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#### SUMMARY GEOLOGICAL REVIEW

OF THE

VALENTINE MOUNTAIN GOLD PROJECT

FOR

BEAU PRE EXPLORATIONS LTD.

#### VICTORIA MINING DIVISION N.T.S. 92B/5 92B/12 92C/9

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VICTORIA, B.C.

NOVEMBER 30, 1990

- E. W. Grove Consultants Ltd. ----

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#### SUMMARY

The Valentine Mountain gold property lies about 40 km west of Victoria, B.C., and is easily accessed by good logging roads. The property includes 77 staked mineral claims comprising 762 units and has an area of about 14,935 ha or about 36,900 acres and 11 placer claims. The property is currently owned 50/50 by Beau Pre Explorations Ltd, the operator, and Point Resources Ltd. (formerly Valentine Gold Corp.).

Since the discovery of free gold in quartz veins by Robert Beaupre in 1976, the occurrence of lode gold has been expanded to an east-west trending zone more than 7 km long across the southerly slope of Valentine Mountain. Extensive work backed by voluminous records has been completed including geochemical and geophysical surveys, land surveys, geological mapping, rock sampling, stripping, trenching, and core drilling. A 20 ton per day pilot mill was also installed for a short period to test one of the veins.

As a consequence of this work hundreds of quartz veins have been located and sampled. Many of these veins which range in width from a few centimeters to two meters contain fine to coarse free gold as well as minor sulfide minerals. So far the 7 km long extent of known gold-quartz vein has only been tested to any extent near the easterly end in the Discovery Zone where This work has included 35 the original showings were located. holes, relatively widely spaced core cross trenching, longitudinal trenching on two veins and mill testing of one About 653 tons of one 'B' zone vein and considerable vein. country rock were put through the small mill with disappointing results. All drilling on this 7 km long belt of mineralization now totals 60 holes.

Mineralization in the veins is typically simple, including minor pyrite, chalcopyrite, arsenopyrite, rare pyrrhotite, minor oxides, and variable graphite, as well as fine to coarse, museum specimen free gold. Sampling has produced gold assays as high as 34.950 ounces per ton across 17 cm along a 2 m length of one B zone vein. Beau Pre has estimated, on the basis of 10 core holes, that one C zone vein contains about 33,800 tons with a calculated grade of 0.429 opt Au + Ag, within a 100 m block with a width of 1.2 m. Nine of these holes

contained visible gold with values of up to 7.55 opt Au across 0.49 m (3.08 opt Au across 1.2 m). One D zone vein, located north of C, which has been traced over a length of 400 m to a depth of 140 m by core drilling contains visible gold and has assayed up to 0.101 opt Au across 0.68 m.

Two of three core holes drilled about 500 meters west of and on strike of the Discovery work area by Noranda also intersected visible gold in quartz veins appear to represent extensions of B zone mineralization.

At Jordan River on the westerly end of the belt Noranda also located new visible gold-quartz showings (BN) which have yet to be tested in detail. Drilling in this area has also intersected visible gold hosted by amphibolite which assayed 1.265 opt Au over a one meter core length.

Eight occurrences of visible gold have also been located in the swarm of quartz veins which extends east of the main Discovery area into Valentine Creek.

The work which was initiated by the first discovery of lode gold in the Leech River Block by Robert Beaupre in 1976 has been carried on in an intermittent manner over the years. Beau Pre Explorations Ltd. carried out grass roots exploration in the area until 1985 when Falconbridge Limited optioned the Beau Pre property and partially completed the bulk sampling program. Beau Pre carried out assessment work until 1986 when Valentine Gold Corp. took over as operator and continued with a widespread program which included core drilling and limited bulk sampling on one vein. In 1989 Noranda exploration again instituted a broad grass roots type program which included only five core holes. Although about \$3.5 to \$4 million has been expended on the property and numerous gold bearing veins have been located, none of these programs has yet completed a full block test of grade and tonnage on any one vein. Because of the free and generally coarse nature of the gold in these vein structures this must be done as a first priority.

Geological studies to date suggest that the goldquartz veins in the Discovery area represent high temperature hypothermal ore deposits deposited in a high grade metamorphic environment as a result of late Tertiary igneous activity. The

lodes are localized within intercalated metasediments above and below layers of altered volcanic rocks. This type of deposit and mineral control compares favourably to gold producing area in Ontario, India, Australia and other areas where world-class gold mines have operated for many years.

A program to trench and bulk sample one Discovery Zone vein, core drilling to extend structures, and limited follow-up work on new showings is recommended. The program is estimated to cost \$750,000.

#### **INTRODUCTION**

The discovery of placer gold west of Victoria in the Leech River in 1864 led to a major rush in the area which lasted only a few years. Subsequently many of the streams flowing across the rock unit known as the "Leech River Schists" have been panned and shown to contain fine gold or "colours". These streams include at least two thirds of all the known gold placer deposits on Vancouver Island and crudely outline a unique geological environment.

It was not until 1976 that significant native gold was found in place in narrow quartz veins within the Leech River Block on Valentine Mountain, about 42 kilometers west of Victoria. Subsequently a detailed streamsilt survey accompanied by detailed prospecting during 1981 revealed a large number of gold bearing quartz veins localized within an area about 2000 meters long (E-W) and from 200-300 meters wide on the upper east slope of Valentine Mountain. Although there have been a variety of geological surveys and studies in the area it was obvious that the geology of the Leech River rocks was far more complex than assumed, particularly in the Valentine Mountain area.

Lode gold deposits found at Valentine Mountain since 1976 and at the OX property south of the San Juan River and at the RENA property on Loss Creek have now confirmed the widespread nature of lode gold in what is still a relatively poorly known and virtually unexplored area.

Prospecting, sampling, trenching, and diamond core





drilling on Valentine Mountain since 1981 have proven conclusively the presence of free gold in narrow, en echelon, sub-parallel quartz veins over a length of more than 7 km and over an overall depth range of about 450 m.

In terms of location, access, work force, accommodation, and potential environmental hazards the area is almost ideal.

The writer has been active in the area and on this property for a number of years and visited the property during 1989 and 1990.

The report was written at the request of Mr. Robert Beaupre, President, Beau Pre Explorations Ltd. It is intended as an overview and makes recommendations as to further property evaluation.

#### LOCATION AND ACCESS

The Valentine Mountain property comprises a large contiguous block of staked mineral claims includes Wye Lake at the west and part of Cragg Creek on the east. Eleven placer claims are held jointly on both the Jordan River and Valentine Creek. The property covers Valentine Mountain which is located about 19 km north of Sooke, and about 40 km west of Victoria at the southern tip of Vancouver Island (Figure 1).

Access to the claims is by a good all weather gravel road from Sooke (Figure 2). Logging operations have left a good road network which provides easy entry to the various claims as well as to the general area. During active logging main road access is restricted in the period 0700 hours to 1700 hours. Other minor limitations have arisen because of washouts from heavy rain, occasional fire closures, and snow at high elevations. Because of the good access and the mild climate, exploration can be carried out in this area most of the year.

#### GEOGRAPHY AND CLIMATE

The Leech River Block is included within the Vancouver Island Mountains of the Insular Mountains. This landscape is the result of mature dissection of a former Tertiary erosion



surface of relatively low relief now expressed as monadnock-like plateaus south of the San Juan River. Fault controlled valleys and fault-line scarps such as the San Juan and Leech rivers, and Loss Creek are conspicuous features of southern Vancouver Island. Pleistocene glaciation modified this topography below about 1200 meters particularly along the structurally controlled valleys.

The east-west trending Leech River Block is largely drained by the westerly flowing, fault controlled San Juan and Leech river systems, and the lesser southerly flowing antecedent Jordan and Sooke rivers. The height of land within the block called San Juan Ridge gives rise to numerous small, steep, consequent streams which feed the major rivers.

Glaciation and recent consequent stream development have deeply incised the ridge with cirques which are well developed on the north side and deep sharp gullies on the south. Stream flows are erratic, depending on the snow and rain which is generally heavy during the brief winter. Because of the location the climate is relatively mild and work can generally proceed for 8 to 10 months of the year.

The glacial and recent morphological development of the area has not been studied in detail but appears to involve several repeated glacial events of both areal and local origin. Roches moutonnee indicate an early major ice advance westerly across the area while large erratic boulders of Island origin indicate a later southwards push of till across the southern part of the Island. More recently downslope creep and isolated slides have contributed to erosion and landscape evolution. Most of the area is covered by a dense relatively mature coniferous forest and scattered reforested patches.

#### PROPERTY

The mineral property owned 50/50 by Beau Pre Explorations Ltd. and Point Resources Ltd. forms a large block of staked claims generally lying north of the Loss Creek - Leech River in the Victoria Mining Division. Together the 77 mineral claims comprise 762 units covering an area of about 14,935 hectares (Figure 3). The holdings also currently include 11 placer claims (Figure 4).

