NEWEX SYNDICATE

THIRD QUARTER REPORT

JULY - SEPTEMBER 1981

672472

FIELD

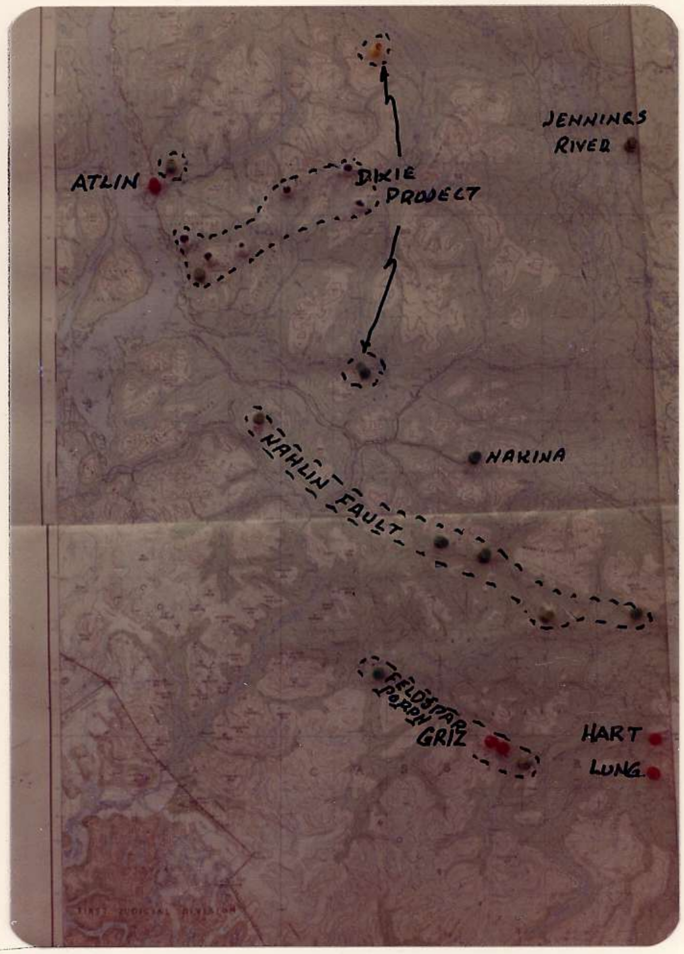

Photo: Newex Syndicate 1981
Location of Exploration Camps

NEWEX SYNDICATE

THIRD QUARTER REPORT

JULY - SEPTEMBER 1981

J.C. STEPHEN EXPLORATIONS LTD.
1458 RUPERT STREET,
NORTH VANCOUVER, B.C.

OCTOBER 1981

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NEWEX SYNDICATE

THIRD QUARTER REPORT

June 30 - Sept. 30, 1981

SUMMARY AND CONCLUSIONS

Field exploration was conducted in the Atlin area between June 1 and September 7 at which time most of the exploration crew had returned to university.

Four groups of claims were staked during the summer. The HART and LUNG claims were staked on gold-silver bearing quartz veins in rhyolite-trachyte formations which form part of the Heart Peaks Formation. The GRIZ claims were staked on silver bearing galena sphalerite mineralization in quartz rich veins within feldspar porphyry units of late Cretaceous or early Tertiary age. These claims lie south and southeast of Atlin. The KEY claims were staked to cover extensive quartz veining in phyllitic sediment northwest of Atlin.

Significant gold silver assays have been obtained from three zones on the HART group and further work is recommended there. On the LUNG and GRIZ groups, low assay results and weak structures indicate that only limited work is justified. Too little is known of the KEY claims to make a definite decision and more sampling is recommended.

Regional exploration was conducted to investigate the following geological settings including those mentioned above:

(1) Heart Peaks rhyolite-trachyte quartz vein system;

(2) Feldspar Porphyry intrusive-extrusive rocks associated with the Sloko volcanics;

(3) Nahlin Fault-serpentine-sedimentary structure;

(4) Cache Creek sediments-Serpentine intrusion areas associated with the Atlin Placer camp. This portion of the program has been termed the Dixie Project;

(5) Jennings River air survey to investigate the area near a pyritic quartz sericite outcrop and nearby copper geochemical anomalies;

(6) Collection of limited data on tungsten tin geochemistry in proximity to the Surprise batholith

Geochemistry, supported by geological mapping and prospecting, was relied on for the most part. Hand trenching and chip sampling was done on mineralized zones on the HART and GRIZ claims.

Continued property and regional exploration is recommended within the same area during 1982.

DESCRIPTION OF PROPERTIES

HART CLAIM GROUP

Property Location and Access

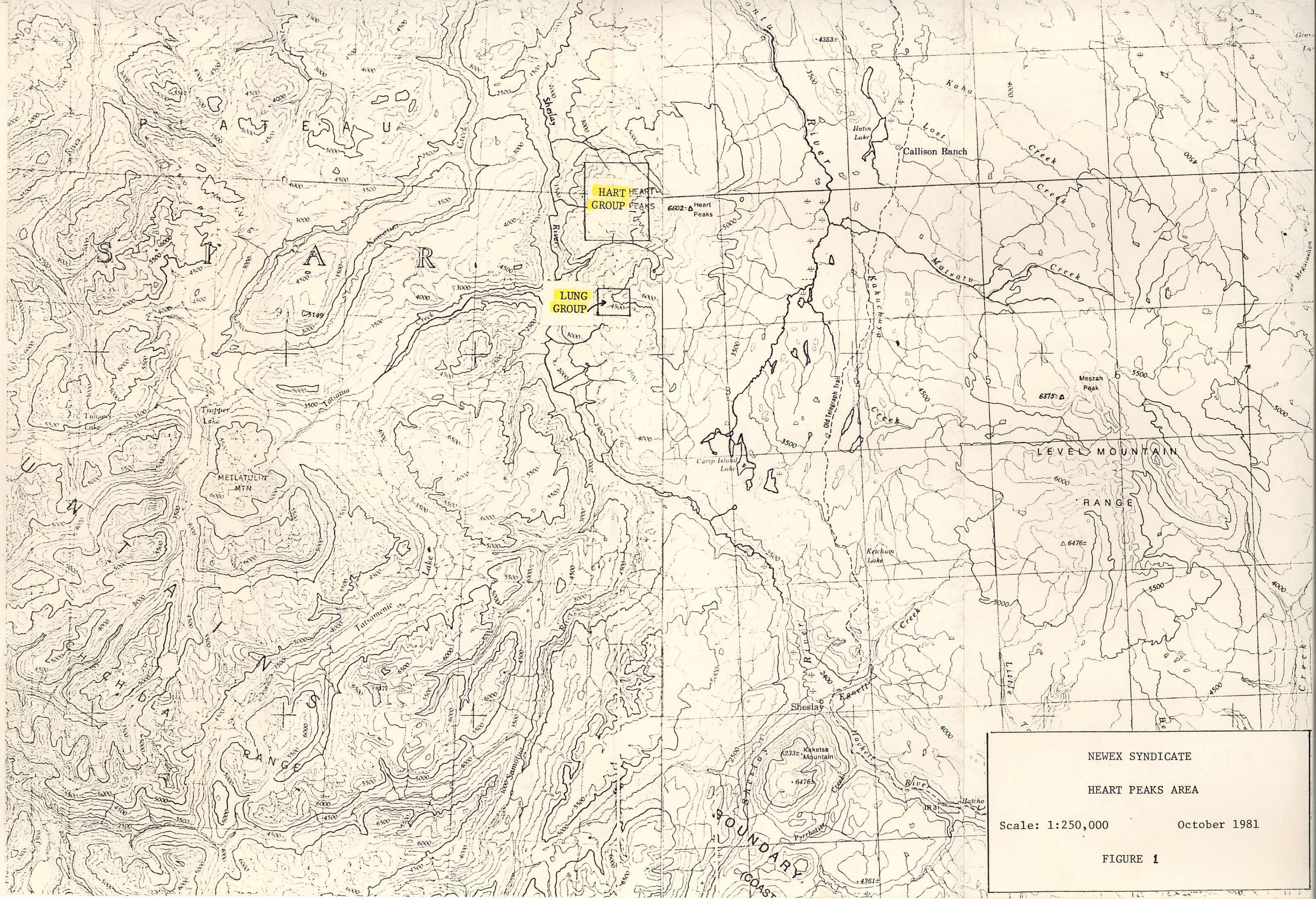
The HART Group consists of 120 units as listed below:

Claim	No. of Units	Date Staked	Date Recorded
HART 1	20	June 6, 1981	June 24, 1981
HART 2	20	June 7, 1981	June 24, 1981
HART 3	20	June 8, 1981	June 24, 1981
HART 4	20	June 9, 1981	June 24, 1981
HART 5	20	June 6, 1981	June 24, 1981
HART 6	20	June 7, 1981	June 24, 1981

The property is located on the west slopes of Heart Peaks at 132^{o} 03'W; 58^{o} 36'N approximately 145 kilometers southeast of Atlin.

Geology

The following description of Heart Peaks Formation and Level Mountain Group is reproduced from Memoir 362. A contoured base map was prepared and received subsequent to field work on the property. A general outline of the basalt and rhyolitic formations is indicated on Maps I and II together with location of mineralized zones.



NEWEX SYNDICATE

HEART PEAKS AREA

Scale: 1:250,000 October 1981

FIGURE 1

Late Tertiary and (?) Pleistocene

Heart Peaks Formation (Map-unit 17)

The brightly coloured group of pyramid-shaped summits on the western flank of Heart Peaks forms a prominent landmark, visible for many miles. The area is underlain by rhyolitic and trachytic lavas, tuffs, and breccias that weather to bright hues of red, yellow, and orange. All of the rocks have a closely spaced random fracture system, with the result that most slopes are covered with a thick mantle of felsenmeer and talus. Several active rock glaciers have also developed on the slopes and pushed their way well down into the fringing forest.

The fresh lavas have a light grey to purplish grey aphanitic matrix surrounding clear, light grey, tabular phenocrysts of feldspar, occasional books of biotite, and small rounded blebs of quartz. Quartz stringers and quartz-lined vugs are locally abundant. In a few outcrops crude columnar jointing can be recognized but the columns are small and randomly oriented. Under the microscope the flow rocks are seen to have a trachytic texture in which the groundmass, consisting mainly of glass and ores, surrounds a felted mass of plagioclase microlites. Phenocrysts, which comprise up to 20 per cent of the roek, are complexly zoned andesine (An_{35-50}).

The pyroclastic rocks are porous and highly oxidized, comprising fine, scoriaceous ejecta, broken feldspar crystals, and angular blocks of porphyritic lava. Several beds contain accidental fragments from the underlying Takwahoni shale and one bed of which crystal-lithic tuff contains a few carbonized plant stems. In thin section the tuffs are seen to contain a high proportion of glass and several beds near the base of the pile are composed entirely of vitreous, welded shards.

The Heart Peaks Formation appears to be overlain by flat-lying basalt; the base of the sequence was not observed in the vicinity of Heart Peaks. It is possible therefore that the earliest basalt flows may predate the rhyolite-trachyte. This appears to be the case 20 miles farther south, where a similar group of acid tuffs has been studied in detail by Panteleyev (1964). There the tuffs are divisible into two units separated by a 250-foot section of columnar basalt. This basalt is similar to the main basalt above the upper tuff unit and was believed by Panteleyev to represent a series of early flows rather than sills. If this is so, then eruption of the acid tuffs must have been more or less contemporaneous with eruption of the earliest Level Mountain basalt.

A potassium-argon age of 15 m.y., or late Miocene, has been obtained on biotite collected by Mr. C. S. Ney from Panteleyev's upper tuff unit.

Level Mountain Group (Map-unit 18)

The two areas of flat-lying basalt along the eastern boundary of the map-area are small outliers on the western edge of a vast lava field that extends almost 40 miles to the east and underlies over 1,500 square miles. The western limit of the basalt is marked by a steep escarpment that exposes many tiers of reddish brown-weathering columnar flows separated by thin layers of brick-red scoriaceous flow breccia. In Tulsequah area at least 25 flows with an aggregate thickness of over 1,500 feet are exposed. The base of the pile rests on an old erosion surface, exposed in section at several places along the base of the escarpment. Mesozoic sediments below the oldest flow are fractured, deeply weathered and capped by a thin regolith of rounded pebbles in a grey, earthy matrix. A thick layer of ash and cinders separates the regolith from the base of the first flow, forming an effective thermal insulator and preventing any apparent baking or alteration of the underlying soil layer. At several places the basalt has filled old stream channels and near the southern end of the Heart Peaks escarpment the early flows must have entered a large body of water. There the normal columnar jointing gives way to well-developed pillow structure in the lower few hundred feet of the pile.

Most of the flows are dark grey to black, fine-grained, equigranular basalt. Open vesicles are developed in the upper part of many flows and some contain amygdules of aragonite or chalcedony. Several of the thicker flows are porphyritic, containing 10 to 15 per cent clear, honey-yellow labradorite laths up to ¼ inch across. Microscopically all the non-vesicular flows are porphyritic or micro-porphyritic olivine basalt, comprising about 50 per cent labradorite (An_{50-60}), 30 per cent augite, and 10 per cent olivine. The remaining 10 per cent is made up of basaltic glass, ores, and a trace of apatite.

As outlined in the previous section, the earliest basalt flows may be as old as late Miocene. The youngest flows exposed in the map-area are older than the last stage of Pleistocene glaciation, but a six-foot layer of unconsolidated material resembling till was observed below the uppermost flows east of Heart Peaks. If this material is in fact till, then eruption of the basalt must have continued into the Pleistocene Period.

We have the impression that basalt flows occur interbedded with rhyolitic horizons in the eastern part of HART Group. The rhyolitic formation consist of both extrusive tuffaceous and flow banded material as well as possible intrusive rhyolitic breccia with fragments of underlying Takwahoni sediments which might represent explosive breccia in vent structures. Quartz veining, in the Mogul zone particularly, occurs within these breccia zones. Quartz veining in the Top Zone, however, probably cuts extrusive material.

The surface is extensively covered by talus and felsenmeer and the formations are intensely fractured probably both by tectonic activity and extensive frost action. Many slopes are extremely steep.

Fragments of nearly pumice like and ribbon quartz occur at the toe of the main rock glacier. The largest of these indicates it may have come from a vein up to 30 cm in width.

Mineralization

Pyrite is the most abundant sulphide present. It occurs in quantities up to 5% most commonly within the rhyolitic breccia both as dissimations within grey rhyolitic fragments and as a part of the matrix. Fine pyrite occurs in pumice like cavities in quartz rich float which may have come from veins and as fine loose "dusting" along partings between quartz bands in fragments of ribboned quartz.

The pyrite occurring as a part of the matrix in rhyolitic breccia does not appear to carry gold or silver values since the best mineralized specimens do not necessarily carry any values.

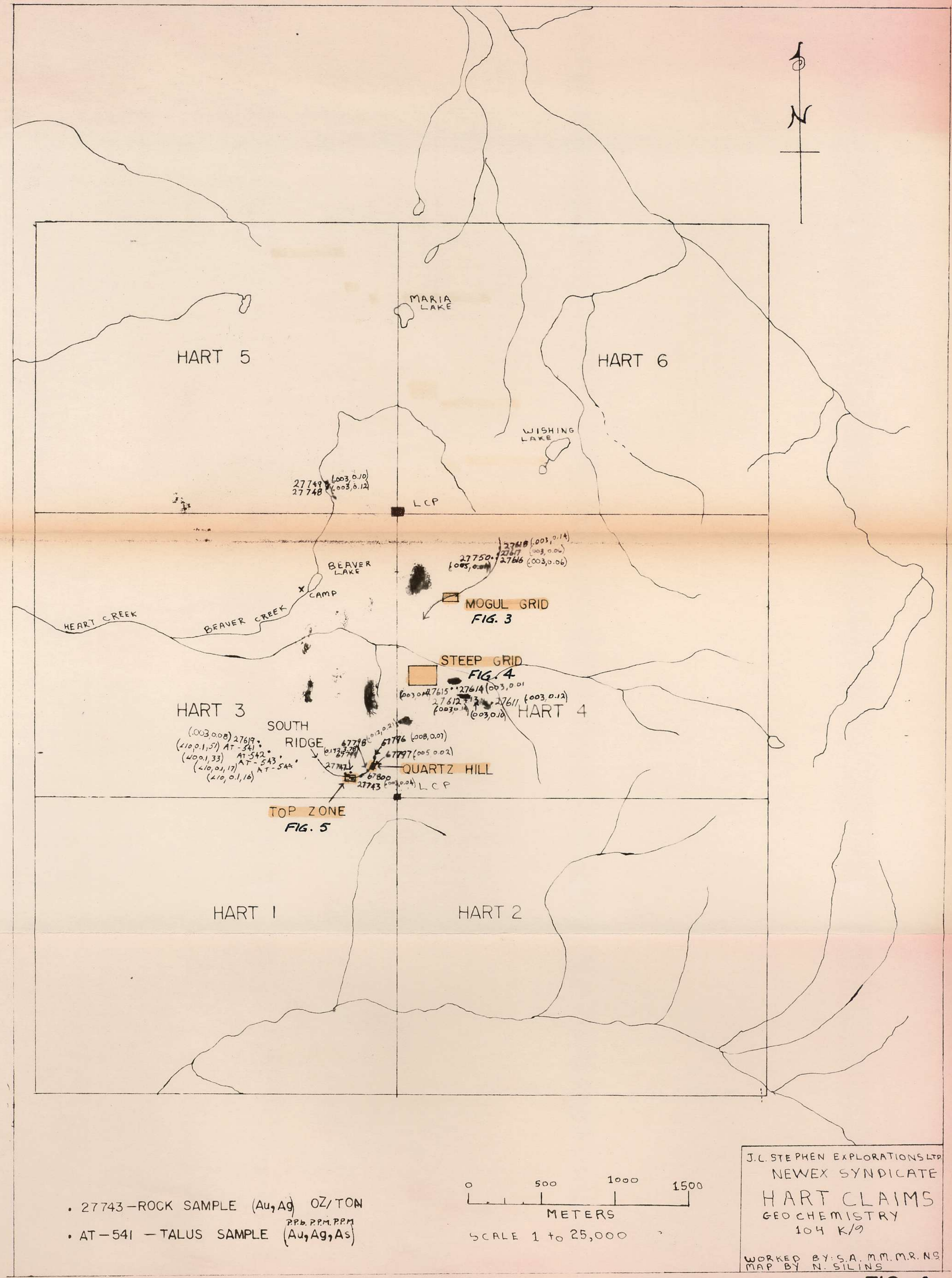

N
MARIA LAKE
HART 5
HART 6
WISHING LAKE
27749 (.003,0.10)
27748 (.003,0.12)
LCP
27750 (.005,0.0?)
27616 (.003,0.06)
BEAVER LAKE
CAMP
HEART CREEK
BEAVER CREEK
MOGUL GRID
FIG. 3
STEEP GRID
FIG. 4
27615
27614
27612
27611 (.003,0.12)
(.003,0.10)
HART 3
HART 4
SOUTH RIDGE
(.003,0.08) 27619
(<10,0.1,51) AT-541
(<10,0.1,33) AT-542
(<10,0.1,17) AT-543
(<10,0.1,16) AT-544
67798
67796 (.008,0.07)
67797 (.005 0.02)
27742
67800
27743
QUARTZ HILL
L C P
TOP ZONE
FIG. 5
HART 1
HART 2
• 27743 – ROCK SAMPLE (Au, Ag) OZ/TON
• AT – 541 – TALUS SAMPLE (Au, Ag, As) P.P.b. P.P.M. P.P.M
0 500 1000 1500
METERS
SCALE 1 to 25,000
J.L. STEPHEN EXPLORATIONS LTD
NEWEX SYNDICATE
HART CLAIMS
GEOCHEMISTRY
104 K/9
WORKED BY: S.A. M.M. M.R. NS
MAP BY N. SILINS

FIG. 2

Low silver values, 3.66 and 4.16 oz per ton, were obtained from "pumice" quartz and ribboned quartz at the foot of the main rock glacier. These samples ran only .005 and 0.020 oz per ton gold.

Gold values range from 0.003 to 0.288 oz per ton in samples taken on quartz vein zones in the Mogul Zone, Figure 3, where silver values range from 0.01 to 3.49 oz per ton.

Chip sampling on the Steep Zone returned 0.003 to 0.146 oz per ton gold and 0.01 to 2.45 oz per ton silver, Figure 4.

Initial sampling on the South Peak Zone, on exposed quartz veins, and run geochemically failed to return any values of economic significance.

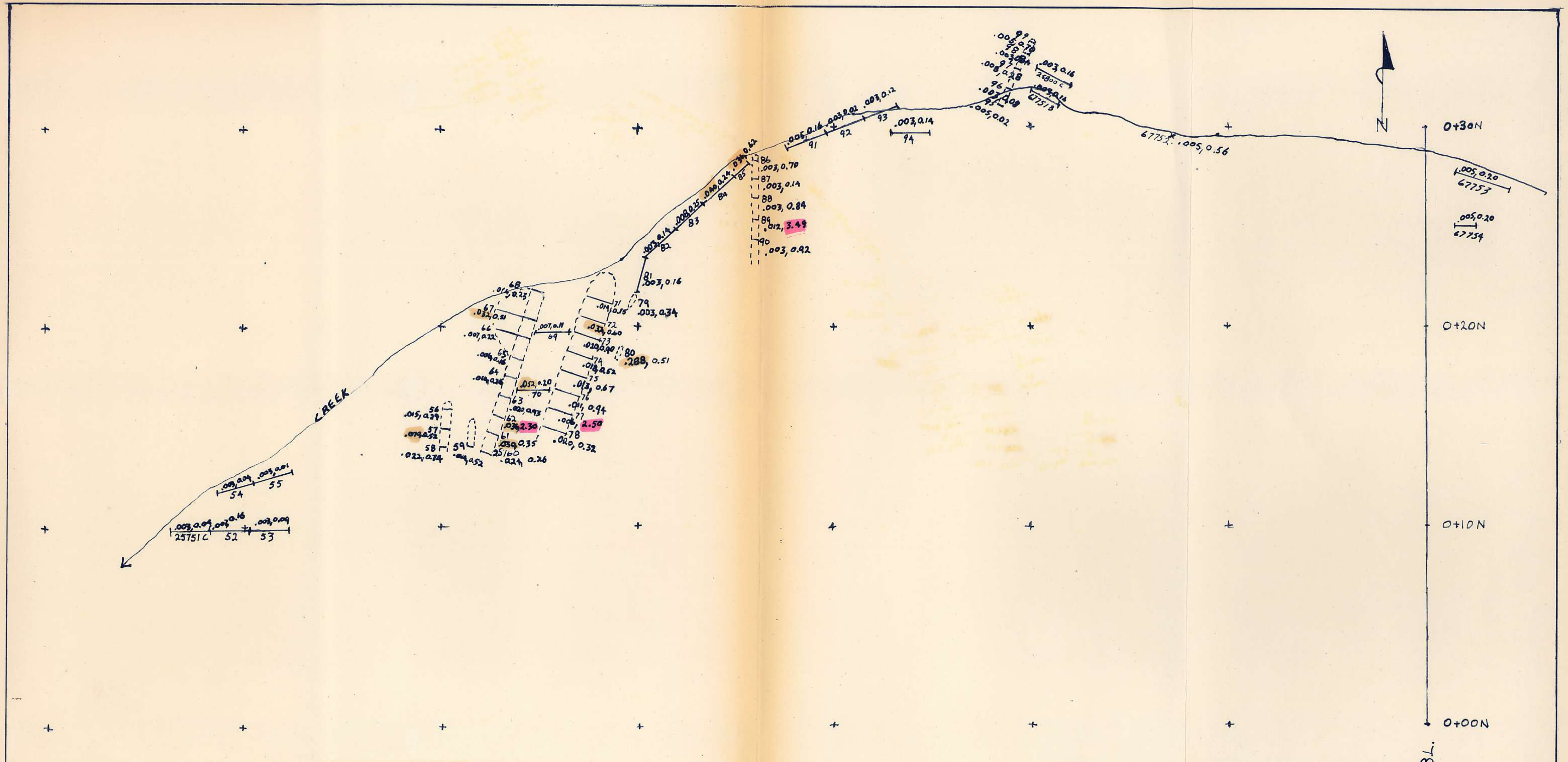
Poorly exposed quartz veining in the Top Zone assayed 0.003 to 0.014 oz per ton gold and 1.42 to 15.18 oz per ton silver as shown on Figure 5.

Only a small proportion of the samples taken returned significant assays.

During prospecting rare examples of stibnite were found.

Geochemical results indicate levels > 1000 ppm arsenic over large areas associated with the gold and silver values. No arsenopyrite, realgar or orpiment has been identified in hand speciman to date but it is assumed some of the very fine pale pyrite or marcasite noted may be arsenopyrite.

No galena or sphalerite have been noted and the low



25753 – ROCK SAMPLE
(.012, 2.30) (Au, Ag) .OZ/TON

QUARTZ VEINS

J.C. STEPHEN EXPLORATIONS LTD.

NEWEX SYNDICATE

HART CLAIM GROUP

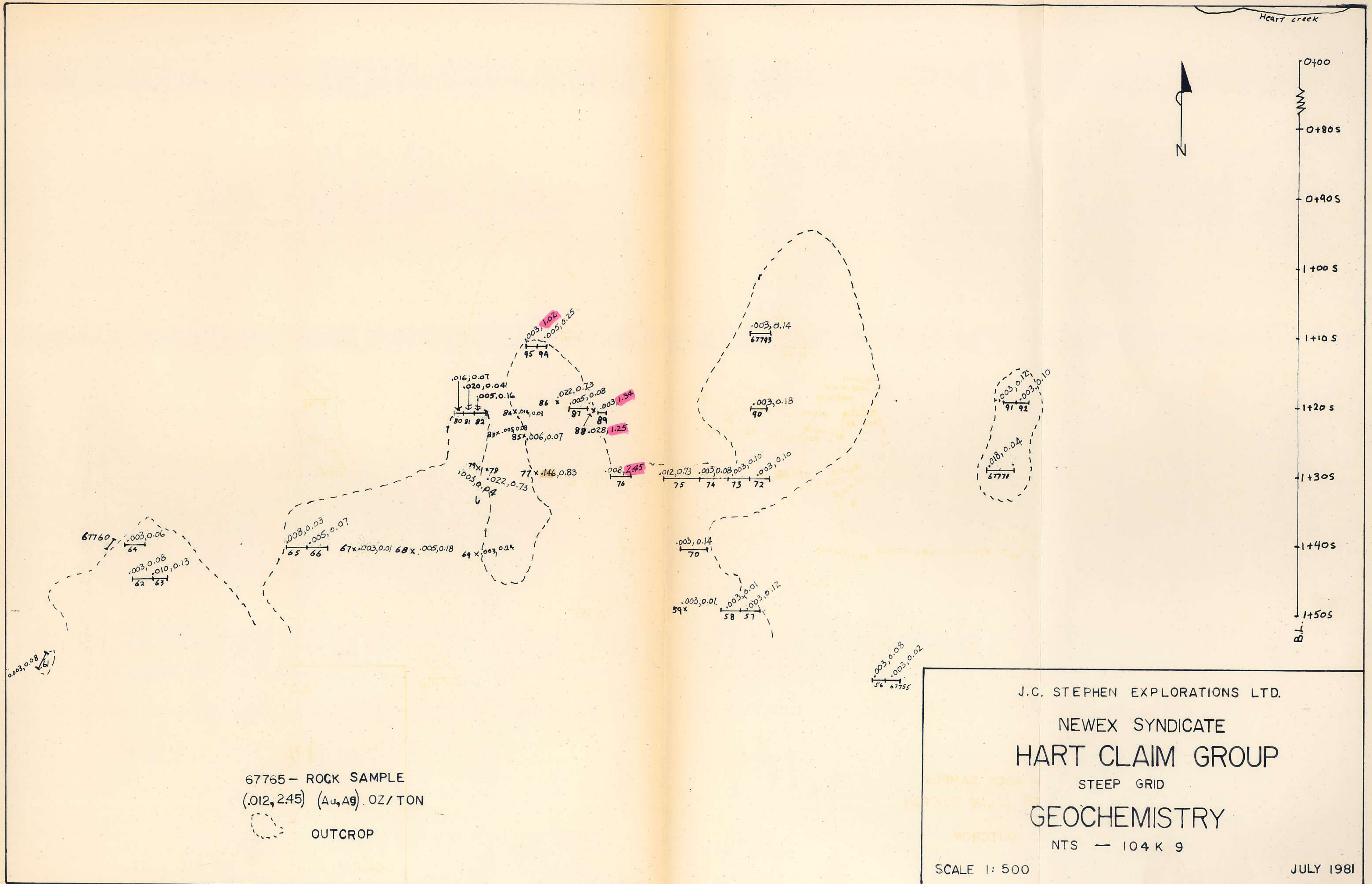
MOGUL GRID

GEOCHEMISTRY

NTS — 104 K 9

SCALE 1:200 JULY 1981

FIG. 3.



67765 – ROCK SAMPLE
(.012, 2.45) (Au, Ag) OZ/TON
OUTCROP

J.C. STEPHEN EXPLORATIONS LTD.

NEWEX SYNDICATE

HART CLAIM GROUP

STEEP GRID

GEOCHEMISTRY

NTS — 104 K 9

SCALE 1: 500 JULY 1981

FIG. 4

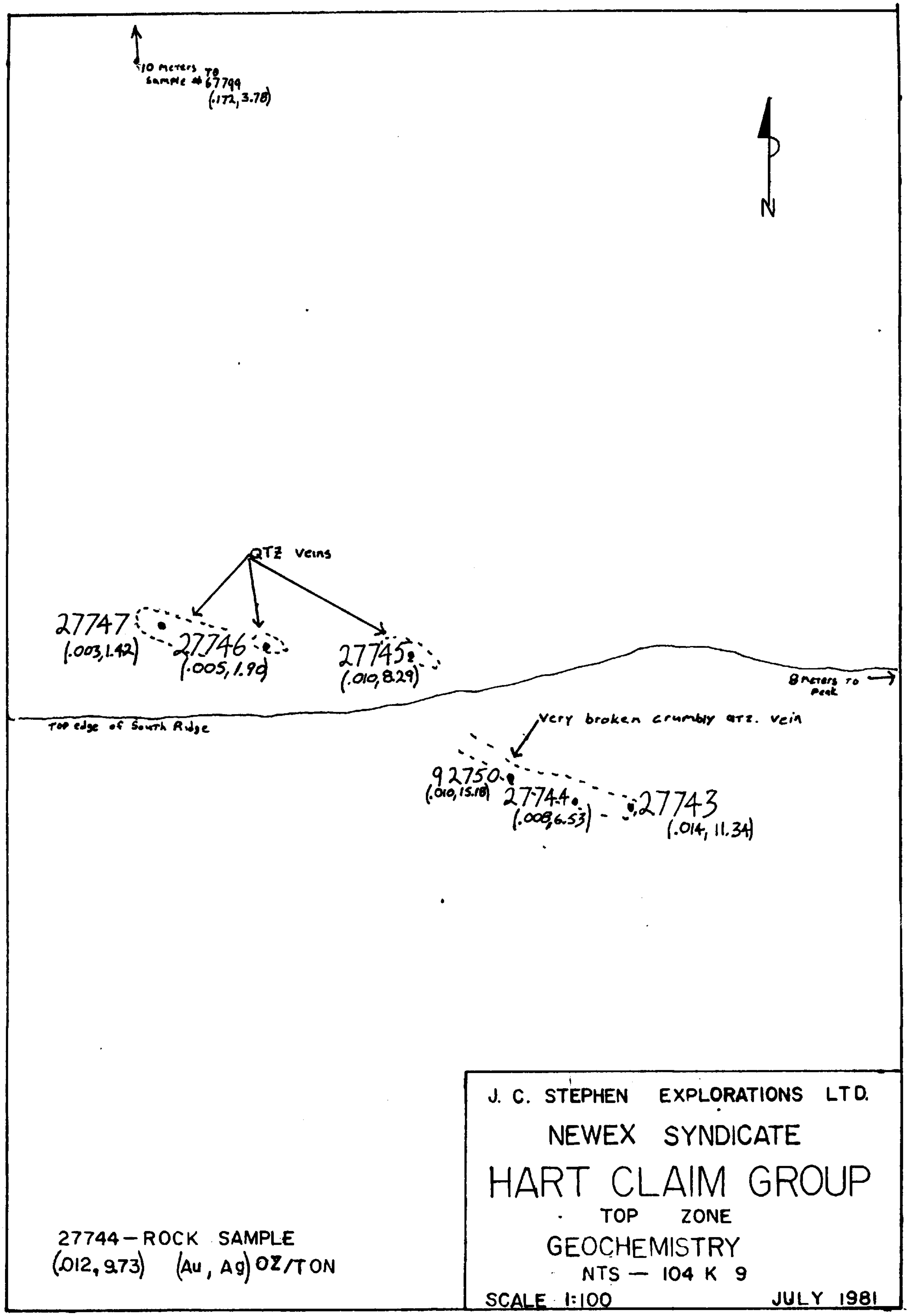

10 meters TO sample # 67799 (.172, 3.78)
N
QTZ Veins
27747 (.003, 1.42)
27746 (.005, 1.90)
27745 (.010, 8.29)
8 meters TO Peak
Top edge of South Ridge
Very broken crumbly qtz. vein
92750 (.010, 15.18)
27744 (.008, 6.53)
27743 (.014, 11.34)
27744 — ROCK SAMPLE
(.012, 9.73) (Au, Ag) OZ/TON
J. C. STEPHEN EXPLORATIONS LTD.
NEWEX SYNDICATE
HART CLAIM GROUP
TOP ZONE
GEOCHEMISTRY
NTS — 104 K 9
SCALE 1:100
JULY 1981

FIGURE 5

level of zinc indicated geochemically (3 to 260 ppm) suggests no significant amounts are present in the area of gold silver anomalies.

