GEOLOGY AND MINERALIZATION
PIN MONEY AND KING FRACTION
REVERTED CROWN GRANTED
MINERAL CLAIMS

'83-507A 11489

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,489

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GEOLOGY AND MINERALIZATION

PIN MONEY AND KING FRACTION

REVERTED CROWN GRANTED MINERAL CLAIMS

93H/3

QUESNEL MINING DIVISION

For

NORMINE RESOURCES LTD.

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by

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BEMA
Industries Ltd.

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1.0 INTRODUCTION

The Pin Money and King Fraction reverted Crown Granted Mineral Claims are owned by Normine Resources Ltd. Work done in 1983 consisted of a 2 day program of geological mapping and sampling on the two claims and geological reconnaissance and prospecting on the adjoining ground.

The Pin Money and King Fraction claims are located within rocks of Rainbow and Baker formations on the west side of the structurally overturned Island Mountain anticline. Mineralization consists of gold bearing quartz-pyrite veins and periferal argentiferous galena veins primarily within rocks of the Baker formation.

1.1 LOCATION AND ACCESS

The claims of Normine Resources Ltd. are located on the north west slope of Mr. Proserpine and Antler Mountain, two miles southeast of Barkerville, B.C. Barkerville is an historic gold placer center that is now a Provincial Park. The small community of Wells is five miles to the northwest and is approximately 500 miles northeast of Vancouver, B. C. Latitude 53°02' N, Longitude 121°30' W.

Barkerville, is accessible by paved road 60 miles east from Quesnel, which is serviced by highway, rail, and air from Vancouver. From Barkerville a gravel road leads to the Warspite workings and the Grouse Creek area. (See Figures 1 and 2.)

1.2 PHYSIOGRAPHY

The property is situated between 5,000 and 6,000 feet elevation on the crest and northeast slope of Mt. Proserpine and Antler Mountain in the western portion of the Cariboo Mountains which are flanked to the east by the

0 100 200 300 400

SCALE Miles

FROM: B. C. GOVERNMENT ROAD MAP

NORMINE RESOURCES LTD.

BARKERVILLE, B. C.

KING FRACTION – PIN MONEY LOCATION MAP

DATE	83-05-24	JOB NO.:	83-17
APPROVED BY		FIG. NO.:	1

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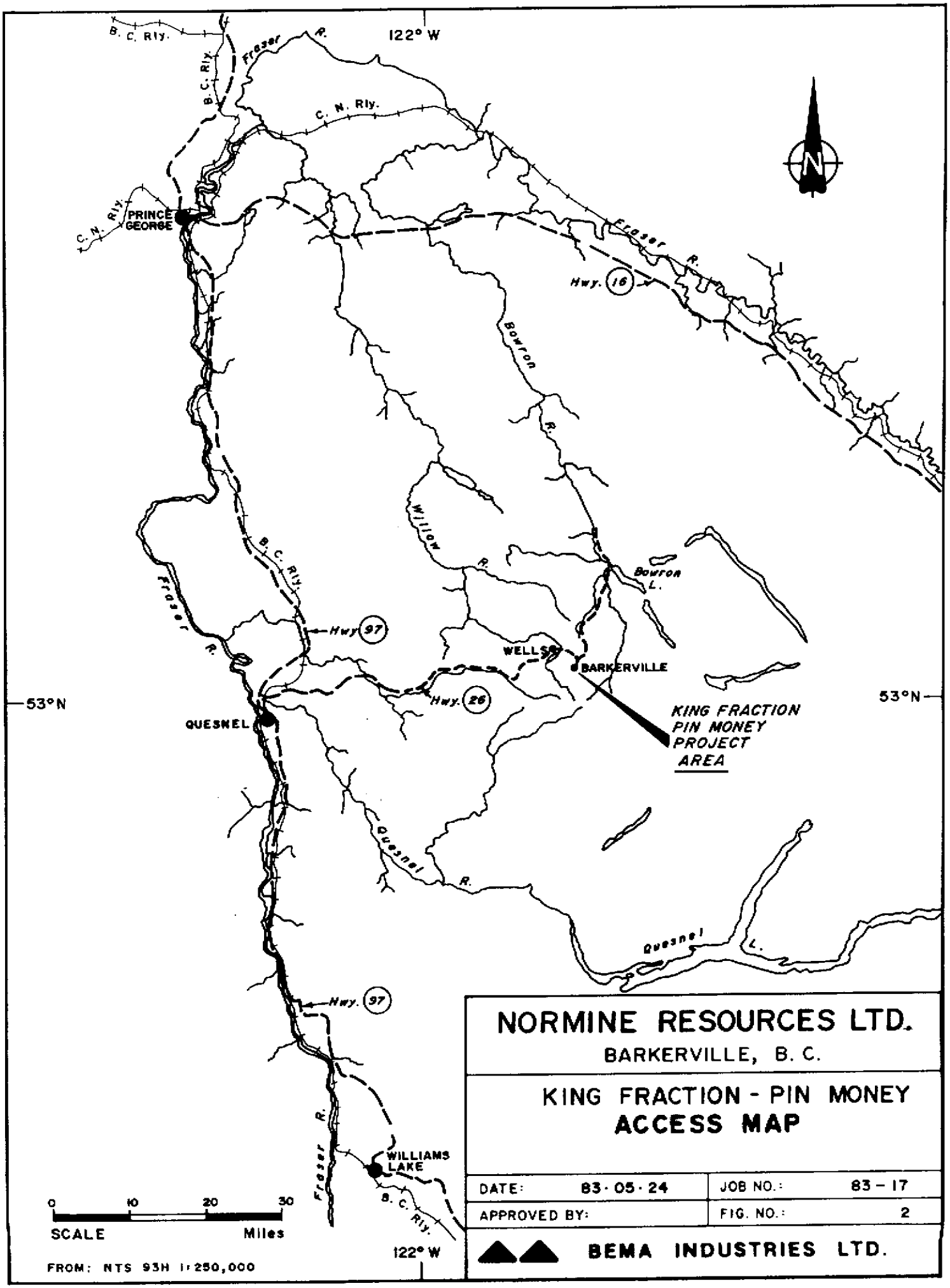

NORMINE RESOURCES LTD.

BARKERVILLE, B. C.

KING FRACTION - PIN MONEY
ACCESS MAP

DATE:	83-05-24	JOB NO.:	83-17
APPROVED BY:		FIG. NO.:	2

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Rocky Mountain Trough and to the west by the Quesnel Trough. The area is drained by Grouse Creek, a tributary of Antler Creek, which flows north to the Bowron Lake Park.

