

ARIS SUMMARY SHEET

District Geologist, Vancouver

Off Confidential: 94.10.21

ASSESSMENT REPORT 23066

MINING DIVISION: Nanaimo

PROPERTY: Beaver

LOCATION: LAT 50 30 05 LONG 126 53 45  
UTM 09 5596275 649223  
NTS 092L07W 092L10W

CAMP: 030 Nimpkish Area

CLAIM(S): Beaver 1-4

OPERATOR(S): Panorama Natural Stone Ltd.

AUTHOR(S): Henneberry, R.T.

REPORT YEAR: 1993, 23 Pages

COMMODITIES

SEARCHED FOR: Dimension Stone

KEYWORDS: Dimension stone, Marble, Quatsino Formation, Limestones, Triassic  
WORK

DONE: Geological, Physical

GEOLOGICAL 100.0 ha

Map(s) - 2; Scale(s) - 1:2000, 1:500

PETROLOGICAL 35 sample(s)

TRENCHES 282.0 m 8 trench(es)

MINFILE: 092L

7

Box 14, Coal Harbour, B.C. V0N 1K0  
Phone : (604) 949-5197 Fax : (604) 949-5198

FINAL REPORT  
1993 PHASE I AND II EXPLORATION PROGRAM  
FOR THE  
**BEAVER PROPERTY**

Nanaimo Mining Division  
Vancouver Island, B.C.

LOG NO:	OCT 27 1993	RD.
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FOR  
PANORAMA NATURAL STONE LTD.  
**GEOLOGICAL BRANCH**  
**ASSESSMENT REPORT**

**23,066**

By: R. Tim Henneberry, P. Geo.  
October 15, 1993

## SUMMARY

The preliminary assessment of the Beaver property in the Nanaimo Mining Division of Vancouver Island has met with favorable results. The mapping and sampling program has identified marketable stone on the claims. The excavator trenching program has opened and extended the zone. A program of diamond drilling is recommended to test the zone to depth.

The Beaver property consists of the Beaver 1-2 and Beaver 3-4 two-post mineral claims. The property is located 15 kilometres east of Port McNeill. A maintained logging road bisects the property.

A program of mapping and sampling was confined to rock cuts and an existing "quarry site", previously used for rail ballast. A series of samples were cut and polished to assess the suitability of the marble for use as slabs and tiles. A white marble, very similar to marbles from the Cararra District of Italy, has been identified. As well, a black marble somewhat similar to a Negro Marquina has also been mapped.

A small program of excavator trenching was concentrated in the area of the "existing quarry" to extend the white marble along the bed. A series of 8 radial trenches succeeded in extending the zone a further 50 metres ahead of the "quarry" face. Trenches spaced further were impeded by a grey soil horizon that was impenetrable for the John Deere 690 excavator.

The favorable results warrant further work. A 1200 foot (365 metre) diamond drilling program is recommended to test the white marble to a depth of 100 feet (30 metres) with 7 holes and to test the black marble to the same depth with 5 holes. Total cost of this program is estimated at \$39,575.

The completed exploration program cost is \$19,941.56.

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## INTRODUCTION

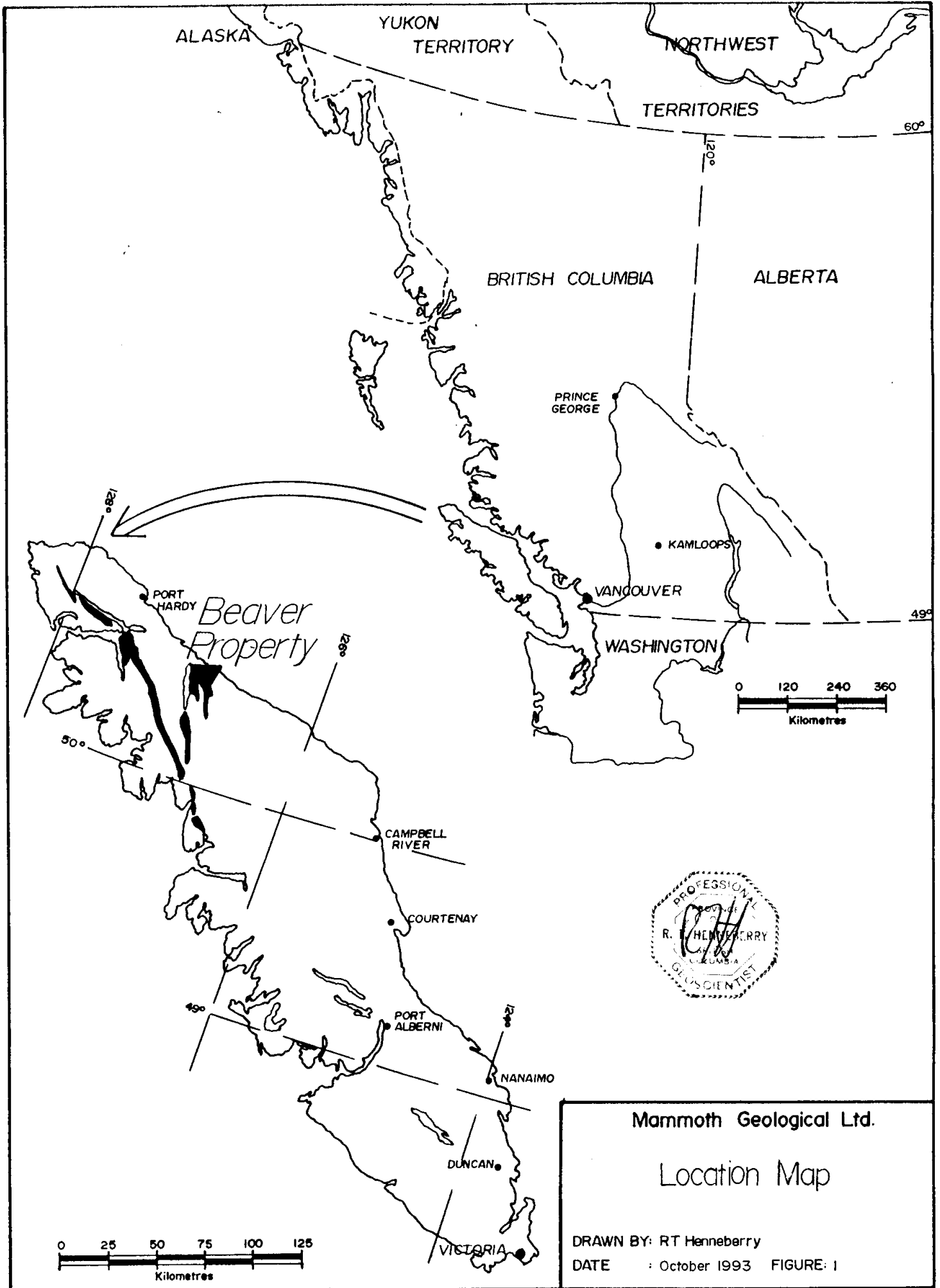
The purpose of this report is to document the 1993 Phase I and Phase II exploration program completed on the Beaver property of Panorama Natural Stone Ltd. The exploration program consisted of property mapping and excavator trenching. The exploration target is marble for dimension stone. The program was undertaken between March and July 1993.

The goal of the property mapping was to examine as many outcrops as possible on the claim group to obtain samples for preparation. As well, as much structural information as possible was gathered from the outcrops.