	TABI	JE 1	
MINERAL CLAIM NAME	RECORD	UNITS	EXPIRY DATE
	<u>NO</u>		
AU 2	1241	1	June 5, 1992
AU 3	1242	1	June 5, 1992
BLAZE 1	47	1	June 21, 1994
BLAZE 2	53	2	July 12, 1994
BLAZE 3	124	12	October 3, 1994
BLAZE 4	370	3	May 26, 1993
BO 1	188	1	September 14, 1991
BO 2	189	1	September 18, 1991
BO 3	190	1	September 18, 1991
BO 4	191	1	September 18, 1991
BO 6	278	1	September 17, 1993
BPEX 1	461	20	February 6, 1993
BPEX 2	462	18	February 6, 1993
BPEX 3	463	1	February 6, 1993
BPEX 4	492	3	March 6, 1993
BPEX 5	493	1	March 6, 1993
BPEX 6	494	1	March 6, 1993
BPEX 7	591	8	October 5, 1994
BPEX 8	670	15	September 21, 1991
BPEX 9	665	16	September 16, 1994
BPEX 10	495	18	March 6, 1991
BPEX 11	507	8	April 21, 1993
BPEX 12	508	14	April 2, 1993
DORAN 1	1980	2	July 7. 1993
DORAN 2 FR	1981	1	July 9. 1993
DORAN 3	1990	10	July 27. 1991
DORAN 4	1992	8	August 5, 1991
DORAN 5 FR	2000	1	August $26.1991$
DORAN 6	2033	- 3	October $28, 1991$
DORAN 7 FR	2034	1	October $28, 1991$
DORAN 8 FR	2035	1	October 28 1991
FRS 9	1480	18	April 15, 1991
FRS 10	1470	12	March 19 1991
FRS 11	1491	10	$\Delta nri = 15, 1991$
FRS 12	1/180	1 /	April 15 1001
HEADT AA	1404 2020	10	November 3 1001
HEARI 4A	2030	12	November 2, 1991

MINERAL CLAIM NAME	RECORD	UNITS	EXPIRY DATE
	<u>NO</u>		
HEART 5A	2039	15	November 2, 1991
HEART 6	1925	20	May 6, 1991
HEART 7	1926	20	May 6, 1991
HEART 8	1927	20	May 6, 1991
HEART 9	1928	20	May 6, 1991
HEART 10	1929	20	May 6, 1991
HEART 11	1930	20	May 6, 1991
JORDAN GOLD 1	731	10	December 24, 1991
JORDAN GOLD 2	732	14	December 24, 1991
JORDAN GOLD 3	733	14	December 24, 1990
JORDAN GOLD 5	737	18	January 11, 1993
LEECH 1	838	20	April 11, 1992
LEECH 2	839	16	April 11, 1992
LEECH 3	840	16	April 11, 1992
LUSTER 1	747	2	January 31, 1993
LUSTER 2	742	18	January 19, 1993
MET 1	2144	18	June 1, 1991
MET 2	2137	18	May 31, 1991
PC 1	817	8	April 7, 1993
PC 4	820	18	April 7, 1993
PEG 1	77	1	February 23, 1991
PEG 2	90	1	May 2 <b>4,</b> 1991
PEG 3	91	1	May 24, 1991
PEG 4	92	1	May 24, 1991
PEG 5	144	1	March 20, 1991
PEG 6	145	1	March 20, 1991
VAL	857	6	April 11, 1991
VG 1	841	15	April 11, 1991
VG 2	842	20	April 11, 1991
VG 3	843	10	April 11, 1991
WEST 1	1238	1	June 5, 1992
WEST 2	1239	1	June 5, 1992
WEST 3	1240	1	June 5, 1992
WOLF 1	1917	16	June 5, 1991
WOLF 2	1918	18	June 5, 1991
WOLF 3	1919	20	June 5, 1991
WOLF 4	1920	20	June 5, 1991



<u>MINEI</u>	RAL CLAIM NAME	RECORD NO	<u>UNITS</u>	EXPIRY DATE
WOLF	5	1921	9	June 5, 1991
WOLF	6	1922	15	June 5, 1991
WOLF	7	1923	20	June 5, 1991
WOLF	8	1924	16	June 5, 1991

#### TABLE 2

PLACER LEASE NO.

ASSESSED TO

8149	December 31, 1990
8150	December 31, 1990
8151	December 31, 1990
8152	December 31, 1990
8161	December 31, 1990
8162	December 31, 1990
8163	December 31, 1990
8400	March 10, 1991
10844	April 18, 1991
10845	April 18, 1991
12703	December 15, 1990

#### HISTORY

The Victoria area experienced a minor gold rush in 1864 after the announcement by Lieutenant Peter Leech that he had found gold on one of the forks of the Sooke River about 10 miles from the sea. A tent city and camp soon mushroomed in the wilderness to as many as 4,000 people located at the junction of the Leech and Sooke rivers about a one hour drive from Victoria. Within one year an estimated \$100,000 in placer gold was recovered with nuggets of from 1/2 to 1 ounce reported. By 1865 the rush had faded and current estimates place the total value of placer gold recovered from the field at from \$100,000 to \$200,000. Like many placer areas, the mystique of placer gold and the possibility of finding the source has attracted prospectors to the area.

In 1966 while logging on the upper east slope of

Valentine Mountain, Fred Zorelli noted a metallic glint as a tractor kicked up a loose rock. He examined the float and recognized free gold He later mentioned the find to Robert Beaupre and partner Alec Low who were prospecting the area. Their subsequent detailed prospecting led to the discovery in 1976 of the A vein, a narrow quartz vein with visible bright yellow gold similar to the placer gold recovered from local creeks. Subsequent work was concentrated on the A vein and included trenching, bulk sampling, and soil sampling.

Property examinations were made and reported on by T.E. Lisle, P.Eng. (Jan. 31, 1980; May 20, 1980) and by G.A. Noel, P.Eng. (Dec. 1, 1980) for Beau Pre Explorations Ltd. The detailed stream silt survey and prospecting on Valentine Mountain, recommended by G.A. Noel and Associates, was carried out in early 1981 by Beau Pre Explorations Ltd. and contractors under the direction of the writer. Three areas with anomalous coincident gold and arsenic were recognized (Grove, 1981). One area, on the open, accessible upper east slope, including the A vein, was chosen for detailed prospecting and sampling. As a result an east-west trending zone about 2000 meters long by 200-300 meters wide was found to contain a large number of narrow, gold bearing quartz veins. The fact that these veins occur within a fairly limited fracture system suggested the need for detailed knowledge regarding geological controls.

Work on the Valentine Mountain property through 1982 and 1983 concentrated on the Discovery Zone area. In 1982 the work was directed by Mr. Robert Beaupre and Mr. Tony Bruce; and in 1983 by Mr. R. Beaupre and Mr. Malcolm Hurd. This work included clearing and washing down rock outcrop over a length of about 350 feet (107 m) to expose the '36' and sub-parallel veins, 140 feet (43 m) of trenching and sampling on the '36' vein, bulk sampling for smelter tests, and drilling 13 core holes with a total length of 5,482 feet (1671 m). In addition portions of the claim block west of Jordan River, along the crest of Valentine Mountain and east of Valentine Creek were mapped geologically to give an almost complete map of the property. During the course of this geological work in 1983 two new areas with significant gold bearing quartz veins were discovered on the east side of Jordan River, and near the West Leech River (Grove, 1981, 1984).

In 1985 Falconbridge Limited optioned the 100% owned Beau Pre property. The program included panel and chip sampling the '36' vein (B vein) trench and cutting two cross trenches to the east for bulk testing. Material blasted from these trenches was stockpiled at the sides for later processing and an attempt was made to chip sample the trench walls under winter conditions. Because of restructuring of Falconbridge by Kidd Creek Mines Ltd., the sampling program was not completed and the option was abandoned.

In 1986 an assessment program by Beau Pre included some geological mapping, heavy mineral stream samples, and soil sampling on the VALENTINE, WEST LEECH, and JORDAN GOLD claim groups.

In late 1986 Beau Pre entered into an agreement with Valentine Gold Corp. which allowed Valentine to earn a 50% interest in the entire property by expending \$3.0 million. Valentine drilled 46 core holes on the Discovery and C-Zone area, performed extensive stripping, some trenching, soil, rock and stream sampling during 1987. Valentine also erected a small 20 ton per day pilot mill through which about 653 tons of '36' (B) vein trench material was run under the general supervision of Bacon Donaldson & Associates Ltd. The mill ran until February 10, 1988 at which time Valentine had earned 50 per cent interest and halted further work and dismantled and removed the mill.

In February 1989 Noranda Exploration Co. Ltd. entered into an option with Beau Pre/Valentine on the property - the Discovery Zone area and FRS-12 was excluded. Noranda's 1989 work comprised an essentially grass roots approach to the claim area, including scattered detailed geological mapping, line surveys, rock sampling, geochemical and geophysical surveys and a five hole drill program. Noranda dropped the option in January 1990.

All of the above work has been compiled in detail and is available at the Beau Pre Exploration office in Victoria. The drill core from the previous programs has been warehoused in Sooke and is available for ready study.

The writer has walked over most of the property and



has examined almost all of the available report material; but has not reviewed all of the core which now totals about 7,936 meters.

#### GEOLOGY

#### INTRODUCTION

Until recently the general geology of the Leech River Block was known best from reports by Clapp (1913) and Muller (1975) and from published thesis work by Fairchild (1979). The discovery of lode gold by Beau Pre Explorations Ltd. in 1976 attracted prospectors and small exploration groups into the area with the result that the general and detailed geology of the area developed rapidly among the select group of local workers.

The Leech River Block which includes the Valentine Mountain area is a discrete geotectonic unit separated along the northerly edge by the San Juan fault zone from Lower Jurassic Bonanza volcanic rocks. The southerly edge of the Leech River Block is separated from Eocene Metchosin Group volcanic rocks by the Leech River fault zone. Relationships along the easterly edge of the Leech River Block with the Lower Paleozoic (?) Wark diorite and Colquitz gneiss are less certain but suggest a fault contact (Figure 5) named the Craqg Creek Fault by Fairchild (1979).The area outlined by these strong shear zones is a narrow east-west trending crustal block extending from Port Renfrew on the west coast of Vancouver Island to Langford, near Victoria, on the east coast. The block has an overall length of about 75 kilometers and a width of about 7 to 12 km in the west half, narrowing to less than 2 km southeast of Survey Mountain at Langford.

Although fault bound and easily accessible, the age of the Leech River country rocks has been of concern and consternation for many years (Dawson, 1876; Clapp, 1912; Muller, 1975). The country rocks (so-called Leech River Schists) have suffered deformation, metamorphism, and intrusion and have not yet yielded discernable fossils. The only rock age dates available indicate that deformation and metamorphism were probably complete by 40 m.y. B.P.