Both Mt. Proserpine and Antler Mountain are heavily wooded with pine and spruce with light second growth. The climate is hot and dry in the summer months with a heavy snowfall and sub-zero temperatures in the winter.

1.3 PROPERTY

The claims are located in the Cariboo Mining Division, Cariboo Land District. The claims are reverted Crown Granted Mineral Claims and are recorded at the Quesnel Mining Recorder. The property consists of two claims. The data is listed in Table 1.

TABLE 1

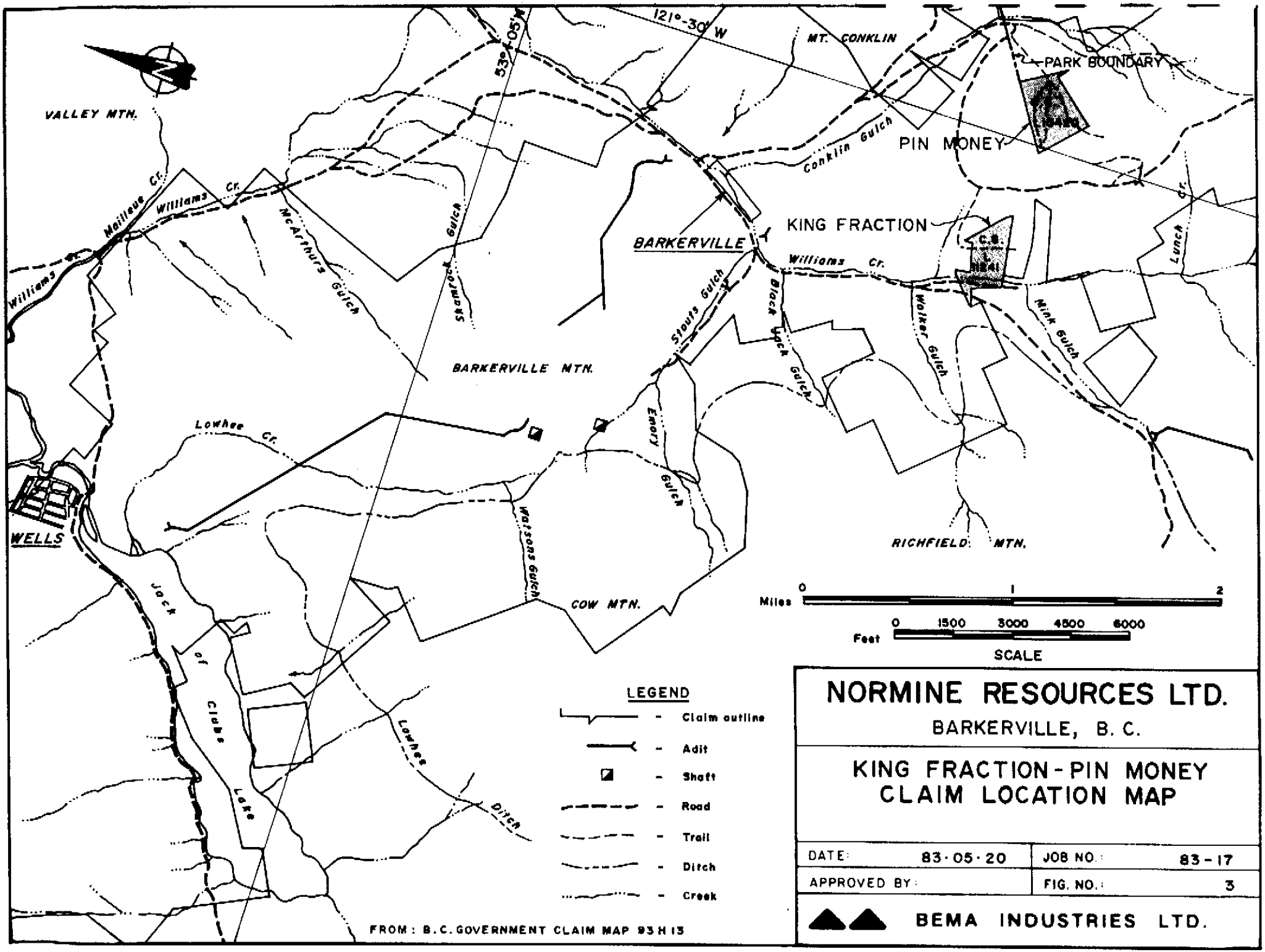
LIST OF CLAIMS

	LOT NO.	RECORD NO.	EXPIRY DATE
King Fraction	11241	617	March 16, 1984
Pin Money	10420	619	March 16, 1984

The claims are owned 100% by Normine Resources Ltd. (See Figure 3.)

1.4 HISTORY

The Barkerville area has been an important source of placer and lode gold production from 1861 to the present time. The Cariboo Gold Quartz and Island Mountain Mines at Wells have produced 1.2 million ounces from 1933 to 1967. (See Table 2.) Placer mining in the Cariboo area produced an estimated 2.5 million ounces from 1858 to 1954, although official records were not kept until thirteen years after the original gold-rush of 1861.



NORMINE RESOURCES LTD.

BARKERVILLE, B. C.

KING FRACTION - PIN MONEY CLAIM LOCATION MAP

DATE:	83-05-20	JOB NO.:	83-17
APPROVED BY:		FIG. NO.:	3

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Lode mining was attempted unsuccessfully from 1870 until 1933 when modern milling methods were developed that allowed the pyritic ore to be mined profitably.

The work carried out to 1933 was the systematic testing and evaluation of veins by sinking shafts and drifting by hand. With the revaluation of the price of gold in 1932 the Cariboo Gold Quartz Mine and the Island Mountain Mine were brought into production. In 1954 the Island Mountain Mine was sold to the Cariboo Gold Quartz Mining Company and until 1967 all production came from the Island Mountain operation. Because of the rising costs and the unchanged price of gold, mining operations were closed in 1967.

The Mosquito Creek Mine was reopened in 1980 by Mosquito Creek Mining Company which is presently operating a 100 ton/day gold mining and milling operation located one mile northwest of Wells.

