Golden Neighbor

GEOLOGICAL, GEOCHEMICAL, AND PROSPECTING REPORT on the GOLDEN NEIGHBOR 1-4 Claims

NTS 94-E/6 E and 94-E/7 W
Latitude 57°19′ North
Longitude 127°02′ West
Omineca Mining Division
British Columbia

October 15, 1990

on behalf of
SKEENA RESOURCES LIMITED
Vancouver, British Columbia

by
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BC-88-6

ABSTRACT

The Golden Neighbor property was explored during a brief field program. The field evaluation included prospecting of areas from which previous exploration programs yielded anomalous gold values and selected portions of the Golden Neighbor 1 and 3 claims.

A total of 30 rock samples were collected and analyzed for Au and Ag. Samples collected from previously located mineralized zones located on the Golden Neighbor 2 claim along the crest of the ridge yielded geochemically anomalous Au values from these alteration zones.

Previous exploration programs located quartz breccia float in the southwest corner of the Golden Neighbor 2 claim. Samples collected yielded geochemically anomalous Au values. Trenching in the area may have been completed too far downslope to locate the source of the mineralized float. Future trenching should be completed further uphill at the foot of the talus slope. This break in slope is considered the source of the quartz float observed.

TABLE OF CONTENTS

INTRODUCTION

Taiga Consultants Ltd. was contracted by Skeena Resources Limited of Vancouver, British Columbia, to undertake a brief exploration program on the Golden Neighbor property located in north-central British Columbia. The property exploration consisted of a brief investigation of the previously located mineralized zones, coupled with prospecting and geochemical sampling over relatively unexplored parts of the property.

Location and Access

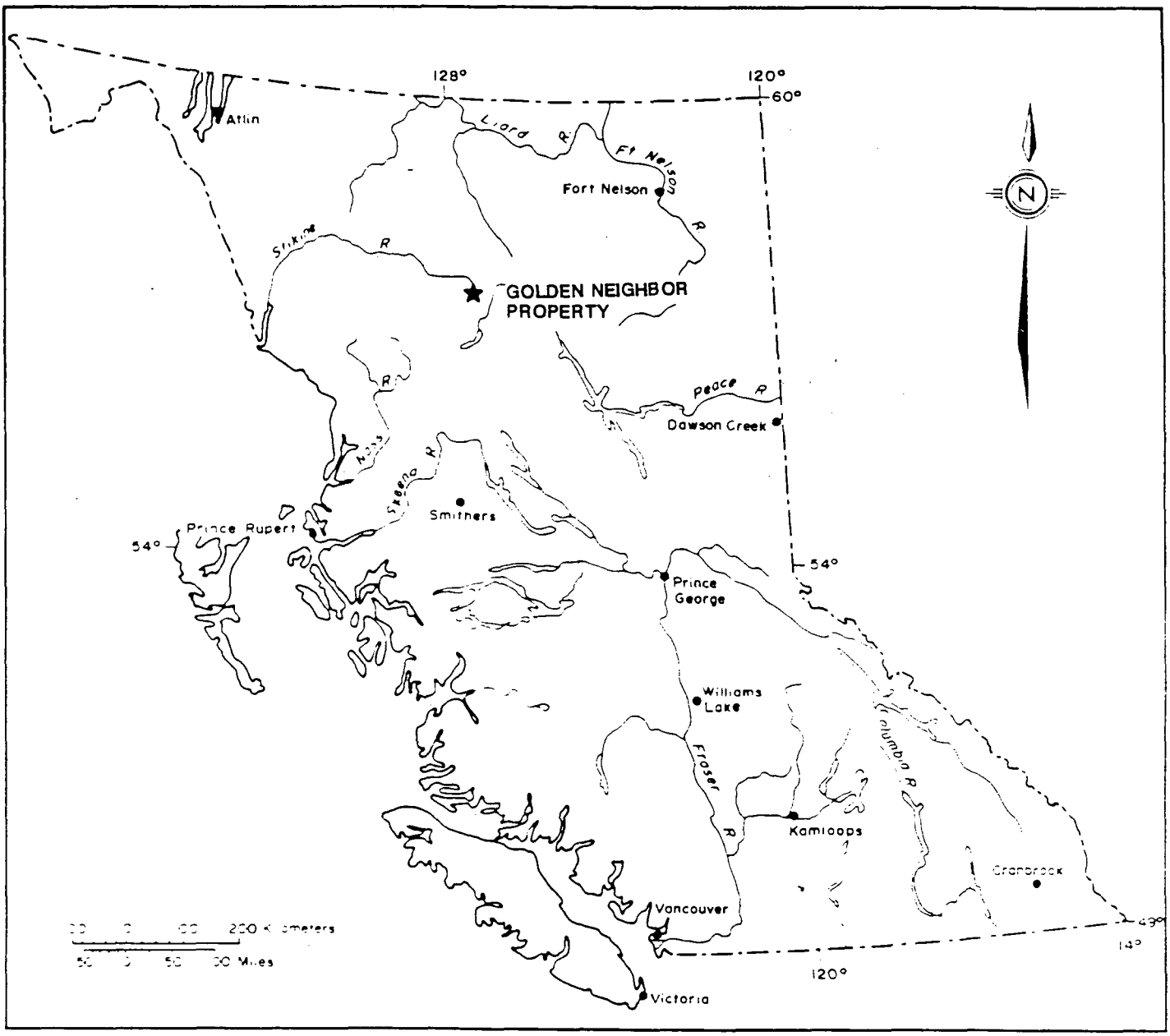
The Golden Neighbor property (Figure 1) is located approximately 300 km north of Smithers, British Columbia, within NTS map-sheets 94-E/6E and 7W. The approximately geographic centre of the claims are 57°19′ North latitude and 127°02′ West longitude, in the Omineca Mining Division.

The property lies within the Toodoggone district which is one of the most active gold exploration camps in British Columbia.

Access to the property from Smithers is via fixed-wing aircraft to the Sturdee airstrip and then by helicopter for a distance of 12 km. With the completion of the Omar Road Extension (which connects the Omineca Resource Road with the Baker Mine site), road access is now available to within 5 km of the property at the closest point.

Claim Status

The Golden Neighbor property forms a contiguous block of five claims and two fractional units. The exact location and configuration of the property is illustrated in Figure 2. Relevant claims data are listed in Table 1.



