013321

1981

ANMAC PROJECT

# GEOLOGICAL AND GEOCHEMICAL REPORT

# ON THE HY-GS-SF CLAIM GROUP

Watson Lake Mining District, Yukon

| | |
|---|---|
| N.T.S. | 105 A 8 |
| Latitude: | 60° 18' N |
| Longitude: | 128° 05' W |

By:

J. W. Mustard

CYPRUS ANVIL MINING CORPORATION

Field work completed during the periods:

May 30 - July 31, 1981

September 17 - September 22, 1981

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## APPENDICES


Appendix I ROCK CHIP GEOCHEMISTRY

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## 1.0 SUMMARY

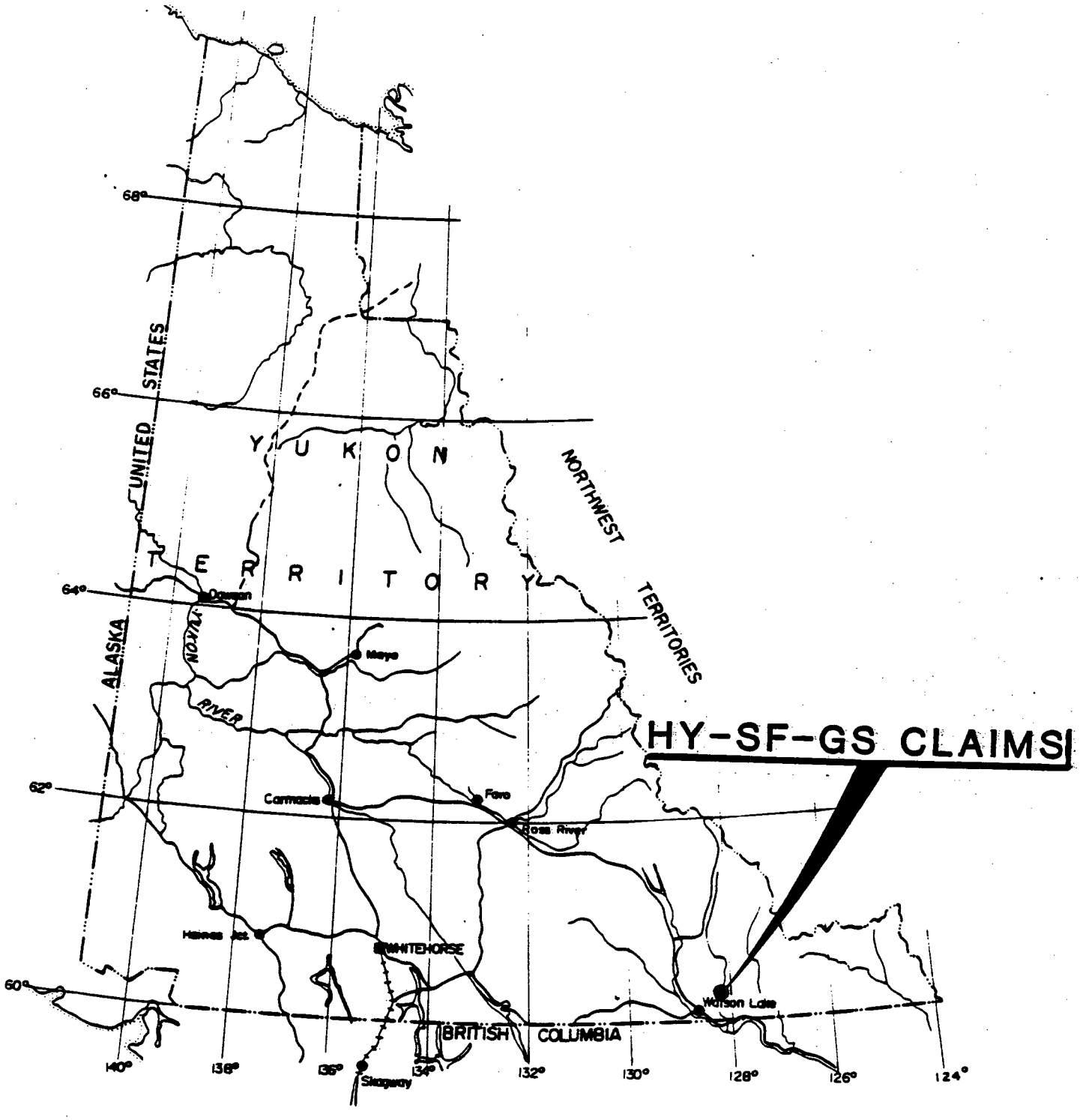
Anomalous Cu, Pb, Zn and Ba stream sediment values in the Hy area originate in rocks of Devono-Mississippian age, a known host for strataform lead--zinc-barite mineralization. During the summer of 1981 111 km of grid line were established over the HY-SF-GS group to provide control for geological, geochemical and magnetic surveys. Several small, isolated veinlets were found to carry galena and sphalerite within silvery grey weathering black shales. Magnetic results, while being somewhat inconclusive, indicate a broad northwest trend. Four distinct geochemical anomalies were outlined, two of which appear to be related to late stage (Cretaceous?) intrusive activity. Two remain essentially untested. A trenching program is recommended to discover the source of these two anomalies.

## 2.0 INTRODUCTION

Field work on the Hy, SF, GS group (Table 1 and 2), during 1981, consisted of line cutting, soil sampling, magnetometer survey and mapping. The purpose of the program was to find the source of a high geochemical response draining the claim groups and an understanding of the geology. This report presents the results of the 1981 program - for a summary on costs the reader is referred to the report filed for assessment in October of 1981 (Mustard and Perkins).

## 3.0 LOCATION AND ACCESS

The group is located 45 km northeast of Watson Lake. Access from Watson Lake was by helicopter (see Fig. 1 and 2).



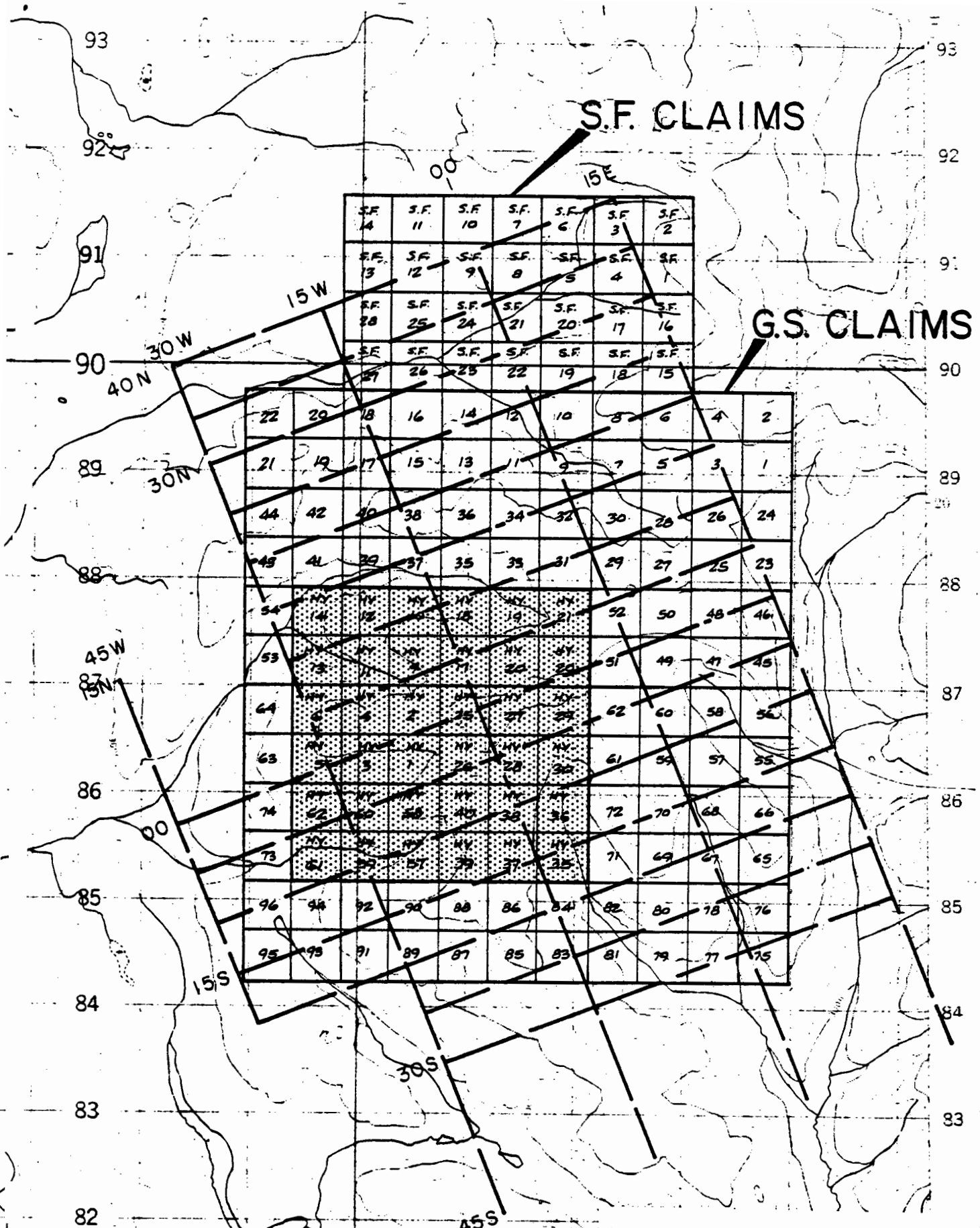

# CYPRUS ANVIL MINING CORPORATION

# LOCATION MAP

YUKON

SCALE : 1" = 100 MILES

FIGURE 1




CYPRUS ANVIL MINING CORPORATION

ANMAC PROJECT

H.Y., S.F. & G.S. CLAIMS

WATSON LAKE M.D. - Y.T.

