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REPORT

on the

GEOLOGY AND MINERALOGY

OF THE STEEP GOLD-SKARN PROPERTY

Kamloops Mining Division, B. C.

FOR

NATIONAL RESOURCE EXPLORATIONS LTD.

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SUMMARY AND CONCLUSIONS

Recent exploration work on a concordant calc-silicate skarn zone on the Steep property has shown that gold values are present near the outer limits of metasomatic alteration. The best gold intersection was made in hole 4 and grades 0.172 oz/t Au over a core length of 3 m, while lower grade but thicker intersections in hole 7 assay 0.054 oz/t Au over 8.7 m and 0.027 oz/t Au over 6 m. The intersections in the two holes are spaced 600 m apart horizontally and about 150-175 m vertically, and it appears that the other holes drilled within this 600m strike length were not deep enough to test the gold-bearing horizon. Thin section work has shown that minute grains of gold, native bismuth and bismuth telluride are associated with pyrrhotite in hole 4. Megascopically the sample contains 4% pyrrhotite with minor pyrite. The host rock is composed largely of chlorite and calcite which indicates retrograde alteration. Thin section work in hole 87-7 did not identify any gold bearing phases but indicated retrograde alteration in the host rock which is largely composed of epidote and actinolite. Megascopically the gold bearing sections in hole 7 contain about 6% pyrrhotite with minor pyrite and chalcopyrite. The gold intersections in both holes occur in skarn bands within the transition from skarn alteration to unaltered limestone.

In general, the occurrence of gold mineralization fits the recently developed model for gold bearing skarns in that native gold is associated with traces of As, Bi, and Te, the host rocks are clastic rich limestones, and intermediate garnet, amphibole, pyroxene and apatite are present. However, gold mineralization is clearly associated with retrograde alteration mineral assemblages which is not typical of other "primary" gold bearing skarns.

In surface soil geochemistry, high gold values are spatially associated with arsenic and copper, and to a lesser extent with lead and zinc.

At this point any hypothesis to explain the origin of the skarn is speculative, but a number of possibilities exist. The stratiform, conformable nature and the large size of the skarn suggest that the skarn developed as a regional process. Working on the assumption that the strata are overturned on the property it is possible that skarn development was related to exhalations from magma in the underlying felsic rocks, with the distribution of skarn controlled by a line of vents along a rift. This hypothesis is developed on the accompanying Figure 18, which also summarizes the geology and mineralogy of the deposit.

Alternatively, it could be argued that the skarn originated from metasomatism associated with an as yet unknown later intrusion directly down dip of the altered beds. Such an intrusion could be related to diorite dykes which cut the Eagle Bay rocks at various locations, and would have to be quite large to account for the large size of the skarn deposit.

RECOMMENDATIONS

The exploration work to date on the STEEP property has located significant gold mineralization in an apparently volcanogenic geological setting dominated by stratigraphy and structure, giving rise to the expectation of large tonnage potential.

In this geological situation, the admittedly sub-ore gold intersections obtained by the program are encouraging and should be followed up with further drilling. This drilling should test the area between holes 4 and 7 with further holes deep enough to penetrate the gold-bearing horizon, and some drilling about 200m both up and down dip from the existing holes is also warranted.

The gold geochem anomalies on lines 18-20W should be drilled with south-dipping holes from locations about 6N on these lines.