#### GENERAL GEOLOGY

In the general Valentine Mountain area the Leech River lithology includes a variety of metamorphosed and deformed units mainly comprising amphibolite, metasandstone, biotite-garnetstaurolite-andalusite-quartz-feldspar schists, leucocratic granitic plutons, and phyllites derived from any of the preceding by retrograde metamorphism along shear zones (Figure 6). Of less extent but of economic consideration are various pegmatites and quartz veins.

Ongoing studies by the writer have confirmed the major east plunging antiform and have shown that in the Valentine Mountain area various amphibolite exposures represent discrete members within the sequence rather than refolded or fault repeated units as suggested by Fairchild. Because of their unique composition, striking aspect and coloration, and relative competency, the amphibolites have been used as crude marker horizons to outline both major and minor structures within the rock sequence. More importantly the amphibolite units on Valentine Mountain appear to have played a role in the localization of gold-quartz veins.

Several leucocratic granitic plutons are well exposed in the Jordan River cut and to the west in the Walker Creek and Loss Creek areas. These units have intruded the country rocks as east-west trending, dike-like masses and appear to plunge easterly at a relatively low angle. Rock ages on these plutons (?), reported by Wanless et al (1978), range from 38.2 to 40.0 Ma and thus have been correlated with the Tertiary Catface Intrusions prominent on the west coast of Vancouver Island (Muller et al, 1981).

Shear zones are conspicuous features forming both the of the boundaries Leech River Block, and east-west to southeasterly trending linears within the block. Retrograde metamorphism related to the shear motion has produced a variety of phyllitic rocks with schistose, slaty, and flaggy habits. These shears are commonly marked by oxidation and differential It has been noted by the writer throughout the weathering. general area that where these shears have intersected quartz veins and vein systems the vein material has been preferentially shattered and commonly liberated from the country rock. As a result quartz float can be easily traced to the veins. It seems likely that this is the most significant mechanism which has released free gold from the veins to be concentrated in the soils and then by local streams. Garnet, magnetite and other heavy minerals have responded to the same processes.

There has been very little if any revision of the writer's general geology of the area since 1983 (Grove, 1984) and Wingert's (1984) metamorphic geology report. Some of the detail has changed as a result of extensive stripping and more core drilling, but overall it appears that several successions of geologists have had little if any impact on the original work. The following general rock descriptions are condensed from the 1984 reports. One annoying and inaccurate item of nomenclature from Muller (1975), "Leech River Formation", has been repeated endlessly in recent property reports. The "Leech River Formation" per se has never been defined and is not acceptable nomenclature. "Leech River Assemblage" is more useful.

#### AMPHIBOLITE

Detailed mapping has shown that amphibolite units of thickness and varying of considerable lateral extent are intercalated within the local metasedimentary sequence. Volcanic units first recognized by Clapp (1917) near Survey Mountain were named the Malahat Volcanics and considered to overlie the Leech River Schists with transitional relationships. Muller (1975) interpreted this unit as a Bonanza equivalent and placed it stratigraphically below Leech River units. Fairchild (1979) studied the Survey Mountain area in much more detail and showed that Clapp was correct. So far it appears that these amphibolites attain their maximum thickness in the Walker Creek - Jordan River area, but this may only be a function of access and lack of detailed work to the west.

The amphibolite units are conspicuous because of their contorted inch-scale banding and mineralogy. color, The weathered surfaces are usually a brilliant green and display differential weathering. marked The general aspect is comparable to thinly intercalated porphyritic basalt and crystal tuff with occasional flattened volcanic bombs. These.

rocks are generally magnetite-rich with moderate pyrite and some chalcopyrite. One amphibolite unit adjacent to the gold-quartz veins on Valentine Mountain contains abundant coarse grained tourmaline in addition to magnetite and pyrite. Portions of the well exposed Walker Creek amphibolites, where they are cut by pegmatite and tourmaline-quartz veins, have been extensively tourmalinized. In addition, secondary alteration has produced a thinly banded dark hornblende with rhodonite rock with an attractive aspect. This occurrence is considerably different from the better known rhodonite deposits at Saltspring Island, Cowichan Lake and the Nanaimo Lakes area.

The amphibolite units are of considerable use structurally because of their visual aspect, their relatively high competency and lateral continuity over extensive areas. The full extent of the Walker Creek amphibolite has not yet been determined but it appears to be several hundred meters thick.

The uniform mineralogy of the various amphibolite units suggests amphibolite grade regional metamorphism which, as will be discussed, is consistent with other lines of evidence.

A second, less obvious type of amphibolite has also been recognized in the Valentine Mountain area. This type is most readily observed in the biotite gneisses (metasandstone) which underlie much of the area, and is seen to comprise irregular, thin, metasomatic veinlets formed along preexisting foliation planes. The alteration includes medium grained brown hornblende in a very fine grained quartz-feldspar matrix with fine grained secondary brown biotite. Typically the hornblende forms stellate clusters within the veinlets. They appear to represent preliminary or partial granitization of themetasandstone.

#### **METASANDSTONE**

Thick, massive generally poorly bedded metasandstone underlies much of the Leech River Block west of Survey Mountain. Exposures along the deep Jordan River valley and Sombrio River suggest thicknesses of several thousands of feet accentuated by folding. These rocks are typically buff weathering with a weak to strong foliation defined by fine

grained biotite. The recrystallized matrix comprises a fine to very fine grained mosaic of quartz and feldspar with accessory apatite, sphene and occasional muscovite and pyrite. Hornblende, actinolite, garnet, epidote and K-feldspar are irregularly present as incipient to fine grained disseminations in most of the dominantly biotitic gneisses. An unusual texture imparted to the gneisses by close spaced biotite rich layers has been termed 'wood grain' sandstone because of the distinctive appearance and seems to represent primary layering. The thickest metasandstone section, called the Valentine Metasandstone by Fairchild (1979), is exposed along Jordan River where it forms most of the steep slopes and high ridges on Valentine Mountain. Although massive, discrete layers and lenses of metapelites, and occasional sedimentary breccia mark primary bedding. The Valentine Metasandstone plunges easterly under Valentine Mountain where it is overlain by a mixed succession of metapelite (schist), relatively thin bedded sandstone, and amphibolite. Within the Leech River Block and indeed within much of the western Metchosin Block metasandstone forms the most common rock type.

In composition these biotite gneisses or metasandstones are typically quartz-rich (20-30%) with low to moderate amounts of biotite and hornblende. Granite or granodiorite gneiss suffices as a rock name. The original composition is not known, but on the basis of current knowledge, these rocks were probably arkose or arkosic greywacke.

The massive nature and competence of the metasandstone bodies have made them relatively easy to map, but because of their similar appearance are useless as marker units. As a result the various members were separated where possible by using the distinctive amphibolite bands and the more common intercalated metapelite layers. Like the amphibolite, the metasandstone has been generally deformed into open, upright, easterly plunging folds on both small and large scale in the Valentine Mountain area.

#### METAPELITES (SCHISTS, PHYLLITES)

On the basis of the published descriptions of the Leech River Block it would appear that metamorphosed pelites form the most abundant rock type. These range in composition

from carbonaceous sericitic chloritic phyllite to carbonaceous andalusite-staurolite-garnet-biotite schist reflecting retrograde metamorphism and middle to upper amphibolite grade regional metamorphism.

Metapelite, that is, schist and phyllite, is only second in order of apparent abundance after the metasandstone. Because of the original nature and composition, these rocks are the best indicator of regional metamorphic grade and of deformation.

#### Staurolite Zone

The highest grade schists preserved within the Leech River Block are carbonaceous andalusite-staurolitegarnetbiotite rocks localized within a relatively narrow zone west of Jordan River. These rocks are dark, moderately fissile, and contain euhedral twinned staurolite crystals up to 3 centimeters long, and alusite remnants up to 8 cm long, garnet and erratic averaging 1 сm across black tourmaline. Metasomatic brown hornblende with distinctive creamy weathering fine grained quartz and feldspar occasionally forms conspicuous veinlets parallel to the fissility in these rocks. Most of the large andalusite crystals have been altered to shimmer aggregates of sericite, brown biotite and minor chlorite, and the coarse primary biotite has been altered to golden brown chlorite and secondary biotite.

#### Andalusite Zone

Like the amphibolite and metasandstone units, the local andalusite-garnet-biotite schists are remarkably uniform in general aspect, habit, and mineral composition. These schists are dark, often black, thinly laminated or banded, and very fine grained with a shiny appearance marking their carbonaceous nature. Andalusite, garnet and biotite are common as porphyroblasts. Andalusite is the most apparent metamorphic indicator in these rocks and has been found as anhedral to euhedral crystals up to 20 centimeters long. Virtually all of this very coarse andalusite has been altered to shimmer aggregates retaining the original crystal forms. Progressive retrograde deformation of these rocks has transformed the shimmer aggregates into still recognizable rods and sericite

laminae. Garnet is a typical constituent of these quartz schists, averaging five per cent, and found as euhedral crystals to one centimeter across. The biotite is brown, qu fine grained, and forms from 15 to 20 per cent of the rock. Very fine grained carbonaceous material which imparts the dark or black color to these schists is typically amorphous and forms from 15 25 per cent of the schist. to Fine grained recrystallized quartz-feldspar laminae are ubiquitous in all the schists.

All of these foliated rocks are marked by tight, uniform, small scale shear folds expressed by mineral layering and by closely folded, thin, phacoidal sugary grey quartz which in places forms up to 35 per cent of the rock. The schist is also host to conspicuous ptygmatic quartz veinlets, and various types of quartz veins.

On Valentine Mountain the andalusite-garnet-biotite schists occur as discrete members intercalated with metasandstone and amphibolite together forming а relatively extensive succession overlying the thick Valentine metasand-The schist ranges from centimeter thick bands stone unit. laminated with metasandstone forming striped rock to homogenous mappable units more than a hundred meters thick. Relation of the schist to the metasandstone varies from transitional to abrupt, but generally appears to be conformable. In many instances where relatively thin schist and metasandstone layers injected the less competent are intercalated deformation has schist across the sandstone in a dike-like manner. Spatial relationships with amphibolite are also apparently conformable but less complex.