PROPERTY LOCATION MAP BRITISH COLUMBIA FIGURE 1

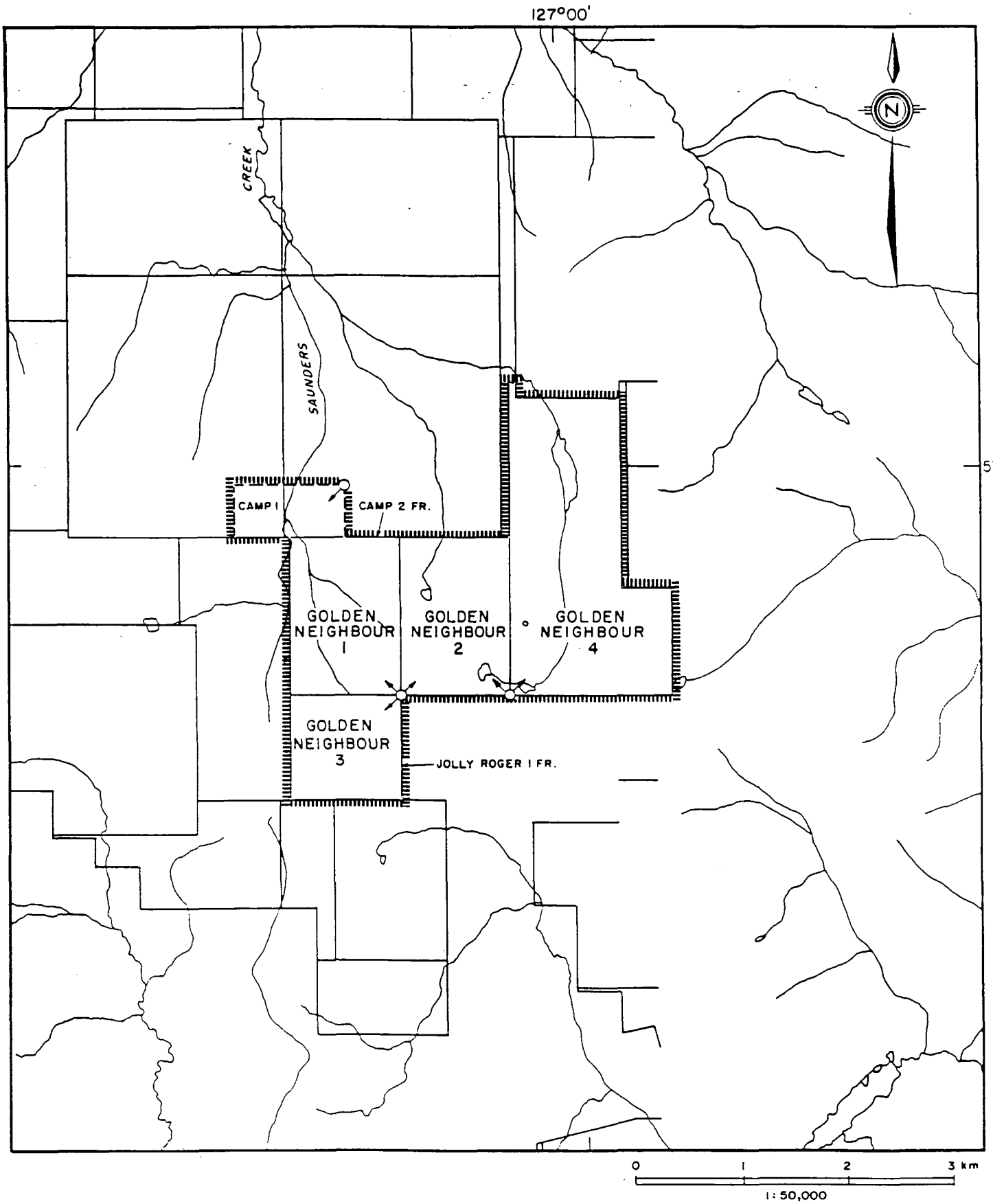


FIGURE 2

CLAIM LOCATION MAP

TABLE 1 - Claims Status

Claim Name	No.of Units	Size (hectares)	Record Number	Assessment due date
Golden Neighbor 1	6	150	1961	Aug.17, 1997
Golden Neighbor 2	6	150	1962	Aug.17, 1997
Golden Neighbor 3	4	100	1963	aug.17, 1997
Golden Neighbor 4	18	450	2958	Aug.01, 1997
Camp 1	2	50	2959	Aug.01, 1997
Camp 2 fraction	1	25	3178	Aug.26, 1997
Jolly Roger 1 fraction	1	25	3176	Aug.26, 1997
TOTAL	38 units	950 hectares (2,347 acres)		

The Camp 1 claim overstakes the Saunders 3 and 4 mineral claims. The Golden Neighbor 4 claim and the two fractional claims partially overstake pre-existing mineral claims. A legal survey will be required to establish the validity of these overlapping claims.

By a letter agreement dated 30 June 1988, Skeena Resources Limited is now operator of the property, and has a right to earn a 55% working interest from American Ore Limited and three other companies which hold fractional interests in the property.

Physiography

The Golden Neighbor property is situated within the Swannell Ranges of the Omineca Mountains within the Cordilleran Region of Canada. Gently rolling lowlands with moderate relief are locally cut by incised stream valleys. The upland areas are either rolling hills of moderate relief or ridges, cirque walls, or arêtes with high relief. Upland valleys exhibit a modified glacial U-shaped profile with post-Pleistocene stream erosion cutting V-shaped valleys as headward migration occurs. Relief on the property is in the order of 640 m, ranging from 1460 m ASL in the lowlands to 2100 m ASL at the higher elevations. Timber line is at approximately 1600 m ASL. Below this level, most slopes and valley bottoms are well forested with fir and spruce. Above timberline, thick ground cover of alpine fir gives way to grassy slopes and alpine meadows.

REGIONAL HISTORY OF EXPLORATION

The Toodoggone region was initially explored for porphyry copper deposits during the period 1966-1968, most notably by Kennco Exploration (Western) Limited. While Kennco did not locate any significant base metals mineralization, their stream sediment geochemical results did indicate anomalous gold and silver concentrations. In 1969, ore-grade gold and silver values in an exposed quartz vein were discovered by Kennco on what is now the Baker Mine site. In 1973, Kennco entered into an agreement with Conwest Exploration Ltd. to conduct further exploration in the region and to instigate underground testing of the Baker deposit. The results were only marginally encouraging and the agreement lapsed that year.

In 1974, DuPont of Canada Exploration Limited optioned the Chappelle property and subsequently brought the Baker deposit into production. This mine produced some 70,000 tons of gold and silver ore with an equivalent tenor of 0.9 ounces of gold per ton while it was operating.

In 1979, the Lawyers property was optioned by SEREM Ltd., owned by the French government. The property is currently being brought into production by Cheni Mines Inc., a successor company of SEREM. Ore reserves in all categories are estimated at 1,938,000 tons grading 0.198 oz/ton gold and 7.09 oz/ton silver.

Commencing in 1980 until the present, over 60 different companies have been involved in gold exploration in the Toodoggone camp. Significant reserves have been developed by Energex Minerals Ltd. on various zones on Albert's Hump, on the Shasta property, and on the METS property to date. Thus, the Toodoggone district is rapidly developing into an important new gold camp.

PROPERTY EXPLORATION HISTORY

In 1971, Kennco discovered the Saunders showing from a gold/copper/molybdenum soil anomaly on what is now the Golden Neighbor 1 claim. The ground was allowed to lapse in 1973 and restaked by Lacana in 1979. Geological mapping, soil and silt geochemical sampling, and ground geophysical surveying conducted during 1980-81 confirmed the presence of extensive gold- and silver-in-soil geochemical anomalies and coincidental VLF-EM anomalies. Follow-up hand trenching revealed a number of quartz veins which assayed up to 1620 ppb Au, and other areas with over 1% Cu.

In 1985, Alban Explorations Ltd. optioned the claims and performed a small amount of detailed magnetometer, VLF-EM, and soil geochemical work, before returning the ground in 1986.

During September 1986, Lacana undertook 605 m of diamond drilling in five locations on the Golden Neighbor property. This drilling encountered a wide, intensely argillically altered fault zone with local quartz veining and abundant stringers of chalcopyrite and sphalerite. Anomalous gold and silver values were encountered but none approaching economic grades. The high levels of base metals and especially Mo indicate a porphyry-type environment (see Figure 5).

In 1988, Prolific Resources Ltd. completed a brief investigation of the previously located mineralized zones, coupled with reconnaissance prospecting and soil geochemical sampling over a potentially interesting but relatively unexplored area of the property.

REGIONAL GEOLOGY

The initial geological mapping of the Toodoggone area was completed during the period 1971-1975 by H. Gabrielse of the Geological Survey of Canada. The results of this undertaking were published in 1977 at a map scale of 1:250,000 as G.S.C. Open File 483.

The British Columbia Ministry of Energy, Mines and Petroleum Resources completed geological mapping within the area from 1971 to 1984 under the direction of T. G. Schroeter. These data have been published at a scale of 1:50,000 as Preliminary Map 61 (1985). The table of formations presented as Table 2 of this report is excerpted from this publication. The following description of the regional geology is excerpted from Schroeter's 1981 report:

> The Toodoggone area lies within the eastern margin in the Intermontane Belt. The oldest rock exposed are wedges of crystalline limestone more than 150 metres thick that have been correlated with the Asitka Group of Permian age. The next oldest rocks consist of andesitic flows and pyroclastic rocks including augite-tremolite andesite porphyries and crystal and lapilli tuffs that belong to the Takla Group of Late Triassic age. The Omineca intrusions of Jurassic and Cretaceous age (potassium-argon age of 186 to 200 Ma obtained by the Geological Survey of Canada) range in composition from granodiorite to quartz monzonite. Some syenomonzonite bodies and quartz feldspar porphyry dykes may be feeders to the Toodoggone rocks which unconformably overlie the Takla Group. The 'Toodoggone' volcanic rocks (named informally by Carter, 1971) are complexly intercalated volcanic and volcanic-sedimentary rocks of Early and Middle Jurassic age, 500 metres or more in thickness, along the west flank of a northwest trending belt of 'basement' rocks at least 90 km in length by 15 km in width. A potassium-argon age of 186 ± 6 Ma was obtained by Carter (1971) for a hornblende separate from a sample collected from a volcanic sequence 14 km southeast of Drybrough Peak. Four principal subdivisions of the 'Toodoggone' rocks have been recognized:
>
> (1) Lower Volcanic Division -- dominantly pyroclastic assemblage including purple agglomerate and grey to green to purple dacitic tuffs.
>
> (2) Middle Volcanic Division -- an acidic assemblage including rhyolites, dacites, 'orange' crystal to lithic tuffs, and quartz feldspar porphyries; includes welded tuff. The 'orange' colour of the tuffs resulted from oxidation of the fine-grained matrix while the rock was still hot. A coeval period of explosive volcanism included the formation of 'laharic' units and intrusion of syenomonzonite bodies and dykes. This event was accompanied by explosive brecciation along zones of weakness, predominantly large-scale faults and attendant

TABLE 2

TABLE OF FORMATIONS

QUATERNARY

PLEISTOCENE AND RECENT

	UNCONSOLIDATED GLACIAL, FLUVIOGLACIAL, ALLUVIAL, AND COLLUVIAL DEPOSITS

CRETACEOUS

UPPER CRETACEOUS

SUSTUT GROUP *(TANGO CREEK FORMATION)*

K	POLYMICTIC CONGLOMERATE, SANDSTONE, SHALE, CARBONACEOUS MUDSTONE

JURASSIC

LOWER AND (?) MIDDLE JURASSIC

"TOODOGGONE VOLCANICS" - (?) HAZELTON GROUP

9	UNDIVIDED, PREDOMINANTLY GREY, GREEN, PURPLE AND ORANGE BROWN HORNBLENDE PLAGIOCLASE AND PLAGIOCLASE PHYRIC ANDESITE PORPHYRY FLOWS, TUFFS, BRECCIA, SOME LAHAR, CONGLOMERATE, GREYWACKE, SILTSTONE, RARE RHYOLITE PERLITE, INCLUDES SOME DYKES AND SILLS

LOWER TO MIDDLE JURASSIC

"TOODOGGONE VOLCANICS" (CARTER, 1972)