No gold or silver minerals have been identified. Petrographic descriptions of three thin sections follow.

Vancouver Petrographics Ltd.

JAMES VINNELL, Manager
JOHN G. PAYNE, Ph. D. Geologist

P.O. BOX 39
8887 NASH STREET
FORT LANGLEY, B.C.
VOX 1JO

PHONE (604) 888-1323

Jean Pautler
J.C. Stephen Explorations Ltd.
1458 Rupert Street
North Vancouver, B.C. V7J 1G1

26-09-'81
Inv. # 2857

Dear Jean,

Enclosed please find petrographic descriptions, thin sections and remaining sample material for 10 specimens submitted to us in august.

Specimens 92750, 22709 and 27714 are all from a trachytic volcanic center, which was extensively veined by quartz and chalcedony. No minerals of economic importance were observed in the thin sections.

The JP samples are hypabyssal (JP-1) and effusive (JP-2) trachy-andesites, which are locally considerably altered (JP-3) and crosscut by a multistage vein network (JP-5 & -6). Samples -5 & -6 contain up to 10% galena and sphalerite, associated with early quartz veins.

I hope these descriptions are satisfactory and of some use to you. Please do not hesitate to call me at our Fort Langley office if you have any further inquiries regarding these samples.

Yours truly,

Peter van der Heyden

Specimen : 27709

Classification : Crystal-lithic tuff-breccia

Mode :	Quartz	40-45%
	K-spar	40-45%
	White mica, claymінrls etc.	<5%
	Jarosite, limonite	5%
	Opaques	5%

Handspecimen : Grey, siliceous (probably silicified), quartzveined volcanic breccia containing a variety of pebble sized, subrounded to angular lithic and crystal fragments. A few elongate fragments faintly define a plane of stratification. Small patches of pyrite are scattered through the rock. Much of the matrix, as well as many fragments, are rich in K-spar (yellow in stained block).

Thin section : The matrix of this specimen is composed of very fine grained, murky nondescript material which is rather dark on account of it's abundant dusty component. It is likely rich in silica and K-spar, as well as secondary (alteration) products, and is probably chemically related to the dominant clastic phase (trachyte).

Fragments ranging up to 7 mms. in size form approx. 70% of this specimen. A variety of types, both crystal and lithic, are present. Conspicuous among the latter are fragments of porphyritic alkali-trachyte and alkali rhyolite, sometimes with a trachytic texture. Many of these are dusted with fine grained opaque material. Fragments composed of clay-minerals and/or white mica are probably alteration products of these feldspathic particles.

Other fragments include chert, composite granular quartz, dark, limonite stained material, fragmental tuffaceous particles and single grain quartz and K-spar fragments. One granitoid fragment containing vermicular quartz in feldspar was observed.

The specimen is penetrated by quartz and jarosite(?) veinlets. The jarosite(?) is locally a bit altered to limonite, and appears to be a late stage hydrothermal product as it coats idiomorphic crystals within the quartz veinlets.

Pyrite occurs as euhedral, disseminated granules up to 1 mm. in size, both in the matrix and in the fragments. Locally it forms small aggregates.

Other opaques include irregular patches of Ti-oxides, anisotropic hematite and micaceous graphite.

No gold was observed in polished section.

Sample	Au ppb	Ag ppm	As ppm
27709 -	880	2.5	+1000

Specimen : 27714

Classification : Vuggy chalcedony/quartz vein-breccia

Mode :	Quartz	70-75%
	Jarosite/limonite	<5%
	K-spar + kaolinite(?)	25%
	Pyrite & opaque dust	<1%

Handspecimen : Vuggy chalcedony and quartz vein-breccia containing irregular kaolinite(?) patches and inclusions of trachyte porphyry. A few fine grained pyritic patches occur in a few places. The specimen is locally limonite stained. Texturally the handspecimen is reminescent of spec. 92750, and it is evidently closely related. The kaolinitic patches are derived from alteration of K-spar rich inclusions (trachyte). This rock provides conclusive evidence linking it to specimens 92750 and 27709.

Thin section : Quartz vein textures (honeycomb masaic) similar to those in specimen 92750 are well developped in this rock. Grainsize ranges from cryptocrystalline to 2 mms., and locally a complete zonal gradation is from chalcedony to granular, locally idiomorphically terminated quartz. Dusty inclusions often outline growth patterns.
Small amounts of jarosite(?) and limonite are present throughout the specimen, as well as lesser amounts of kaolinite(?).
The trachytic inclusions have locally been recrystallized, but mostly retain their original trachytic texture. These fragments are similar to clastic fragments in spec. 27709, but none appear to be fragmental themselves. They may have been part of a (massive) flow or plug, rather than a pyroclastic lithology. In any case, all three rocks appear to be from a trachytic volcanic domain or center, which was extensively veined by quartz and chalcedony.

Sample	Au ppb	Ag ppm	As ppm
27714	6500	33.0	+1000

Specimen : 92750

Classification : Vuggy quartz vein

Mode :		
	Quartz	90-95%
	Clayminerals	5%
	K-spar(?)	2-3%
	Opaques etc.	<1%

Handspecimen : White, fine grained, vuggy quartzite or quartz-vein containing irregular, vaguely preferentailly oriented patches of white, soft clayminerals (kaolinite?) and a dark, very fine grained siliceous seam. The vugs are lined with small, idiomorphic quartz crystals. Widely scattered tiny black metallic specks are probably hematite (they scratch red with a needle). A small patch of sericite or K-spar is yellow in stained block. The rock is probably from a quartz vein, with kaolinitic patches due to hydrothermal alteration of country-rock inclusions.

Thin section : The rock is almost entirely composed of quartz. The yellow staining feldspars(?) are @ the top of the section, where they are too thin to be positively identified. It is biaxial, and therefor tentatively designated K-spar.
The soft, white claymineral is present in minor amounts only in thin section, interstitial to quartz. It is very fine grained to cryptocrystalline, and is probably kaolinite.
Texturally this rock is a bit peculiar. On the whole it is granular or aplitic, containing ill defined domains of relatively coarse grained quartz up to 1 mm. in size. In many places groups of grains are bounded by very straight edges, resulting in a distinctive honeycomb mosaic. Many of the individual grains are radiating or have radially arranged dusty inclusions. Quartz crystals with idiomorphic terminations are present here and there, especially in vugs. Locally a few very small, extremely fine grained brownish aggregates (jarosite?) occur interstitial to quartz. The dark seam is composed of fine granular quartz dusted with opaques and other very fine grained, nondescript material.
Trace amounts of very fine grained hematite occur interstitial to quartz, widely scattered through the rock. No other opaques were observed.

Sample	Au oz/ton	Ag oz/ton
92750	0.010	15.18

Structure

Very little hard information is available as to the structure involved. The GSC Memoir 362 includes the basalt on the west side of Heart Peaks as part of the Level Mountain structure. We have not done sufficient regional work to quarrel with this interpretation but, because of topography, it is easier to think the Heart Peak basalts originate from extrusive centres within that mountain rather than having flowed from Level Mountain.

The perimeter of Heart Mountain has not been explored. However, a gossan, similar to the rhyolite gossan on HART Group, occurs near the centre of Level Mountain.

Photo 1 - HART Group looking southeast to Main Rock Glacier

The shape of the peak at Top Zone is illustrated in photo 2. Flows and fragmentals seen in the west and southeast walls of Rock Glacier cirque suggest this peak is built of extrusive material surrounding a possible volcanic vent. Detailed mapping of these walls may assist in locating such a vent. It is assumed to lie below the southeast head of the main rock glacier.

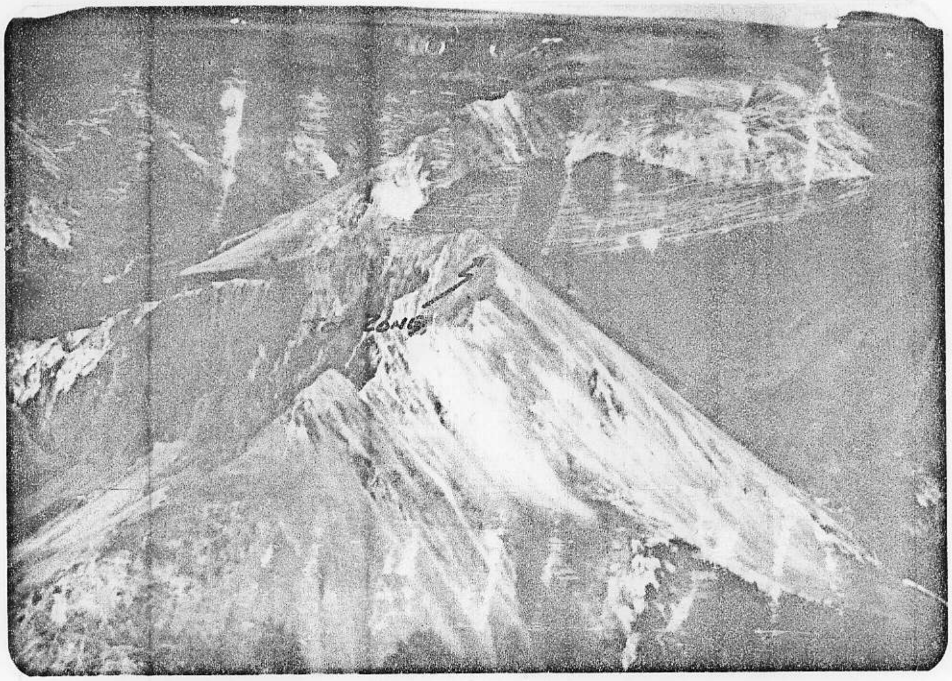


PHOTO 2 - Top Zone facing east
Top of Main Rock Glacier shows to left of photo

Photo 3 illustrates the structure north and northeast of the Mogul Zone which may also be in a vent area as indicated by extensive breccias. No cone structure is immediately apparent, however.

PHOTO 3 - Facing northeast to basalt topped rhyolite cliffs above Mogul Zone

The quartz veins so far located all seem to trend slightly east of north but this may be misleading as so little exposure is available. The various zones, however, are aligned in this direction as indicated in Photo 4 which is taken from the west side of Mogul Zone.

PHOTO 4 - Facing south showing apparent alignment of Quartz Vein Zones

Our present hypothesis suggests that gold silver mineralization is associated with quartz veins in the vicinity of one or more explosive rhyolitic volcanic vents which are themselves centred along a north-south trending zone of weakness on the west margin of a basaltic volcanic vent centred on Heart Peaks.

Geochemistry

A series of silt, talus and rock geochemical samples were taken on the HART property. The following is a summary of the range of values received for various elements from each type of sample including rock samples assayed.

ELEMENT RANGE

Type of Samples	Total No. of Samples	Au ppb	Hg ppb	Ag ppm	As ppm	Zn ppm	Sb ppm	Mo ppm	Mn ppm
Silt	7	-		0.1-0.2	22-340	25-220		1-17	184-1250
Talus,Soil	139	-		0.1-18.0	6- 1000	3-260			
Rock Geochem	74	<10-6500	20-1400	0.1- 100	10->1000	11-370	1.2-26	1-9	17-345
Rock Assays	117	.003-.288		0.1-11.34					

TABLE I

HART CLAIM GROUP

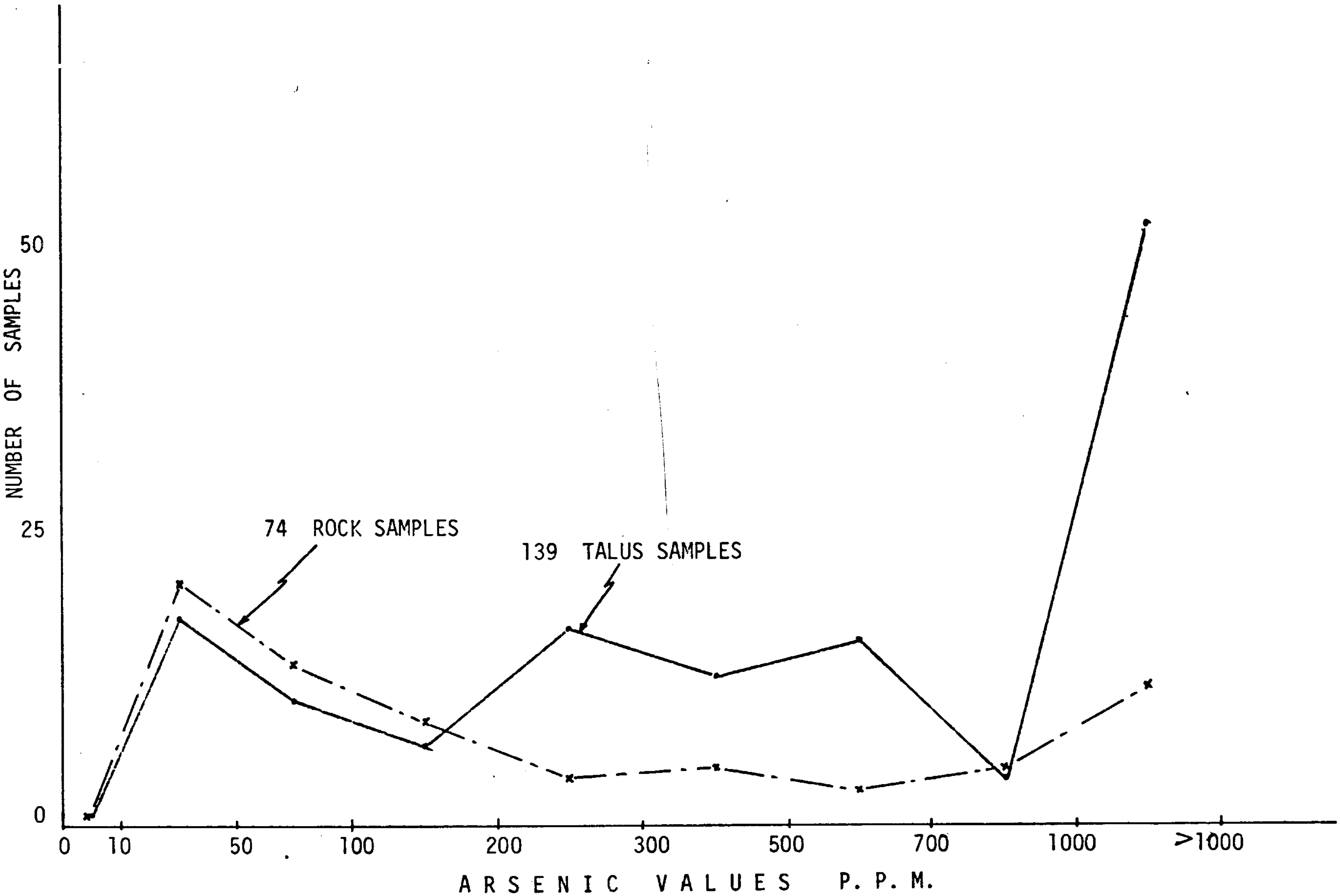
RANGE OF GEOCHEMICAL VALUES

Figure 6 is a histogram of arsenic values in talus and rock samples. The talus samples show a large number of determinations >1000 ppm as well as a large percentage which run between 200 and 700 ppm As. This distribution of high values is compared to the distribution for rock samples. The source of the arsenic in the talus has not been identified and the high values may suggest that mineralization high in arsenic exists but has not been found as yet.

Figure 7 compares distribution of silver values in talus and rock samples. A much higher proportion of the talus samples have values ranging from 2.0 to 9.0 ppm Ag than is the case with rock samples. Again there is a suggestion that silver mineralization exists which is being distributed into the talus but has not been recognized in rock sampling except possibly in the TOP ZONE where assays range from 1.42 to 11.34 oz silver/ton with only traces of gold.

Figure 8 shows gold vs silver values from 62 rock geochem samples indicating little or no positive correlation between the occurrence of gold and silver. A similar lack of correlation is evident in chip sample assays. These are provided on sample data sheets as Appendix IV.

Figure 9 shows silver vs arsenic values for 139 talus samples indicating only a general correlation between the occurrence of silver and arsenic.



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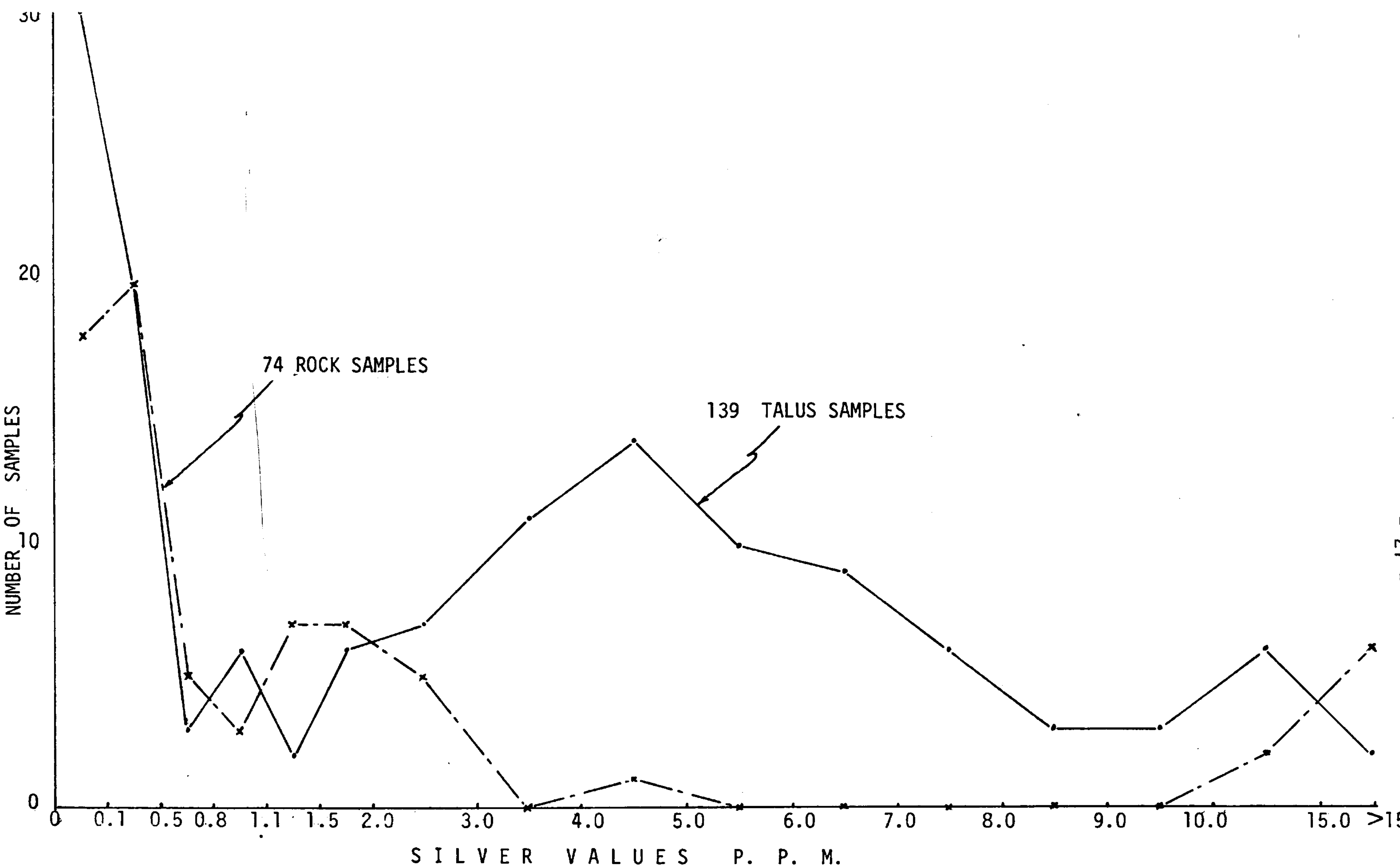
HART CLAIM GROUP

HISTOGRAM OF ARSENIC VALUES

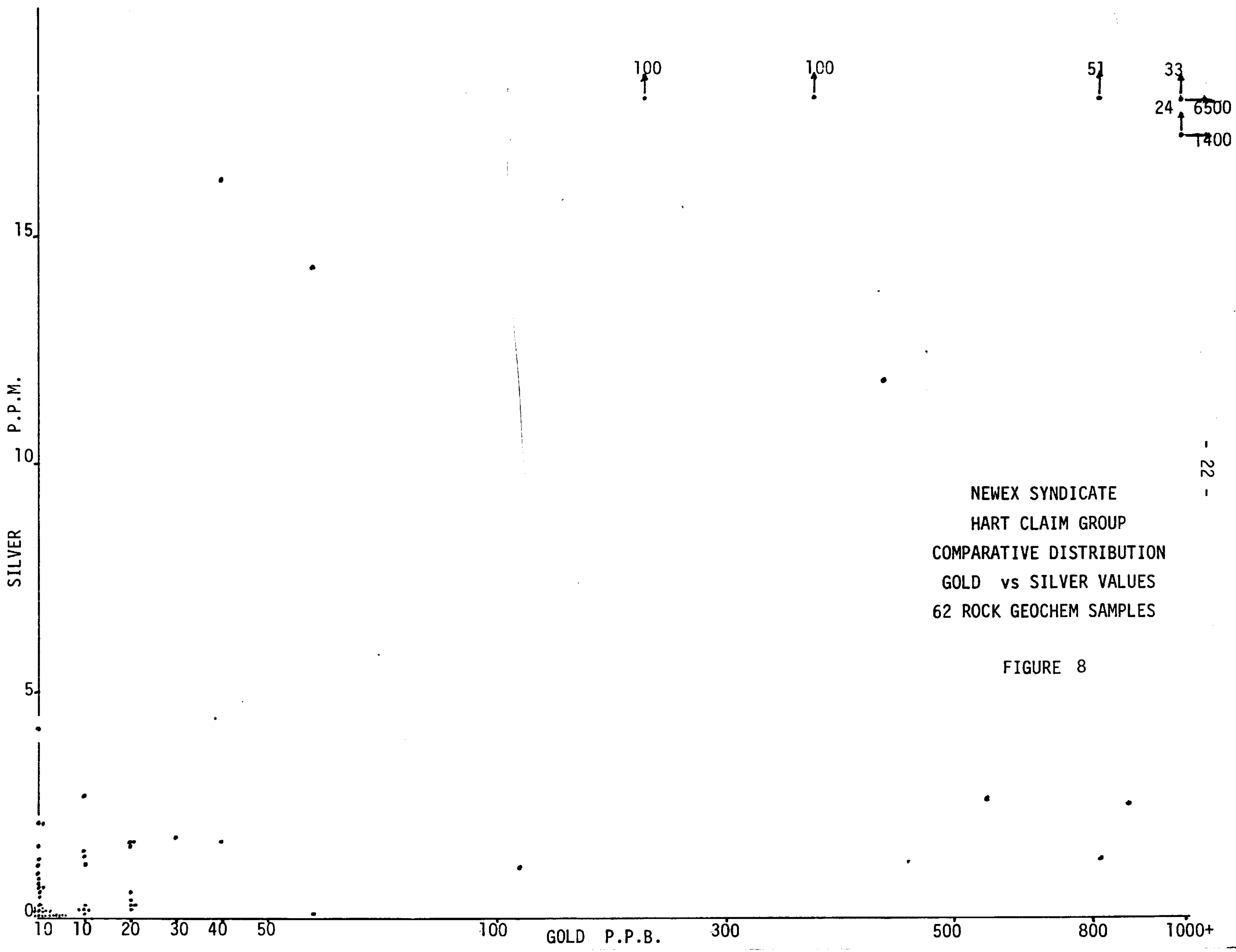
FOR TALUS AND ROCK SAMPLES

FIGURE 6



NEWEX SYNDICATE
HART CLAIM GROUP
HISTOGRAM OF SILVER VALUES
FOR TALUS AND ROCK SAMPLES

FIGURE 7



NEWEX SYNDICATE

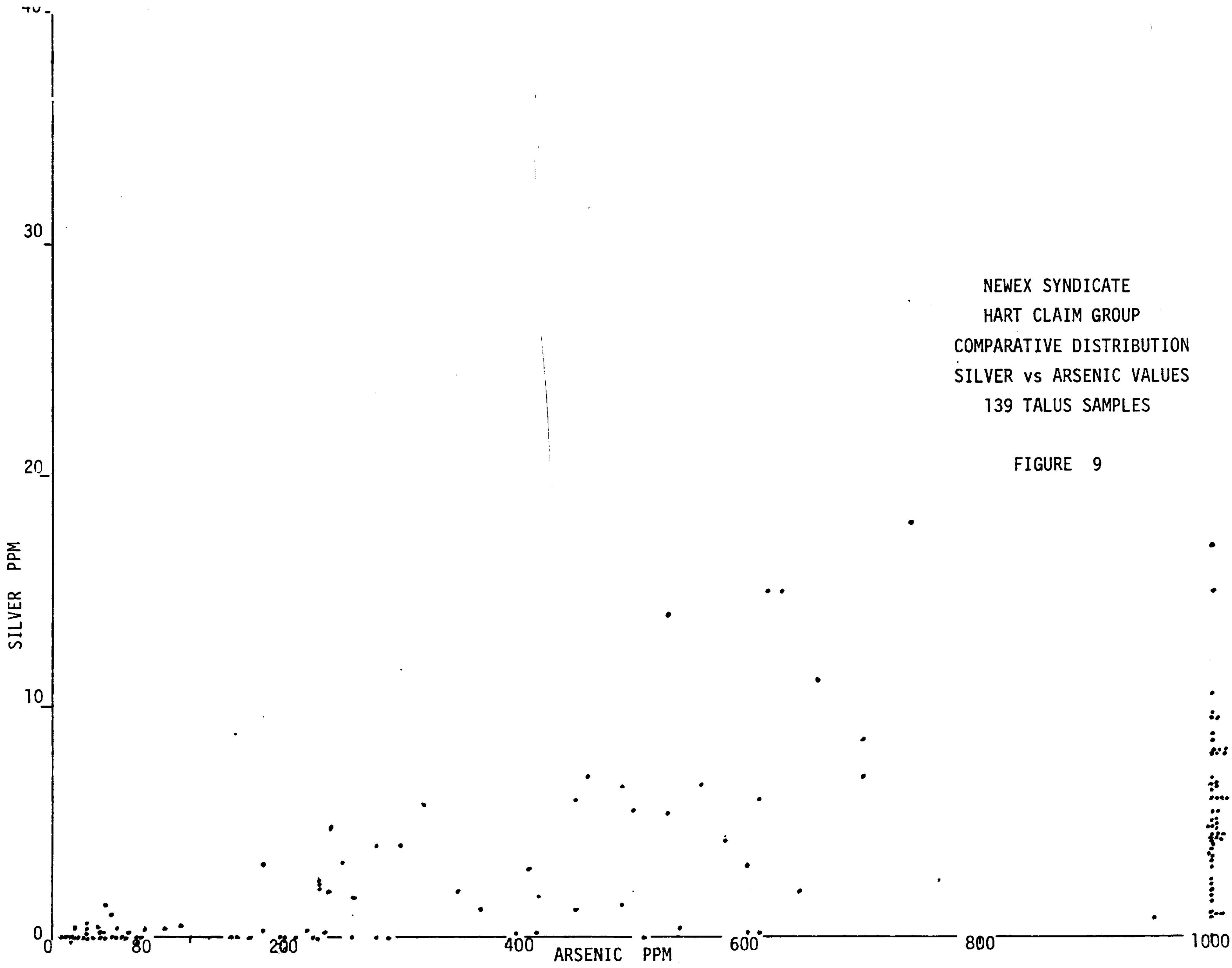
HART CLAIM GROUP

COMPARATIVE DISTRIBUTION

GOLD vs SILVER VALUES

62 ROCK GEOCHEM SAMPLES

FIGURE 8



NEWEX SYNDICATE

HART CLAIM GROUP

COMPARATIVE DISTRIBUTION

SILVER vs ARSENIC VALUES

139 TALUS SAMPLES

FIGURE 9

RECOMMENDATIONS

Assay values so far obtained are too low, and too scattered, to warrant diamond drilling or tractor trenching.

It is recommended that detailed mapping be conducted using the presently prepared topographic base map and that extensive rock geochemistry and chip sampling be done in conjunction with this mapping.

An arbitrary budget figure of $30,000 is proposed.

LUNG CLAIM

PROPERTY, LOCATION AND ACCESS

The LUNG claim consists of 20 units as follows:

Claim	Number of Units	Date Staked	Date Recorded
LUNG 1	20	July 13	July 22

The property is located 6 kilometres south of the HART Group at 132° 04'W, 58° 32'N approximately 150 kilometres southeast of Atlin.

Access was entirely by helicopter from Atlin. The property was staked to cover Heart Peaks Formation following receipt of relatively high gold values on HART Group.

GEOLOGY

Rock Types

Field reports describe the outcrop of Heart Peaks Formation as a light to medium grey aphanitic rhyolite to trachyte, commonly porphyritic with plagioclase and sometimes quartz phenocrysts. Associated lapilli tuffs and acid scoria is evident.

The GSC Map, Memoir 362 shows what appear to be sills of basalt inter-bedded with the rhyolite indicating an association similar to that above the Mogul Zone on HART Group. This was confirmed by prospectors on the property.

Black shales were encountered below the Heart Peaks Formation in the southwest portion of the property.

MINERALIZATION

The LUNG Group does not contain the drusy quartz, quartz veins, quartz breccia or pyrite mineralization which was evident on the HART Group.

GEOCHEMISTRY

Reconnaissance soil, talus and rock grochem sampling was done shortly after staking. These samples are generally widely spaced and results are generally very low as compared to HART.

		Range of Values			
Sample Type	Au ppb	Ag ppm	As ppm	Hg ppb	Zn ppm
Soils	<10-20	0.1-0.2	4-24	20-50	-
Talus	<10-20	0.1	4-230	10-60	-
Rock	<10-10	0.1-0.3	2-5	20-45	15-480

RECOMMENDATIONS

Assessment work will be filed to hold this claim pending development on the HART Group. No further work is presently proposed.

FELDSPAR PORPHYRY INTRUSIVE

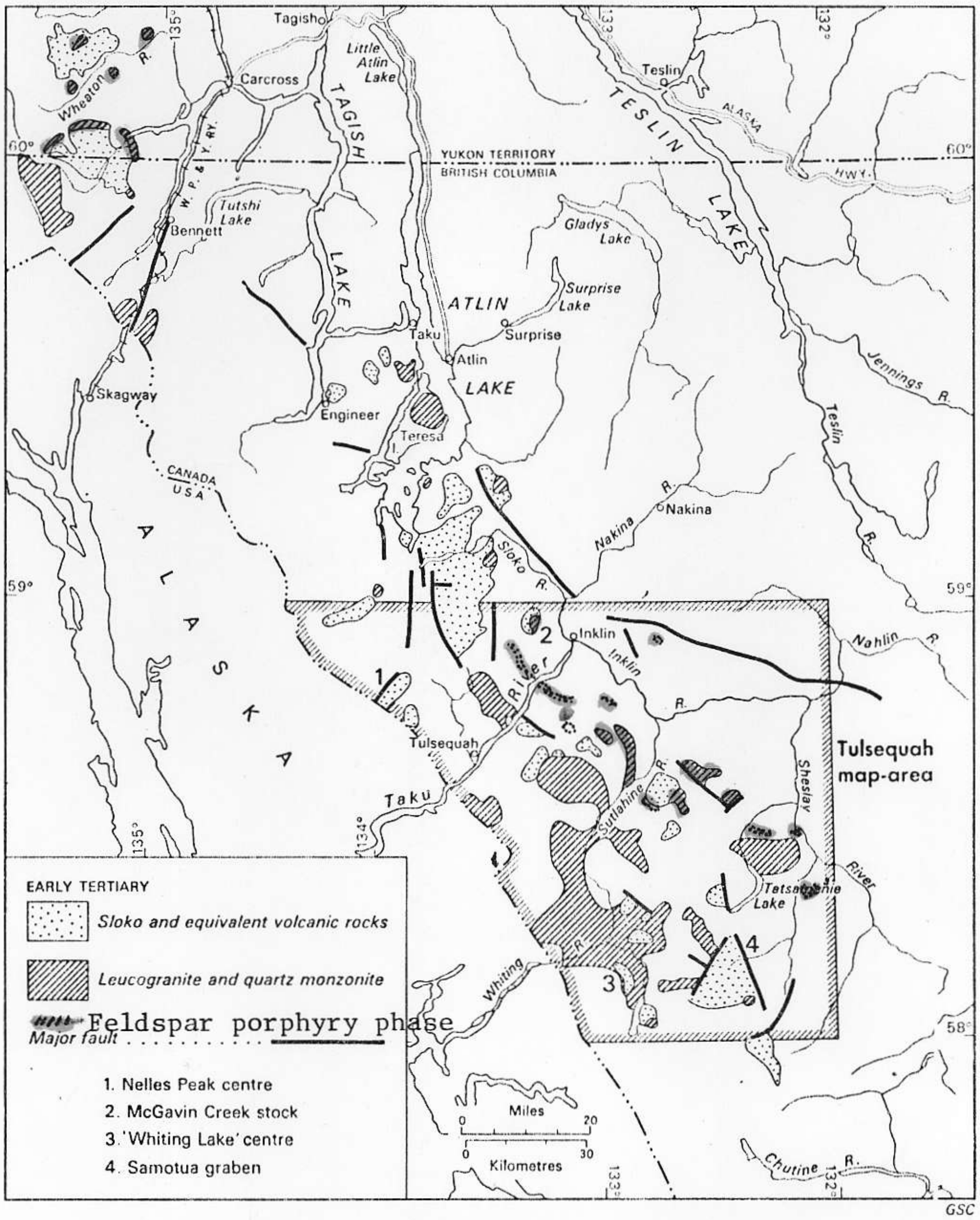
EXTRUSIVE AREA

Prospecting was initiated on a belt of feldspar porphyry intrusions in the Tulsequah map area which are apparently related to the Sloko volcanics and to some of the last stages of monzonite intrusion in the area. It is thought these intrusions are related to Sloko and equivalent rocks in a belt trending northwest through Atlin Park, Bennett Lake map sheet and into the Whitehorse districts. See Figure 10.