# 1981 LINE CUTTING MAP

JULY 1981 D.P./r.w.r.

105-A-8

| Claim No. | Grant No. | No. of Claims | Recording Date | Due Date |
|---|---|---|---|---|
| 1-6 | YA34614-YA34619 | 6 | Aug. 4, 1978 | Feb. 4, 1985 |
| 9-14 | YA34622-YA34627 | 6 | Aug. 4, 1978 | Feb. 4, 1985 |
| 17-22 | YA34630-YA34635 | 6 | Aug. 4, 1978 | Feb. 4, 1985 |
| 25-30 | YA34638-YA34643 | 6 | Aug. 4, 1978 | Feb. 4, 1985 |
| 35-40 | YA34648-YA34653 | 6 | Aug. 4, 1978 | Feb. 4, 1985 |
| 57-62 | YA34670-YA34675 | 6 | Aug. 4, 1978 | Feb. 4, 1985 |

TABLE 1 - Hy Group Claim List

GS Group

| Claim No. | Grant No. | No. of Claims | Recording Date | Due Date |
|---|---|---|---|---|
| 1-8 | YA55840-YA55847 | 8 | Aug. 6, 1980 | Feb. 4, 1985 |
| 9-16 | YA55848-YA55855 | 8 | Aug. 6, 1980 | Feb. 4, 1985 |
| 17-24 | YA55856-YA55863 | 8 | Aug. 6, 1980 | Feb. 4, 1985 |
| 25-32 | YA55864-YA55871 | 8 | Aug. 6, 1980 | Feb. 4, 1985 |
| 33-40 | YA55872-YA55879 | 8 | Aug. 6, 1980 | Feb. 4, 1985 |
| 41-44 | YA55880-YA55883 | 4 | Aug. 6, 1980 | Feb. 4, 1985 |
| 45-52 | YA55884-YA55891 | 8 | Aug. 6, 1980 | Feb. 4, 1985 |
| 53-60 | YA55892-YA55899 | 8 | Aug. 6, 1980 | Feb. 4, 1985 |
| 61-68 | YA55900-YA55907 | 8 | Aug. 6, 1980 | Feb. 4, 1985 |
| 69-76 | YA55908-YA55915 | 8 | Aug. 6, 1980 | Feb. 4, 1985 |
| 77-84 | YA55916-YA55923 | 8 | Aug. 6, 1980 | Feb. 4, 1985 |
| 85-92 | YA55924-YA55931 | 8 | Aug. 6, 1980 | Feb. 4, 1985 |
| 93-96 | YA55932-YA55935 | 4 | Aug. 6, 1980 | Feb. 4, 1985 |

SF Group

| Claim No. | Grant No. | No. of Claims | Recording Date | Due Date |
|---|---|---|---|---|
| 1-8 | YA55812-YA55819 | 8 | Aug. 6, 1980 | Feb. 4, 1985 |
| 9-16 | YA55820-YA55827 | 8 | Aug. 6, 1980 | Feb. 4, 1985 |
| 17-24 | YA55828-YA55835 | 8 | Aug. 6, 1980 | Feb. 4, 1985 |
| 25-28 | YA55836-YA55839 | 4 | Aug. 6, 1980 | Feb. 4, 1985 |

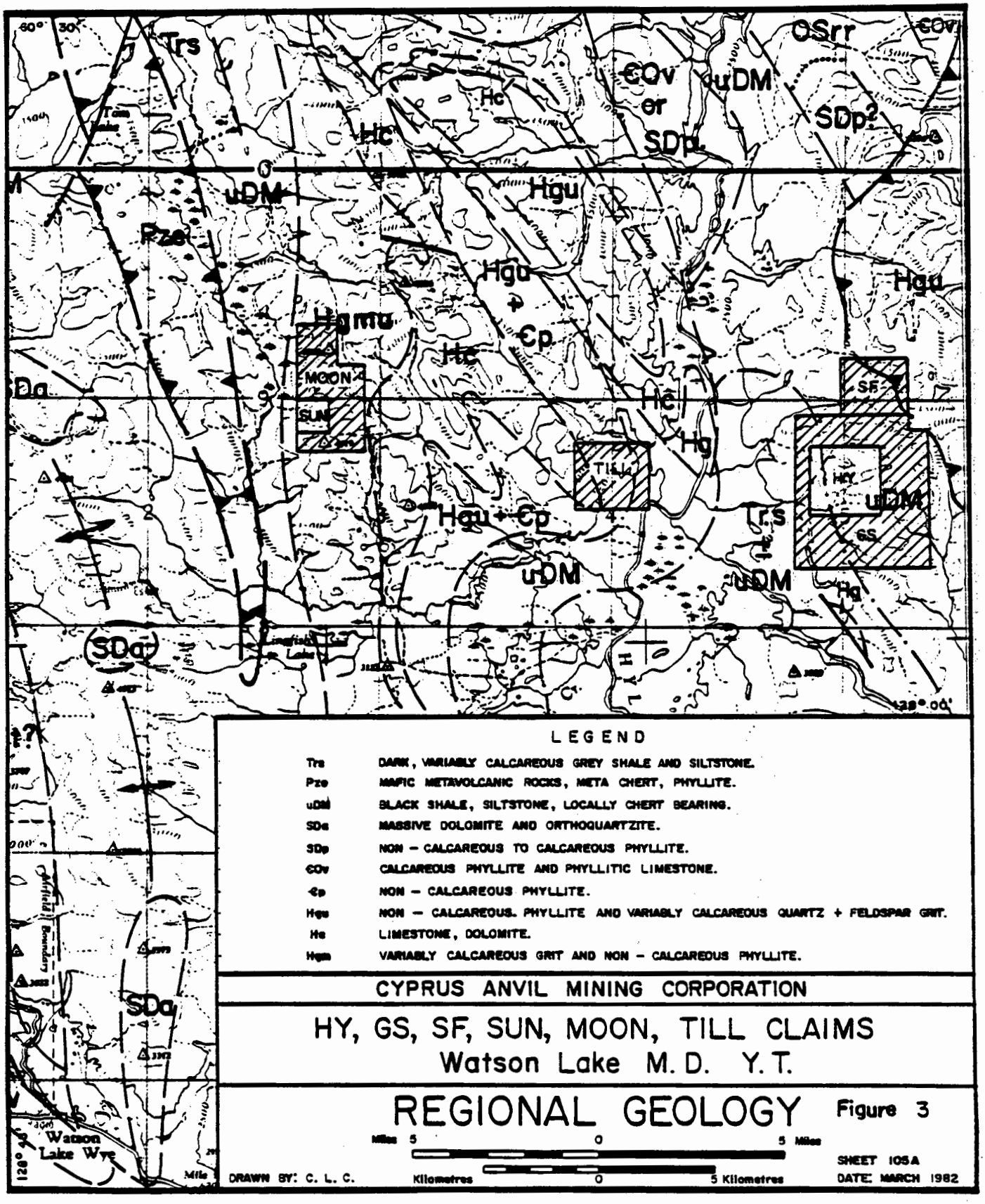
TABLE 1 - GS, SF Group Claim List

## 4.0 REGIONAL GEOLOGY

Regionally, the stratigraphy of the Mackenzie Platform (or margin) of ancient North America includes a thick section of Hadrynian clastic strata, (informally called "Grit" in Selwyn Basin). Cambrian to Devonian carbonates overlie these and in turn are overlain by Mississippian and younger clastic rocks. This stable configuration did not persist throughout the platform but was interrupted by a regional marine transgressive sequence beginning by early Silurian, resulting in what is now commonly called Selwyn Basin. Selwyn Basin stratigraphy is dominated by shales, cherts, carbonates and culminating with the regionally extensive, thick, Devono-Mississippian "Black Clastic" unit, equivalent to the much thinner Imperial and Besa River Formations on the Mackenzie Platform.

In the claim group areas (Fig. 3) the lower most unit is middle grit (Hgm). This is a medium grey non-calcareous phyllite with variable amounts of quartz grit and sandstone. It may contain some green phyllite of Hg. Hc is massive white weathering calcite marble and grey limestone with minor dolomite. The upper grit (Hgu) consists of green and grey non-calcareous phyllites, variably calcareous quartz and feldspar grit to quartzite. Possible equivalents to uppermost grit and lower Mt. Mye are lower Cambrian non-calcareous to green phyllites (Cp). Calcareous phyllites and phyllitic limestone of Cambro-Ordovician age are equivalent to Vangorda Formation (COv).