GREY DACITE

8	DARK TO PALE GREY OR GREEN QUARTZOSE BIOTITE HORNBLENDE PLAGIOCLASE ASH FLOWS OF ANDESITIC AND RARELY DACITIC COMPOSITION, VARIABLY WELDED WITH LOCALLY WELL DEVELOPED COMPACTION LAYERING, CONTAINS ABUNDANT GREY DACITE AND RARE GRANITIC CLASTS, OUTCROPS ARE COMMONLY BLOCKY AND STRONGLY JOINTED
8A	POLYMICTIC CONGLOMERATE WITH ABUNDANT TAKLA AND GREY DACITE CLASTS IN A QUARTZOSE SANDSTONE MATRIX
8B	GREYWACKE CONGLOMERATE DERIVED ENTIRELY FROM GREY DACITE

TOODOGGONE CRYSTAL ASH TUFFS AND FLOWS

7	RECESSIVE, GREY, MAUVE, PURPLE QUARTZOSE PLAGIOCLASE CRYSTAL TUFF, LAPILLI TUFF AND BRECCIA, WITH LESSER AGGLOMERATE, LAHAR, AND EPICLASTIC BEDS, INCLUDES SOME WELDED TUFFS AND PYROXENE HORNBLENDE FELDSPAR PORPHYRY FLOWS WHICH ARE LOCALLY DOMINANT, SOME MEMBERS CONTAIN NO QUARTZ, PINK WEATHERING WHERE LAUMONTITE IS ABUNDANT
7A	*EPICLASTIC RED BEDS* — ARKOSIC SANDSTONE, SILTSTONE, CONGLOMERATE, AND SLIDE DEBRIS, CONTAINS SOME CRYSTAL TUFF

TUFF PEAK FORMATION

6	PALE PURPLE, GREY, AND GREEN BIOTITE AUGITE HORNBLENDE PLAGIOCLASE PORPHYRY FLOWS, SOME AUTOBRECCIATED FLOWS, MINOR SILLS AND PLUGS, SOME CRYSTAL AND LAPILLI TUFF
6A	CONGLOMERATE OR LAHAR DERIVED FROM UNITS 6 AND 6B, WITH GRADED AND CROSSLAMINATED MUDSTONE AND SANDSTONE INTERBEDS, DEBRIS FLOWS, LAPILLI AND CRYSTAL TUFFS
6B	FLOWS SIMILAR TO UNIT 6 BUT CONTAINING SPARSE ORTHOCLASE MEGACRYSTS

MCCLAIR CREEK FORMATION

5	PURPLE, LAVENDER, GREY, RARELY GREY GREEN, CROWDED, FINE TO MEDIUM-GRAINED PLAGIOCLASE PORPHYRITIC FLOWS, INCLUDES SOME LAPILLI TUFF, BRECCIA, AND MINOR EPICLASTIC BEDS
5A	INTRUSIVE DOME WITH AUTOBRECCIATED CARAPACE AND FLANKING BRECCIA

MAFIC FLOW AND TUFF UNIT

4	*BASALT FLOWS*—THIN BEDDED, PURPLE TO DARK GREEN, COMMONLY EPIDOTIZED, FINE GRAINED PYROXENE BASALT FLOWS AND TUFFS, INCLUDES SOME SILLS AND DYKES
4A	PURPLE TO MAUVE, MEDIUM-GRAINED PORPHYRITIC BASALT, LOCALLY MAUVE TO PINK, ZEOLITIZED WITH LAUMONTITE, POSSIBLE INTRUSIVE (LACCOLITH)
4B	LAPILLI, CRYSTAL, AND ASH TUFF, WELL BEDDED, INCLUDES MINOR THINLY BEDDED SANDSTONE AND RARE CALCAREOUS SILTSTONE (MARL), TOTALLY OR IN PART EQUIVALENT TO UNIT 7
4C	PYROXENE BIOTITE HORNBLENDE PORPHYRY FLOWS WITH TRACES OF QUARTZ AND K FELDSPAR, INTERBEDDED MINOR BRECCIA AND LAPILLI TUFF, TOTALLY OR IN PART EQUIVALENT TO UNIT 6

JURASSIC *(CONTINUED)*

LOWER TO MIDDLE JURASSIC *(CONTINUED)*

"TOODOGGONE VOLCANICS" (CARTER, 1972) *(CONTINUED)*

LAWYERS—METSANTAN QUARTZOSE ANDESITE

3	GREEN TO GREY QUARTZOSE PYROXENE (?) BIOTITE HORNBLENDE PLAGIOCLASE PORPHYRY FLOWS AND TUFFS, QUARTZ CONTENT RANGES FROM NEGLIGIBLE TO ABOUT 3 PER CENT IN THE NORTH, FLOWS PREDOMINATE WITH LOCAL FLOW BRECCIA, LAPILLI TUFF AND RARE WELDED TUFF UNITS, TOWARD THE SOUTH ASH FLOWS ARE COMMON, INCLUDING RARE SURGE DEPOSITS, THE UNIT CONTAINS EXTENSIVE ZONES OF EPIDOTIZED, PYRITIC ROCK WITH CHARACTERISTIC SALMON, PINK, AND ORANGE PLAGIOCLASE CRYSTALS

MOYEZ CREEK VOLCANICLASTICS

2	CONGLOMERATE WITH SOME GRANITIC CLASTS, GRADED, CROSS-BEDDED GREYWACKE, WELL-BEDDED CRYSTAL TUFF, EPICLASTIC SEDIMENTS, LOCAL LAMINATED CALCAREOUS SILT (MARL), RARE THIN LIMESTONE AND CHERT, LOCAL COARSE LANDSLIDE DEBRIS AND LAHAR, IN PART OR TOTALLY EQUIVALENT TO UNIT 5A
2A	CRYSTAL TUFFS IN THIN, WELL-LAYERED UNITS, SOME EPICLASTIC SANDSTONE AND MUDSTONE, RARE PLANT FRAGMENTS IN SOME BEDS, MINOR LAPILLI TUFF

ADDOOGATCHO CREEK FORMATION

1	PALE REDDISH GREY TO DARK RED-BROWN QUARTZOSE BIOTITE HORNBLENDE PHYRIC ASH FLOWS, THE ROCKS CONTAIN MINOR SANIDINE AND RARE AUGITE, WELDING IS WIDESPREAD AND RANGES FROM INCIPIENT TO EUTAXITIC, LOCALLY ORANGE TO BROWN VITROPHYRIC CLASTS ARE COMMON, INCLUDES LAPILLI TUFF AND BRECCIA UNITS AS WELL AS MINOR LAYERED GROUND SURGE DEPOSITS
1A	CRYSTAL ASH TUFF LAPILLI TUFF AND RARE AGGLOMERATE WITH INTERSPERSED EPICLASTIC BEDS, TUFFACEOUS SEDIMENTS AND MINOR CONGLOMERATE THAT LOCALLY CONTAINS GRANITIC CLASTS, MINOR HORNBLENDE PLAGIOCLASE PHYRIC FLOWS FORMING SINGLE OR THIN COMPOSITE FLOW UNITS
1B	*QUARTZOSE PLAGIOCLASE PORPHYRY*— JOINTED DOMAL INTRUSION(?) OF HOMOGENOUS-APPEARING GREY TO GREEN, CHLORITIZED AND EPIDOTE ALTERED ROCK CONTAINING ABUNDANT INCLUSIONS OF TAKLA VOLCANICS AND RARE METAMORPHIC ROCK CLASTS

TRIASSIC

UPPER TRIASSIC

TAKLA GROUP

T	DARK GREEN AUGITE PORPHYRY BASALT FLOWS AND BRECCIAS WITH LESSER FINE-GRAINED ANDESITE TO BASALT FLOWS AND MINOR INTERBEDDED SILTSTONE, TUFFACEOUS SEDIMENTS, AND CHERT, CONTAINS LIMESTONE LENSES THAT MAY BE PART OF THE ASITKA GROUP

PALEOZOIC

PERMIAN

P	ASITKA GROUP?

PREDOMINANTLY LIMESTONE (INCLUDING MARBLE AND MINOR SKARN) WITH SOME ARGILLITE, BLACK SHALE, AND CHERT, UNITS COMPOSED OF LIMESTONE, CHERT ARGILLITE, AND BASALT (Pv) MAY BE IN PART OR TOTALLY TAKLA GROUP

INTRUSIVE ROCKS

JURASSIC

LOWER JURASSIC (DYKES, SILLS, AND SMALL PLUGS)

A	BASALT
B	AUGITE HORNBLENDE PORPHYRY — BASALTIC STOCK, DOMAL INTRUSION, OR TAKLA INLIER)
C	BIOTITE HORNBLENDE DIORITE GABBRO
D	PYROXENE PLAGIOCLASE PORPHYRY

LOWER TO MIDDLE JURASSIC (DYKES AND STOCKS)

E	QUARTZ MONZONITE, GRANODIORITE—MEGACRYSTIC IN PART, MINOR SYENITE OR QUARTZOSE SYENITE ALONG CONTACTS
E1	GRANODIORITE, QUARTZ DIORITE — MEDIUM GRAINED, PORPHYRITIC, FOLIATED IN PART
F	FELDSPAR PORPHYRY, HORNBLENDE FELDSPAR PORPHYRY — DYKES AND PLUGS, RARE QUARTZ FELDSPAR PORPHYRY

after L.J. Diakow et al 1985

splays, followed by silicification and deposition of precious and base metals to varying degrees in the breccias.

