ASSESSMENT REPORT

ON

GEOLOGICAL AND GEOCHEMICAL SURVEYS

OF THE SOUTH-EAST QUADRANT OF

GNOME M.C. (TENURE No. 208110)

VIDETTE LAKE AREA, CLINTON M. D., B. C.

LAT. AND LONG.: 51° 10', 120 ° 53'

NTS 92P/2

REGISTERED OWNER: RAGNAR U. BRUASET & ASSOCIATES LTD.,

OPERATOR: RAGNAR U. BRUASET & ASSOCIATES LTD.
DATE SUBMITTED: 23 AUGUST 1999

FIELDWORK DONE: Oct. 7-21, 1998

REPORT BY: R. U. BRUASET, B. Sc.

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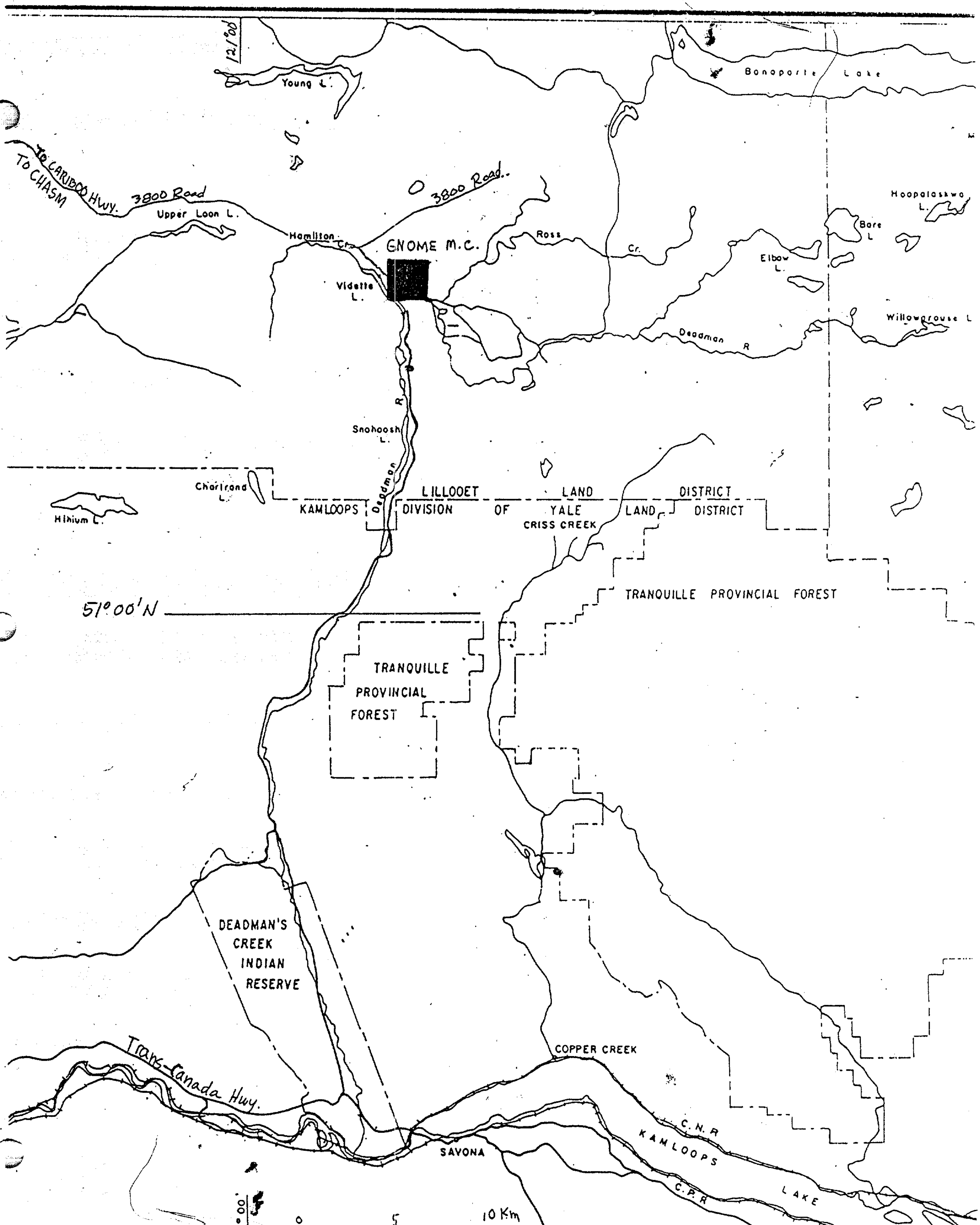
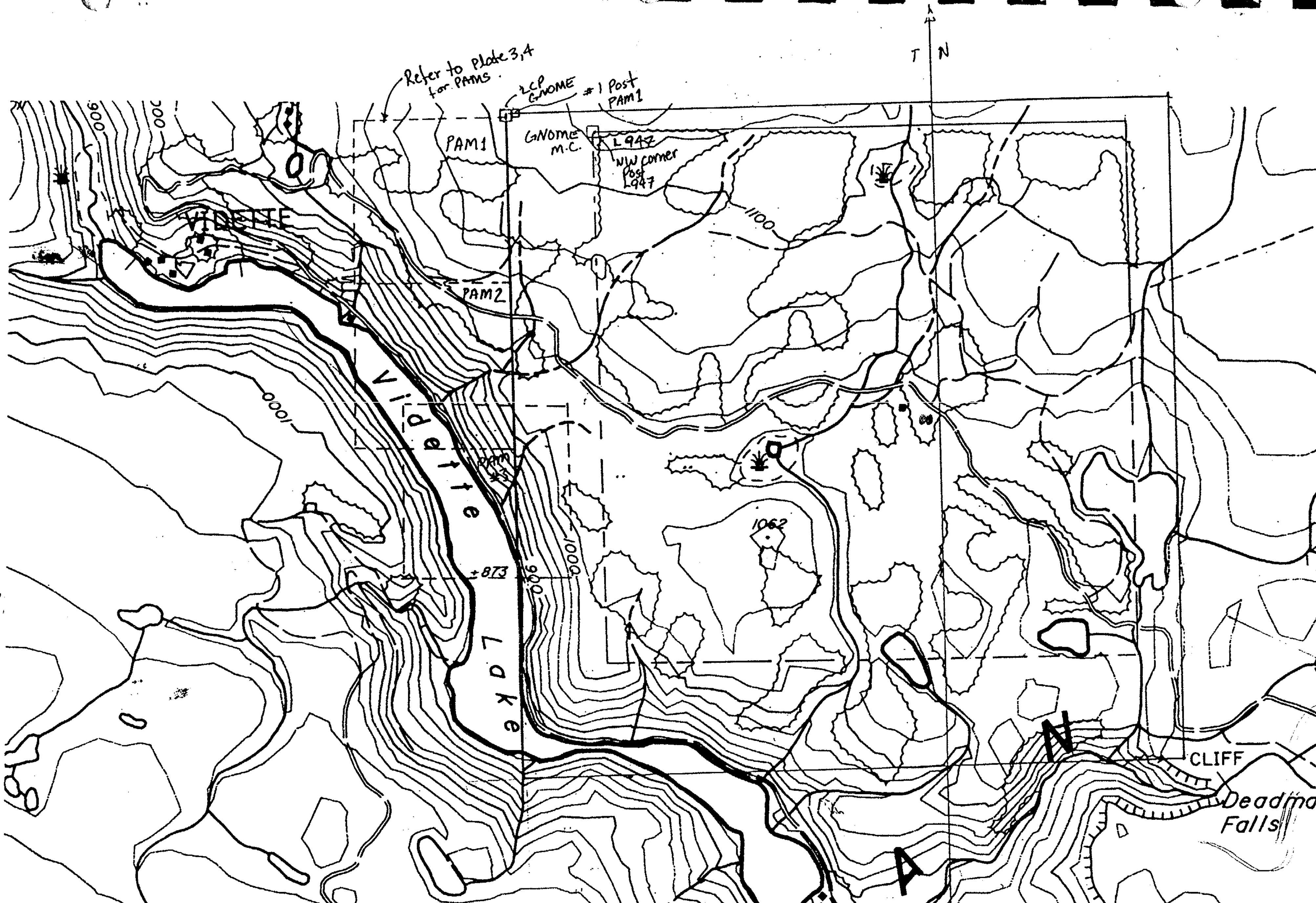


Location Map. Plate 1



0 500m

1994 declination 20°50'E. Ann. change 7.7'W
Ref. GSC Geomagnetic Lab. Jun 07/94

TOPOGRAPHY		
"GNOME AREA" CLAIM MAP		
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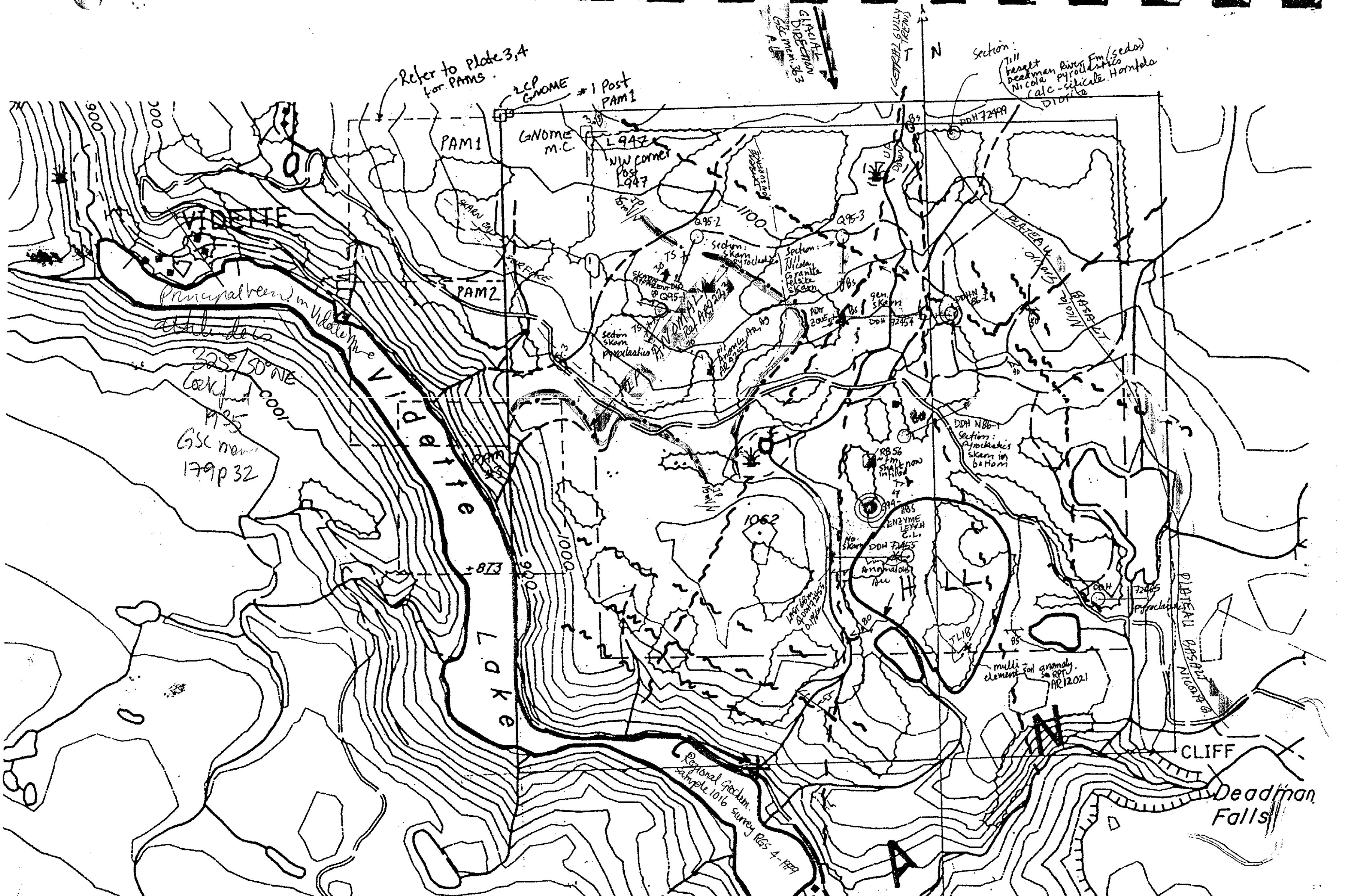