Siluro-Devonian dolomite and orthoquartzite (SDa) are discontinuously exposed in the core of a major anticline to the east. Medium grey non-calcareous to calcareous phyllites with interbeds of dolomitic siltstone are present to the north but their relationship to COv is uncertain. Devono-




LEGEND

| | |
|---|---|
| Trs | DARK, VARIABLY CALCAREOUS GREY SHALE AND SILTSTONE. |
| Pze | MAFIC METAVOLCANIC ROCKS, META CHERT, PHYLLITE. |
| uDM | BLACK SHALE, SILTSTONE, LOCALLY CHERT BEARING. |
| SDq | MASSIVE DOLOMITE AND ORTHOQUARTZITE. |
| SDp | NON - CALCAREOUS TO CALCAREOUS PHYLLITE. |
| COv | CALCAREOUS PHYLLITE AND PHYLLITIC LIMESTONE. |
| Cp | NON - CALCAREOUS PHYLLITE. |
| Hgu | NON - CALCAREOUS. PHYLLITE AND VARIABLY CALCAREOUS QUARTZ + FELDSPAR GRIT. |
| Hc | LIMESTONE, DOLOMITE. |
| Hgm | VARIABLY CALCAREOUS GRIT AND NON - CALCAREOUS PHYLLITE. |

CYPRUS ANVIL MINING CORPORATION

HY, GS, SF, SUN, MOON, TILL CLAIMS
Watson Lake M. D. Y. T.

# REGIONAL GEOLOGY

Figure 3

Miles 5 0 5 Miles

Kilometres 0 5 Kilometres

DRAWN BY: C. L. C.

SHEET 105A

DATE: MARCH 1982

Mississippian strata (uDM) consists of black, graphitic shale, siltstones and chert pebble conglomerate. Poorly exposed Mississippian or Jurassic variably calcareous grey shales and siltstone outcrop west of the Hy group (Trs). Paleozoic (Pre-Triassic ?) mafic metavolcanics meta chert, phyllite, eclogite and amphibolite (Pze) are part of an allochtonous package to the west of the Sun-Moon Group. Refer to Figure 4 for a comparative stratigraphic column.

Structurally the Hy group is thought to straddle a southward plunging open anticline formed mainly by uDM stratigraphy. To the north this anticline may be replaced by an overturned syncline of older rocks, which is somewhat in contradiction with that observed on the Hy. A previously unrecognized east-west structural break may be present to the north of the properties, as observed in airphotos.

## 5.0 PROPERTY GEOLOGY

Hg - Rocks of Hadrynian age rest unconformably on Devono-Mississippian stratigraphy to the north and northeast of the property. Upper grit (Hgu) consists of variably calcareous quartz and feldspar grit, poorly sorted sandstone to quartzite and green, grey and brown phyllites. Hcp is a dark grey platy, sandy limestone. Hgugn are grey and green thinly bedded phyllites with minor calcareous quartzites and grit. Middle grit? (Hgm) consists mostly of non-calcareous green phyllite and minor quartz grit sandstone.

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# STRATIGRAPHIC COLUMN

THICKNESS OF UNITS NOT TO SCALE

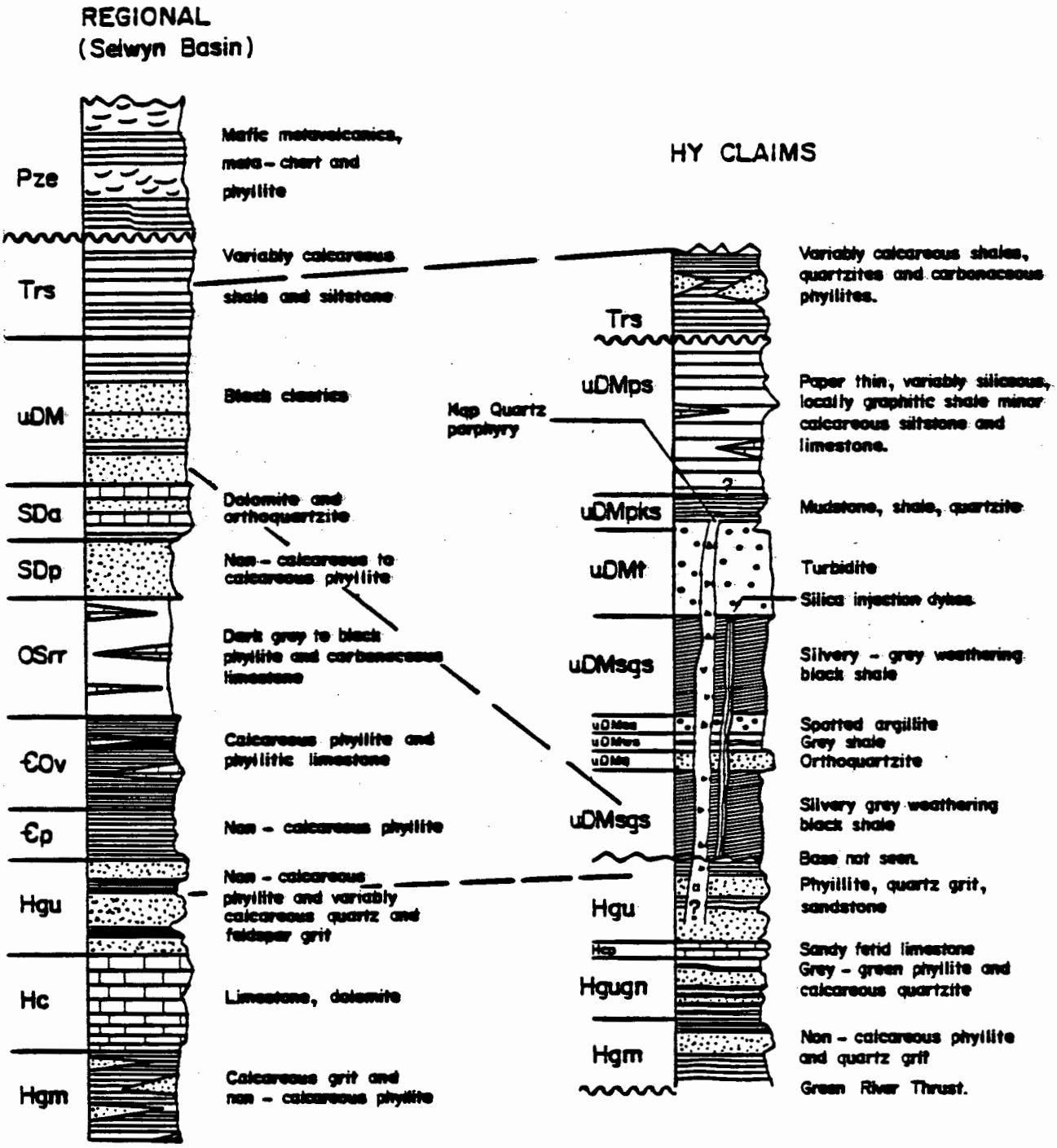


FIGURE 4

Stratigraphic Column, Hy Area

uDMsgs - Forming the bulk of the outcrop is a variably cherty, silvery grey weathering shale. There are at least three facies recognized, none of which appear to be stratigraphic at the mapped scale. Each subunit is described separately below with examples of type of exposures.

The predominant subunit is a hard, relatively massive, siliceous shale. Eighty per cent of the black shale sequence is of this type. It is spatially associated with an abundance of silica injection veins, which are assumed to be the source of much of the silica. This is best exposed on ridge tops in the south and east central portions of the map area.

The second subunit is a laminated to massive chert bearing black shale. These chert bearing horizons are possibly stratigraphic but this is not certain because of poor outcrop and its similarity to the more massive siliceous shales makes it difficult to map. This chert bearing horizon or horizons, occurs within the massive shales but appears to become more dominant towards the north or possibly lower in the section.

The third subunit, although least exposed, is a very massive, blocky, graphitic shale which is characteristically non-siliceous. The silvery-grey weathering nature is more pronounce than with the other subunits, possibly due to a lack of silica. There is often very finely laminated layers which are composed of sand sized clasts and very fine pyrite. The pyritic nature was observed in only one outcrop. Best exposure of this unit occurs discontinuously in the upper reaches of a creek draining eastward in the southeast part of the property. It is also found in areas proximal to the silicified black shale and numberous outcrops consisted of both types. This same relationship was not observed with the chert bearing shales.

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Contact relations with the overlying turbidites is unknown but it is assumed to be fairly sharp. Though uDMsgs forms the bulk of outcrop on the Hy it does not appear to be regionally extensive except possibly west of the Hyland River where it outcrops on the west limb of a syncline.

uDMq - Well sorted, very clean orthoquartzites are well exposed on a east-west ridge just west of the main anticlinal axis. They are fine grained and contain very minor amounts of detrital biotite. Colour ranges from black to sand brown but sandy brown variaties are more common - possibly representing a slightly dirtier quartzite. This unit is apparently repeated in the section.

uDMsa - This unit is characterized by ovoid spots set in a very fine grained, well foliated ground mass. It is grey to light brown weathering and commonly forms well rounded outcrops. It is easily recognized in the field because of the distinctive spots as well as its stratigraphic position relative to uDMq and uDMws.

Mineralogically the unit consists of 5 - 10% ovoid spots which are elongated in the plane of principle foliation. These spots are 0.7 to 1.5 mm in length with width 2/3 of the length. Their mineralogy is similar to the groundmass but proportionally more sericite is present than quartz. Sericite and biotite vary from 7 - 12%, quartz 2 - 10% with trace amounts of epidote, calcite and potash feldspar.

The groundmass consists of up to 60% sericite and up to 40% quartz in a fine grained matted network. Trace amounts of the following are present: opaque, hematite, carbonate and carbonaceous material. Compositionally

the groundmass can vary widely but the makeup of the spots appears to be more consistent.