During part of the season, this portion of the overall program was interrupted as a precautionary measure due to forest fires in the district. Heavy smoke made access to camps uncertain and crews were temporarily withdrawn.

Northwest of Wade Lake lead, zinc, silver, gold mineralization was encountered and staked as the GRIZ 1 - 3 claims. A report on these olaims follows. The only other campsite occupied on this project was west of King Salmon Lake were the crew camped in an ill chosen spot and relatively little was accomplished due to dense bush and difficult terrain. Geochemical values were low:

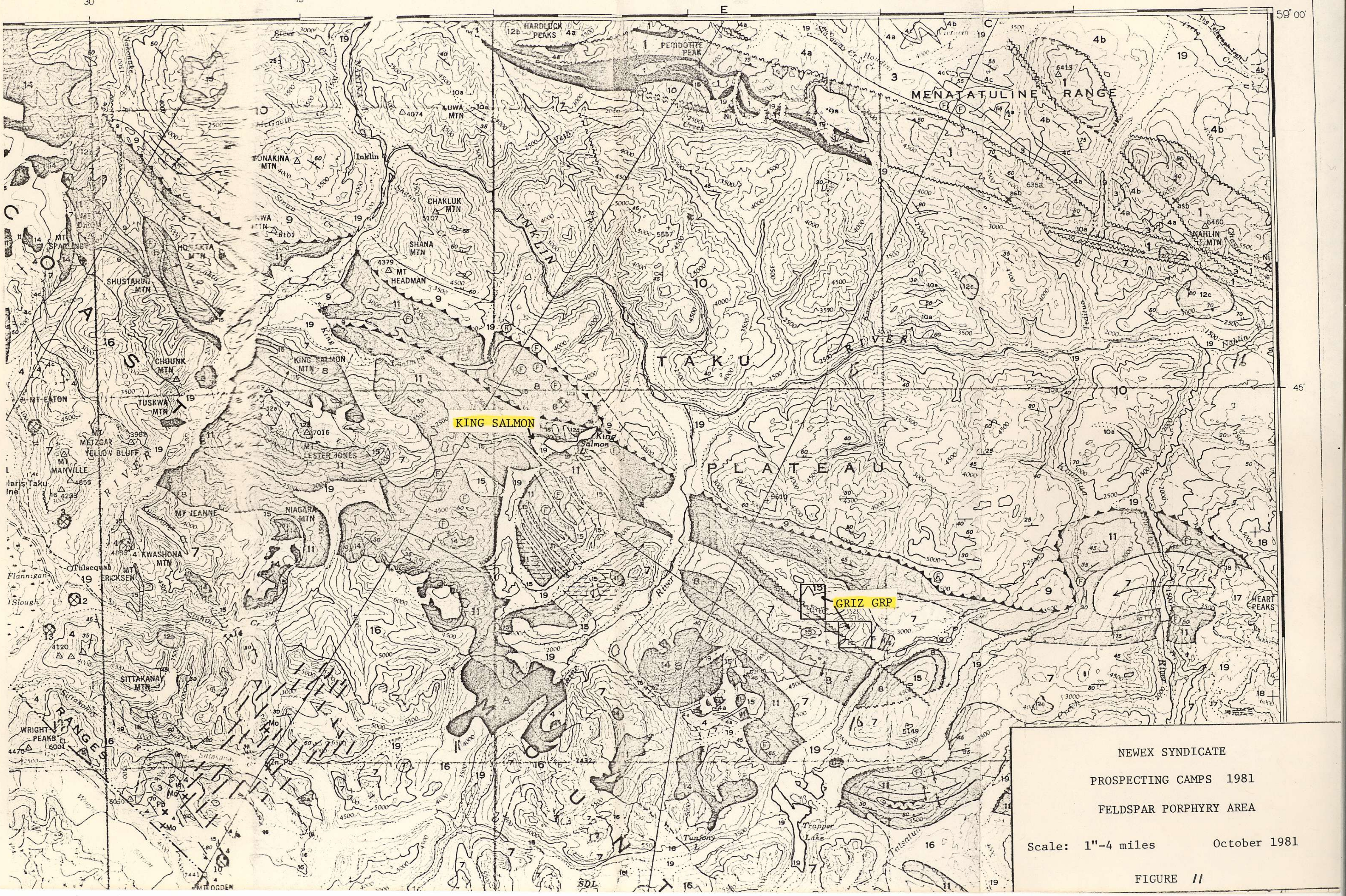
	Element Range				
Type	Au ppb	Ag ppm	As ppm	Zn ppm	
Silt	<10-10	0.1	23-29	100-135	three samples
Soil & Talus	<10	0.1-1.3	9-160	75-210	
Rock	<10	0.3	20		one sample



Distribution of Sloko and equivalent rocks and related intrusions in northwestern British Columbia and southern Yukon Territory.

ADAPTED FROM MEMOIR 362

FIGURE 10



NEWEX SYNDICATE

PROSPECTING CAMPS 1981

FELDSPAR PORPHYRY AREA

Scale: 1"-4 miles October 1981

FIGURE 11

GRIZ 1 AND 2 MINERAL CLAIMS

SUMMARY

(1) GRIZ Group One consists of 24 units and is located 120 kms. southeast of Atlin, B.C.

(2) The claim group was staked to cover an anomalous gold value and several occurrences of galena-sphalerite mineraliz - ation with associated silver values.

(3) A crew of 2 to 4 people spent 15 mandays on the property beween August 5 and 15, 1981.

(4) The claims are occupied by a large Tertiary feldspar porphyry body which intrudes Jurassic and possibly Triassic sediments.

(5) Property mapping was at a scale of 1:31,680 using air photos. Four trenches containing mineralization were mapped at a scale of 1:50.

(6) Nine selected chip samples were taken from the trenches. Gold values of 0.138 and 0.038 oz/ton were obtained. Silver values were up to 2.23 and 3.38 oz/ton; zinc values were up to 0.77 and 3.05%; lead values were 0.48 and 1.78%.

(7) A soil/talus grid providing 62 samples was established on GRIZ 1. A strongly anomalous area is indicated. A few of the reconnaissance soil and rock samples are also anomalous.

(8) Geological mapping at 1:2,500, extension of the soil sample grid and additional trenching are recommended for the 1982 program.

INTRODUCTION

Griz Group One constitutes the 20 unit Griz 1 claim and the 4-unit Griz 2 claim, which were staked in early August, 1981. Griz 1 was staked to cover a number of small occurrences of gold, silver, lead and zinc lithogeochemical results. The Griz 2 claim was staked to cover a fault contact that extends through Griz 2 and 3 which may be important in the mineralizing process.

Field work carried out in August, 1981, involved detailed geological mapping at a scale of 1:50 of four trenches which were dug. Limited geological mapping of the property at a scale of 1:31,680 was also conducted and further prospecting on the northwest side of the property was carried out. A total of 21 rock, and 102 soil and talus samples were collected for analysis.

The claim group is immediately south of the Taku Plateau within the Coast Mountains.

The topography of the claims consists of a plateau area at 4,500 - 5000' in the northwest section and a large ridge at 4,000' with several smaller ridges, in the southeast part. A large valley separates the northwest and southeast sections. A smaller northeast trending valley cuts through the Griz 2 claim.

Vegetation on the plateau area and on the highest part of the large ridge is sparse. It consists of grass, moss and some patches of thick balsam trees and shrubs. Most of the southeastern part of the large ridge and the smaller ridges have been burnt about 10 years ago and are covered by second growth. The sides of the main valley and the southern part of the ridge are covered by a thick balsam and spruce forest.

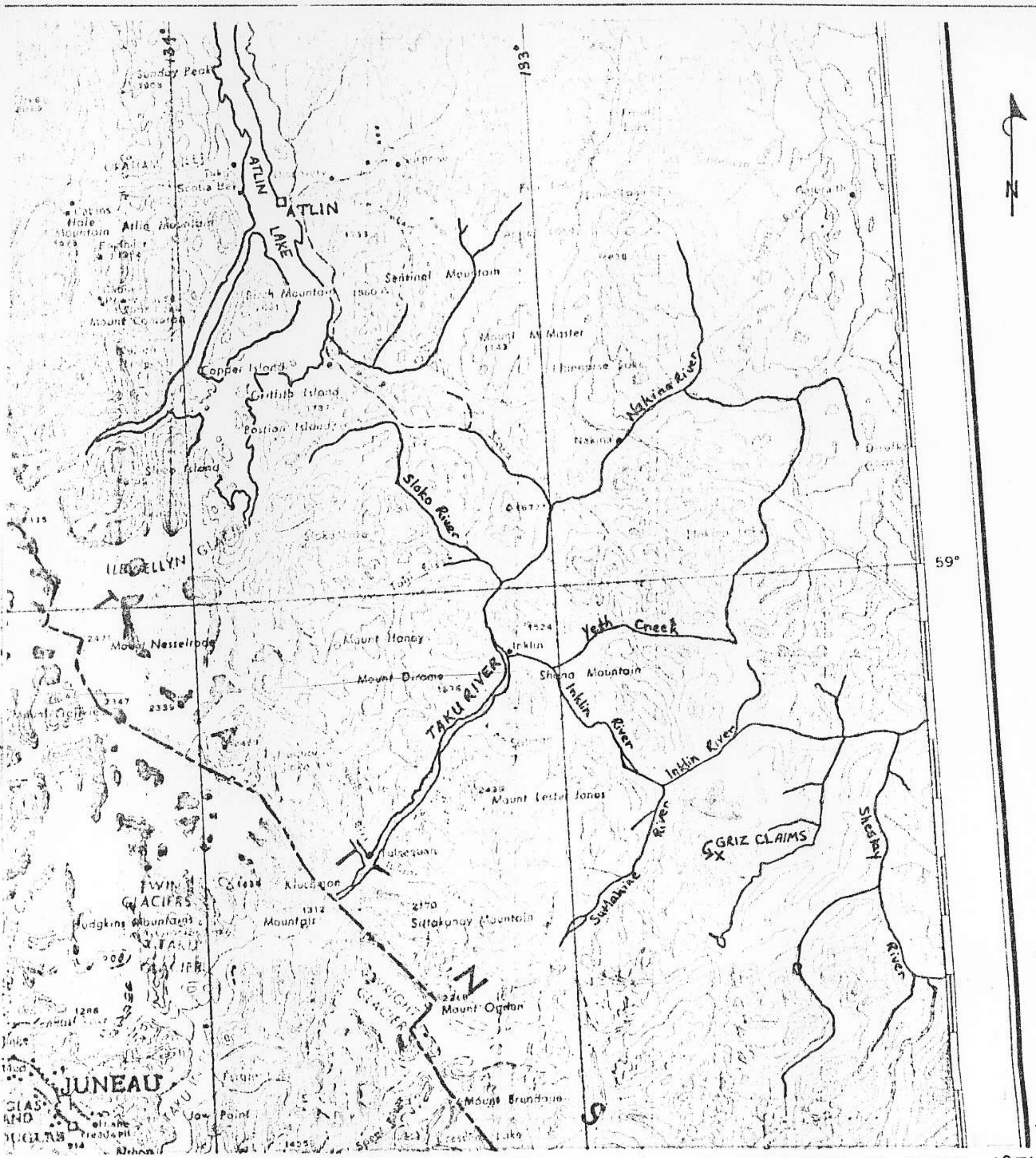
Drainage on the claim group is provided by numerous creeks which drain into the main valley and also the smaller valley. Both valleys contain swampy southwesterly flowing creeks. The drainage of the plateau area is generally poor with many swampy areas.

LOCATION AND ACCESS

The Griz 1 and 2 claims, (map sheet 104K/10E), are located approximately 15 kms north of Trapper Lake, which is 132 kms southeast of Atlin, B.C. (Refer to Figure 12). Latitude and longitude are $58^{\circ}37'$N and $132^{\circ}35'$W.

Adjoining the claims on the north side is Chevron's 20 unit EMU claim. Much of the Griz 2 claim overlaps Chevron's 20 unit Way 5 claim. (Figure 13).

Access to the property is by helicopter from Atlin or Dease Lake.



from SITKA, NORTH AMERICA, G.S.C. Map No. 7.8., 1956

J.C. STEPHEN EXPLORATION LTD.

NEWEX SYNDICATE

GRIZ CLAIMS

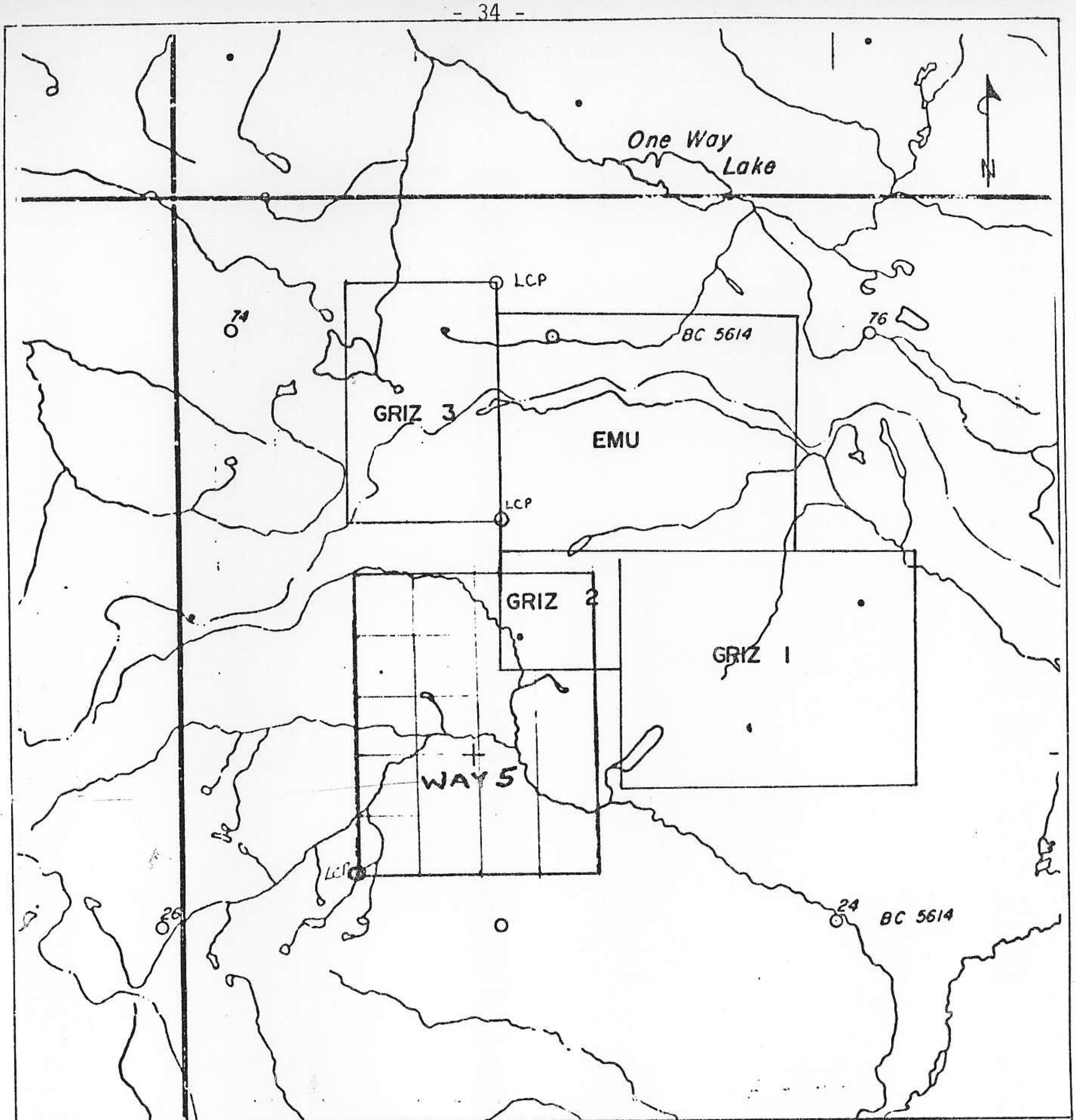
NTS 104K/10E

LOCATION

SCALE 1:1,000,000

0 10 20 kms.

FIGURE 12



CLAIMS SURVEYED by TOPOCHAIN and COMPASS.

J. C. STEPHEN EXPLORATION LTD.

NEWEX SYNDICATE

GRIZ CLAIMS

NTS 104K/10E

CLAIM MAP

0 0.5 1.0 kms.

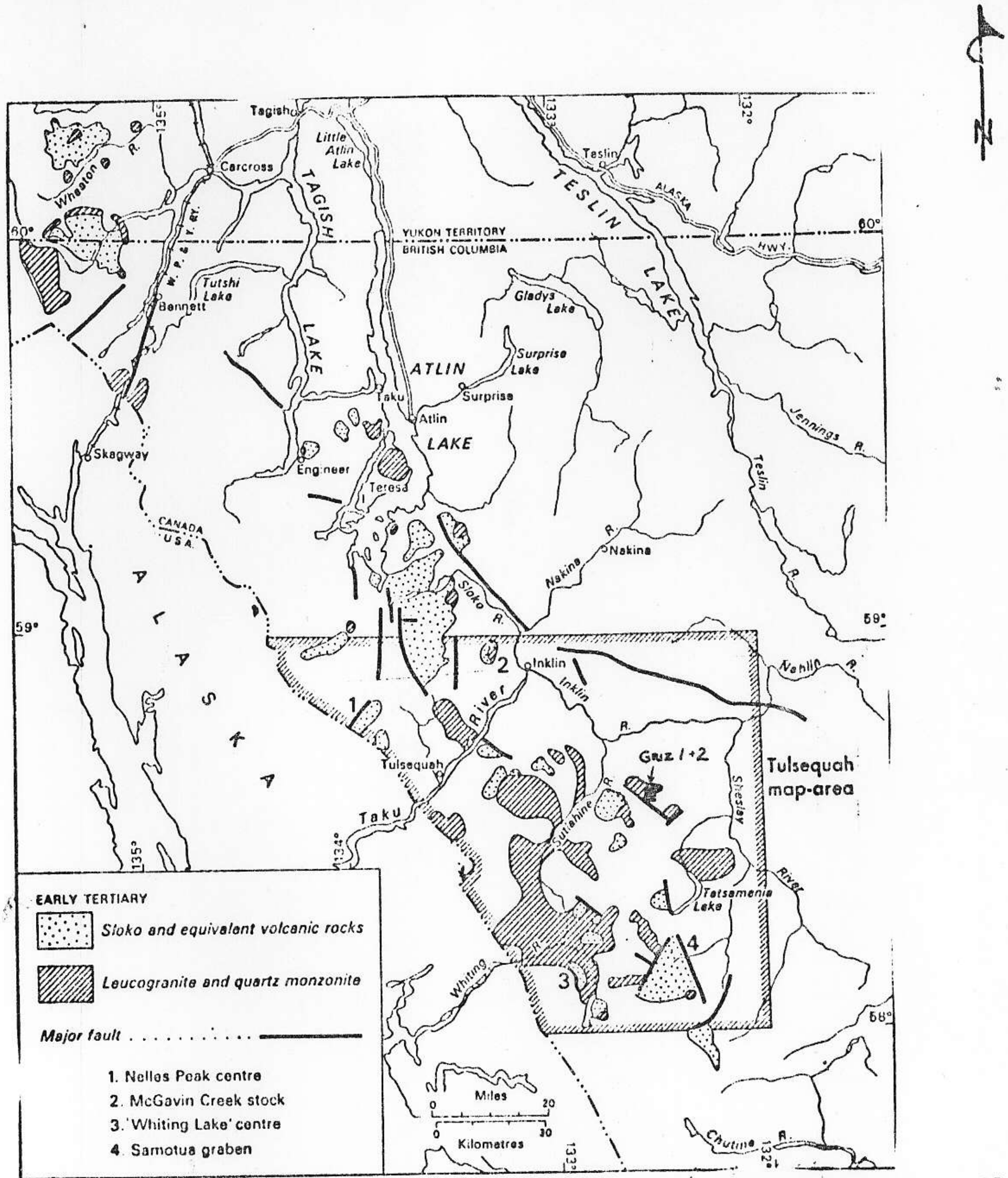
SCALE 1 50,000

FIGURE 13

REGIONAL GEOLOGY

The regional geology has been mapped by the G.S.C. at a scale of 1:250,000 and is published as Tulsequah - Juneau map sheet 104K.

Griz Group One is situated in the area of a Late Cretaceous to Early Tertiary quartz feldspar porphyry intrusion which is one of many that form a west northwesterly trending belt from Trapper Lake to Yonakina Mountain. These intrusive bodies are in close spatial association with the Sloko volcanic rocks of the same age which are limited to a larger northwesterly trending belt along the eastern edge of the Coast Mountains. Figure 14 shows the distribution of the Sloko volcanic rocks and related intrusions within the Tulsequah map area. The Sloko volcanic rocks are of interest due to the number of gold occurrences found associated with them.



from G.S.C. Memoir 362, 1961, p 29.

J. C. STEPHEN EXPLORATIONS LTD.

NEWEX SYNDICATE

GRIZ CLAIMS

NTS 104K/10E

DISTRIBUTION of SLOKO VOLCANIC ROCKS

SCALE: 1:1900800

0 kms. 30

FIG. 14

PROPERTY GEOLOGY

MAPS III, IV

Rock Types

The limited geological mapping conducted on Griz Group One indicated the existence of various phases of the quartz feldspar porphyry. The southwestern fault contact with the Takwahoni sedimentary rocks present on GRIZ 3 was not observed on GRIZ 1 and 2. This is due to the presence of thick bush in the area of occurrence of the sedimentary rocks. Outcrop of Takwahoni Formation bedded shales and siltstones is present in the creek southwest of the claim group. Mapping was conducted in conjunction with that on GRIZ 3 thus the quartz feldspar porphyry is Unit 3.

Unit 3 - Quartz Feldspar Porphyry

Both effusive and hypabyssal varieties of what the G.S.C. refer to as a quartz feldspar porphyry, are present on the property. The porphyry would more properly be termed a feldspar porphyry in this area since quartz phenocrysts are not common. The rock varies from aphanitic to fine and rarely medium grained, contains feldspar phenocrysts of varying sizes, occurs with or without biotite and hornblende phenocrysts. Colour ranges from pinkish through to pinkish grey and commonly green. Minor pyrite is common. Small quartz veins, commonly drusy and up to 1 cm wide cut the porphyry. Larger quartz veins are also present.

A thin section of a phase of the feldspar porphyry was prepared by Vancouver Petrographics Ltd., Fort Langley, B.C. The specimen, (J.P.-1), was classified as a hypabyssal trachyandesite. The petrographic description is available in Appendix II.

A thin section of the same porphyry body was prepared for a specimen from the GRIZ 3 claim, northwest of GRIZ Group One. This sample was also trachyandesitic in composition suggesting a uniform composition for the feldspar porphyry body although various phases are evident.

Structure

The G.S.C. shows a fault contact between the feldspar porphyry and the Takwahoni sedimentary unit. Although a contact must exist in this area, it has not as yet been observed.

The feldspar porphyry is cut by several small vertical joint sets. The most common of these trend 80-90^{0} and 5-20^{0}. Others trend 160^{0} and 40^{0}.

Mineralization

Several occurrences of galena and sphalerite were found throughout the GRIZ 1 property. On the south-east side of the main valley that cuts the claim, there are two outcrops in which galena mineralization occurs as small blebs, (from 1-5 mm in size), in a highly silicified feldspar porphyry host rock. The silica is almost black in the best mineralized areas. Rusty, calcite-sphalerite veins, quartz veinlets and Mn staining appear to be associated with the mineralization.

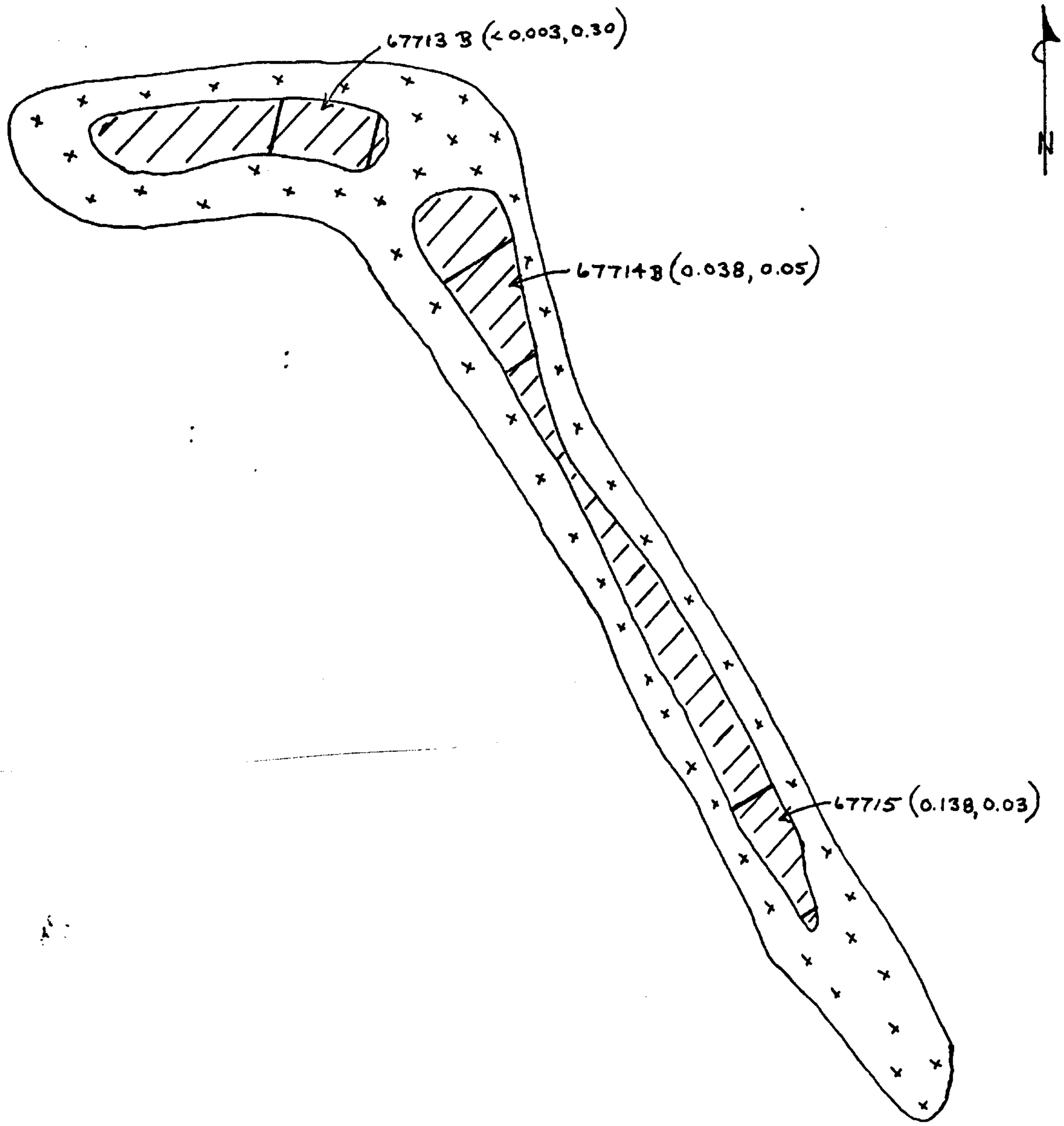
The southernmost of the 2 occurrences mentioned above also contain a pyritic quartz breccia and abundant pyritic seams.

Veinlets of galena and sphalerite up to 8 mm in width were found on the northwest bank of the main valley. Abundant pyritic and silicified zones and calcite veins were associated with the mineralization. Mn staining was also evident.

Along this same ridge, several zones of silica replacement with disseminated pyrite were observed. Several small calcite-sphalerite veins a few centimetres wide were also noted.

A trench was established where the galena veinlets were found and two more similar zones were discovered in the process. Trenching was also undertaken in these areas. Small silicified veins containing galena, sphalerite and calcite lenses and with Mn staining were exposed within a silicified feldspar porphyry host rock. Two of the veins had a trend of about 60^{0} while the strike of the third was 83^{0}. All the dips were almost vertical. The geology and geochemistry of the trenches are illustrated in Figures 15to18.

A silicified zone that ran 1700 ppb gold was also trenched. The zone consists of silicified, Mn stained material with rusty feldspar porphyry fragments within a silicified, altered porphyry host. This trench is shown in Figure18.



LEGEND:

- SILICIFIED, Mn STAINED, with RUSTY QFP FRAGMENTS
- SILICIFIED, ALTERED QFP
- ROCK SAMPLE
  67713 B
- (<0.003, 0.30) oz/ton (AU, AG)

J. C. STEPHEN EXPLORATION LTD.

NEWEX SYNDICATE

GRIZ I CLAIM

NTS 104K/10E

GEOLOGY & GEOCHEMISTRY

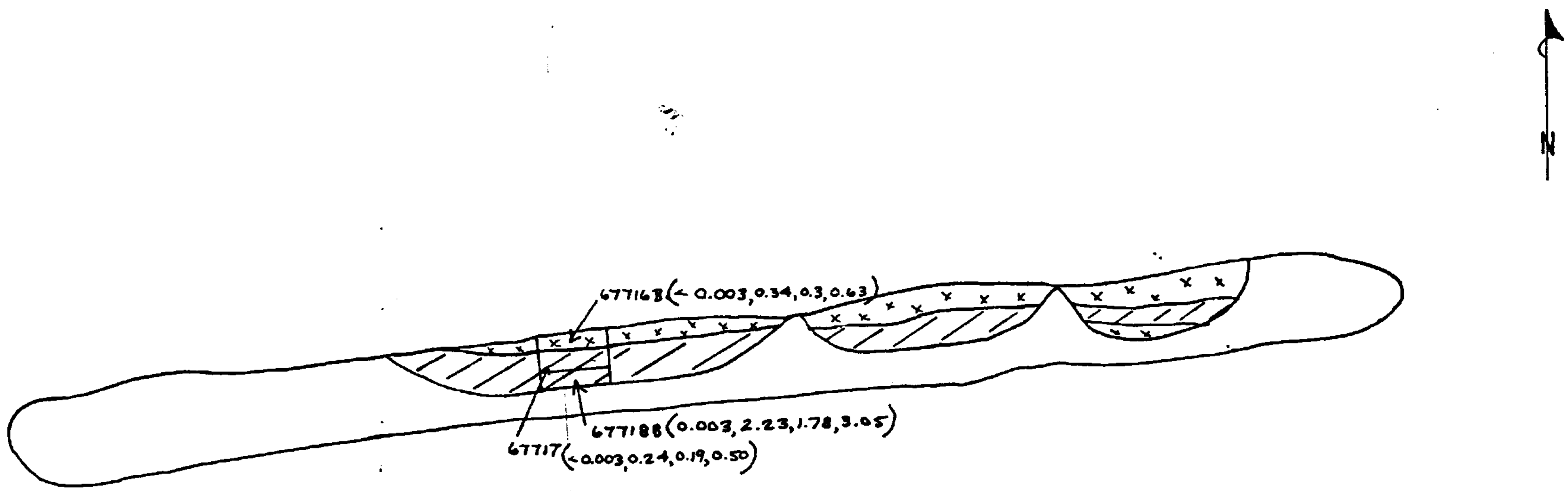
TRENCH I

DATE: AUG, 1981

SCALE: 1:50

0 — 1.0 — 2.0 METRES

FIG. 15



LEGEND:

- SILICIFIED QUARTZ FELDSPAR PORPHYRY
- VEIN with SILICIFICATION, GALENA, SPHAL., CALCITE LENSES, Mn STAINING
- RUBBLE
- 67717 ROCK SAMPLE oz/ton, % (Au, Ag, Pb, Zn)

J.C. STEPHEN EXPLORATION LTD.