Polished samples were made from each of the samples taken. These prepared samples were then compared to obtain indications of the color, style and texture of the stone for its intended purpose of polished slabs and tiles.

The mapping pinpointed locations where color and texture were consistent and fracturing looked to be minimized. Excavator trenching was undertaken in this area to test the stone's textural and structural consistency along strike. Each trench that reached bedrock was sampled, with one or more polished samples made.

Although this comment is not geological in nature, it should be included. Panorama Natural Stone Ltd. has attended two trade shows as roving delegates displaying the polished marble samples to as many individuals as possible. The samples have been very favorably received, with interest generated for the white and the black from the Beaver Property.



ALASKA

YUKON  
TERRITORY

NORTHWEST  
TERRITORIES

60°

BRITISH COLUMBIA

ALBERTA

PRINCE  
GEORGE

KAMLOOPS

VANCOUVER

WASHINGTON

49°

PORT  
HARDY

*Beaver  
Property*

CAMPBELL  
RIVER

COURTENAY

PORT  
ALBERNI

NANAIMO

DUNCAN

VICTORIA



Mammoth Geological Ltd.

Location Map

DRAWN BY: RT Henneberry

DATE : October 1993 FIGURE: 1

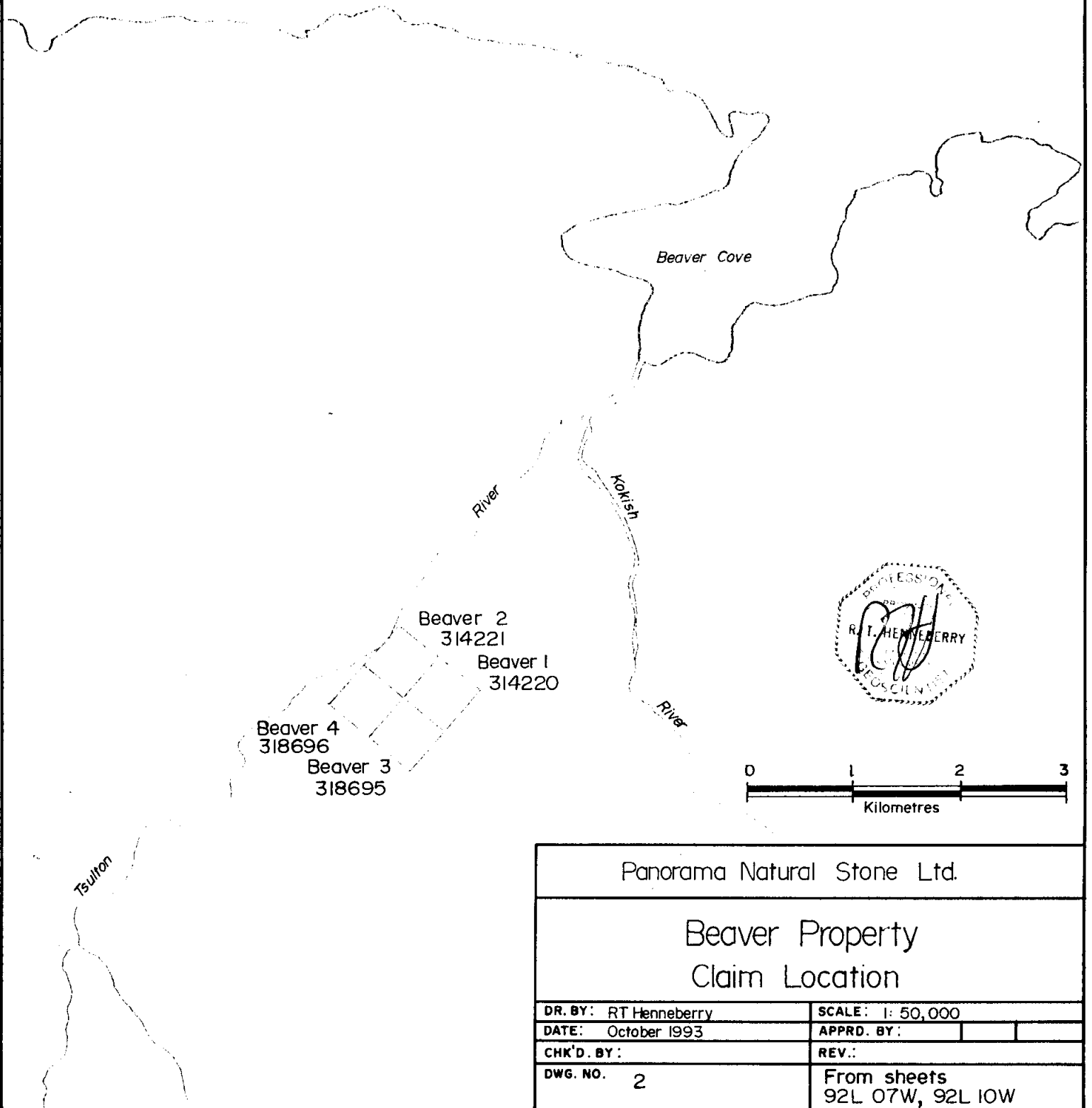
## LOCATION, ACCESS

The area of interest is the northern section of Vancouver Island, between latitudes  $49^{\circ} 45'$  and  $50^{\circ} 45'$  and longitudes  $126^{\circ} 30'$  and  $127^{\circ} 55'$ . Topography ranges from Sea Level to 1050 metres, with valleys generally less than 300 metres. There are numerous lakes, creeks and streams where water for diamond drilling is readily obtainable. Heavy duty equipment for trenching and road-building will be accessible locally, in either Port Hardy or Port McNeill.

The climate on the north island is relatively mild. The summers are warm and generally dry, while the winters are cool and wet. Snow will accumulate on the higher peaks, but generally the valley bottoms and lower hills are clear for year round work.

There are several towns and lesser communities in the map area where accommodation and lodging can be readily obtained, including Port Hardy, Port McNeill and Woss. The Island Highway cuts through much of the map area. The numerous logging roads of Canadian Forest Products, Fletcher Challenge Canada and Canadian Pacific Forest Products provide access to different claim groups.

The Beaver Property lies on NTS Sheet 092L/10W, 15 kilometres east of Port McNeill. Access to the property is obtained by driving 15 kilometres east of Port McNeill via the Beaver Cove Road. A short logging road is then taken at the Beaver Cove "T" to reach the claims. The status of the property is logged and reforested.



Panorama Natural Stone Ltd.