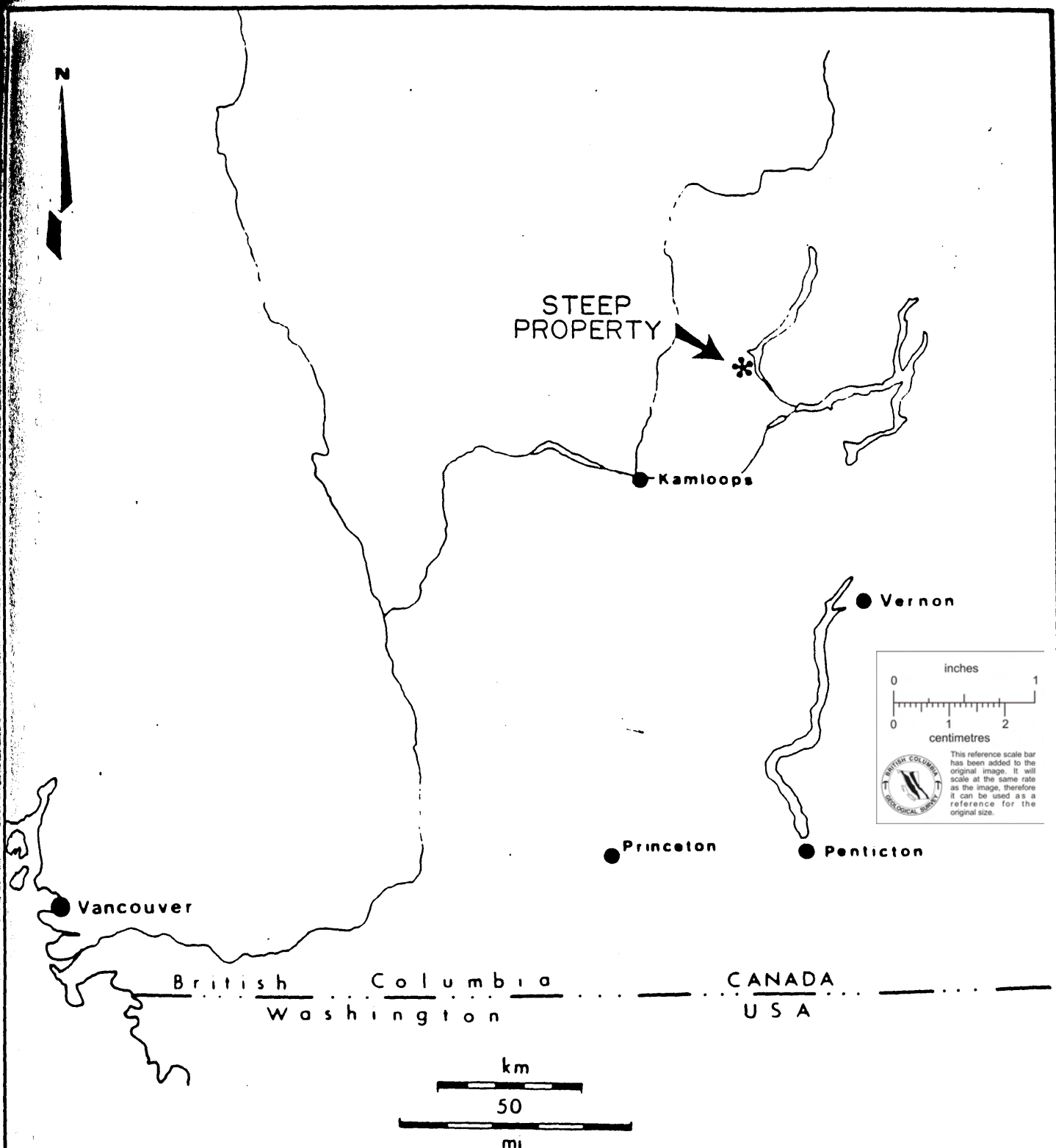
In any further program, constant attention should be paid to the possibility that the gold-bearing zones might have a rake in the plane of the bedding, which could be controlled by the intersection of a cross structure with the bedding.

INTRODUCTION

The STEEP property is a gold-skarn prospect located on the west shore of Adams Lake about 55 km northeast of Kamloops, B. C. It is one of 14 properties owned by National Resource Explorations Ltd. in the Eagle Bay - Adams Plateau area under their Shuswap Project, managed by Discovery Consultants of Vernon, B. C.