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TOPOGRAPHY		
GNOME AREA		
GEN. GEOLOGY, THIN SECTION INDEX MAP		
TRIM		
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Misc. Legend

FOLIATION

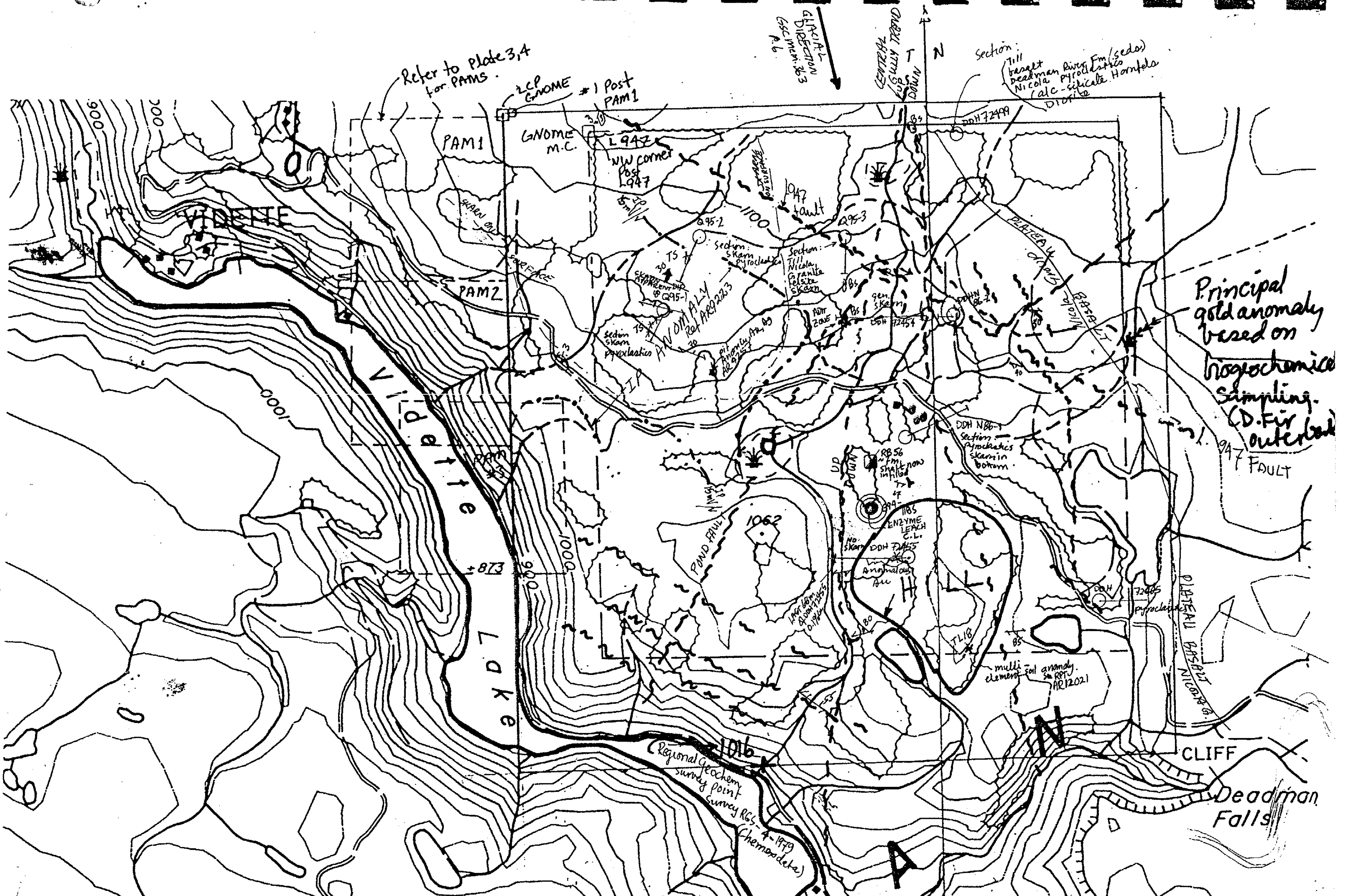
TS * THIN SECTION

old adit (gen. collapsed)

O Bs silica breccia outcrop

Granodiorite

DDH: INCO: 72454, 72455, 72485 72499
NOREX DDH 86-1,2
QUEENSTAKE Q95-1,2,3



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old adit (gen. collapsed)

INTRODUCTION

The GNOME property is located in the Vidette Lake area, in the Clinton Mining Division, about 65km NW of the City of Kamloops in southcentral B. C.

The property is considered to have potential for epithermal gold, calc-alkaline Cu-Mo and possibly alkaline Cu-Au porphyry deposits.

The local physiographic division is the Cariboo Plateau (Physiographic Map of the Canadian Cordillera, GSC map 1701A).

The Gnome property consists of a total of 19 units comprising 4 contiguous claims: the 16-unit GNOME and three one-unit PAM mineral claims. The author is the owner.

The general exploration history of the Gnome Property is given in Assessment Report 23971.

The program discussed in this report involves geological mapping, rock geochemistry and petrographic work mainly in the SE quadrant of the Gnome Mineral Claim (Fig. 3). The technical basis for conducting work in this part of the Gnome is variously geochemical and geological. The author's early interest in this part of the property grew out of a geochemical survey conducted by Chevron in 1983 (Assessment Report 12021). A reconnaissance soil sample in this part of the Gnome yielded a strong multi-element soil anomaly at station TL 18 in the southeastern part of the 500m wide hill noted on Fig. 3. This hill area, and its more immediate surroundings, is considered to be highly prospective for epithermal gold deposits. This is partly based on the position of the hill astride several N-S trending faults, which, about 0.5 km to the north of the hill, are believed to partly control several silica breccias containing anomalous Au pathfinders. Anomalous levels of gold, silver, arsenic, antimony and molybdenum are variously hosted by the high level comb-textured silica breccias and banded chalcedonic veins. This N-S trending structural zone extends northward and southward well beyond the Gnome and was under investigation by Inco and others during the 1980s. The main breccia zone on Gnome forms a topographic high.

Some of the other aspects of the hill area that have tended to draw attention to it includes the occurrence of abundant large silica breccia float material, particularly in its south western portion. Some of the float boulders are in excess of 1 m in their largest dimension. As the float occurs, in part, down-ice from known outcrops containing the same or similar rocks, the simplest solution would be to assume a common source of all of this float material. However, there are indications based on geochemistry and drilling that the western part of the hill, and its more immediate adjacent area on the west, offer high exploration potential for both gold and copper. One of these indications of favourability involve fluid inclusion geochemistry. High salinity fluid inclusions as well as possible evidence of boiling are indicated in a banded quartz vein outcropping near a former shaft situated a short distance NW of the hill (Fig.3, Sample RB 56 in A.R. 12021, and reports by O'Brient and Bondar COFRC, LaHabra, CA.).

Enzyme Leach sampling and diamond drilling both suggest the hill area to be of ongoing interest. Selective extraction Enzyme Leach surveys carried out in 1994 and 1995 had indicated a multi-element oxidation anomaly on the Central Gully Trend near the west margin of the hill (Figs 3 and 5 in this report; also Bruaset Feb. 1995, Clark, Dec. 1995). The central low is defined by oxidation suite elements Br, Mo, As, and V and base metals Cu, Ni, Cd and Zn. The central low is centred approximately on station GN94 -118S (Figs. 3, 5). A central low, in Enzyme Leach vernacular, is predicted over the most oxidized portion of a deposit. Preliminary testing of oxidation anomalies usually involves drilling vertical holes on the central lows.

Inco's DDH 72455 collared well within the hill, and directed to the west, intersected the strongest gold mineralization so far encountered in the Gnome based on a comparison of the five highest gold analyzes in each of the 9 drill hole completed to date. In the case of this particular hole, the five highest gold analyzes are: 630, 745, 1025, 2390 and 4650 ppb; all occur in the first 185m of the hole and all are within the hill-area. This hole bottomed in an average of 1087 ppm Cu over 68 m, which is the strongest Cu intersected to date in the Gnome.

Logging activity carried out in late 1994 and early 1995 had created some new exposures in the SE part of the property. Exploring this part of the property at this time provided an opportunity to map the most recent outcrops whose location is frequently in steep road cut making them prone to slides and overgrowth.

SUMMARY

The earlier noted hill, and the more immediate adjacent areas were traversed by a series of closed loops. The positions of outcrop, silica breccia float boulders, and their size, as well as any drill holes, old workings and identifiable grid picket were recorded.

A total of about 60 silica breccia float boulders were tied-in. Eighteen rock samples of Nicola volcanics were collected and submitted for ICP and fire assay. Seven thin-sections of foliated rocks were studied by Charlie Greig. Greig was extensive experience with rocks of this type in his MSc thesis project area near Coqihalla Pass and in 1988 completed a petrographic study of high-grade Nicola metavolcanics from the Tip-Top property on Joe Ross Creek about 10 km east of the Gnome.