### Beaver Property Claim Location

DR. BY: RT Henneberry	SCALE: 1: 50,000
DATE: October 1993	APPRD. BY:
CHK'D. BY:	REV.:
DWG. NO. 2	From sheets 92L 07W, 92L 10W

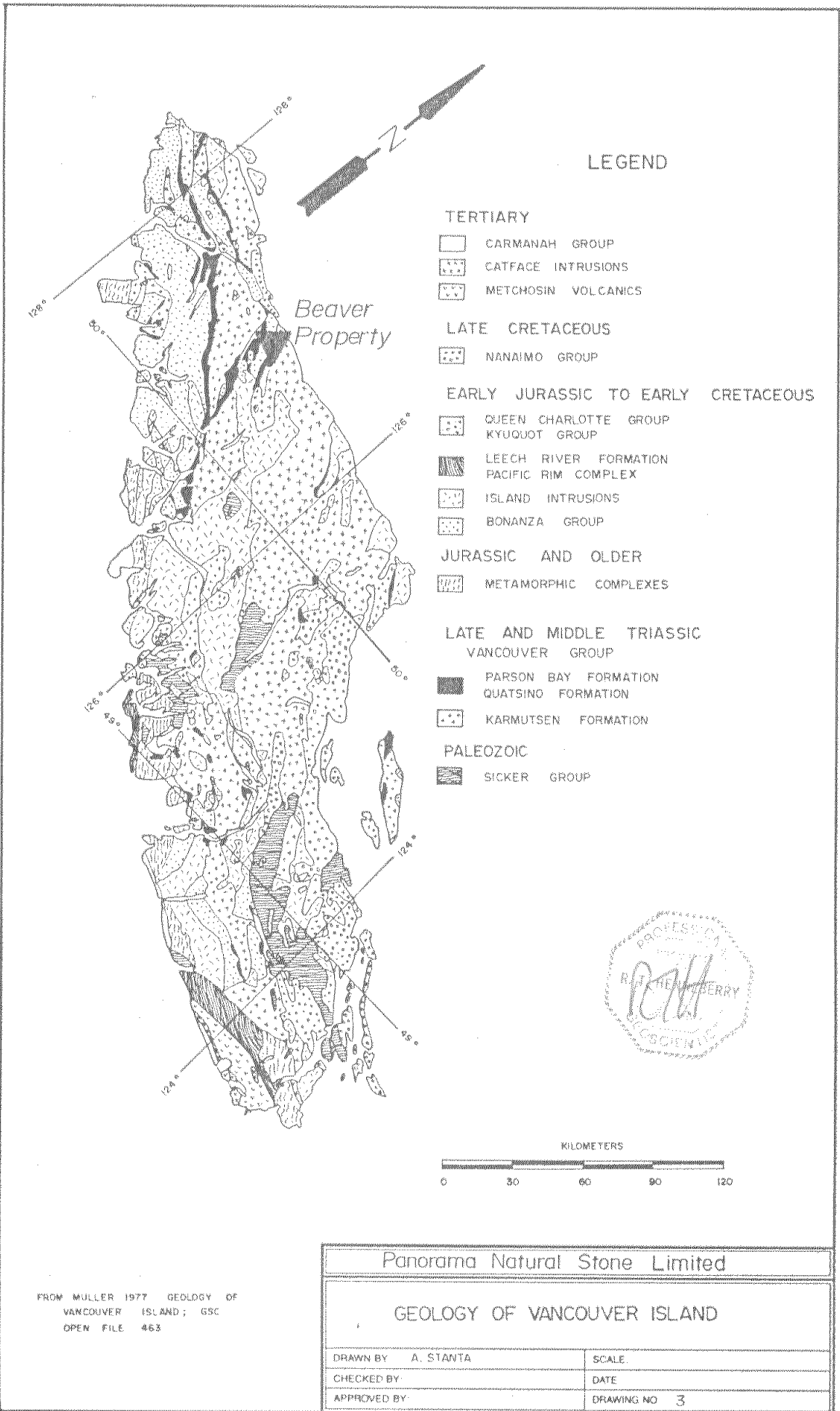


CLAIM HOLDINGS

The Beaver property comprises a total of 4 units. Unlike metallic mineral exploration, large tracts of ground do not need to be acquired to secure your deposit. The marble groups cover the full width of the limestone band, so a larger claim holding is pointless.

<b>Name</b>	<b>Record Numbers</b>	<b>Anniversary Date</b>
Beaver 1-2	314220-314221	October 25, 1993
Beaver 3-4	318695-318696	July 1, 1994

All claims are presently registered to R. Tim Henneberry who is holding them in trust for Panorama Natural Stone Ltd.



## REGIONAL GEOLOGY

The geology of the north end of Vancouver Island has been described by Muller et al (1974) and Muller et al (1980). The area lies in the Insular Belt of the Canadian Cordillera. The map area is chiefly underlain by the middle to upper Triassic Vancouver Group, overlain by the lower Jurassic Bonanza Group. The Vancouver Group is intruded by large and small bodies of middle Jurassic Island Intrusions and the related (?) Westcoast Complex, and overlain unconformably by remnants of a lower Cretaceous clastic wedge on the southwest side and similar upper Cretaceous beds on the northwest side of Vancouver Island. There are some small early Tertiary (Catface) intrusions also mapped. The region may be divided into several great structural blocks, separated mainly by important near-vertical faults and themselves fractured into many small fault segments.

The Vancouver Group is comprised of the lower Karmutsen Formation, middle Quatsino Formation and upper Parson Bay Formation. The Karmutsen Formation, the thickest and most widespread of the Vancouver Group formations, consists of basaltic pillow lavas, pillow breccias and lava flows with minor interbedded limestones, primarily in the upper part of the formation. Karmutsen rocks outcrop throughout the north part of Vancouver Island, primarily on the east side.

The Quatsino Formation overlies the basalts. The lower part of the Quatsino Formation consists of thick bedded to massive, brown-grey to light grey, grey to white weathering, fine to microcrystalline, commonly stylonitic limestone. The upper part is thin to thick bedded, darker brown and grey limestone, with fairly common layers of shell debris. The formation is in gradational contact with the overlying Parson Bay Formation by an increase in layers of calcareous pelites. Quatsino limestone outcrops as three narrow belts on the north part of Vancouver Island.

The Parson Bay Formation consists of a series of interbedded silty limestones and calcareous shales and sandstones, and occasional beds of pure limestone. Parson Bay rocks outcrop sporadically overlying the Quatsino limestone.

The Bonanza Group overlies the Vancouver Group. Bonanza Group rocks are primarily a Jurassic assemblage of interbedded lava, breccia and tuff with compositions ranging from basalt through andesite and dacite to rhyolite, deposited in a volcanic island arc environment. The Bonanza Group outcrop primarily on the west side of northern Vancouver Island.