This unit is presumed to be a metamorphic mudstone and the spots may be retrogressive or alternatively they may be a primary metamorphic aggregation.

uDMt - Course grained turbidites are well exposed on the eastern limb of the major south plunging anticline. The clasts are dominantly subrounded to subangular chert fragments with an average size of 2 - 3 cm. The matrix is fine grained, with the chert clasts floating within it. Black shale chips or wisps occupy 1 - 2% of the clasts where present. Chert pebble conglomerate is present but relatively restricted as it was only observed (as float) in two localities. In both cases it consisted of rounded, elongated chert nodules (to 4 cm) in a fine grained aphanitic matrix.

Paper thin, grey weathering shales are commonly interbedded throughout but are generally thin (less than 1 m). Thickness of these interbedded shales increases near the top of the section until turbidites no longer persist. No sedimentological features were observed in the field except for one possible graded bed between shale layers which indicated a facing direction towards the east (upright). Clast size apparently diminished towards the north, but this was obscured due to lack of outcrop. No gradation was observed down section.

uDMpks - This unit, although not extensively exposed, is present in two areas which typify the heterogeneous character. Lithologically, the main unit within this sequence is a variably carbonaceous, often graphitic, shale/phyllite. This unit is dark to red-brown weathering and is commonly silicified and cut by, apparently, random quartz veining of micro to macro size. The second most common lithologic type is a quartzite very similar to that observed near the central portion of the claim group. Here the quartzite is finer grained and more dicontinuous and certainly more than one horizon. It too is commonly cut by numerous silica veinlets. The third, but not least, component of this package are clastic layers of quite variable thickness within the shales and certainly discontinuous. Clasts are quite small (sand size), to 0.5 mm in size, and are composed mainly of quartz and plagioclase. Pinch and swell textures are common with the enclosing shales.

This is somewhat of an enigmatic unit in that it's stratigraphic position is not certain. It most certainly is within uDMsgs but need not be stratigraphically above it (as assumed). It has lithologies like that of uDMps as well as uDMt but most certainly does not belong (lithologically) to either. For the purpose of this interpretation I have assumed that it is a facies equivalent to the transition between uDMsgs and uDMps. This is not substantiated by outcrop but is certainly plausible given the dynamic paleography which gave rise to the coarse clastics (uDMt).

uDMps - These are paper thin, silty shales which are assumed to be the youngest stratigraphic unit exposed in the map area. They consist largely

of recessive weathering, locally graphitic grey to black shales. Excellent exposures occur along the main north-south creek on the eastern edge of the map sheet. Another type exposure occurs on an east-west creek north of the map area.

Locally, and possible discontinuous within this unit, are silty limestone horizons observed in two outcrops. Except for the carbonate horizons the unit is generally non-calcareous. Quartzite horizons are unknown but may be present; very fine silty layers are not common. A distinctive feature of this unit is the "tinkly" nature of weathered outcrops where the shales remain intact. This unit possibly becomes more graphitic towards the north - but this may be due to better exposure.

Quite commonly these shales occur as thin (up to 4 m) intraformational layers within the turbidite sequence. Here these shales appear very homogeneous and generally quite thin, but often very irregular. Certainly within the first several tens of metres of turbidite, shale is very common.

Trs - Although not exposed on the property, rocks of Triassic (?) age are assumed to subcrop in the southwest corner, bounded by a north-south structure observed on airphotos. These rocks do outcrop further southwest in a north trending valley. It is entirely possible that this unit does not subcrop within the map area and that the rocks here are part of the uDMps sequence.

Where exposed this group consists largely of variably calcareous, brown weathering shales. Locally these shales are graphitic to the point of resembling uDM lithology. Quartz sandstone horizons are common up to at least

10 - 15 m thick. The sandstones appear to be generally well sorted (mature) and generally are calcareous.

Kqfp - This unit is characterized by a distinct grey-green groundmass with large phenocrysts of plagioclase and K-feldspar (up to 5 mm). It is a quartz feldspar porphyry granite. Quartz forms subrounded phenocrysts to 2 mm in size, plagioclase as subhedral phenocrysts from 0.5 to 2.0 mm and K-feldspar as anhedral phenocrysts to 5.0 mm. Zoning in feldspars is quite common.

The groundmass is dominated by a fine grained aggregate of K-feldspar and quartz (30% and 10% respectively). Biotite (6%) and muscovite (2%) is present as irregular patches. Trace amounts of opaque, opatite and zircon are also present. Biotite is often altered to muscovite, sericite and limonite.

As this unit only crops out in one locality, its field relationship is not known. Compositionally it is similar to Kqp, with which it is assumed to be related. Both Kqp and Kqfp are assumed to be Cretaceous in age.

Kqp - This is a pale grey to cream coloured, fine to medium grained quartz porphyritic granite with subsidiary phenocrysts of plagioclase and K-feldspar. The porphyritic phase consists of 4 to 12% quartz, 2 to 5% K-feldspar and 3 to 5% plagioclase. Quartz forms euhedral to subhedral phenocrysts ranging in size to 4mm. Plagioclase is anhedral to subhedral and is up to 3 mm in size. K-feldspar forms euhedral grains ranging in size from 0.5 mm to 3.0 mm. The K-feldspar often contains minor exsolved plagioclase in irregular perthitic intergrowths. Micrographic intergrowths are not uncommon.

... 16

The groundmass is dominated by a fine grained, interlocking mosaic of quartz and K-feldspar. The K-feldspar and quartz form equant grains from 0.05 mm to 0.1 mm, plagioclase is generally absent. Trace amounts of the following are commonly present: biotite, garnet, chlorite, sericite and carbonate. Alteration is generally weak to non-existent with minor amounts of clay, sericite, carbonate and clinozoisite observed.

In outcrop, quartz-epidote veins up to 0.5 mm in width often cut the rock. Quartz-flourite bearing veinlets were observed on a number of occasions near the margins as well as in the host rock. These often carried trace amounts of galena, chalcopyrite and pyrite. A common mineralogical occurrence within these dykes was the presence of quartz-tourmaline clusters. These formed large radial arrays up to 1.5 cm in cross section and appeared to be replacement or alteration features and not xenoliths.

Contact relations suggest a dike type emplacement but the pronounced linearity is based on outcrop distribution and outcrop weathering patterns (only one actual outcrop of Kqp was observed). Thickness of one dike approaches 300 m but on an average it is considerably less. Compositionally this unit is a granite but texturally it is a (graphic) granite pegmatite.

Structure - The area lies within the Hyland Depression as defined by Jilson. This structural province is bounded by the Green River thrust and a normal fault of unknown strkie-slip displacement on the north and northeast corners. The Green River thrust places rocks of Hadrynian age structurally above uDM stratigraphy. The major north trending fault (AW fault) is necessary to account for the abrupt structural thickening of the grit unit where it is in contact with uDMps on the southern portion of the Green River thrust.

Though the rocks within the allochthonous package are interpretated as being Hadrynian in age, this is not without problems. Lithologies similar to Rabbitkettle (Cambro-Ordovician) Askin (Siluro-Devonian) and black clastics were observed within the thrust package. If these rocks are in fact lower Paleozoic then it would imply that the Green River thrust is not a simple zone of detachment but rather it may be a series of imbricated sheets. On the other hand, these may be a series of unrecognized vertical faults which would account for the significant structural thickening.

Hoek fault on the west is a clearly defined airphoto linear and accommodates the structural removal of much of the uDM stratigraphy on this side. The short SJ fault is an airphoto linear.

There are two periods of non-brittle deformation recognized within Hy area. A major southward plunging anticline ($D_1$) is accompanied by a pervasive $S_1$ axial plane cleavage. A second phase of deformation is characterized by locally developed chevron or kink folds trending northwest-southeast with northerly plunges. The $D_2$ foliation is not persistent nor are (apparently) small scale $F_2$ folds. The syncline-anticline sequence on the east side, accounting for changes in dip and outcrop pattern, are thought to be $D_2$ related. The syncline-anticline trends on the west side of the major anticline are not well understood but are thought to be related to $D_1$ deformation. There may be numerous $D_1$ folds unrecognized on the west side and it is possible that the uDMpks is a synclinal keel of a more regionally extensive unit.

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## 6.0 GEOCHEMICAL (Refer to Maps 2, 3, 4 and 5)

For a description of sampling and analytical technique refer to Mustard and Perkins, 1981.

Pb, Zn and Ba cumulative frequency plots (Fig. 5) each have a pronounced break at relatively high values. This is due to an excess of low values which would result from either a mix of different lithologic rock types with different backgrounds or inconsistent sampling. Sampling bias can be ruled out and even though there are several different rock types it is assumed that geochemical values are similar. The breaks are more likely a result of a large background population coupled with a small anomalous population.

Copper has a somewhat different distribution (two breaks) and is possibly a result of a mix of two populations. An attempt was made to separate and derive statistical parameters for the two populations but this resulted in values that gave too many "bullseye" type patterns.

For all elements, contour intervals were established at the following levels:

| | Cumulative Frequency |
|---|---|
| Background | 50% |
| Mean + 1 Standard Deviation | 14% |
| Mean + 2 Standard Deviation | 2.5% |
| Mean + 3 Standard Deviation | 0.1% |

In all cases values higher than the mean plus two standard deviations should be considered anomalous.