The staurolite and andalusite-garnet-biotite schists have been extensively deformed along the Leech River shear zone, along numerous sub-parallel narrow shears on the southerly slope of Valentine Mountain and by sub-parallel southeasterly trending shears on the northerly and easterly slopes. Deformation of the porphyroblastic schist has produced generally metallic grey green phyllite in which some of the а andalusite remains as sericitic rods or laminae. In the zones of most intensive deformation, particularly along the Leech River "Fault", the rock approaches an ultramylonite but is colloquially termed a slate. The deformed schists generally

weather differentially to form gullies, and where pyritic exhibit weak gossan-like stripes.

The andalusite-garnet schists in the Valentine Mountain area appear to have hosted an unusual amount of quartz in the form of matrix material, as conformable, folded, grey, sugary quartz lenses and as veins. The ubiquitous sugary grey quartz probably represents a transposed primary constituent of the original mudstone. The quartz veins which from field evidence are of several ages crosscut all the local country rocks and indicate remobilization. Late period quartz veins cutting the andalusite-garnet schists on the upper east slopes of Valentine Mountain contain arsenopyrite, pyrite and native gold and are of economic consideration.

#### Chlorite Zone

Chlorite zone rocks in the general area, are clearly phyllites. The fine grained nature, foliated habit, and presence of intercalated, less deformed and still recognizable andalusite and garnet clasts show the results of extensive regional shearing related to the major east-west San Juan and Leech River shear zones and the conjugate southeasterly Floodwood Creek, Survey Mountain and Cragg Creek shears. It is likely then that much of the apparently lower grade chloritebiotite-garnet schist is the result of progressive, and probably repeated, retrograde deformation.

#### PLUTONIC ROCKS

Intrusive granitic rocks are concentrated in the Walker Creek - Jordan River area where a number of sill-like east-west trending bodies have been mapped. These plutons are mainly coarse grained leucocratic granite in the west grading irregularly to granodioritic phases at Jordan River. Core drilling in the Discovery Zone area on Valentine Mountain has intersected several biotite granodiorite dikes, one of which has been mapped, while the others appear to lense out before reaching the surface. Like the older country rocks, the plutons generally appear to plunge easterly under Valentine Mountain at a shallow angle. Age dates (Wanless et al, 1978; Fairchild, Tertiary emplacement and like most Tertiary 1979) indicate intrusives on Vancouver Island are still relatively unknown.

Unlike most of the Tertiary and older plutons on Vancouver Island which are described as elongated in а northwesterly direction parallel to the regional fabric, the trend of the Walker-Jordan-Valentine bodies is roughly east-west (080+). This coincides with the trend of the local major and minor folds in the country rocks forming the Leech River Block. These plutons are not particularly noteworthy except for the presence of extensive peqmatite zones formed within the granite bodies and as veins in the adjacent country rocks. As previously indicated, these plutons are spatially related to the axis or core of highest grade metamorphism in the region and lack the associated tectonic breccias and other features typical of most epizonal Tertiary intrusives on Vancouver Island. The lines of evidence therefore suggest that the **synkinemat**ic Walker-Jordan-Valentine bodies are mesozonal intrusives to which metamorphism, pegmatites, and quartz veins can be related as inherent to the evolution of the Leech River Block during the Tertiary.

#### **STRUCTURE**

Layering, banding and bedding are present in the amphibolites, sandstones, and metapelites but must be discriminated with caution from metamorphic differentiation. Tops were determined using cross bedding at a number of sites in metasandstone. and intraformational structures between the various intercalated schist and metasandstone members also gave sufficient tops to rationalize the major structures. Gross layering was the most useful tool in determining both large and small scale features.

The most conspicuous feature in the amphibolites, metasandstones, and various schists is a well developed foliation which over most of the area is parallel to both large and small scale compositional layering.

Regional mapping of the Leech River Block by the writer as well as detailed mapping in the general Valentine Mountain area suggests that the Leech River Block country rocks comprise an east-west trending, gently plunging sequence of open folds. The relatively simple fold pattern shown by the metasandstone units is also repeated by the massive amphibolite units which form the best marker horizons. The metapelites (schists) have not acted as competent units and therefore present a disharmonic, very complex geometry requiring considerable experience to interpret.

To date most of the major granitic to dioritic plutons appear to be concentrated in the south-central portion of the Leech River Block and along the north side of the San Juan River within the Vancouver Island Block. The latter are more typical stock-like to batholithic masses presumably related to the Vancouver Island Intrusions whereas the Leech River plutons are dike-like masses of Eocene age and appear to represent a unique event marked by an east-west fracture systems.

#### FAULTS AND SHEARS

The San Juan and Leech River lineaments represent major high angle shears/faults with unknown offset and motion. The two east-west zones are joined by a multitude of southeasterly trending conjugate shears which cut across the Leech River and older Metchosin block along which considerable erosion has taken place resulting in features such as the Floodwood and Cragg creek lineaments. Evidence from the field relationships shows that the latest shears cut both the Eocene (30 m.y.) intrusives and the younger gold-quartz veins. As a result of the extensive crushing gold has been released from the vein systems and latterly collected as scattered placer deposits.

#### **MINERALIZATION**

#### **INTRODUCTION**

Since 1864 hand panning has shown that many of the creeks draining the north and south slopes of the Leech River Block contain fly speck to coarse nugget gold. This placer gold was generally assumed to represent material derived from glacial materials. As a result of the discovery of lode gold on Valentine Mountain in 1976 most of the block has been staked and lode gold has now been discovered in quartz veins from Port Renfrew to Saanich Inlet.

New discoveries since 1976 have been made at various

places of easy access within the interior of this area in Leech River Assemblage rocks. These include the gold-quartz veins at Valentine Mountain (grades up to 34 opt Au), the auriferous arsenopyrite bearing dikes and gold-quartz veins on the OX property near Port Renfrew, the auriferous quartz vein - quartz stockwork system at Loss Creek on the RENA property and more recently the iron formation adjacent to the OX in the GAD claims area. This iron formation sequence was first examined for the magnetite content and its associated vanadium, nickel and cobalt content and more recently has been explored by Beau Pre Explorations Ltd. to examine the gold potential of the many quartz veins on the claims.

In addition to the various gold occurrences, the extensive magnetite-sulfide zones east of Port Renfrew (Grove, 1989), large pegmatite veins, quartz-tourmaline veins, and extensively tourmalinized country rocks have been mapped and sampled in the Walker Creek area west of Jordan River on the Beau Pre property (Grove, 1984). Both pegmatites and quartztourmaline veins lie along fracture systems west of, and possibly form part of, the same plumbing system that controls the extensive gold-quartz vein system. Tourmaline and tourmalinization is ubiquitous along this zone.

The geology of the Beau Pre claim area is now known in considerable detail with the result that a reasonable geologic model linking stratigraphy, rock structure, and mineralization has been devised. Because of these relationships which will be explained more fully it is suggested that the Valentine Mountain property has considerably more potential in terms of exploration possibilities than first realized.

#### GOLD MINERALIZATION

On the Beau Pre Valentine Mountain mineral property visible gold has been observed in two main hosts/environments: in quartz veins, and in wall rocks along quartz veins; and in pyrrhotite-pyrite lenses localized within amphibolite.

Over the 7 kilometers of exposures from the west side of Jordan River to Valentine Creek visible gold has been located in numerous quartz veins and veinlets and in adjacent wall rocks. At least three ages of quartz veins have been observed



and on the basis of field observation, trenching, and core drilling gold has been found in significant amounts (and as VG) in only the youngest veins which trend consistently from 060' to 080' with steep dip and cut across all other rocks as fracture controlled features. Occasionally the veins show offsets where they form stockworks but in general are well defined linear features.

The quartz veins have widths up to two (2) meters and appear to average 4 to 6 centimeters overall in the Discovery area. The veins comprise mainly vuggy white to watery grey quartz with up to three per cent arsenopyrite, marcasite, and rare chalcopyrite, sphalerite, galena and ilmenite. Many samples have been collected in which gold fills fractures in arsenopyrite in both veins and wall rocks. Arsenopyrite is also relatively abundant in vein wall rocks. Overall, the auriferous quartz veins are found as swarms (or zones) in hanging wall and footwall metasediments of the major amphibolite units and as veins in the amphibolite. Visible gold has also been identified in pyrrhotite streaks or lenses in amphibolite core in several instances.

#### FIELD WORK

#### PROSPECTING

Interest in the Valentine Mountain area was initiated by the presence of placer gold in local streams and led to the discovery of visible gold in the 'A' vein in 1976. Subsequently hundreds of quartz veins have been located and sampled over a length of 7 km extending from Valentine Creek to the west side of Jordan River. The most recent discoveries were made by Noranda personnel on both the west (Braitech Zone) and east sides of Jordan River (BN Zone) in 1989 (see Figure 7). Because of the relatively sparse outcrop, except for road cuts, geochemical silt and soil surveys were first utilized to outline areas for detailed mapping and sampling.

#### GEOCHEMICAL SURVEYS

Several geochemical silt, soil, and heavy mineral concentrate surveys have now been carried out over parts of this large property beginning in 1981 to aid prospecting and as

assessment work on certain claim blocks. The 1981 survey which included orientation profiles outlined three anomalous areas, one of which defined the "Discovery Zone" as a major target (Grove, 1981).

In 1986 work by Minequest involved mainly heavy mineral stream sediment sampling which essentially confirmed the In 1987 Valentine Gold resampled the major earlier work. drainage taking a total of 490 samples. Of these 151 samples gave anomalous values which ranged from 10 to 105,000 ppb. This was followed by orientation profiles in the Discovery area and then by soil sampling of areas east and west of Discovery and over both sides of Jordan River. A total of 5,900 samples were taken and several new anomalous areas were indicated. Analysis of 890 rock chip samples from various parts of the property also indicated four areas for more work. Noranda continued the geochemical sampling in 1989 by checking several previous anomalies and by sampling the more remote portions of the claim block. This work included taking 81 silt samples, 90 pan concentrates, 1,355 soil samples and 1,206 rock chip samples. This work as well as the Valentine sampling pointed to anomalous areas on the east and west slopes of Jordan River.

