

# Mt. Calvery Resources Ltd.

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## PHASE I EXPLORATION REPORT

ON THE

CPW GOLD PROSPECT  
SPANISH MOUNTAIN AREA

CARIBOO MINING DIVISION  
BRITISH COLUMBIA

NTS: 93 A/11 W  
LATITUDE: 52°36'N  
LONGITUDE: 121°28'W

FIELD WORK DONE DURING THE PERIOD: OCTOBER 1 - DECEMBER 20, 1984

FIELD WORK SUPERVISED BY: A.J. SCHMIDT, P.ENG

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## SUMMARY AND RECOMMENDATIONS

The CPW Claim, lying 4 miles east-southeast of the village of Likely, B.C., was evaluated in 1984 by a comprehensive, two phase exploration program. During Phase I, (prior to November, 1984) grid-soil sampling, prospecting, geological mapping and back-hoe trenching was completed at a cost of \$62,800. Prompted by highly encouraging results, a continued Phase I program of line cutting, VLF-EM surveying, road building, bulldozer trenching, 1,531 feet of NQ diamond drilling in 10 holes and 1,934 feet of rotary drilling in 10 holes was carried out at a cost of \$185,000.

Geological mapping shows the claims to be underlain by a thick succession of Triassic-age inter-bedded phyllitic shale, siltstone and dolomitic quartzite which have been folded into a northwest trending anticline-syncline pair and intruded by younger feldspar porphyry dikes. Numerous faults and shear zones disrupt the rocks in directions parallel and conjugate to the fold axis.

Contouring of the soil sample results at 400 ppb gold outlined three broad anomalous regions known as the Madre West, Madre Central and Madre East Zones. The Madre West anomaly trends northwesterly and measures 1,800 feet by 500 feet, while the Madre Central anomaly can be traced discontinuously along a northwest trend for over 2,600 feet. The Madre West anomaly, the smallest of the three, has a northerly trend and dimensions of 500 by 100 feet.

Gold mineralization is wide spread within the soil anomalies, occurring in three interrelated forms, localized in and adjacent to fold-related fracture and shear zones. Gold is found in quartz veins in massive siltstone, as replacements of pyrite invariably associated with shaly siltstone, and as anastomosing vein systems in shale. Trenching and drilling of several of the auriferous quartz stockworks and

replacement zones have found gold grades in the .06 to 0.2 oz/T range over widths to 85 feet, and up to 0.2 oz/T over 85 feet. All of the known zones are open along strike and to depth, indicating potential for large-tonnage, open-pittable reserves with grades of 0.1 oz/T gold or better.

The 1984 programs have demonstrated the CPW claims to host exciting and intriguing structural-strata controlled gold mineralization warranting an aggressive exploration program in 1985. To this end, a 1985 Phase I program encompassing additional property acquisition, bulldozer trenching, detailed sampling and reverse circulation drilling is recommended. Principal objective of the 1985 program will be establishing the continuity of the known mineralized zones on strike and to depth. The anticipated cost of Phase I is \$183,000.

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ILLUSTRATIONS

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## INTRODUCTION

Mt. Calvery Resources Ltd., successfully completed a two phase exploration program on the CPW gold prospect during 1984.

The Phase I program consisting of grid soil geochemistry, geological mapping, prospecting and back-hoe trenching was undertaken during the period August to October for a total expenditure of \$62,800. Intensive prospecting and panning outlined several strata bound - structural gold zones with grades up to 0.16 oz/T gold over 9 feet within a gold soil anomaly measuring 1,300 by 2,500 feet with values ranging from 200 to 5,100 parts per billion. The discovery, termed the Madre Gold Zone, was subsequently back-hoe trenched with two subparallel trenches measuring 280 and 500 feet in length and approximately 181 feet apart. Several gold bearing zones consisting of pyritic carbonaceous siltstone and shale cut by shears and quartz veins were outlined with values ranging up to 0.14 oz/T gold over 36 feet.

The follow-up Phase I program, funded through a financing agreement with Teck Corporation, consisting of line cutting, additional soil geochemistry, VLF survey, detailed prospecting, road building, bulldozer trenching, 1,531 feet of NQ diamond drilling and 1,954 feet of reverse circulation rotary drilling was completed during the period November 1st to December 20th. Total expenditure(s) of this phase to date are approximately \$185,000. The program has successfully upgraded the property. Three zones of gold mineralization outlined on surface were confirmed at depth by the drilling program.

The encouraging results to date fully justify additional exploration to outline zones of potential economic gold mineralization.

### LOCATION AND ACCESS

The CPW claim is located just west of Spanish Lake, approximately 4 miles east - southeast of the village of Likely, B.C. Approximate geographic coordinates are 52°36' North latitude, and 121°28' West longitude (see Figure 1).

The all-weather, Spanish Lake - Abbott Creek forestry-access road transects the northern portion of the claim and provides ready access from the village of Likely. Secondary logging roads off the main haul road have been up-graded and extended to provide access throughout the property.