LOCATION AND ACCESS

The Steep property is located about 55 km northeast of Kamloops, B.C. and is situated on the west side of Adams Lake at geographic coordinates 51°07′ N by 119°45′ W, NTS map 82M/4. Access to the lower part of the property is gained by following the main Adams Lake West logging road northward from the Holding Lumber Co. sawmill located at the south end of Adams Lake. Access can be gained to the upper part of the property by following logging roads from the Barriere area to the headwaters of Cicero Creek, and then following a new access road to a radio repeater tower located near the northwest corner of the claim block.



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STEEP PROPERTY

LOCATION MAP

DATE: March 1988	PROJECT: 258	SCALE: as shown	NTS. 82 L/14	M.D. Kamloops	FIGURE: 1

PHYSIOGRAPHY

The Steep property derives its name from the steepness of the local topography. The elevation change from Adams Lake to the top of the hill where the radio tower is located is 1250 m (4100 ft) over a horizontal distance of 2.5 km. The average slope on this portion of the property is about 27° to the southeast. This slope is dominated by a southeast trending topographic nose which reflects the resistant nature of the underlying skarn. Several small but steep cliffs are present along this nose.

Forest cover includes stands of commercial douglas fir at the lower elevations giving way to spruce-balsam forests at higher elevations.

Water for drilling purposes is available from two creeks crossing the Adams Lake West forest road at 6.5 and 10.2km, and from a small lake and several springs near the headwaters of Cicero Creek.

PROPERTY AND OWNERSHIP

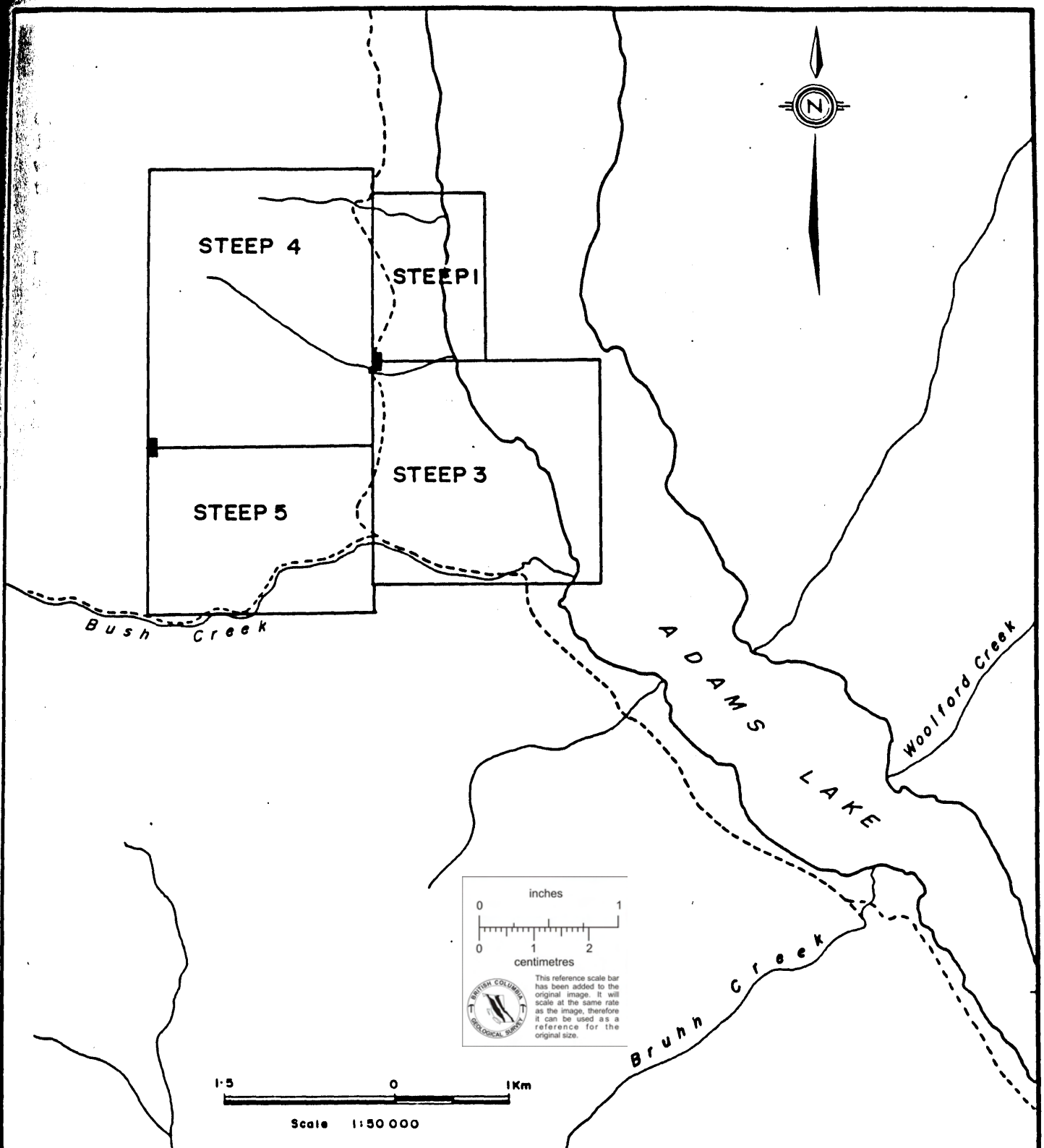
The property consists of 4 modified grid claims totalling 54 units which were acquired by staking in 1986 and 1987 by Discovery Consultants as agents for National Resource Explorations Ltd.