(3) Upper Volcanic-Intrusive Division -- grey to green to maroon crystal tuffs and quartz-eye feldspar porphyries.

(4) Upper Volcanic-Sedimentary Division -- lacustrine sedimentary rocks (sometimes varved), stream bed deposits, and possible local fanglomerate deposits and interbedded tuff beds.

Many Toodoggone rocks have a matrix clouded with fine hematite dust implying a subaerial origin, however, some varieties may have accumulated in shallow water. The host rock for mineralization (division 2) is an orange to chocolate brown coloured crystal tuff with varying minor amounts of lithic and vitric ash. Broken crystals of plagioclase and quartz are set in a fine-grained 'hematized' matrix of quartz and feldspar. The exact chemical composition(s) and rock name(s) await chemical analyses. Carter (1971) determined the composition of a suite of rocks collected from the Toodoggone area to range from latites to dacite.

To the west, Upper Cretaceous to Tertiary pebble conglomerates and sandstones of the Lower Tango Creek Formation of the Sustut Group unconformably overlie both Takla Group volcanic rocks and Toodoggone volcanic rocks.

The structural setting was probably the most significant factor in allowing mineralizing solutions and vapours to migrate through the thick volcanic pile in the Toodoggone area. The entire area has been subjected to repeated and extensive normal block faulting from Jurassic to Tertiary time. It is postulated that a northwesterly trending line of volcanic centres along a gold/silver-rich 'province' marks major structural breaks, some extending for 60 km or more (for example, McClair Creek system, Lawyers system). Prominent gossans are often associated with structural zones but many contain only pyrite; sulphides occur as disseminations and fracture fillings in Toodoggone and Takla Group rocks. Thrusting of Asitka Group limestones over Takla Group rocks probably occurred during Middle Jurassic time.

Today Toodoggone rocks display broad open folds with dips less than 25°. The Sustut Group sedimentary rocks have relatively flat dips and do not appear to have any major structural disruptions.

PROPERTY GEOLOGY

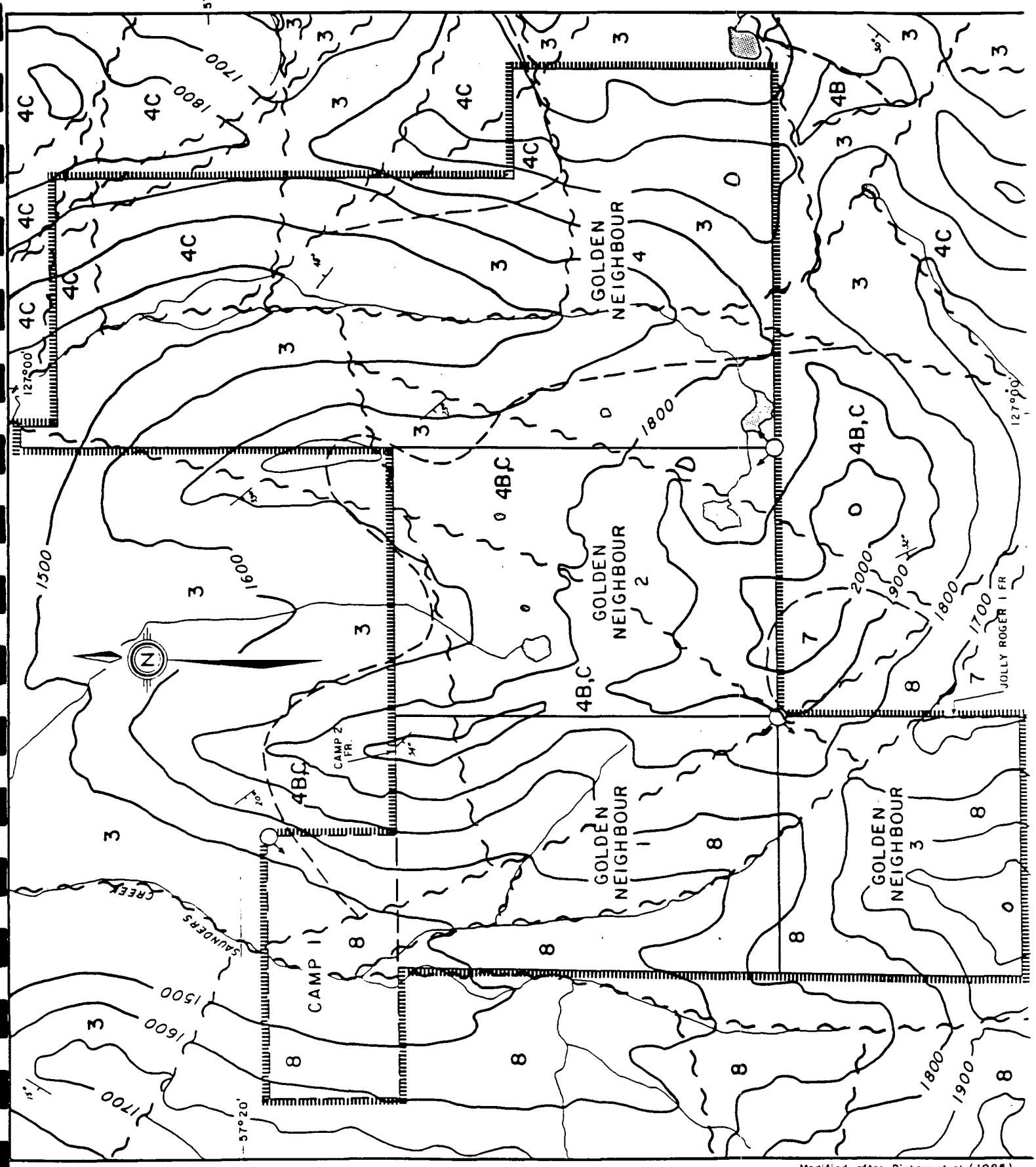
The Golden Neighbor property is underlain by a succession of Lower to Middle Jurassic subaerial volcanics and volcaniclastic sediments. This succession has been collectively termed the "Toodoggone Volcanics" by Carter (1971). These rocks have been extensively faulted and locally folded. During this volcanic event, hydrothermal activity led to the development of epithermal gold deposits.

The property geology is illustrated on Figure 3, which is based on mapping by Diakow et al. (1985) and data compiled from various company reports. The area is disrupted by a conjugate set of northwest and northeast trending faults which appear to have significant vertical and/or horizontal displacements.

All of the rock units exposed on the property belong to the Lower to Middle Jurassic Toodoggone volcanic sequence. Within the property, the volcanics consist of porphyritic trachy-andesite, andesite, and dacite along with lithic tuff, lapilli tuff, and agglomerate of similar composition.

These lithologies commonly exhibit weak to intense alteration. Weak propylitic alteration is widespread throughout the property, consisting of fracture infilling with seams of chlorite and epidote. Proximal to the epithermal vein systems, alteration varies from intense propylitic adjacent to the veins to intense argillic within the vein systems.

Epithermal veins are often strongly brecciated and consist predominantly of quartz ± barite. The quartz varies in colour from white to dark grey and exhibits a chalcedonic to coarsely crystalline texture. Barite, where present in the breccias, varies in colour from white to light pink and is medium- to fine-grained. Where mineralized, native gold, electrum, argentite, and tetrahedrite can be found in various concentrations. Characteristically, these quartz-vein systems show evidence of multiple stages of brecciation.



Modified after Diakow et al (1985)

FIGURE 3
PROPERTY GEOLOGY

ECONOMIC GEOLOGY

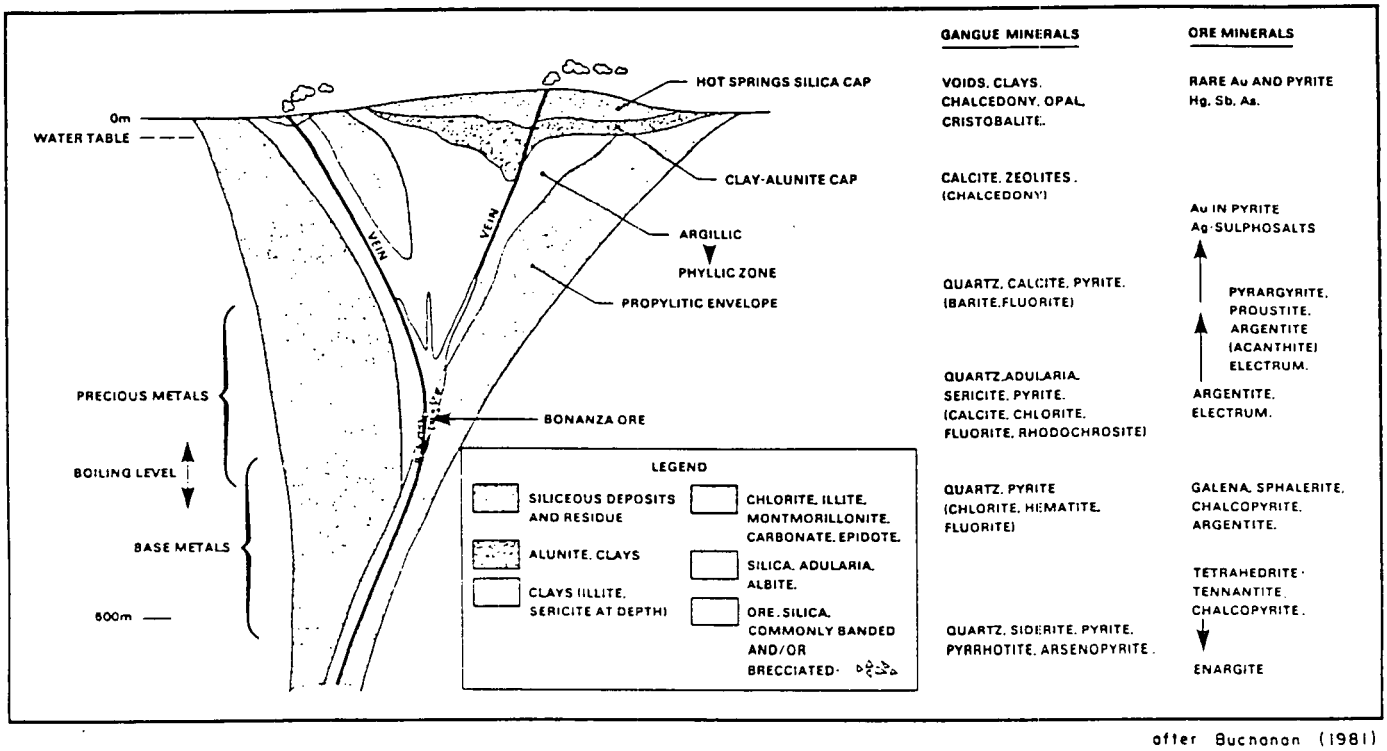
The focus of exploration in the Toodoggone district to date has been epithermal gold/silver mineralization associated with subaerial Lower to Middle Jurassic volcanism (Toodoggone Volcanics). Gold mineralization is also found within Late Triassic alkaline andesitic rocks (Takla Group). However, this latter mineralization is viewed as occurring in the "root zone" of the epithermal event related to Toodoggone volcanism (e.g., Baker Mine).