### PHYSIOGRAPHY AND VEGETATION

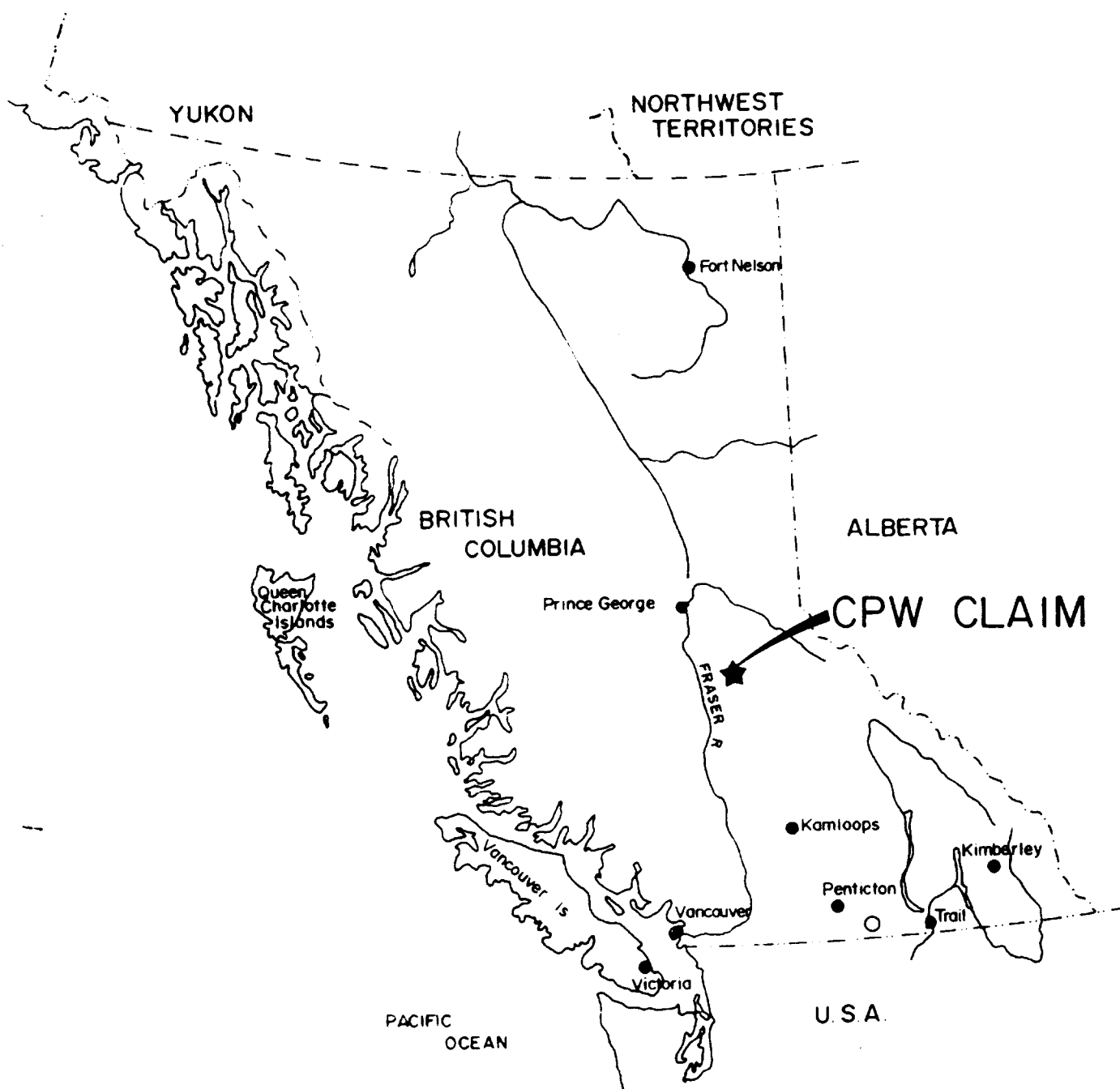
The CPW claim lies on the north slope of the western ridge of Spanish Mountain. The terrain is moderate, elevations range from 3,000 feet a.s.l. at Spanish Creek to 4,300 feet a.s.l. along the southern boundary of the property. Side slopes seldom exceed 25°.

Much of the property has been clear-cut logged; however, the northeast and southwest corners of the property are covered by mature stands of fir, spruce, alder and cottonwood. The logged-off areas have been reforested, but are largely covered by a heavy growth of alder.

### CLAIM STATUS (see Figure 2)

The four-unit CPW claim was staked in October, 1982 and recorded November 1, 1982 (Record No. 4541) by D.E. Wallster, as agent for C.P. Wallster, trustee for the Mariner Joint Venture. On March 18, 1983, the CPW claim was optioned to Whitecap Energy Inc.



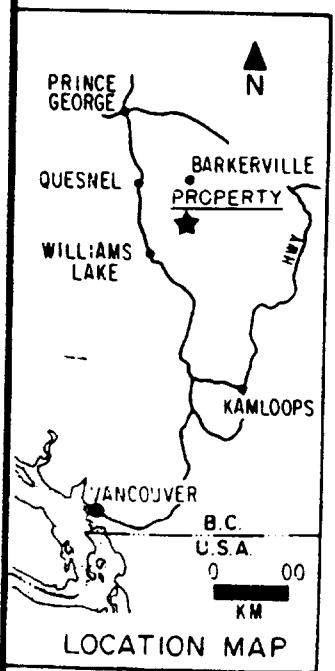
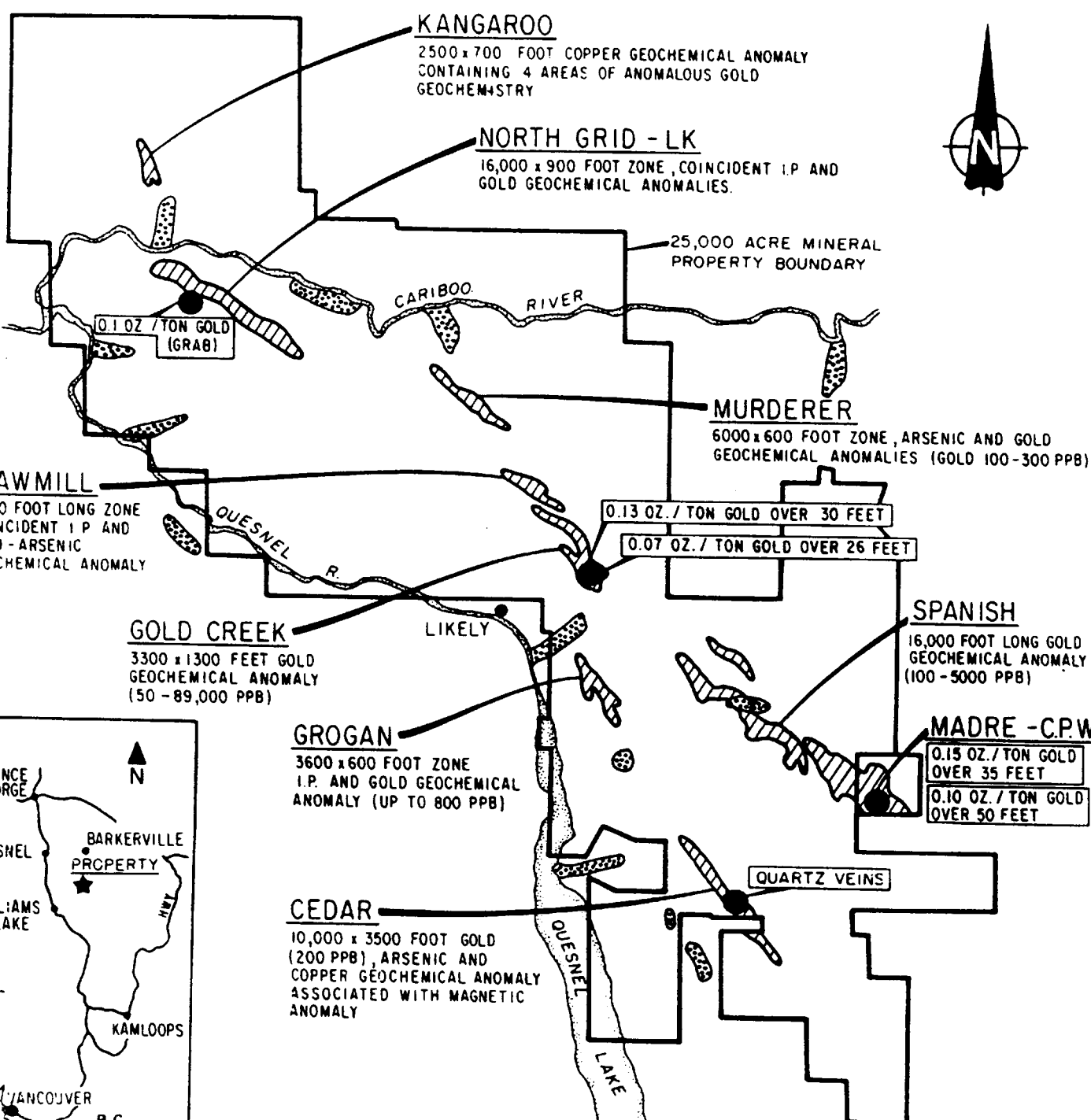