TABLE NUMBER 2

LODE PRODUCTION FROM THE BARKERVILLE AREA

Tons Milled	Grade	Production Ounces/Au	Recovery Au	Ounces Ag
Cariboo Gold Quartz on Cow Mountain 1933-1959:				
1,681,950	.3925	660,088	626,755	56,092
Island Mountain Mines on Island Mountain 1934 - 1954:				
771,109	.4517	348,330	532,465	47,225
Aurum Mines (C.G.Q.) on Island Mountain 1954-1967:				
474,186	.5172	245,265	237,063	34,433
Total Both Mines:				
2,927,246	.4283	1,253,683	1,196,283	137,750

PLACER PRODUCTION FROM THE BARKERVILLE AREA

Estimated production from 1858 to 1954 (records were not kept until 1871):

2.5 million ounces Au.

Williams Creek was one of the first areas prospected in the rush of 1861 but little was done except the exploration of some veins at the head of Grouse Creek where several small adits were driven. The first intensive work was done by E.E. Armstrong in 1916 who located the Kitchener, Warspite, and other claims. In 1919 the Mining Corporation of Canada optioned both groups but dropped them the following year. Personnel of the B.C. Department of Mines described the Proserpine area in 1919 as follows:

"There are a number of well-defined quartz veins on these claims varying in width from 1 to 30 feet. These veins are mineralized in places with pyrite, arsenopyrite, and a little galena. The main valuable metal is gold, the distribution of which is some what irregular. From the results of many samples taken, it is evident that at least portions of the veins would pay to work and it is quite possible that further development would show considerable tonnages of ore which would pay to mill. The possibilities of these veins is that when they are properly opened up they will furnish tonnages sufficient to mine and mill on quite a large scale, although the average values may prove to be comparatively low grade. These properties warrant a thorough investigation."

In 1933 the Proserpine property optioned by the Proserpine Syndicate directed by W.R. Wilson and Sons. Small adits were driven on the Warspite and Independence claims. In the same year Premier Gold Mines did some surface stripping on the claims on Antler Mountain which are now part of the group. In 1934 the Proserpine Syndicate incorporated as Proserpine Gold Mines Limited and did some surface and underground work, particularly in the Bell and Newberry adits on the Independence claim. In 1939 the company drove an adit more than 1,000 feet on the Hard Cash claim from Grouse Creek. In 1940 Privateer Mines optioned the Proserpine Gold Mines Holdings and did 36,000 feet of bulldozer and hand stripping and some underground work in the Warspite adit. In 1945 Proserpine Mines Limited succeeded the former company, and twenty-one claims, the Rex, Elsie, and Hen groups were recorded northeast of the Crown granted claims. In 1945-6 approximately 54,000 lineal feet of bulldozer stripping, road building, 900 feet of drifting in the Warspite adit and 1,700 feet of diamond drilling were carried out by Pioneer Mines Limited.

The first systematic geological investigations were made by Amos Bowman in 1885. W.L. Uglow mapped the Barkerville area in 1922 at 1 mile to the inch and studied the lode deposits from 1921 to 1924. G. Hanson in 1933 mapped the Willow River at one mile to the inch and in 1934 mapped a narrow zone, the "Barkerville Gold Belt" between Island Mountain and Grouse Creek at 1,000 feet to the inch. N.F.G. Davis, (1937), continued mapping of the "Barkerville Gold Belt" on Island Mountain. P.C. Benedict, (1945), and A.C. Skerl, (1948b), in papers on Island Mountain and Cariboo Gold Quartz respectively, made important contributions. Stuart S. Holland, (1954), mapped the area from Yanks Peak to Roundtop Mountain in 1948 to 1951 on a scale of 1,200 feet to the inch. A. Sutherland Brown, (1957), mapped the Antler Creek area and studied the lode deposits of the "Barkerville Gold Belt".

Since that bulletin, major studies undertake in the area include two unpublished summary reports by Campbell (1966, 1969), radiometric studies of precious metal deposits in the cordillera by Andrew (1982) and Andrew, Godwin, and Sinclair (this volume), and a continuing program of regional mapping by Struik of the Geological Survey of Canada (1980, 1981a, 1981b, 1982a, 1982b).

1.5 PRESENT WORK

Normine Resources Ltd. contracted Bema Industries Ltd. to conduct a preliminary geological mapping and sampling program over the area of the claims. The purpose of the program was to map and sample the mineralized quartz veins in detail and evaluate all other mineralization and alteration zones in a reconnaissance fashion to assess their potential.

A total of 11 grab samples and rock chip samples were taken and analyzed by fire assay for gold, silver and lead. (See Figures 5 and 6.)

1.6 BIBLIOGRAPHY

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2.0 REGIONAL GEOLOGY

A simplified geological map of the Wells area is presented on Figure 4. The region is dominated by a thick, highly deformed sedimentary sequence of distinctive quartzites, conglomerates, grits, siltites, slates, phyllites, marbles, limestones, dolomites, amphibolites, and metatuff(?). From fossil studies Struik (1982b) ascribes an Upper Paleozoic age to the overall sequence.

The sedimentary sequence has been folded and regionally metamorphosed to greenschist facies. Small amounts of fine euhdral pyrite are disseminated through most of the rocks. Struik (1981a) inferred that the main folding event took place between Early Jurassic and Late Cretaceous time from stratigraphic and structural relationships throughout the region. Andrew (1982) obtained a Lower Jurassic (179 ± 8 ma) whole rock K/Ar date for a sample of phyllite from the Cariboo Gold Quartz mine. It is interpreted to be a metamorphic date.

Regional folds trend northwesterly and are overturned toward the southwest, with dips ranging between 40 and 55 degrees northeast. An important feature of this folding is the rhythmic development of minor folds down the limbs of the main folds. In the mined area these drag folds plunge 21 degrees at north 40 degrees west to north 50 degrees west; they host the majority of the ore zones. This folded sequence is crosscut by a series of north trending normal faults with left lateral movement.

WELLS

121°-35' W

121°-30' W

53°-05' N

BARKERVILLE

BARKERVILLE MTN.

COW MTN.

RICHFIELD MTN.

KING FRACTION

PIN MONEY

Jack of Clubs Lake

Lowhee Ck.

McArthur Gulch

Williams Ck.

Little Valley Ck.

Weldon L.

Stouts Gulch

Emary Gulch

Black Jack Gulch

Conklin Gulch

French Ck.

Victoire Ck.

Walker Gulch

Lowhee Ditch

Williams Ck.

GEOLOGY BY :
A. S. BROWN, 1957
STRUICK, 1981

LEGEND

CENOZOIC

PLEISTOCENE, EARLIER (?) AND LATER

Glacial drift ; gravel, sand, silt

PRE-CARBONIFEROUS

PROSERPINE INTRUSIONS : minor acidic dykes and sills

PALAEOZOIC

CAMBRIAN AND LATER (?)