The structural settings of these epithermal vein systems is of primary importance in the development of gold mineralization within the Toodoggone Volcanics. Faulting and concomitant brecciation form the conduits for ascending hydrothermal solutions and vapours. It is often secondary tensional fractures in crudely concentric fracture systems related to collapse structures, major faults, or dilatant zones within major fault systems, which supply the necessary plumbing system for gold mineralization in this camp. It is also necessary that repeated fault movement and brecciation occur, allowing hydrothermal solutions to continue to circulate. If only a single brecciation event occurs, the ascending solutions carrying silica will eventually heal the fractures and restrict passage of additional gold-bearing solutions. Only by recurrent faulting and brecciation can the process of mineralization be carried to the stage where economic concentrations of gold can be anticipated.

Adjacent to these epithermal deposits, lateral and vertical alteration patterns have been noted. The outer 'propylitic' zone consists of chlorite, epidote, calcite, and pyrite. This grades inward to an 'argillic/phyllic' zone characterized by sericite, montmorillonite, illite, and silica. Finally, there is the silicified core zone consisting dominantly of silica, adularia, and/or albite, immediately adjacent to the vein system.

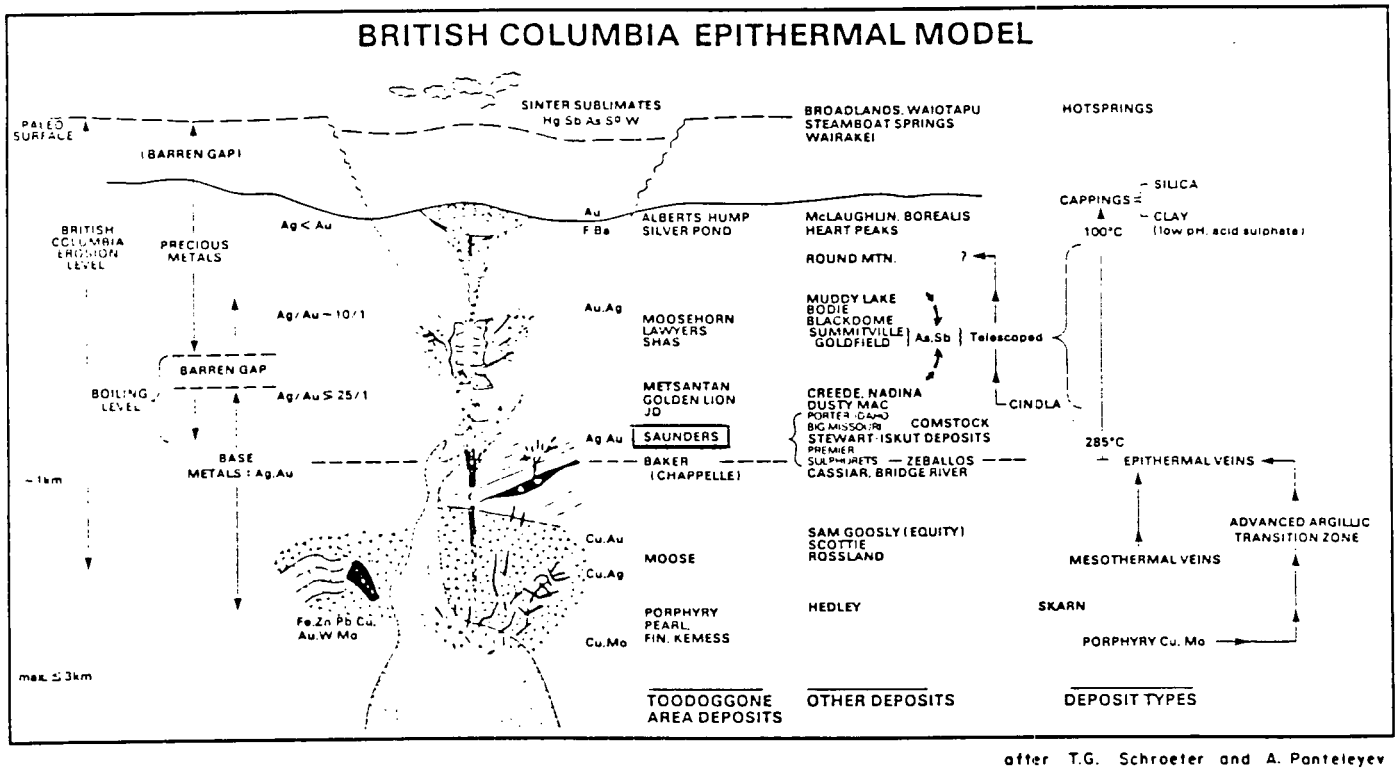
Hematite and manganese oxides are normally abundant in the precious metal rich occurrences. Native gold, electrum, barite, and minor pyrite have been found within these silica-rich zones along with amethystine quartz. Anomalous silver, lead, zinc, and copper values are commonly associated with the epithermal vein systems. However, such systems appear to be relatively free of contaminants such as arsenic and antimony.

The pattern of gold mineralization also exhibits both vertical and lateral zonation. These variations are controlled by temperature and pressure conditions within the breccia zones which in turn control the boiling point levels for the mineralizing solutions. The upper levels of these systems are characterized by a barren silica cap, thus displaying increasing gold values with depth. This simple model is complicated by re-brecciation (which changes the physical characteristics of the system) and the changing chemical composition of hydrothermal solutions during the various pulses of mineralization. Figures 4 and 5 illustrate the epithermal model utilized in exploration for precious metals within the Toodoggone gold camp.



after Buchanan (1981)

FIGURE 4. IDEALIZED SECTION OF EPITHERMAL DEPOSIT



after T.G. Schroeter and A. Panteleyev

FIGURE 5. BRITISH COLUMBIA EPITHERMAL MODEL

1990 EXPLORATION PROGRAM

The 1990 property exploration consisted of a brief evaluation of the previously located mineralized zones, coupled with reconnaissance prospecting of portions of the property. Map 1 shows the sample locations, analytical results, and the areas investigated during the current exploration program. Map 4 depicts the property geology (modified after Diakow et al., 1985), along with previous property exploration results indicating anomalous gold values, sample locations, and analytical results. Rock sample descriptions and the analytical results are presented in the Appendix.

Thirty rock samples were collected and forwarded to TerraMin Research Labs Ltd. in Calgary, Alberta, for gold and silver analyses. Two samples (collected during the 1988 exploration program) from the Golden Neighbor 2 claim, along the crest of the ridge, yielded anomalous gold values of 0.014 and 0.036 oz/ton, with corresponding Ag values of 2.16 and 7.29 oz/ton respectively. These sample sites were re-located as part of the current exploration program, and the area of alteration was systematically chip sampled. A brief description of each area follows.

Sample Site DR-05 (0.014 oz/ton Au): The zone of alteration is 1.3 m wide, composed of argillically altered trachy-andesite containing frequent quartz stringers and minor malachite staining. Chip samples collected across the zone yielded a geochemically anomalous value of 296 ppb Au over 0.4 m (Figure 6).

Sample Site DM-35 (0.036 oz/ton Au): This zone of alteration is 4 m wide, composed of moderately propylitically and argillically altered andesite porphyry. The zone contains quartz stringers and pods up to 20 cm wide, but with no apparent linear extension. Sample DM-35 was a grab from quartz vein material containing a high concentration of sulphides. Chip samples collected across the zone yielded a geochemically anomalous Au value of 248 ppb Au over 1.0 m, and a grab sample of quartz vein material yielded 432 ppb Au. The area contains a number of narrow, widely spaced, sub-parallel argillically altered zones containing quartz stringers, veinlets, and pods, with disseminated pyrite and minor chalcopyrite.