NEWEX SYNDICATE

GRIZ I CLAIM

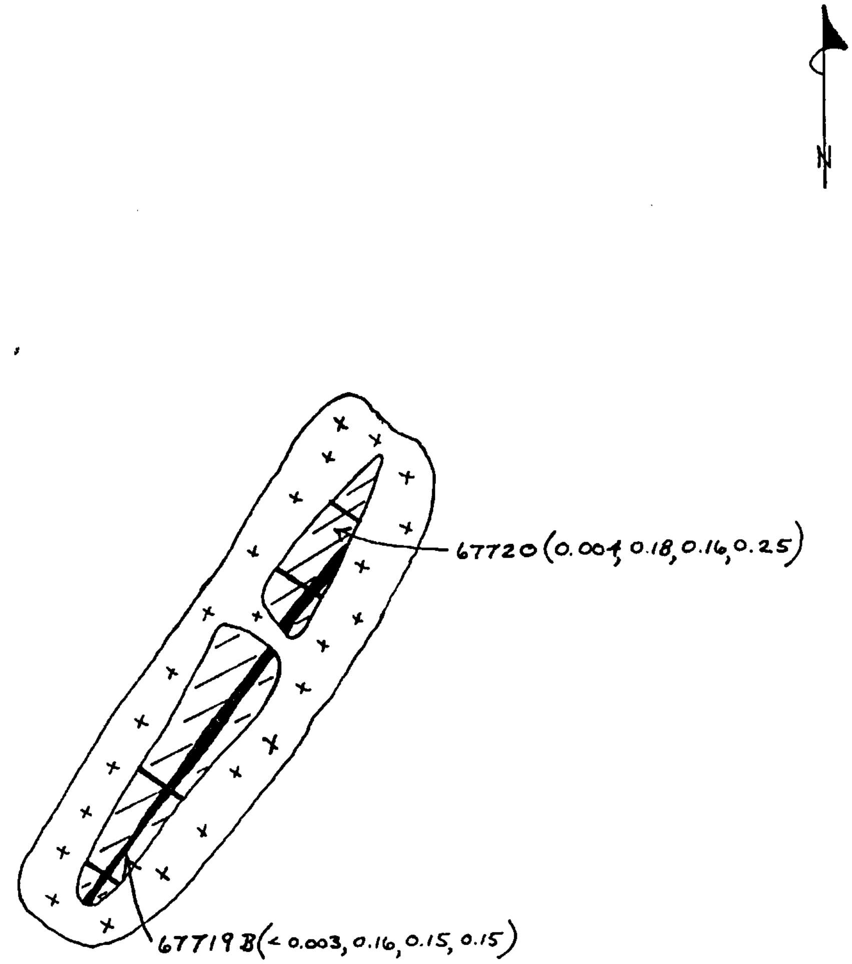
NTS 104K/10E

GEOLOGY & GEOCHEMISTRY
TRENCH 2

DATE: AUG, 1981
SCALE: 1:50

0 1.0 2.0
METRES

FIG. 16



LEGEND:

SEE FIG. 15

Galena, sphalerite, calcite vein.

J.C. STEPHEN EXPLORATION LTD.

NEWEX SYNDICATE

GRIZ I CLAIM

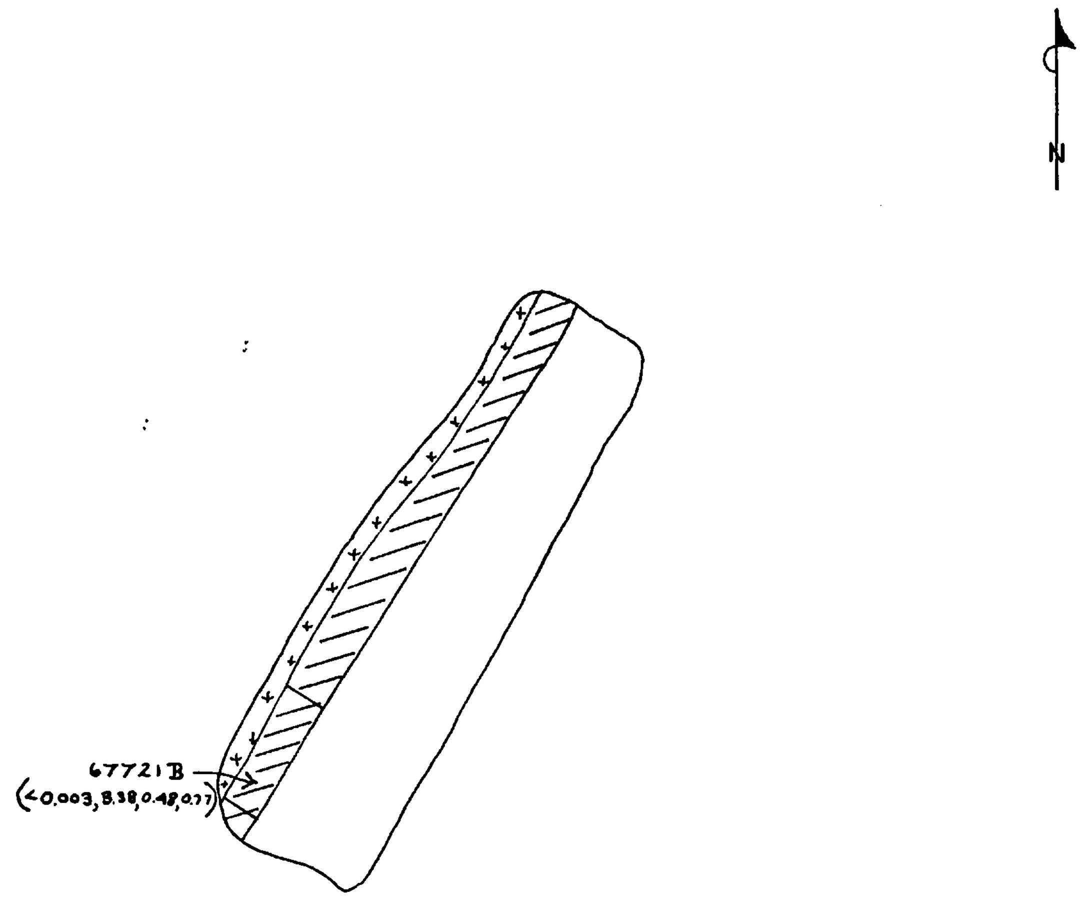
NTS: 104K/10E

GEOLOGY & GEOCHEMISTRY
TRENCH 3

DATE: AUG, 1981
SCALE: 1:50

0 1.0 2.0
METRES

FIG. 17



LEGEND:
SEE FIG. 15

J.C. STEPHEN EXPLORATION LTD.

NEWEX SYNDICATE

GRIZ I CLAIM
NTS: 104K/10E

GEOLOGY & GEOCHEMISTRY
-TRENCH 4

DATE AUG, 1981
SCALE. 1:50

0 1.0 2.0
METRES.

FIG. 18

GEOCHEMISTRY

Soil and Talus

A topochain and compass soil and talus grid was established on GRIZ 1 on the top of the ridge forming the northwest bank of the main valley. The purpose of this grid was to determine the extent of the mineralization found in the area. Samples were taken at 20 metre intervals along cross lines 100 metres apart. A total of 62 samples were collected and analyzed for Au, Ag, As, Pb and Zn.

A soil grid consisting of 16 samples was established along the claim line between GRIZ 1 and 2 and continued along the northern boundary of GRIZ 2. The samples were analyzed for the same five elements.

Reconnaissance soil and talus samples were collected throughout the claims.

Method

The soil samples were collected mainly from the 'B' horizon and occasionally from the 'A' horizon, at depths of 5 to 40 cm. using a grubhoe. Samples were placed in waterproof kraft paper bags and sent to base camp where they were dried and sifted to -35 mesh. The samples were then sent to Chemex Labs, North Vancouver for analysis.

In the lab the soils were first pulverized to -100 mesh. The gold content in ppb was determined by aqua-regia digestion and chemical extraction followed by atomic absorption. Silver and arsenic in ppm, were determined by perchloric-nitric acid digestion and atomic absorption analysis.

Results

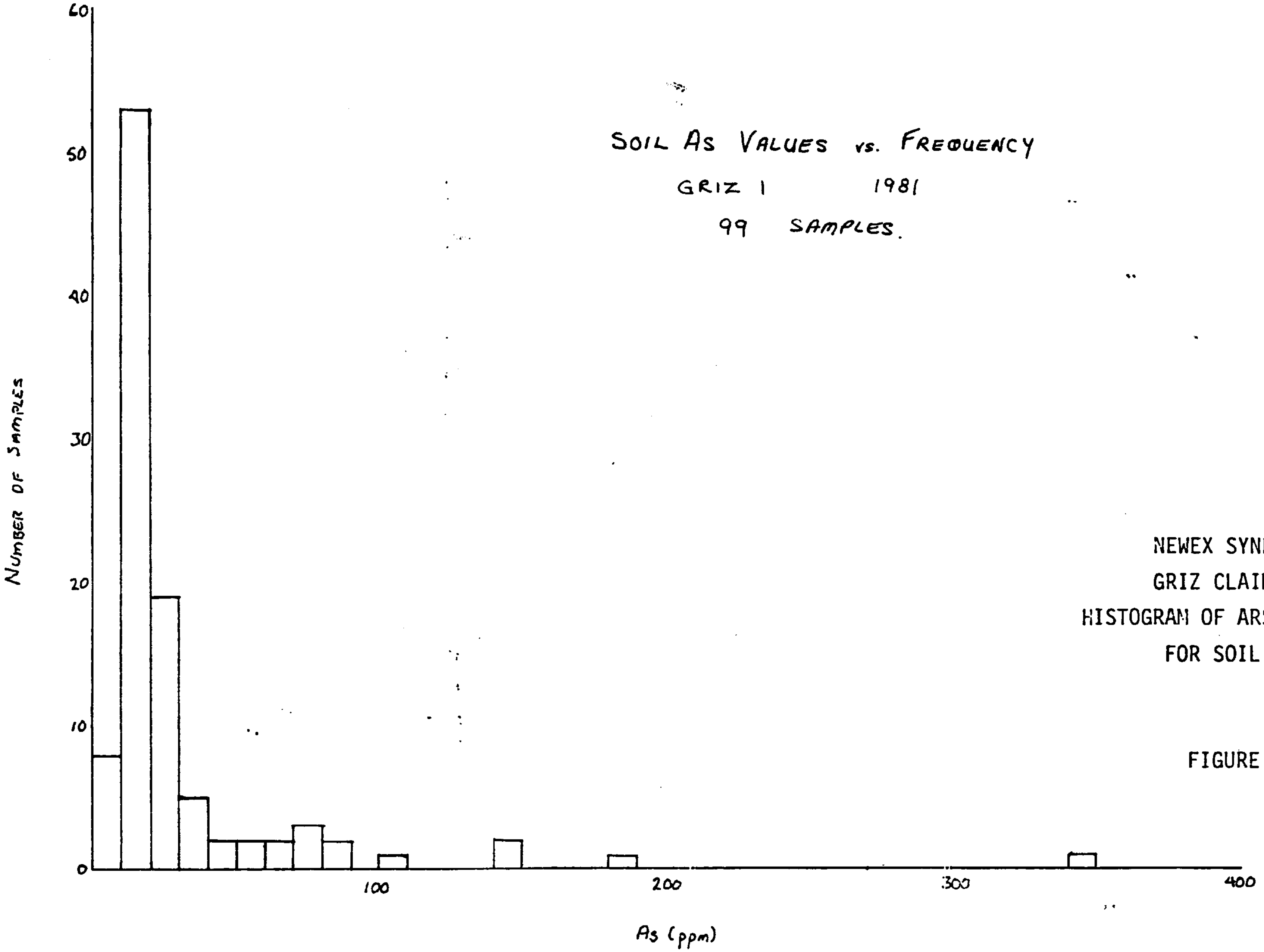
Several anomalous soil results were returned from the sampling on GRIZ 1 and 2. Arsenic, zinc and lead histograms were prepared and are shown in Figures 19 to 21 . Arsenic and zinc show similar patterns for the 99 samples taken. There are five anomalous arsenic values and another nine possibly anomalous values from 50 to 90 ppm. The threshold from the zinc histogram appears to be 135 ppm. Ther are 35 values out of 99 samples that are above this level. The lead histogram shows 18 anomalous values.

Tha anomalous arsenic, zinc and lead results were almost entirely confined to the soil/talus grid on GRIZ 1. The samples taken around the four trenches were anomalous as well as the samples along the entire 3+00S line. Nine anomalous silver results from 0.5 to 3.8 ppm were also returned.

One slightly anomalous soil value came from the claim line between GRIZ 1 and 2 which ran 20 ppb Au, 0.1 ppm Ag, 20 ppm As, 190 ppm Zn and 144 ppm Pb at 800 metres south.

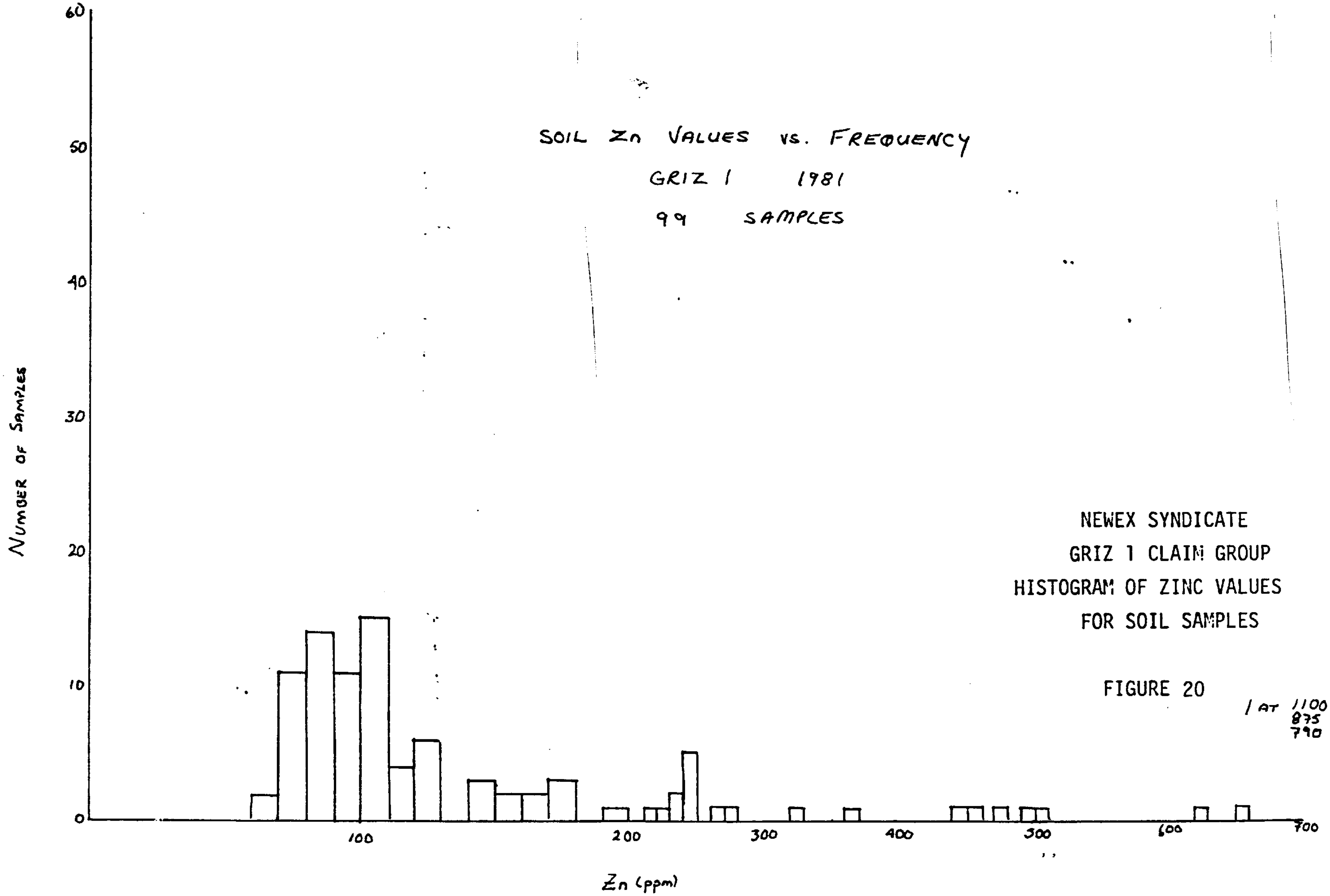
In the reconnaissance soil program one sample was anomalous and ran 20 ppb Au, 0.3 ppm Ag, 9 ppm As, 750 ppm Pb and 245 ppm Zn.

All results are plotted on Maps III and IV in the pocket of this report.



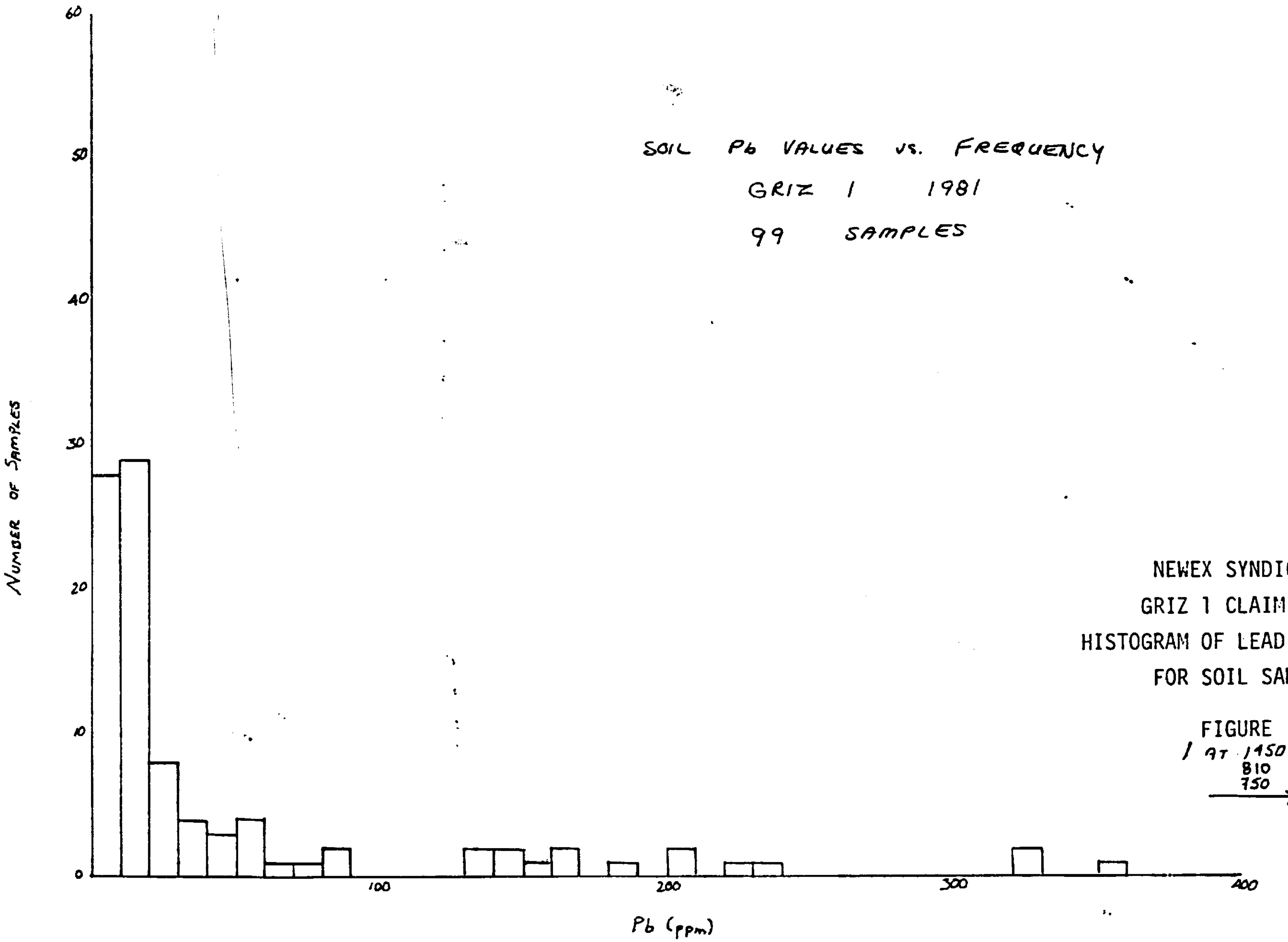
NEWEX SYNDICATE
GRIZ CLAIM GROUP
HISTOGRAM OF ARSENIC VALUES
FOR SOIL SAMPLES

FIGURE 19



NEWEX SYNDICATE
GRIZ 1 CLAIM GROUP
HISTOGRAM OF ZINC VALUES
FOR SOIL SAMPLES

FIGURE 20



NEWEX SYNDICATE
GRIZ 1 CLAIM GROUP
HISTOGRAM OF LEAD VALUES
FOR SOIL SAMPLES

FIGURE 21

Rock Sampling

A total of nine selected chip samples were collected from four hand dug trenches. Sample locations and assay results are shown on Figures 15 to 18.

Two of the three samples from Trench 1 were anomalous in gold. The values were 0.038 and 0.138 oz/ton.

Trenches 2 and 4 returned anomalous silver, lead and zinc values of 2.23 oz; 1.78%; 3.05% and 3.38 oz; 0.48%; 0.77% respectively. Gold values do not appear to be associated with the galena-sphalerite mineralization.

In the reconnaissance program two samples of quartz veins (one with drusy quartz and pyrite) ran 50 ppb gold. The latter was associated with 0.5 ppm silver. Both samples were from a large outcrop of feldspar porphyry in the northwest corner of GRIZ 1. Another sample near 1S on GRIZ 1 ran 110 ppb gold. This sample consisted of a quartz carbonate vein with rusty breccia fragments of feldspar porphyry.

All results are plotted on Maps II and IV in the back of this report.

CONCLUSIONS AND RECOMMENDATIONS

Property and detailed geological mapping of the trenches, chip sampling of the trenches and general prospecting were carried out in 1981. A total of $ was spent on this program.

Significant gold results were returned from the silicified zone in Trench 1 and interesting silver, zinc and lead mineralization was exposed in Trenches 2, 3 and 4. The soil/talus grid on GRIZ 1 showed significantly anomalous silver, lead and zinc results and a few reconnaissance samples were also anomalous.

Future work should include detailed mapping of the property at a scale of 1:2,500. Since the soil/talus grid on GRIZ 1 has not defined the limits of the anomaly this grid should be extended. Trenching should be conducted on this anomaly and Trenches 2, 3 and 4 might be extended to explore the area further. Additional prospecting and sampling on the property would be of value especiallysince little work has been done in the southeast section of the claims.

GRIZ 3 CLAIM
SUMMARY AND CONCLUSIONS

(1) The GRIZ 3 claim consists of 12 units and is located 120 kms southeast of Atlin, B.C.

(2) The claim was staked this year to cover galena-sphalerite mineralization found in silicious veins. Gold and silver values were associated with the Pb-Zn veins.

(3) A crew of two to four people spent 25 man days on the property between July 30 and August 15, 1981.

(4) The claim consists of a large Tertiary quartz feldspar porphyry body which intrudes sediments of Jurassic age. The property has been mapped at a scale of 1:31,680 on an air photo.

(5) Detailed mapping of the mineralized outcrop was conducted at a scale of 1:300 and individual vein zones were mapped at 1:50.

(6) A total of 69 chip samples were taken across the zones and all were analyzed for Au and Ag and also for Pb and Zn where galena and sphalerite were visible. Anomalous results ranging up to 0.194 oz/ton Au, 16.97 oz/ton Ag, 8.29% Pb and 6.72% Zn were obtained.

(7) A soil/talus grid consistingof 41 samples was established to trace the extent of the veins. Two anomalous samples were returned. A talus line at the base of the showing and adjacent outcrop area returned no significant values.

(8) The prospecting and reconnaissance sampling program was limited this year and was so far unsuccessful. The only even slightly anomalous sample was from the far west part of the same northwest striking ridge which contains the mineralization. A total of 6 soils and 3 rocks were collected in this program.

(9) Enlargement of the present soil/talus grid and an E.M.-16 survey on this grid is proposed for the 1982 program in an attempt to determine the actual extent of the veins. Additional talus lines at the base of the ridge are also recommended. Detailed mapping of the property at 1:2500 and additional prospecting and sampling should be conducted.

INTRODUCTION

The GRIZ 3 claim consists of 12 units. It was staked in July, 1981 on the basis of anomalous silver, lead and zinc lithogeochemical results in samples taken earlier in the season. The silver results were obtained from galena-sphalerite veins in a large outcrop in the southeast section of the property. Thus, subsequent field work, carried out in August, 1981, involved detailed geological mapping of the outcrop and veins, at a scale of 1:300 and 1:50 respectively. Geological mapping of the property at a scale of 1:31,680 was also conducted and further prospecting was carried out on the entire property. A total of 42 soil, 23 talus, and 72 rock samples were collected for geochemical analysis.

The claim is immediately south of the Taku Plateau within the Coast Mountains.

The topography of the claims themselves consists of a large plateau area with scattered outcrop at an elevation of approximately 5,000 feet. Three steep ridges and a large cirque, on the property, provide good rock exposure. A northwest trending valley cuts the southwest portion of the claim.

Vegetation is sparse on the plateau region and consists entirely of grass and moss. The southwest corner is covered by patches of thick balsam trees and shrubs.

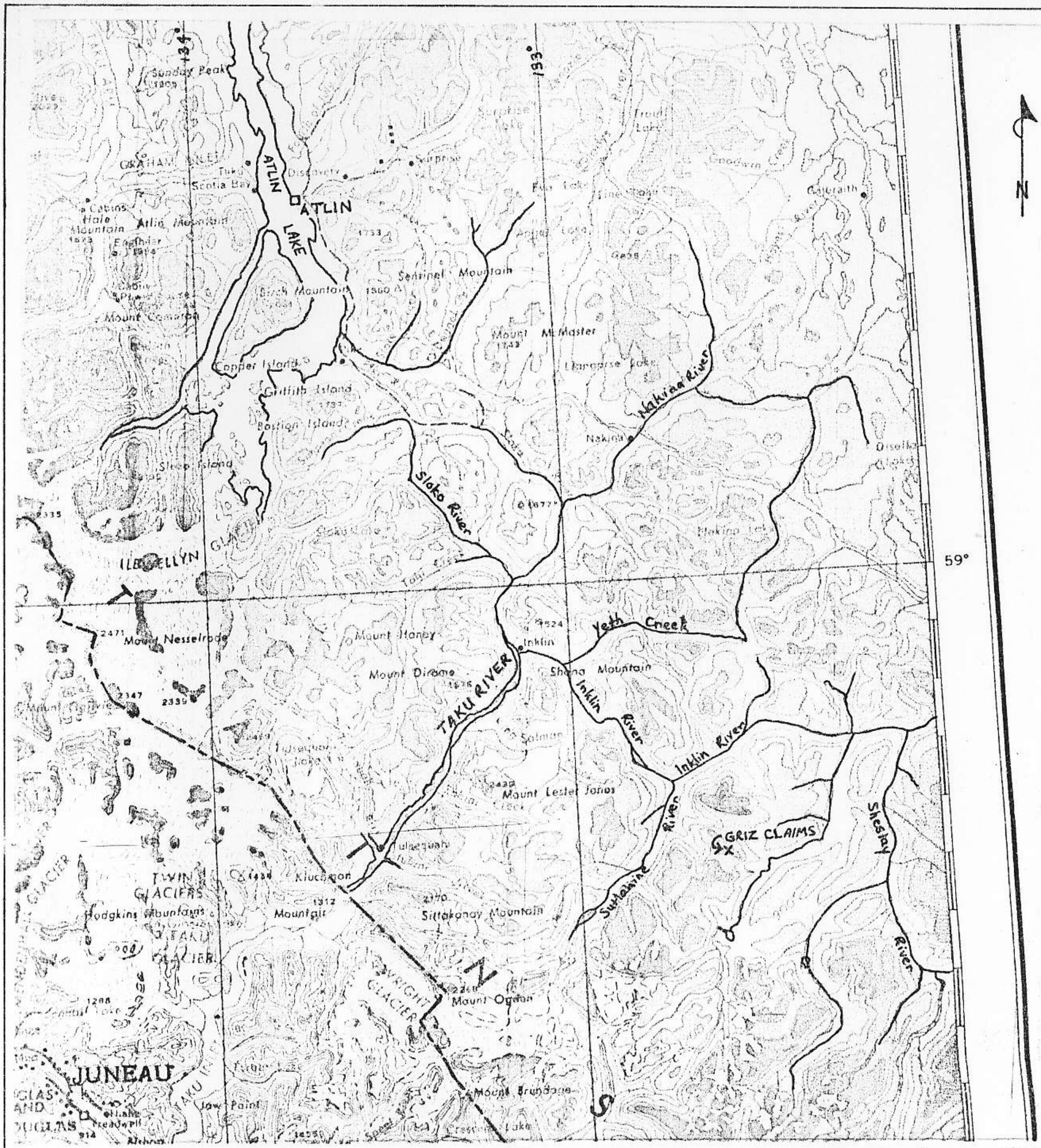
Drainage on the claim is generally poor. The northwest trending valley is extremely swampy and is fed by a few small creeks. Small snow-fed creeks and ponds on the plateau dry up in mid-summer. There are two well developed easterly draining creeks that drain this area.

LOCATION AND ACCESS

The GRIZ 3 claim, (Tulsequah-Juneau map sheet 104K/10E), is located approximately 15 kms north of Trapper Lake, which is 132 kms southeast of Atlin, B.C. (refer to Figure 22). Latitude and longitude are 58°37'N and 132°38'W.

Adjoining the GRIZ 3 claim on the east side is Chevron's 20 unit EMU claim which was staked two weeks prior to GRIZ 3. (Figure 23).

Access to the property is by helicopter from Atlin or Dease Lake.



from SITKA, NORTH AMERICA, G.S.C. Map No. 7.8., 1956

J.C. STEPHEN EXPLORATION LTD.

NEWEX SYNDICATE

GRIZ CLAIMS

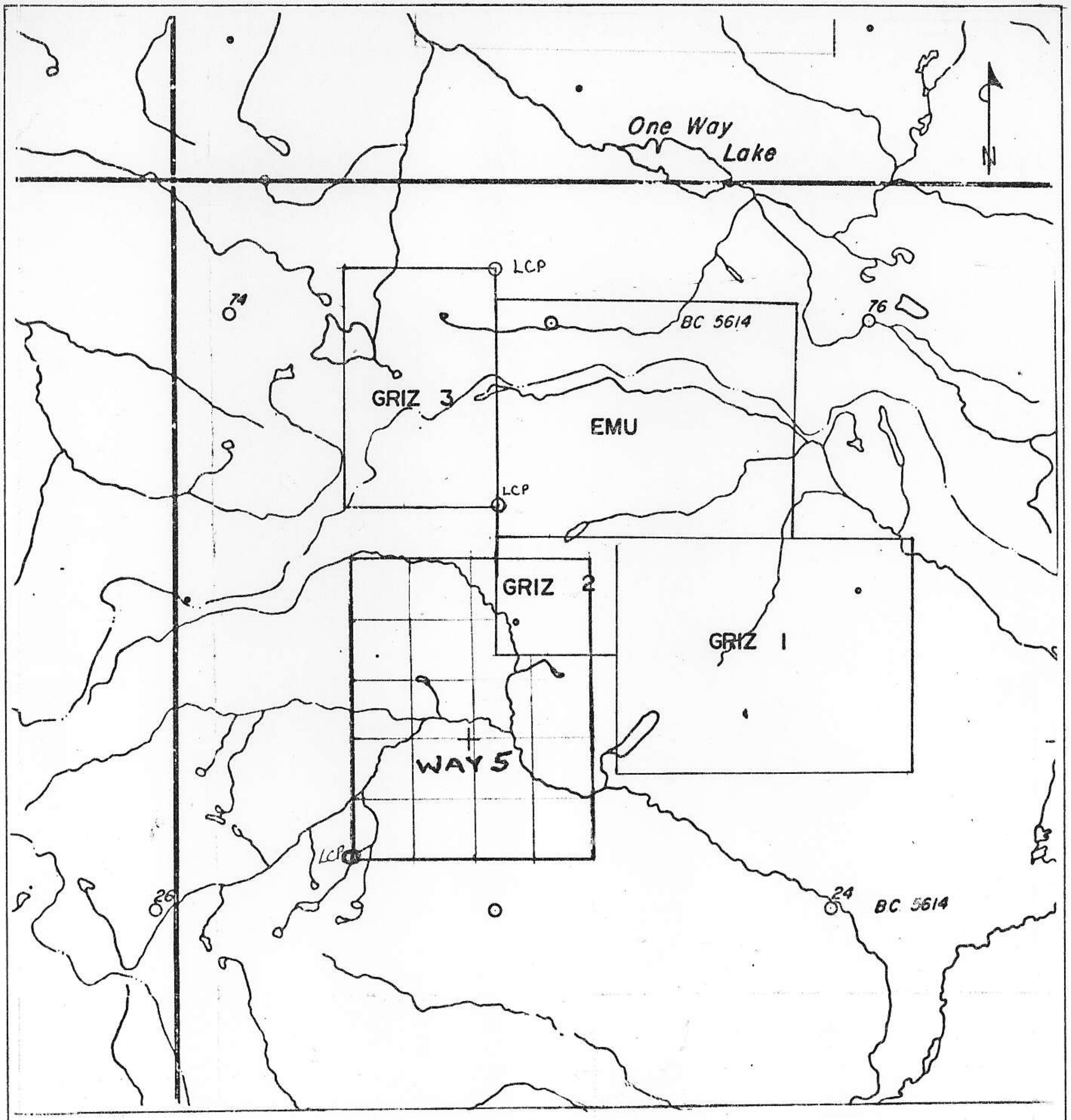
NTS 104K/10E

LOCATION

SCALE 1:1,000,000

0 10 20 kms.