CARIBOO GROUP

1 — RAINBOW MEMBER : grey to brown micaceous quartzite, phyllitic siltstone, phyllite, fine conglomerate; grey to white limestone

2 — BAKER MEMBER : black quartzose phyllite, slate, argillite, grey limestone.

3 — YANKEE BELLE FORMATION: brown quartzose phyllite to fine quartzite

4 — CUNNINGHAM LIMESTONE : grey limestone, buff dolomite.

- Geological boundary (defined)
- Geological boundary (approximate, assumed)
- Bedding (inclined, vertical)
- Schistosity (inclined, vertical)
- Plunge
- Bedding, schisosity and plunge combined
- Drag-fold (plunge indicated on the anticline)
- Fault (defined; inclination, dot on downthrown side)
- Fault (approximate ; movement)
- Fault (assumed)
- Anticlinal axis (overturned)
- Synclinal axis (overturned)
- Glacial striae
- Esker
- Adit ; Shaft
- Ditch
- Road
- Stream
- Surface contours (250' interval)

Scale 0 — 1 Miles

N

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BARKERVILLE, B. C.

GEOLOGICAL MAP OF THE WILLIAMS CREEK AREA

DATE:	83 · 05 · 30	JOB NO.:	83 - 17
APPROVED BY:		FIG. NO.:	4

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3.0 STRATIGRAPHY

The thick predominately coarse clastics of the Kaza Group (Hadrynian, Windermere equivalents) are the oldest rocks and conformably underlie the Cunningham Formation. The Cunningham Formation consists primarily of massive limestone with lesser dolostone, shale, and sandstone thickening westward away from the Rocky Mountain Trench.

The Yankee Belle Formation is composed of shales and siltstones together with minor quartzite and limestone in the eastern Cariboo Mountains but becomes thicker and more calcareous toward the west. The Yanks Peak Formation is dominated by distinctive clean quartzites. Regional correlation of the Yanks Peak Formation with the basal Gog Group and the Hamill Group 150 miles southeast in the Big Bend area by Young, et al (1973) has been generally accepted. A rough correlation of the underlying rock units can also be made. Facies changes within the clastic units suggests a more distal part of the shelf environment to the west. The Midas Formation is composed mostly of black, quartzose fine grained rocks.

The Barker member is the youngest formation of the Cariboo Group, although Campbell, et al (1973) consider the Snowshoe Formation as Kaza Group equivalent. It is the most intensely studied because the majority of productive vein and replacement systems are found along favourable structural settings within the Lower Snowshoe Formation.

Sutherland-Brown describes the Snowshoe Formation as follows:

"The Baker member is composed predominantly of clastic rocks. In general the amount of coarse detrital particles decreases eastward and probably upward. In the west the formation is composed dominantly of coarse clastic rocks, but in the east only the lower 200 to 300 feet is dominantly coarse. The clastic rocks are subgreywackes which are characteristically poorly sorted, schistose, and deposited in very lenticular beds. The proportion of clastic to carbonate rocks in the sections exposed in the mines averages about 15 to 1. The limestones are characteristically thin, lenticular and impure."

"The arenaceous rocks are mostly micaceous quartzites which are normally a middle to dark grey, but can be light brown or greenish-grey. The typical rock is a dark-grey coarse - to medium-grained micaceous quartzite in which the large quartz eyes are black or opalescent."

The Slide Mountain Group unconformably overlies the Snowshoe Formation. It contains a typical "Cache Creek" assemblage of ribbon cherts, limestone and basic volcanics.

The only intrusives with any relationship to the Cariboo Group are the Proserpine dykes. The Proserpine dykes are quartz porphyries that are commonly very altered. Most dykes are 1 to 4 feet wide.

3.1 STRUCTURE

GENERAL

The Cariboo Group has been closely compressed into northwesterly trending complex folds which are overturned toward the southwest. All folds plunge at low angles to the northwest. Most folds are asymmetrical and vary in cross-section along strike. The original stratigraphic succession is disrupted throughout many folds by shearing, rupture and flowage.

The most important major structure in the Warspite area is the Island Mountain anticlinorium which can be traced from Grouse Creek to Island Mountain and contains the gold ore bodies mined by Cariboo Gold Quartz and Newmont on the western limb of the fold. (See Figure 5.)

Faults abound in the mine. Most fall into two categories: north-south striking, steeply east-dipping dextral faults, and shallow, normal faults parallel to the cleavage. The latter are abundant but often subtle, with little or no gouge. They produce a limited but repetitive displacement which produces an overall apparent dip of 70 degrees northeast in the strata. (See Figure 6.)

PROPERTY STRUCTURE

The Pin Money and King Fraction are located along the western limb of the major Island Mountain anticline. (See Figure 4.)

The King Fraction claim straddles the Rainbow-Baker member contacts and is cut by the Barkerville fault, a major north trending normal fault. (See Figure 7.)

The Pin Money claim lies southeast of the King Fraction nearer to the anticlinal axis. There is a small drag fold mapped just south of the claim delineated by a limestone unit of the Baker member. (See Figure 8.)