The purpose of the petrographic study was to determine any metamorphic similarities between the Gnome and Joe Ross Creek volcanics. It was found that foliated mafic to intermediate volcanic from the Gnome have undergone middle greenschist facies metamorphism while the corresponding rocks of Joe Ross Creek had reached uppermost greenschist facies or amphibolite facies. In the case of Joe Ross Creek, the temperatures would have had to be in the range of 450-600°C and pressures greater than 3 kbar (roughly equivalent to 9 km in depth) to generate the mineral phases and textural features observed (Greig. 1988 p. 3). For the middle greenschist facies rocks of the Gnome, the temperature and pressure regime could have been of the order of 300°C and the depth of burial in the order of a few kms (J.Monger, pers. comm). Of great exploration interest would be the position of any fault on which these metaporphic blocks were uplifted. Such potentially deep- seated structures could have acted as channel ways for hydrothermal solutions leaching a variety of commodity elements from surrounding rock and depositing same in adjacent faults, fractures or breccias.

Outcrops encountered in these traverses were plotted either at the scale of 1:1250 or 1:500 (Figs. 4 and Fig. 6). The mapping yielded many additional attitudes on the prevalent foliation of the schist which property-wide strike generally ENE to ESE and dip northerly in the northern half of the property but both southerly and northerly in the southern half (Fig. 3 and 6). The position of the important Central Gully Trend of Fault can be more closely inferred based on the current mapping.

The rock sample obtained from the vicinity of the original entrance to the old adit on Central Creek yielded the highest values for both gold and silver at 180 ppb and 1.2 ppm, respectively. The highest value for Cu, 327 ppm, occurs immediately east of the hill.

In view of the dearth of outcrops in the hill area, any appraisal of its potential would ultimately have to depend on geochemistry and drilling information. The central low in the area of station GN 94-118S lies a short distance up-ice from the greatest concentration of large silica breccia boulders.

TREATMENT OF DATA

The basic background information on geology, geochemistry and geophysics appears on a topographic base in Fig. 3. The principal IP anomaly of the Gnome, all drill holes to date, as well as the general attitudes of foliation are shown, in addition, other points of interest such as the location of the hill, known and inferred faults, and known silica breccia outcrops. Two plans at scale 1:1250, Figs, 4 and 5, are presented. Fig. 4 indicates the silica breccia float distribution and geology. Fig. 5 shows the distribution of rock samples and the analytical data for Au, Ag, Cu, Mo, As, Sb and Bi. Figure 6 @ 1:500 encompasses the geology along Centre Creek.

REGIONAL GEOLOGY

The current regional geologic reference for the Gnome property is the 1:250,000 scale Bonaparte Lake map sheet, GSC Map 1278A. This plan depicts the Vidette Lake area as an Upper Triassic window 2 km wide by 10 km long in a broad area underlain by Miocene and /or Pliocene Plateau lava. About 14 km WSW and 20 km NE of the Gnome are major areas of Eocene and (?) Oligocene Skull Hill Formation of the Kamloops Group. The silica breccias found in gold targets on the Gnome, and elsewhere in the general Deadman River area, are believed to be related to the Skull Hill volcanic events.

PROPERTY GEOLOGY

The Gnome is underlain mainly by intermediate and basic volcanics of the Upper Triassic Nicola Group. These consist of augite porphyry, andesite and pyroclastics, mainly lapilli tuff. Rock geochemical work in the mid.-1970s in the southern part of what is now the Gnome claim indicated these rocks to be generally alkaline. A comparison of the Bonaparte sheet with the current GSC Ashcroft sheet (GSC Map 42-1989), suggests the position of the Gnome is on trend with the Eastern volcanic facies of the Nicola. This facies hosts the important alkaline porphyry copper-gold group of producers.

Nicola volcanics in the property are generally strongly foliated. In the northern half of the property, foliation strikes generally ESE and dips northerly at 70 to 80°. In the southern half, foliation strikes variously ENE to ESE. In the south central part of the property, foliation dips generally to the south at 32-70°. Along the general Central Gully Trend, to the south of station 98-186, (Fig. 6), foliation generally dips north at 55-80°. It would appear from the alternating north and south dips of the foliation that the Nicola rocks are folded. No folding has been recognized in outcrops and few indications appear in the drill logs (Ref. log for DDH72485 at 195.63-207.26m: "concordant folds with axial plane at 45°to core axis---."

The petrographic report of Charlie Greig found in the APPENDIX describes one sample from Inco DDH 72455, five from DDH Q95-1 and one from DDH Q 95-2. Mr. Greig has summarized his findings. " The sections examined consist of very fine grained mafic schists and local calc-silicate that commonly contain biotite, actinolitic amphibole and calcite. They were probably derived from mafic to intermediate volcanic and volcaniclastic protolith. The metamorphic mineral assemblage, which is roughly of middle greenschist facies, is syn-(?) to late to post-kinematic e.g. , R 98-2084 (73.3m in Q 95-2) with respect to deformation that formed the fabric in the rock, and as a consequence, many of the deformation textures have been annealed through recrystallization. There are, however, many indications that the fabric had its origin in strain. For example, in section R 98-2079 (Q95-1 at 44.0m), local lenticular lithons of very fine grained calcite and acicular amphibole are suggestive of completely replaced and recrystallized plagioclase feldspar porphyroclasts. Within some of the lithons, the distribution of calcite and amphibole mimic what appears to be rotated, broken and recrystallized porphyoclasts, as well as their well developed pressure shadows."

The samples from Inco DDH 72455 and Queeenstake DDHs Q 95-1, 2 classified on the basis of petrographic work by Greig are given the following names:carbonate chlorite schist (DDH72455), calcareous biotite amphibolite schist, biotite actinolite schist, calc-silicate and amphibolitic schist, calcareous biotite schist, calc-silicate schist (all from Q 95-1) and biotite amphibolite schist (Q95-2).

Foliation, which is prominent in the Nicola volcanics of DDHs Q 95-1 to 3, is not reported in Inco DDHs 72454, 72499 and Noranda DDH NG86-2. However, NG86-1 contains numerous references to foliation. DDH 72455 contains several references to foliation but for DDH 72485, there is scant references to foliation. Nicola volcanics. east of the Main silica zone (Fig.3) are foliated with strikes ESE and ENE and dips 40 to 60° south.

Contact metamorphism described variously as epidote, calcite+- garnet skarn (Bruaset, 1983, 1995), calc-silicate skarn (Morin, 1989) is widespread in outcrops and float in the NW quadrant of Gnome, and was intersected in drill holes there. The upper 75% (approx.) of DDH Q95-2 is skarn as is the upper 30% of Q 95-1. Accordingly, the skarn intersected in these holes has an apparent dip of about 30° northerly. DDH Q 99-3 intersected the skarn about half way down the hole after a complex interval involving faulting, granodiorite and felsic intrusive. DDH 72454 intersected calc-silicate skarn throughout. GN 86-1 intersected skarn at about 220 m and remains generally in this material to the end of the hole. In GN86-2, calc-silicate veining is reported at about 90 m which is below the silica alteration. DDH 72499 intersects the most complete stratigraphic section in the area. Following 12 m of Pleistocene till, the hole penetrates 12 m of Miocene Plateau Basalt, followed by 33 m of sediments of the Miocene Deadman River Fm. This is followed by 3 m of tuff, then by 7 m of epiclastic basal conglomerate, which includes chalcedony clasts. Following this is 8 m of Upper Triassic Nicola volcanics which are cut by calcite chalcedony veining, the alteration common in the main gold zones on the Gnome. The hole then enters a 9 m section of calc-silicate hornfels which is indicated to contain calcite, actinolite, garnet and diopside. In the last 3 m of the hole, before entering diorite at 85 m, what is said to be metamorphic foliation, DIPS 50°. The hole ends at 93.88 m after penetrating a total of about 9 m of variously altered diorite and granodiorite inferred to be Triassic-Jurassic Thuya Batholith(Morin, 1989). Chalcedonic veining occurs throughout the intrusive section but the intrusives appear unfoliated. No skanification is reported in Inco DDHs 72455 and 72485.

Faulting, known or inferred, on the Gnome is extensive, as shown on Fig. 3. Apparently the oldest fault is the NNE trending Pond Fault. This structure, which is inferred from the highs in the Enzyme Leach zirconium data, is apparently offset right laterally on a WNW trending fault, referred to as L.947 Fault. The L. 947 fault is sub-parallel to the foliation in the NW quadrant of the Gnome. The L 947 fault is also inferred from the Enzyme Leach zirconium data. DDH Q 95-3 tested a multi-element biogeochemical anomaly located astride L947 fault. The hole was collared on the north side of the fault. The first 90 m (approx.) consisted of augite porphyry, granodiorite, and felsite, all of which were intensely faulted, particularly the upper 30 m. This faulting is considered to be evidence for the L 947 Fault. Exactly what the nature of the movement is remains unresolved but right lateral appears to be a component of the movement. The skarn zone was intersected about half way down Q 95-3 at 108 m and the hole remained in skarn to 211 m at which point the hole was stopped due to severe caving in the upper part of the hole and lost circulation. The hole was considered a technical success in that it intersected 7 m of typical epithermal silica breccia (Unit Bs on Fig. 3) and penetrated the L.947 fault.

The so-called Central Gully Trend or fault, appears to represent the latest major faulting in the property. This structure is believed to be responsible for introduction of gold into the system. The intersection of the Central Gully Trend with the L 947 Fault appears to have created a major centre of fracturing, silicification, brecciation and potential gold mineralization. However, several other areas with potential for gold mineralization occur elsewhere along the Central Gully Trend, some situated well to the north of the Gnome. It has been noted that DDH 72455, which tested the Central Gully Trend, intersected some of the strongest gold mineralization found to data on the Gnome.

Granitic rock outcrop along the main road in the NW quadrant of Gnome. Outcrops of granodiorite also occur in the vicinity of the NW corner of Lot 947. Drill holes in which intrusive rock was intersected are as follows: a total of about 25 m of granitic rock occur in the interval 46.18 to 213.61 in DDH 72454, a total of 9.38 m of granodiorite and diorite occurs in DDH 72499 and minor granodiorite in DDH Q 95-1 from 166.64 to 174.21m. Granodiorite also occurs from 45.1 to 72.0 in DDHQ95-3.