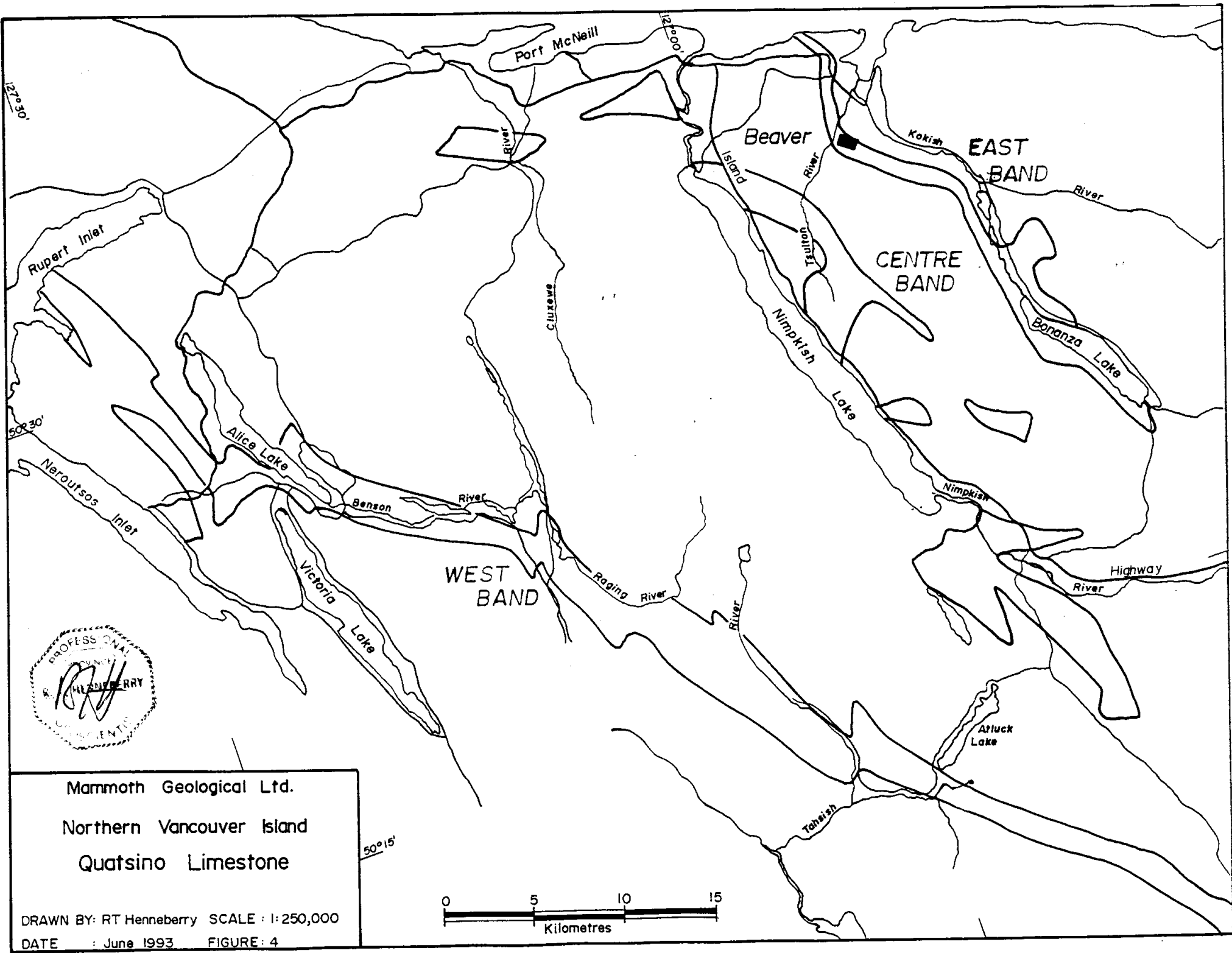
The Westcoast Complex is a heterogeneous assemblage of amphibolite and basic migmatite with minor metasedimentary and metavolcanic rocks of greenschist metamorphic grade. The Westcoast Complex outcrops in a loosely defined belt on the west coast of Vancouver Island.

Granitoid batholiths and stocks of the Island Intrusions underlie large parts of Vancouver Island. These intrusions range in composition from quartz diorite and tonalite to granodiorite and granite. Island Intrusions outcrop in a belt through the central section of Vancouver Island.

The Cretaceous clastic wedge includes the Queen Charlotte and Nanaimo Groups. These groups consist of cyclical successions of sandstone, conglomerate and shale, with interbedded coal in the Nanaimo Group. These rocks outcrop around Quatsino Sound.

Small intrusive stocks of early Tertiary age and of general quartz dioritic composition are known in many parts of Vancouver Island. These rocks are generally massive, light colored, fine to medium grained equigranular to locally porphyritic granitoid rocks. They are commonly regularly and closely jointed.

The network of faults displayed on the north end of Vancouver Island appears to be the super position of two or more fracture patterns, each with a characteristic directions and of different age and origin.



Mammoth Geological Ltd.  
 Northern Vancouver Island  
 Quatsino Limestone

DRAWN BY: RT Henneberry SCALE : 1:250,000  
 DATE : June 1993 FIGURE: 4



### **Quatsino Formation**

The Quatsino Formation limestones are the main focus of the marble exploration. The larger, massive beds of limestone are white to grey in color and distinctly crystalline. Exceedingly fine-grained beds form a small percentage of the whole and siliceous or cherty varieties are likewise sparingly developed (Gunning, 1930). The Quatsino formation consists almost entirely of limestone, with a few thin flows of andesite or basalt. The limestone is fine to coarsely crystalline, and ranges from white to black, with various intermediate colors. Towards the base, it tends to be exceedingly fine grained, and grey and brownish or buff colors are characteristic. Midway of the formation the colors are predominantly white or grey, but towards the top the limestone becomes dark grey to black, due to a varying quantity of carbonaceous matter, and the formation grades upward into argillites and impure limestones of the overlying Parson Bay Formation. Even at the top, however, light grey or even white beds are interbedded with the darker varieties. The bedding, as represented by colour banding, is generally well preserved in the upper part of the formation but in the lower part, where white to brownish grey and buff colors predominate, it is poorly preserved. In the upper part, too, the beds are generally thin, thicknesses of 1-2 centimetres being common and more than 60-100 centimetres uncommon. The formation as a whole is dominantly a high-calcium limestone (Hoadley, 1953).

Within 1-3 kilometres of bodies of the Coast Intrusions, the limestone may be highly contorted and extremely jointed and fractured, cut by many acidic dykes, and partly to completely skarnified (Hoadley, 1953).

In the vicinity of Kathleen and Alice lakes, the lower portion of the limestone contains small interbeds of lava and above it lies a mixed series of argillites, quartzites and volcanics in which there are small beds of argillaceous limestone. White to dark grey limestones occur at several places on Nimpkish Lake. The limestones are recrystallized and somewhat faulted. (Gunning, 1930), and obtain a thickness of 150 to 300 metres in the Nimpkish Lake Quadrangle. The limestone becomes darker and argillaceous towards the top of the formation. (Gunning, 1932a).

The limestone in the Zeballos area is medium to coarsely crystalline and, owing to extensive recrystallization, has lost all evidence of bedding. On weathered surfaces the limestone is grey, but on freshly broken surfaces it ranges from white to cream (Stevenson, 1950).

The limestone outcropping along Nimpkish Lake (Central Band) is too jointed in many places to serve as a building stone, but where the beds are least deformed and well removed from intrusions, as from Beaver Cove to Bonanza Lake, it could be extracted in blocks sufficiently large for ordinary structural purposes. However, there is an inexhaustible supply of limestone suitable for fluxing purposes in smelting operations, a favourable location for an open-pit operation being on the east side of Tahsis Inlet, 1.6 kilometres north of Mozino Point (Hoadley, 1953).

Limestone outcrops in three relatively narrow discontinuous bands of varying lengths on the north end of Vancouver Island (McCammon, 1968). The East Band reaches from the hill just west of Beaver Cove southeast across Tsulton River to Bonanza Lake and down the west side of the lake to its west end. The Centre Band extends from 5 kilometres south of Port McNeill southeast to 15 kilometres past the south end of Nimpkish Lake. The West Band extends from west of Nahwitti Lake southeast to Tlupana Inlet. A additional limestone occurrence extends along the south shore of Holberg Inlet.

The limestone from the East Band is generally grey-white to white in color with occasional beds of dark black. Structurally, this band is fairly competent in certain sections. Large blocks could be quarried from these locations.