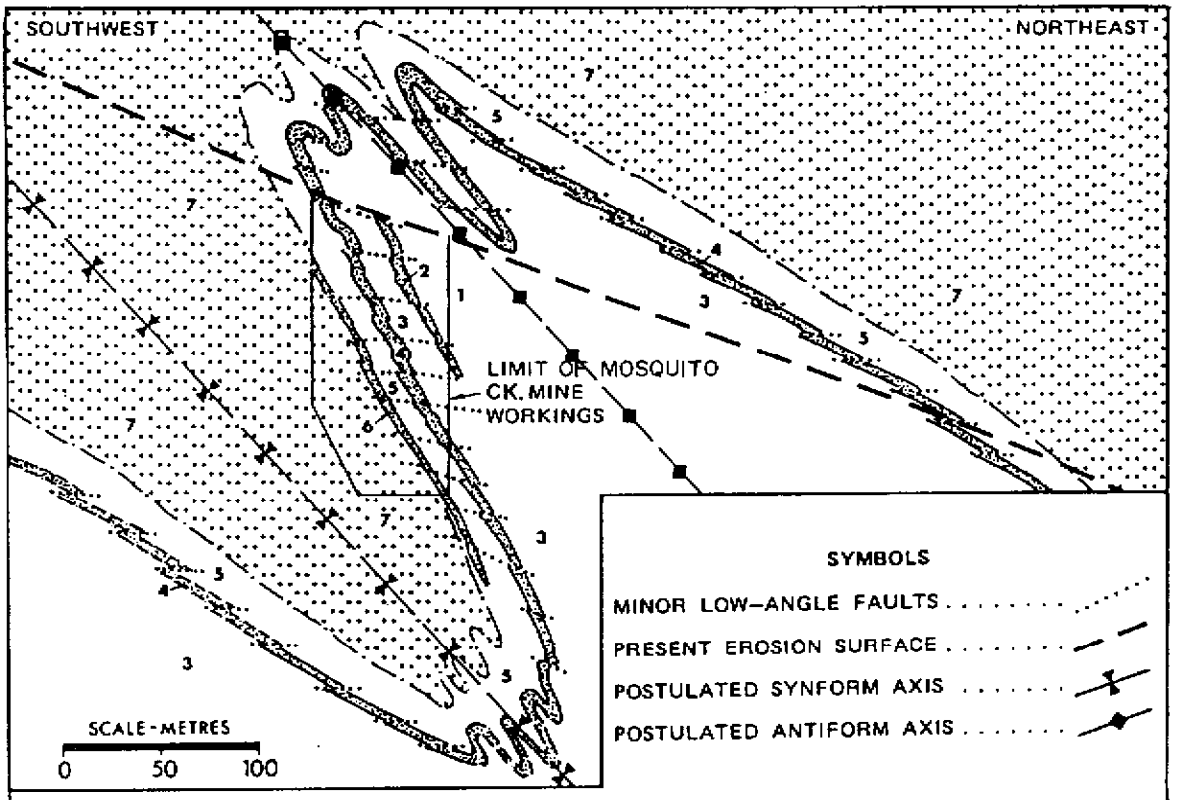
3.2 MINERALIZATION

GENERAL

Gold ore occurs in a large number of discrete, relatively small deposits along a total strike length of 45 kilometres that includes the Mosquito Creek, Island Mountain, and Cariboo Gold Quartz mines. (Sutherland-Brown, 1957). These occurrences consist of either auriferous pyrite in quartz veins in the Rainbow member (Figure 6) or stratabound, massive auriferous pyrite lenses, termed 'replacement ore', within and at the contacts of limestone beds of the Baker member. (See Figure 6.)

QUARTZ VEIN ORE

The mine rocks are cut by numerous generations of intersecting quartz veins; the majority are barren. A minority of these veins carry coarse pyrite which is invariably auriferous. Ore-bearing quartz veins carry up to 25 percent pyrite and grade up to 70 grams gold per tonne, although average production grades are considerably lower. Ore veins in Mosquito Creek mine reach 5 metres in width; the ultimate length and height of the near-vertical veins is still to be determined.



FROM: D. J. ALLDRICK, 1983
BENEDICT, 1945

NORMINE RESOURCES LTD.

KING FRACTION AND PIN MONEY

IDEALIZED GEOLOGICAL CROSS-SECTION OF THE MOSQUITO CREEK MINE SETTING

DATE:	83 · 08 · 11	JOB NO.:	83 - 17
APPROVED BY:		FIG NO.:	5

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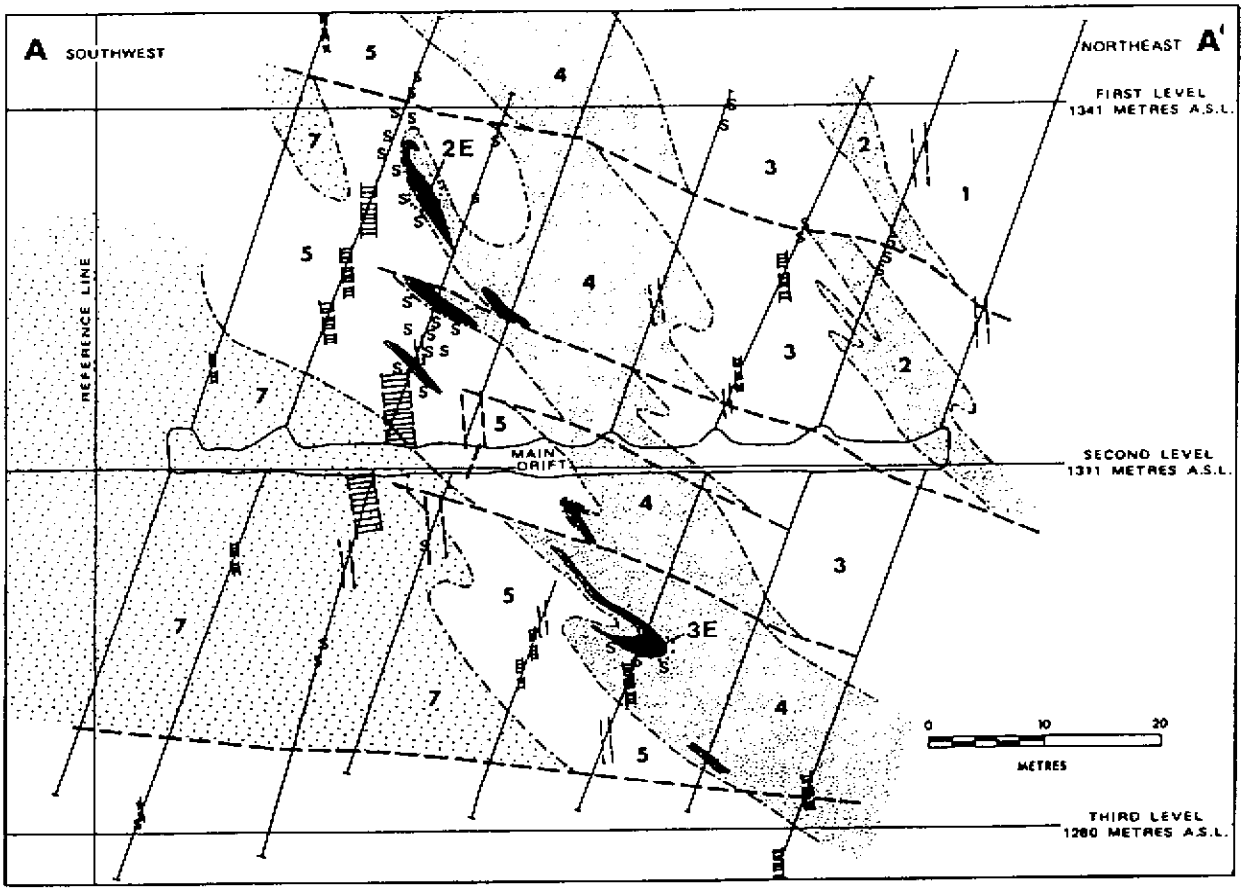

LEGEND

STRATIGRAPHY

RAINBOW MEMBER

7 — BLACK AND GREY CLASTIC SEDIMENTS

BAKER MEMBER

5 — PALE, THIN-BEDDED CLASTIC SEDIMENTS

4 — GREY LIMESTONE

3 — PALE MIXED CLASTIC SEDIMENTS

2 — GREY LIMESTONE

1 — CONGLOMERATE

SYMBOLS

SULPHIDE MINERALIZATION AND SERICITE ALTERATION

REPLACEMENT MINERALIZATION

QUARTZ VEIN: BARREN, MINERALIZED

SERICITE SCHIST ZONE ..... S

GEOLOGICAL CONTACT

FAULT

STOPE 3E

DIAMOND DRILL HOLE

NORMINE RESOURCES LTD.