The silica breccia exposed on the Gnome and occurring as abundant float boulder in the hill area consist of greatly varying proportions of fine grained brown rock rich in quartz, sericite, chlorite, limonite and biotite (Harris, 1983). Common fragment sizes are 2 to 5cm. Fragments range from angular to sub-rounded. Fragments are often crackle brecciated with fractures filled with silica. The fragments are typically matrix supported, usually with white silica that is often comb-textured and vuggy. The breccia is freqenrly cut by banded chalcedonic veins. Accordingly, several stages of silicification, brecciation and fracturing are indicated. Rounding of some fragments suggest milling took place such as one would expect to be taking place in a breccia pipe.

ALTERATION AND MINERALIZATION

Some indications of the nature of alteration and structures associated with gold on this property can be obtained by considering the occurrence of gold >300 ppb. There are four diamond drill hole in which this level of gold occur and they are: DDH 72455, 72454, Q 95-1 and NG 86-2. The best hole among these is DDH 72455 which was drilled in the SE quadrant of the property. This hole yielded the following highest analyses (length): 4650 ppb (0.55m), 239O ppb (0.85m), 1025 ppb (0.27m), 745 ppb (1..53m) and 630 ppb (1.71m) The host rocks are variously lapilli tuff (4 out of 5) and gritty tuff (1 out of 5). The associated veining are calcite, pyrite, usually quartz and occasionally chlorite. Pyrite levels of these intersections are 1, 2, 8, 2 and 35 %. The highest gold analyses are associated with the highest pyrite which occurs as heavy disseminations and conformable streak along foliation. For these intersections, in 4 out of 5 cases, including the three highest, intense clay, chlorite and sericite alteration were reported.

DDH 72454 yielded the following highest analyses: 1620 ppb (0.25m), 890 ppb (0.75m), 310 ppb (0.74 m). The host rock is actinolite-diopside-garnet tactite in all cases. The small scale structure involved is veining describes variously: for 1620 ppb: intense quartz vein stockwork , for 890 ppb: 55 calcite veinlets to 3mm and 3 quartz veins 1 to 6 cm thick or about 15% veining, and for 310 ppb: 27 calcite quartz veinlets up to 1 cm or about 2 % veining. The pyrite contents were: for 1620 ppb-2%, for 890ppb-1% and for 310-1%. Alteration is described as follows: for 1620 ppb-no to weak chlorite, for 890-moderate sericite and chlorite and for 310 ppb-no to weak chlorite.

DDH Q 95-1 yielded the following gold analyses over 300 ppb Au: 660 (1.02 m), 515 ppb (0.38m) and 470ppb (1.13m). The host rock in the case of the two highest values were augite porphyry with no indication of skarnification, in the third highest sample the host rock is strongly foliated augite porphyry. The pyrite content for the two highest samples is described as 3% -as fracture fillings-2% and as disseminations-1% and 5.5 % total fracture filling and disseminated for the 470 ppm sample . Alteration in the in the case of the three highest gold samples is moderate patchy pervasive epidote, moderate calcite fracture filling and moderate disseminated chlorite only in the case of the two highest analyses.

In the case of DDH GN 86-1, two samples of >-300 ppb Au were obtained namely 380 ppb (1m) and 300 ppb (1m). The highest sample occurs in intermediate crystal lapilli tuff that has been brecciated, but calc-silicate veins are common, and the rock contains frequent siliceous veins. Alteration is in the form of clay, chlorite and silicification. Pyrite and minor pyrrhotite occur in veins typically less than 1%. The 300 ppb sample occurs in chalcedonic breccia-Unit Bs on the attached Fig. 3. The pyrite content is <1%. Alteration is sericite and silicification.

PREVIOUS GEOCHEMICAL SURVEY ON THE GNOME

Chevron conducted systematic grid based soil sampling in the NW part of the Gnome in order to evaluate the gold potential of the Cominco IP anomaly (Fig. 3).. A few soil lines were run eastward across the 400 m wide NS running gold trend that includes the so called Central Gully Trend. A few reconnaissance samples were obtained from the hill area of the SE quadrant of the Gnome. Inco concentrated its geochemical efforts in a N-S strip about 1km wide as measured from the east boundary of Gnome (A.R. 18492). The strongest gold values in the soil survey of Inco cluster in the area tested by DDH 72455 and extending northward approximately as far as the main road. This is a multi-element anomaly for Au, Ag, and Mo and it trends generally along the baseline while extending variable distances to the east and west .The Inco anomaly covers the NW portion of the hill and the more immediate adjacent areas to the west.

The owner's own surveys carried out in 1984 are the only property-wide geochemical data bases. These includes Enzyme Leach and biogeochemical surveys (Bruaset, Feb. 1995). The biogeochemical survey was based on Douglas fir outer bark. The Enzyme Leach survey indicates a multi-element central low on the west side of the hill, and this anomaly is currently regarded as the principal drill target in the SE Gnome. The bark survey indicated a particularly striking multi-element anomaly located astride the intersection of the Central Gully Trend with the L 947 Fault (Fig. 3).

Silt sample no. 1016 of the regional geochemical survey of 1979 (RGS- 4- 1979) is anomalous in molybdenum at 4 ppm. A water sample at this site is also anomalous in fluorine. The molybdenum analyses was carried out at Chemex using A.A.. Sample 1016 is the highest Mo value in the regional survey within a 16 km radius. Out of a total of 42 samples that fall within that radius, sample no. 1016 is the only sample with molybdenum >1 ppm. Within the same area, the highest fluorine in waters by specific ion electrode (ppb) is sample 1016 with 260 ppb. Mo is a common component of the silica breccias where concentrations range up to of a few tens ppm commonly and maximum 130 ppm (AR 15120). In the area surrounding the silica breccias Mo values are frequently in the hundreds with a maximum of 2000 ppm (A.R15120). .Mo is also anomalous in skarn such as in DDH Q 95-2 where values are commonly a few tens and sometimes a few hundreds, occasionally a few thousands (A.R.23971). Fluorite has also been found in the silica breccia in the northern part of the Gnome.

ROCK SAMPLING

A total of 18 rock samples were collected during this survey. Sample locations are shown on Fig. 5. Due to the dearth of outcrop on the hill, all but three samples fall in the area surrounding the hill. Rock samples were analyzed by Eco-Tech Laboratories, Kamloops for gold geochem. by F.A. at the 5 ppb detection limit. 30 g sub-samples were used. Samples were also analyzed for 28 elements by ICP (Fig. 5). Au, Cu and Mo are the principal commodity elements in the Gnome and these are also local patfinders for Au together with As, Sb, and Bi.

The thresholds for the elements considered are listed on Fig. 5. In setting thresholds, reference were made to the handy Table 2-1 in Levinson ,1980.

The threshold for gold is set at 20 ppb by inspection of the data. A total of 10 anomalous samples for gold are indicated. The strongest anomaly is 180 ppb taken from schist near the original entrance to the old adit on Central Creek. This sample has also the highest Ag

Ag at 1.2 ppm. Another anomaly occurs at the base of the hill on the east side. Here, the two samples returned 20 and 70 ppb Au. They are also anomalous in Mo-up to 12 ppm- and in Cu with up to 327 ppm. A cluster of anomalous Au samples occur on the north side of the hill and these have values up to 35 ppb. One sample gave 162 ppm Mo, which is the highest in the data. The outcrop contains abundant quartz veins and is believed to be an extension of the silica alteration zone tested in DDH NG 86-1. The southern limit to this alteration is unknown and the distance to the hill is about 100 m.

CONCLUSIONS

1. The mapping made possible by the new, or improved, exposures attributable to the logging activity of 1994-95 has enhanced the geological control in the SE portion of the Gnome. However, outcrop is too scarce in the hill area to permit a definitive geological assessment the hill.

2.An additional point on the southern extension of the silica alteration zone tested in Noranda DDH GN 86-1 is indicated at station GN 98-76. This extension could reach the northern portion of the hill.

3. A total of three anomalous areas for gold and other elements are indicated around the margins of the hill and two on the hill itself. Gold anomalies in rock in this program are usually supported by anomalous levels of one or more of elements such as Cu, Ag, and Mo.

4. The abundance, size and distribution of silica breccia float boulders are suggestive of a possible source of some of the material along the western margin of the hill. Glaciation is obviously the mode of transportation for these large boulders but the amount of movement is unknown. This is also an area of anomalous gold in conventional soil sampling by Inco. The position of a central low based on selective extraction Enzyme Leach surveying corroborates this anomaly as one of ongoing interest. The fact that the strongest gold mineralization in a drill hole was encountered in the western part of the hill in DDH 72455 further confirms this area to be of ongoing interest for gold.

5. The present survey places a limit on what can be achieved through further ground work of a geological and geochemical nature without first creating new exposures by excavator trenching. Given that the land is private, and used for grazing, and the owners wish to limit disturbance, trenching with a large excavator would probably be acceptable if done during the late fall or winter, provided the disturbed areas are re-seeded early in the spring.

Report by:

Ragnar U. Bruaset B Sc

Geologist

REFERENCE

Bondar, R. J. 1984. Gnome Fluid Inclusion Report

Bruaset, R.U, March 1984. Assessment Report # 12021. Soil and Rock Geochemistry and Ground Magnetics on Gnome Claim

Bruaset, R.U. Feb. 1995. Report on the 1994 Enzyme Leach and Biogeochemical Surveys of the Gnome Property

Bruaset, R.U. June 1995. Assessment Report on the Gnome Drilling A.R. 23971

Clark, J. Robert Dec.3 1995 Letter report on Gnome Enzyme Leach geochem.

Cockfield, W.E. 1935. Lode Gold Deposits in the Fairview Camp, Camp McKinney and Vidette Lake, and the Divident-Lakeview Property near Osoyoos, B. C., GSC Memoir 179

Dawson, J. M. 1973. Geochemical Report on the Vidette Lake Property A.R. 4257

Greig, Charles 1988. 18-page petrographic report dealing with metamorphic rocks etc from Tip-Top Property. Report is found in: Geological and Geochemical Assessment report on Tip-Top Property by R. U. Bruaset dated Jan. 1989

Greig, Charles 1998 Nine page pertographic report dealing with Gnome and referring to the work in Greig, 1988.

Harris J.F. 1983. Unpublished Petrographic Report on Gnome

Morin, J. Feb. 1989. Geological, Geochemical and Drilling Drilling Report on Gnome A.R. 18492

O'Brient, J. D. 1984. Preliminary Fluid Inclusion Study of Gnome (Unpublished RPT)

Scott, A. R., 1981. Geophysical Report on I.P. and Magnetic Survey on Gala A.R. 9223

Wilson, R., 1986. Report on Drilling on the Gnome Claim Assessment Report 15120

STATEMENT OF QUALIFICATIONS

I certify that:

1. I am a 1967 graduate of the University of British Columbia with a BSc in Geology. I have practiced my profession as an exploration geologist since 1967.