MT. CALVERY RES. LTD.




CPW CLAIM  
LOCATION MAP

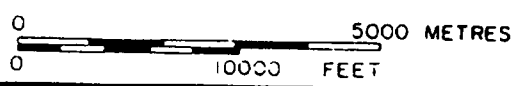
FEB., 1985

FIGURE 1



**LEGEND:**

-  PLACER GOLD DEPOSIT
-  GOLD IN BEDROCK
-  GOLD GEOCHEMICAL ANOMALY



**MT. CALVERY RESOURCES LTD.**  
**CARIBOO-LIKELY AND C.P.W.**  
**GOLD PROJECT**

**GOLD EXPLORATION**  
**TARGETS**

**FIGURE 2**

Mt. Calvery Resources acquired the CPW claim by an agreement with Whitecap Energy and the Mariner Joint Venture under a Letter of Agreement on August 2, 1984, and a formal agreement dated November 2, 1984. Mt. Calvery has the right to earn an 100% interest in the property, while Mariner and Whitecap may elect to participate as to 10% and 20% working interests respectively.

Mt. Calvery and Teck Corporation concluded a financing agreement on November 2, 1984, which allows Teck the option of funding Mr. Calvery's Cariboo-Likely Project, including the CPW claim, through production, by the purchase of Mt. Calvery treasury shares. The initial \$200,000 advanced by Teck, provided the necessary funds to continue the Phase I program on the CPW claim.

#### 1984 FIELD PROGRAM

##### Phase I Program

Gold mineralization was found on the CPW claim in late July, 1984, during detailed prospecting of a large and intense gold soil geochemical anomaly previously outlined by earlier workers and expanded by Mt. Calvery in mid July.

The excellent assay values obtained by preliminary chip samples, within an impressive gold soil anomaly, led Mt. Calvery's management to initiate and conclude an option agreement to acquire the CPW claim in August.

Two sub-parallel excavator trenches, totalling 780 feet, were established across the strongest part of the soil anomaly in early September.

Detailed trench sampling outlined several significant gold bearing zones worthy of further trenching and drill testing.

Phase I Program (Teck Financing)

A financing agreement was completed with Teck to fund a comprehensive exploration program consisting of:

- 1) Establishment of 8 miles of cut grid over the southern half of the CPW claim with line spacing of 165 feet and stations every 82 feet along the lines;
- 2) Completion of 6 miles of VLF survey over the above grid;
- 3) Fill-in geochemical soil sampling over the southern half of CPW claim;
- 4) Detailed prospecting and chip sampling of geochemically anomalous zones;
- 5) Approximately 7,300 feet of (TD-25) trenching over geochemical and geophysical targets;
- 6) Cutting approximately 1,200 one-metre channel samples (12-15 lbs. each) from mineralized zones exposed by the above trenches;
- 7) Detailed geological mapping (1:200) of trenches and road cuts;
- 8) Construction of approximately 1 mile of new access roads and rehabilitation of approximately 1.5 miles of old logging roads to provide access for the trenching and drilling programs;

- 9) Diamond drilling 10-NQ inclined holes, from 5 sites, totalling 1,531 feet. All core was split and assayed in 1-metre intervals. Remaining core is presently stored on the property.
- 10) Rotary drilling (reverse circulation) of 10 inclined holes, from 10 sites, totalling 1,954 feet. Samples were collected and assayed at 1-metre intervals for the entire length of all holes.

The Phase I Program as originally proposed, was completed with all of the major known gold zones surface trenched and drill tested. Several additional proposed rotary holes were not completed due to severe winter conditions and the onset of the Christmas holiday season. Please note Table's 1 and 2 on the following page for location and particulars on the individual drill holes.

Welcome North Mines Ltd., as operator, implemented, carried out and essentially completed the program of work on the Mariner (CPW) Property as set out in Schedule "D" of the Teck-Mt. Calvary financing agreement.