KING FRACTION AND PIN MONEY

GEOLOGICAL CROSS-SECTION OF THE No. 2 CROSSCUT WEST, No. 2 LEVEL, MOSQUITO CREEK GOLD MINE

DATE: 83 · 08 · 11	JOB NO.: 83 - 17
APPROVED BY:	FIG. NO.: 6

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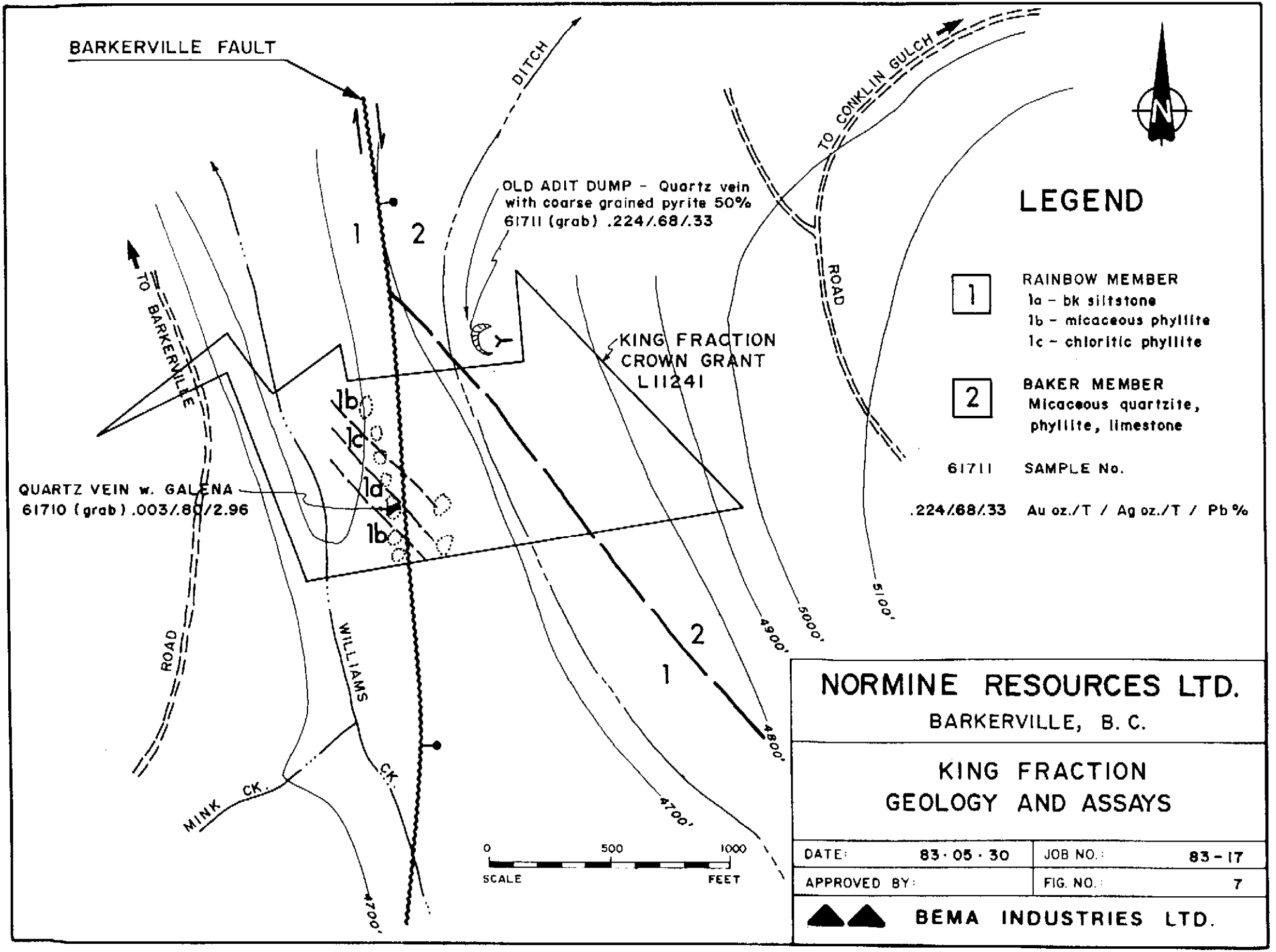
FROM: D. J. ALLDRICK, 1983
THE MOSQUITO CREEK MINE,
CARIBOO GOLD BELT



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KING FRACTION GEOLOGY AND ASSAYS