2. I have carried out geological and geochemical surveys in the area of the current Gnome Property on several occasions starting about 1976. I logged diamond drill core from the Gnome in 1995.

3 I carried out the 1998 mapping and sampling program on the Gnome..

4. I am the author of this report.

6. I am the owner of the Gnome Property.

Ragnar U. Bruaset BSc
Geologist
Aug. 1999

COST STATEMENT

FIELD WORK	12 days @ $ 350	$4200.00
TRANSPORTATION	Rental, Gas, mileage	$940.47
DOMICILE	Food and lodging	$1020.41
PETROGRAPHIC WORK	Thin sections and report	$992.21
ANALYSES	Freight and analytic cost	$385.27
PREPARE MAPS	6 days @ $350	$2100.00
REPRODUCTIONS, DRAFTING.	Mylar, reductions, printing, binding	$330.00
REPORTING	6days @ $350	$2100.00

TOTAL		$ 12068.36

Eco-Tech LABORATORIES LTD.

ASSAYING
GEOCHEMISTRY
ANALYTICAL CHEMISTRY
ENVIRONMENTAL TESTING

10041 E. Trans Canada Hwy., R.R. #2. Kamloops, B.C. V2C 6T4
Phone (250) 573-5700 Fax (250) 573-4557
email: ecotech@mail.wkpowerlink.com

Analytical Procedure Assessment Report

MULTI ELEMENT ICP ANALYSIS

Samples are catalogued and dried. Soil samples are screened to obtain a -80 mesh sample. Samples unable to produce adequate -80 mesh material are screened at a coarser fraction. These samples are flagged with the relevant mesh. Rock samples are 2 stage crushed to minus 10 mesh and pulverized on a ring mill pulverizer to minus 140 mesh, rolled and homogenized.

A 0.5 gram sample is digested with aqua regia which contains beryllium which acts as an internal standard. The sample is analyzed on a Jarrell Ash ICP unit.

Results are collated by computer and are printed along with accompanying quality control data (repeats and standards). Results are printed on a laser printer and are faxed and/or mailed to the client.

K:Methods/methicp

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Phone (250) 573-5700 Fax (250) 573-4557
email: ecotech@mail.wkpowerlink.com

Analytical Procedure Assessment Report

GEOCHEMICAL GOLD ANALYSIS

Samples are catalogued and dried. Soils are prepared by sieving through an 80 mesh screen to obtain a minus 80 mesh fraction. Samples unable to produce adequate minus 80 mesh material are screened at a coarser fraction. These samples are flagged with the relevant mesh. Rock samples are 2 stage crushed to minus 10 mesh and a 250 gram subsample is pulverized on a ring mill pulverizer to -140 mesh. The subsample is rolled, homogenized and bagged in a prenumbered bag.

The sample is weighed to 10/15/30 grams and fused along with proper fluxing materials. The bead is digested in aqua regia and analyzed on an atomic absorption instrument. Over-range values for rocks are re-analyzed using gold assay methods.

Appropriate reference materials accompany the samples through the process allowing for quality control assessment. Results are entered and printed along with quality control data (repeats and standards). The data is faxed and/or mailed to the client.

K:Methods/geoauana

27-Jul-99

ECO-TECH LABORATORIES LTD.
10041 East Trans Canada Highway
KAMLOOPS, B.C.
V2C 6T4

Phone: 250-573-5700
Fax : 250-573-4557

ICP CERTIFICATE OF ANALYSIS AK 99-255

RAGNAR U. BRUASET & ASSOCIATES LTD.
5851 HALIFAX STREET
BURNABY, BC
V5B 2P4

ATTENTION: RAGNAR BRUASET

No. of samples received: 18
Sample type: Rock
PROJECT #: None Given
SHIPMENT #: None Given
Samples submitted by: R. Bruaset

Values in ppm unless otherwise reported

Et #.	Tag #	Au(ppb)	Ag	Al %	As	Ba	Bi	Ca %	Cd	Co	Cr	Cu	Fe %	La	Mg %	Mn	Mo	Na %	Ni	P	Pb	Sb	Sn	Sr	Ti %	U	V	W	Y	Zn
1	GN 98-2	15	<0.2	1.92	<5	115	10	>10	<1	29	54	69	4.44	<10	2.14	1813	<1	0.02	13	880	<2	15	<20	292	0.13	<10	155	<10	2	44
2	GN 98-3	70	<0.2	1.11	50	35	<5	0.29	<1	20	125	71	3.85	<10	0.31	173	12	<0.01	31	660	4	<5	<20	7	<0.01	<10	102	<10	<1	27
3	GN 98-4	20	<0.2	4.05	<5	70	<5	8.05	<1	39	257	327	5.87	<10	3.38	1495	4	<0.01	69	830	4	<5	<20	452	<0.01	<10	175	<10	9	31
4	GN 98-62	35	<0.2	2.04	<5	40	5	1.25	<1	41	179	111	5.34	<10	1.92	598	1	0.09	47	880	<2	<5	<20	33	0.11	<10	116	<10	<1	28
5	GN 98-~~75~~ 76	15	<0.2	2.04	<5	55	5	0.14	<1	7	90	19	3.61	<10	1.37	336	162	<0.01	8	890	6	<5	<20	4	<0.01	<10	91	<10	<1	28
6	GN 98-108	20	<0.2	2.02	<5	280	<5	1.74	<1	27	229	190	2.81	<10	2.27	457	<1	0.02	45	2040	4	10	<20	90	0.17	<10	81	<10	15	30
7	GN 98-109	35	<0.2	1.44	<5	280	<5	1.33	<1	22	171	178	2.21	<10	1.76	385	<1	0.02	36	2090	4	10	<20	134	0.13	<10	59	<10	15	24
8	GN 98-126	25	<0.2	3.10	<5	60	10	2.25	1	33	99	134	5.49	<10	3.16	1270	<1	0.03	24	1130	10	15	<20	87	0.23	<10	147	<10	11	52
9	GN 98-169	10	<0.2	0.69	50	80	<5	0.41	<1	25	41	151	4.08	<10	0.11	1214	5	<0.01	28	1050	4	<5	<20	23	<0.01	<10	83	<10	7	73
10	GN 98-177	15	<0.2	0.72	<5	475	<5	>10	<1	14	33	86	4.39	<10	1.85	1581	3	0.02	7	690	<2	15	<20	507	<0.01	<10	97	<10	20	49
11	GN 98-194	180	1.2	2.16	<5	35	<5	>10	<1	41	175	145	6.60	<10	2.47	1494	4	0.02	44	820	4	<5	<20	163	<0.01	<10	106	<10	<1	50
12	GN 98-232	30	0.2	1.70	<5	60	<5	6.63	<1	37	104	201	6.22	<10	4.13	1801	5	0.03	37	650	8	15	<20	272	<0.01	<10	70	<10	1	105
13	GN 98-238	20	<0.2	2.48	<5	50	<5	2.41	<1	33	182	154	3.92	<10	2.70	707	<1	0.02	45	870	6	5	<20	54	0.18	<10	110	<10	14	28
14	GN 98-240	15	<0.2	2.89	15	135	<5	6.93	<1	37	232	156	6.00	<10	4.16	1148	4	0.01	60	820	6	15	<20	188	<0.01	<10	137	<10	<1	59
15	GN 98-350	10	<0.2	2.12	<5	145	<5	8.34	<1	34	180	164	4.41	<10	1.78	1412	3	0.02	34	1150	14	10	<20	231	0.01	<10	175	<10	9	87
16	GN 98-351	25	<0.2	2.73	<5	190	5	8.80	1	32	124	159	6.18	<10	2.74	1711	8	0.01	34	1170	12	5	<20	252	<0.01	<10	155	<10	9	181
17	GN 98-352	10	<0.2	3.37	<5	180	<5	5.76	<1	32	170	179	6.71	<10	3.27	1427	4	0.02	40	1420	6	5	<20	162	0.02	<10	214	<10	<1	67
18	GN 98-353	10	<0.2	2.67	<5	95	<5	6.26	<1	48	122	168	6.21	<10	1.94	1048	6	0.01	36	1440	12	<5	<20	130	<0.01	<10	165	<10	6	77

QC DATA:

Et #.	Tag #	Au(ppb)	Ag	Al %	As	Ba	Bi	Ca %	Cd	Co	Cr	Cu	Fe %	La	Mg %	Mn	Mo	Na %	Ni	P	Pb	Sb	Sn	Sr	Ti %	U	V	W	Y	Zn
Resplit:																														
1	GN 98-2	15	<0.2	1.89	<5	130	<5	>10	<1	29	53	70	4.36	<10	2.11	1799	<1	0.02	10	900	<2	10	<20	287	0.13	<10	152	<10	3	43
Repeat:																														
1	GN 98-2	15	<0.2	1.89	<5	115	15	>10	<1	28	55	67	4.41	<10	2.12	1776	<1	0.02	11	960	<2	10	<20	279	0.14	<10	152	<10	4	43
10	GN 98-177	15	<0.2	0.77	<5	470	<5	>10	<1	14	34	86	4.45	<10	1.87	1592	3	0.02	8	670	<2	5	<20	517	<0.01	<10	99	<10	18	49
Standard:																														
GEO'99		135	1.0	1.77	65	160	<5	1.76	<1	19	62	92	3.71	<10	0.94	705	<1	0.02	24	660	18	5	<20	62	0.10	<10	76	<10	9	67

df/265
XLS/99

ECO-TECH LABORATORIES LTD.
Frank J. Pezzotti, A.Sc.T.
B.C. Certified Assayer

APPENDIX 1

ECO-TECH LABS. CERTIFICATES # AK 99-255

ANALYTICAL PROCEDURES

APPENDIX 2

PETROGRAPHIC REPORT BY CHARLES GREIG

GNOME PROPERTY

(QN series of thin sections: R98-2078 to R98-2084, from DDH's QN95-1, 2 and 7-2455; cut perpendicular to rock fabric)

Introduction

The Gnome property is a gold and Cu-Mo property located in the Deadman River area, approximately 100 km northwest of Kamloops, B.C., and about 9 km west of the Tip Top gold property, from which the author examined thin sections for the same owner/operators in 1988. According to the property owners, Upper Triassic Nicola Group volcanic and clastic rocks on the Gnome property host a strong foliation across a zone of about two kilometres. This zone of foliated rocks is apparently similar (in orientation, protolith, metamorphic grade, and intensity of deformation) to that found on the Tip Top property, and the suggestion was that the structural fabric might play an important role in localizing gold mineralization. If it did, a further question was how the structure might relate to that on the Tip Top property?