CLAIM NAME	RECORD #	UNITS	EXPIRY	OWNER
STEEP 1	6780	6	09/17/97	NRE
STEEP 3	6914	16	02/11/98	NRE
STEEP 4	7100	20	06/08/94	NRE
STEEP 5	7101	12	06/08/95	NRE
	TOTAL	54 UNITS		

HISTORY AND PREVIOUS WORK

The date of the original discovery of mineralization on the STEEP property is unknown. Certainly the construction of the Adams Lake West logging road and associated logging activity in the late 1960's resulted in the exposure of the skarn zone in several places.

In 1971 the area of the present STEEP property was staked by an exploration syndicate directed by K.L. Daughtry. Surface geochemical and geophysical surveys and hand trenching were conducted in 1971-72 to evaluate the base metal potential of the property. Results were negative and the claims were allowed to lapse.



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STEEP 1, 3, 4, & 5

CLAIM MAP

DATE : March 1988	PROJECT : 258	SCALE : 1:50,000	N.T.S. : 82 M/4, 82L/13	M.D. Kamloops	FIGURE : 2

In 1976, following a regional airborne geophysical survey, Craigmont Mines staked the area of the STEEP property and, in 1977, carried out geochemical and geophysical surveys. The claims were allowed to lapse and were restaked by various parties over the next decade.

Detailed rock chip sampling of the skarn zone on the Adams Lake road was carried out by Cominco Ltd. in 1985. Samples were analyzed for precious metals but returned only very low values.

In 1986 NRE, attracted by the geological setting of the skarn zone at the contact of the Eagle Bay and Sicamous Formations, staked the STEEP claims as part of its Shuswap project. The results of 1986, 1987and early 1988 exploration on these claims are presented in this report.

EXPLORATION PROGRAM - OCTOBER, 1986 to MARCH, 1988

The current exploration program on the property started with claim staking in September, 1986. A limited linecutting and HLEM survey near the Adams Lake West logging road was conducted in late 1986 and followed up with the drilling of DDH 258-1 to 3 in January and February of 1987.

Further staking on the west of the property was done in May, and in June, 1987 the main grid was established with a 2.5 km baseline and 21.8 km of cross-lines at 100 m intervals. The baseline starts at the 9 km post on the main West Adams logging road, and runs up the nose of the ridge on azimuth 295°. The entire grid was soil sampled and covered with an HLEM survey during June-August, 1987.