DATE:	83 · 05 · 30	JOB NO.:	83 - 17
APPROVED BY:		FIG. NO.:	7

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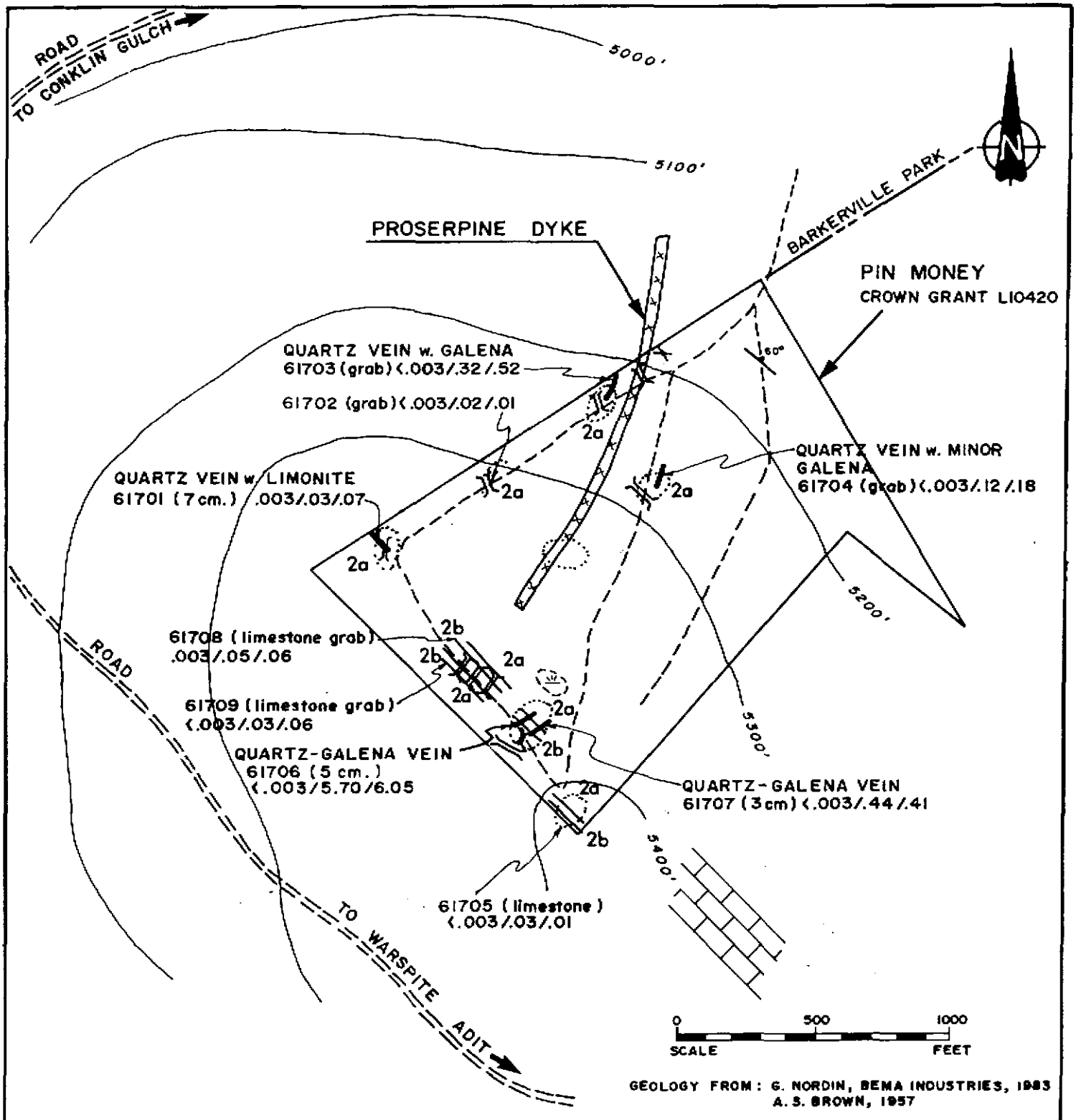


GEOLOGY FROM: G. NORDIN, BEMA INDUSTRIES, 1983
A. S. BROWN, 1957

LEGEND

2 — BAKER MEMBER
2a – micaceous phyllite, micaceous quartzite
2b – grey limestone

61708 (7cm.) SAMPLE No. (Length)

.003/.05/.06 Au oz./T / Ag oz./T / Pb %

NORMINE RESOURCES LTD.

BARKERVILLE, B. C.

PIN MONEY
GEOLOGY AND ASSAYS

DATE:	83·05·31	JOB NO.:	83-17
APPROVED BY:		FIG. NO.:	8

BEMA INDUSTRIES LTD.

Mineralized quartz veins occurred in all three of the major mines at Wells. At Cariboo Gold Quartz, where total production was 1.54 million tonnes grading 13.4 grams gold per tonne from 1933 to 1959 (Carlyle, in press), the quartz veins were the main source of ore. At Mosquito Creek mine, during high metal price cycles, production has come from three quartz veins with grades ranging from 4.5 to 7.9 grams gold per tonne. These mineralized quartz veins at Mosquito Creek mine occur within Baker member rocks and accessory minerals in the veins are ankerite, galena, sphalerite, and sericite. However, Skerl (1948) also reports free gold, cosalite, argentite, and chalcopyrite from quartz veins at Cariboo Gold Quartz mine. It shows that the vein is most extensively developed in Rainbow rocks but where the vein system continues into Baker member rocks it intersects and terminates in a 'replacement ore' lens.

REPLACEMENT ORE

The historic term 'replacement ore' is used for the stratabound massive pyrite ore lenses despite its genetic implications. While quartz vein ore is most abundant in Rainbow rocks and only rarely occurs in Baker rocks, replacement ore occurs only within Baker rocks. Typically, replacement ore lenses occur within or at the contacts of the limestone lenses (Figures 5 and 6). The ore lenses generally occur within 25 metres of the contact between dark Rainbow member beds and pale Baker beds.

In addition to this lithologic association, most of the replacement lenses are structurally controlled. The massive pyrite lenses are commonly locallized in the crests or noses of the minor folds and less frequently in fold troughs. However, significant tonnages of ore also occur in steeply dipping limbs of the main fold structure and in flat-lying tabular lenses where the limestones have 'rolled out' or flattened.

At Island Mountain mine ore lenses ranged from 500 to 35,000 tonnes, and averaged 2,000 to 7,000 tonnes. Typical dimensions are 2 to 3 metres thick, 6 metres wide, and from 30 to many hundreds of metres long down plunge. Replacement ore zones have average cross-section areas of 10 square metres, necessitating tight exploration drill spacing and careful

study of peripheral alteration features in order to recognize 'near misses' in drilling.

The pyrite lenses are fine-grained and usually massive. Locally they display faint banding parallel to the host strata. The finest grained pyrite contains the highest gold values. Overall grades from 30 years of production at Island Mountain mine averaged 16.5 grams gold per tonne and 2.4 grams silver per tonne (Carlyle, in press). However, grades from replacement ore alone, which supplied roughly 60 percent of the production, averaged 23.0 grams gold per tonne and 3.4 grams silver per tonne. Overall grades at Mosquito Creek to December, 1982 mine averaged 14.5 grams gold per tonne from 49 940 tonnes of quartz vein and replacement ore combined.