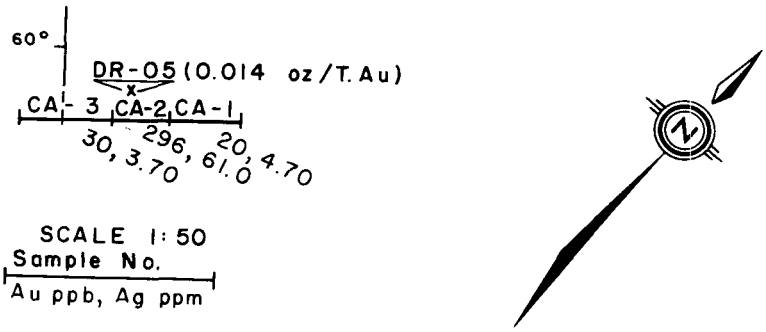


Fig. 6

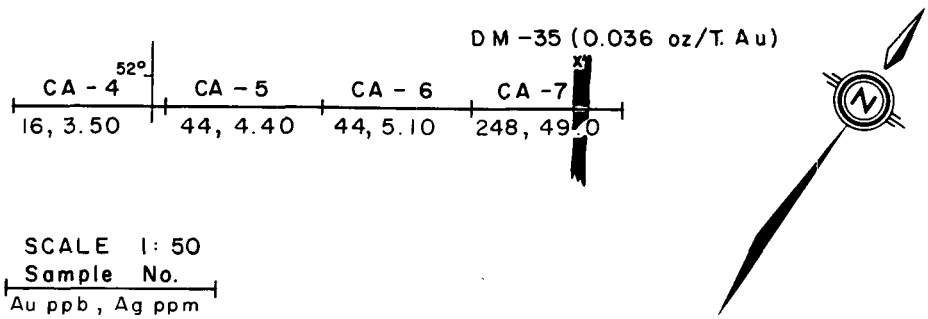


Fig. 7

x CA-8 (432, 43.0)

Previous exploration programs located quartz float in the southwest corner of the Golden Neighbor 2 claim. Two samples collected from this area during the current program yielded geochemically anomalous values of 324 and 112 ppb Au. Trenching in the area may have been completed too far downslope to locate the source of the quartz float. The float was traced upslope from the trenches to the foot of the talus slope where it becomes buried. Hoe trenching would be an excellent tool for future investigations.

In addition, a limited amount of prospecting was completed over the Golden Neighbor 1 and 3 claims. Samples collected did not yield any significant Au or Ag results.

SUMMARY AND RECOMMENDATIONS

The Golden Neighbor property comprises five mineral claims and two fractional units totalling 950 hectares (2,347 acres). The property is located approximately 300 km north of Smithers, British Columbia, at the headwaters of Saunders Creek, which flows north into the Toodoggone River, 5 km west of Toodoggone Lake.

The property lies within the Toodoggone district which is one of the most active gold exploration camps in British Columbia. DuPont's Baker Mine, which operated from 1981 to 1983, is 6 km to the southwest, and the Cheni Mine site is 10 km to the west-northwest of the property.

Access to the property from Smithers is via fixed-wing aircraft to the Sturdee airstrip and then by helicopter for a distance of 12 km. With the completion of the Omar Road Extension (which connects the Omineca Resource Road with the Baker Mine site), road access is now available to within 5 km at the closest point.

The property is underlain by a succession of Lower to Middle Jurassic subaerial volcanics and volcaniclastic sediments collectively termed the "Toodoggone Volcanics". These rocks have been extensively faulted and locally folded. During this volcanic event, hydrothermal activity led to the development of epithermal gold deposits.

Previous exploration on the property has consisted of geological mapping, soil and silt geochemical sampling, ground geophysical surveying, and hand trenching which uncovered a number of quartz veins assaying up to 1620 ppb Au and other areas with over 1% Cu.

Five diamond drill holes (totalling 605 m) were completed in 1986. The drilling encountered a wide, intensely argillically altered fault zone with local quartz veining and abundant stringers of chalcopyrite and sphalerite. Anomalous gold and silver values were encountered but none approaching economic grades. The high levels of base metals (and especially Mo) indicate a porphyry-type environment. The drill program may have been completed too low in the

epithermal system to encounter significant Au/Ag concentrations, which explains the Cu/Mo values encountered.

The 1990 exploration consisted of a brief evaluation of the previously located mineralized zones, coupled with reconnaissance prospecting of portions of the property.

A total of 30 rock samples were collected and analyzed for Au and Ag. Samples collected from the previously located mineralized zones on the Golden Neighbor 2 claim along the crest of the ridge yielded geochemically anomalous Au values. The area contains a number of narrow, widely spaced, sub-parallel argillically altered zones of limited extent, containing quartz stringers, veinlets, and pods, with disseminated pyrite and minor chalcopyrite. Additional exploration is not warranted.

Samples collected from the quartz float in the southwest corner of the Golden Neighbor 2 claim yielded geochemically anomalous Au values. Previous trenching in the area may have been completed too far downslope to locate the source of the quartz float. Hoe trenching would be an excellent method for future investigations of this area.

Prospecting completed over selected portions of the Golden Neighbor 1 and 3 claims did not located any gold mineralization.

CERTIFICATE

I, Claude Henry Aussant, of 31 Templebow Way N.E. in the City of Calgary in the Province of Alberta, do hereby certify that:

1. I am a Consulting Geologist with the firm of Taiga Consultants Ltd. with offices at Suite 400, 534 - 17th Avenue S.W., Calgary, Alberta.

2. I am a graduate of the University of Calgary, B.Sc. Geology (1976), and I have practised my profession continuously since graduation.

3. I am a member in good standing of the Association of Professional Engineers, Geologists and Geophysicists of Alberta; and I am a Fellow of the Geological Association of Canada.

4. I am the author of the report entitled "Geological, Geochemical, and Prospecting Report on the Golden Neighbor 1-4 Claims, Omineca Mining Division, British Columbia", dated October 15, 1990.

   I personally supervised the exploration work (completed on the property from August 1 to 30, 1990) upon which this report is based.

DATED at Calgary, Alberta, this 15th day of October, A.D. 1990.

Respectfully submitted,

C. H. Aussant, B.Sc., P.Geol., F.GAC

PERMIT TO PRACTICE
TAIGA CONSULTANTS LTD.
Signature
Date Oct 15, 1990
PERMIT NUMBER: P 2399
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

GEOLOGICAL ASSOCIATION OF CANADA · FELLOW · C. H. AUSSANT

PROFESSIONAL GEOLOGIST ALBERTA CLAUDE H. AUSSANT

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- (1983) Geological Fieldwork 1982, Paper 1983-1, pp.125-132
- (1984) Geological Fieldwork 1983, Paper 1984-1, pp.134-135
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A P P E N D I X

Summary of Personnel
Summary of Expenditures
Rock Sample Descriptions
Certificates of Analysis
Analytical Techniques

SUMMARY OF PERSONNEL

Name / Address	Position	Field Time	Man Days
C. H. Aussant, P.Geol. Calgary, Alberta	Project Geologist	Aug.29-31, 1990	3.00
M. D. Jamieson, P.Geol. Calgary, Alberta	Assistant Geologist	Aug.29-31, 1990	3.00
Bob Charles Stanley Mission, Sask.	Prospector	Aug.29-31, 1990	3.00
Solomon Hardlotte Stanley Mission, Sask.	Prospector	Aug.29-31, 1990	3.00
J. M. Hislop Calgary, Alberta	Labourer	Aug.29-31, 1990	3.00
		TOTAL MAN DAYS	15.00

SUMMARY OF EXPENDITURES

Pre-Field			
Logistics, assembly of personnel and gear (pro rata)			266.02
Field Personnel			
Project Geologist	3 days @ $400/day	1,200.00	
Assistant Geologist	3 days @ $300/day	900.00	
Prospectors	2 x 3 days @ $300/day	1,800.00	
Labourer	3 days @ $210/day	630.00	4,530.00
Camp & Accommodation			
(incl. helicopter pilot)	19 man days @ $55/day		1,045.00
Travel Expenses (mob & demob)			413.84
Equipment Rentals			
one-ton van	3 days @ $65/day	195.00	
generator	3 days @ $10/day	30.00	
FM radio-telephone	3 days @ $10/day	30.00	
HF radio-telephone	3 days @ $ 9/day	27.00	
chainsaw	3 days @ $ 8/day	24.00	306.00
Aircraft Support			
Helicopter		5,442.01	
Fixed-wing		919.97	6,361.98
Fuel (pro rata)			43.62
Geochemical Analyses (Au, Ag)			
rock samples	30 @ $12.00/each		360.00
Miscellaneous			
Disposable supplies		108.52	
Communications		17.58	
Maps and reproductions		46.09	
Expediting and freight		100.05	272.24
Post-Field			
Data compilation, report writing, drafting, word processing			1,443.00
		TOTAL	$15,041.70