FIGURE 22



CLAIMS SURVEYED by TOPOCHAIN and COMPASS.

J. C. STEPHEN EXPLORATION LTD.

NEWEX SYNDICATE

GRIZ CLAIMS

NTS 104K/10E

CLAIM MAP

0 0.5 1.0 kms.

SCALE 1 50,000

FIGURE 23

REGIONAL GEOLOGY

The Geological Survey of Canada has mapped the geology of the Tulsequah area at a scale of 1:250,000. This mapping is published as Map 1262 A, Tulsequah and Juneau map sheet 104K.

The GRIZ 3 claim is situated in an area of a late Cretaceous to early Tertiary quartz feldspar porphyry intrusion which is one of many that form a west-northwesterly trending belt extending from Trapper Lake to Yonakina Mountain. These intrusive bodies are in close spatial association with the Sloko volcanic rocks of the same age, which are limited to a larger northwesterly trending belt along the eastern edge of the Coast Mountains. Figure 14shows the distribution of the Sloko volcanic rocks and related intrusions within the Tulsequah map area. The Sloko Group volcanic rocks are of interest due to the number of Au occurrences found associated with them. Of additional interest is the major fault which truncates the southwestern part of the GRIZ 3 intrusion.

PROPERTY GEOLOGY

Geological mapping of the GRIZ 3 property, shown in the back pocket on Map V, revealed three rock units.

Rock Types

Unit 3 - Quartz Feldspar Porphyry

Almost the entire property consists of the late Cretaceous to early Tertiary quartz feldspar porphyry body which is extremely variable in compostion. It is fine-grained to aphanitic, porphyritic with mainly plagioclase phenocrysts and less commonly quartz phenocrysts and occurs with or without biotite and hornblende. On the GRIZ 3 property, the quartz feldspar porphyry would be more properly designated a feldspar porphyry. The colour varies from light grey to mauve and pink, but is most commonly green, Minor pyrite is common.

A thin section of the quartz feldspar porphyry was prepared and petrographically analyzed by Vancouver Petrographics Ltd., Fort Langley, B.C. The specimen, (JP-2), was found to be of trachyandesitic composition and of effusive nature, although field relationships suggest a hypabyssal origin. The petrographic description is provided in Appendix II.

Unit 2 - Diabase Dykes

Diabase dykes up to a few metres across cut the feldspar porphyry. The diabase is fine grained and green in colour. Minor pyrite is sometimes present.

Unit 1 - Sedimentary Rocks

The southwestern part of the intrusion appears to be in fault contact with a chert pebble conglomerate of the lower and/or middle Jurassic Takwahoni Formation. The conglomerate is green, chloritic and has chert pebbles from a few millimetres to 10 millimetres in size. A small outcrop of Takwahoni Formation black, rusty shale is also present in the centre of the claim.

Structure

As already mentioned, a major northwest trending fault truncates the southwestern edge of the quartz feldspar porphyry. Three sets of air photo linears, which trend northerly, northwesterly and easterly, are also evident throughout the intrusion and may represent minor fault and fracture systems. A fault, represented by a northerly striking gully, appears to offset the mineralized veins which trend easterly to northeasterly.

Mineralization

As illustrated in Figure24, six vein zones have been outlined that contain veins of galena-sphalerite mineralization. The zones are defined by an altered recessive area, containing mineralized veins, between relatively unaltered walls of the feldspar porphyry host rock. This is illustrated in Photo 1 which shows part of Zone 5.

PHOTO 5: GRIZ 3 CLAIM ZONE 5

The zones appear to be offset by a left-lateral fault. However, since it is difficult to directly correlate them, each will be referred to as a distinct zone.

The outcrop in which the veins occur is strongly fractured with many faults and joints. (Photo 1) The feldspar porphyry is rusty in the general area of mineralization but is altered almost beyong recognition within the vein zones themselves. Sphalerite-calcite veins are abundant throughout the outcrop, especially in the vicinity of the mineralized zones.

Generally, the zones trend 75 - 90^{o} and dip 85^{o}S to 85^{o}N. On the west side of the gully, they extend for approximately 5-8 m before being covered by overburden after which the veins could not be traced despite good rock exposure less than 20 m away. On the east side of the fault gully, the veins continue for about 20 m before they disappear beneath overburden. Although the zones do not entirely match, minor vertical displacement along the fault would account for any discrepancies. The left-lateral movement appears to be approximately 12 m.

Each zone contains at least one larger vein, usually on the hanging wall side, and often another vein along the footwall side. Smaller veins and veinlets, from a few millimetres to 10 cms cut the very altered quartz feldspar porphyry that lies in the centre of the zone. The galena-sphalerite mineralization occurs as bands and disseminations and is generally restricted to that part of the vein immediately adjacent to the wall of the zone. Minor pyrite and arsenopyrite are also present and are spatially associated with the galena and sphalerite.

Alteration

Most of the rock within the zones is Mn stained. The veins themselves exhibit more intense Mn staining and the smaller veins and veinlets in the central region of the zones are so extensively altered and Mn stained that only a black, extremely soft 'clayey' material remains. Rusty remnant fragments of quartz feldspar porphyry are contained within this black material.

The altered feldspar porphyry exhibits limonitic and calcarious alteration. Plagioclase biotite and amphibole phenocrysts ~~have been~~ altered to clay minerals, white mica, limonitic calcite and opaque minerals. A petrographic description of this rock (JP-3) is provided in Appendix II.

The veins themselves also show limonitic and calcareous alteration and silicification. Remnants of an original porphyritic texture are evident in thin section. Several stages of deformation have occurred which include an early stage of brecciation and mylonitization followed by several periods of fracturing. The petrographic analysis outlined the following events:

1. early quartz veining and probably silicification as well as introduction of ore minerals
2. calcite veinlets which remobilized some of ore minerals
3. late chalcedony veinlets and some brecciation and fracturing resulting in an almost cataclastic fabric
4. late fracturing offsetting stage 3 structures.

From field observation as well as petrographic analysis, it appears that the sphalerite was commonly remobilized in stage 2 resulting in the abundant calcite-sphalerite veins proximal to the vein zones and mineralization.

The petrographic descriptions of the vein material is outlined in Appendix II. Specimen numbers are JP-5, JP-6, G-1, G-2. Both G-1 and G-2 are highly mineralized samples.

0015 0024

0013 007

Description of Veins - GRIZ 3 Showing

The following is a description of individual veins as numbered in Figure 4:

1. barren coarse-grained calcite vein - 1 cm wide
2. barren coarse-grained calcite vein - 2 cm wide
3. barren coarse-grained calcite vein - 3 cm wide
4. barren coarse-grained calcite vein - 3.5 cm wide
5. calcite vein 1/4 cm wide
6. calcite vein 2 cm wide, 3-4' long
7. Calcite vein, exact orientation unknown
8. rusty calcite vein 1 cm wide
9. vein Zone 1; 75-90 cm wide; 20 cm of abundant galena on footwall side with minor sphalerite, silicification, followed by 50 cm of highly altered 'gungy' black Mn stained and rusty orange vein material towards hanging wall side; last rock adjacent to footwall of vein is slightly Mn stained and rusty quartz feldspar porphyry fragments
10. quartz-calcite vein 1 cm wide
11. silicious vein material, some calcite, Mn stained, rusty quartz-feldspar porphyry fragments, 30 cm wide
12. Mn-quartz feldspar porphyry breccia vein 15 to 18 cm wide with small calcite vein in centre; maximum width of vein 40 cm with less Mn breccia and more calcite
13. same as 12. only 15 cm wide
14. vein material with heavy Mn staining, rusty quartz feldspar porphyry fragments, associated with silicification, some irregular calcite veins
15. same as 14., 50 cm wide
16. 3 cm wide calcite vein surrounded by silicified, Mn stained, rusty vein material
17. footwall vein in vein Zone 4; 30 cm wide, very silicious, Mn stained, rusty quartz feldspar porphyry fragments
18. rusty sphalerite vein 2 cm wide
19. sphal-calcite vein 3 cm wide
20. vein zone about 3 m wide (refer to sketch of Zone 5)

21. hanging wall vein of Zone 5; 40-45 cm wide at base, heavily Mn stained, rusty quartz feldspar porphyry fragments, 2.5 cm of quartz rich vein material towards centre; minor quartz-carbonate veining, calcite veins

22. vein from footwall to hanging wall; 15 cm of black Mn stained breccia, rusty quartz feldspar porphyry fragments, very altered followed by 30 cm quartz-calcite vein, heavily Mn stained, buff weathering, resistant, with 5 cm quartz feldspar porphyry in centre of vein, followed by 5 cm of black Mn stained breccia

23. rusty calcite vein 15 cm wide with Mn-silica vein material

24. two veins; north vein 4 cm wide surrounded by Mn staining; south vein 15 cm wide Mn-silica, minor calcite in centre

25. rusty, Mn-breccia veins.

Legend for Figures 25 to 30

Quartz Feldspar Porphyry

Mn staining

Silicification

vein with rusty quartz feldspar porphyry fragments

galena, sphalerite mineralization

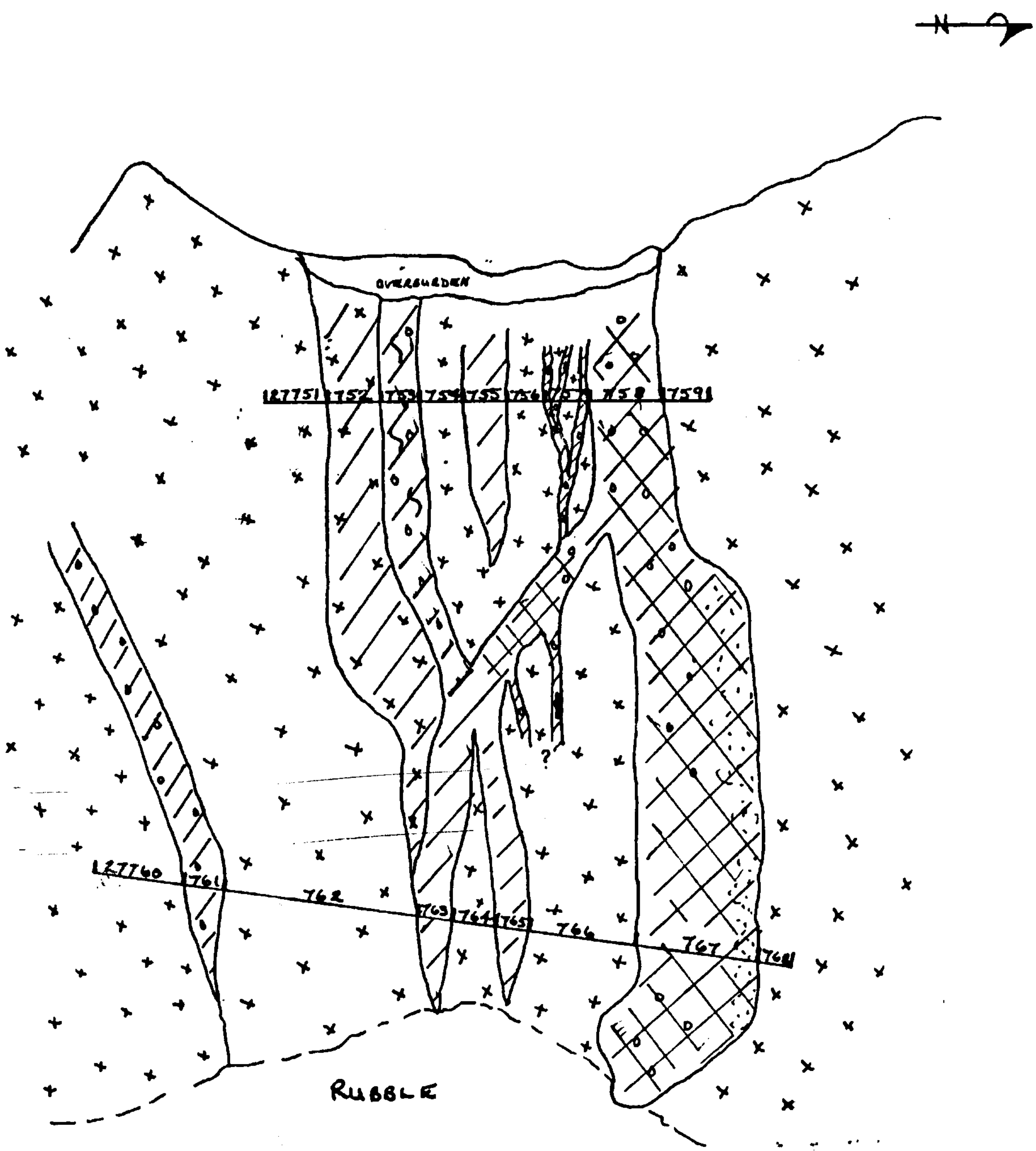
calcite stingers

Symbols

27760, 761 - chip sample locations

(10,8.1) - Au ppb, Ag ppm, rock geochemistry results

(0.010, 1.46, 0.54, 1.22) (Au, Ag oz/ton; Pb,Zn%) assay results



GEOCHEMICAL RESULTS

27751 C	(10,0.8)	27760 C	(10,0.2)
27752 C	(10,0.2)	27761 C	(10,4.5)
27753 C	(10,2.5)	27762 C	(10,0.3)
27754 C	(10,0.6)	27763 C	(10,2.1)
27755 C	(10,1.1)	27764 C	(10,0.4)
27756 C	(10,0.4)	27765 C	(20,2.7)
27757 C	(10,1)	27766 C	(10,0.7
27758 C	(10,2.4)	27767 C	(0.010,5.98,3.46,4.19)
27759 C	(10,0.4)	27768 C	(10,0.9)

J.C. STEPHEN EXPLORATION LTD.

NEWEX SYNDICATE

GRIZ 3 CLAIM GROUP

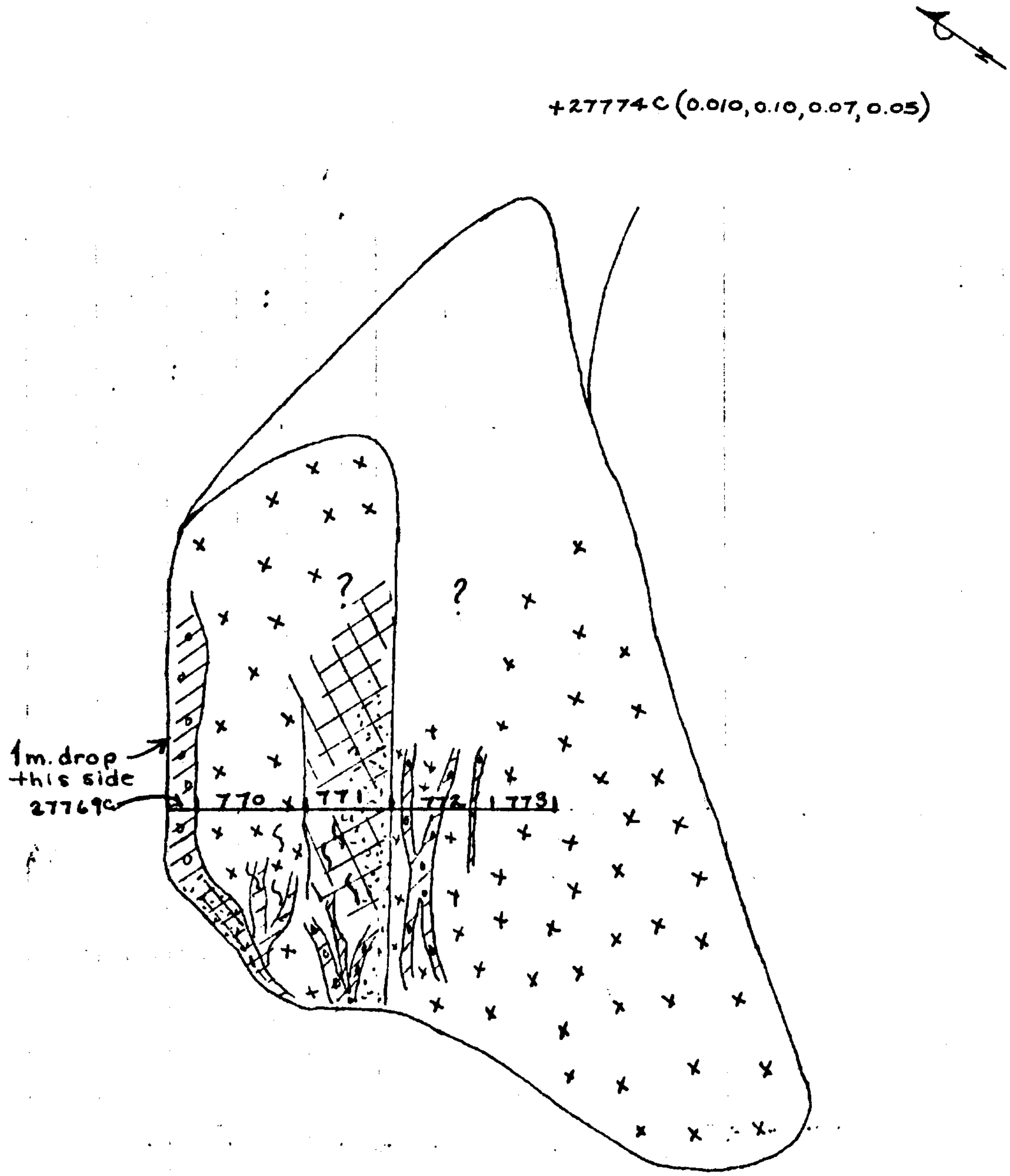
N.T.S. 104K/10E

GEOLOGY & GEOCHEMISTRY

PLAN of ZONE I

SCALE: 1:50 AUG., 1981

FIGURE 25



GEOCHEMICAL RESULTS

27769 C (20,1.9)
27770 C (10,0.9)
27771 C (0.194,1.46,0.54,1.22)
27772 C (10,1.7)
27773 C (10,0.2)

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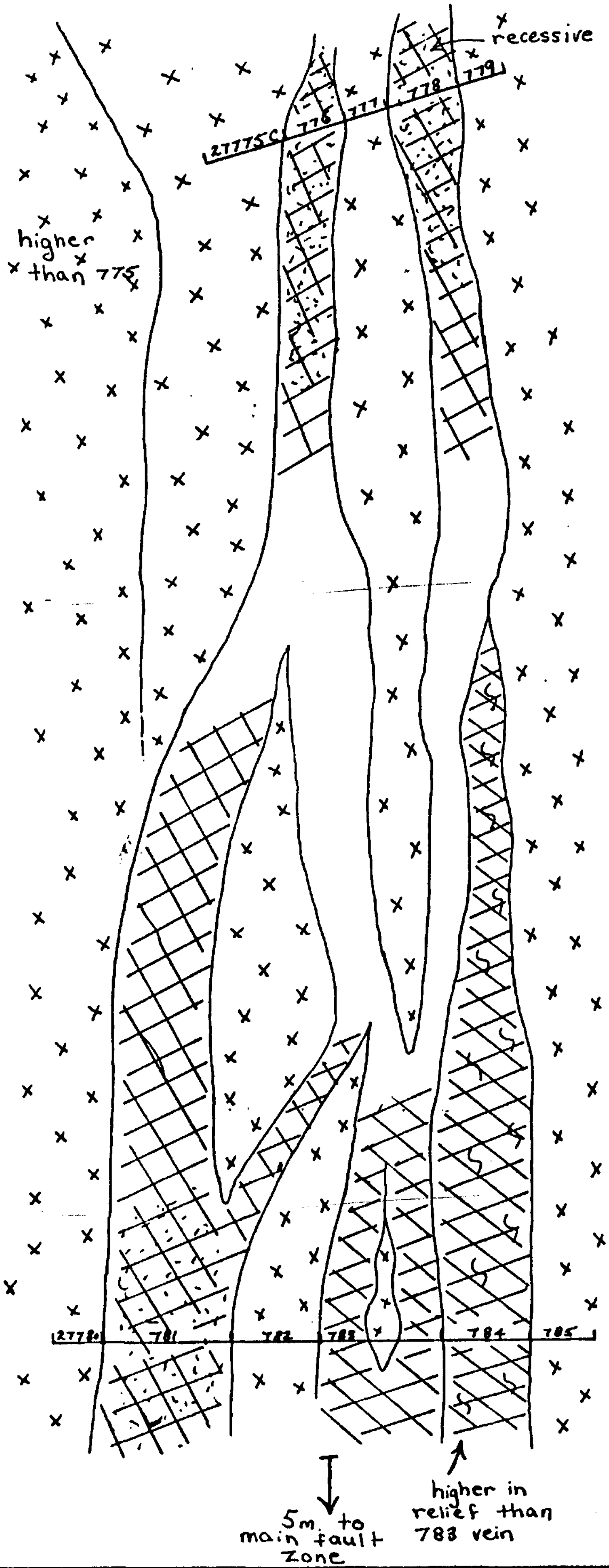
NEWEX SYNDICATE

GRIZ 3 CLAIM GROUP
NTS 104K/10E

GEOLOGY & GEOCHEMISTRY
PLAN of ZONE 2

SCALE: 1:50 AUG. 1981

FIGURE 26



GEOCHEMICAL RESULTS

27775 C (10,0.2)
27776 C (0.003,1.15,1.14,1.43)
27777 C (10,0.5)
27778 C (0.004,1.93,0.87,4.43)
27779 C (10,0.2)

27780 C (10,0.1)
27781 C (0.003,0.22,0.21,0.54)
27782 C (10,0.5)
27783 C (10,1.2)
27784 C (10,0.7)
27785 C (10,0.2)

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NEWEX SYNDICATE

GRIZ 3 CLAIM GROUP
NTS 104K/10E

GEOLOGY & GEOCHEMISTRY
PLAN of ZONE 3

SCALE: 1:50 **AUG., 1981**

FIGURE 27

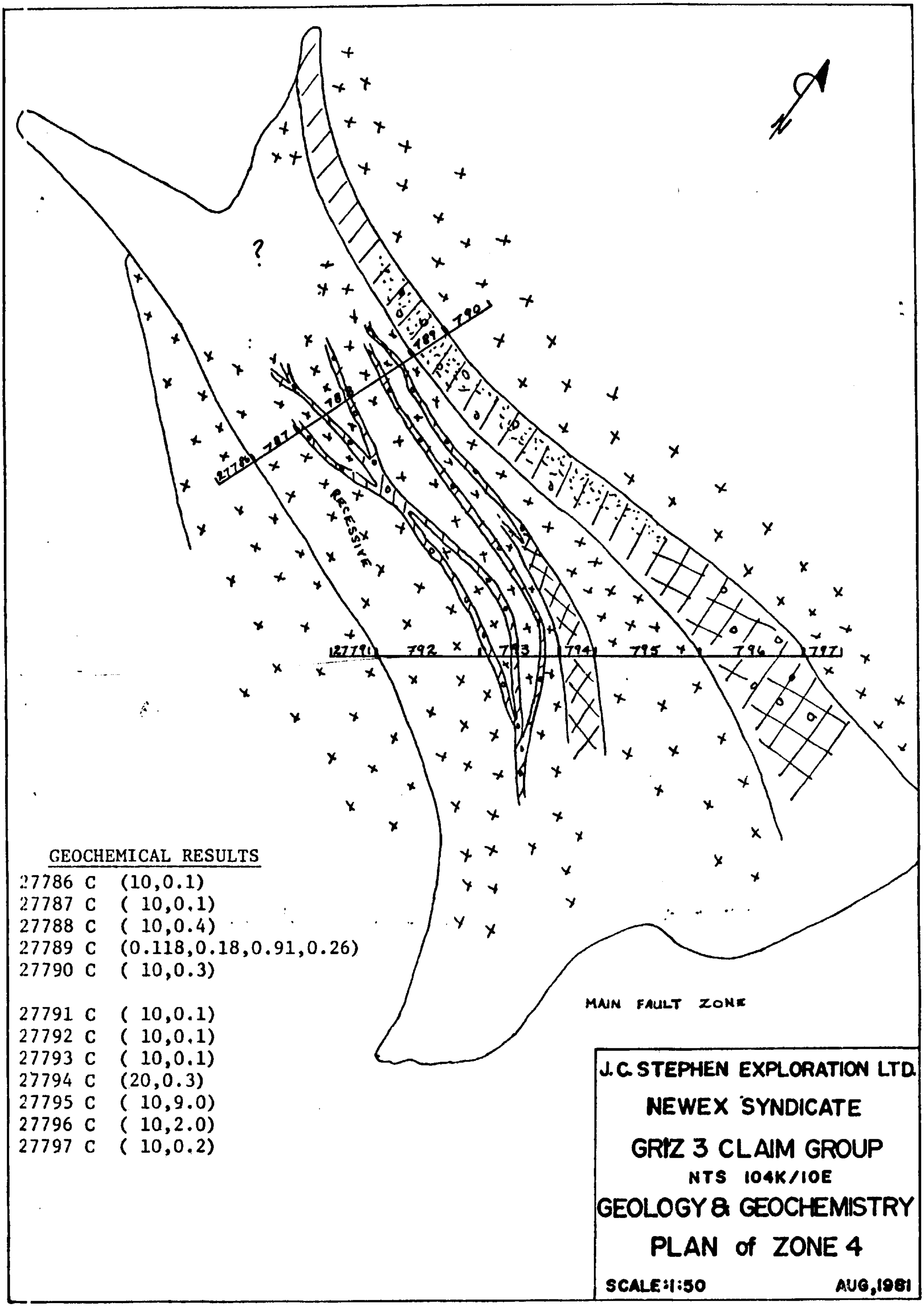
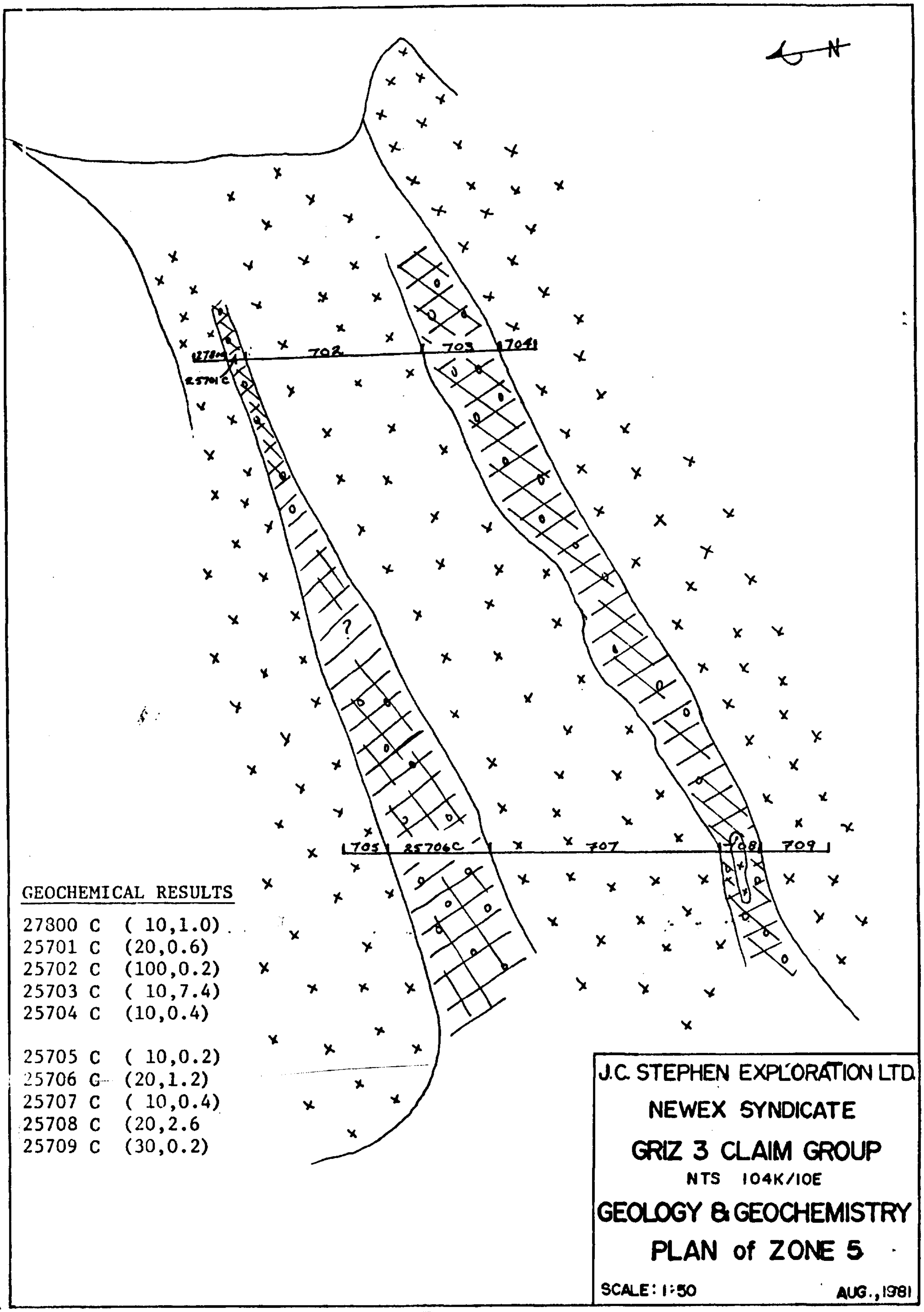

?
27786
787
788
789
790
RECESSIVE
27791
792
793
794
795
796
797
MAIN FAULT ZONE
GEOCHEMICAL RESULTS
27786 C (10,0.1)
27787 C (10,0.1)
27788 C (10,0.4)
27789 C (0.118,0.18,0.91,0.26)
27790 C (10,0.3)
27791 C (10,0.1)
27792 C (10,0.1)
27793 C (10,0.1)
27794 C (20,0.3)
27795 C (10,9.0)
27796 C (10,2.0)
27797 C (10,0.2)
J.C. STEPHEN EXPLORATION LTD.
NEWEX SYNDICATE
GRIZ 3 CLAIM GROUP
NTS 104K/10E
GEOLOGY & GEOCHEMISTRY
PLAN of ZONE 4
SCALE: 1:50
AUG, 1981

FIGURE 28



GEOCHEMICAL RESULTS

27800 C (10,1.0)
25701 C (20,0.6)
25702 C (100,0.2)
25703 C (10,7.4)
25704 C (10,0.4)

25705 C (10,0.2)
25706 C (20,1.2)
25707 C (10,0.4)
25708 C (20,2.6
25709 C (30,0.2)

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NEWEX SYNDICATE
GRIZ 3 CLAIM GROUP
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GEOLOGY & GEOCHEMISTRY
PLAN of ZONE 5
SCALE: 1:50 AUG., 1981

FIGURE 29

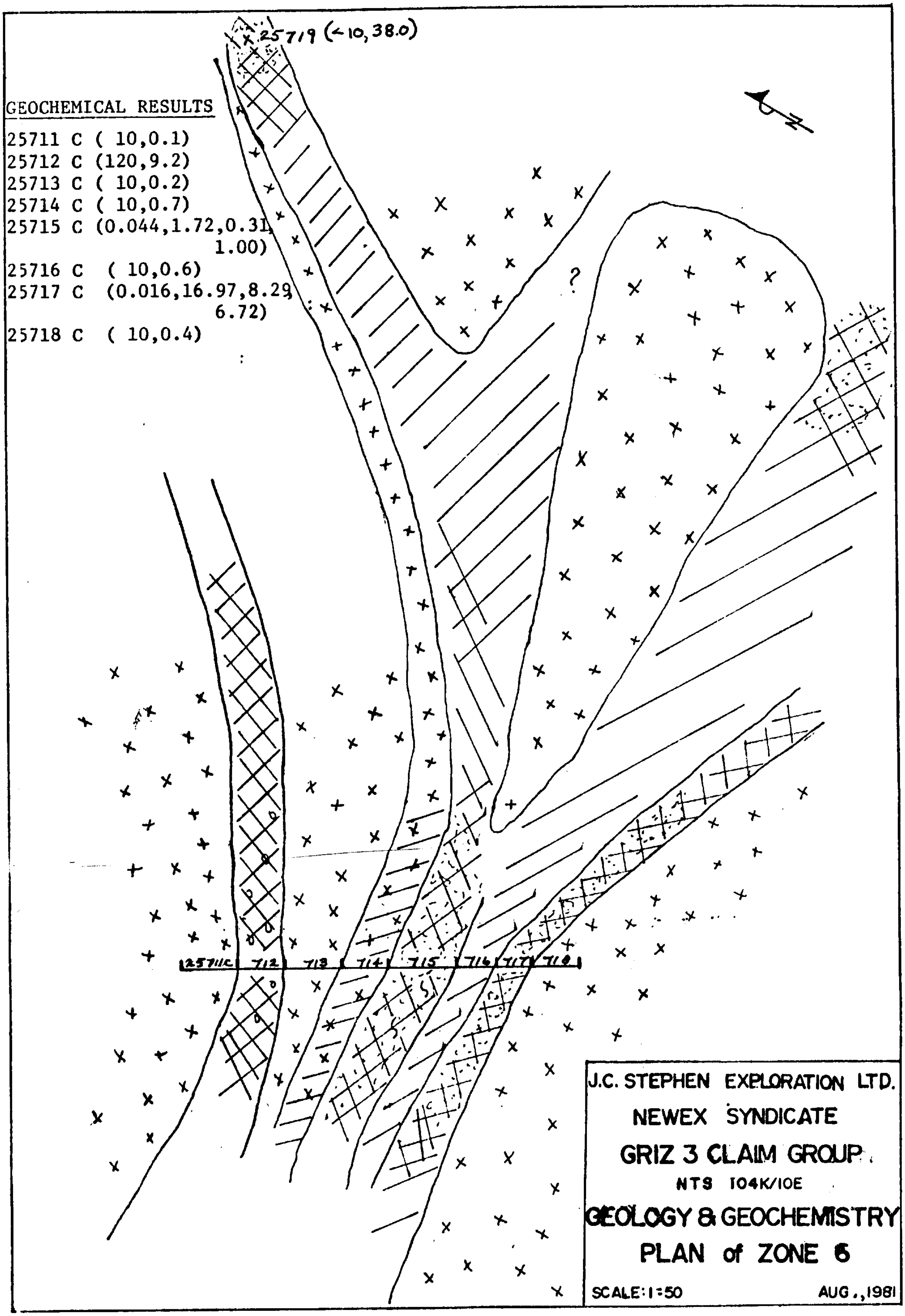

25719 (<10,38.0)
GEOCHEMICAL RESULTS
25711 C (10,0.1)
25712 C (120,9.2)
25713 C (10,0.2)
25714 C (10,0.7)
25715 C (0.044,1.72,0.31, 1.00)
25716 C (10,0.6)
25717 C (0.016,16.97,8.29, 6.72)
25718 C (10,0.4)
25711C 712 713 714 715 716 717 718
J.C. STEPHEN EXPLORATION LTD.
NEWEX SYNDICATE
GRIZ 3 CLAIM GROUP
NTS 104K/10E
GEOLOGY & GEOCHEMISTRY
PLAN of ZONE 6
SCALE: 1:50
AUG., 1981

FIGURE 30

GEOCHEMISTRY

Soil and Talus:

A topochain and compass grid was established on the east side of the showing in an attempt to determine the extent of the mineralized veins. The baseline was run parallel to the majority of the veins. Samples were taken at 20 m intervals along crosslines 100 m apart. A total of 36 soil samples and 5 talus samples were collected on the grid. All samples were analyzed for Au, Ag, As and Zn and some were also analyzed for Pb.