TABLE 1 - DIAMOND DRILL HOLE DATA

Hole No.	Length		Azimuth	Dip	Grid Location		% Recovery
	m	ft			South	West	
MD 1	36.58	120	180°	-30°	868 S	250 W	78.1
MD 2	40.23	132	180°	-60°	866.5 S	250 W	69.7
MD 3	36.58	120	180°	-30°	808 S	350 W	86.4
MD 4	55.32	182	180°	-60°	806.5 S	350 W	91.9
MD 5	36.58	120	180°	-30°	945 S	130 W	84.1
MD 6	55.47	180	180°	-60°	943.5 S	130 W	89.6
MD 7	53.34	175	244°	-30°	700 S	117 W	64.9
MD 8	68.58	225	244°	-60°	700 S	115.5 W	91.5
MD 9	22.86	75	244°	-40°	700 S	116 W	79.7
MD 10	60.96	200	180°	-45°	827 S	076 E	92.1
Total =	466.5	1531					84.0%

TABLE 2 - ROTARY DRILL HOLE DATA

Hole No.	Length		Azimuth	Dip	Grid Location	
	m	ft			South	West
MR 1	61	200	270°	-60°	558 S	193 W
MR 2	61	200	270°	-60°	516 S	196 W
MR 3	61	200	325°	-60°	525 S	151 W
MR 4	61	200	180°	-60°	872 S	250 W
MR 5	61	200	90°	-60°	927 S	267 W
MR 6	61	200	180°	-60°	839 S	290 W
MR 7	61	200	300°	-60°	940 S	175 W
MR 8	61	200	90°	-60°	894 S	264 W
MR 9	54	177	244°	-60°	709 S	134 W
MR 10	54	177	90°	-60°	598 S	253 E
Total =	596	1954				

### GEOCHEMICAL SOIL SAMPLING PROGRAM

Mt. Calvery Resources, as a result of geochemical soil sampling of its Cariboo-Likely project, outlined a large and strong gold soil anomaly extending for over 13,000 feet southeast into the CPW claim. After receipt in mid July of the vendor's original geochemical data, Mt. Calvery extended soil sampling coverage into the northern portion of the property and completed "fill-in" lines throughout the existing grid.

All grid soil geochemical results have been compiled and contoured at 40, 100, 200, 400 and 800 ppb Au. The 40 ppb Au contour was used in the Cariboo-Likely project to indicate threshold anomalous areas, based on the results of over 10,000 soil samples from more than 50 square miles of survey area.

Three large (+400 ppb) gold soil anomalies outlined three potential zones of mineralization which were subsequently trenched and named "MADRE" East, Central and West. The large +400 ppb anomaly measuring 1,800 x 500 feet occurs over the Madre West zone, with some downslope (northerly) dispersion within this zone. The +800 ppb Au contour is elongate to the northwest and is centred over attractive gold mineralization found in the original back-hoe trenches. Extensions to the NW are indicated by the +400 ppb Au contour between lines 600 S and 700 S along the western boundary of the CPW claim.

The Madre Central zone was discovered within an elongate semi-continuous northwest trending, 2,600 foot long gold anomaly contoured at 400 ppb Au.

The Madre East zone is located within the +400 ppb that is elongated in a north-south direction for over 500 feet.

## GEOPHYSICAL SURVEYS

### Airborne EM Magnetic Surveys

A helicopter EM and magnetometer survey was flown over the area in February, 1981, by Apex Airborne Surveys Ltd., for Aquarius Resources Ltd. A total of 42 line miles were completed with a line spacing of 660 feet.

A very strong EM anomaly is indicated over the CPW claim, that trends northwest, following both the general strike of the strata, and the Madre West faulted shale-siltstone (SH/SST) contact zone.

A contoured aeromagnetic map of the CPW claim and surrounding area was produced by the 1981 airborne survey. This data indicates virtually no magnetic signatures, except for a small 40 gamma anomaly on the southwest slopes of Spanish Mountain, some distance from the CPW claim.

On September 7, 1984, Questor Surveys flew three trial helicopter EM and magnetometer survey lines over Mt. Calvary's Likely area properties, including one line directly over the CPW claim. Three very strong EM anomalies were outlined within the CPW claim boundary that require further definition.

The results of the 1981 and 1984 airborne EM surveys are of exploration significance as the northwest trend of conductors is coincident with the 13,000 foot long gold geochemical anomaly on the Cariboo-Likely Property. The northwest trending axial plane shears known to contain gold mineralization in the Madre West Zone would most probably provide an excellent electromagnetic signature of the type that the above surveys are outlining.



### Ground VLF-EM Survey

A six mile VLF-EM survey was completed in late October to aid in delineation of structures for hosting gold mineralization and interpretative mapping. The work was contracted out to Durfeld Geological Management Co., of Williams Lake, who used a Crone Radem VLF-EM receiver utilizing the Seattle station for the survey.

Durfeld has plotted the results, after using a 'Fraser filter' method for manipulating the raw data. The results are shown on Plate 3.

A number of strong VLF anomalies are indicated with predominant trends in northwest and north-south orientations. The strongest single conductor trends northwest through trenches N and O, which is coincident with the strongly sheared SH/SST contact mapped along the Madre West Zone.

Strong N-S faults seen in three of the Madre West trenches were not outlined by the VLF Survey.

Another strong VLF anomaly trends NW through the Madre Central Zone, and is exposed by trenches L-Extension and G, H, and I. This anomaly continues to the northwest, but has not been explored. The Madre East Zone is not coincident with a strong VLF-EM conductor. A moderately strong northerly trending VLF anomaly occurs in the SE portion of the CPW claim (L950 S, 325 E), further mapping is required to verify a possible structure.

In summary, the trenching and mapping programs have verified north-west trending fault and shear structures originally outlined as conductors by the VLF-EM Survey. A weak conductive response coincident with north to northeast structural trends may be a function of grid line orientation coupled with selection of receiving station.

Since structurally hosted gold mineralization occurs in both north-west and northeast trending faults and shears, further VLF-EM surveys utilizing an alternate receiving station should be carried out.

## GEOLOGICAL SETTING

The Cariboo-Quesnel Gold Belt lies within the Cariboo-Quesnel Trough, a 20 mile wide, northwest-trending, early Mesozoic volcanic-sedimentary belt of regional extent. To the west, the trough is fault-bounded by Cache Creek Terraine sediments and greenstones, and to the east by Omineca Terraine metamorphosed sediments. The trough is defined by an Upper Triassic assemblage of calcareous argillites, sandstones and conglomerates overlain by a series of Jurassic basalt flows and breccias, with variable interbedded limestone, mudstone, greywacke and conglomerate and an upper series of maroon-coloured basaltic flows and breccias. This entire sequence has been intruded by a series of stocks and sills of syenite and diorite. The Cariboo-Quesnel Gold Belt contains two types of large-tonnage, low-grade gold deposits that occur in unique geological settings.

### QR Type Deposit

The QR deposit has an inferred reserve of 2 million tons of 0.2 ounces per ton gold (and a rumoured potential reserve of 4 million tons). Gold mineralization is associated with propylitization of Jurassic basalts, andesites and siltstones adjacent to alkalic intrusives. Gold is hosted within an alteration assemblage of epidote, chlorite, carbonate and pyrite. Mineralization produces significant I.P. signatures and gold geochemical anomalies in soils.

