528,545 t

Pit Floor Elevation Contours

Temporary -30° Slope

Toe of slope Phase 1

-30° Slope



Capital Ready Mix Limited

Project: Black Mountain West

MINING PLAN TO END OF PHASE 2

| | | |
|---------------------|--------------------------------------|--------------------------|
| Map 6 | Area: Eastern, NL | Date Drafted: 01/22/2014 |
| NAD 83, UTM Zone 22 | Drafted By: B. Dyke | Revised Date: |
| Scale: 1:1,500 | File: Mining Plan Map_All Phases.wor | NTS: 1N/06 |



Elevation Contours at 2 meter Intervals (contours labelled in meters)

Proposed 25.6 Ha Quarry Lease

Toe of slope Phase 3

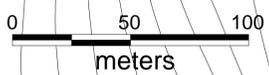
Toe of slope Phase 2

Grubbing Stockpile

Mining Phase Boundaries

Phase 4
7.5 Ha
251,688 m³
528,545 t

Pit Floor Elevation Contours



| | | |
|--------------------------------------|--------------------------------------|--------------------------|
| Capital Ready Mix Limited | | |
| Project: Black Mountain West | | |
| MINING PLAN TO END OF PHASE 3 | | |
| Map 7 | Area: Eastern, NL | Date Drafted: 01/22/2014 |
| NAD 83, UTM Zone 22 | Drafted By: B. Dyke | Revised Date: |
| Scale: 1:1,500 | File: Mining Plan Map_All Phases.wor | NTS: 1N/06 |



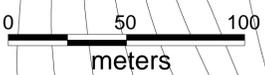
Elevation Contours at
2 meter Intervals
(contours labelled in meters)

Proposed 25.6 Ha
Quarry Lease

Sloping Along East Boundary into
Current Quarry Lease #114308

Grubbing
Stockpile

Pit Floor Elevation
Contours



Capital Ready Mix Limited

Project: Black Mountain West

**MINING PLAN TO END OF PHASE 4
(POST DEVELOPMENT PLAN MAP)**

| | | |
|---------------------|--------------------------------------|--------------------------|
| Map 8 | Area: Eastern, NL | Date Drafted: 01/22/2014 |
| NAD 83, UTM Zone 22 | Drafted By: B. Dyke | Revised Date: |
| Scale: 1:1,500 | File: Mining Plan Map_All Phases.wor | NTS: 1N/06 |



Proposed 25.6 Ha Quarry Lease

Toe of Slope

Toe of Slope

Phase 2
6.6 Ha Disturbed
3.2 Ha Reclaimed

Phase 3
7.1 Ha Disturbed
5.8 Ha Reclaimed
(incl. part of Phase 2)

Grubbing Stockpile

Sloping Along East Boundary into Current Quarry Lease #114308

Mining Phase Boundaries

Phase 4
7.5 Ha Disturbed
14.5 Ha Reclaimed
(incl. the remaining parts of Phase 1, 2, & 3)

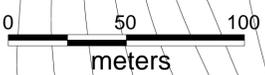
Pit Floor Elevation Contours

Phase 1
4.4 Ha Disturbed
2.1 Ha Reclaimed

Toe of Slope

Toe of Slope

Toe of Slope



Capital Ready Mix Limited

Project: Black Mountain West

RECLAMATION PLAN MAP

| | | |
|---------------------|--------------------------------------|--------------------------|
| Map 9 | Area: Eastern, NL | Date Drafted: 01/28/2014 |
| NAD 83, UTM Zone 22 | Drafted By: B. Dyke | Revised Date: |
| Scale: 1:1,500 | File: Mining Plan Map_All Phases.wor | NTS: 1N/06 |