A talus line was run at the base of the outcrop in which the showing is located. Eighteen samples were taken at intervals of 25 m, where possible, and analyzed for Au, Ag, As, Pb and Zn.

Reconnaissance soil and talus samples were collected throughout the claims.

Method

The soil samples were collected from the 'B' horizon at depths of 3 to 32 cm, using a grubhoe or rock hammer. Samples were placed in waterproof Kraft bags and sent to base camp where they were dried and sifted to 35 mesh. The samples were then sent to Chemex Labs, 212 Brooksbank Avenue, North Vancouver, B.C. for analysis. In the lab, the soils were first pulverized to 100 mesh. The gold content in ppb was determined by aquaregia digestion and chemical extraction followed by atomic absorption. Ppm, Ag and As were determined byperchloricnitric acid digestion and atomic absorption analyses.

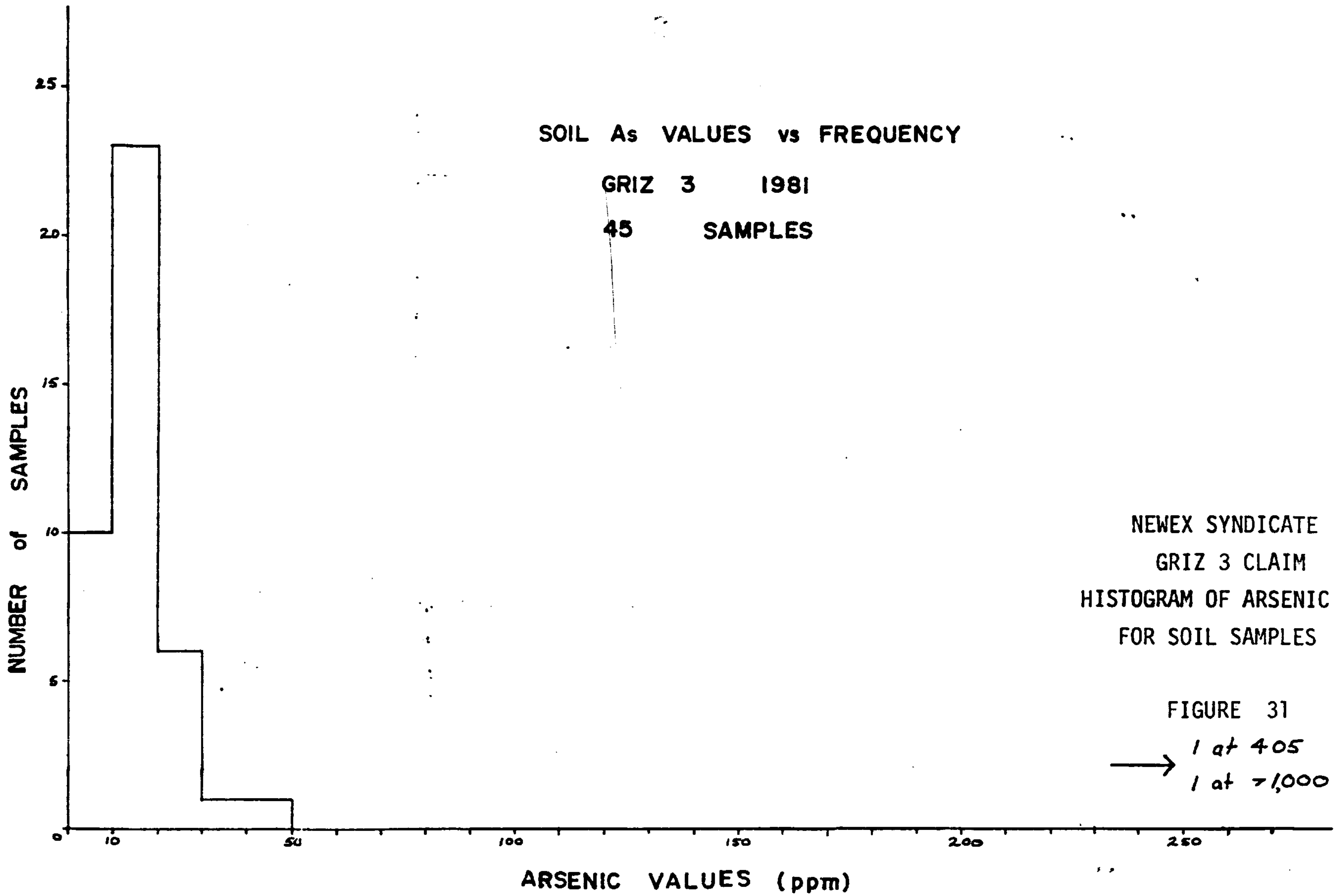
Results

One highly anomalous soil result was obtained from the soil/talus grid east of the showing. The results were 80 ppb Au, 42.0 ppm Ag, >1000 ppm As, 3000 ppm Pb and 1900 ppm Zn. The sample is 200 m east of the showing along the trend of the exposed veins. No other Au results greater than 20 ppb were returned from the grid. A 250 ppm Zn value was associated with a high As value of 405 ppm. This sample was taken at 0+00E/0+20N on the soil/talus grid and is directly above the galena-sphalerite veins in the showing.

A histogram of As results is illustrated in Figure 31 The distribution does not indicate any further anomalous values.

The distribution of Zn results in the histogram shown in Figure 32, indicates another anomalous Zn value. The sample ran 198 ppm Zn, 21 ppm Pb and 25 ppm As and was taken below the rock exposure on the far west part of the northwest striking ridge which contains the mineral showing.

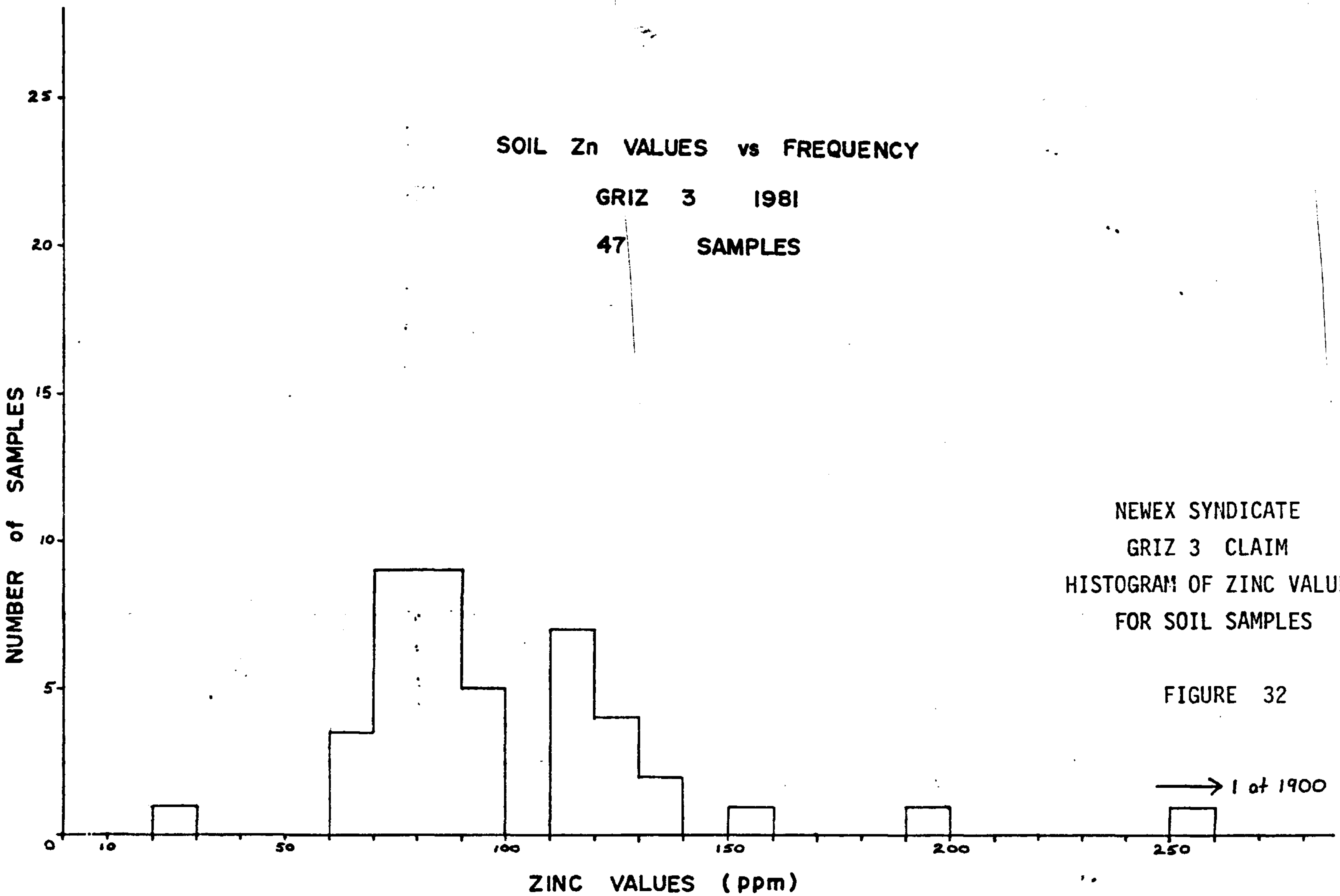
No anomalous results were obtained from the talus line.



NEWEX SYNDICATE
GRIZ 3 CLAIM
HISTOGRAM OF ARSENIC VALUES
FOR SOIL SAMPLES

FIGURE 31

→ 1 at 405
1 at >1,000



NEWEX SYNDICATE
GRIZ 3 CLAIM
HISTOGRAM OF ZINC VALUES
FOR SOIL SAMPLES

FIGURE 32

Rock

A total of 69 chip samples were taken across the galena-sphalerite veins in the showing. The samples included the relatively fresh wallrock, the altered host rock and the vein material. The sample locations and geochemistry and assay results are shown in Figures 25 to 30 . Chip samples, showing no mineralization, were geochemically analyzed for Au and Ag. Those which showed galena-sphalerite mineralization were assayed for Au, Ag, Pb and Zn.

Results

There were six samples that ran 0.010 oz /ton Au or greater. These values were 0.194, 0.118, 0.044, 0.016 and two 0.010 oz/ton Au, and were restricted to the vein material with visible galena-sphalerite mineralization.

The highest Au values correspond to high Ag results, but a direct correlation does not seem to exist. The 0.016 oz/ton Au assay was associated with 16.97 oz/ton Ag, 8.29% Pb and 6.72% Zn, whereas the sample that ran 0.194 oz/ton Au ran 1.46 oz/ton Ag, 0.54% Pb and 1.22% An. Some of the high Ag values did not have anomalous Au values associated with them at all.

The assay results from the veins are tabulated below:

Sample	Au (oz/ton)	Ag (oz/ton)	Pb (%)	Zn (%)
27767 C	0.010	5.98	3.46	4.19
27771 C	0.194	1.46	0.54	1.22
27774 C	0.010	0.10	0.07	0.05
27776 C	0.003	1.15	1.14	1.43
27778 C	0.004	1.93	0.87	4.43
27781 C	0.003	0.22	0.21	0.54
27789 C	0.118	0.18	0.91	0.26
25715 C	0.044	1.72	0.31	1.00
25717 C	0.016	16.97	8.29	6.72

Initial grab samples from the showing returned the following results:

Sample	Ag	Pb	Zn
73845 B	14.62 oz/ton	5.64%	6.72%
78848 B	100 ppm	>10,000 ppm	>10,000 ppm
78847 B	8 ppm	1,800 ppm	3,800 ppm

The Au and Ag values are closely related to the Pb-Zn mineralization. The chip samples which were geochemically analyzed, (ie. had no evident galena-sphalerite mineralization), did not return any highly anomalous results. There were three anomalous gold results which were 800, 120, and 100 ppb. Ag values of 38.0, 9.8, 9.2, 9.0, 7.4, 4.5, 2.7 and 2.6 ppm include all those above 2.5 ppm. All the above samples except the 9.0 ppm Ag, were from the highly altered, Mn stained vein material with rusty quartz feldspar porphyry fragments.

No anomalous rock geochemical results were obtained from the reconnaissance sampling program.

CONCLUSIONS AND RECOMMENDATIONS

Property and detailed geological mapping of the showing, chip sampling of the veins and general prospecting and sampling were carried out in 1981. A total of $5,266 was spent on this program, $2,400 of which has been applied for 2 years assessment work on the GRIZ 3 claim. The remainder has been credited to a portable assessment credit account. Significant results were returned from chip samples of the galena-sphalerite bearing veins. A few soil samples along the covered possible extent of the veins were also anomalous. Future work should involve further tracing of the veins to determine extent. This can be done by increasing the size of the present soil/talus grid and by running additional talus lines below the northwest striking ridge which contains the showing. An E.M. 16 survey on the soil grid is also recommended. Detailed mapping of the property should be conducted at a scale of 1:2500. Additional prospecting and sampling both on the property and around the property to investigate air photo linears would be beneficial.

PROSPECT AREAS

NAHLIN FAULT AREA

Nahlin Mountain Camp

As indicated on Figure 33a camp was established near Nahlin Mountain on a body of hornblende diorite which gives the appearance of having been offset by a branch of the Nahlin Fault. It was hoped the intrusive might have fractured during deformation and acted as a host for mineralization.

The prospecting crew report very little available outcrop within the intrusive. A north trending cleavage was noted but no quartz veining.

Quartz veining is evident in the serpentinite formation near the fault zones. These zones are rusty but no sulphide mineralization was seen.

A blue-grey andesitic rock found as float in several places contained pyrite.

Geochemical values obtained were all very low:

	Element Range		
Type	Au ppb	As ppm	Ag ppm
Silt	<10	4-9	0.1
Soil	<10	4-27	0.1
Rock	<10-10	3-57	0.1-0.2

The area has been prospected and staked for asbestos. A few fractures with minor fibre developmentwere seen in old trenches.

NEWEX SYNDICATE

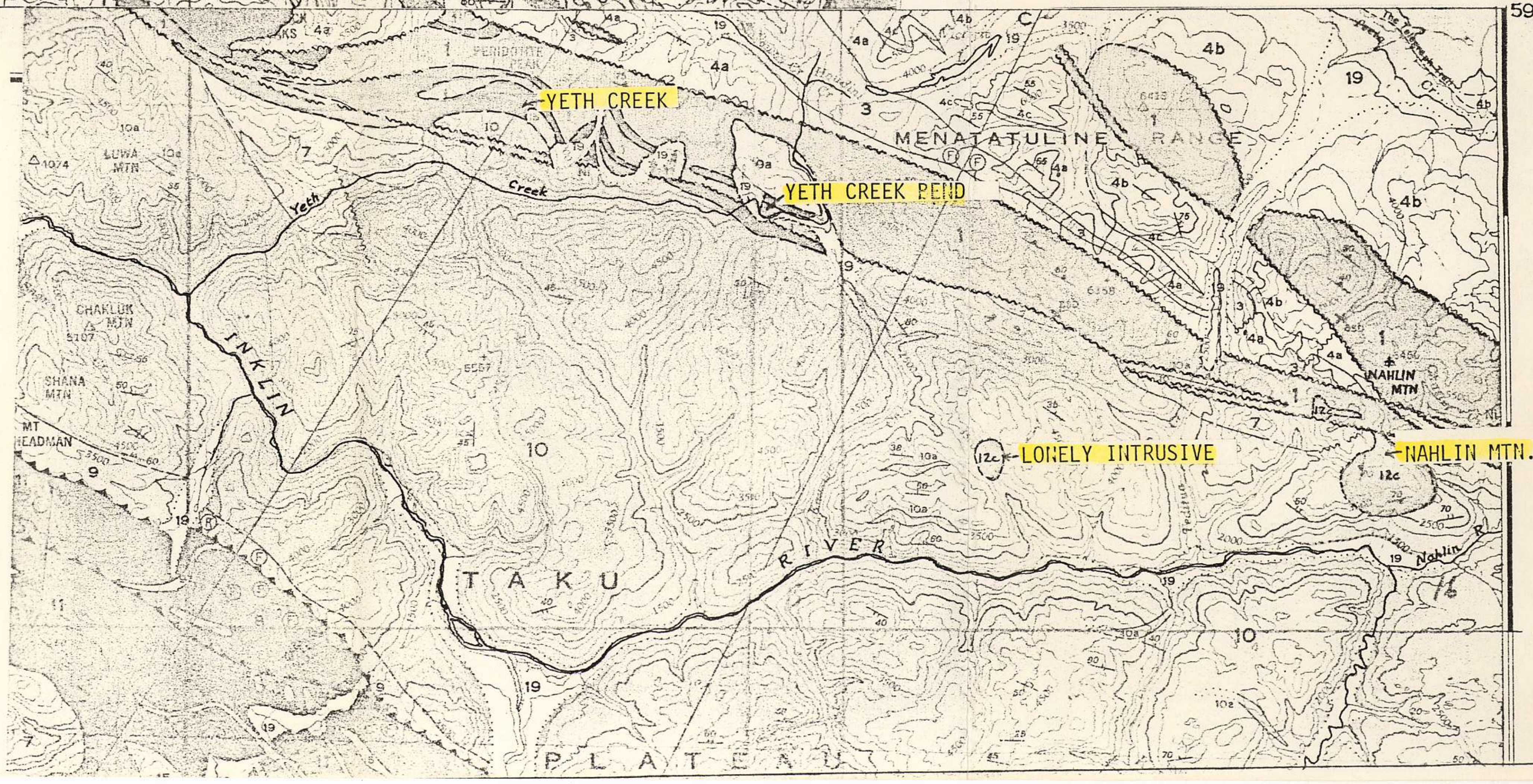
PROSPECTING CAMPS 1981

NAHLIN FAULT AREA

FIGURE 33

Scale: One Inch to Four Miles = $\frac{1}{253,440}$
Miles

30′ 15′



Lonely Intrusive

An isolated body of hornblende diorite within Inklin Formation sediments south of Nahlin fault was investigated. Very little outcrop was located. Sediments are reported to be fresh and unaltered. Drainage is poor and soil horizon development nearly non-existant. Geochemical values were all extremely low.

Yeth Creek Bend

A camp was located here in the vicinity of a large landslide because of reported placer gold in Yeth Creek at about this location and prominent quartz and magnesite (?) veining.

Abundant quartz, calcite and magnesite (?) were found in veins and stockworks. No sulphide mineralization was located. A small body of diorite in contact with the ultra basic was noted.

Geochemical values are very low:

	Element Range		
Type	Au ppb	As ppm	Ag ppm
Soil	<10-20	4-35	0.1
Rock	<10-10	5-25	0.1

Yeth Creek

A camp was located north of Yeth Creek in the vicinity of the ultra basics and a local feldspar porphyry body.

A wide variety of rock types exist and exposure is relatively good. The field party describes the feldspar porphyry body as ranging from a rhyolitic rock with very few quartz phenocryst, to a banded rhyolite, to a quartz feldspar porphyry which is highly fractured and weathered. Minor pyrite was found. The contact is sharp and fairly well exposed.

Quartz veining and silicification of two or three stages was evident. Minor pyrite mineralization was found on fractures and joints ~~in~~ ~~some~~ outcrops.

Geochemical values are low and very disappointing considering the appearance of some of the quartz veining.

	Element Range			
Type	Au ppb	As ppm	Ag ppm	Zn ppm
Silt	<10	3-7	0.1	-
Soil	<10-60	4-23	0.1-0.2	-
Rock	<10-10	4-67	-	18-380

Mount O'Keefe

A camp was placed west of Mt. O'Keefe to prospect the serpentine contact, a GSC mapped "granophyre" and the intruded Cache Creek volcanics and sediments. Some exploration has previously been conducted in the vicinity for copper.

The field party termed the GSC granophyre an alaskite-fine grained, grey-brown with equal amounts of quartz and feldspar with very minor mafics. No associated mineralization was found.

Two large zones of rusty quartz veining were found but the veins are reported to be barren.

A float speciman with malachite was found near camp but no bed rock source was found.

No significant precious metal values were obtained.

	Element Range			
Type	Au ppb	As ppm	Ag ppm	Cu ppm
Silt	<10	1-10	0.1	-
Soil & Talus	<10-10	2-15	0.1-0.4	-
Rock	<10-20	5-11	0.1-0.7	2-130
Copper float sample ran	10	-	2.0	9500

DIXIE PROJECT

INTRODUCTION

The Dixie Project is essentially a geochemical search for the source of the placer gold in the Atlin area. The Atlin placer camp has existed since 1898 and since then much of the area has been prospected in attempts to locate a lode source. However, with the relatively high overburden to outcrop ratio west of Atlin, a gold source could exist which outcrop prospecting would not reveal. Thus, the Dixie Project was undertaken based upon the following hypothesis:

(1) the placer gold of the Atlin area is fluvial in origin with little or no transport due to glaciation

(2) the drainage patterns when the gold was deposited are similar to those of the present such that the source rocks are probably those of the Cache Creek Group or the ultra basic units lying east of Atlin.

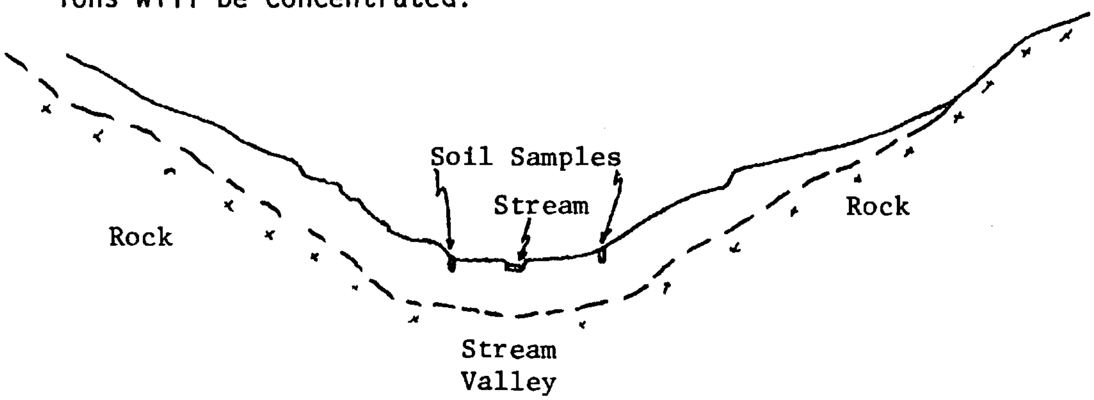
(3) despite failure of previous prospecting efforts to locate it, the lode source does still exist (has not been completey eroded) and is a discrete ore body (or ore bodies) rather than a number of scattered gold bearing quartz veins which would be uneconomical to mine.

(4) regional scale, geochemical sampling of stream, soil and talus supplemented by geological mapping may detect the ore body and that Au and As are the correct tracer elements for gold.

GEOCHEMISTRY

Method

Creeks were silt sampled at 500 metre intervals and soil samples were taken at the same time except in broad, glacial valleys where the till was quite deep. Generally the soils were taken from the upper part of the 'B' horizon at the base of the slope at the edge of the stream valley where hopefully mobile ions will be concentrated.



Silt samples were collected by taking active stream sediments and wet field sifting them through a 20 mesh screen to obtain a minus 20 mesh sample. By sifting a large amount of sediments, a silt sample could be collected in streams which deposit very little silt to fine sand sized material. This allowed sampling to be much more consistent and bank material could be avoided. The silt samples (along with the talus and soil samples) were dried at base camp and sifted to minus 35 mesh before being sent to Chemex Labs for analysis. The coarse fraction of the silts (-20 to +35 mesh) and the talus (+35 mesh) have been stored so that they can also be analysed if anomalies are found in the minus 35 mesh material.

Approximately every 25th silt, soil and talus sample, a duplicate sample was taken by rolling and splitting the original sample. These were kept until the last shipment to Chemex to see if the values determined at Chemex are consistant over a time period. The normal sample and the duplicate are taken from the same material, mixed together in a large plastic container and then split by pouring back into the sample bags alternating the flow of material between sample bags. See page 108.

Since gold apparently does not form a mobile ion, it tends not to produce a large anomaly. Thus, arsenic was tested for as As forms a mobile ion and arsenopyrite (Fe As S) is often associated with gold. If gold or arsenic anomalies are found, the anomalous samples may be retested for other elements such as mercury to try and determine the best tracer element for gold in the Atlin area. The best tracer elements will be those with the greatest mobility that are directly associated with the gold deposit.

NEWEX SYNDICATE

DIXIE PROJECT

PROSPECTING AREA

Scale 1"-4 miles October 1981

FIGURE 34

GEOLOGY

The following table gives a summary of the rock types encountered east of Atlin. If hypothesis one and two are correct, the lode gold is probably hosted by one or more of these units.

No.	Rock Units	Age*	Characteristics
7	Olivine Basalt	Tertiary	Only observed outcrop is on the east end of Mt. Farnsworth. This outcrop tends to have steep faces due to near verticle columnar jointing. This, along with most of the other basalts in the area,has been staked by Cominco for uranium.
6	Alaskite	Cretaceous	Found in the Surprise Batholith and in dykes and veins near the intrusion. Characterized by large crystals of quartz and feldspars (mostly orthoclase) and lack of mafics. Near contacts between the batholith and the surrounding rock, the alaskite may grade into a feldspar porphyry.
5	5a Granite or Quartz Monzonite 5b Diorite	Jurassic	Very few outcrops of these rock types were observed. The GSC map indicates granite of the Black Mountain body N.E. of the Marble Dome but the outcrops visited in the area grade from diorite to quartz monzonite moving from west to east.
4	4a Serpentinite 4b Talc bearing (steatitized) Ultramafic rocks	Pennsylvanian & Permian	These outcrops tend to have irregular reddish-brown surfaces. The surface coloration is probably due to iron oxide staining as fresh surfaces are dark green to black. The talc may be orange-brown or a distinctive green. Small outcrops of fairly pure talc were found west of Idaho Peak and these ranged in color from green to white. The serpentinite N.E. of the Marble Dome carries occasional, narrow (up to 1 mm) veins of Asbestos (chrysotile).

* G.S.C. Map, Atlin Sheet (104 N)

No.	Rock Units	Age	Characteristics
1,2,3,	Cache Creek Group	Pennsylvanian & Permian	
1.	chert, chert pebble conglomerate, argillite, & derived quartzite		This was the most commonly encountered unit during the Dixie project. It usually occurs as chert pebble conglomerate in which usually black, elongated pebbles up to 20 cm long tend to occur with their long axis lying in a plane forming a weak foliation. Where this foliation could be observed, it was assumed to be parallel to bedding. Many of the outcrops displayed tight folding. The chert pebble conglomerate tends to form prominent, somewhat rounded outcrops with rounded talus. Argillite forms the matrix of the chert pebble conglomerate and also occurs interbedded with it as well as occuring alone. Argillaceous outcrops often contain scattered cubes of pyrite up to 1 mm wide. The pyrite probably causes the rusty staining which is common on the argillite units. The argillite is recessive weathering compared to the chert pebble conglomerate and so it may be more common than field observation indicates.
2.	greenstone		Dark green to black and usually very fine grained, although a greenstone porphyry with feldspar phenocrysts was observed on Mt. Dixie. In areas of good exposure such as on Sentinel Mtn., greenstone can be observed to grade into serpentinite. Where they occur in the same area, greenstone can often be distinguished from chert pebble conglomerate by the more rugged outcrops and platy talus of the greenstone.

No.	Rock Units	Age	Characteristics
3.	limestone		Usually medium to dark grey and is rarely silicified.
A.	Intermediate intrusive		Medium grained crystals of feldspars (mostly plag), hornblende and occassionally biotite. This rock type which outcrops east of the Marble Dome is of uncertain age and may possibly be a large dyke. The GSC map does not include this unit.

PROSPECT AREAS

HIRSHFIELD CREEK

Comments

Hirshfield Creek flows east into the Gladys River with its drainage basin bordered by the Tintern Mountains to the north and Mount Farnsworth to the south. The main creek flows through a fairly broad, glacial valley whereas most of its tributaries occupy narrow, steep, stream cut valleys. There is no placer staking in the area nor any sign of old placer activity.

Hirshfield Creek and its major tributaries were silt sampled at 500 metre intervals with soils being taken on both banks at the same time when possible. Several air photo linears, which may be the surface expression of zones of weakness such as faults or contacts, were soil sampled at various intervals in the hope that mineralization might be concentrated along such zones. Some recent sampling by another party was observed along Hirshfield Creek and on Tintern Mountain. Due to the reasonably high G.S.C. silt geochemistry values for base metals in the area, Cu was added to the elements requested.

No significant mineralization was observed but quartz veins were reasonably common in all rock types except the basalt and several of these were sampled. The olivine basalt has been staked by Cominco for uranium and some drilling has been performed.

TERRAHINA CREEK

Comments

Terrahina Creek is located just south of the Surprise batholith and flows east into the Gladys River. The rocks south of the batholith are predominantly chert pebble conglomerate (and related argillite) with occassional limestone and only minor greenstone. Occassional feldspar porphyry dykes were observed which are probably related to the batholith as they become more numerous near the contact. The Surprise batholith is predominantly alaskite but near the contact there was often a unit which might best be described as a feldspar porphyry.