The limestone from the Centre Band is generally medium grey to black or dark brown to black. Along the east side of Nimpkish Lake a section of "dirty" sugary grey white limestone was observed. Structurally, this is the least competent of the three bands, with several continuous sections of severely broken and brecciated limestone.

The limestone of the West Band is the most colorful of the three, ranging from light brown, through medium grey brown to dark grey, or dark brown to black. As with the East Band, several locations have been identified where large blocks could be quarried.

## 1993 EXPLORATION PROGRAM

The Beaver Property lies in the East Band of the Quatsino Limestone and hosts two different types of marble. The dominant variety is a white to grey-white, fine grained dense marble (known as Carrara Bianco CD). Of lesser importance is a grey black marble (similar to but lighter than a Negro Marquina). Up to 1/2% pyrite can be disseminated through the marbles.

Phase I mapping was confined to accessible areas, namely roads and skidder trails. Little outcrop was noted in the bush. The property is well-traversed by road and trails. Topography is moderate. Water can easily be obtained from a small creek east of the property.

The Phase II exploration program consisted of excavator trenching and peripheral mapping of the newly staked Beaver 3 and 4 claims. The first objective was to clean the debris away from the face of the existing "quarry". A total of 14 trenches were then dug to test for the continuation of color and texture within the bed. As part of this phase, two additional claims were staked to cover the western edge of the marble belt, ensuring the full width was covered. Mapping was also completed along the rail line, where massive outcrops of white limestone were noted.

### **Property Geology**

The property is underlain by Quatsino Formation limestone, obtaining a thickness of at least 150 metres. Two dominant limestones were mapped a white to light grey massive unit and a dark grey black broken unit. The contact appears to be gradational as the excellent exposures along the rail line show a the limestone passing from black to interbedded black and white to white in an easterly direction.

Mapping has been confined to the existing "quarry site" and the rail line, as little additional outcrop has been found on the property. The "quarry site" has opened a large area of the white marble, while the rail line appears to traverse across section in an easterly direction, moving through black and interbedded black and white to massive white marble.

### White Marble

The most abundant limestone mapped is the dense, fine-grained, grey-white marble. A marble similar in appearance to this in the Natural Stones Volume (Studio Marmo s.r.l.) is known as Carrara Bianco CD. This limestone appears to underlie the central and eastern sections of the property, having been mapped in two areas.

The best exposure is in a "quarry site", used for fill on the rail bed. The size of this excavation is 30 metres wide by 15 metres long. The depth at the face is 15 metres. There is not a lot of variation in the marble with depth, other than in the top 50 centimetres. There are two small andesite dykes mapped within the quarry.

The marble in the top 50 centimetres is a dense blue-grey limestone with abundant limonite. This section also appears to be well brecciated, though it is hard to tell if this is a function of blasting or naturally occurring.

The remaining 14.5 metres is dense, fine-grained white to grey white limestone with or without delicate blue-grey veining. The white to grey-white colorations give the stone a lot of contrast, yielding a very attractive appearance. The structure of the limestone is hard to obtain in the quarry, as most of the fracturing is due to blasting. One possible feature that suggests large blocks could be obtained is the large number of boulders (up to 2 metres by 2 metres in size) pushed over the side of the bank, at the quarry site.

There are thin (to 30 centimetre) halos containing 1-2% sulfides in marble at the andesite dyke contacts. Other than these locations, there are traces to 1/2% pyrite throughout the marble.

This is a very attractive stone. It has been strongly received at all trade shows we have attended.

The semi-continuous rock cut exposure along the rail line was also mapped. Two distinct rock types were noted: the typical dense white to grey white and a darker grey to black. The white is generally massive, with few joints noted in the 5-15m high faces. The stone is a dense, fine-grained white to grey white limestone with or without delicate blue-grey veining, similar to the stone noted in the "quarry site". Again, the white to grey-white colorations give the stone a lot of contrast, yielding a very attractive appearance.

The limestone is locally cut by thin (to 30cm) andesite dykes. Three dykes were mapped along the rail cut with subparallel strikes from 030/80E to 045/80E. These dykes show strong limonite within their contacts, and within 10 centimetres of the contact within the limestone.

The contact between the white and black is gradational, passing from black to a 50 metre wide zone of interbedded black and white through to white. The bedding looks to be relatively flat (124/10S).

### Black Marble

This marble has been mapped on the west-central side of the property, in two exposures. The first is a small "pit" 250 metres west of the white "quarry site". The second is the western section of the massive exposure along the rail line. Marbles similar to the black mapped on this property are known as Negro Marquina in the Natural Stone Volume (Studio Marmo s.r.l.).

The color of the samples taken and cut from "pit" is best described as a medium grey-black. In polished sections the marble has been micro-brecciated and healed with white carbonate. The texture is very fine grained and dense. This limestone can show a small percentage (up to 1%) of white carbonate, as blebs and clots (to 2cm) and veinlet and microveinlet stockworks with individual veinlets ranging from 1-10mm. The clots and blebs are randomly dispersed throughout the stone.

Though the color and texture is good, structurally the unit is well broken with few pieces in excess of 60cm noted. Most of the polished sections show micro-brecciation and appear to be susceptible to breaking.

The grey-black limestone along the rail line is similar in color and texture to that from the "pit", though white carbonate inclusions are nowhere near as abundant. The exposures are massive to broken, with horizontal fractures spaced at 60-100cm and vertical fractures spaced at 60-100cm.

### **Trenching**

The existing "quarry site" was previously used as a source for rail ballast. A large part of the total volume can be seen in the rail bed in the immediate area. Dimensions of the quarry are approximately 30 metres by 30 metres by 10-15 metres in depth. As might be expected the walls had sloughed and a large volume of marble was left piled against the quarry walls. The excavator cleaned the walls, pulling the broken marble into the middle of the quarry.

A full height of 15 metres of marble was exposed at the face. There is little variation in the marble with depth, other than in the top 50cm. Structurally, the marble is quite competent, though there are several sections of broken stone. There are two thin sub-parallel dykes cutting the marble in the quarry.

The top 50cm is a dense blue-grey to white limestone with abundant limonite. This bed is well broken into 40 to 80 cm pieces at the face. Several samples of this bed were cut and each showed disseminated limonite throughout them.

The remaining 14.5 metres appears to be one dense, fine-grained white to grey-white limestone bed with or without delicate blue veining. The white to grey-white colorations give the stone a lot of contrast, yielding a very attractive appearance. Although the stone is fractured in the face, most of the fracturing appears to be due to blasting. A large number of 2-3 metre blocks have been pushed over the side of the bank at the quarry site.

Two sub-parallel andesite dykes (060/85-90E) of 30-50cm in width were mapped in the quarry. These dykes are well broken and contain small (<1%) amounts of pyrite. There are also 30cm alteration halos in the limestone at the dyke contacts. These halos are slightly coarser grained than the remaining marble and may contain 1-2% pyrite.

Several pieces of the quarry material have been cut and polished to date. They range from dense white-grey marble with no texture, to appealing white to grey-white marble veined in blue, with a sharp contrast yielding an almost cloudy appearance.

A series of 8 radial trenches were excavated ahead of the face of the quarry. The purpose was to ensure a continuation of color and texture within the bed. All of the trenches reached bedrock, though two of them encountered a thin layer of "cemented" grey soil immediately above the limestone.