ROCK SAMPLE DESCRIPTIONS

Sample	Au ppb	Ag ppm	Description
CA-1	20	4.7	(0.3 m chip) trachy-andesite porphyry, grey-green, weak propylitic alteration; frequent quartz stringers
CA-2	296	61.0	(0.4 m chip) argillic zone striking 140° dipping 60° SW, rusty and beige, frequent quartz stringers, 1-3 cm grey quartz veinlets, 3-5% disseminated pyrite
CA-3	30 47.5	3.7 9.34	(0.6 m chip) trachy-andesite porphyry, grey-green on fresh surface, rusty weathered, minor spotty malachite staining, minor disseminated pyrite
CA-4	16	3.5	(1.0 m chip) trachy-andesite, greenish grey on fresh surface, rusty weathered, moderate argillic and propylitic alteration, minor spotty malachite, occasional quartz-carbonate stringers, sections with 3% diss Py
CA-5	44	4.4	(1.0 m chip) andesite porphyry, green-grey, rusty weathered, moderate propylitic and argillic alteration, minor pyrite, minor quartz-carbonate stringers
CA-6	44	5.1	(1.0 m chip) andesite porphyry, greenish grey, rusty weathered, weak to moderate propylitic and argillic alteration, minor disseminated pyrite
CA-7	248 88.	49.0 15.5	(1.0 m chip) andesite porphyry, greenish grey, rusty weathered, weak to moderate propylitic and argillic alteration, minor disseminated pyrite, minor quartz stringers; interval contains a 20 cm white quartz vein with up to 3% disseminated pyrite, sample DM-35 was collected from this quartz vein; spots of up to 10% pyrite, quartz vein irregular, zone contains quartz pods up to 20 cm wide with no apparent linear extension, with concentrations of up to 10-15% pyrite
CA-8	432	43.0	(grab) quartz vein material, grey quartz, with 10-15% disseminated pyrite; with argillic alteration halo in andesite porphyry
CA-9	10	0.41	(float) mottled grey quartz, 3-5% disseminated pyrite
MH-10	24	10.2	(grab) andesite tuff, pale grey, siliceous, spotty malachite staining, 1% disseminated pyrite, occasional pyrite clots
MH-11	4	0.09	(grab) andesite porphyry, grey on fresh surface, rusty weathered, highly fractured, moderate argillic alteration, sections siliceous, 3-5% disseminated pyrite

	Au	Ag	
MH-12	30	2.50	(grab) tuff, pale grey, siliceous, 1-3% dissem pyrite
MH-13	14	0.48	(grab) trachy-andesite porphyry, pale to medium grey, 1-3% disseminated pyrite, weak argillic alteration, white to pink feldspar phenocrysts, limonite stained
MH-14	6	0.20	(grab) trachy-andesite porphyry tuff, greenish grey, weak argillic alteration, white to pink feldspar phenocrysts, limonite stained
MH-15	8	1.28	(grab) tuff, pink to mottled pink and green, small feldspar phenocrysts, minor disseminated pyrite, fine-grained phase of the porphyritic tuff
MH-16	14	1.72	(grab) tuff, highly fractured, limonitic
MH-17	16	0.82	(grab) felsic tuff, mottled pink and green, 5% disseminated pyrite, limonite staining along fractures
MH-18	8	0.08	(grab) tuff, pale to medium grey, 1-3% disseminated pyrite, limonite stained, calcareous stringers, weak argillic alteration, portions porphyritic, feldspar phenocrysts altering to clay
SH-11	2	0.10	(grab) andesite porphyry tuff, mottled greenish beige, fine- to medium-grained, limonite stained, <1% disseminated pyrite
SH-12	14	0.49	(grab) same as SH-11
SH-13	142	0.84	(grab) tuff, pale grey, aphanitic, with 1-3% disseminated pyrite, sections porphyritic, mottled pink-green (same as MH-18)
SH-14	10	0.06	(grab) tuff, medium grey, occasional quartz stringers, sections porphyritic, contains small white feldspar phenocrysts
BR-02	24	0.09	(float) tuff, pale to medium grey, 1-3% disseminated pyrite, moderate argillic alteration, limonite stained
BR-03	34	0.11	(float) tuff, pale to medium grey, 1-3% disseminated pyrite, moderate argillic alteration, limonite stained
MJ-2	324	5.90	(talus) chalcedonic quartz, pale grey with dark grey to black blebs, 1% very fine disseminated pyrite in darker sections, weakly brecciated
MJ-3	112	3.10	(float) quartz breccia, pale grey, two generations of quartz, second generation fracture filling, darker grey with 1-2% pyrite as disseminations and stringers
MJ-4	48	0.10	(float) andesite porphyry, 1-2% disseminated pyrite, intense argillic alteration, rusty weathered

MJ-5	26	0.12	(float) andesite porphyry, dark grey-green, trace to 1% disseminated pyrite
MJ-6	52	0.09	(soil) same location as MJ-4 and MJ-5, pale yellow-brown
MJ-7	34	0.17	(grab) andesite, medium-grained, light to medium grey-green, massive, siliceous; fine quartz stringers, up to 5% pyrite as disseminations, blebs, and stringers

TERRAMIN RESEARCH LABS LTD.
14-2235 - 30th Avenue N.E. Calgary, Alberta T2E 7C7
(403) 276-8668

SAMPLE PREPARATION

Soil and sediment samples are dried and sieved through 80 mesh nylon screen (maximum partlcle size 200 microns).

Rock or drill core samples are crushed to approximately 1/8" in a jaw crusher, riffled to obtain a representative sample, and pulverized to 100 mesh (180 micron particle size).

TERRAMIN RESEARCH LABS Ltd.

Job#: 90-184

Project: BC-88-6

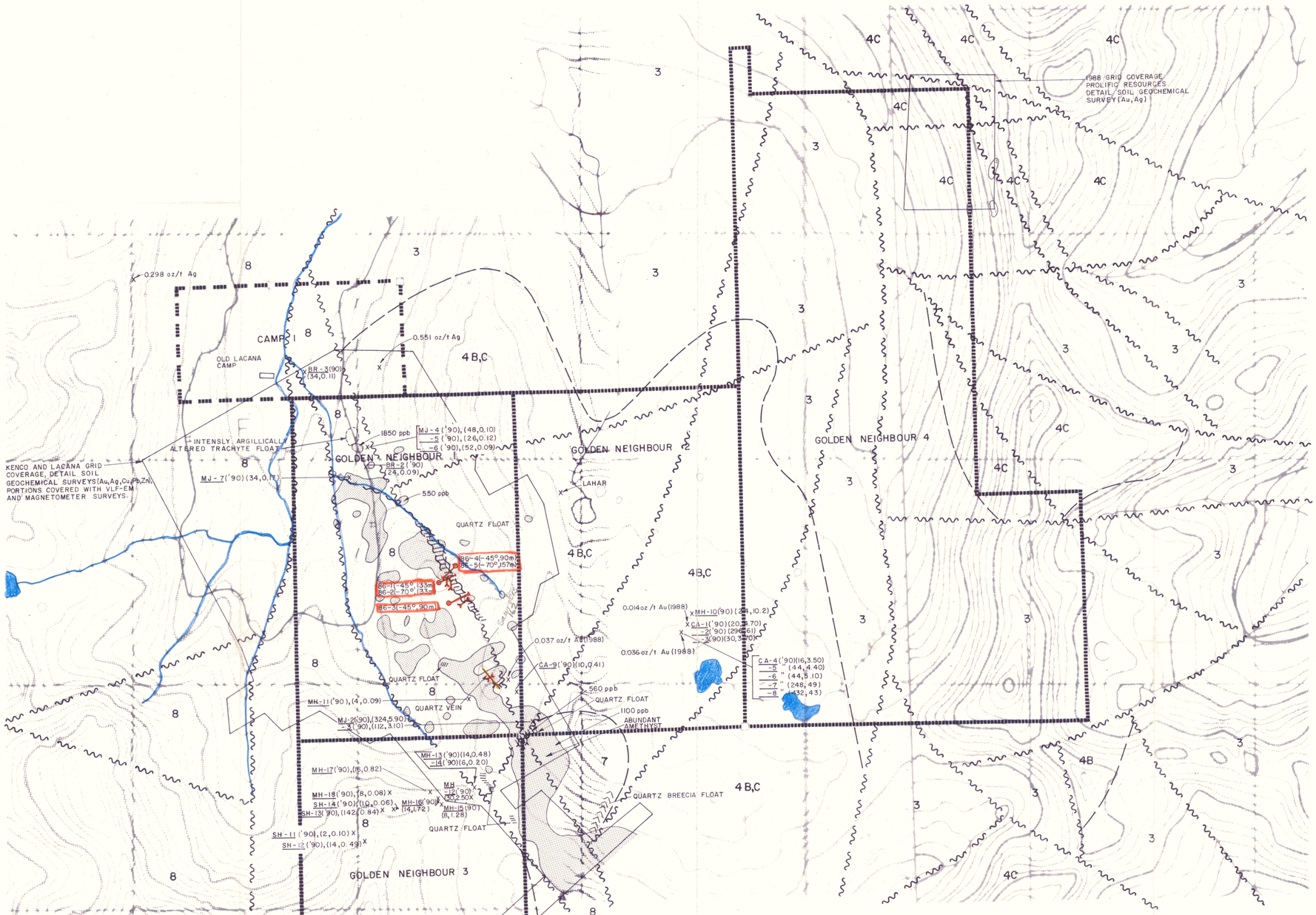
Sample Number		Au ppb	Ag ppm
BR-	1	4	1.08
	2 ✓	24	0.09
	3 ✓	34	0.11
CA-	1 ✓	20	4.70
	2 ✓	296	61.0
	3 ✓	30	3.70
	4 ✓	16	3.50
	5 ✓	44	4.40
	6 ✓	44	5.10
	7 ✓	248	49.0
	8 ✓	432	43.0
	9 ✓	10	0.41
MH-	1	4	0.40
	2	92	26.0
	3	3420	32.0
	4	8	0.48
MH-	5	38	50.0
MH-	6	12	0.26
	7	72	2.50
	8	4	0.17
	9	38	3.60
	10 ✓	24	10.2
	11 ✓	4	0.09
	12 ✓	30	2.50
	13 ✓	14	0.48
	14 ✓	6	0.20
	15 ✓	8	1.28
	16 ✓	14	1.72
	17 ✓	16	0.82
	18 ✓	8	0.08
MJ-	1	22	6.20
	2 ✓	324	5.90
	3 ✓	112	3.10
	4 ✓	48	0.10
	5 ✓	26	0.12
	6 ✓	52	0.09
	7 ✓	34	0.17
SH-	1	212	69.2
	2	2	0.19
	3	12	0.44

TERRAMIN RESEARCH LABS Ltd.