Diamond drill holes 258-4 through 9 were drilled in August-October, 1987, and holes 258-10 through 14 were drilled in January through March, 1988.

GEOLOGY

Geological mapping covered about 68 hectares at a scale of 1:5000, mainly between 0W-9W and 19W-25W, and the results are shown on Figure 5. Fracture attitude and frequency was mapped between 0 and 9W in an attempt to locate any cross structure that might control gold mineralization, but no significant findings were made by this work.

GEOCHEMISTRY

A total of 995 soil samples from the B and C horizons were collected at 20 m intervals along all crosslines and 3 contour lines south of the grid, and sent to Bondar Clegg's laboratory in North Vancouver, B.C.

At Bondar Clegg the -80 mesh fraction was obtained by dry sieving and analyzed as follows:

ELEMENT	LOWER DETECTION LIMIT	EXTRACTION	METHOD
Copper	1 ppm	HN03-HCL Hot Extr	Plasma
Lead	5 ppm	HN03-HCL Hot Extr	Plasma
Zinc	1 ppm	HN03-HCL Hot Extr	Plasma
Molybdenum	1 ppm	HN03-HCL Hot Extr	Plasma
Silver	0.5 ppm	HN03-HCL Hot Extr	Plasma
Cobalt	1 ppm	HN03-HCL Hot Extr	Plasma
Bismuth	2 ppm	HN03-HCL Hot Extr	Plasma
Arsenic	5 ppm	HN03-HCL Hot Extr	Plasma
Antimony	5 ppm	HN03-HCL Hot Extr	Plasma
Thallium	1 ppm	HN03-HCL Hot Extr	Plasma
Gold-Fire Assay	5 ppb	FIRE-ASSAY	Fire Assay AA

Gold values in soils run up to 1500 ppb with a mean of 5 ppb and a threshold of 20 ppb. High gold values are within larger areas of high arsenic values which range up to a maximum value of 1254 ppm against a mean of 5 ppm and a threshold of 30 ppm. High gold values are similarly within areas of higher copper values which have a mean of 45 ppm and a 100 ppm threshold.

While high gold values in soil have a clear spatial association to zones of high copper, lead and arsenic, direct correlations of gold with these other elements on a sample by sample basis are poor.

The results of the geochemical work are plotted on Figures 6 - 11 and summarised on Figure 3. These maps show a broad zone of high Cu, Pb and As surrounding smaller gold highs, with the overall zone of geochemical highs lying along the transitional contact from Sicamous limestone to skarn.

HLEM SURVEY

An attempt was made to cover the entire grid with an HLEM survey, with a total of 18.2 line km covered.

An Apex Parametrics Max Min II Unit was used to carry out the survey. This is a multi frequency, horizontal loop electromagnetic induction system which measures the in phase and quadrature of the secondary field as a percentage of the primary field intensity.

A one hundred metre coil separation was utilized. Readings at 2 frequencies, 444HZ and 1777HZ, were taken at 25 metre intervals. Coils were kept coplanar and data was slope corrected to maintain proper separation. Data is presented as profiles with conductive axes marked on the 444HZ maps.

This survey proved difficult both to conduct and interpret due to the steepness of the terrain. It served to confirm the continuity of sulphides along strike, but was not useful in picking out detail within the broad sulphide zone. Because of this limited usefulness, the maps from the survey are available at Discovery Consultants' Vernon office, but are not included in this report.

DIAMOND DRILLING

Between January, 1987 and March, 1988 a total of 3360 metres of NQ diamond drilling in 14 holes was completed on the property. A total of approximately 1.4 km of minimum standard road was built for access to drilling sites. Commercial timber along these roads was harvested and taken to the nearby Holding Lumber Co. Sawmill. The details of the drill program are tabulated below.