As would be expected, the marble in the individual trenches show strong surface weathering features. These include limonite and red hematite as well as a broken, blocky habit. The trenches do prove the white marble is continuous to the southeast, ahead of the quarry face for at least an additional 50 to 75 metres.

A series of 6 additional trenches were excavated in a loosely defined radius of 150 to 350 metres. Only one of these trenches reached bedrock. The remaining 5 were abandoned after encountering the "cemented" grey soil. The John Deere 690 excavator was unable to penetrate this layer. A thin layer of this material was noted immediately overlying the white marble in two of the eight trenches around the quarry.

The one trench that reached bedrock encountered showed the same surface weathering features as the 8 radial trenches. The limestone was a little greyer in color than that previously encountered.



## DISCUSSION

The results of the exploration program completed to date on the Beaver Claims are most encouraging. The trenching in the actual quarry site has located a semi-massive face in excess of 15 metres. The bulk of the fracturing in the face appears to be due to blasting, since most of the fractures are clean, when compared to the fractures noted in the trenches which are heavily limonite and hematite stained.

The mapping along the rail line, at an elevation of  $\pm 30\text{m}$  below the sill of the quarry located the same white marble as in the quarry itself. Including the 15m quarry face, the white marble appears to be continuous over a vertical extent of at least 45m. The trenching has extended the zone a further 50-75m ahead of the present quarry face.

A true measure of the fracture density and pattern of the white marble cannot be obtained from the "quarry site" due to blasting, though the presence of large (+ 2m) blocks of marble littered about the quarry site, suggests large blocks may be produced. The unfractured massive beds noted along the rail line also suggest large quarry blocks should be obtainable.

The sampling of the black-grey along the rail line has located a dense, fine-grained, textured black marble. The mapping has noted white carbonate networks within several sections, while other sections are white carbonate free. While the black is well fractured in the small quarry, and in some sections on the rail line, there are sections of semi-massive, continuous black limestone.

The next step is to drill a series of short  $\pm 30\text{m}$  holes both ahead of the present face and within the quarry sill to test for continuity down dip. A good indication of variation in color and texture, as well as an indication of variation in structure should be obtained.

A series of diamond drill holes is recommended to test both the white and the black. The drilling for the white marble should be concentrated around the existing quarry. The drilling for the black should be concentrated on the existing road and in the area of the smaller quarry.

Initially, a total of 7 holes should be drilled on three sections spaced at 40-50 metres. The middle section will run up the centre of the quarry and include three holes of 30 metres each. The outside sections will consist of two holes each of 30 metres. An additional two to three holes should be drilled stepping out either along section or along strike of one of the sections at a distance of 50 to 150 metres. A total of 275-300 metres of diamond drilling will be required.

A total of 5-7 holes is proposed for the black. These holes should again be drilled on section spaced at 40-50 metres. Each hole should be no more than 30 metres deep. A total of 175 metres of diamond drilling is required.

## CONCLUSIONS AND RECOMMENDATIONS

The exploration program completed to date on the Beaver property has met with favorable results. Both the white and black marbles encountered appear to be marketable stones. Potential quarry sites have been identified within the marbles.

The next step is to test the potential quarry sites to ensure marketable quarry blocks of an approximate 2.5\*1.5\*15m (8\*5\*5 ft) size can be consistently quarried. Of equal importance is to ensure the marble is consistent in color and texture with depth.

An annual production in the range of 200-300 blocks is a total of 1120 to 1680 cubic metres. An average home of 10m\*20m\*10m high is 2000 cubic metres. Therefore only a small area is required to sustain an annual production of 250 blocks. The drilling program has been laid out with this in mind.

The proposed drilling program will test the white and black marble for consistency of color and texture and structural competency at the potential quarrying sites. A total of 7-9 thirty metre (one hundred foot) holes will test the white marble, while 5-7 holes of similar lengths will test the black marble.

The entire length of the core from each hole should be cut and polished to accurately assess the color and texture variations with depth.

Total cost of this program is estimated at \$39,575

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STATEMENT OF QUALIFICATIONS

I, R. Tim Henneberry, am the principle of Mammoth Geological Ltd., a geological consulting firm with offices at #1 - 5745 Hardy Bay Road, Port Hardy, B.C. The mailing address is Box 14, Coal Harbour, B.C. V0N 1K0.

I earned a Bachelor of Science Degree majoring in geology from Dalhousie University, graduating in May 1980.

I have practiced my profession continuously since graduation.

I am registered with the Association of Professional Engineers and Geoscientists in the Province of British Columbia as a Professional Geoscientist. I am also a Fellow of the Geological Association of Canada.

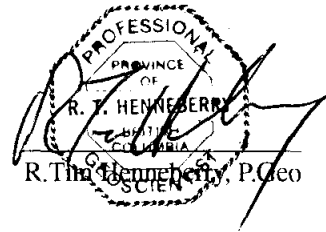
I undertook the mapping and sampling programs described in this report on the following 1993 dates: March 20, March 29, May 14, June 20, June 22-25, and July 9

I am presently the registered owner of the Beaver 1-2 and Beaver 3-4 mineral claims. I am holding them in trust for Panorama Natural Stone Ltd.

I am a principle of Panorama Natural Stone Ltd. I presently directly hold 500,000 escrow shares and 15,010 common shares. Mammoth Geological Ltd. presently directly holds 7,500 common shares.

This report may be used for any purpose normal to the business of Panorama Natural Stone Ltd., provided no part is used in such a manner to convey a meaning different than that set out in the whole.

Dated this 15<sup>th</sup> day of October in the Town of Port Hardy, British Columbia.



STATEMENT OF COSTS

Beaver Property				
Field Dates	Mar 20, Mar 29, May 14, Jun 20, Jun 22-25, Jul 9			
Excavator Dates	Jun 23-25			
Report Dates	May 15-17, Jun 5, Jul 15-16, Aug 2, Sep 16, Sep 20, Sep 27			
Project Manager	9 days	@	450.00 /day	\$4,050.00
On-site Geologist	7 days	@	350.00 /day	\$2,450.00
Vehicles	13 days	@	50.00 /day	\$650.00
Room and Board				\$836.79
Analysis	73 days	@	50.00 /sample	\$3,650.00
Excavator Mob/Demob				\$176.00
Excavator Hours	29 hrs	@	125.13 /hr	\$3,628.77
Documentation	10 days	@	450.00 /day	\$4,500.00
<b>Beaver Property Costs</b>				<b>\$19,941.56</b>

COST ESTIMATES

Diamond Drilling Budget for the Beaver Claims

There is no budget for support as the project will be run from Port Hardy.