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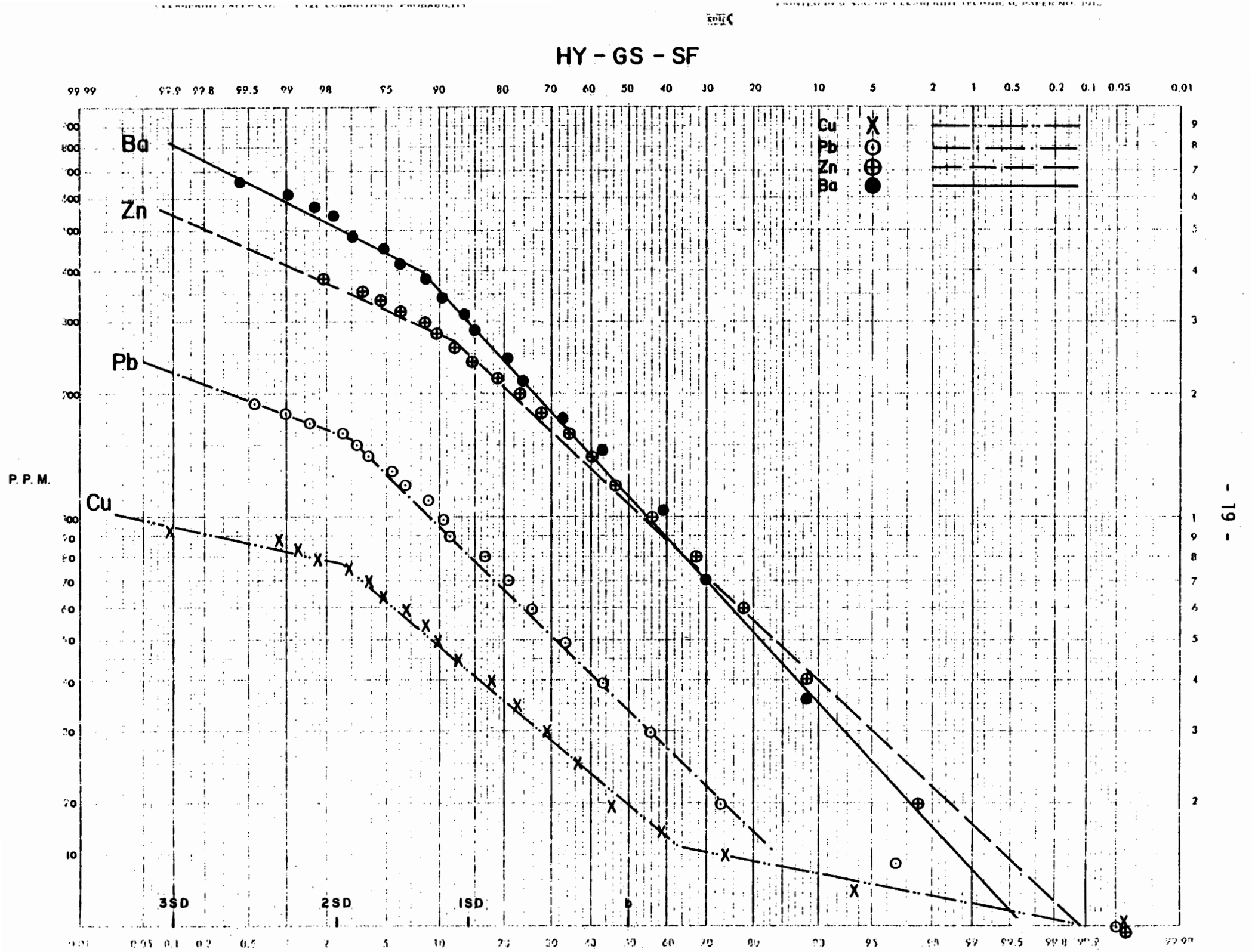

HY - GS - SF
Ba
Zn
Pb
Cu
Cu
Pb
Zn
Ba
P. P. M.
3SD
2SD
1SD
CUMULATIVE FREQUENCY %

Figure 5

## 6.1 Rock Geochemistry

Four rock samples were analyzed by ICP to obtain background levels for a number of elements and in particular barium (see Appendix I). A suspected high barium background was confirmed with one sample of uDMsgs having a value of 5200 ppm Ba. Horizons of high barium within uDMsgs may be the source of the barium geochemistry observed in stream sediment and soil samples.

## 6.2 Lead Plot

Lead geochemistry shows four distinct, large anomalous (labelled A, B, C and D) and several smaller anomalies which are generally spot highs of one or two samples. The most interesting spot high (1050 ppm) is located at 17+50N, 60E. This plots directly over the contact between Kqp and uDMsgs. The anomaly has a small dispersion directly downslope from the one high value and is assumed to be related to the Kqp dike. It is worth noting that many of the spot highs are proximal to dikes.

Anomaly A is centered directly over numerous Kqp outcrops. Values range up to 855 ppm and generally are up to 10 times local background. All spot highs are within 150 m of mapped outcrops or are centered near contacts. This anomaly occurs on a $25^{o}$+ slope and shows very little downslope dispersion. Soil cover is assumed to be less than 8 m in this vicinity. Clearly this anomaly is associated with a series of dikes and known lead, copper bearing veinlets within the environs.

Anomaly B is somewhat more diffuse and in fact has two parts. Values here are not as high (440 ppm) and the overall contrast is reduced. One spot high is directly on the contact with a dike and the others are on strike with dike trends from anomaly A. This anomaly is centered on a gentle slope with poorly developed drainage and appears to be related to the intrusives.

Anomaly C appears to be the widest dispersed but with a lack of very high values (one sample did return 1900 ppm). The anomaly is centered upslope from a creek in a relatively well drained area. Dispersion from the high values appears to be minimal with some minor downslope migration. No clear explanation for this anomaly is apparent, except that it lies directly on the strike with the longest dike mapped (some 800 m to the northeast).

Anomaly D has two lobes which straddle the flanks of a small east-west ridge. Although the north lobe continues upslope across a creek it appears that the extent of this part is due to downslope dispersion. There is a known dike in the western part of the anomaly but its presence could not account for the entire anomaly. There is no readily apparent reason for the southern lobe despite the two trenches.

## 6.3 Zinc Plot

Zinc anomalies are very similar to the lead pattern and the same discussion can apply. Overall, the zinc values show a somewhat wider dispersion, particularly in anomaly A where the dike related nature is more evident. As in the lead plot, many of the spot highs coincide with dike subcrop or appear to be on strike with mapped dikes.

Anomaly F occurs in an area of good outcrop of uDMsgs and uDMq. However, this is clearly on strike with a mapped dike some 100 m to the northeast.

## 6.4 Copper Plot

The Cu anomalies mimic the Pb and Zn distribution except dispersion is much less. This lack of apparent dispersion may be a result of a problem in defining contour intervals as previously discussed. As in Pb and Zn, anomaly D flanks the east-west trending ridge. Anomaly E, centered on a creek, has very weak Pb and Zn values and is thought to be related to a poor drainage environment.

## 6.5 Barium Plot

Selective lines were analyzed for Ba to obtain a reasonable estimate of statistical parameters. Clearly Ba contours tend to follow the same patterns as observed with Pb and Zn. Anomaly D again has a flanking nature of the same east-west ridge. The intensity of the Ba anomaly here is ten times background, the same intensity as Pb, with a spot high of 5040 ppm. Ba appears to show more dispersion than does the Pb anomaly and high Ba values do not necessarily coincide with high Pb values.

# 7.0 GROUND MAGNETOMETER SURVEY

A regional airborne magnetic anomaly of 240 gammas is centered over the eastern margin of the property. Because of this contrast, a ground

survey was carried out with Scintrex model MFD-3 fluxgate magnetometer. Results are shown on Map 6.

Stations were read at 30 m intervals and corrections made for time variations by looping or by correcting between established base stations. For a majority of the survey, readings were corrected between base stations. The ground survey shows contrasts similar to those observed from the airborne (200 - 300 gammas). A broad northeasterly trend is evident over much of the central portion of the property. Although correlation with the intrusives is difficult, it is suggested that there is an approximate 75 - 100 gamma anomaly associated with dikes, where their contacts can be defined by outcrop. This, however, cannot be used without realizing that the magnetic susceptibility between the felsic dikes and the shales is not strongly disimilar. The series of dike outcrops associated with anomaly A follow the localized magnetic pattern but contacts were determined by outcrop pattern; all other dike contacts are based on outcrop pattern.

The general trend towards higher values towards the western boundary is very similar to that observed with the airborne results. No reason for this was observed in the field.

## 8.0 HY TRENCHING PROGRAM

Three trenches were blasted on the HY property. These trenches were primarily located on areas of high lead geochemistry response and preferentially on steep slopes where overburden was thought to be thin.

... 24

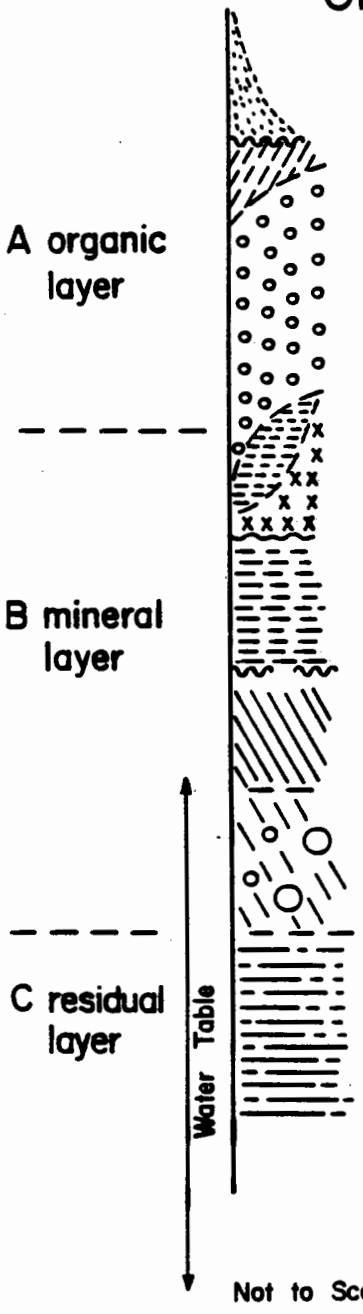
The first trench, HT-1, is located at 2400 west, 900 south with original soil values of 77, 450 and 280 (Cu, Pb and Zn in ppm). The soil here is a placic ferro-humic podzol (Fig. 6). This is a soil developed under cool forest cover. A hardpan was encountered from 1 to 1.5 m below surface to at least a depth of 4 m. The second trench, HT-2, at 2400 west, 840 south, was located directly upslope of trench HT-1. The purpose of HT-2 was to trench to bedrock and find the source rock for HT-1 anomalous values. Unfortunately, HT-2 encountered the same placic ferro-humic podzol as HT-1 and was not able to penetrate below the hardpan.