The QR deposit lies within a 4,000 x 1,300 foot gold soil anomaly with a threshold of 40 ppb and maximum responses of 350 ppb gold. The intrusive stock produces a well-defined magnetic anomaly. Consequently, gold mineralization of the QR-type produces a geophysical and geochemical signature which can be identified in areas of little or no bedrock

exposure. Dome Mines utilized geochemical and geophysical surveys to recently discover the Maud Lake and West Zone, two significant new gold occurrences of this type.

#### Frasergold Type Deposit

Amoco and Eureka Resources have recently discovered and are currently exploring a different type of potentially large tonnage gold deposit. Located 60 miles southeast of Likely along the Mackay River, stratabound gold mineralization is associated with an iron-carbonate-rich member of Upper Triassic graphitic phyllite. Gold occurs within the phyllite in remobilized quartz-siderite-gold lenses that can constitute up to 40% of the mineralized zone. Near-surface mineralization was detected by a geochemical gold soil anomaly two miles long, with peak values up to 1,365 ppb gold (0.043 ounces). Diamond drill hole intersections in widely spaced holes included 0.18 ounces per ton gold over 14.5 feet and 0.13 ounces per ton gold over 15 feet.

#### PROPERTY GEOLOGY

The Property is underlain by a northwest trending assemblage of intercalated sericite-chlorite phyllite, phyllitic siltstone, massive siltstone and highly carbonate altered dolomitic quartzite of Triassic age. Light gray altered quartz porphyry to dacite dikes cut the above lithologies in the southwest portion of the property. Structurally the above units have been folded into a major northwest trending anticline-syncline pair. Much of the property overlies the "S" limb of the anticline resulting in a predominant sheet dip of 30-35 degrees to the northeast with local dip reversals due to open parasitic folding. Numerous faults and shear zones parallel and conjugate to the major fold axes are present throughout the property and are important control to the gold mineralization. All sedimentary units have suffered low grade

green-schist metamorphism with universal pyritization and carbonatization.

#### LITHOLOGIC DESCRIPTIONS

Structural-stratigraphic mapping has outlined a thick succession of interbedded phyllitic shale, siltstone and dolomitic quartzite (Plate 1). Although there is an apparent lack of stratigraphic control, the succession appears to have a minimum thickness of over 500 feet. Thickness of individual members varies from 50 to over 200 feet.

The core of the northwest trending anticline consists of dark gray to black, variably sheared, graphitic, phyllitic shale and silty shale. This shale assemblage, unit SH, largely confined to the core of the anticline is considered to be the oldest unit on the property. Abundant fine grained pyrite <5 mm and oval shaped limonite after ankerite <1 cm are common throughout.

The shale sequence is conformably overlain by a pale orange weathering variably calcareous, laminated dark gray silty shale to shaly siltstone. Overall, the shaly siltstone, unit SST, is pyritic with euhedral crystal growth to one inch, but commonly has a lower graphite content.

Overlying the shaly siltstone is a pale orange weathering, massive to thick bedded, light to dark gray siltstone, unit ST. Since this is the most competent unit on the property, contacts with other less competent shaly members are usually sheared as a result of the northeast - southwest compression.

Locally, siltstone to quartzite horizons that are highly altered a light gray to white assemblage of silica, dolomite and fuchite, have been tentatively labelled "Altered Sediments" unit AS. These altered units have a granular quartzitic appearance and due to the high calcium-magnesium content, the original rock was probably a dolomitic quartzite. A future thin-section study will be required to properly classify all rock types and their alteration overprint.

Intrusive into the sedimentary rocks are narrow light gray, siliceous, quartz feldspar porphyry dikes and sills ranging from a few inches to over 20 feet thick. They appear to be most common in the southwestern portion of the claim. The age of the porphyries has not been determined, but it is assumed they are related to the Jurassic age stocks seen elsewhere in the district. The porphyry dikes commonly contain, minor fuchite, up to 5 percent subhedral pyrite and traces of galena. These dikes are cut by quartz veins containing gold mineralization.

All of the above sedimentary units indicate evidence of moderate to strong carbonization and pyritization. Ankerite occurs as oval shaped blebs up to 1/2 inch in diameter disseminated throughout the rock units, but is more prevalent in massive siltstone and the altered dolomitic quartzite. Overall, the ankerite varies from 10 to 25 percent by volume throughout the sedimentary sequence. Medium to coarse grained euhedral pyrite up to 1 inch in diameter is also common throughout all sedimentary units. Note gold mineralization is associated with a second generation of pyrite associated with silicification.

#### STRUCTURAL SETTING

The CPW claim largely covers the east limb of a major northwest trending anticline. Bedding attitudes, when recognized, have an average strike of 130 degrees and variable dip of 30 to 60 degrees to the northeast. The variable dips are due to open parasitic folds along

the back or "S" limb of the anticline. These folds have amplitudes of several tens of feet and wave lengths of 50 to 100 feet. The net effect of the sub-parallel topographic relief and unit sheet dips results in the present surface being a dip slope.

Economically important sets of conjugate shears, axial plane shears and sheared rock contacts also appear related to the stage of northeast - southwest compression. Axial plane shear zones trend at approximately 150° and are sub vertical. These zones have been recognized in the graphitic shale with widths of over 50 feet that contain graphitic shear planes, quartz veinlets and disseminated fine grained subhedral pyrite accompanied by anomalous gold content.

A conjugate set of fractures and shears has been recognized and is believed to be an important control for the gold mineralization. A set of quartz filled fractures and shears that trends at 035 degrees with a steep northeast dip contains coarse visible gold. A fracture set trending at 090 to 115 degrees has been identified, but its economic significance is presently unknown.

Late stage north to northeast sub vertical faults with gray clay gouge appear to displace rock unit boundaries, but post date the mineralizing event.

In short, the structural preparation of the layered sequence of shales and siltstones through folding, shearing and fracturing appears to have provided the network of channelways for the silica-gold mineralization.