Ore lenses have sharp hangingwall and footwall contacts; laterally they grade progressively into coarser barren pyrite with coarse arsenopyrite, minor amounts of disseminated galena, sphalerite and rare pyrrhotite, then into silicified limestone, sericitized limestone or sericite schist. The host rock is always limestone; dolomitized, silicified, or sericitized limestone; or sericite schist. In the schist, pervasive sericitization has obliterated the original lithology. One small replacement ore occurrence in sericite schist host rock is illustrated on Figure 6. Comparison with ore lenses in sericitized limestone suggests that the schists are derived from limestone as well. Carlyle (in press) noted that sericitization is most intense in the structural footwall of the pyrite lenses.

Short (2 to 4 metre), narrow (less than 5 centimetre) veins of massive galena and sphalerite mineralization occur in the hangingwall oriented at right angles to the ore lenses; similar veins occur, but are rare, in the footwall. Minor amounts of turquoise-green chromium-bearing mariposite characterize the hangingwall alteration zones. Recognition of these alteration features and peripheral accessory minerals at the mine enlarges 'targets' for exploration diamond drilling.

Some quartz veinlets show crosscutting relationships that clearly postdate the ore, but at least one major vein may be contemporaneous with a massive pyrite lens.

GENESIS

Carlyle and A.S. Brown describes the three main genetic theories of mineralization developed since mining operations began in 1933:

(1) Metals were remobilized from the country rock during regional metamorphism and were reconcentrated in dilation zones, such as fold axes.

(2) Hydrothermal fluids rose from a deeply buried source along a complex fracture network of quartz veins and preferentially replaced the limestone beds.

(3) Hydrothermal fluids rose from a deeply buried source up the major north-striking faults and preferentially replaced limestone beds. Quartz vein ore then developed outward from the replacement ore lenses.

Given the distribution of all the known gold deposits over a 45 kilometre strike length along a single fold limb, a regional tectonic control for the mineralizing event seems necessary. The gold-bearing fluids were derived from the crustal rocks during regional metamorphism and emplaced late in the tectonic cycle during a period of fault readjustment (140 ma). The fluids penetrated the folds, overturned strata, precipitating mineralized quartz veins and reacting with carbonate beds when encountered. Fluids flowed along dilatent fold noses and troughs within the limestones, precipitating a massive sulphide lenses.

PROPERTY MINERALIZATION

Numerous narrow quartz veins containing pyrite and galena with assays of .03 to 5.70 oz/ton Au and .01 to 6.05% PB are present on both claims. As noted by Aldrick, 1983, these veins generally occur in the hangingwall oriented at right angles to the ore lenses. On the north end of the King Fraction and old sloughed adit has quartz vein with coarse grained pyrite on the dump. A grab sample of this material assays 0.224 oz/ton Au, 0.68 oz/ton Ag and 0.33% Pb. This mineralization is typical of the auriferous pyrite quartz veins found elsewhere in the district.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The King Fraction and Pin Money claims are located in the Cariboo Gold Belt along the western limb of the Island Mountain anticlinorium near the north trending Barkerville fault, a major normal fault.

Numerous narrow quartz-pyrite-galena veins are present on both cliams with silver values of 0.03 to 5.70 oz/ton and Pb values of 0.01 to 6.05% Pb. These veins as noted by Aldrick, 1983, generally occur in the hangingwall of ore lenses indicating there is good possibility of auriferous gold veins at a shallow depth. On the north end of the King Fraction an old sloughed adit has quartz vein material with coarse grained pyrite on the dump. A grab sample of this material assays 0.224 oz/ton Au, 0.68 oz/ton Ag, and 0.33% Pb. This mineralization is typical of the auriferous quartz veins found elsewhere in the district.

Good potential is present in outlining auriferous quartz veins or auriferous sulphide replacement lens in limestones of the Baker member on the King Fraction or Pin Money claims in the same structural environment as other mines in the Cariboo Gold Belt which has produced 37,697 kilograms of gold along a 45 kilometre strike length.

RECOMMENDATIONS

A staged exploration program is recommended on the claims to test for auriferous veins or replacement bodies. This would consist of geological mapping, a detailed VLF-EM-16 survey, and geochemical survey of anomalous areas. Second stage program would test mineralized areas and geophysical targets by bulldozer trenching and diamond drilling.

STAGE I

Geological Mapping	
Line Cutting	
VLF-EM-16 Survey	$ 40,000.00

STAGE II

Cat Trenching	
4,000 feet diamond drilling	
Further geological studies	$150,000.00

Signed: _____

G. Nordin, B.Sc.

Date: August 11, 1983

STATEMENT OF COSTS FOR PIN MONEY & KING FR.

FIELD WORK COSTS

SUPPLY		
Motel and meals - 2 days	$ 86.65	
ASSAY		
Chemex Labs	195.52	
LABOUR		
K. Hansen, Geological Assistant July 1 & 2 - Total days 2.0 x $225.00/day	450.00	
	732.17	
TRAVEL EXPENSES		
Mileage on truck - 151.56 x 20¢	30.31	
TOTAL COST OF FIELD WORK		$762.48

GEOLOGICAL REPORT COSTS

G. Nordin, Geologist July 5, Aug. 8 - 10 - Total days 1.5 x $300	450.00	
B. Thacker, Draftsman Aug. 10 - 12 - Total days 1.428 x $185	264.18	
TOTAL COST OF REPORT	$714.18	
25% of Report costs applied to Assessment $714.18 x 25% =		178.54
TOTAL COSTS APPLIED FOR ASSESSMENT		$941.02

PIN MONEY - $470.51
KING FRACTION - 470.51
$941.02

BEMA
Industries Ltd.

STATEMENT OF QUALIFICATIONS

I, GARY D. NORDIN OF BEMA INDUSTRIES LTD. DO HEREBY CERTIFY THAT:

1. I am a graduate of the University of Alberta and hold the following degrees:

   B.Sc. Honors Geology, 1970.

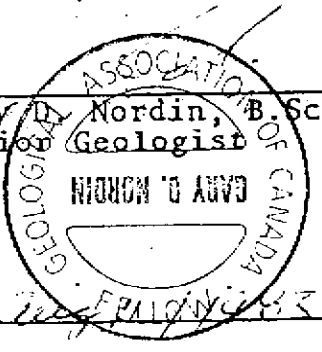
2. I am a member of the Association of Professional Engineers, Geologists and Geophysicists of Alberta, and a fellow of the Geological Association of Canada.

3. I have practiced as a professional geologist since 1970, gaining a wide variety of geological experience with mining companies, petroleum companies and the British Columbia government.

4. That the information contained in this report is both true and correct to the best of my knowledge.

signed: _____

Gary D. Nordin, B.Sc.
Senior Geologist



date: _____