Trench HT-3 is located at 1300 west, 540 south with original soil values of 68, 890 and 398 (Cu, Pb and Zn in ppm). Trench HT-2 is approximately 8 m long with good exposure of black wispy shale (uDMws) and more massive chert (uDMsgs). Sampling of the rock shows no corresponding anomalous values in Pb geochemistry. The top boundary of the subcrop may be a fault contact due to it's smooth planar surface at an angle to the apparent $S_0$. This surface shows some limonite which may have carried some lead values and account for the initial geochemical response.

## 9.0 MINERALIZATION

In all cases but one, observed mineralization consisted of galena and lesser chalcopyrite associated with silica filled, fracture related, veinlets. The one exception was a fine (2 cm) layer of sand size, pyrite rich, clastics with the black shales. The veinlet mineralization appears to be rather restricted in nature but apparently widespread and in all cases could be considered as trace amounts.

# ORTHO FERRIC - HUMIC PODZOL




L - H — Organic layer characterized by an accumulation of organic matter in varying stages of decomposition 5 – 10 cm.

Ah — Organic matter that has accumulated as a result of biological activity 1 – 5 cm.

Ae — Horizon that has been eluviated of clay, iron, aluminum or organic matter, or all of these 5 – 10 cm.

Bhf — A horizon enriched with hydrated iron with more than 10 % organic material 1 – 3 cm.

Ash — Volcanic ash, 2 – 10 cm thick may have remnants of top of old soil profile at base. This shows as a dark carbon rich horizon 0 – 1 cm. thick.

Bhf — As Bhf above generally showing the reddest hues or highest chromas near top grading to a lighter, less organic rich Bf 5 – 15 cm.

Bf — A horizon enriched in hydrated iron with less than 5% organic matter 5 – 10 cm.

B - C — Transition from B to C in rocks from C horizon in a matrix of Bf 10 – 20 cm.

C — Generally outcrop or proximal to it.

Figure 6 Placic Ferric - Humic Podzol Profile, Hy Claims, Trench HT - 1.

Not to Scale

Abundant silica "injection" veinlets or dikes were observed on the property and have an apparent northeasterly strike with steep dips. They are often uniquely identifiable by their brecciated and cemented (with silica) matrix. There was no apparent distribution of these dikes except a possible spatial association with the Cretaceous dikes, which they are assumed to genetically related to. No direct correlation with observed mineralization and the silica dikes can be made. No barite was recognized though it's presence was indicated by the high geochemistry.

## 10.0 CONCLUSIONS

Much of the geochemical response appears to be related to known intrusives, in particular, anomalies A and B. Anomalies C and D occur where bedrock exposure is extremely restricted and thus their source must remain speculative. The nature of all the geochemical anomalies indicate a very restrictive dispersion pattern about very localized spot high values. The magnetic survey provided some local correlation with the bedrock but lack of good outcrop control prevented more widespread use.

The restrictive nature of the soil geochemical results appears to be somewhat enigmatic when compared to the regional stream geochemical data which is widespread with good dispersion. Certainly, the observed mineralization would not necessarily account for the geochemical anomalies. Indeed, areas with known fracture related sulfides did not necessarily have high geochemical values, which may be a function of sample spacing. No barite was observed within the shales, but there is a high background within some of the units. The association of the mineralization with the dikes is not denied - but this does not exclude the possibility of a stratiform deposit.

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## 11.0 RECOMMENDATIONS

Since two of the geochemical anomalies (C and D) occur over areas of no outcrop, it is recommended that a series of trenches be excavated to uncover bedrock. The initial phase of this work should be carried out on anomaly D. Estimated cost of an adequate trenching program is $45,000.00.

## REFERENCES

Jilson, G.A. - Personal communication during 1981, 1982.

Mustard, J.W.; Perkins, D.A. - Geochemical Report on the SF, GS and Hy Claims - filed for assessment in 1981.

APPENDIX I

## ROCK GEOCHEMISTRY - ICP GEOCHEMICAL ANALYSIS

A .500 gram of sample is digested with 3 ml of 3:1:3 nitric acid to hydrochloric acid to water at 90° C for one hour. The sample is diluted to 10 ml with water. The results are reported in ppm except for: Fe, Ca, P, Mg, Ba, Al, Na and K which are in percent, Au is ppb. This leach is partial for: Ca, P, Mg, Al, Ti, La, Na, K and W. IS = Internal Standard. Au and Ba are geochem assay.

| Sample | MO | CU | PB | ZN | AG | NI | CO | MN | FE | AS | AU |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M81-12 | .442 | 45.6 | 22.5 | 251 | .121 | 35.9 | 9.23 | 186 | 1.87 | 4.28 | 3 |
| (uDMws) | U | IS | TH | SR | CD | SB | BI | V | CA | P | |
| | -4.0 | 2.16 | 6.67 | 46.2 | 2.39 | .734 | 2.14 | 35.5 | 1.18 | .032 | |
| | LA | CR | MG | BA | TI | B | AL | NA | K | W | |
| | 5.97 | 55.1 | 1.89 | 95 | .135 | 1.53 | 3.10 | .271 | .095 | 2.6 | |
| M81-112 | .882 | 5.42 | 8.41 | 49.0 | .151 | 6.33 | 1.22 | 117 | .446 | 4.57 | 2 |
| (uDMws) | -2.3 | 1.55 | 5.08 | 47.2 | .835 | 2.63 | -.11 | 10.4 | 1.14 | 0.34 | |
| | 4.36 | 18.1 | .372 | | .114 | 1.31 | 1.41 | .151 | .065 | .949 | |
| DPHR81-03 | 13.0 | 45.0 | 33.0 | 308 | .146 | 61.0 | 5.1 | 200 | 1.51 | 28 | 2 |
| (uDMpks) | 1.6 | 1.2 | 2.2 | 641 | .83 | -.7 | 1.9 | 360 | 0.43 | .40 | |
| | 9.3 | 3.1 | .47 | 1500 | .02 | 7.7 | .82 | 78 | 3.3 | 2.2 | |
| DPHR81-42 | 15.0 | 34.0 | 15.0 | 35.0 | .853 | 18.0 | 4.3 | 101 | .823 | 21 | 3 |
| (uDMsgs) | 4.1 | .60 | 1.5 | 574 | .17 | 3.2 | 1.4 | 356 | .28 | .19 | |
| | 8.1 | 11.0 | .11 | 5200 | .06 | 8.8 | .75 | 68 | 2.9 | -.3 | |

M 81113 Spotted Argillite

The rock is a metamorphosed mudstone containing scattered to moderately abundant patches dominated by biotite? or muscovite-sericite, abundant quartz-rich lenses in some layers, and moderately abundant opaque (carbonaceous?) seams. The composition of the groundmass varies widely from sericite-rich to quartz-rich. The biotite and sericite-rich spots probably are metamorphic segregations.

The rock contains a late vein of quartz and lenses of hematite.

| | |
|---|---|
| spots | |
| biotite | 7- 8% |
| muscovite | 2- 3 |
| quartz lenses | 7- 8 |
| groundmass | |
| sericite | 35-40 |
| quartz | 35-40 |
| semiopaque | 0.5 |
| hematite | ½- 1 |
| opaque | ½- 1 |
| vein | |
| quartz | ½- 1 |

The majority of the spots consist of biotite? These average 1 to 1.5 mm in length, and generally are ovoid to anhedral and elongated parallel to foliation in the groundmass. The spots consist of unoriented aggregates of mica flakes averaging 0.05-0.1 mm in size. The grains have a medium brown color which might represent biotite or might represent extremely fine grained Fe-oxides intergrown with sericite. Some patches consist of very fine grained aggregates of sericite with or without scattered to abundant patches of Fe-oxides. Quartz and semiopaque-opaque occur in some spots in minor amounts.

Quartz occurs in lenses averaging 0.5 mm long and 0.05 mm wide. These are concentrated in certain layers in the rock, and are oriented parallel to the foliation of the groundmass. In some layers lenses are partly outlined by seams of carbonaceous? opaque parallel to foliation and wrapping around the ends of quartz-rich lenses. The lenses are composed of extremely fine to very fine grained aggregates with an interlocking texture.

The groundmass of the rock is extremely fine grained (0.01-0.02 mm) and consists of very variable amounts of sericite and quartz, with variation defining layers of different composition parallel to the foliation. Some layers are dominated by quartz with minor sericite. These grade sharply or gradually to other layers dominated by sericite with only minor quartz. Semiopaque and opaque grains of unknown composition are scattered through the rock. They are anhedral to subhedral prismatic in outline and average 0.01-0.02 mm in size.

