

FIELD EXAMINATION AND CLAIM SURVEY
OF THE
HARP PROPERTY

DAWSON MINING DISTRICT

NTS 116B/12

Lat.: 64° 44' N. Long.: 139° 45' W.

By

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May 23, 1997

093688

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1. INTRODUCTION

The Harp claims were examined in 1996 during the period from August 15 to 21. The writer and field assistant Andrey Schmidt carried out a claim survey, a survey of previous drill sites and trenches, limited hand trenching, prospecting and sampling. The survey confirmed the location of the claims relative to earlier work. The claims were staked in 1981 and only the physical component of work carried out can be applied for assessment. This report focusses on the physical aspects of the program.

2. PROPERTY, LOCATION AND ACCESS

The Harp 1-10 mineral claims were staked for Enterprise Exploration Limited in February 1981. The writer acquired the claims in 1982 because they cover a zinc-lead exploration target which has a lead age that is the same as the Sullivan deposit in southern British Columbia and other Proterozoic mineral occurrences in Yukon. The claims are located near the headwaters of a tributary of Coal Creek, in the Ogilvie Mountains, approximately 78 km north of Dawson City.

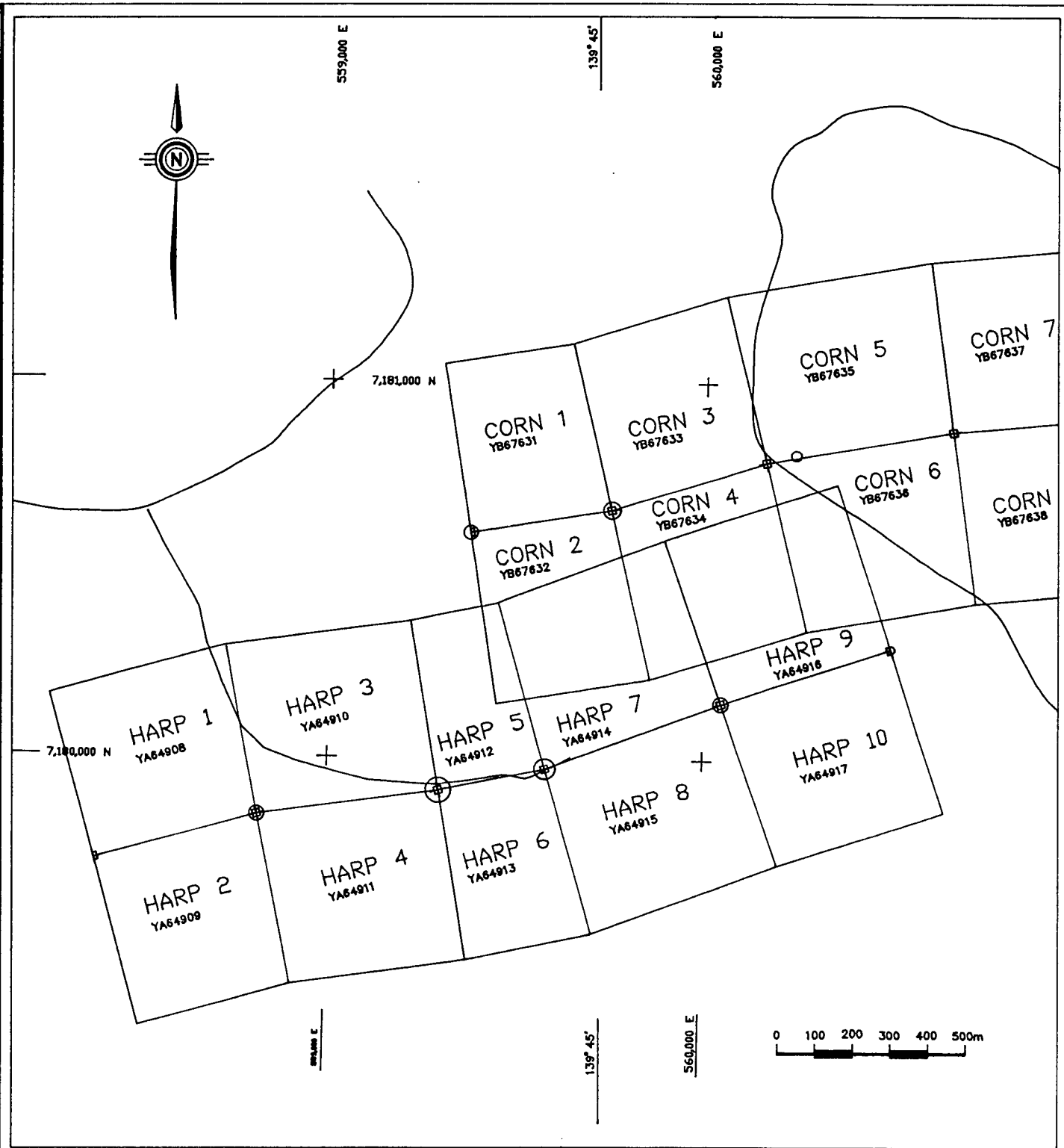
The Harp 1-10 claims are owned jointly by U. Schmidt (85%) and E. M. Jensen (15%). The Harp 7 and 9 claims were optioned by Atna Resources Ltd. along with the nearby Corn 1-10 claims in December, 1996.