Petrographic summary

The sections examined consist of very fine grained mafic schists and local calc-silicate that commonly contain biotite, actinolitic amphibole, and calcite. They were probably derived from mafic to intermediate volcanic and volcaniclastic protoliths. The metamorphic mineral assemblage, which is roughly of middle greenschist facies, is syn-(?) to late- to post-kinematic (e.g., R98-2084) with respect to deformation that formed the fabric in the rocks, and as a consequence, many of the deformation textures have been annealed through recrystallization. There are, however, many indications that the fabric had its origins in strain. For example, in section R98-2079, local lenticular lithons of very fine grained calcite and acicular amphibole are suggestive of completely replaced and recrystallized plagioclase feldspar porphyroclasts. Within some of the lithons, the distribution of calcite and amphibole mimic what appears to be rotated, broken, and recrystallized porphyroclasts, as well as their well developed pressure shadows.

Observations relating to mineralization and explortation on the Gnome Property

The work to date on the property, in concert with the present petrographic work, pose a number of questions related to exploration. Perhaps most interesting are questions related to the fact that many of the sulphides, and related alteration, are probably pre-kinematic with respect to deformation. Are the anomalous base and precious metals values carried by these sulphides and related to this early mineralizing event? If so, then what exploration model best applies to the property? The most obvious model would be a porphyry model, but if the mineralizing system is a porphyry, and if the mineralizing event was truly pre-kinematic, then one must ask where the "early" intrusive is? It should also have experienced deformation, and any post-kinematic plutons on the property may only be obscuring its location, as well as the true potential of the property. There are also indications of other styles of mineralization on the property, such as skarn and vein types, some of which may be post-kinematic, and so at this stage, given the deformational overprint of at least some mineralization, and the ubiquitous structural fabric, the importance of structural geology to exploration of the Gnome property is obvious, and few exploration possibilities can be completely ruled out. Before one can understand the role the fabric played in localizing Au mineralization, one must understand the more fundamental question of the relative timing of mineralization and deformation.

Review of petrographic work on rocks from the Tip Top property
Thin sections from the Tip Top property were divided into three suites of rocks: 1) foliated amphibolitic and monzodioritic rocks of uppermost greenschist to amphibolite grade; protoliths for the amphibolitic rocks were likely intermediate to mafic volcanic rocks, probably of the Upper Triassic Nicola Group; the rocks of this suite have been ductilely strained; strain occurred either at high temperatures or has largely been annealed by subsequent recrystallization; 2) unfoliated to weakly foliated biotite and hornblende biotite granodiorite; and 3) siliceous breccias (monolithologic, with either rhyolitic or granodioritic fragments) and "late" dykes (diorite and quartz porphyry).

Comparison between rocks from the Tip Top and Gnome properties
Rocks from the Tip Top and Gnome properties have both experienced ductile strain. The metamorphic grade of rocks of similar bulk composition (intermediate to mafic volcanic and(or) volcaniclastic rocks) on the two properties is somewhat different: on the Tip Top property the rocks are in upper greenschist to lower amphibolite facies, and on the Gnome the rocks are in the middle greenschist facies. In keeping with this, the Tip Top rocks are also coarser grained, and grain boundaries are straighter and "cleaner" (more equant, they display a much more truely granoblastic metamorphic texture). Amphiboles in the Tip Top rocks also tend more toward hornblende than do the more amphibolitic amphiboles in the rocks from the Gnome property.

Relationship between structures on the Gnome and Tip Top properties
The style of deformation, the orientation of the structural fabric, the metamorphic grade, and the protoliths of the metamorphic rocks on the Gnome and Tip Top properties are similar, and the properties are roughly ten kilometres apart. Are the Gnome and Tip Top structures related? The common features listed above suggest that they are, but without map control, few other conclusions may be drawn. We know little of the absolute age of either structure, and their regional extent is poorly understood. In addition, the sense of shear on the structures is not known, and there is little information on associated linear fabrics, which examination of some of the Gnome drill core suggests are present and well developed. As is the case with the relative timing of mineralization and its implications for exploration, a number of questions and possibilites arise. The ductile strain fabric is not typical of the Nicola Group from a terrane-wide perspective, but is it characteristic of the Nicola Group in this area? Are the Tip Top and Gnome structures of similar age? Are other showings located along trend from them? These questions that can only be answered by further study and fieldwork. At a minimum, some reconnaissance scale work between the two properties is called for, as is more detailed mapping on the properties, together with structural studies of the fabrics (for example, what are the orientations and origins of associated linear fabrics, and what sense of shear do they indicate?).

No. R98-2078 (from DDH-72455 (INCO) at a depth of 18.50 m); Name: Carbonate chlorite schist (intermediate to mafic metavolcanic or volcaniclastic rock).

Hand Specimen: Pale green, fine grained, well foliated rock with abundant disseminated pyrite (commonly as mm- to sub-mm-scale cubes) and calcite(as veins and pervasive(?) alteration); foliation surface shows a well developed linear fabric.

Stained off-cut: no potassium feldspar, abundant plagioclase feldspar and mafic minerals (actinolitic amphibole?), up to 10% quartz(?); at least 3-5% disseminated pyrite.

Thin section:

Fabric: well developed fabric outlined by compositionally-distinct lenticles (lenticular lithons) rich in fine grained chlorite (possibly actinolitic amphibole) and pyrite, or fine grained calcite, or (predominantly) by extremely fine grained intergrowths of chlorite and white mica.

Texture: very fine grained

Mineralogy: abundant carbonate, abundant pale green chlorite; abundant opaques (in two populations: as scattered fine grained grains (about 5%?) and ubiquitous extremely fine grained grains); much of the groundmass is extremely fine grained and of uncertain mineralogy--it consists, at least in part, of chlorite, which may be intergrown with very fine grained white mica (it is either very pale coloured or clear, and it appears to have somewhat higher birefringence than chlorite).

Veinlets: none

No. R98-2079 (hole QN95-1, from 44.00m depth); Name: Calcareous biotite amphibolite schist (deformed and recrystallized intermediate to mafic volcanic(?) rock).

Hand Specimen: Well foliated, streaky, pale green to dark brown-green, fine grained rock; contains feldspar, biotite(?) and(or) chlorite, actinolitic amphibole(?), common carbonate; disseminated and local streaky pyrite, to approximately 1%.

Stained off-cut: Intense fabric in fine grained rock defined by mineralogical variations; abundant plagioclase feldspar, local potassium feldspar.

Thin section:

Fabric: intense foliation; recrystallized; common lenticular lithons defined by compositional (mineralogical) differences.

Texture: very fine grained; local lenticular lithons of calcite and acicular amphibole are suggestive of replaced and recrystallized porphyroclasts, possibly of plagioclase. Within some lithons, the distribution of calcite and amphibole outline replaced, rotated, broken, and recrystallized porphyroclasts and their commonly well developed pressure shadows (*e.g.*, a common situation is that the relict porphyroclast consist of calcite [typically sparry], with pressure shadows consisting of biotite and(or) amphibole). This suggests that the foliation and(or) layering had its origins in deformation.

Mineralogy: abundant calcite (locally as sparry calcite intergrown with amphibole needles), amphibole (pleochroic from colourless to pale green), biotite (pleochroic from colourless to pale green to pale brown, commonly associated in lenticular lithons with somewhat coarser grained, but typically less abundant epidote group minerals), plagioclase (as very fine grained, fine grained, and locally medium grained, variably replaced porphyroclasts [or poikiloblasts?] which commonly contain abundant very fine grained biotite or amphibole grains. The primary nature of the pale coloured layers is uncertain. They are rich in calcite and may be recrystallized replacements of what were once plagioclase-rich layers(?). A less favoured alternative is that they are recrystallized carbonate veins and veinlets, but the fact that they consist of essentially the same mineralogy as other parts of the section (but in different proportions; *i.e.*, calcite, plagioclase with abundant fine grained inclusions of amphibole, calcite, biotite, and epidote group minerals), favours the former possibility.

Veinlets: none.

No. R98-2080 (hole QN95-1, from 57.00m depth); Name: Biotite actinolite schist (metavolcanic or metavolcaniclastic rock of intermediate composition).

Hand Specimen: Well foliated, locally compositionally layered (on a mm-scale), pale to dark green rock containing approximately 2-5% pyrite (mainly as disseminations, but locally concentrated (to approximately 10%) in mm-scale layers. Predominantly fine grained feldspar and mafic (amphibole?) minerals, also chlorite(?). Local carbonate, mainly in veinlets.

Stained off-cut: Predominantly plagioclase feldspar and fine grained mafic minerals; local potassium feldspar in mm-scale compositional layers.

Thin section:

Fabric: intense fabric, strongly recrystallized; somewhat more pronounced layering than section R98-2079, which is mainly defined by the presence of pale coloured mm-scale calcite- and quartz-rich layers.

Texture: very fine to fine grained; the pale coloured calcite- and quartz-rich layers are typically somewhat coarser grained than the remainder of the rock.

Mineralogy: calcite, quartz, epidote, opaques (greater proportion than in R98-2079), local chlorite. Opaques (appear to be two-phase) are most commonly associated with the pale-coloured layers, which appear to be either predominantly calcite or predominantly quartz. Locally they have well developed pressure shadows of quartz and therefore are either pre- or syn-kinematic with respect to the fabric-forming event. Epidote (pleochroic from colourless to very pale apple green) is a common constituent of the pale coloured layers but is not restricted to them--in other layers (local) it is the predominant mineral. Overall, epidote is less abundant than the other main rock forming minerals, but it is commonly somewhat coarser grained.

Most of the rest of the rock other than the quartz and calcite layers and lenticular lithons is extremely fine grained and consists of plagioclase feldspar, biotite, and amphibole, all with a strong preferred orientation which, along with the compositional layering, defines the fabric in the rock. The extremely fine grained minerals surround local somewhat more coarsely grained epidote group minerals..

Veinlets: one monomineralic calcite veinlet and one (recrystallized(?)) quartz-epidote-calcite-(opaque) veinlet.

No. R98-2081 (hole QN95-1, from 124.00m depth); Name: Calc-silicate and amphibolitic schist (deformed and metamorphosed intermediate to mafic pyroxene plagioclase phyric volcanic and(or) volcaniclastic rock with local limey layers).

Hand Specimen: Two to 3 cm thick pale pink bands within typically streaky, pale to dark green host rock. Pink bands are characterized by calcite in the matrix; calcite also occurs as veinlets. Disseminations and clots of pyrite are common in the host to the pink bands, but uncommon in the bands themselves.