Hematite occurs in lenses up to 1 mm long and 0.05 mm wide, possibly as late-stage veinlets.

Carbonaceous opaque occurs in seams parallel to foliation. In some parts of the rock, seams are discontinuous, and zones of moderately abundant opaque strike along foliation into patches with very little opaque.

The rock is cut by a late quartz vein up to 0.3 mm wide composed of a very fine grained aggregate of anhedral, equant grains.

JM 8121 Quartz-(Feldspar) Porphyritic Granite-Rhyolite

The rock is probably of hypabyssal origin, either a dike or phase of a near-surface intrusion. It is cut by quartz-epidote-chlorite-(garnet) veins and contains patches of garnet, suggesting that it has been metamorphosed, probably shortly after intrusion.

| | | |
|---|---|---|
| phenocrysts | | |
| quartz | 10-12% | |
| K-feldspar | 2- 3 | |
| plagioclase | 3- 4 | |
| groundmass | | |
| K-feldspar | 50-55 | |
| quartz | 20-25 | |
| biotite | 2- 3 | (some coarser patches in hand sample resemble phenocrysts) |
| garnet | 1½-2 | |
| chlorite | 1½-2 | |
| muscovite | 1½-2 | |
| opaque-semiopaque | 1-1½ | (in feldspar) |
| zircon | trace | |
| veins | | |
| quartz | 2- 3 | |
| epidote | 1- 1½ | (less in rock than in section) |

Quartz forms anhedral to subhedral phenocrysts from 0.5 to 2 mm in size. Some occur in clusters of a few grains.

Plagioclase forms subhedral to anhedral prismatic to irregular phenocrysts from 0.5 to 1.5 mm in size. Many of these show only weakly developed albite twins. Most contain moderately abundant opaque-semiopaque inclusions, in part oriented along crystallographic directions in feldspar and averaging 0.02 mm in length.

K-feldspar forms anhedral phenocrysts from 0.5 to 2.5 mm in size. Many of these contain minor inclusions of albite in irregular perthitic intergrowths. Opaque-semiopaque inclusions are common.

The groundmass is dominated by very fine grained intergrowths of K-feldspar and quartz. K-feldspar forms equant grains averaging 0.05-0.1 mm in size, and quartz commonly forms interstitial irregular grains of finer size, or locally equant grains from 0.05-0.1 mm in size. Some intergrowths show textures approaching graphic intergrowths.

Biotite forms patches of grains up to 0.7 mm across. Grains are anhedral to subhedral flakes averaging 0.05-0.2 mm in size. The mineral shows pleochroism from pale greenish yellow to medium green. Other patches of similar texture but finer grain size consist of chlorite; this mineral is green to brownish green in color.

Garnet forms patches of irregular grains intergrown with other groundmass minerals. Garnet grains average 0.1-0.3 mm in size. Some are isotropic and others show weak birefringence. Some garnet patches are associated with chlorite.

Muscovite forms scattered ragged flakes from 0.1-0.2 mm in length.

Zircon forms one anhedral grain 0.03 mm long associated with chlorite

The rock is cut by a few veins composed mainly of quartz and epidote in moderately variable amounts. Most are dominated by quartz in the thin section, but the hand sample shows patches of the vein composed almost completely of epidote. Grain size is mainly medium to locally coarse, with a few epidote patches being finer grained. Minor chlorite occurs in some fine to medium grained patches of epidote. Some veins are vuggy

M 81114 Spotted Argillite

The rock is a metamorphosed mudstone containing abundant aggregates of sericite with or without one or more of epidote, calcite, and K-feldspar; these give the rock a spotted texture. The original nature of the spots is unknown; the present assemblages might be retrogressive after an original metamorphic mineral, or might represent a primary metamorphic aggregation. The groundmass is dominated by sericite and quartz. A few quartz-rich lenses are parallel to the foliation. The rock is cut by a late sericite-rich vein with a halo of K-feldspar.

| | |
|---|---|
| spots | |
| sericite | 10-12 |
| K-feldspar | 2- 3 |
| epidote | 1½-2 |
| calcite | 1½-2 |
| quartz lenses | 1½-2 |
| groundmass | |
| coarser quartz | 10-15 |
| finer quartz | 30-35 |
| sericite | 30-35 |
| chlorite | 3- 4 |
| opaque | 0.5 |
| vein | |
| sericite | 1- 1½ |
| K-feldspar | 1½-2 |

The rock has a prominent foliation defined by parallel orientation of sericite in the groundmass, and the elongation of quartz lenses and to a lesser extent of spots.

The spots average from 0.7 to 1.5 mm in length and about 2/3 that in width. Most consist of very fine grained aggregates of unoriented sericite with a pale greenish color. Associated with sericite are various other minerals. Epidote occurs in the centers of some patches as very fine grained aggregates. Calcite forms extremely fine grained patches in the centers of some patches, and as separate patches near some large muscovite patches. K-feldspar occurs intergrown with sericite-muscovite along the borders of some patches. Quartz occurs locally intergrown with sericite. The origin of the patches probably was during prograde metamorphism, but it could not be determined if the present assemblage was the original prograde assemblage, or was formed by retrogressive alteratic of a primary metamorphic mineral.

Quartz forms a few lensesup to 0.5 mm long and 0.05 mm wide, elongate parallel to foliation. Grains in these lenses are extremely fine grained and strongly interlocking. One similar lens consists of epidote.

The groundmass contains scattered grains of quartz up to 0.05 mm long, generally elongated parallel to foliation. These are set in a much finer grained groundmass (0.005-0.02 mm) of quartz and sericite, with scattered grains and patches up to 0.1 mm long of pale green chlorite Opaque forms scattered grains and clusters of grains of extremely fine grain size; some occur in the groundmass and others are associated with spots of sericite.

The rock is crosscut by a veinlet 0.05 mm wide composed of very fine grained sericite, with a halo up to 0.2 mm wide consisting of K-feldspar and sericite, possibly with some extremely fine grained epidote.

JM 8149 Spotted Argillite

The rock is a metamorphosed mudstone containing moderately abundant spots dominated by sericite-biotite, some of which contain moderately abundant epidote. The groundmass is dominated by sericite with lesser quartz grains and minor quartz-rich lenses. The foliation is strongly deformed by an irregular set of minor folds with axes at a high angle to the foliation. Some of the fold axes are marked by quartz veinlets and others by wispy lenses of semiopaque. The rock is cut by an early quartz vein, mainly parallel to the foliation, but with a few warps in which it cuts sharply across foliation. The rock is cut by two subparalle fracture zones along which are concentrations of sericite-biotite as in the spots, and locally concentrations of coarser grained epidote-quartz-(chlorite-amphibole). Carbonaceous opaque is concentrated in seams in some layers in the rock.

| | |
|---|---|
| spots | |
| sericite-biotite | 7-10% |
| epidote | ½- 1 |
| quartz grains | 7-10 |
| quartz lenses | minor |
| groundmass | |
| sericite | 55-60 |
| quartz | 10-15 |
| semiopaque | 1½-2 |
| carbonaceous opaque | 1½-2 |
| quartz veins | |
| 1) early | 1½-2 |
| 2) late veinlets | 1- 1½ |
| fracture zones | |
| epidote-quartz-(chlorite-amphibole) | 1½-2 |
| sericite-biotite | 3- 4 |

Spots dominated by sericite-biotite probably are of metamorphic origin. They average 0.7 to 1 mm in length and most are elongated paralle to foliation. They consist of unoriented aggregates of very fine grained mica with a pale brownish green color, darker than that of the groundmass sericite, but not dark enough for biotite. The mineral may be intermediate between sericite and biotite. A few patches contain very fine grained epidote intergrown with mica, mainly towards the cores of the patches.

Quartz occurs as moderately abundant elongate detrital? grains averaging 0.02-0.03 mm in size. These grains are elongated parallel to foliation.

A few lenses up to 0.3 mm long and 0.05 mm wide are elongated parallel to foliation. These consist of interlocking aggregates of extremely fine grained quartz.

The groundmass is dominated by extremely fine grained sericite oriented parallel to the foliation, with much less intergrown extremely fine grained quartz. Semiopaque forms dusty lenses parallel to foliation and along secondary fold axes. Carbonaceous opaque is concentrated in zones up to 0.3 mm wide as thin selvages parallel to foliation. These are deformed by later folding.

The rock is cut by a very fine grained quartz vein up to 0.5 mm wide. It consists of an aggregate of equant anhedral grains. Borders with the groundmass are slightly diffuse and intergrown. The vein locally cuts sharply across foliation. No age relationship could be determined between this vein and the later quartz veinlets; however, textures suggest that the larger veinwas earlier and was deformed during later folding.

Late veinlets of quartz up to 0.02 mm wide are mainly parallel to secondary fold axes.

(continued)

JM 8149 (continued)

The rock is cut by two fracture zones at about 45° to the foliation and later folds. Along these are developed patches of sericite-biotite which resemble closely the sericite-biotite spots present throughout the rock. As well, locally patches up to 2 mm across consist of fine to locally medium grained aggregates of epidote and lesser quartz, with the largest patch also containing fine grained patches of chlorite and amphibole. Chlorite occurs in anhedral equant flakes, and amphibole in irregular prismatic to locally acicular grains.