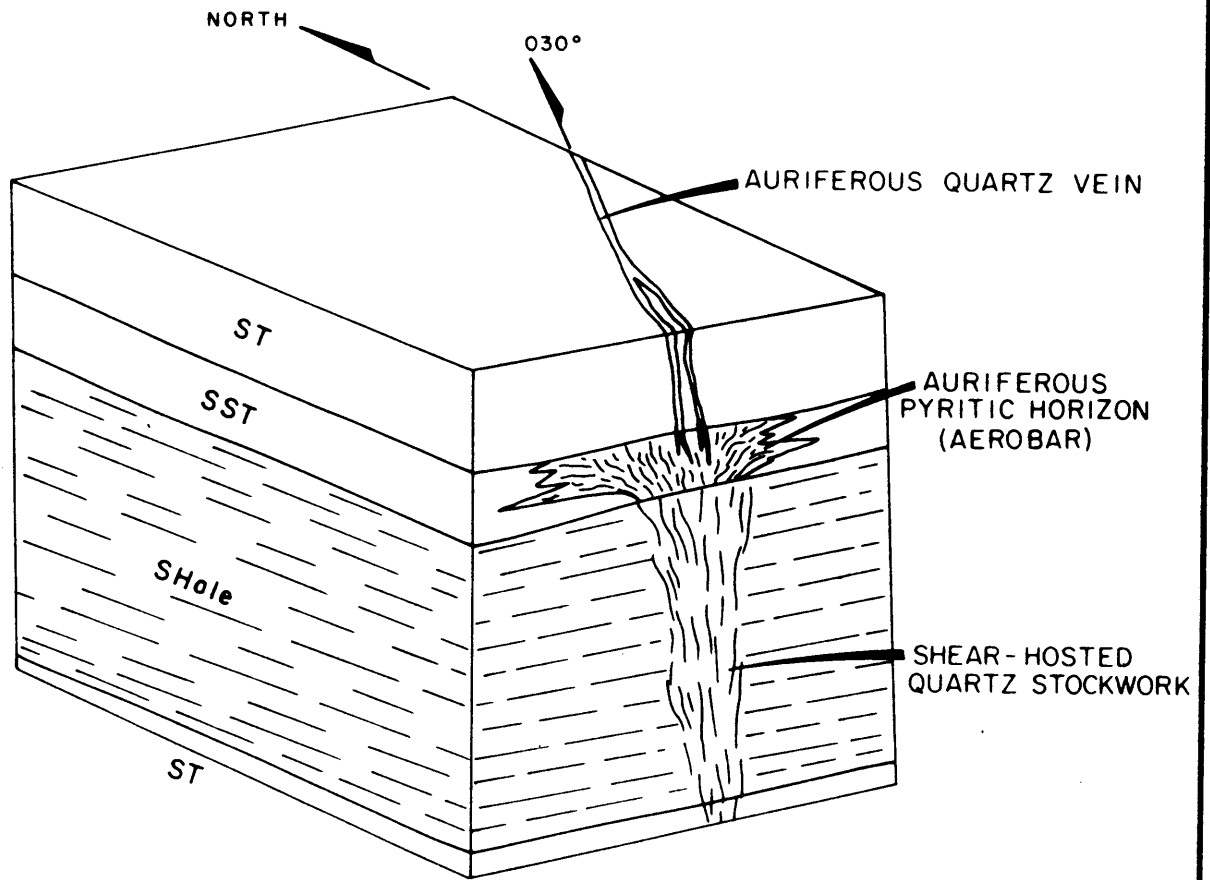
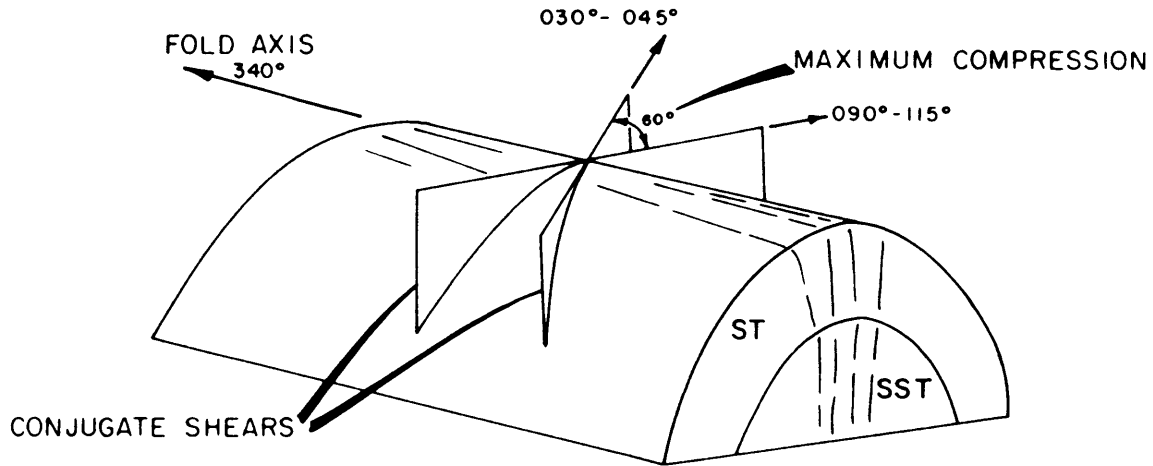
## MINERALIZATION

Gold-bearing quartz veins were discovered on Spanish Mountain in the 1930's (possibly earlier) and were subsequently explored by the N.A. Timmins Corp., who, in the period to 1938, did extensive hand-trenching and drove several short adits and declines. In 1947, the veins were re-evaluated with a limited diamond drill program. From 1948 to 1982, with the exception of sporadic trenching and sluicing designed to evaluate the placer-gold potential, the area was not actively explored. Grid soil sampling in 1983 outlined large areas of the area as anomalous for gold. In late July 1984, Mt. Calvery prospector, Dave Heino discovered free-gold within vuggy shales and siltstones while prospecting within the gold geochemical anomaly.

Extensive prospecting, sampling, trenching and diamond drilling carried out subsequently to the Heino discovery has established gold as occurring in three forms:

- a) As free gold associated with minor galena in northeasterly and easterly trending, steeply dipping, 2 cm to 1 m quartz veins in massive siltstone;
- b) As residual particles in leached pyrite vugs invariably with silica association in pyritic shaly siltstone. This mineralization was aptly named "aerobar" by the prospector, after the cellular-type chocolate bar of the same name;
- c) In anastomosing quartz vein stockworks occupying northeasterly and easterly trending, steeply dipping shear zones in graphitic shale.