The results of these various geochemical surveys have shown the efficacy of using silt and pan concentrates to locate areas of interest which can be outlined by follow-up soil sampling. The hundreds of analyses point to the strong correlation between anomalous gold and arsenic values which in soils in this area are usually located within meters (or feet) of the auriferous veins and amphibolite.

#### GEOPHYSICAL SURVEYS

A number of both airborne and ground geophysical surveys have covered parts of the Valentine Mountain property. In 1984 broad regional helicopter borne VLF-EM a and magnetometers survey conducted by Western Geophysical included the Valentine Mountain property. Only part of this survey was made accessible to Beau Pre Exploration at the time. The overall result was that slightly to moderately magnetic amphibolite units were recognized along with certain structural zones marked by VLF-EM anomalies.



'C' 36 Trench Looking West

Τn 1987 White Geophysical (Western Geophysical) conducted a ground VLF-EM and magnetics survey of the Discovery The VLF-EM results suggested cross-over and inflection area. anomalies could be related to the vein mineralization. Later in 1987 White Geophysical flew the same Discovery area with VLF-EM and magnetics and suggested the technique could be used for exploration in the area. A Max-Min unit was then tested by MWH Geophysics Ltd. showing a possible correlation of results of soil anomalies possibly overlying sulfides or graphite. Because of topography difficulties and I.P. system was then tried which appeared to outline amphibolite units and several target areas. In December 1987, the claim area was again flown using a coplanar high frequency system. The results were reported to correspond to known lithology and it was suggested further detailed work could reveal target areas.

In 1989 Noranda Exploration also tested portions of the claim block with magnetometer and I.P. systems. Of the numerous anomalies recorded only two were recommended as target areas, one in Zone B, and one in Zone C.

Overall these geophysical surveys are somewhat useful in outlining some gross lithology, but because of the difficult topography and very complex geology give rise to more questions than answers.

#### TRENCHING

Detailed trenching has been attempted only in the Discovery area where Beau Pre initiated work on the 'A' vein and '36' vein. Systematic channel sampling on a portion of the '36' vein in 1983 showed erratic gold values in both the vein and wall rocks. The weighted average of this sampling gave 2.240 opt Au, and 0.355 opt Ag across an average width of 1.03 meters over a length of about 45 meters (Grove, 1984; Garratt, 1986). In addition Beau Pre shipped a number of small bulk samples from both veins to various facilities to test grades (Table III).



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### FIGURE 8

## VALENTINE MOUNTAIN PROPERTY

TABLE III

		······		·····		
No.	Date	Treatment	Dry Weight	Ag	Au	Location
	<u>Mo/Yr</u>	Facility	<u>kq</u>	opt	opt	
1.	7/79	Asarco Tacoma	335.54	0.21	0.27	A vein
2a.	3/84	Cominco Trail	101.15	0.60	4.821	36 vein fines
2b.	3/84	Cominco Trail	134.26	1.25	18.447	36 vein grab
2c.	7/84	Cominco Trail	1886.52	2.25	0.210	36 vein East end fines
2d.	7/84	Cominco Trail	3758.98	18.60	0.348	36 vein East end bulk
3.	11/85	Bondar- Clegg	19.091 Tabling	0.70	13.362	A trench
4.	8/86	Sando Ind.	136.08 Gravitation	heads tails	5.557 0.311	A trench

In 1985 Falconbridge attempted to carry out a bulk sampling program on the Discovery area. This included cleaning out the 45 meter long 36 vein trench and cutting two new cross trenches; Trench #1 (68 m long) near the east end of the 36 vein trench, and Trench #2 (59 m long) 60 meters east of Trench #1 (Figure 8). 'A' vein trench was also resampled over a length of 11 meters. The intent of the program was to both panel sample and test large bulk samples for comparison but the program was never completed for a number of reasons. Because of 13 missing samples, and the very inadequate manner and methods of sampling the results are difficult to interpret. Preliminary results from the 'A' trench sampling which included 25 samples are as follows from analyses by Lakefield Research (Chandler, 1985, 1986):

Group	No. of	Total	Weighted Average	Range gpt Au
·	<u>Samples</u>	<u>Weight kg</u>	<u>Grade gpt Au</u>	······
1	4	15.37	9.72	3.59 - 14.24
2	13	108.09	2.47	0.15 - 15.46
3	1	39.61	38.34	0.49 - 629.96
4	7	?	?	0.09 - 9.01

Location - 'A' Trench

- 1 East end South vein
- 2 South wall vein
- 3 North wall vein

4 wall rock

Overall calculated grade was reported as 67.29 gpt Au across 0.02 meters over a length of 11.0 meters. Inclusion of wall rock in the calculation gave 9.180 gpt across 1.16 meters over a length of 11.0 meters.

Results from the incomplete rather spotty sampling of the '36' vein were apparently calculated using a "weighted meter square area" program which gave the following reported results -Lakefield Research analyses (Chandler, 1986):

Location	<u>Au gpt</u>	<u>Length (m)</u>	<u>Au Width (m)</u>
West '36' vein	0.16	15.0	0.05
Middle '36' vein	5.30	7.0	0.06
East '36' vein	1.25	12.7	0.08
Overall	1.25	34.7	0.06
West '36' vein + wall rock	c 0.27	15.0	0.15
Middle " " "	2.27	7.0	0.16
East " " "	0.26	12.7	0.17
Overall	0.77	34.7	0.16

As seen from the above data which was incomplete because of missing samples about half of the '36' vein was included in the results, and results of the sampling of the two cross trenches (#1 & #2) were not reported. Garratt (1986) noted and remarked on the suspect methods of sampling and also reported that material containing V.G. was removed from the samples, and where V.G. was noted in several instances the assays returned unexpectedly low values, and in other instances wall rock was substituted for vein. He suggested that the results were appropriate if spectacular gold samples were omitted from the vein samples. As one who observed the work in November 1985 the overall operation was inadequately performed.

In 1987 Valentine Gold Corp. optioned the Beau Pre Valentine mineral property and as part of the "Flow-Through" spending erected a 20 ton/day bulk sampling plant. The plant started up in mid June 1987 and ran off and on until February 10, 1988 with a recorded through-put of 653.1 tons. Bacon, Donaldson & Associates ran the initial tests and were also

contracted to manage operations. Three 40-gallon drums of material from the Falconbridge #1 and 'A' trench were used as test material giving the following results:

Barrel <u>/Trench</u>	Sample <u>Weight</u>	Jig Rec. <u>% of overall</u>	Table Rec. <u>% of overall</u>	Total <u>Recovery</u>	Calc Grade 
'A'	372 lbs	58.25	16.43	74.67	0.391
FL1/#1	365 lbs	23.67	20.05	43.72	0.382
FL2/#1	403 lbs	17.65	27.04	44.69	0.144

Results of test milling of the 653.1 ton bulk sample given by Bacon, Donaldson & Associates were:

<u>Location</u>	<u>Tons</u>	Average Grade opt Au	<u>Recovery</u>
#1 Trench D-14	247.1	0.015	?
36 Vein East	184.0	0.106	?
36 Vein West	222.0	0.0265	?

Examination of the excavation by the writer in 1989 suggested that an excessive amount of country rock was blasted giving the impression that an open pit operation rather than lode vein mining had taken place. At the request of the local Mines Inspector trenches #1, 2 and '36' were filled. The 'A' vein trench which was also reblasted by Valentine was not run through the mill.

The following is a summary of results of bulk sampling in the Discovery area by Valentine and Beau Pre:

<u>Trench</u>	<u>Weight</u>	<u>Width</u>	/Length	<u>Grade opt Au</u>	Processor
36 W	222.0 tons	8	feet +	0.0206	Valentine
36 E	184.0 tons	8	feet +	0.106	64 64
# 1	247.1 tons	6	feet +	0.015	99
36 W	6.48	4	feet +	3.970	Cominco
А	300 lbs	1' x	50 feet	5.557	Nesmont
36 E	100  lbs	1' x	4 feet	4.800	tt.
36 W	347 lbs	6' x	30 feet	7.688	n
36 W	pan concent	trate		3.549	Degussa
36 E	grab sample	e		98.000+	Bondar Clegg

The Cominco run also averaged 81.998 opt silver, and included 4.6 pounds copper, 103.22 pounds lead, and 42.30 pounds zinc. The above results show that both the A and 36 vein mineralization contains erratic high grade gold, and also that controlled mining could produce a moderate to good product.

#### CORE DRILLING

#### **GENERAL**

A total of 60 AQ and NQ size diamond core holes have been drilled on the Valentine Mountain property since 1982 (Appendix I). This drilling includes 40 holes in the Main Discovery Area, 3 holes in the West Discovery Area, and 17 holes in the Jordan River area for a total of 7,936 meters. Beau Pre Explorations Ltd. drilled holes 82-3 through 82-21 and 88-14 through 88-19, Valentine Gold Corp. drilled holes 87-1 through 88-13, and Noranda drilled holes 89-20 to 89-24.

The location of these core holes is shown here as Figure 9, and geological drill hole sections have been included as Figure 10 (D-1 to D-6) and Figure 11. The hole locations have been plotted using a corrected Noranda base line survey. A few drill hole locations in the Main Discovery Area may be displaced from 3 to 4 meters of the actual location because the site was covered or destroyed. Most of the core which has been sawn in half for sampling is stored in a good roofed warehouse in Sooke and is easily accessible for viewing and resampling.