On one of the streams east of Todd Creek flowing south into Terrahina Creek, two argillite talus blocks up to a metre across were found which had quartz veining containing arsenopyrite (rock sample #77553 B). The arsenopyrite occurred as numerous well formed crystals along two narrow quartz veins the largest of which was approximately 1 cm wide. Unfortunately, the area where the talus blocks are located falls within the southeast corner of the ENG 2 property which is staked predominantly on the alaskite. The ridge above and to the east of the talus blocks has recently been talus sampled using a grid with 50' spacing. This section of the ridge has a rusty appearance due to pyrrhotite staining.

Silt sampling at 500 metre intervals was conducted on Todd Creek and Terrahina Creek above its juction with Todd Creek. Due to the thick overburden in these valleys, soil sampling was restricted to the upper valleys. Another party has taken some silt and/or soil samples along Todd Creek earlier this year. There are presently no placer claims in the area but Todd Creek has been staked for placer in the past and Daryl Bruns mentioned that gold could be panned from Todd Creek.

UPPER O'DONNEL RIVER

Rock Units Observed: (In order of decreasing outcrop area)	chert pebble conglomerate (and argillite) alaskite greenstone limestone

Comments

The area is characterized by broad glacial valleys with only limited outcrop south of the Surprise batholith. Active placer operations exist on both the O'Donnel River and Bull Creek and most of the drainage is staked for placer. Carrell Creek and the upper section of the O'Donnel River were silt sampled at 500 metre intervals and soils were taken in the upper valleys.

Talus samples were taken on rusty areas of Mount Dixie and along the contact between the Surprise batholith and the Cache Creek sediments. Apparently Union Creek has significant alluvial tin and some of the rusty alaskite areas look very much like the Seagull batholith (J.C.S.). Due to the possibility of skarns along the contact, Sn was added to the list of elements requested for silt, soil and talus samples. West of Union Creek there is a small limestone outcrop near the batholith and along the north side of the outcrop there is a unit up to 1 metre wide which has been altered to the point that it might be referred to as a calc-silicate hornfels. It contains no visible mineralization and is non-magnetic.

This limestone outcrop along with much of the area west of Union Creek has recently been staked.

MUNRO MOUNTAIN

Prospecting and mapping was done on Munro Mountain just northeast of Atlin. This was the scene of some underground mining in the past on gold bearing quartz veins. Cache Creek sediments are intruded by several ultra-basic bodies. Zones of alteration associated with these intrusions as well as quartz veining was investigated.

The data for this work has not been plotted on base maps as yet.

Ten soil samples were taken at scattered locations. One of these returned 40 ppb Au, 81 ppm As, 40 ppb Hg which might be considered slightly anomalous. The remainder gave <10 ppb Au, 6-10 ppm As.

Twenty-four rock samples were taken for geochemical determination with the following results:

Sample No.	Au ppb	As ppm	Rock Type
77473 B	2000	5	Rusty quartz float, south slope
77480 B	240	>500	Qtz veining in altered peridotite
77485 B	40	29	Rusty quartz float, south slope
77486 B	40	29	Qtz vein in brecciated volcanics
77484 B	20	29	Milky quartz vein on edge of trench 3
77481 B	10	65	Minor quartz float, buff altered, mariposite?
67702 B	10	-	Silica in brecciated peridotite
67706 B	10	24	Marble, fine black veinlets
67708 B	<10	680	Silicified serpentine, cherty, geyserite coatings
77492 B	<10	780	Qtz veining in brecciated altered peridotite

Other samples, consisting of various rock types ran <10 ppb Au, 2-310 ppm As.

Low gold values appear to be associated with quartz veining and silicification in brecciated, altered ultra-basic rocks and volcanics. The majority of values obtained during this prospecting are on or very close to existing crown granted claims. No new structures showing potential were located.

A portion of the mountain was previously staked and additional staking was done to the east and southeast following reports of extensive gold mineralization on Yukon Revenue ground near Birch Creek. We did not examine the Yukon Revenue showings but understand careful sampling shows values to be restricted to small quartz veins only.

MARBLE DOME

Rock Units Observed: (in order of decreasing outcrop area)	greenstone chert pebble conglomerate limestone serpentinite diorite granite (or quartz monzonite) feldspar-hornblende intermediate intrusive talc-bearing(steatitized) ultramafics

Comments

The area near the Marble Dome which is situated south-west of Gladys Lake contains numerous rock types but only limited outcrop area. The upper part of the main creek flowing north-east from the Marble Dome to Gladys Lake was silt and soil sampled at 500metre intervals. The small creek north of Placer Camp Creek was also sampled. A north-south talus soil line was run just above treeline east of the Marble Dome. The west side of the dome was not sampled due to a large area of mineral staking.

The feldspar (mostly plagioclase-hornblende) intermediate intrusive which also contains occasional biotite is not indicated on the G.S.C. geology map and its age relationship could not be determined in the field. The Black Mountain Body granite which the G.S.C. shows to the north-west of the dome, grades from a diorite in the west to a quartz monzonite or possible granite to the east. A greenstone unit appears to lie between the intrusives and the limestone so the potential for skarn mineralization is lessened. However, that contact was not thouroughly explored. The serpentinite north-west of the Marble Dome contains occassional asbestos (chrysotile) veins up to 2 mm wide

Although there are no active placer operations on Placer Camp Creek, there is evidence of intensive activity in the past.

WEST BRANCH OF WILSON CREEK

Rock Units Observed: (In order of decreasing outcrop area)	chert pebble conglomerate and chert (with some argillite) greenstone serpentinite (may contain talc) limestone diorite (previous prospecting) f.g. felsic rock (possibly dyke, only observed in talus) red jasper (only as talus)

Comments

The West Branch of Wilson Creek (from here on referred to as the West Branch) was first investigated during June of this year (see Spruce Creek - Wilson Creek Report, Camp Charlie, 1981). Silt sampling of the West Branch revealed weak arsenic anomalies ranging from 15 to 24 ppm while a small creek flowing in from the south-west had values as high as 79 ppm As. Soil samples taken along the upper West Branch were also anomalous for As (16 to 33 ppm) while a talus sample near the top of the West Branch had 94 ppm As and 20 ppb gold. This was the only sample along this drainage to have a Au value greater than 10 ppb. Zinc and nickel values also tended to be higher along the West Branch than in the other drainage areas of Wilson, Spruce and Slate Creeks that were sampled (Zn as high as 242 ppm and Ni as high as 1050 ppm).

Due to the somewhat anomalous geochemical values, a camp was located on the upper part of the West Branch late in the field season. The stream was silt sampled at 500 metre intervals from the old road to its source in Sentinel Mountain. These samples were taken by sifting active stream sediment through a 20 mesh screen. Some of these overlap with prior silt samples taken without field screening to 20 mesh. Soil samples were taken on both banks near the silt locations west of camp (west of previous soil samples). Talus slopes which drain into the creek were also sampled.

Outcropping south-west of camp between the talus slopes are exposures of serpentinite and limestone which are missing on the G.S.C. map. The serpentinite in this area often forms distinctive green, sand to pebble sized talus. A fairly large area of what appears to be green talus is visible in the distance to the east on the Lawrie Range and it is possible that it is from a large serpentinite body that the G.S.C. map fails to indicate. One of the serpentinite outcrops south-west of camp contains a quartz vein approximately 2 metres wide and 20 metres long (rock sample #25996C). Quartz veining (#77568B) was also observed along with calcite veins in outcrops among the talus on north facing slopes above the upper part of the McKee Creek valley. Higher up in this valley, in the Spruce Creek drainage system, 3 silts which ran 10 ppb Au were taken during earlier prospecting in the area. To the north-west of camp, fine grained felsic (quartz and white feldspar) rubble trends east-west and might be from a dyke. It contains small, disseminated pyrite cubes (77566B). Red jasper was observed as talus along the south side of the upper section of Eldorado Creek.

Recent mineral staking has been carried out near the top of Eldorado Creek. A corner post situated near the south side of the valley reads:

C.P. #69833
4S
D.J. Brownlee (F.M.C. #194998)
BRX Mining and Petroleum Corp. (F.M.C. #209135)
Aug. 11/81

The upper part of Eldorado Creek has also been staked for placer along with the main flow of Wilson Creek.

SENTINEL MOUNTAIN

Considerable prospecting and geochemistry was done on Sentinel Mountain mainly to the south of McKee Creek because of relatively good exposure of Cache Creek sediments and basic intrusive rocks spatially close to operating placer claims. This work was done by a different crew than the remainder of the Dixie Project but as the geological picture is the same, it is grouped with that project.

Volcanics, agglomerates, limestone cobble conglomerate, limestone, argillite, chert and jasper were encountered together with small bodies of ultra-basic intrusives. Quartz veining and pyrite mineralization were fairly common in some areas.

In the upper portion of Eldorado Creek, geochemical values fell into low but slightly anomalous ranges:

Sample Type	Element Range Au ppb	Ag ppm	As ppm
Silt	<10-20	0.1-0.3	9-23
Soil	<10-20	0.1	5-35
Talus	<10-20	0.1	4-33
Rock	<10-100	0.1-1.5	Not run

Further prospecting north of McKee Creek and on the west slopes of Sentinel Mountain, however, gave very low results:

Sample Type	Element Range Au ppb	Ag ppm	As ppm
Silt	<10-20	0.1-0.3	4-15
Soil	<10-20	0.1-0.3	2-77
Talus	<10	0.1-0.5	3-33
Rock	<10-100	0.1-0.2	Not run

RUTH LAKE

West of Ruth Lake a ridge of Cache Creek sediment is intruded by ultra-basic bodies. Considerable rust is evident in a cirque at the east end of the ridge and there are verbal reports of old workings in the area. A granitic stock intrudes the south slopes of the ridge.

Quartz veins were common in the peridotite, greenstone and felsic intrusive rocks. The quartz was milky white, clear and rusty, and in places, drusy and vuggy.

No evidence of oldworkings were found. Evidence of staking is presumed to be related to prospecting for asbestos.

One silicified peridotite float with interconnected pyramidal quartz ran 260 ppb Au. Other results were low:

Sample Type	Element Range Au ppb	Ag ppm	As ppm
Silt	<10	0.1	1-20
Soil & Talus	<10-10	0.1-3.9	1-57
Rock	<10-10(260)	0.1-0.2	1-20

Because of related geology, this area is considered part of Dixie Project.

DIXIE PROJECT

SUMMARY AND CONCULSIONS

Plotting of data, particularly on regional base maps has not yet been completed and final conclusions are premature. Table II, however, shows distribution of geochemical samples as to sample type and geochemical values. This shows that, for the Dixie Project excepting Eldorado Creek and Ruth Lake areas, only seven samples from a total of 413 (1.69%) returned ≥ 50 ppb gold. Four of these seven samples were rock samples. It is evident then that silt samples, either those taken in the ordinary manner by hand, or those collected by panning active sediments to -20 mesh, do not indicate either potential placer, or lode, potential in this area of widespread glacial drift. Similarly the lack of any anomalous values in the 170 soil samples suggests that no detectable train of gold values was encountered such as might be expected in glacial till deposited down ice from a bedrock source. It is probable that nearly all the stream sediment available for sampling is derived from these barren tills.

Results for the more soluble and mobile elements, arsenic and zinc are difficult to judge. TableIIIshows a tabulation of those samples which returned 10 ppb or more gold together with accompanying arsenic and zinc values.

In the case of silt samples, the arsenic values range from 6 to 23 ppm which is not significantly anomalous. The gold high of 4300 ppb gave only 7 ppm zinc.

Zinc content in silt samples ranges from 78 to 390 ppm. There is no apparent systematic increase in zinc with gold values in this limited data.

<10	10	20	30	40	50	60	70	80	90	100	140	180	220	260	300	340	380	420	460	500	>500	TYPE / Au ppb
86	8	5																			1	SILT
126	20	16																				SOIL
51	8	9								1											1	TALUS
56	8	3	0	2	0	1				1											2	ROCKS

0	10	20	30	40	50	60	70	80	90	100	140	180	220	260	300	340	380	420	460	500	>500	As ppm.
50	37	8	4								1											SILT
67	78	12	6	2	1			1		1	1	1									1	SOIL
23	25	5	4	2	2		2	1	1	1					1		1				2	TALUS
54	10	4	1				1	1			1										1	ROCK

0		100		200		300		400	>400	Zn ppm.
10	32	8	12	1			1			SILT
6	76	32	12	5					1	SOIL
9	21	15	9	5	2	1	1			TALUS
NO DETERMINATIONS										ROCK

TABLE II

DIXIE PROJECT

DISTRIBUTION OF GEOCHEMICAL SAMPLES

AS TO

SAMPLE TYPE AND GEOCHEMICAL VALUES

Soil samples which returned gold values of 10 or 20 ppb returned 5 to >500 ppm arsenic. Three samples gave arsenic values over 100 ppm and only seven had values over 30 ppm. Not all of these were analysed for zinc.

The zinc values range from 40 to 430 ppm. Some of the higher zinc values (≥100ppm) coincide with relatively higher arsenic values and the location of some of these will have to be examined closely with regard to geology etc.

Talus samples range from 10 to 560 ppb gold. They show a range of from 3 to >500 ppm arsenic and 40 to 230 ppm zinc. The highest gold value (560 ppb) coincides with the third highest arsenic (330 ppm) which is definitely anomalous and with 105 ppm zinc which is perhaps a threshold value.

Rock samples which gave 10 to 1440 ppb gold returned from 2 to >500 ppm arsenic. These rocks were not run for zinc - probably because of no visible sphalerite.

DIXIE

SILTS

Sample No.	Au ppb	As ppm	Zn ppm	Cu ppm	HG ppb
81 NXD-X248	10	6	41		
256	10	11	100		20
259	10	20	150		20
261	10	17	80		20
231	10	7	80		20
232	10	7	82		
234	10	6	78		
237	10	12	390		
245	20	6	80		
260	20	23	170		30
242	20	15	84		
225	20	12			
227	20	7			
215	4300	7			

TABLE III

DIXIE PROJECT SAMPLES

RUNNING 10 ppb GOLD OR BETTER

DIXIE

SOIL

Sample No.	Au ppb	As ppm	Zn ppm	Cu ppm	Hg ppb
81 NXD-C-243	10	10	100		
245	10	10	56		
246	10	6	48		
247	10	12	64		
250	10	7	45		
252	10	6	40		20
115	10	35	110		20
117	10	29	130		20
119	10	24	130		20
120	10	23	230		20
84	10	16			
89	10	14			
93	10	11			
101	10	32			
102	10	15			
103	10	15			
201	10	11			
211	10	5			
215	10	14			
227	10	10	80		
228	10	9	62		
231	10	6	44		
232	10	6	45		
235	10	10	65		
236	10	10	68		
238	10	41	58		
239	10	10	82		
240	10	9	73		
242	20	7	42		
248	20	9	52		
116	20	150	430		40
118	20	48	230		30
38	20	19	126	83	
88	20	10			
91	20	12			
20	20	9	56	38	
100	20	12			
105	20	215			
106	20	500			
209	20	10			
213	20	7			
224	20	9	58		
226	20	9	65		
237	20	9	55		

DIXIE

TALUS

Sample No.	Au ppb	As ppm	Zn ppm	Cu ppm	Hg ppb
81 NXD-CT 3	10	19			
17	10	14	130		30
18	10	17	90		40
19	10	46	115		40
202	10	14			
226	10	33	115		40
233	10	7	160		20
234	10	3	50		30
CT 6	20	500			
7	20	385			
25	20	99	160		
207	20	14	202		
230	20	57	150		40
235	20	15	100		20
237	20	6	54		20
245	20	4	40		20
246	20	125	75		20
CT 10	140	16	230		
CT 215	560	330	105		

DIXIE

ROCKS

Sample No.	Au ppb	As ppm	Zn ppm	Cu ppm	Hg ppb
25995 C	10	20		330	
25998 C	10	3			
25986 C	10	11			
77554 B	10	2			
77563 B	10	2			
77568 B	10	2			
27685 C	10	75			
25997 C	20	3			
27699 C	20	4			
77564 B	20	3			
77557 B	40	4			
77565 B	40	12		6800	
25994 C	60	500		7	
77559 B	120	4			
77558 B	1000	3			
25980 C	1440	180			

TABLE IV

LIST OF CHECK SAMPLE RESULTS on DIXIE PROJECT SAMPLES

Original Sample	Check Sample	Zn	As	An
X 30		97	15	10
	X 901	90	16	10
?X 262		110	32	10
	X 902	120	30	10
X 232		82	7	10
	X 910	100	15	10
X 247		42	6	10
	X 911	115	11	20
X 249		40	9	10
	X 912	45	11	10
X 256		100	11	10
	X 913	90	14	10
C 27		155	11	10
	C 901	150	14	10
C 46		62	9	10
	C 902	65	16	10
C 95		-	12	10
	C 903	110	12	20
C 113 or 114		72,90	12,16	10, 10
	C 904	85	19	10
C 115		110	35	10
	C 905	110	36	10
C 117		130	29	10
	C 906	140	27	140
C 225		65	9	10
	C 910	55	11	10
C 236		68	10	10
	C 911	70	14	10
C 244		58	33	10
	C 912	65	39	10
CT 219		65	5	10
	CT 910	65	9	20
CT 245		40	4	20
	CT 911	38	9	20

The two rock samples with the highest gold values, 1000 and 1440 ppb gave 3 and 180 ppm arsenic showing the relationship between the elements is not direct.

The indication, from preliminary examination of these results, is that silt sampling is of little aid in prospecting for gold in areas of deep glacial overburden. Soil sampling is of potential value if dependable tracer elements, which are soluble and mobile, can be identified. Talus and rock sampling can give useful results but this very nearly gets back to plain ordinary pick and hammer prospecting.

Considerable plotting and comparison of results has yet to be done. Geochemical results were generally received several weeks (4-6) after taking the samples and some of these results were not received until October 9.

TIN-TUNGSTEN GEOCHEMISTRY

SURPRISE BATHOLITH AREA

TABLE V

No prospecting was done specifically for tin or tungsten and values obtained were incidental to the Dixie Project geochemical sampling although some samples from the feldspar porphyry areas in Tulsequah map sheet were run for tin with uniformly negative results. The following list shows results obtained. All results were received after crews had left Atlin area.

Sample No.	Sn ppm	W ppm	Remarks
Terrahina Creek			
27697		1	Rock
81 NXD CT-3		1	Talus
81 NXD CT-4		T	Talus
81 NXD CT-5		1	Talus
81 NXD CT-6		20	Talus - high arsenic
81 NXD CT-7		30	Talus - high arsenic
81 NXD C-084		49	Soil
81 NXD C-085		1	Soil
81 NXD C-086		1	Soil
81 NXD C-087		1	Soil
81 NXD C-088		1	Soil
81 NXD C-089		1	Soil
81 NXD C-090		1	Soil
81 NXD C-091		1	Soil
81 NXD C-092		1	Soil
81 NXD C-093		1	Soil
81 NXD C-094		1	Soil
81 NXD C-095		1	Soil
81 NXD C-096		1	Soil
81 NXD C-097		1	Soil
81 NXD C-098		1	Soil
81 NXD C-099		1	Soil
81 NXD C-100		1	Soil
81 NXD C-101		1	Soil
81 NXD C-102		1	Soil
81 NXD C-103		1	Soil

Sample No.	Sn ppm	W ppm	Remarks
81 NXD C-104		1	Soil - high arsenic
81 NXD C-105		14	Soil - high arsenic
81 NXD C-106		23	Soil - high arsenic
81 NXD X-35		1	Silt
81 NXD X-36		28	Silt - high arsenic
D X-201		1	Silt
D X-202		1	Silt
D X-203		1	Silt
D X-204		1	Silt
D X-205		1	Silt
D X-206		1	Silt
D X-207		1	Silt
D X-208		1	Silt
D X-209		1	Silt
D X-210		1	Silt
D X-211		1	Silt
D X-212		1	Silt
D X-213		1	Silt
D X-214		1	Silt
D X-215		1	Silt
D X-216		1	Silt
D X-217		1	Silt
D X-218		1	Silt
D X-219		1	Silt
D X-220		1	Silt
D X-221		1	Silt
D X-222		1	Silt
D X-223		1	Silt
D X-224		23	Silt
D X-225		1	Silt
D X-226		1	Silt
D X-227		1	Silt
D C-201		1	Silt
D C-202		1	Silt
D C-203		1	Silt
D C-204		1	Silt
D C-205		1	Silt
D C-206		1	Silt
D C-207		1	Silt
D C-208		1	Silt
D C-209		1	Silt

Sample No.	Sn ppm	W ppm	Remarks
D C-210		1	Silt
D C-211		1	Silt
D C-212		1	Silt
D C-213		1	Silt
D C-214		missing	Silt
D C-215		1	Silt
D CT-201		1	Talus
D CT-202		1	Talus

O'Donnel Creek

Sample No.	Sn ppm	W ppm	Remarks
81-NXD-C-107	2	1	Soils
81-NXD-C-108	2	1	Soils
81-NXD-C-109	1	1	Soils
81-NXD-C-110	1	1	Soils
81-NXD-C-111	1	1	Soils
81-NXD-C-212	1	1	Soils
81-NXD-C-217	1	1	Soils
81-NXD-C-218	1	1	Soils
81-NXD-C-219	1	1	Soils
81-NXD-C-220	1	1	Soils
81-NXD-C-221	1	1	Soils
81-NXD-C-222	1	1	Soils
81-NXD-CT 08	1	-	Talus
81-NXD-CT 09	1	-	Talus
81-NXD-CT 10	1	-	Talus
81-NXD-CT 11	17	-	Talus
81-NXD-CT 12	91	-	Talus
81-NXD-CT 13	41	-	Talus
81-NXD-203	5	1	Talus
81-NXD-204	5	1	Talus
81-NXD-205	2	1	Talus
81-NXD-206	2	1	Talus
81-NXD-207	2	10	Talus
81-NXD-208	37	8	Talus
81-NXD-209	1	12	Talus
81-NXD-210	2	20	Talus
81-NXD-211	1	10	Talus
81-NXD-212	1	9	Talus
81-NXD-213	1	6	Talus
81-NXD-214	1	2	Talus
81-NXD-215	1	17	Talus
81-NXD-216	1	2	Talus
81-NXD-217	1	4	Talus
81-NXD-218	1	1	Talus
81-NXD-X 37	1	1	Silt
81-NXD-X 38	1	1	Silt
81-NXD-X228	1	1	Silt
81-NXD-X229	78	1	Silt
81-NXD-X230	5	1	Silt
81-NXD-X231	6	1	Silt
81-NXD-X232	3	1	Silt

Sample No.	Sn ppm	W ppm	Remarks
81-NXD-X233	6	1	Silt
81-NXD-X234	1	1	Silt
81-NXD-X235	1	1	Silt
81-NXD-X236	1	1	Silt
81-NXD-X237	1	1	Silt
81-NXD-X238	1	1	Silt
81-NXD-X239	1	1	Silt
81-NXD-X240	1	1	Silt
81-NXD-X241	1	1	Silt
81-NXD-X242	2	1	Silt
81-NXD-X243	1	1	Silt
81-NXD-X244	1	1	Silt

Marble Dome

Sample No.	Sn ppm	W ppm	Remarks
81 NXD C 113		1	Soils
81 NXD C 114		1	Soils
81 NXD C 223		1	Soils
81 NXD C 224		1	Soils
81 NXD C 225		1	Soils
81 NXD C 226		1	Soils
81 NXD C 227		1	Soils
81 NXD C 228		1	Soils
81 NXD C 229		4	Soils
81 NXD C 230		1	Soils
81 NXD C 231		1	Soils
81 NXD C 232		1	Soils
81 NXD C 233		1	Soils
81 NXD C 234		1	Soils
81 NXD C 235		1	Soils
81 NXD C 236		1	Soils
81 NXD C 237		1	Soils
81 NXD C 238		1	Soils
81 NXD C 239		1	Soils
81 NXD C 240		1	Soils
81 NXD C 241		1	Soils
81 NXD C 242		1	Soils
81 NXD C 243		1	Soils
81 NXD C 244		1	Soils
81 NXD C 245		1	Soils
81 NXD C 246		1	Soils
81 NXD C 247		1	Soils
81 NXD C 248		1	Soils
81 NXD C 249		1	Soils
81 NXD C 250		1	Soils
81 NXD C 251		1	Soils
81 NXD X 245		1	Silts
81 NXD X 246		1	Silts
81 NXD X 247		1	Silts
81 NXD X 248		7	Silts
81 NXD X 249		10	Silts
81 NXD X 250		1	Silts
81 NXD X 251		1	Silts
81 NXD X 252		1	Silts
81 NXD X 253		1	Silts

Sample No.	Sn ppm	W ppm	Remarks
81 NXD X 254		10	Silts
81 NXD X 255		1	Silts
81 NXD CT 14		1	Talus
81 NXD CT 15		2	Talus
81 NXD CT 16		1	Talus
81 NXD CT 219		1	Talus
81 NXD CT 220		12	Talus
81 NXD CT 221		1	Talus
81 NXD CT 222		1	Talus
81 NXD CT 223		1	Talus
81 NXD CT 224		1	Talus

There is relatively little direct correlation between tin and tungsten results although there may be a spatial relationship in the O'Donnell Creek area where a number of talus samples show significant values in tin or tungsten but seldom both.

The two talus samples with anomalous tungsten and high aresenic from Terrahina Creek would bear investigation since both also ran 20 ppb gold. They should be run for tin.

When data has been compiled, selected samples will be run for tin particularly and field checks should be made of some of these anomalous areas next season.

KEY CLAIM

PROPERTY, LOCATION AND ACCESS

Claim	Number of Units	Date Staked	Date Recorded
KEY	12	Sept. 5	Sept. 16

The KEY claim is located 54 kilometres slightly north of west from Atlin on the Bennett Lake map sheet 104 M at 134^{o} 17'W, 59^{o} 41.5'N.

North trending drainage systems occur on the east and west sides of the property which is located on an open rounded northeast spur of Teepee Peak. See Figure35.

Access was by helicopter from Atlin. The White Pass railway is located about 24 kilometres west of the property.

GEOLOGY

Rock Types

On the property the main rock type appears to be a "dry" fine grained sandy phyllitic sediment and micaceous quartzite. Formations are generally grey to light brown in color. These rocks are part of Unit 1a on GSC Map 19-1957 which is indicated to be of "Pre-Permian" age.

Abundant white quartz fragments are conspicuous on the hillside. The majority of these are but little removed from a series of generally east-west trending quartz veins.

Teepee Mountain consists largely of altered volcanics of undetermined age. These are intruded by granitic rocks related to the Coast Intrusions. These formations were not examined.

NEWEX SYNDICATE

KEY CLAIM GROUP

104M/10

Scale: 1"-4 miles October 1981

FIGURE 35

Southeast of Teepee Mountain and north of the west end of Fantail Lake, a north-west trending fault is indicated on the geological map. This fault zone is topographically fairly prominent and is marked by a striking rusty zone caused by weathering of quartz carbonate altered basic to ultra-basic intrusives.

MINERALIZATION

Much of the quartz which appears milky white on the weathered surface is rusty on numerous fracture surfaces when broken. Small amounts of pyrite occurs in several veins.

There is evidence of earlier trenching on at least two exposed quartz veins.

ROCK GEOCHEMISTRY

Seven random grab samples of quartz were collected and run geochemically for gold and silver (Table VI). One of these returned 2350 ppb Au and 4.2 ppm Ag. The white quartz veins are prominent but there is also some indication of dark grey silicified material which does not appear to be represented in these samples.

J.C. STEPHEN EXPLORATIONS LTD.

GEOCHEMICAL DATA SHEET — ROCK GEOCHEM SAMPLING

NTS 104 M

SAMPLER

PROJECT NEWEX SYND

LINE

AIR PHOTO No.

	SAMPLE NUMBER	LOCATION	ROCK TYPE	ALTERATION	MINERALIZATION	STRIKE / DIP	ADDITIONAL REMARKS	APPARENT WIDTH	TRUE WIDTH	ASSAYS Au.	Ag		
(1)	25746 C	EAST OF TEEPEE MTN	ALTERED BASIC RK GREEN MINERAL	QTZ VEINING			RUSTY FAULT ZONE			<10	0.1		
(2)	747 C	FLORENCE RANGE S. OF WANN. RIVER	QUARTZITE		Py CUBES RUSTY					10	3.8		
(3)	748 C	"	QUARTZ	PARTLY DRUSY						20	0.1		
(4)	749 C	NE SPUR TEEPEE MTN	QUARTZ	DRUSY RUSTY			WEST SIDE RIDGE			<10	0.1		
(5)	750 C	"	MILKY QTZ VEIN	RUSTY	Mn stain Py ON FRACTS					2350	4.2		
(6)	28176 B	"	MILKY QTZ VEIN DRUSY	RUSTY	Py? CRYSTALS					20	0.2		
(7)	177	"	"	"	SILVERY SULPHIDE?		PHYLLITIC HOST.			10	0.1	KEY	
(8)	178	"	"	"						<10	0.1	GROUP	
(9)	179	"	"	"	Py CUBES		East top of ridge			<10	1.0		
(10)	180	"	" DRUSY	"	Mn STAIN					<10	0.1		
(11)	28181 B	EAST OF TEEPEE MTN FAULT ZONE	ULTRABASIC ALTERED BASIC?	SILICIFIED	RUSTY MARIPOSITE?					<10	1.0		
(12)	182 B	SMALL PEAK IN SNOW FIELD S. OF WANN RIVER	RHYOLITIC INTRUSIVE	RUSTY	PYRITE - RATHER GREY					10	0.3		
(13)	183 B	DB SAMPLE S. OF WANN R.	SILICEOUS DYKE	BUFF RUSTY						<10	0.1		
(14)	184 B	S. OF WANN R	FOLDED META SED.	MICACEOUS RUSTY						40	0.1		
(15)													
(16)													
(17)													
(18)												VI	
(19)													
(20)													

TABLE VI

RECOMMENDATIONS

The property should be mapped on a scale large enough to trace the various quartz veins. Exposed veins should be blasted to provide a fresh surface for chip sampling at intervals of about 15 metres along outcrop. Silicified zones encountered during mapping should also be sampled.

JENNINGS RIVER AIR SURVEY

1981 Program and Results

A combined aeromagnetic - VLF/EM survey was commenced at the end of June by Evergreen Explorations Ltd. The survey was hampered by bad weather and during the survey the EM bird was severely damaged when the helicopter failed to clear a belt of trees with sufficient altitude. Somewhat more than half the proposed survey area was covered. Contoured magnetic results together with location of EM conductors are shown on Map VI. The EM tapes have not been reproduced for our examination and no detailed interpretation can be made of the EM results at this time.

The contoured magnetic results show an apparent fold structure north of the quartz sericite schist outcrop on Jennings River. A granitic intrusive occurs at the south end of the small lake within this apparent fold while EM conductors occur in magnetic low areas. The magnetic highs conform to location of magnetic volcanic rocks found in outcrop. Pyrite mineralization occurs in some of these outcrops.

In the northeast portion of the air survey area, magnetic highs occur which are also probably due to volcanics. Several spot EM conductors are shown in this area but insufficient evidence is available to suggest whether any of these may reasonably be connected in linear zones.

During August a ground crew flagged short lines as shown on Map VII and conducted an EM-16 survey of these lines. Results are shown on Figure ???

The surveyed lines shown on Figure are really too far apart (300 metres) to allow for correlation of anomalous zones but contours have been drawn based on treatment of the survey ???

readings with "Fraser's Filter". EM crossovers occur on both lines. The anomalies at 'A' and 'B' appear to coincide with the air survey anomalies while that at 'C' appears to coincide with the flank of an aeromagnetic high.

Geological and geochemical data obtained in previous prospecting is shown on Map VII.

Recommendations

Ground check of indicated VLF-EM conductors can be carried out fairly rapidly with EM-16 ground reconnaissance. Those conductors which appear to be significant should be detailed using loop-frame EM on properly cut lines. Detail mapping, soil sampling and magnetometer surveys should be done on these local grids.

Possible drilling of conductors would depend on results of these preliminary surveys.

RECOMMENDATIONS 1982

The 1982 exploration program will consist of three concurrent phases:-

(1) property exploration and development;

(2) investigation of presently known anomalies;-

(3) investigation of apparently favourable geological structures.

PROPERTY EXPLORATION

(1) HART GROUP

This property has the greatest apparent potential due to geological setting, indications of several mineralized zones and size of the property itself.

Extensive detailed mapping and rock geochemistry is recommended. Provision should be made for tremching to investigate zones indicated to have gold and/or silver values. A minimum of $30,000 is expected to be spent on this property.

The greatest difficulty will be in finding a field geologist competent to map this type of geology.

(2) GRIZ GROUP

The potential of the original showing on this property appears to be very limited. Compilation of results on the property, however, suggests that additional showings exist and detailed exploration is warranted

It is expected some $10,000 will be spent on this work which will include more or less routine mapping, geochemical sampling, some preliminary geophysics and trenching.