It is postulated that all three types of mineralization are interrelated and represent three parts of the same mineralizing event shown diagrammatically in Figure 3. Hydrothermal fluids responsible



MT. CALVERY RES. LTD.  
CPW CLAIM  
BLOCK DIAGRAM  
GOLD MINERALIZATION

J.M./r.w.r

FEB., 1985



for the gold mineralization are thought to have been localized in northeasterly and easterly trending fracture and shear zones formed by compressional shearing during folding of the strata. Compressional stress caused the more competent massive siltstones to fail along a limited number of fractures, while wide zones of fracturing developed in the shale. The auriferous, hydrothermal fluids migrated up these structures forming discrete vein-fillings in the massive siltstone, but horse tailed into an anastomosing vein system on passing into the fractured shale. Ponding of the hydrothermal fluids occurred as the upwardly migrating solutions attempted to pass from the structural more permeable shale into the overlying less permeable siltstone. As the ponded fluids spread laterally through the pyritic shaly siltstone, gold was deposited as replacements of pyrite rims forming manto-like "aerobar" mineralization beneath the less permeable siltstone.

Both the "aerobar" or manto-type and shear-hosted stockwork zones have potential for significant tonnages, which near surface would have open-pit potential. Ideally, the most favourable loci for mineralization would occur at the junction of the northeast and east trending structures.

To date, prospecting and trenching have found various forms of gold mineralization within three broad regions of the CPW claim, known as the Madre West, Madre Central and Madre East zones (Plate 1). A description of each zone follows:

#### Madre West Zone

This area, which was the discovery zone, has been explored by 7 trenches, 6 diamond drill holes and 5 rotary holes (Plates 4, 5, 14 & 15). Numerous auriferous shear-hosted, quartz stockwork zones in

TABLE III

ASSAY RESULTS FROM CPW CLAIM DIAMOND AND ROTARY DRILLING

<u>Hole No.</u>	<u>Metres</u>		<u>Width</u>		<u>Gold</u> <u>Oz/Ton</u>
	<u>From</u>	<u>- To</u>	<u>Feet</u>	<u>- Metres</u>	
MD-1	20	23	10	3	.04
MD-2	23	26	10	3	.04
MD-4	36	37	3	1	.05
MD-7	6	13	23	7	.09*
	15	17	7	2	.07
	21	31	33	10	.06
	45	49	13	4	.09
	53	53.3	1	0.3	.05**
MD-8	7	12	16	5	.05
MD-9	8	16	26	8	.08
<u>ROTARY DRILL HOLES</u>					
MR-2	39	42	10	3	.04
MR-3	56	58	6	2	.05
MR-4	11	22	36	11	.05
including	14	19	16	5	.07
	32	35	10	3	.05
MR-5	23	30	23	7	.06
	35	37	6	2	.05
	40	42	6	2	.04
MR-6	42	51	29	9	.05
MR-7	8	14	20	6	.05
	24	50	85	26	.19
includes	27	50	75	23	.21
includes	29	32	10	3	.44
includes	39	43	13	4	.49
MR-8	8	12	13	4	.04
	14	16	6	2	.04
	45	48	10	3	.04
MR-9	2	24	26	8	.06
including	14	20	20	6	.10
MR-10	11	16	16	5	.10

\*Sludge Sample

\*\*Sample From End of Hole

shale and replacement "aerobar" zones in pyritic siltstone have been identified over a distance of 2,000 feet.

The most impressive mineralization is exposed in the North and South Trenches. At the eastern end of Trench-South an anastomosing vein system occupying a 030° near vertical shear zone in shale assayed .095 oz/T gold across 49 feet is present. Rotary drill hole MR-7 tested the down-dip extension of the mineralization and intersected 85 feet grading 0.2 oz/T gold. This shale-hosted, shear controlled gold-bearing zone is open in all directions and is a primary target for further exploration.

Located in the west end of the South and North Trenches is a second gold zone. Here, gold is in both anastomosing veins in sheared shale and as "aerobar" type replacements in shaly siltstone. The zone, which trends 040° with a steep northwest dip, assayed .08 oz/T gold over 72 feet including a section grading .143 oz/T over 36 feet in the North Trench and .067 oz/T gold over 23 feet including a section grading .094 oz/T gold over 13 feet in the South Trench. This gold-bearing shear and aerobar zone has been tested by diamond drill holes MD 1 and 2, and rotary drill holes RD 4, 5 and 8 (Plates 18, 26 & 29). Assay results from drilling were lower grade than surface sampling. Rotary drill hole 5, drilled under the South Trench intersected 23 feet grading .06 oz/T gold while rotary hole 6 intersected 36 foot interval assaying .05 oz/T gold. Diamond drill results were lower than the rotary results as evident from comparing assays from rotary hole MR 8 and diamond drill hole MD 5. The lower results from the diamond drilling are thought to be caused by poor core recovery. Despite the somewhat lower grades at depth, this zone is open in all directions and is a primary exploration target.

A third northeasterly trending, shear-hosted zone assaying .05 opt gold over 46 feet lies in the extreme west end of the North Trench. Rotary hole MR 6, drilled 60 m north of this mineralization, intersected 29 feet grading .05 opt gold in quartz-veined shale near the end of the hole. The intersection in MR 6 is probably the on-strike, down-dip extension of the North Trench mineralization. As the other zones, this zone remains untested on strike and to depth, and requires further trenching and drilling.

Additional gold-bearing, shear-hosted quartz stockworks within shale have been found in Trenches L and M. Only one of these zones has been tested by drilling. These zones all require further trenching and drilling to define their extent and grade.

#### Madre Central Zone

This zone was also initially outlined by the soil survey and confirmed by later detailed prospecting. To date, the zone has been explored by 7 trenches, 4 diamond drill holes and 4 rotary holes.

Trenching has exposed "aerobar"-type gold mineralization over a length of 1,600 feet. Shear-controlled mineralization has not been found; however, because the favourable shale unit is not exposed, there is potential for such mineralization beneath a thin veneer of siltstone and shaly siltstone.