BEAVER CLAIMS

15 day duration - from Port Hardy

Machine Mobilization				\$1,000
Drilling Footage	1200 ft.	@	15.00 /ft	\$18,000
Cat	15 hrs	@	100.00 /hr	\$1,500
Project Manager	15 days	@	450.00 /day	\$6,750
Logging Core	5 days	@	450.00 /day	\$2,250
Cutting core	5 days	@	450.00 /day	\$2,250
Support	0 days	@	75.00 /day	\$0
Vehicle	15 days	@	50.00 /day	\$750
Thin Sections	5 sec.	@	25.00 /sec	\$125
Documentation	11 days	@	450.00 /day	\$4,950
Contingency (for standby time)				\$2,000

**BEAVER CLAIMS DRILLING BUDGET**

**\$39,575**

SAMPLE DESCRIPTIONS

**Beaver 1**

- Sample 03-20-01 - Fine grained, dense, grey-white marble, with crystals to 1mm. This sample does not have the "cloudy" appearance typical of this marble. Two distinct wavy black microveinlets (or beds?) spaced at 15cm. Traces of sulfides. Several stress fractures likely due to blasting.
- Sample 03-29-11A - Fine grained, dense, grey-white marble, with crystals to 1mm. Very weak "cloudy" appearance due to grey white colorations. The distinct wavy black microveinlets (or beds?) spaced at 15cm have been altered to limonite. There is 1% limonite disseminated through this sample. Traces of sulfides. Several stress fractures, which do not contain limonite likely due to blasting.
- Sample 03-29-11B - Fine grained, dense, grey-white marble. This sample has the "cloudy" appearance typical of this marble. No wavy microveinlets. Large 1cm blebs of black material in two locations. Minor limonite at exterior of sample. Traces of sulfides. Minor blast induced stress fracturing.
- Sample 03-29-11C - Fine grained, dense, grey-white marble. "Cloudy" wavy appearance due to white grey colorings. Several distinct wavy black microveinlets (or beds?) spaced at 5-15cm. Traces of sulfides. Strongly fractured sample with limonite throughout most fractures.
- Sample 03-29-11D - Fine grained, dense, grey-white marble, with crystals to 1mm. This sample does not have the "cloudy" appearance typical of this marble. Two distinct wavy black microveinlets (or beds?) spaced at 15cm. Traces of sulfides. Several stress fractures likely due to blasting.
- Sample 03-29-12 - Fine grained, dense, grey-white marble. "Cloudy" wavy appearance due to grey white colorations. Several distinct wavy black microveinlets (or beds?) spaced at 5-20cm. Traces of sulfides. Minor blast induced fractures.
- Outcrop - From the "quarry" site.
- Sample 03-29-13 - No sample.
- Outcrop - Grey white limestone in a series of outcrops along the tributary creek of Tsulton River. Bedding 138/28W. Outcrops appear to be massive with few fractures.
- Sample 05-14-01 - Fine grained, dense, grey-white marble. This sample has the "cloudy" appearance typical of this marble. Weak blue-grey veining. The top 1/2 of this sample is dense white limestone more typical of (-20-01). Traces of sulfides. Minor blast induced stress fracturing.
- Outcrop - From the "quarry" site.

SAMPLE DESCRIPTIONS

**Beaver 2**

- There is a problem with proximity to surface. Samples show clays and brown carbonate along fractures and limonite along several bedding planes (?).
- Sample 06-30-01 - Dense, fine grained white limestone, with a strong "cloudy" appearance. Near surface weathering features, with minor red hematite and limonite along several bedding planes (?). Traces of sulfides.
- Outcrop - Trench 1.
- Sample 06-30-02 - Dense, fine grained white limestone, "cloudy" appearance poorly defined. Strong red hematite and limonite along several bedding planes (?). Weakly fractured. No sulfides.
- Outcrop - Trench 2.
- Sample 06-30-03 - Dense, fine grained white limestone, with a strong "cloudy" appearance. Near surface weathering features, with minor red hematite and limonite along several bedding planes (?). Weak micro-fracturing. No sulfides.
- Outcrop - Trench 3.
- Sample 06-30-04 - Dense, fine grained white limestone. Strongly fractured, with white carbonate and clays along fractures. Limonite disseminated throughout sample, associated with up to 1% disseminated sulfides.
- Outcrop - Trench 4.
- Sample 06-30-05 - Dense, fine grained white limestone, with a strong "cloudy" appearance. Near surface weathering features, with minor red hematite and limonite along several bedding planes (?). Speckled with 2-5mm grey carbonate clots(?). Traces of sulfides.
- Outcrop - Trench 5.
- Sample 06-30-06 - Dense, fine grained white limestone, with a weak, poorly defined "cloudy" appearance. Near surface weathering features, with minor red hematite and limonite along several bedding planes (?). Weakly fractured. Traces of sulfides.
- Outcrop - Trench 6.
- Sample 06-30-07 - Dense, fine grained white limestone. Strongly fractured, with white carbonate and clays along fractures. Limonite disseminated throughout sample, associated with up to 1% disseminated sulfides.
- Outcrop - Trench 7.
- Sample 06-30-08 - Dense, fine grained white limestone. Strongly fractured, with white carbonate and clays along fractures. Strongly fractured. Limonite disseminated throughout sample, associated with up to 1% disseminated sulfides.
- Outcrop - Trench 8.

SAMPLE DESCRIPTIONS

**Beaver 3**

- Sample 06-30-09 - Dense, fine grained dull white grey brown limestone. Strongly fractured with white carbonate along fractures and hematite along bedding planes. Traces of disseminated sulfides.
- Outcrop - Trench 104-3.
- Sample 07-23-01 - Dense, fine-grained black marble. Good dark color one polished surface. Sample is well brecciated, with 5mm alteration envelopes associated with larger fractures. Micro fractures are abundant through sample. Traces of sulfides.
- Sample 08-04-01 - Dense, fine-grained black marble. Good dark color one polished surface. Sample is well brecciated, with 5mm alteration envelopes associated with larger fractures. Micro fractures are much less abundant than in -23-01 or -04-02. Traces of sulfides.
- Sample 08-04-02 - Dense, fine-grained black marble. Good dark color one polished surface. Sample is well brecciated, with 5mm alteration envelopes associated with larger fractures. Micro fractures are abundant through sample. Traces of sulfides.
- Sample 08-04-03 - Dense, fine-grained black marble. Good dark color one polished surface. Sample is well brecciated, with 5mm alteration envelopes associated with larger fractures. Micro fractures are much less abundant than in -23-01 or -04-02. Traces of sulfides.
- Outcrop - These samples are from the small black pit 250 metres west of the "quarry site". A small volume of rock has been removed from this location. These samples are pieces of rubble left behind. Very little of the outcrop is presently exposed.
- Sample 09-03-11a - Dense, fine grained black marble. Good dark color on polished surface. This sample appears to be "speckled" with a finely disseminated (1-2mm) black material (?). 1% shell fragments as grey carbonate clots. Very weakly fractured, though the sample would not be considered massive. Traces of sulfides.
- Sample 09-03-11b - Dense, fine grained black marble. Good dark color on polished surface. This sample is also "speckled" with a finely disseminated (1-2mm) black material (?), though in lesser concentrations. 1% shell fragments as grey carbonate clots. Very weakly fractured, though the sample would not be considered massive. Traces of sulfides.
- Outcrop - These samples are from the black exposures along the rail cut. The black limestone is generally broken with vertical fractures spaced at intervals from 20cm to 100cm. There are two smaller sections that appear to be relatively massive, where these samples were taken.