#### **RESULTS - MAIN DISCOVERY AREA**

All of the core holes in the Main Discovery area have been drilled between 20850 E and 21300 E, and from 19880 N to 20120 N, that is, within an area about 450 meters long by 240 meters wide. The spacing has been erratic, but more or less complete at 100 meter intervals, and in detail only on line E+21000. The 1982 core drilling sited to test depth, continuity and grade of the 'A' and '36' veins confirmed their extent and addition cut several more modest to high grade vein in structures (Grove, 1984). The 1987 and 1988 core drilling in the same area has shown the presence of a number of vein swarms which are concentrated in hanging wall metasedimentary rocks along the metasediment-amphibolite contact, within the amphibolite, and in the footwall metasedimentary rocks. For this report these swarms have been labelled B through H. The '36' and 'A' veins are part of the C and D swarms which are outlined in the accompanying sections. Core logging has shown the presence of a multitude of quartz veins cutting the local rocks including the narrow granitic dikes. In the accompanying sections only significant assay composite gold values and V.G. occurrences have been plotted. The results suggest that there are several auriferous quartz veins in each swarm which are apparently continuous from Section D-1 through D-6. The best values and vein widths in the C and D swarms can also be noted to occur at the west limit of the Main Discovery drill area (Figure 10, D-1).

#### **RESULTS - WEST DISCOVERY AREA**

Three holes were drilled by Noranda to test a geochemical-geophysical anomaly which lies about 550 meters west of the Main Discovery area. All three holes intersected auriferous quartz veins (V.G. in 89-22 and 2.138 opt Au in 89-24; Figure 11). These intersections appear to represent C and D swarm veins suggesting that the Discovery area gold-quartz vein mineralization has an overall tested length of at least 1000 meters with a width of about 200 meters. As previously noted, surface prospecting has located V.G. in quartz veins in the general area west of Valentine Creek over an area about 2000 meters long by 240 meters wide.

The West Discovery vein intersections also suggest that although individual veins such as the 'A' and '36' trend 060' to 080' and appear to be steep to vertical, the overall trend is about 095'. In addition although the drilling has been too widely spaced, the majority of the gold-quartz veins in this area have a steep southerly dip. It appears that the swarms include veins with trends between 060' and 100' with dips from vertical to steeply south (and north?). Drilling has now intersected the gold veins to a depth of about 150 meters, but one hole, 82-15 intersected auriferous quartz at over 200 meters (Figure 10, D-6).

So far, the limits on mineral potential and mineral reserve estimates have been imposed on the Discovery area because of the widely spaced core holes and limited drilling along strike.

#### **RESULTS - JORDAN RIVER AREA**

Coincident strong geochemical and geophysical anomalies first outlined by the Valentine Gold Corp. exploration

program and confirmed by Noranda in the Jordan River area of the property have been core drilled showing the presence of auriferous quartz veins and pyrrhotite-arsenopyrite mineralization in amphibolite. This area which straddles Jordan River lies about 6 kilometers west-northwest of the Main Discovery area (see Figures 9 & 11). The drilling in this area has been more of a wildcat nature apparently guided by anomaly targets with relatively little geological input.

The results of this spotty drilling show that a large number of quartz veins are localized in mixed metapelite/ metasandstone/amphibolite an massive metasandstone north of a massive amphibolite unit which forms one of the major marker horizons in the general area. This unit lies north of, and parallels the prominent amphibolite unit mapped in the Discovery area (see Figure 6). Significant assay results were returned from Holes 88-4 and -5, 87-23 (0.159 opt Au over 1 meter) and 88-24 all drilled in massive metasandstone. V.G. bearing float located 420 meters east of holes 87-23 and 88-10 was never investigated. One hole 88-12 intersected 0.193 opt Au in pyrrhotite/arsenopyrite mineralization localized in massive amphibolite. Again mineralization which graded 0.078 opt Au 450 meters east-southeast of 88-12 was not pursued.

Work in this general area along the slopes of Jordan River has now located gold in both quartz veins and in sulfide lenses in amphibolite. However it has not yet been of sufficient quality to suggest that another major auriferous zone at least comparable to the Discovery area has been discovered. What has been shown however is that in the claim area the gold mineralization is most commonly localized in late fractures in various metasedimentary rocks adjacent to the amphibolite units. It has also been illustrated to a lesser degree that the amphibolite units host gold in both quartz veins and in sulfide lenses.

#### ASSAYING

Since the start of work on the Valentine Mountain property it has been noted by almost every worker that samples containing visible gold repeatedly return unbelievably low assay values. Garratt (1986) attempted to examine this phenomenon by reviewing 14 samples, three of which had been subjected to

extensive reassaying. The results are listed as follows (Gold assays gpt):

Sample <u>No.</u>	DDH #	From-To (m)	Pulp 1	Pulp 2	Pulp 3	Rej. 1	Rej. 2	Rej. 3
51309	6A	55.47-55.78	0.82	0.86		1.43	1.10	1.34
13651	6A	9.14- 9.45	3.82	5.40	6.08	14.95	20.70	20.49
T2022	DА	13.10-13.41	T•T9	1.42		C0.1	7•28	5.94

In the above the reject samples consistently assay significantly higher that the original pulp - as much as 5 times higher.

Beau Pre has also attempted to illustrate the problem many times. For example, one sample from the 'A' vein was split into five sub-samples. Results were:

	opt Au	opt Ag
Split 1	0.681	0.20
Split 2	0.999	0.22
Split 3	0.100	0.23
Split 4	0.607	0.18
Split 5	0.670	0.19

In addition 19 drill hole intercepts in which gold was reported gave assay values from 0.002 opt Au to 7.55 opt Au (range 4.795 to 9.100 opt Au). Reassays on V.G. intercepts in some of these holes follow:

DDH	From - (m)	То	Original Assay opt	Reassay	s (Au opt)	
2	5 4 2	5 70	0.006	0 106	0 202	0 170
6	35.96 -	36.45	7.550 =	avq. of	4.795 to	9.100
	88.54 -	89.48	0.029	0.010	0.026	
	204.82 -	206.34	0.095	0.021	0.071	
12A	50.29 -	52.12	0.060	0.043	0.038	
15	150.27 -	151.18	0.003	0.042		
	154.53	154.96	0.003	0.098		
6A	9.14 -	9.45	0.174	0.111 to	0.604	
	9.45 -	9.75	0.018	0.001 to	0.011	
	13.10 -	13.41	0.011	0.034 to	0.173	
	55.47 -	55.78	0.026	0.039		

As illustrated above the precision and reproducibility of gold assay values from even the most respected laboratories on rock and drill core samples leaves the explorationist perplexed. Because of this problem the writer recommended a tightly controlled bulk sampling plan which was only partly carried out

by Falconbridge in 1985 (Grove, 1984). Valentine Gold Corp., as noted here, also attempted a more elaborate bulk sampling program, but this was made redundant by uncontrolled blasting and mill problems.

#### MINERAL RESERVES

to calculate mineral Attempts reserves in the Discovery area have been made on the basis of a single vein (Allen, 1989, Appendix II) and on geological speculation. Allen calculated an inferred tonnage of about 34,000 tons grading 0.429 opt Au on the basis of 10 drill core intersections on a 130 meter long section of a 'C' vein to a depth of about 130 meters across a width of 1.2 meters. As he indicated, however, 90% of the gold predicted in this block is based upon two high grade core intersections. Because of the coarse and erratic nature of gold in these veins both here and elsewhere in British Columbia this is to be expected. Without comparison to mined tonnage in this block any cutting of high grade values is pure guesswork.

At the other global scale Garratt (1986) concluded "The tonnage potential of this type of deposit is considerable and a target potential of several million tons in not unreasonable". In 1989 Pincock, Allen & Holt Inc. stated "There is a reasonable possibility for the discovery of a deposit containing 500,000 to 1,000,000 tonnes at an average grade of 10 to 15 grams per tonne (0.30 to 0.50 oz. Au/ton)."

#### CONCLUSIONS

Gold mineralization including simple quartz veins, stockworks, and vein swarms, as well as sulfide lenses has been located in the Valentine Mountain area over a known length of 7 kilometers from Valentine Creek to Jordan River. In the best known Discover area core drilling indicates a large number of auriferous veins with widths of up to 2 meters over a length of 1000 meters and a width of at least 200 meters. Another less tested zone includes Jordan River where core drilling has also shown the presence of gold-quartz veins and auriferous sulfide lenses. Visible gold has also been located in a number of quartz veins between the two main drill areas.

The gold-quartz veins have been found in a variety of metasedimentary rocks localized near or at the contacts with the extensive amphibolite units which also have hosted gold-quartz veins and auriferous sulfide lenses. Where examined in detail by trenching the veins are seen to be confined to sharply defined late fractures which cut across country rocks and narrow granitic dikes. The vein attitudes trend from 060' to 110', are generally steep, and appear to form larger zones trending about 095'. Individual veins have been traced on the surface for over 100 meters and where trenched contain spectacular coarse gold with values exceeding 35 opt Au over 17 cm. Although bulk sampling has been attempted twice on one vein, the results have been rendered disappointing because of poor sampling techniques. Because of the coarse aggregate nature of the gold in these veins drill core information is not particularly useful in guess-estimating grades and generally serves best to outline and extend structure.

Attempts have been made to estimate mineral reserves in the Discovery area based upon drill core assay results and upon geological speculation. Without a well monitored bulk sampling plan backed by close spaced drilling supervised by experienced professionals, prospects of developing economic ore bodies are limited.

The Valentine Mountain gold mineralization has also been subjected to geological speculation regarding its genesis. This involves two basic models. One, which compares the mineralization and environment to the Kolar area with similar relationships of veins to basic volcanic units, and second, to Ballarat with a similar metamorphic environment. While posing these models both Valentine and Noranda geologists also proposed that the veins (which stage?) were "sweats" invoking both regional metamorphism and lateral secretion as the dynamics and means of transport for gold and quartz.