Dave's Ridge  Quartz-Feldspar Porphyry

The sample probably is related in origin to sample JM 8121, based on similarity of groundmass texture and composition.

| | |
|---|---|
| phenocrysts | |
| quartz | 15-20% |
| plagioclase | 15-20 |
| K-feldspar | 10-12 |
| biotite | 1½-2 |
| groundmass | |
| K-feldspar | 30-35 |
| quartz | 10-12 |
| biotite | 5- 7 |
| muscovite | 1½-2 |
| opaque | 0.3 |
| apatite | trace |
| zircon | trace |

Phenocrysts are not uniformly distributed through the rock. Some regions contain more abundant feldspars and others contain more abundant quartz.

Quartz forms subrounded to well rounded phenocrysts and clusters of phenocrysts from 0.5 to 2 mm in size. Clusters commonly contain selvages of groundmass material (mainly plagioclase) between grains. Most quartz phenocrysts are rimmed by layers up to 0.2 mm thick of plagioclase, which appears to have grown on the surface of the quartz.

Plagioclase forms subhedral prismatic phenocrysts from 0.5 to 2 mm in average size. These commonly occur in clusters from 3 mm to 1 cm across associated with anhedral K-feldspar phenocrysts of similar size. Some plagioclase phenocrysts occur in cores of larger K-feldspar phenocrysts. Plagioclase is slightly altered to extremely fine grained sericite flakes.

K-feldspar forms anhedral to locally subhedral phenocrysts up to 5 mm in size, commonly associated with plagioclase phenocrysts. Some K-feldspar phenocrysts are rimmed by zones of plagioclase up to 0.15 mm wide. Some of these zones are thinnly banded, with layers of plagioclase and of quartz averaging 0.01-0.02 mm thick.

Biotite forms scattered subhedral to euhedral phenocrysts from 0.5 to 1 mm in size. They are strongly altered to muscovite and limonite, and many have been removed from the rock by weathering and in sample preparation. The leaching of biotite phenocrysts in the rock suggests that calcite may have been present with muscovite in the alteration products. One euhedral zircon prism 0.1 mm long occurs in one of the biotite phenocrysts.

The groundmass is dominated by a very fine grained aggregate of K-feldspar with variable amounts of quartz. In places the groundmass is completely K-feldspar. Elsewhere quartz occurs in interstitial selvages between K-feldspar grains. Still elsewhere, quartz forms clusters of grains with size from 0.05 to 0.3 mm. Biotite forms irregular patches of very fine to fine grained aggregates up to 1 mm in size. This biotite is greenish brown in color. Some similar patches consist of very fine grained muscovite-sericite; these may represent alteration of biotite.

Opaque occurs in scattered anhedral grains and clusters from 0.03-0.1 mm in size. Some opaque grains are altered to bright red hematite.

Apatite forms scattered subhedral to euhedral prismatic grains up to 0.15 mm long.

L 40 W
L 35 W
L 30 W
L 25 W
L 20 W
L 15 W
L 10 W
L 5 W
L 00
L 5 E
L 10 E
L 15 E
L 20 E
L 25 E
L 30 E
L 35 E
L 40 E
L 45 E
L 50 E
L 55 E
L 60 E
L 65 E
L

ANOMALY A

ANOMALY B

ANOMALY C

ANOMALY D

L 40 W

L 35 N

L 30 W

L 25 N

L 20 N

L 17+50 N

L 15 N

L 12+50 N

L 10 N

L 7+50 N

L 5 N

L 2+50 N

L 00

L 2+50 S

L 5+00 S

L 7+50 S

L 10 S

L 12+50 S

L 15 S

L 20 S

L 25 S

L 30 S

L 15 W

L 30 W

3000 E

548 000 E

Ba Contour Interval

| | | |
|---|---|---|
| Background | — | 115 ppm |
| Mean + 1 Std. Dev. | — | 300 ppm |
| Mean + 2 Std. Dev. | — | 500 ppm |
| Mean + 3 Std. Dev. | — | 750 ppm |

SCALE 1:10,000

Contour Interval 10 metres

inches
0 1 2
0 1 2 3 4 5
centimetres

YUKON GEOLOGICAL SURVEY

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

CYPRUS ANVIL MINING CORPORATION

SF, GS AND HY MINERAL CLAIMS

WATSON LAKE MINING DISTRICT

GEOCHEMICAL SURVEY – BARIUM RESULTS

N.T.S. 105-A-8
SURVEY BY:
DRAWN BY: C. L. C.

DATE: MAY, 1981

EXECUTIVE DRAFTING SERVICES LTD.

548 000E

L 40 W

L 35 W

L 30 W

L 25 N

L 20 N

L 17+50 N

L 15 N

L 12+50 N

L 10 N

L 7+50 N

L 5 N

L 2+50 N

L 00

L 2+50 S

L 5+00 S

L 7+50 S

L 10 S

L 12+50 S

L 15 S

L 20 S

L 25 S

L 30 S

L 15 W

L 30 W

ANOMALY A

ANOMALY B

ANOMALY C

ANOMALY D

ANOMALY E

Cu Contour Interval

Mean + 1 Std. Dev. — 40 ppm
Mean + 2 Std. Dev. — 80 ppm
Mean + 3 Std. Dev. — 95 ppm

SCALE 1:10,000

Contour Interval 10 metres

inches
centimetres

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

YUKON GEOLOGICAL SURVEY

CYPRUS ANVIL MINING CORPORATION

SF, GS AND HY MINERAL CLAIMS

WATSON LAKE MINING DISTRICT

GEOCHEMICAL SURVEY - COPPER RESULTS

NTS 105-A-8

SURVEY BY:

DRAWN BY: C. L. C.

DATE MAY, 1981

EXCLUSIVE DRAFTING SERVICES LTD

ANOMALY A

ANOMALY B

ANOMALY C

ANOMALY D

ANOMALY F

L 30 W

L 15 W

L 00

L 15 E

L 40 N

L 35 N

L 30 N

L 25 N

L 20 N

L 17+50N

L 15 N

L 12+50N

L 10 N

L 7+50N

L 5 N

L 2+50N

L 00

L 2+50S

L 5+00S

L 7+50S

L 10 S

L 12+50S

L 15 S

L 20 S

L 25 S

L 30 S

Zn Contour Interval

Mean + 1 Std. Dev. — 260 ppm
Mean + 2 Std. Dev. — 360 ppm
Mean + 3 Std. Dev. — 600 ppm

SCALE 1:10,000

Contour Interval 10 metres

inches
centimetres

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

YUKON GEOLOGICAL SURVEY

CYPRUS ANVIL MINING CORPORATION

SF, GS AND HY MINERAL CLAIMS

WATSON LAKE MINING DISTRICT

GEOCHEMICAL SURVEY- ZINC RESULTS

NTS 105-A-8
SURVEY BY:
DRAWN BY C. L. C.

DATE MAY, 1981

EXCLUSIVE DRAFTING SERVICES LTD

548,000E

958,000E

L 30W

L 15W

L 00

L 15E

L 40W

L 35N

L 30N

L 25N

L 20N

L 17+50N

L 15N

L 12+50N

L 10N

L 7+50N

L 5N

L 2+50N

L 00

L 2+50S

L 5+00S

L 7+50S

L 10S

L 12+50S

L 15S

L 20S

L 25S

L 30S

ANOMALY A

ANOMALY B

ANOMALY C

ANOMALY D

Pb Contour Interval

Mean + 1 Std. Dev. — 85 ppm
Mean + 2 Std. Dev. — 160 ppm
Mean + 3 Std. Dev. — 225 ppm

SCALE 1:10,000

Contour Interval 10 metres

inches
centimetres

This reference scale bar has been added to the original drawing. It was drawn to scale at the same ratio as the image, therefore it can be used as a reference for the original size.

YUKON GEOLOGICAL SURVEY

CYPRUS ANVIL MINING CORPORATION

SF, GS AND HY MINERAL CLAIMS

WATSON LAKE MINING DISTRICT

GEOCHEMICAL SURVEY- LEAD RESULTS

N.T.S. 105-A-8

DATE: MAY, 1981

SURVEY BY:

DRAWN BY: C. L. C.

EXCLUSIVE DRAFTING SERVICES LTD.

## Legend

| | |
|---|---|
| Kqfp | Quartz, plagioclase, K-feldspar porphyry. |
| Kqp | Quartz porphyry. |
| Trs | Dark, variably calcareous grey shale, siltstone and calcareous quartzite. |
| uDMps | Paper thin, dark grey to black, variably graphitic shale. |
| uDMt | Medium to coarse grained turbidite sequence with interbedded shale. |
| uDMpks | Mudstone, gritty shales, siliceous shales, quartzites and graphitic shales. |
| uDMsgs | Silvery grey weathering black shales, variably cherty. |
| uDMq | Mature, well sorted, grey to black orthoquartzite. |
| uDMws | Well laminated, light to dark grey, variably calcareous shale. |
| uDMsa | Spotted argillite. |
| Hg | Grit – undifferentiated. |

FAULT

AW

FAULT

FAULT

Pbs Zns

Pbs Pyrite

Pbs Fe Cu

Pyrite

inches
0 1 2
0 1 2 3 4 5
centimetres

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

YUKON GEOLOGICAL SURVEY

MAP I

SCALE 1:10,000

100 50 0 100 200 300 400 Metres

Contour Interval 10 metres.

CYPRUS ANVIL MINING CORPORATION

SF, GS AND HY MINERAL CLAIMS

WATSON LAKE MINING DISTRICT

# GEOLOGICAL MAP

N.T.S. 105-A-8
SURVEY BY:
DRAWN BY: C. L. C.

DATE: MAY, 1981
REVISED: MARCH 1, 1982

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