HOLE	LOCATION	MINERAL CLAIM	COLLAR ELEVATION (metres)	DIP (°)	AZIMUTH (°)	TOTAL DEPTH (metres)	SECTION
258-1	0+50W/4+10N	STEEP 1	700	-45	212	200.6	1W
258-2	3+60W/7+80N	STEEP 1	690	-45	212	211.5	4W
258-3		STEEP 3	549	-45	228	187.7	
258-4	2+50W/6+50N	STEEP 1	730	-45	210	349.6	3W
258-5	4+30W/5+20N	STEEP 4	850	-45	205	251.8	4W
258-6	9+00W/5+60N	STEEP 4	975	-45	205	90.5	9W
258-7	8+50W/7+00N	STEEP 4	884	-45	205	352.6	9W
258-8	23+00W/2+60N	STEEP 4	1615	-45	205	204.8	23W
258-9	24+00W/3+20N	STEEP 4	1585	-45	205	199.5	24W
258-10	2+50W/6+50N	STEEP 1	730	-55	210	49.0	3W
258-11	2+50W/6+50N	STEEP 1	730	-55	210	336.2	3W
258-12	2+50W/6+50N	STEEP 1	730	-38	210	316.7	3W
258-13	2+50W/6+50N	STEEP 1	730	-45	220	352.2	3W
258-14	2+50W/6+50N	STEEP 1	730	-45	200	306.3	3W
				TOTAL		3360 metres	

Diamond drill core was split at the property and one half was sent to Bondar Clegg for analysis. At Bondar-Clegg the entire sample was crushed to -10mesh, riffle split, and a 250 gram sub-sample pulverized to -150 mesh. Analytical procedure on the sub-sample was exactly the same as for soil samples, above.

Part of hole 258-4, and holes 258-7 to 8 were sent to Kamloops Research & Assay Lab for analysis. At Kamloops gold was done by fire-assay and Cu, Pb, Zn, Ag, As and Sb were done by geochemical methods.

Any samples running over 1000ppb Au were both re-run and sent to another lab for checking. The core is stored at Discovery Consultants core storage facility in Vernon, B.C.

REGIONAL GEOLOGY

The most recent regional geological mapping in the area was carried out by Preto et al in 1984 and published as Preliminary Map No 56, recently released in final form as Paper 1987-2, B.C. Ministry of Energy, Mines and Petroleum Resources. This work indicates that the Steep property is underlain by the Eagle Bay Formation comprising rocks of Devono-Mississippian age or older. On the basis of more detailed mapping in the area by Discovery Consultants and previous workers the sedimentary units south of the main skarn zone are thought to belong to the Sicamous Formation of Paleozoic or Upper Triassic age, with the skarn zone occurring in the transitional contact from Eagle Bay to Sicamous.

The Eagle Bay Formation hosts a number of volcanogenic mineral occurrences including the recently discovered Samotosum silver-gold-base metal deposit and the nearby Rea Gold- Hilton gold deposit. These discoveries have resulted in considerable exploration activity within the area.

The Eagle Bay Formation consists of volcanic and volcaniclastic rocks, clastic sediments and limestones which have been regionally metamorphosed to greenschist facies rocks, including mainly greenstones, quartzites, phyllites, schists and marbles. Some sill-shaped foliated, felsic intrusive bodies are present within Eagle Bay rocks and one such intrusion is located just north of the Steep property.

Eagle Bay rock-units have a regional northwesterly strike and dip mainly northeastward. Foliation attitudes are nearly parallel to bedding attitudes. A number of tight isoclinal anticlinal and synclinal structures with northeasterly dipping limbs and accompanied by related southwesterly directed thrust faults have been interpreted on the regional map to account for certain structural features. In general, the direction of bedding tops is unknown. A simplified regional geological map is shown on Figure 4.

With respect to the Steep property, unit EBK of Preliminary Map 56 is of special significance. This unit includes skarn mineral assemblages over a strike length of 12 km, thickness of 350 m and a dip extent of at least 1250m.