The simplicity of the vein mineralization, the mineral assemblages, and alteration suggest single-pass conditions along narrow channelways. These channelways can reflect both deeply sourced metamorphic fluids which have moved into a higher brittle environment and late-stage magmatic fluids which also ascended into a brittle fracture environment prepared by magmatic wedging (Grove, 1981, 1984). Age dating and field

relationships show that the local granitic intrusions which are of Eocene age postdate metamorphism and are cut be the goldquartz veins leaving the second suggestion more realistic.

Mineral zoning is also strongly suggested in the Quartz-tourmaline, and tourmaline mineralization general area. which is ubiquitous here, but rare on Vancouver Island, is most extensive in the Walker Creek or west end of the property and is generally found in the eastern Discovery mineralization as discrete lenses or crystals in amphibolite. In contrast arsenopyrite increases in both veins and country rocks from west to east. This suggests a geochemical zoning comparable to the easterly dip of the rock structures and indicates a temperature gradient which also plunges easterly. So far no gold-pyrite zone has been recognized but if it exists it should lie between Jordan River and the Discovery area where prospecting has been minimal and where higher gold grades should be encountered.

#### RECOMMENDATIONS

In late 1989 Pincock, Allen & Holt Inc. recommended a two phase program to evaluate gold deposits on the property. Phase I included bulk sampling surface veins, and Phase II involved underground testing of the Discovery zone to a depth of 40 meters by driving a decline. The cost of this project was estimated at about \$5 million.

This writer's recommendation is considerably smaller in scale and cost as follows:

#### VALENTINE MOUNTAIN EXPLORATION & DEVELOPMENT BUDGET PROPOSAL

Priority work includes testing a Discovery Area C-vein block. Secondary work includes testing the BN and Braitech area showings.

#### **Discovery Zone**

I Stage I - C-Vein 1. Stripping & trenching @ 25 m intervals (includes logging as required) - trenching along vein - wash down trenches (pumps, fuel, etc.) - backhoe (\$1,000/day, mob, fuel, etc.) - 1 laborer @ \$150/day \$30,000 2. Core drilling test block (NQ core) 2300 m @ \$100/m (all found) 230,000 - assays (including bags, freight, etc.) 15,000 245,000 3. Geological mapping, core logging, sampling 1 geologist @ \$300/day 10,000 1 sampler @ \$150/day 5,000 assays 6,000 21,000 4. Room & Board - 3 men, 30 days @ \$40/man/day 3,600 5. Transportation - 1 vehicle @ \$400/wk 1,600 6. Supervision 8,000 7. Surveying 3,000 8. Data processing (plans, sections, etc.) 10,000 9. Engineering (including report) 15,000 Sub Total 337,200 Contingencies @ 15% <u>50,600</u> TOTAL \$387,800 II Stage II - C-Vein Block 1. Mining: 20x50x1 m block; 1000 m<sup>3</sup> @ \$600/m<sup>3</sup> (contract, including stockpiling) \$54,000 2. Geological Mapping, sampling 1 geologist @ \$300/day 12,000 1 sampler @ \$150/day 6,000 18,000 3. Assays 25,000 4. Room & Board 10,800

			36
5.	Transportation - 2 vehicles @ \$400	0/wk	4,800
6.	Surveying		2,000
7.	Supervision		10,000
8.	Data processing, geostatistical an (assay plans, sections)	nalysis	20,000
9.	Engineering (including report)		<u>35,000</u>
	Continue in 0 150	Sub Total	179,600
	Contingencies @ 15%	TOTAL	<u>26,900</u> \$206,500
<u>111</u>	BN & BRAITECH AREA EXPLORATION		
1.	Geological mapping, trenching, sam 1 geologist @ \$300/day 1 sampler @ \$150/day assays (including equipment renta)	npling 6,000 3,000 ls) <u>2,000</u>	11,000
2.	Core drilling (NQ) - 1000 m @ \$100 (all found, including access roads assays	)/m s) 100,000 <u>5,000</u>	105,000
3.	Room & Board - 2 men		1,200
4.	Transportation - 1 vehicle		1,600
5.	Surveying		1,000
6.	Supervision		3,000
7.	Data processing		5,000
8.	Engineering (including report) Contigencies @ 15%	Sub Total	$ \begin{array}{r}     10,000 \\     137,800 \\     20,500 \\     200     $
тота	L EXPLORATION & DEVELOPMENT PROGRAM	I T+TT+TTT	\$158,300

#### REFERENCES

- Allen, G. (1989): Valentine Mountain Property 'C' Vein Ore Reserves, Beau Pre Explorations Ltd.
- Armbrust, G.A. (1989): Review of the Valentine Mountain Property, Vancouver Island, British Columbia, Pincock, Allen & Holt Inc.
- Chandler, T. (1985, 1986): Internal Memos, Letters, Maps, Reports, Falconbridge Ltd.
- Clapp, C.H. (1912): Southern Vancouver Island; Geol. Surv. Can., Memoir No. 13.

(1917): Sooke and Duncan Map-Areas, Vancouver Island; Geol. Surv. Can., Memoir No. 96.

- Dawson, G.M. (1887): Vancouver Island and Adjacent Coasts; Geol. and Nat. Hist. Surv. Can., Part B. Annual Report 1886.
- Fairchild, L.H. (1979): The Leech River Unit and Leech River Fault, Southern Vancouver Island, British Columbia; M.Sc. Thesis, University of Washington.
- Garratt, G.L. (1986): An Evaluation of the Valentine Mountain Property for Valentine Gold Corp.
- Grove, E.W. (1981): Assessment Report, BLAZE & BPEX Claims, for Beau Pre Explorations Ltd., Victoria M.D.

(1982): Geological Report and Work Proposal on the Valentine Mountain Property for Beau Pre Explorations Ltd.

(1983): Geological Report and Work Proposal on the RENA Claims, for Gator Resources Corporation.

(1984): Geological Report and Work Proposal on the Sombrio Property, for Unicorn Resources Ltd. & Nirvana Oil and Gas Ltd.

(1984): Geological Report and Work Proposal on the RENA Claims for Gator Resources Corporation.

(1984): Geological Report and Work Proposal on the Valentine Mountain Property for Beau Pre Explorations Ltd.

McCorquodale, J.E. (1989): Summary Report Beau Pre - Valentine Project, Noranda Explorations Ltd.

Muller, J.E. (1975): Victoria Map-Area, British Columbia, Geol. Surv. Can., Paper 75-1, Part A.

Valentine Gold Corp. (1988): Valentine Mountain Project Report.

Wanless, R.K., et al (1978): Age Determinations and Geological Studies, K-Ar Isotopic Ages, Rept. 13, Geol. Surv. Can., Paper 77-2.

Wingert, G.A. (1984): Structure and Metamorphism of the Valentine Mountain Area, SW Vancouver Island, B.C., B.Sc. Thesis, UBC.

#### CERTIFICATE

I, Edward W. Grove, of the Municipality of Saanich, do hereby certify that:

- 1. I am a consulting geologist with an office at 4581 Boulderwood Drive, Victoria, British Columbia.
- 2. I am a graduate of the University of British Columbia (1955) with a Master's degree, Honours Geology (M.Sc. Hon. Geol.) and a graduate of McGill University (1973) with a doctorate in Geological Sciences (Ph.D.).
- 3. I have practised my profession continuously since graduation while being employed by such companies as the Consolidated Mining and Smelting Co. of Canada Ltd., British Yukon Exploration Ltd., the Quebec Department of Natural Resources, and the British Columbia Ministry of Energy Mines and Petroleum Resources. I have been in corporate consulting practice since January 1981.
- 4. This report is based on the writer's own work in the area, including the property described, since 1981; and review of summary reports prepared by various operators on the property during the period 1985 through 1989.
- 5. I have been a director of Beau Pre Explorations Ltd. since August 30, 1989 and I directly hold 156,230 Common Shares and 50,000 Options of Beau Pre Explorations Ltd.
- 6. I am a member in good standing of the Association of Professional Engineers of British Columbia.

Chard Moin

November 30, 1990

Victoria, B.C.

Edward W. Grové, Ph.D., P.Eng.

APPENDIX I

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DRILL HOLE SUMMARY

\_\_\_\_\_ \_\_\_\_\_ \*\*\* EW Grove Consultants \*\*\* 17:12:11 Serial no: 22396 \*\*\* BEAU PRE EXPLORATIONS LTD. 17:12:11 Serial no: 22396 29/11/90 Page: 1 \*\*\* VALENTINE MOUNTAIN GOLD PROPERTY \_\_\_\_\_

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#### DATABASE DRILLHOLE SUMMARY REPORT