(3) KEY GROUP

Exposure is fairly good as minor outcrop and extensive felsenmeer. Geological mapping is required primarily to locate and follow the quartz vein structures and to map the main rock units on the property. Visual appearance of the veins is very good, higher gold results were expected than were actually received. In spite of these relatively disappointing results extensive trenching and chip sampling of vein material is justified.

Approximately $10,000 is expected to be spent on this work, most of which will be for trenching and assaying.

(4) LUNG GROUP

No work is proposed on this ground in 1982.

INVESTIGATION OF ANOMALIES

(1) It is understood recent staking has been done on Level Mountain. Extent of this staking is not known to us at the moment but, if not covered by this staking, the rusty, apparently rhyolitic, zones near the centre of Level Mountain, should be staked and sampled using rock geochemistry.

(2) Specific tin-tungsten anomalies indicated by the Dixie Project geochemistry are to be investigated with detailed prospecting.

(3) The VLF-EM anomalies at Jennings River are to receive further attention on the ground.

(4) Assessment of the overall geochemical results of the 1981 program has not been completed. It is expected a few of the anomalous results will warrant investigation.

FAVOURABLE GEOLOGICAL STRUCTURES

The feldspar porphyry belt of Tertiary age was to have received considerably more attention in 1981 than was actually accomplished. This belt is to be prospected in more detail in spite of fairly extensive staking in the area by other companies.

Exploration is planned for the area east of the Engineer Mine and to the northwest beyond the KEY Group.

The main base camp for 1982 is expected to be located at Atlin, probably in the same location as in 1981.

Respectfully submitted,
J.C. Stephen Explorations Ltd.

J.C. Stephen

APPENDIX I

HART CLAIM GROUP

SAMPLE DATA SHEETS

ROCK ASSAYS

MOGUL GRID channel samples

J.C. STEPHEN EXPLORATIONS LTD.

GEOCHEMICAL DATA SHEET — ROCK GEOCHEM SAMPLING

B.C. GOLD SYNDICATE

NTS

SAMPLER S. ANGUS

PROJECT NEWEX

LINE

DATE JULY 23 1981

AIR PHOTO No.

	SAMPLE NUMBER	LOCATION	ROCK TYPE	ALTERATION	MINERALIZATION	STRIKE / DIP	ADDITIONAL REMARKS	APPARENT WIDTH	TRUE WIDTH	ASSAYS Au.	Ag	Sb.	
(1)	25751	MOGUL GRID	RYH		minor sulfides		2 meter channel			0.003	0.04		
(2)	25752	"	"		"		"			0.007	0.16		
(3)	25753	"	Black chert Breccia				"			0.003	0.09		
(4)	25754	"	RYH	Chert brecciation and veining	minor sulfides		"			<0.003	0.04		
(5)	755	"	"	"	"		"			<0.003	0.01		
(6)	756	"	QTZ. vein		"		50 c.m channel			0.015	0.29		
(7)	757	"	"		"		"			0.070	0.52		
(8)	758	"	"		"		"			0.022	0.74		
(9)	759	"	QTZ. Breccia vein		"		1 meter sample wall of vein			0.014	0.52		
(10)	760	"	"		sulfides in chert.		1.2 meter sample wall of vein			0.024	0.26		
(11)	761	"	"		"		1 meter " "			0.030	0.35		
(12)	762	"	"		"		75 cm. " "			0.036	2.35		
(13)	763	"	"		"		65 cm. " "			0.020	0.93		
(14)	764	"	"		"		75 CM. Channel			0.014	0.26		
(15)	765	"	"		sulfides throughout.		1½ meter wall of vein			0.006	0.16		
(16)	766	"	"		"		"			0.027	0.22		
(17)	767	"	"				"			0.032	0.51		
(18)	768	"	RYH.	minor druzy QTZ.			½ meter channel			0.014	0.23		
(19)	769	"	Chert Breccia	"	minor sulfides		2 meters.			0.007	0.11		
(20)	770	"	"	"	"		"			0.052	0.20		

MOGUL GRID channel sampling

J.C. STEPHEN EXPLORATIONS LTD.

GEOCHEMICAL DATA SHEET — ROCK GEOCHEM SAMPLING

B.C. GOLD SYNDICATE

SAMPLER J. ANGUS

PROJECT NEWEX

DATE JULY 23-24 / 1981

NTS

LINE

AIR PHOTO No.

	SAMPLE NUMBER	LOCATION	ROCK TYPE	ALTERATION	MINERALIZATION	STRIKE / DIP	ADDITIONAL REMARKS	APPARENT WIDTH	TRUE WIDTH	ASSAYS Au.	Ag.	Sb.	
(1)	25771	MOGUL GRID	Chert Breccia				1 meter channel			0.019	0.15		
(2)	772	"	Druzy QTZ. vein.				"			0.032	0.60		
(3)	773	"	QTZ vein				1½ meter.			0.020	0.90		
(4)	774	"	white to Blk QTZ. vein		sulfhides in dark QTZ.		"			0.018	0.52		
(5)	775	"	QTZ vein				"			0.013	0.67		
(6.)	776	"	"				"			0.011	0.94		
(7)	777	"	"				1 meter.			0.006	2.50		
(8)	778	"	"				~~4~~			0.020	0.32		
(9)	779	"	"				24 cm.			<0.003	0.34		
(10)	780	"	"				"			0.288	0.51		
(11)	781	"	RYH.	Chert Brecciation	Sulfhides in Chert		2 meters.			0.003	0.16		
(12)	782	"	RYH	minor Chert	Sulfhides throughout		"			<0.003	0.14		
(13)	783	"	RYH. Phorphry	minor massive Black Chert	~~ss~~ "		"			0.008	0.25		—
(14)	784	"	~~ss~~ RYH	Small QTZ. vein.	minor sulfhides		"			0.040	0.24		
(15)	785	"	chert to QTZ. Breccia		~~ditto~~ "		1 meter.			0.036	0.62		
(16)	786	"	QTZ. Breccia vein				25 cm.			0.003	0.70		
(17)	787	"	"				"			<0.003	0.14		
(18)	788	"	"				"			0.003	0.84		
(19)	789	"	"		Minor Sulfhides		"			0.012	3.49		
(20)	790	"	"		"		"			0.003	0.92		

MOGUL GRID & STEEP GRID Channel samples

J.C. STEPHEN EXPLORATIONS LTD.

GEOCHEMICAL DATA SHEET — ROCK GEOCHEM SAMPLING

B.C. GOLD SYNDICATE

SAMPLER S. ANGUS

DATE JULY 26 - 28/1981

PROJECT NEWEX

NTS

LINE

AIR PHOTO No.

	SAMPLE NUMBER	LOCATION	ROCK TYPE	ALTERATION	MINERALIZATION	STRIKE / DIP	ADDITIONAL REMARKS	APPARENT WIDTH	TRUE WIDTH	ASSAYS Au.	Ag	Sb.	
(1)	25791	MOGUL GRID	RYH. and RYH Porphyry	Chert brecciation	minor Sulfides		2 meter channel			<0.005	0.16		
(2)	792	"	RYH and RYH Porphyry	Chert Brecciation	Sulfhides throughout		"			<0.003	0.02		
(3)	793	"	RYH	"	"		1½ meters			<0.003	0.12		
(4)	794	"	"	"	"		2 meters			<0.003	0.14		
(5)	795	"	Aglomerate		minor sulfides		½ meter			0.005	0.02		-
(6)	796	"	RYH		"		"			<0.003	0.08		
(7)	797	"	Aglomerate	Silicified	sulfhides in RYH.		"			<0.003	0.28		
(8)	798	"	"	"	Sulfhides throughout		"			0.003	0.84		
(9)	799	"	"	"	minor sulfhides		"			0.005	0.70		
(10)	25800	"	"	"	Abundant sulfhides		2 meters			<0.003	0.16		
(11)	67751	"	RYH with Agglomerate		"		1½ meters			<0.003	0.14		
(12)	67752	"	Agglomerate	silicified	sulfhides throughout		GRAB SAMPLE			0.005	0.56		
(13)	753	"	RYH & RYH Breccia		minor sulfhides		3 meter channel.			0.005	0.20		
(14)	754	"	"		"		1 meter.			0.005	0.20		
(15)	755	STEEP. GRID	RYH to RYH Porph.	minor QTZ.	"		2 meter.			<0.003	0.02		
(16)	756	"	"	"	"		"			<0.003	0.08		
(17)	757	"	RYH	"			3 meter channel.			<0.003	0.12		
(18)	758	"	"	minor QTZ. veining and druzy QTZ.			"			<0.003	0.01		
(19)	759	"	QTZ. Breccia vein.				½ meter			<0.003	0.01		
(20)	760	"	QTZ. RYH vein		minor sulfhides		1½ meter			0.018	0.14		

STEEP GRID channel samples

GEOCHEMICAL DATA SHEET — ROCK GEOCHEM SAMPLING

J.C. STEPHEN EXPLORATIONS LTD.

B.C. GOLD SYNDICATE

SAMPLER S. ANGUS

DATE JULY 26 - 30 1981

PROJECT NEWEX

NTS

LINE

AIR PHOTO No.

	SAMPLE NUMBER	LOCATION	ROCK TYPE	ALTERATION	MINERALIZATION	STRIKE / DIP	ADDITIONAL REMARKS	APPARENT WIDTH	TRUE WIDTH	ASSAYS Au.	Ag g	Sb.	
(1)	67761	STEEP GRID	RYH	QTZ. veins	minor sulfhides		3 meter channel sample			<0.003	0.08		
(2)	762	"	Agglomerate				"			0.003	0.08		
(3)	763	"	"	minor QTZ.	"		2 meter			0.010	0.13		
(4)	764	"	RYH.		"		3 meter.			0.003	0.06		
(5)	765	"	"		"		"			0.008	0.03		
(6.)	766	"	"	minor QTZ.	"		"			0.005	0.07		
(7)	767	"	QTZ. vein	some druzy			1/2 meter			0.003	0.01		
(8)	768	"	"		minor sulfhides		25 cm.			0.005	0.18		
(9)	769	"	"				1/2 meter			<0.003	0.24		
(10)	770	"	RYH.	QTZ. veining & QTZ. Breccia			5 meter			<0.003	0.14		
(11)	771	"	RYH. TO Agglom	minor QTZ	minor sulfides		3 1/2 meter.			0.018	0.04		
(12)	772	"	Agglomerate,	Si. minor QTZ. vein,	Abundant pyrite		3 meter.			<0.003	0.10		
(13)	773	"	"	Si.	Minor sulfhides		"			<0.003	0.10		
(14)	774	"	RYH.	small QTZ. veins and stringers.	"		"			<0.003	0.08		
(15)	775	"	"	"	"		5 meters.			0.012	0.73		
(16)	776	"	Druzy to massive white	QTZ. vein.			2 meters.			0.008	2.45		
(17)	777	"	"	"			"			0.146	0.83		
(18)	778	"	QTZ. vein.				1/2 meter			0.022	0.73		
(19)	779	"	"		minor sulfhides		25 CM			<0.003	0.04		
(20)	780	"	RYH.	QTZ. veining.			1 1/2 meters.			0.016	0.07		

STEEP GRID - channel sampling

J.C. STEPHEN EXPLORATIONS LTD.

GEOCHEMICAL DATA SHEET — ROCK GEOCHEM SAMPLING

B.C. GOLD SYNDICATE

NTS ____

LINE ____

AIR PHOTO No. ____

SAMPLER S. ANGUS

DATE JULY 30 - Aug 2 1981

PROJECT NEWEX

	SAMPLE NUMBER	LOCATION	ROCK TYPE	ALTERATION	MINERALIZATION	STRIKE / DIP	ADDITIONAL REMARKS	APPARENT WIDTH	TRUE WIDTH	ASSAYS Au.	ASSAYS Ag	ASSAYS Sb.	
(1)	67781	STEEP GRID	RYH	Druzy QTZ veining			1½ meter channel			0.020	0.04		
(2)	782	"	"	"			"			0.005	0.16		
(3)	783	"	"	"	minor sulfhides		1 meter			0.005	0.08		
(4)	784	"	QTZ. vein				"			0.014	0.03		
(5)	785	"	Sil. RYH.	QTZ. veining	Sulfhides in RYH.		2 meter			0.006	0.07		
(6)	786	"	QTZ. vein.				25 cm.			0.022	0.21		
(7)	787	"	Agglomerate	Druzy QTZ. veining	Sulfhides throughout.		3 meter			0.005	0.08		
(8)	788	"	"	very QTZ rich.	"		25 cm			0.028	1.25		
(9)	789	"	QTZ vein.				1 meter			0.003	1.34		
(10)	790	"	RYH	minor druzy QTZ veining	minor sulfhides in RYH.		"			<0.003	0.18		
(11)	791	"	Agglomerate	minor QTZ.	minor sulfhides		2 meter.			0.003	0.12		
(12)	792	"	"	"	"		"			0.003	0.10		
(13)	793	"	RYH.	QTZ. rich.	"		3 meter			0.003	0.14		
(14)	794	"	Sil. Agglomerate.	Druzy QTZ veining			1½ meters			0.005	0.25		
(15)	795	"	"	QTZ veining.			1½ meters			0.003	1.02		
(16)	796	QTZ Hill	RYH	QTZ. and Druzy QTZ. rich.	Sulfhides in RYH,					0.008	0.07		
(17)	797	"	QTZ Breccia to agglomerate	vein.	"					0.005	0.02		
(18)	798	South ridge.	Agglomerate	very QTZ rich. vein.	minor sulfhides					0.012	0.21		
(19)	799	white to black QTZ. vein.			"		south ridge			0.172	3.78		
(20)	67800	SOUTH RIDGE.	Agglomerate,	Rusty wth.	Sil. some druzy					<0.003	0.04		

J.C. STEPHEN EXPLORATIONS LTD.

GEOCHEMICAL DATA SHEET — ROCK GEOCHEM SAMPLING

HART CLAIMS

B.C. GOLD SYNDICATE

SAMPLER M. RADAN

DATE AUG. '81

PROJECT NEWEX

NTS

LINE

AIR PHOTO No.

	SAMPLE NUMBER	LOCATION	ROCK TYPE	ALTERATION	MINERALIZATION	STRIKE / DIP	ADDITIONAL REMARKS	APPARENT WIDTH	TRUE WIDTH	ASSAYS Au.	Ag	Sb.	
(1)	27611c	HART CLAIMS	BRECCIATED TRACHYTE		NONE VISIBLE		- trachyte fragments occur in minor qtz. veins; similar to mogul grid			<0.003	0.12		
(2)	27612	"	"		DISSEMINATED SULFIDES		- matrix ranges from qtz. to qtz rich rhyolite			<0.003	0.14		
(3)	27613	"	TRACHYTE	RUSTY WEATHERING	"		- rock is only mod. fractured			<0.003	0.10		
(4)	27614	"	"		DISSEM. PY. &/OR ARSENOPY.		- ~~[illegible]~~ highly fractured			<0.003	0.01		
(5)	27615	"	"		POSSIBLE CHALCOPY. ?		- flow banding visible			<0.003	0.04		
(6)	27616	"	RHYOLITE		DISSEM. SULFIDES		- plag rich.			<0.003	0.06		
(7)	27617	"	"		POSSIBLE ARSENOPY.		- fracture surface is in-filled by cherty material			<0.003	0.14		
(8)	27618	"	"		DISSEM SULFIDES		- blue grey rock - qtz & plag rich			<0.003	0.10		
(9)	27619	"	"	RUSTY	MINOR "		- dark blue grey rock			<0.003	0.08		
(10)													
(11)													
(12)													
(13)													
(14)													
(15)													
(16)													
(17)													
(18)													
(19)													
(20)													

MAKI CLAIMS

J.C. STEPHEN EXPLORATIONS LTD.

GEOCHEMICAL DATA SHEET — ROCK GEOCHEM SAMPLING

B.C. GOLD SYNDICATE

SAMPLER S. ANGUS

DATE Aug - 2 - 6 1981

PROJECT NEWEX.

NTS

LINE

AIR PHOTO No.

	SAMPLE NUMBER	LOCATION	ROCK TYPE	ALTERATION	MINERALIZATION	STRIKE / DIP	ADDITIONAL REMARKS	APPARENT WIDTH	TRUE WIDTH	ASSAYS Au.	Ag		
(1)	27743 C	TOP Zone	white to Black QTZ. vein	with Altered Kaolanite	Silvery Black mineral.		Grea of 15 oz per ton sample.			0.014	11.34		
(2)	27744	"	"	"	"		"			0.008	6.53		
(3)	27745	"	"	–	"		"			0.010	8.29		
(4)	27746	"	"	–	"		"			0.005	1.90		
(5)	27747	"	½ meter wd. QTZ vein.		"		"			0.003	1.42		
(6)	27748	HART 5	Agglomerate.	green staining on fresh surfaces.	minor sulfides		float boulder area.			0.003	0.12		
(7)	27749	"	"	"	"		"			0.003	0.10		
(8)	27750	HART A. head of mogul creek	Altered RYH.	minor QTZ.						0.005	0.04		
(9)													
(10)													
(11)													
(12)													
(13)													
(14)													
(15)													
(16)													
(17)													
(18)													
(19)													
(20)													

APPENDIX II

PETROGRAPHIC DESCRIPTIONS

Specimen : JP-1 GRIZ 1 SHOWING

Classification : Trachyandesite (hypabyssal)

Mode :

Plagioclase	65-70%
K-spar	10-15%
Quartz	5-10%
Biotite	2%
Chlorite & carbonate	5%
Zircon and apatite	tr
Opaques	5%

Handspecimen : Massive, holocrystalline, grey, medium to fine grained volcanic or hypabyssal rock. The stained block indicates a trachyandesitic to dacitic composition. Small flakes of biotite are macroscopically visible. Small blebs of disseminated pyrite are locally present.

Thin section : Texture : intergranular, medium grained.
Plagioclase occurs as abundant, subhedral to euhedral, randomly oriented laths and a few phenocrysts up to 2.5 mms. long. Carlsbad, albite and pericline twinning are all present. Many crystals are zoned, with compositions ranging from albite (rims) to andesine (cores). The plagioclase is locally a bit altered to saussurite.
K-spar is rather hard to distinguish from quartz in thin section. Both occur as anhedral grains occupying the interstices between plagioclase laths. Quartz loclally contains euhedral apatite inclusions.
Biotite forms subhedral to anhedral flakes up to .8 mms. in size. It is brown pleochroic, locally a bit chloritized and sometimes associated with granular opaques.
Carbonate and chlorite occur together in fine grained, irregular patches of up to 1.5 mms. in size, scattered throughout the rock. These are most likely altered amphiboles. Locally the patches are pseudomorphs after amphibole.
Apatite is present in small amounts, as accessory microlites.
Zircon occurs in trace amounts as small, euhedral microlites (.1 mm. size).
Opaques are present as euhedral granules and aggregates up to .5 mms.
Much of this is probably pyrite, which can locally be seen in handspecimen.

Specimen : JP-2 GRIZ 3 SHOWING

Classification : Trachyandesite (volcanic)

Mode :		
	Plagioclase	35-40%
	K-spar	40%
	Calcite & other secondary minrls.	10%
	Biotite	5%
	Quartz	<5%
	Accessories	1%
	Opaques	1%

Handspecimen : Grey, massive volcanic rock containing phenocrysts of plagioclase, altered (calcareous) amphibole and biotite. The matrix is very rich in K-spar, as indicated by the yellow colour in the stained block.

Thin section : Texture : porphyritic, holocrystalline; most likely a effusive rock.

Plagioclase occurs as euhedral and subhedral phenocrysts ranging up to 5 mms. in size. Although finely developped oscillatory zoning is present in many of the laths, the average composition appears to be An-40, andesine. (Determined by combined carlsbad/albite method). Carlsbad, albite and pericline twinning are all present. All grains contain small patches and thin veinlets of secondary carbonate.

Biotite forms brown pleochroic phenocrysts up to 2 mms. in size. These are frequently somewhat corroded and locally intergrown with plagioclase phenocrysts. Most grains are surrounded by thin rims of granular opaques.

Calcite occurs in granular aggregates up to 2 mms. in size, which are clearly pseudomorphous sfter a ferro-magnesian phenocrystic phase. Frequently the carbonate surrounds cores composed of fine grained, aggregate clayminerals, white mica and feldspar. In turn, they are rimmed by fine granular opaques. Calcite occurs furthermore as irregular secondary patches throughout the remainder of the rock.

K-spar forms the bulk of the fine grained groundmass. together with lesser plagioclase and probably some quartz, secondary minerals, apatite, opaques etc.

Apatite occurs as euhedral and subhedral accessory crystals up to .25 mms. in size, scattered throughout the groundmass. A few grains of subhedral zircon are present as well.

Opaques occur as fine disseminated granular material. The coarser grains (up to .5 mm.) are subidiomorphic and tend to form aggregates.

Note : possibly this specimen is a effusive variety of spec. JP-1.

Specimen : JP-3 GRIZ 3 SHOWING

Classification : Altered feldspar porphyry

Mode :		
	Quartz	40-50%
	Clayminerals	30-40%
	Limonitic calcite	10%
	White mica	5%
	Accessories	1%
	Opaques	1%

Handspecimen : Strongly altered (limonitic & calcareous), porphyritic volcanic rock. Altered feldspar (plagioclase) and amphibole(?) phenocrysts are macroscopically visible. The vague primary texture somewhat resembles that of specimen JP-2.

Thin section : The groundmass of this specimen appears to be composed predominantly of fine grained, granular quartz (av. size .18 mm.), clouded by dusty secondary minerals, probably mostly clayminerals. Scattered through this matrix are abundant, irregular secondary patches of limonitic calcite, clayminerlas and a bit of white mica. Probably the quartz itself is of secondary origin, having replaced a primary volcanic groundmass. This throws considerable doubt on a rhyolitic classifioation for this specimen. It may be a silicified and altered version of JP-2, but is here classified as a altered feldspar porphyry.

Scattered throughout the groundmass are accessory amounts of euhedral apatite (up to .25 mm.) and subhedral zircon.

Original phenocrysts of plagioclase, amphibole and biotite are represented by pseudomorphs composed of clayminerals, white mica, limonitic calcite and opaques. These range up to 4 mms. in size and resemble those of spec. JP-2 in being frequently surrounded by rims of fine granular opaques, which are mostly altered to limonite.

Small grains of subidiomorphic opaques are scattered throughout.

Specimen : JP-5 GRIZ 3 SHOWING

Classification : Galena & sphalerite bearing cataclastic rock

Mode :	Quartz	60-70%
	Clayminerals & white mica	10%
	Calcite & limonite	10%
	Galena & sphalerite	10%
	Apatite & zircon	tr

Handspecimen : Limonitic and calcareous banded breccia/protomylonite containig lenticular domains rich in galena and sphalerite. The rock is crosscut by post mylonitic fractures, some of which have been healed by carbonate.

Thin section : Irregular to lenticular, nebulous domains of very fine grained to aphanitic material (rich in clayminerals but otherwise silicified) are the only indicators of a primary lithology. Locally a faint suggestion of a original porphyritic texture is present as well, with claymineral aggregates resembling altered phenocrysts set in a fine grained, siliceous matrix. These are visible in the lower part of the section.

The remainder of the specimen is composed of secondary minerals, mainly quartz carbonate, limonite, galena and sphalerite, with lesser clayminerals and white mica. Some of the quartz forms granular textures masses rather similar to the groundmass quartz in spec. JP-3. Small, irregular patches and veinlets of limonitic calcite and clayminerals are everywhere present. Relict zircon, apatie and altered biotite are present within these domains.

The rest of the quartz is clearly of hydrothermal origin, replacing the earlier lithologys along veinlets and lenticular domains generally parallel to the cataclastic fabric. Grainsize ranges from extremely fine grained to approx. .5 mms.

Calcite forms lenticular bodies up to 3 mms. thick, parallel to the cataclastic fabric. It is also present in irregular secondary patches and in veinlets along late fractures. Cross cutting relations suggest several episodes of remobilization.

Sphalerite occurs as subhedral crystals, often faintly zoned, up to 1 mm. in size. It is clearly associated with galena within the relatively coarser grained quartz domains. Minor amounts of pyrite are present as well.

Specimen : JP-6 GRIZ 3 SHOWING

Classification : Silicified, veined and altered trachyandesite

Mode :	Quartz	30-45%
	Clayminerals	25%
	Calcite	30-40%
	Zircon & apatite	tr
	Sphalerite	<5%
	Other opaques	1%

Handspecimen : Light grey, siliceous and calcareous vein breccia. Angular fragments with a original porphyritic texture, very similar to spec. JP-2, are clearly visible in cut surface. This spec. is most likely a altered, silicified and veined version of JP-s. Rare, small specks of galena are visible in handspecimen.

Thin section : The above view is conclusvely verified by thin section examination. The pre vein texture is identical to thatin spec. JP-3. Abundant carbonate occurs in small secondary patches, as larger granular masses and in veinlets. As tiny euhedral crystals it is associated with chalcedony veins, which run along the length of the section and crosscut all other fabrics. Locally these veins are a bit vuggy.
Clayminerals occur as very fine grained aggregates associated with granular quartz (as in JP-3). A few relict zircon and apatite,crystals remind one of the original nature of this rock. Relict phenocrysts are not very well visible in thin section but are clearly present in handspecimen.
Opaques occur as scattered, small grains and aggregates. A few small grains of sphalerite (av. size .25 mms.) are clearly associated with galena and secondary granular quartz.

Specimen : G-1

GRIZ 3 SHOWING

Classification : Siliceous and calcareous vein-breccia + ore minerals

Mode :	Quartz	40-50%
	Calcite	40%
	Clayminerals	10%
	Opaques	5-10%

Handspecimen : Siliceous and calcareous vein-breccia containing galena and sphalerite. Light coloured siliceous fragments are set in a dark, aphanitic siliceous vein network. Some of the veins are a bit hematitic. A few dark areas (fragments?) contain fine, yellow metallic needles.

Thin section : Texturally and mineralogically this specimen is somewhat similar to the previous two samples, combining elements of both. However, original (porphyritic?) textures are only very poorly preserved among some of the finer grained siliceous, claymineral rich domains. These are here interpreted as remnants of the primary, albeit altered, lithology. Only a few of these are present, the remainder of the sample being composed of a complex multistage vein network. The pattern of veining is as follows:

stage 1 : Early quartz veining, probably synchronous with silicification. Relatively coarse grained quartz, locally speroidal and radiating. Average size .5 mms. It is evidently this phase during which the ore minerals were introduced.

stage 2 : Crosscutting calcite veinlets. These are locally a bit hematitic and appear to have remobilized some of the ore minerals.

stage 3 : Late, very fine grained silica (chalcedony) veinlets, cross-cutting the previous two stages. This stage includes some brecciation and fracturing. The resulting fabric is in part cataclastic. At least some late stage movement along fractures has occured after injection of these fine grained silica veins, juxtaposing them against earlier stage domains.

The fine grained euhedral, yellow sulfide needles are arsenopyrite. ~~composed of pyrite.~~ They are up to 1 mm. long and have a rhombic cross-section. Locally it is intergrown with galena. Galena locally forms feathery, anisotropic aggregates, probably due to cataclastic deformation. Sphalerite is associated with the galena and pyrite, and forms zoned, subhedral crystals up to 1 mm. in size.

Specimen : G-2 GRIZ 3 SHOWING

Classification : Siliceous and calcareous vein-breccia

Mode : Quartz 30%

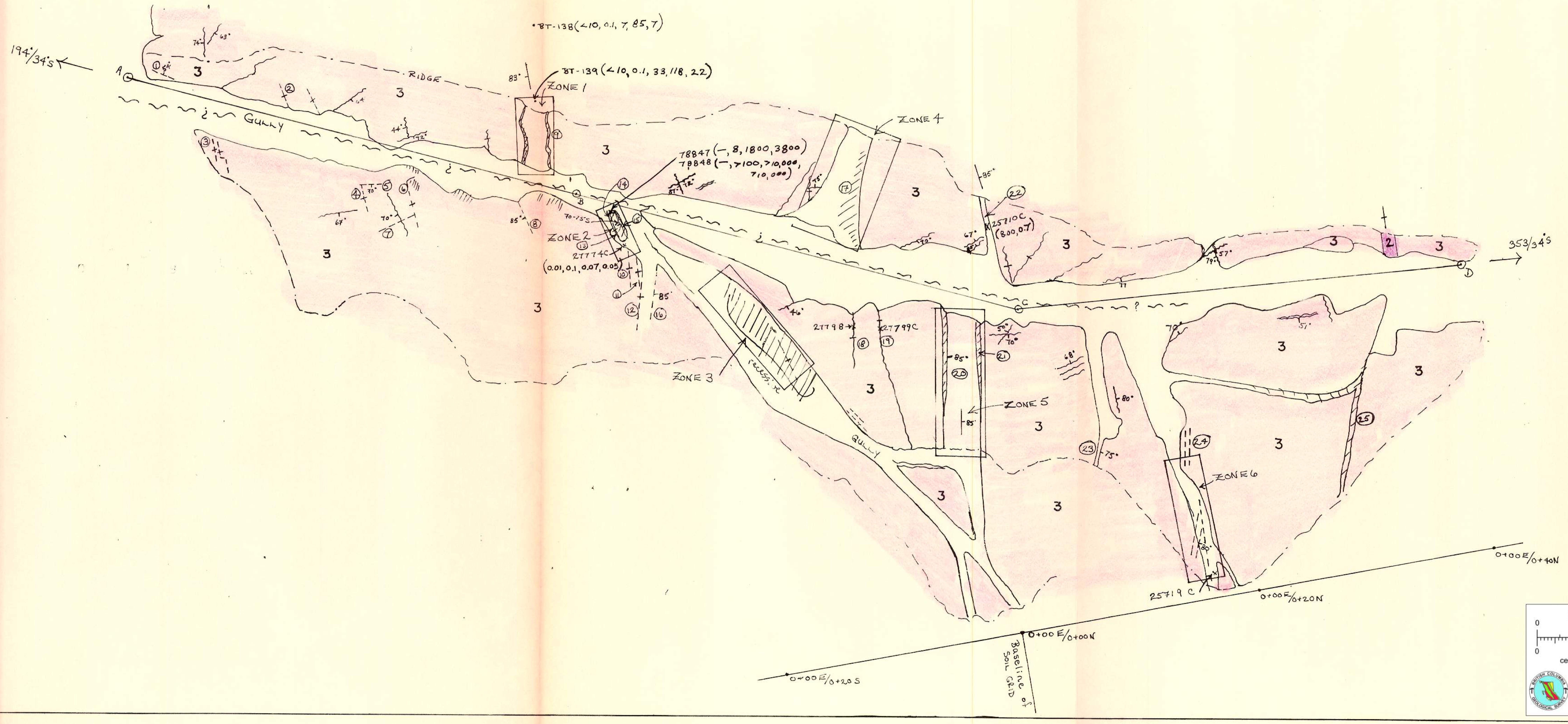
Calcite 40%

Clayminerals/white mica 10%

Opaques 20%

Handspecimen : Galena and sphalerite bearing vein-breccia. A distinct anisotropic fabric is probably the main difference with spec. G-1. Both calcite and silica veinlets are present, and any remaining original lithology is likely highly silicified and altered. Late fractures have slightly offset some of the catclastic fabric, and hence are younger in age.

Thin section : In thin section this specimen is not significantly different from spec. G-1, at least mineralogically. Fine grained, silicified domains rich in clayminerals and a bit of white mica, probably represent the oldest phase in this rock. A crosscutting sequence of veins appears to be similar to that in spec. G-1. Spalerite occurs mainly in calcite veinlets and may have been remobilized from a original association with early quartzveins. It forms grains up to 5 mms. in size. Very fine grained siliceous veins (stage 3) which locally crosscut calcite veins, contain abundant euhedral calcite crystals, probably due to remobilization from the earlier calcite veinlets. The coarser grained calcite crystals (up to 3.5 mm.) are a bit bent, lending support to the notion of late stage cataclastic deformation as advertized under G-1. Subsequent fractures have offset the stage 3 structures somewhat. Galena, associated with spalerite, ranges up to 1 mm. in size.



LEGEND

3 QUARTZ FELDSPAR PORPHYRY fine to medium grained, greenish color, white feldspar and some quartz phenocrysts, light to pinkish weathering.

2 DIABASE fine grained, dark green dyke, dark weather.

SYMBOLS

MN STAINING

70 SMALL VEINS showing strike and dip

70 SMALL FRACTURES showing strike and dip

FAULT

STATION

RIDGE

25710 SAMPLE LOCATION

(<10, 0.1, 33, 118, 22) (ppb Au, ppm Ag, ppm Pb, ppm Zn, ppm As)

(0.01, 0.1, 0.07, 0.05) (oz/ton Au, Ag, % Pb, Zn)

17 VEINS

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NEWEX

GRIZ 3 SHOWING

GEOLOGY AND GEOCHEMISTRY
PLAN SECTION
NTS: 104 K/10 E

SCALE 1 : 300

AUG, 1981

FIGURE 24