PROPERTY GEOLOGY

The Steep property is underlain by a northwesterly striking assemblage of rocks including garnet skarn, calc-silicate rocks, phyllitic argillaceous limestone and quartz-sericite phyllite (Figure 5). These strata dip fairly uniformly northeastward at an average of approximately 50°. A number of factors indicate that these beds are structurally inverted, including regional relationships, reversed graded bedding and the distribution and intensity of skarn mineralization. The entire sequence has been offset by a late northerly-trending normal fault.

Strata underlying the property can be subdivided into the following units:

Unit 5 - Phyllitic Argillaceous Limestone (EBL=Sicamous Ls)

This unit comprises recrystallized limestone with thin but numerous intercalations of black shale, which are locally graphitic, and carries less than 1/2% pyrite as fine to coarse grained blebs drawn out parallel to the foliation, and as cubes. This unit corresponds to unit EBL on Preliminary Map 56 referred to in the preceding section, but is believed by the writer to be part of the Sicamous Formation, not the Eagle Bay Formation. The unit is at least 400 m thick and grades into the structurally overlying calc-silicate phyllite unit.

Unit 4 Calc-Silicate Phyllite (EBK)

Unit 4 consists of the altered equivalent of Unit 5 preceding. Calcareous bands have been partly to entirely replaced by actinolite, pyroxene, chlorite, epidote, quartz, sphene and minor garnet. Abundant shaly intercalations are relatively unaltered or altered to sericite and quartz. This unit carries about 4% sulphides mainly as pyrrhotite with lesser pyrite, minor chalcopyrite and occasional reddish-brown sphalerite. Gold mineralization is present in this unit near the contact with Unit 5 limestone. Drilling indicates that this unit is 140-220 m thick.

Unit 3 Main Garnet Skarn (EBK)

This unit consists of massive garnet skarn along with calcite and epidote and minor quartz, amphibole, plagioclase, potassium feldspar, chlorite, apatite, pyrrhotite, pyrite, chalcopyrite and sphalerite. The garnet is pale brown to slightly reddish and occurs as anhedral masses. The average sulphide content is about 5% mainly as pyrrhotite with lesser pyrite, minor chalcopyrite and traces of sphalerite. At one location magnetite was observed in the skarn.

Unit 2 Calc-Silicate Rock (EBK)

This unit consists of green to greyish banded to massive rocks composed mainly of fine-grained amphibole, plagioclase and epidote along with lesser garnet, biotite, sphene, quartz, chlorite, carbonate, potassium feldspar and sericite. There is less than 1/2% sulphides present mainly as fine grained pyrrhotite and pyrite. Rare galena, sphalerite and chalcopyrite mineralization occurs. This unit is approximately 80 m thick and contains some garnet-actinolite skarn lenses. The rock is thought to have been derived from a calcic tuff with thin limestone interbeds.

Unit 1 Quartz-Mica Phyllite (EBA)

This unit is pale grey green and is composed of sericite, quartz, biotite, plagioclase and calcite. It is not well exposed on the property but is thought to be about 70 m thick and to structurally underlie Preto's EBAi Unit. It contains less than 1/4% fine pyrite-pyrrhotite where observed.

MINERALIZATION AND ALTERATION

Sulphide mineralization is mainly associated with units 3 and 4 and appears to be directly related to metasomatic alteration. In these units the dominant sulphide is pyrrhotite which occurs mainly as blebs and laminae, drawn out parallel to foliation. Local layers of massive pyrrhotite and magnetite occur. Pyrite, chalcopyrite and occasional rare sphalerite occur as fine intergrowths with pyrrhotite. Pyrite also occurs as separate blebs, cubes, veinlets associated with quartz and calcite and as fine coatings on late fractures. Some pyrrhotite is also associated with fine quartz-calcite veinlets commonly 1-2 mm thick, but which may range up to 0.5 m thick.

Gold mineralization within the skarn/sulphide zone on surface is known only from the soil geochemical survey, which showed several high gold zones. Diamond drill testing of these soil anomalies returned significant gold intersections in six holes (4,7,8,9,11,12) as summarised below.