Job#: 90-184

Project: BC-88-6

Sample Number	Au ppb	Ag ppm
SH- 4	18	0.38
5	114	1.66
6	6	1.55
7	14	0.11
8	14000	17.7
9	48	2.20
10	2	0.17
11 ✓	2	0.10
12 ✓	14	0.49
13 ✓	142	0.84
14 ✓	10	0.06
1) L 4+00 S 0+75 W	146	10.4
2) L 4+00 S 4+00 W	22	0.45
3) L 6+00 S 2+05 W	10	15.2



8 DARK TO PALE GREY OR GREEN QUARTZOSE BIOTITE HORNBLENDE PLAGIOCLASE ASH FLOWS OF ANDESITIC AND RARELY DACITIC COMPOSITION. VARIABLY WELDED WITH LOCALLY WELL-DEVELOPED COMPACTION LAYERING. CONTAINS ABUNDANT GREY DACITE AND RARE GRANITIC CLASTS. OUTCROPS ARE COMMONLY BLOCKY AND STRONGLY JOINTED

7 RECESSIVE, GREY, MAUVE, PURPLE QUARTZOSE PLAGIOCLASE CRYSTAL TUFF, LAPILLI TUFF, AND BRECCIA. WITH LESSER AGGLOMERATE, LAHAR, AND EPICLASTIC BEDS. INCLUDES SOME WELDED TUFFS AND PYROXENE HORNBLENDE FELDSPAR PORPHYRY FLOWS WHICH ARE LOCALLY DOMINANT. SOME MEMBERS CONTAIN NO QUARTZ. PINK WEATHERING WHERE LAUMONTITE IS ABUNDANT

4B LAPILLI, CRYSTAL, AND ASH TUFF; WELL BEDDED. INCLUDES MINOR THINLY BEDDED SANDSTONE AND RARE CALCAREOUS SILTSTONE (MARL) TOTALLY OR IN PART EQUIVALENT TO UNIT 7

4C PYROXENE BIOTITE HORNBLENDE PORPHYRY FLOWS WITH TRACES OF QUARTZ AND K FELDSPAR. INTERBEDDED MINOR BRECCIA AND LAPILLI TUFF TOTALLY OR IN PART EQUIVALENT TO UNIT 6

3 GREEN TO GREY QUARTZOSE PYROXENE (?) BIOTITE HORNBLENDE PLAGIOCLASE PORPHYRY FLOWS AND TUFFS. QUARTZ CONTENT RANGES FROM NEGLIGIBLE TO ABOUT 3 PER CENT IN THE NORTH. FLOWS PREDOMINATE WITH LOCAL FLOW BRECCIA. LAPILLI TUFF AND RARE WELDED TUFF UNITS; TOWARD THE SOUTH ASH FLOWS ARE COMMON, INCLUDING RARE SURGE DEPOSITS. THE UNIT CONTAINS EXTENSIVE ZONES OF EPIDOTIZED, PYRITIC ROCK WITH CHARACTERISTIC SALMON, PINK, AND ORANGE PLAGIOCLASE CRYSTALS

GEOLOGY MODIFIED AFTER DIAKOW ET AL (1985)

1980 TRENCHES

1986 LACANA DIAMOND DRILL HOLE

Au SOIL GEOCHEMICAL ANOMALY >100 ppb Au, ONLY 4 SAMPLE SITES WITH GREATER THAN 500 ppb Au (SITES INDICATED)

FAULT OR TOPOGRAPHIC LINAMENT

GEOLOGICAL CONTACT

X CA-8('90) (432,43.0) SAMPLE LOCATION, SAMPLE NUMBER, YEAR SAMPLED (Au ppb, Ag ppm)

NOTE: ALL STREAMS-SILT SAMPLED

GEOLOGICAL BRANCH
ASSESSMENT REPORT

20,401

REVISED AUGUST, 1990

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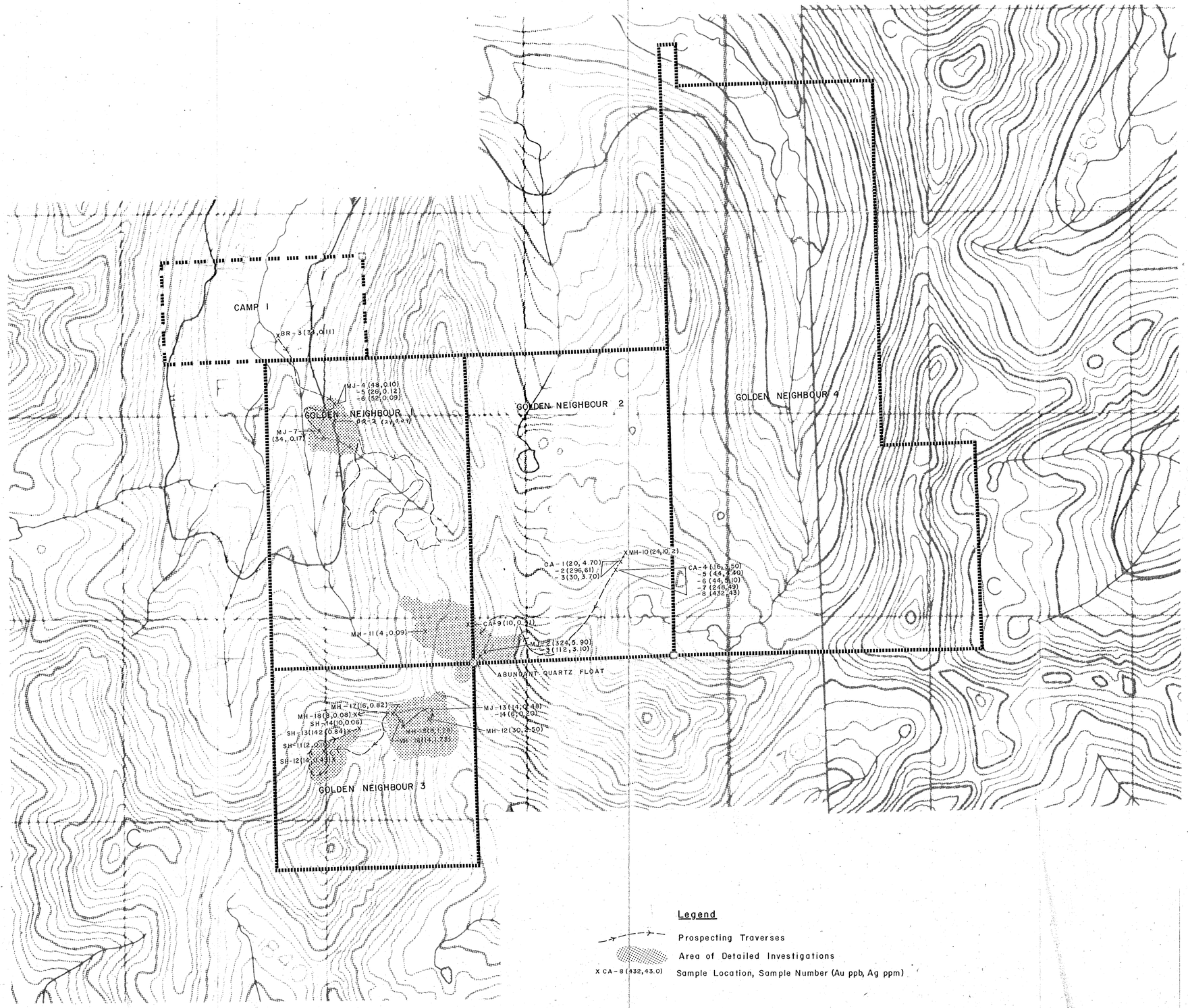
GOLDEN NEIGHBOUR PROPERTY

COMPLIATION MAP

DATE SEPT., 1988	NTS 94 E/6
PROJECT BC-88-6	MAPPED/ DRAWN BY C. AUSSANT
SCALE 1:10,000 0 500m	
TAIGA CONSULTANTS LTD	MAP 4



Legend

Prospecting Traverses

Area of Detailed Investigations

X CA-8 (432, 43.0) Sample Location, Sample Number (Au ppb, Ag ppm)

A.R. 20401

PROLIFIC RESOURCES LTD.

GOLDEN NEIGHBOUR PROPERTY

1990 Sample Locations and Areas Investigated

DATE SEPT., 1988	NTS 94 E/6
PROJECT BC-88-6	MAPPED/ DRAWN BY C. AUSSANT
SCALE 1: 10,000	0 500m
TAIGA CONSULTANTS LTD	MAP 1