Stained off-cut: Local very fine grained potassium feldspar associated with calcite veinlets (as sub-mm-scale haloes).

Thin section:

Fabric: locally (outside of the pale pink calc-silicate bands) the rock shows a well developed fabric; pink calc-silicate bands show little evidence for fabric.

Texture: moderately abundant veins cutting rock with medium grained relict phenocrysts within a very fine grained recrystallized and dirty groundmass

Mineralogy: The section may be viewed as a variably deformed, replaced, and recrystallized pyroxene plagioclase feldspar phyric metavolcanic rock with abundant calcite and calc-silicate veins(?) and replacements. The colour of the layers and zones with a pink cast, the calc-silicates, results principally from the presence of strongly zoned hydrogarnet (it is commonly but not exclusively isotropic). The garnet is commonly associated with opaques and calcite, and locally associated with epidote and feldspar. Formation of calc-silicate presumably reflects metamorphism of a primary limey component. The very dark, dirty areas of the section near to the calc-silicate zones appear to be of similar mineralogy, although they are much finer grained.

Clinopyroxene occurs as variably recrystallized and replaced (by actinolitic amphibole and biotite), locally altered (to chlorite), medium grained phenocrysts. Relict plagioclase feldspar phenocrysts are typically fine to medium grained and lath shaped. The matrix surrounding the relict phenocrysts consists principally of very fine grained intergrowths of plagioclase feldspar, amphibole (actinolite), and biotite--these minerals are locally chloritized. Other parts of the matrix are extremely fine grained and dirty--they appear to consist primarily of epidote group minerals, and plagioclase feldspar.

Veinlets: local veinlets consisting of calcite, quartz, and epidote group minerals.

No. R98-2082 (hole QN95-1, from 127.00m depth); Name: Calcareous biotite schist (possibly a metamorphosed calcareous volcaniclastic rock).

Hand Specimen: Fine grained, well-foliated, streaky, white to dark green rock containing 5-10% disseminated pyrite; the subordinate white layers range in thickness up to 0.5 cm, typically lie sub-parallel to foliation, and are calcite-rich. Local mm-scale calcite veinlets are also present.

Stained off-cut: No potassium feldspar; pyrite most commonly associated with layers and lenticular lithons rich in fine grained mafic minerals (actinolitic amphibole?); leucocratic layers rich in fine grained plagioclase feldspar.

Thin section:

Fabric: intensely developed fabric, now recrystallized, mainly to very fine grained minerals; opaques are fine grained, but typically are the most coarse grained of the constituent minerals--they show well-developed pressure shadows (quartz, lesser calcite, biotite, epidote group minerals), indicating formation prior to the deformation which resulted in the foliation.

Texture: very fine grained to fine grained; recrystallized.

Mineralogy: biotite (pleochroic in pale greens to browns); plagioclase feldspar; calcite, quartz(??), opaques (appears as if there are two phases), epidote group minerals (typically coarser grained than other matrix constituents, but still fine grained), local chlorite (one uncertainty about this section is whether or not the chlorite is retrograde after biotite, or if the biotite is prograde after chlorite), local actinolitic amphibole.

Veinlets: none

No. R98-2083 (hole QN95-1, from 194.00m depth); Name: Calc-silicate schist (deformed and metamorphosed limey volcaniclastic rock).

Hand Specimen: Well foliated, streaky pale to dark green rock with local mm- to cm-scale pale brownish-pink layers and segregations; dark green mm-scale layers appear to contain pyrrhotite or magnetite.

Stained off-cut: Pink layer contains marginal fine grained potassium feldspar; otherwise, rock consists mainly of plagioclase feldspar, mafic minerals, and quartz(?).

Thin section:

Fabric: moderately intense fabric, except in calc-silicate layers.

Texture: very fine grained to fine grained; recrystallized.

Mineralogy: hydrogarnets in pale pink calc-silicate layers, as is the case with section R98-2081. Garnet is associated with calcite, local chlorite and opaques. Finer grained layers contain variable proportions of biotite, calcite, plagioclase feldspar, epidote group minerals, opaques, actinolitic amphibole, potassium feldspar (marginal to calc-silicate layer) and quartz(?),

Veinlets: Several relatively large clearly cross-cutting calcite veinlets containing local biotite and(or) chlorite. Several thinner chlorite veinlets. The calcite veinlet truncates the fabric, but itself appears as if it may be truncated along one discrete chloritic veinlet and(or) shear surface. Calcite within it is commonly fibrous and radiating in habit.

No. R98-2084 (hole QN95-2, from 73.30m depth); Name: Biotite amphibolite schist (deformed and metamorphosed intermediate to mafic volcanic or volcaniclastic rock).

Hand Specimen: Pale green to dark brown-green fine grained rock with local calcite-epidote-chlorite(?)-pyrite-(chalcopyrite(?)) veinlets; possible local pyrrhotite or magnetite.

Stained off-cut: Local sub-mm-scale potassium feldspar veinlets; well developed foliation.

Thin section:

Fabric: moderately well developed fabric

Texture: very fine grained; strongly recrystallized

Mineralogy: the rock appears to be largely made up of variable proportions of fine grained to extremely fine grained amphibole, mica (biotite?), epidote (clinozoisite?), and plagioclase feldspar(?). Differences between the several zones of outwardly different colour in the thin section relate mainly to differences in relative abundance of the aforementioned minerals. The amphibole is pleochroic from pale brown to green to colourless. The mica (biotite?) is pleochroic from very pale brown to colourless, and locally appears to have formed at the expense of plagioclase feldspar porphyroclasts. Clinozoisite is typically less abundant than the other constituents, but is somewhat coarser grained--it is colourless, of high relief, and has moderately high birefringence. Plagioclase feldspar(?) occurs as poikiloblastic(?) groundmass grains.

Veinlets: Two veinlets consist of very fine grained potassium feldspar, calcite, epidote group minerals, local pyrrhotite, and a colourless mineral with moderately high birefringence (2nd or 3rd order) that is probably an epidote group mineral.

APPENDIX 3

DESCRIPTION OF HAND SPECIMENS

APPENDIX 3

DESCRIPTION OF HAND SPECIMENS

GN 98-2

Chlorite-carbonate schist

Strongly foliated, dark green with orangy brown limonite, heavy calcite pervasive, very strong HCl reaction, no calcite veining, non-magnetic, up to 5% pyrite, minor disseminated chalcopyrite, protolith:Nicola volcanics.

GN 98-3

Tuff

Massive fine grained (grain size<0.5mm), strong brown gossan throughout. No sulphide seen, no HCl reaction.

GN 98-4

Chlorite-calcite schist

Strongly foliated, light green, probable protolith: augite porphyry, disseminated pyrite to 2%, strong HCl reaction

GN98-62

Chlorite schist

Strongly foliated, protolith: probably augite porphyry, disseminated pyrite occurs along the foliation, minor chalcopyrite, about 7% pyrite.

GN98-76

Nicola andesite

Non-foliated, chloritized, cut by quartz veinlets with quartz crystals growing at right angle to walls, quartz crystal lined cavities common, epithermal-looking material, reddish brown gossan development.

GN 98-108

Augite porphyry

Augite phenocrysts, strongly chloritized throughout, minor disseminated pyrite, trace chalcopyrite, non-magnetic, slightly brownish oxidation in fractures.

GN 98-109

Augite porphyry

Massive, augite phenocrysts, strongly chloritized, minor epidote alteration, 0.5% pyrite as fracture fillings, minor disseminated chalcopyrite.

GN 98-126

Schist

Non-magnetic, strongly foliated, augite porphyry protolith, heavy disseminated pyrite (5%) and minor chalcopyrite along foliation, pyrite also occur in calcite stringers cutting foliation.

GN 98-169

Schist

Strongly foliated, strongly oxidized (light brown gossan), no sulphides seen.

GN 98-177

Iron rich rock

Intensely oxidized throughout, orangy brown gossan, no sulphides seen.

GN 98-194

Chlorite schist

Strongly foliated, about 0.25% sulphide-mainly pyrite occurring along foliation minor chalcopyrite with the pyrite along foliation, prototith likely a tuff.

GN 98-238

Schist

Strongly foliated , greenish gray, chloritized, strong HCl reaction throughout, minor disseminated pyrite along foliation, no chalcopyrite seen.

GN 98-240

Iron carbonate altered volcanic

Massive iron carbonate alteration, dark brown groundmass, patches of calcite through out the rock, also calcite in fractures, heavy surface caliche, no sulphide seen.

GN 98-350

Augite andesite.

Augite present, massive, greenish gray, strong HCl reaction from fractures and groundmass, heavy surface caliche .

GN 98-351

Augite andesite.

Augite present, massive, greenish gray, extremely friable, strong HCl reaction throughout