HOLE	FROM	TO	LENGTH (m)	AU OPT	AG ppm	AS ppm	BI ppm	SB ppm	CU ppm	PB ppm	ZN ppm
258-2	88.0	88.4	0.4	0.004	14.0	806	37	15	3830	1450	15500
258-4	16.9	17.4	0.5	0.001	22.3	1871	44	<5	1374	6910	9061
	251.3	254.3	3.0	0.166	0.3	<20	272	<4	315	4	60
check 1/4 core above int				0.172	<0.5	<5	240	<5	479	6	61
258-7	196.5	197.7	1.2	<.001	17.5	<5	40	46	843	4352	7098
	250.0	256.0	6.0	0.027	<0.5	23	125	7	331	23	60
	283.3	292.0	8.7	0.054	1.0	108	151	173	227	70	24
258-8	69.0	72.0	3.0	0.021	0.9	1431	8	23	66	20	79
258-9	62.5	65.5	3.0	0.013	<0.5	51	16	<5	192	7	27
	68.5	71.5	3.0	0.006	<0.5	326	19	61	33	14	43
258-11	58.0	59.0	1.0	0.033	<0.5	960	<2	<5	17	22	59
258-12	256.8	257.9	0.2	0.033	1.0	2000	11	<5	2373	17	19

NOTE: Analyses were done partly at Kamloops Research Assay Lab and partly at Bondar-Clegg. Where samples were initially run at Kamloops, the values in this table are from check samples run by Bondar-Clegg, and can be found on the last sheet of each drill log.

By far the best intersection was 0.172 oz/t Au over a 3 m core length at a depth of 251.3 m in 258-4. Samples on either side were barren but enriched in As, Mo, and Cu. High bismuth values were associated directly with the gold. In microscope examination rare minute grains of gold, 5-15 microns in size were seen with pyrrhotite along with similar sized grains of native bismuth and bismuth telluride (Identified by SEM analysis). Minor pyrite and chalcopyrite were also associated with the pyrrhotite. The host rock mineralogy consisted dominantly of chlorite and calcite along with lesser plagioclase, quartz, allanite(?) and rutile. The gold intersection occurred in the calc-silicate phyllite well beyond the main garnet skarn.

In hole 87-7, two thicker intersections of lower grade gold mineralization were obtained. These intersections lie in about the same stratigraphic position as the intersection in hole 87-4, but are 600 m to the northwest and 150-175 m higher in elevation. The better intersection in hole 87-7 was at a depth of 283.3 m and averaged 0.054 oz/t Au over an 8.7 m core length. The gold is associated with about 6% pyrrhotite, minor pyrite and traces of chalcopyrite. The host rock is composed largely of epidote and actinolite with lesser quartz, calcite and biotite. This assemblage also represents a zone of retrograde alteration.

The other intersection in hole 7 was at a depth of 250 m and assayed 0.027 oz/t Au over a 6.0 m core length. It occurs in a similar mineralogical and lithological setting as the higher grade assay and both zones are within a larger section containing geochemically high values in As, Cu, and Mo. Again, high bismuth geochemistry is directly related to gold values. The up-dip projections of intersections in both holes correspond with the location of surface soil geochemical anomalies in Au, As, and Cu.

The intersections in 258-8 and 9 are again similar although lower grade, and their occurrence at roughly the same stratigraphic horizon as the intersections in holes 4 and 7 implies that this horizon is enriched in gold over a strike length of at least 2000 metres.

Of the five holes(258-10,11,12,13,14) drilled in early 1988 to test for continuity of the intersection in 258-4, only holes 11 and 12, drilled on the same azimuth at a steeper and shallower dip respectively, intersected any significant gold. It appears that the gold mineralization is not uniform along strike, and may be controlled in part by some type of cross structure.

EXPENDITURES

September 1986 - February 28, 1987	$ 56,000.00	
March 1, 1987 - December 31, 1988	287,000.00	
January 1, 1988 - April 30, 1988	175,000.00	(est.)
TOTAL	$518,000.00	

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