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HOLE-ID	EASTING	NORTHING	ELEVATION	LENGTH (M)	DIP	AZIMUTH		LOCATION	
82-3	20965.6	19989.2	809.5	69.2	-45.0	.0	MAIN	DISCOVERY AREA	A
82-5	21018.2	19994.2	812.4	77.1	-45.0	•0	MAIN	DISCOVERY ARE	A
82-5A	21006.5	20020.0	812.6	38.4	-45.0	180.0	MAIN	DISCOVERY AREA	A
82-6	20995.8	19964.0	811.0	203.3	-60.0	.0	MAIN	DISCOVERY AREA	A
82-6A	21004.9	19990.0	812.4	246.0	-70.0	330.0	MAIN	DISCOVERY AREA	4
82-7	21014.0	20058.9	800.2	50.6	-45.0	180.0	MAIN	DISCOVERY AREA	A
82-7A	21013.8	20058.9	800.0	103.3	-45.0	210.0	MAIN	DISCOVERY AREA	ł
82-9	21078.0	19986.0	812.6	58.8	-45.0	.0	MAIN	DISCOVERY AREA	A
82-12A	21262.7	20056.1	793.6	59.7	-45.0	180.0	MAIN	DISCOVERY AREA	Ą
82-12N	21262.1	20059.5	793.7	167.9	-55.0	.0	MAIN	DISCOVERY AREA	A
82-15	21264.8	19875.4	827.0	312.4	-45.0	.0	MAIN	DISCOVERY AREA	4
82-21	20710.6	19919.8	800.0	152.4	-50.0	.0	MAIN	DISCOVERY AREA	4
87-1	21296.4	19879.7	824.5	100.3	-45.0	.0	MAIN	DISCOVERY AREA	ł
87-2	21297.8	19943.9	817.7	111.6	-45.0	.0	MAIN	DISCOVERY AREA	4
87-3	21299.3	20004.1	806.4	117.7	-42.0	1.0	MAIN	DISCOVERY AREA	A
87-4	21197.7	19993.8	817.7	105.5	-42.0	355.0	MAIN	DISCOVERY ARE	A
87-5	21190.5	19957.2	819.9	108.5	-37.0	359.0	MAIN	DISCOVERY AREA	4
87-6	21103.2	19938.2	813.2	108.2	-45.5	5.0	MAIN	DISCOVERY ARE	4
87-7	21298.4	20057.7	790.5	111.6	-42.0	4.0	MAIN	DISCOVERY AREA	4
87-8	21195.3	19888.3	819.7	105.5	-46.0	1.0	MAIN	DISCOVERY AREA	Ą
87~9	20896.9	20056.3	798.1	111.6	-44.0	1.0	MAIN	DISCOVERY AREA	A
87-10	20876.3	19996.3	805.9	111.6	-42.5	355.0	MAIN	DISCOVERY AREA	Ą
87-11	20892.8	19940.5	806.2	108.5	-43.0	359.0	MAIN	DISCOVERY AREA	A
87-12	21000.9	19988.0	812.5	117.7	-43.5	359.0	MAIN	DISCOVERY ARE	A

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87-13	20887.5	20109.4	797.0	123.8	-46.0	357.5	MAIN DISCOVERY AREA		
87-14	21004.6	20063.5	800.0	108.5	-44.5	.0	MAIN DISCOVERY AREA		
87-15	21098.4	20062.9	802.1	108.5	-45.0	2.0	MAIN DISCOVERY AREA		
87-16	20998.1	20116.9	797.0	105.5	-45.0	2.0	MAIN DISCOVERY AREA		
87-17	21091.0	20116.5	790.4	108.5	-45.5	2.0	MAIN DISCOVERY AREA		
87-18	21198.9	20066.2	798.8	121.9	-47.0	5.0	MAIN DISCOVERY AREA		
87-19	21287.1	20120.4	775.9	108.5	-44.0	6.0	MAIN DISCOVERY AREA		
87-20	21202.8	20122.8	786.0	110.9	-45.0	2.0	MAIN DISCOVERY AREA		
87-21	21099.9	19997.2	818.7	105.5	-43.5	1.0	MAIN DISCOVERY AREA		·
87-22	20995.5	19935.8	811.5	108.5	-45.5	.0	MAIN DISCOVERY AREA		•
87-23	17027.0	21106.0	425.0	108.5	-45.0	183.0	JORDAN RIVER AREA		
87-24	16964.0	21182.0	426.0	154.2	-45.0	184.0	JORDAN RIVER AREA		
88-01	16753.0	20994.0	490.0	141.7	-39.0	188.0	JORDAN RIVER AREA		
88-02	16754.0	20962.0	492.0	129.5	-45.0	188.0	JORDAN RIVER AREA		
88-03	16754.0	20962.0	492.0	154.2	-70.0	188.0	JORDAN RIVER AREA		
88-04	16657.0	21206.0	484.0	259.1	-41.0	180.0	JORDAN RIVER AREA		
88-05	16657.0	21206.0	484.0	157.3	-55.0	181.0	JORDAN RIVER AREA		
88-06	17115.0	20912.0	417.0	98.2	-43.0	184.0	JORDAN RIVER AREA		
88-07	17115.0	20912.0	417.0	122.5	-79.0	187.0	JORDAN RIVER AREA		
88-08	16940.0	21240.0	422.0	150.9	-42.5	180.0	JORDAN RIVER AREA		
88-09	16885.0	21354.0	424.0	153.9	-45.0	178.0	JORDAN RIVER AREA		
88-10	17027.0	21106.0	425.0	138.1	-44.0	48.0	JORDAN RIVER AREA		
88-11	16385.0	21040.0	641.0	227.4	-56.0	181.0	JORDAN RIVER AREA		
88-12	17287.0	20717.0	410.0	130.4	-48.0	225.0	JORDAN RIVER AREA		
88-13	17287.0	20717.0	410.0	117.3	-47.0	45.0	JORDAN RIVER AREA		
88-14	20990.8	19881.6	819.1	175.3	-46.0	359.0	MAIN DISCOVERY AREA		
88-15	20990.9	19880.9	819.1	321.6	-55.0	358.0	MAIN DISCOVERY AREA		

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88-16	20889.3	19945.8	811.1	134.1	-66.0	.0	MAIN DISCOVERY AREA	
88-17	20937.0	19916.9	817.0	154.2	-54.5	356.0	MAIN DISCOVERY AREA	
88-18	20941.4	19949.3	811.5	108.2	-45.0	355.0	MAIN DISCOVERY AREA	
88-19	20864.5	19947.8	809.8	104.8	-45.0	356.0	MAIN DISCOVERY AREA	
89-20	17210.0	20739.0	415.0	99.1	-45.0	180.0	JORDAN RIVER AREA	
89-21	17150.0	20739.0	415.0	111.6	-60.0	180.0	JORDAN RIVER AREA	
89-22	20410.0	19975.0	815.0	187.4	-45.0	.0	WEST DISCOVERY AREA	
89-23	20300.0	20005.0	810.0	190.1	-48.0	.0	WEST DISCOVERY AREA	
89-24	20350.0	20005.0	813.0	139.0	-49.0	.0	WEST DISCOVERY AREA	

APPENDIX II

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C VEIN ORE RESERVE

#### BEAU PRE EXPLORATIONS LIMITED VALENTINE MOUNTAIN PROPERTY 'C' VEIN ORE RESERVE

The 'C' vein is a 1-30 cm (average 5 cm) wide 63° south dipping quartz vein. Of the 10 holes used to calculate this ore reserve, 9 contain visible gold indicating that the vein is continuous and is consistently mineralized. Over 90% of the gold in the calculated reserve, however, is contained in two cells around two drill holes. This sort of distribution is to be expected considering the erratic nature of the mineralization as seen on surface.

A standard polygonal plot was used to determine the cell size to which the grade from each hole was applied. Around the edge of the drill coverage, dummy holes with an assumed grade of 0 oz Au/ton were plotted 25 m from real drill hole piercement points. This allowed closure of the cells.

Tonnage was calculated using a rock density of 2.6 g/cm<sup>3</sup>. One cubic metre, therefore, contains 2.6 tonnes or 2.87 tons.

TABLE 1

#### 'C' VEIN ORE RESERVES

Cell	Hole No.	Area (m <sup>2</sup> )	Tonnage in A 1.2m Width (Area x 1.2m x 2.87)	Grade Across 1.2m oz Au/Ton	oz Au
1	87-11	1054	3,630	1.580	5,735
2	88-16	996	3,430	0.087	298
3	88-18	1550	5,338	0.001	5
4	88-17	1454	5,008	0.041	205
5	DDH-3	748	2,576	0.019	49
6	DDH-6A	530	1,825	0.149	272
7	DDH-6	697	2,400	3.08	7,393
8	87-22	980	3,375	0.033	111
9	88-14	1185	4,081	0.031	127
10	88-15	619	2,132	0.145	309
		Totals	33,795 Tons		14,504 oz
		~ ~ ~ ~ .			

Calculated Grade = 0.429 oz Au/Ton

Because of the narrow vein widths and widely spaced drill holes it is difficult to have great confidence in the accuracy of the calculated overall grade and tonnage. The sporadic distribution of gold in the vein, however, makes a determination of grade difficult regardless of the separation of the drill holes. Perhaps more important than providing an overall grade, the drilling has shown the structure to be persistent and consistently mineralized. The vein is poorly tested to the east and virtually untested to the west and at depth.

Gordon J. Allen

Gordon J. Allen, P.Geol.

Victoria, B.C. July 12, 1989





EW	GROVE
	DISCOV
	VERTICAL
	AU CO
DRAWN FOR:	BEAU I
PROJECT:	VALEN
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1 CN 1		
N+20200.00		
500.00	265.00	
N+200	E+212	
	- +800.00	
	-	
		LEGEND
	- +750.00	
		INTRUSIVES
		QD QUARTZ DIORITE
		TRIASSIC-JURASSIC
		B BIOTITE-CARNET-STAUROLITE
	+700.00	ANDALUSITE SCHIST
		S METASANDSTONE
		A AMPHIBOLITE
		F FAULT
2N		VG VISIBLE GOLD
	+650.00	
		GEOLOGICAL BRANCH ASSESSMENT REPORT
		22 60Z
		CC,002
		PART_OF_2
ROVE CONSULTA	NTS	S REVISION BY DATE
DISCOVERY.GOLD ZONE		
ERTICAL N-S SECTION 21265 AU COMPOSITES OZ/T	5	3.   4:   5:
REALL PDE EVELODATIONS		DRAWN BY: THO DRAWING NO:
VALENTINE MOUNTAIN		DATE: 90/10/30 D-5



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	EW	GROVE
		DISCOV
		VERTICAL
		AU CO
	DRAWN FOR:	BEAU
	PROJECT:	VALEN







# 22,683 PART\_OF2

#### GEOLOGICAL BRANCH ASSESSMENT REPORT

	EW GROVE CONSULTANTS	REVISION	BY DATE
		1:	
m 10 0 10 20 m	VALENTINE MOUNTAIN PROPERTY	2:	dek
SCALE 1 : 500	WEST DISCOVERY AREA	4:	
	GOLD COMPOSITES 07/T	5:	
	DRAWN FOR: BEAU PRE EXPLORATIONS LTD.	DRAWN BY: EWG	DRAWING NO:
é	GEOLOGICAL BRANCH	90/12/02	11