SAMPLE DESCRIPTIONS

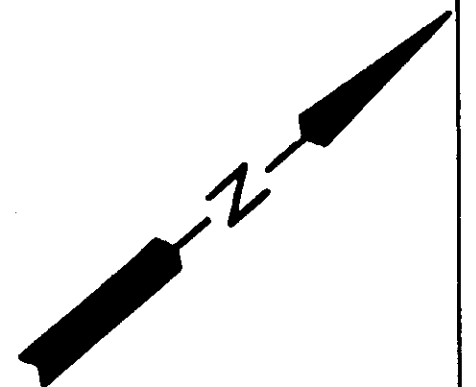
**Beaver 4**

- Sample 09-03-12 - Fine grained, dense, grey-white marble. Very weak "cloudy" appearance due to grey white colorations. The stone has two distinct wavy black microveinlets (or beds?) spaced at 5cm, showing minor hematite. This sample has been well fractured with alteration envelopes to 1cm associated with the larger fractures. Several stress fractures, which do not have alteration envelopes are likely due to blasting. Traces of sulfides.
- Sample 09-03-13 - Fine grained, dense, grey-white marble. A weak "cloudy" appearance due to grey white colorations in the sample give the sample good contrast. One distinct wavy black microveinlet (or bed?) is noted. Generally massive in appearance. Traces of sulfides.
- Outcrop - This sample is from the rail cut. The outcrop in this area is generally massive, making samples hard to obtain. -12 is from a rubble pile below a massive cliff, likely left when the cut was blasted. -13 is from a semi-massive outcrop.
- Sample 09-23-01a - Fine grained, dense, grey-white marble. A strong "cloudy" appearance due to grey white colorations in this sample give the sample good contrast and an appealing appearance. One distinct wavy black microveinlet (or bed?) is noted. Generally massive in appearance. Traces of sulfides.
- Sample 09-23-01b - Fine grained, dense, grey-white marble. A weak "cloudy" appearance due to grey white colorations in the sample give the sample good contrast. There is no wavy veinlets in this sample, though it is "speckled" with 1-2mm clear grey carbonate, possibly shell fragments (?). Generally massive in appearance. Traces of sulfides.
- Sample 09-23-02a - Fine grained, dense, grey-white marble. A weak "cloudy" appearance due to grey white colorations in the sample give the sample good contrast. There is no wavy veinlets in this sample, though it is "speckled" with 1-2mm clear grey carbonate, possibly shell fragments (?). Weakly fractured, though no alteration envelopes are associated. Traces of sulfides.
- Outcrop - These samples are from the "quarry site". Once the excavator cleaned the walls of the site and redistributed the rubble, further sampling was completed to ensure the texture and color of the white marble is consistent.







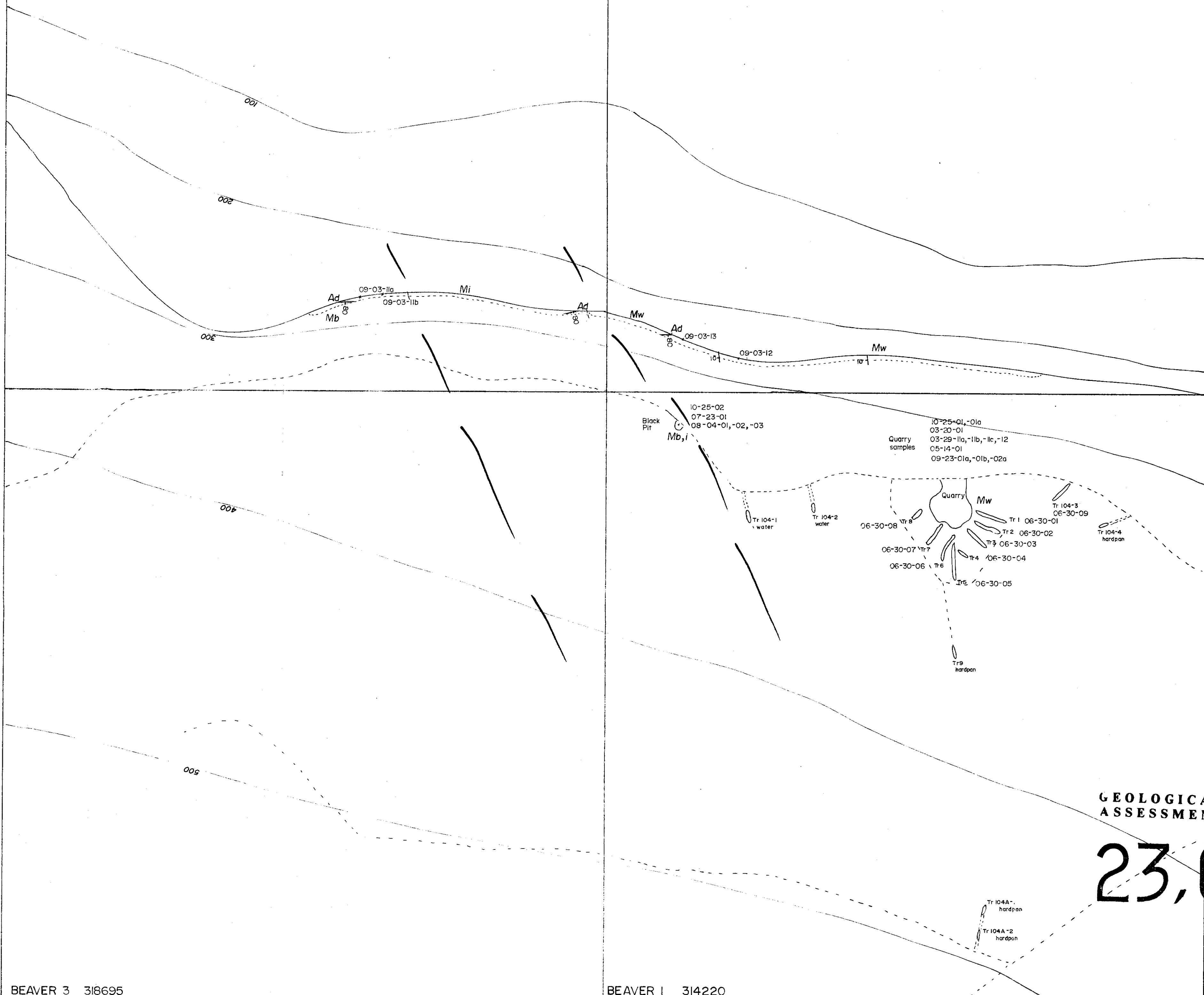
BEAVER 4 318696

BEAVER 2 314221



**LEGEND**

- Ad Andesite dyke
- Mw White marble
- Mi Interbedded marble
- Mb Black marble
-  Bedding
- 09-03-11 Polished sample location
-  Trench
-  Rail line
-  Logging road
- Contour interval 100 feet



**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**23,066**



BEAVER 3 318695

BEAVER 1 314220



Panorama Natural Stone Ltd.	
Beaver Property Geology	
DRAWN BY: RTHenneberry	SCALE : 1 : 2,000
DATE : October 1993	FIGURE : 5



Rail line

Mw

Tr 104-4  
Hardpan

Tr 104-3

06-30-09

"Quarry site"

Tr 1

Mw

06-30-01

Tr 2

Ad

06-30-02

Tr 3

Mw

06-30-03

Tr 8

Mw

06-30-08

Tr 7

Mw

Ad

06-30-07

Mw

06-30-07

Tr 6

Tr 5

Tr 4

Mw

06-30-04

Mw

06-30-06

Mw

06-30-05

Tr 104-2  
Water

Tr 9  
Hardpan

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**23,066**



Panorama Natural Stone Ltd.	
Beaver Property	
Trench Geology	
DRAWN BY: RTHenneberry	SCALE : 1: 500
DATE : October 1993	FIGURE : 6



See Figure 5 for Legend