GN98-352

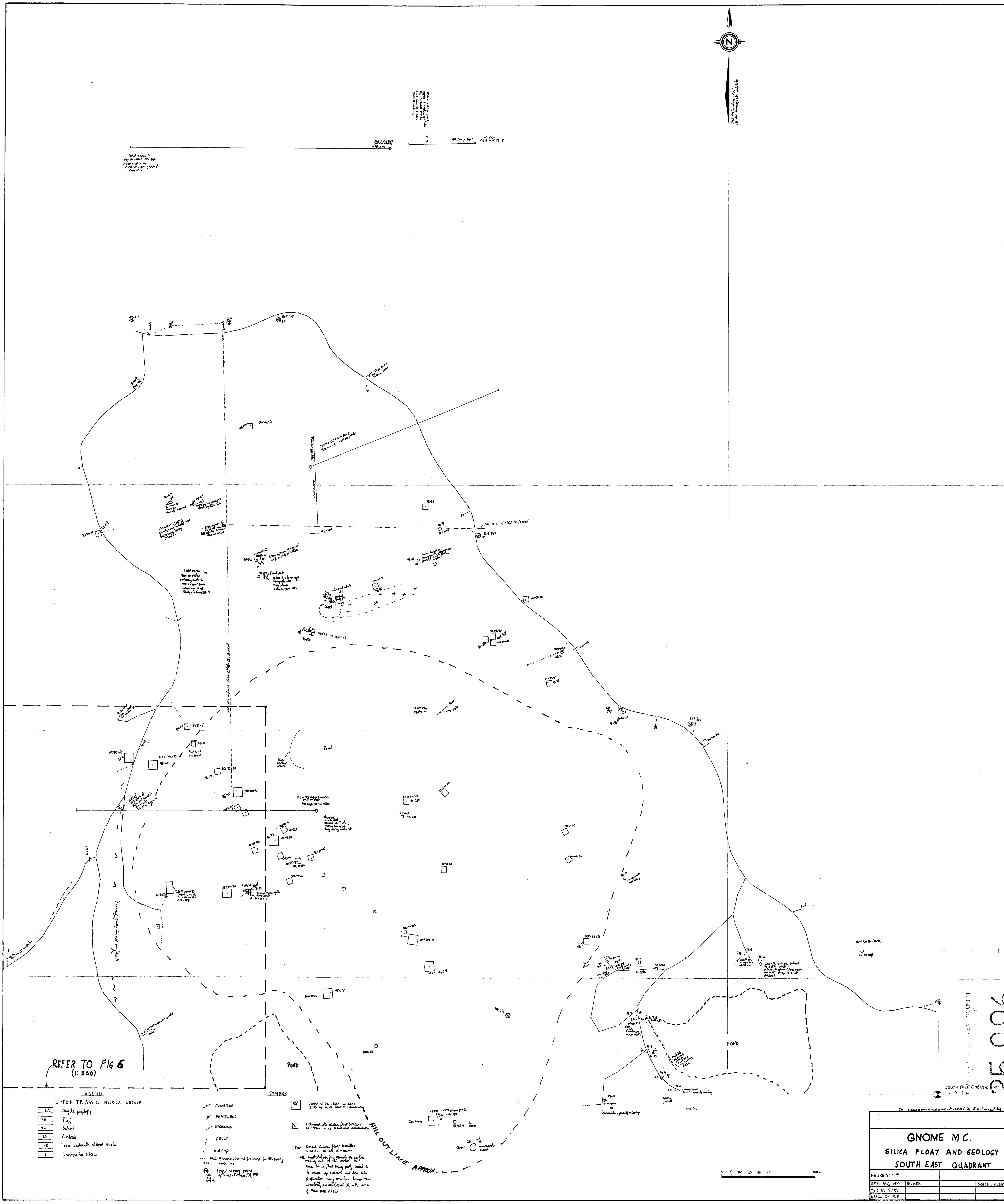
Andesite

Massive, greenish gray, chlorite alteration pervasive, strong HCl reaction along fractures, moderately strong HCl reaction rest of rock, traces disseminated pyrite

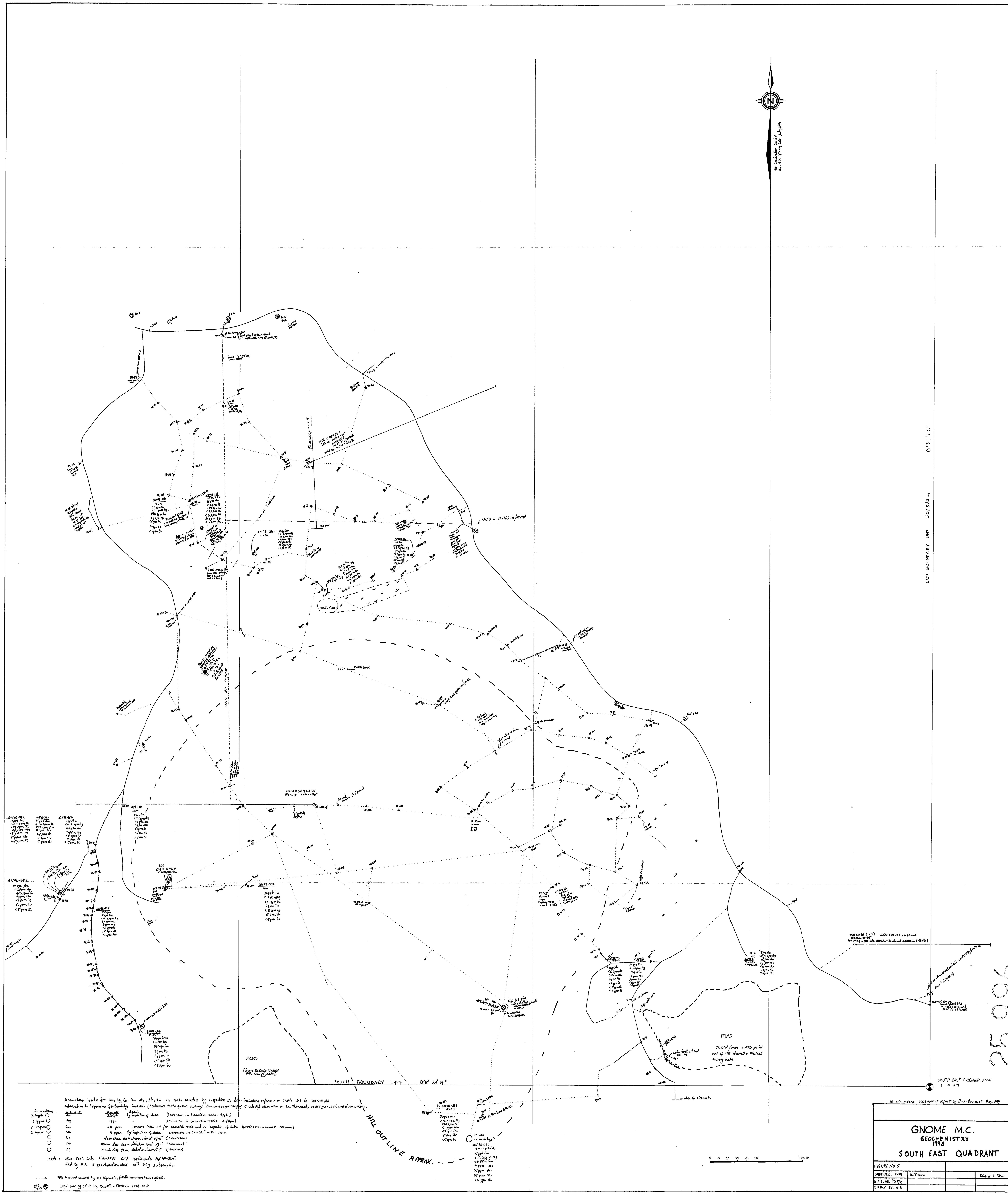
GN 98-333

Augite porphyry

Extremely friable rock, augite phynocrysts, pervasive chloritization, orangy brown gossan, strong HCl reaction throughout, no sulphide seen.



N
POND
Pond
HILL OUTLINE APPROX.
REFER TO FIG. 6
(1: 500)
SOUTH EAST CORNER PIN
L 947
25,996
LEGEND
UPPER TRIASSIC NICOLA GROUP
2A Augite porphyry
2B Tuff
2C Schist
2D Andesite
2E Iron-carbonate altered Nicola
2 Unclassified Nicola
SYMBOLS
FOLIATION
FRACTURES
SHEARING
FAULT
outcrop
misc. ground control traverse for 1998 survey
fence line
Legal survey point by Bartell & Fiedrich 1994, 1998
Large silica float boulder: ≥ 100 cm in at least one dimension
Intermediate silica float boulder 30-99 cm in at least one dimension
Small silica float boulder < 30 cm in all dimensions
Note: smallest dimensions generally the portion sticking out of the ground - most silica breccia float being partly buried. In the course of road work and drill site preparation, many boulders have been completely exposed especially in the area of INCO DDH 72455.
To accompany assessment report by R.U. Bruaset Aug. 1999
GNOME M.C.
SILICA FLOAT AND GEOLOGY
SOUTH EAST QUADRANT
FIGURE No: 4
DATE: AUG. 1999
REVISED:
SCALE: 1:1250
N.T.S. No 92P/2
DRAWN BY: R.B.



GNOME M.C.
GEOCHEMISTRY
1998
SOUTH EAST QUADRANT
FIGURE NO. 5
DATE: AUG. 1999
REVISED:
SCALE 1:1250
N.T.S. NO. 92P/2
DRAWN BY: R.B
To accompany assessment report by R.U. Bruaset Aug. 1999
SOUTH EAST CORNER PIN
L 947
SOUTH BOUNDARY L947 090° 29' 14"
EAST BOUNDARY L947
HILL OUTLINE APPROX.
POND
(from Bartell & Fiedrich 1998 survey data)
POND
Anomalous levels for Au, Ag, Cu, Mo, As, Sb, Bi in rock samples by inspection of data including reference to Table 2-1 in Levinson, A.A.
Introduction to Exploration Geochemistry 2nd Ed. (Levinson's table gives average abundances (or ranges) of selected elements in Earth's crust, rock types, soil and river water).
Anomalous | Element | Threshold | Basis
≥ 20ppb | Au | 20ppb | By inspection of data (Levinson in basaltic rocks: 4ppb.)
≥ 1ppm | Ag | 1ppm | " (Levinson in basaltic rocks: 0.1ppm)
≥ 150ppm | Cu | 150 ppm | Levinson TABLE 2-1 for basaltic rocks and by inspection of data. (Levinson in basalt 100ppm)
≥ 4ppm | Mo | 4 ppm | By inspection of data. Levinson in basaltic rocks: 1ppm
As | Less than detection limit of 5 (Levinson)
Sb | much less than detection limit of 5 (Levinson)
Bi | much less than detection limit of 5 (Levinson)
Data: Eco-Tech Labs Kamloops ICP Certificate AK 99-255.
Gold by F.A. 5 ppb detection limit with 30g subsamples.
1998 Ground control by NCI hip chain, plastic Brunton (back sighted).
Legal survey point by Bartell & Fiedrich 1994, 1998
25996

CENTRAL CREEK
TRAIL
Vertical projection of strongest copper in this hole
Vertical projection of principal fault in DDH 72455
END OF INCO DDH 72455 BASED ON COLLAR ON THIS PLAN AND PLOT OF HOLE ON INCO SECTION 1:1000
Fault inferred. Part of "Central Gully Trend"
Pretalla Central Creek Trend or fault:
Recessive section with sandy textured soil is likely decomposing gouge and intensely fractured rock.
END OF TRAIL
LEGEND
UPPER TRIASSIC
2 Nicola Group unclassified
2A Augite porphyry
2B Tuff
2C Schist
2D Andesite
Iron Carbonate altered Nicola
FAULT Known, inferred
FOLIATION
FRACTURE
SHEARING
outcrop
Legal survey point (Bartell & Fiedrich 1998)
Hip chain & plastic Brunton front & back sighted road centre traverse line incl. misc. ground control lines off-road.
INCO DDH partly shown. Note: all known holes in map-area shown.
GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT
25,996
0 10 20 30 40 50 m
To accompany assessment report by R.U. Bruaset Aug. 1999
GNOME M.C.
GEOLOGY
CENTRAL CREEK
FIGURE NO. 6
Date Aug. 1999
REVISED:
SCALE 1:500
N.T.S. No. 92P/2
DRAWN BY: R.B.