Within the trenches, significant gold mineralization is exposed over widths from 10 to 49 feet (Plates 1, 6, 7, 10, 11, 16 & 17), with the best assay intervals being 0.108 opt gold over 33 feet and .083 opt gold over 30 feet in Trench L-Extension. Diamond and rotary drilling beneath Trench L-Extension confirmed the persistence of gold at depth with the following results:

DDH	MD 7	returned .06 opt Au over 33 feet
DDH	MD 8	returned .05 opt Au over 16 feet
DDH	MD 9	returned .08 opt Au over 26 feet
RDH	RDH 9	returned .10 opt Au over 20 feet

Here, the gold zone occurs in a manto-like zone, stratabound to pyritic shaly siltstone beneath a massive siltstone capping (Plate 21). This zone has a thickness of 30 to 100 feet with the zone open in all directions. The feeder zone, (auriferous quartz stockwork in shale) which is postulated to exist, was not intersected, but may lie at depth west of the fault shown on Plate 21. Additional trenching and drilling of the mineralization is recommended.

Southeast of Trench L-Extension, "aerobar"-hosted gold has been discovered in Trenches G, H and I over a strike length of 300 feet. Gold grades found in the trenches are:

Trench I	.063 opt gold over 23 feet
Trench H	.058 opt gold over 13 feet
Trench G	.046 opt gold over 30 feet

A single diamond drill hole, MD 10, was drilled to test the mineralization in Trench G at depth, but unfortunately, due to a major fault, the down-dip extension was missed (Plate 22). The mineralization in Trenches G, H, and I, therefore, remains untested to depth. Further rotary-drill testing of this zone is recommended.

To the northwest of Trench L-Extension, drilling of "aerobar" gold mineralization exposed in Trenches A, B and C intersected low-grade gold over narrow widths. No additional work is recommended at this time.

Madre East Zone

This zone, originally outlined by a 400 foot by 100 foot gold geochemical anomaly, has been tested by several hand-trenches and bulldozer trenches D, E and F (Plates 1, 8 and 9).

Both auriferous fissure-filling veins and aerobar zones have been found. The veins, which are up to 1 metre wide with assays to .32 opt gold across 3 feet, occur in massive siltstone. Aerobar mineralization was exposed in Trenches D, E and F. Sampling of the "aerobar" showed a 29 foot interval in Trench E to average .097 opt gold and a 7 foot interval in Trench D to average .079 opt gold. The mineralization in Trench E was tested by rotary drill hole 10, which showed it to be semi conformable with the host pyritic shaly siltstone, and to average .10 opt gold across 16 feet. This aerobar zone is open on strike and to depth. If shear-controlled mineralization is present, it would lie at depth in the underlying shale. Further work is recommended to establish the extent of the aerobar mineralization and to search for underlying shear-hosted gold zones.

CPW PROPERTYSUMMARY OF 1984 PHASE I EXPENDITURES

<u>Exploration Function</u>	<u>Costs to Dec. 31/84</u>	<u>Estimated Costs For Jan/85</u>	<u>Estimated Total Costs</u>
Assays & Geochem	13,580.56	5,805.00	19,385.56
Camp Maintenance	3,395.04	738.30	4,133.34
Consulting Fees	1,730.15	-	1,730.15
District Expense	387.81	251.04	638.85
Drilling	54,472.40	-	54,472.40
Field Supplies/Equipment	3,225.14	111.64	3,336.78
Fuel	63.87	-	63.87
Linecutting	2,550.00	-	2,550.00
Maps, Printing, Drafting	6,475.43	2,200.00	8,675.43
Salaries	36,010.82	4,450.00	40,460.82
Surveys Other	2,550.00	-	2,550.00
Transportation, Misc.	3,428.30	4,768.59	8,196.89
Trenching and Roads	16,545.50	2,070.00	18,615.50
Misc. Indirect	5,521.10	-	5,521.10
Project Management Fees	14,993.62	2,039.46	17,033.08
	<u>                    </u>	<u>                    </u>	<u>                    </u>
Total	\$164,929.74	\$22,434.03	\$187,363.77

Funds Advanced \$200,000.00

Estimated Total Costs 187,363.77 (as at Jan. 31/85)

Balance Remaining \$12,636.23 (for expenditures estimated to Feb. 28/85)

PROPOSED 1985 PHASE I PROGRAM - MADRE ZONES

The CPW property hosts structural-strata controlled gold mineralization warranting aggressive exploration programs in 1985. The 1984 program successfully advanced the exploration potential of the property from geochemical anomalous zones to significant intersections of gold mineralization on surface and in drill holes, highlighted with a drill intersection of 0.2 oz/ton gold over 85 feet. Follow-up trenching, sampling and drilling will determine the tonnage potential of the exposed mineralization.

The Phase I program of additional property acquisition, bulldozer trenching, detailed sampling and reverse circulation rotary drilling is proposed on the Madre Zones for an estimated expenditure of \$183,000. The above two month program would be initiated in April with anticipated completion in late June.



PROPOSED 1985 PHASE I - BUDGETESTIMATE OF EXPENDITURES

<u>Exploration Function</u>	<u>Estimated Cost</u>
Assays and Geochem, 2,000 samples @ \$12/sample	\$24,000
Camp Maintenance, 2 men for 60 days; 2 men for 30 days x \$25/man/day	4,500
District Expense, estimate	500
Drilling ..... 4,000 feet @ \$12/ft. all up	48,000
Field Supplies & Equipment ..... estimate .....	2,000
Fuel ..... estimate .....	1,000
Maps, Printing, Drafting ..... estimate .....	5,000
Property Acquisition & Option Payments - (Mariner & Mickle)	35,000
Property Maintenance ..... estimate .....	1,000
Salaries ..... estimate .....	20,000
Transportation, Misc. .... estimate .....	5,000
Trenching and Roads, estimate - 250 hours @ \$80/hour	20,000
Project Management Fees (10%)	17,000
	<hr/>
Total Cost	\$183,000
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BIBLIOGRAPHY

1. R.B. Campbell, GSC OF 574, 1978, 1:125,000
2. C.T. Rees, GSC Paper 83-13, 1983, 1:56,000
3. L.C. Struick, GSC O.F. 920, 1982, 1:50,000
4. D.E. Wallster, Geochemical Assessment Report, 1984
5. R.F. Sheldrake, Report on Helicopter EM/MAG Survey, 1981

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PHASE I EXPLORATION REPORT

ON THE

CPW GOLD PROSPECT  
SPANISH MOUNTAIN AREA

CARIBOO MINING DIVISION  
BRITISH COLUMBIA

VOLUME II

PLATES 9 THROUGH 30

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PHASE I EXPLORATION REPORT

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VOLUME III

APPENDICES