The property is located within the Dawson Mining District, on NTS map area 116B/12. The coordinates of the approximate centre of the property are latitude 64° 44' N and longitude 139° 45' W.

The details of the claims are as follows:

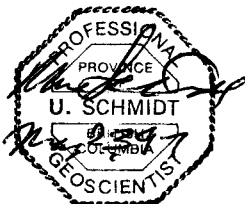
Name	Record Number	Expiry Date
Harp 1-10	YA64908-917	February 18, 1997

The property is accessible by helicopter from Dawson City. The Dempster Highway lies 64 km east of the property and Clinton Creek airstrip lies 56 km to the southwest of the property.



LEGEND

- Claim Post Position Error indicated by average GPS Position
- ⊕ Claim Post Location



Harp Property Claim Location

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SCALE	NTS	DATE	Fig.
1:15,000	116B/12	May 97	2

3. PHYSIOGRAPHY

The property is located in rugged terrain of the Southern Ogilvie Ranges of the Ogilvie Mountains. This area is underlain predominantly by sedimentary rocks of Precambrian to Lower Paleozoic age. Three periods of alpine glaciation covered the area. The youngest glaciation has a minimum age of 7,510 +/-100 years based on a radiocarbon age of bog deposits in eastern Dawson map-area (Vernon and Hughes, 1966). During glacial periods alpine glaciers covered most of the major valleys while interglacial periods were ice free.

Ridge crests in the area lie at elevations ranging from 1500 to 1800 metres. The lowest elevation on the property is 1280 m.

The property lies above tree line and only isolated alpine fir or black spruce are found in the area. Typical vegetation cover include mosses, grasses and lichen with patches of dwarf birch and willow thickets in boggy areas.

Valley bottoms are covered by a blanket of till and glaciofluvial deposits. The valley sides are covered to a large extent by anastomosing talus fans. The best bedrock exposures occur along ridges and streams. Soil development is poor and consists primarily of talus fines mixed with organics.

4. HISTORY

The area was first staked as the OZ claims by Dynasty Explorations Limited in August, 1974, to cover lead/zinc mineralization and geochemical anomalies outlined by a regional exploration program. Dynasty Explorations explored the property in 1974 by grid soil sampling, mapping. In 1975, Cyprus Anvil drilled 3 holes totalling 379 m (1245 feet) to test stratabound, disseminated, shale-hosted, Zn-Pb mineralization.

The OZ claims lapsed in 1981 and were restaked as the Harp claims by Enterprise Exploration Limited. The main showing and drill holes are located on the Harp claims. The writer acquired the Harp claims in 1982 but did not examine the property until July 1995. During this

examination, hematitic and copper bearing "Wernecke" breccia boulders were discovered in the creek at the east end of the Harp claims. The Corn claims were staked to cover the most likely source area for these breccias. Atna Resources Limited optioned the Corn claims and Harp 7 and 9 in December 1996 after a preliminary examination of the Corn claims confirmed the location of an intrusive breccia body.

The program in 1996, covered by this report, consisted of a claim survey, a survey of previous diamond drill holes and trenches, prospecting, limited hand-trenching and limited soil sampling. A significant portion of time was spent on surveying the claims and their relative position to the Corn property because the location of the Corn claims in the field varied significantly from locations on government claim maps. A survey of earlier work was also necessary because it is not clear in an earlier report that drilling carried out by Dynasty exploration reached the target surface showings (Dean, 1975b).

5. REGIONAL GEOLOGY

The Harp claims are underlain by Proterozoic carbonates, clastics and shales. At the time of the Dynasty staking the only mapping available for the area was that of Green and Roddick (1972). Since then, a clearer understanding of the Proterozoic geology of the Yukon has evolved. Most of this work was carried out in Wernecke and Mackenzie Mountains where the GSC and other workers have outlined three groups of sedimentary rocks of Proterozoic age. These are from oldest to youngest: Wernecke Supergroup, Pinguicula Group and Ekwi Supergroup. They are separated by pronounced angular unconformities in Wernecke Mountains but their relationship is less clear in the other areas.

The geology of Coal Creek Dome area north of Dawson is similar to Wernecke Mountains. In this area equivalents of the three major divisions occur but their boundaries are not as clearly exposed. Mapping by Green and Roddick grouped the three divisions into Units 1 and 2a to 2e.

The oldest rocks, belonging to Wernecke Supergroup, are mapped as Units 1, 2a and 2b. Rocks equivalent to the Quartet Group of the Wernecke Supergroup are included in Unit 1. Overlying carbonates and shales of the Gillespie Lake Group of the Wernecke Supergroup are mapped as

Unit 2a and 2b. The Wernecke Supergroup is thought to be of Helikian age. The sedimentary sequences are intruded by heterolithic diatreme breccias which have yielded a variety of ages from around 1.0 to 1.5 BY.

The Fairchild Lake Group, the oldest sub-division of Wernecke Supergroup, is not distinguishable in Green and Roddick's mapping but has been mapped east of the property (Lane and Godwin 1992).

The bulk of Unit 1 in Wernecke Mountains consists of the Quartet Group. A clastic unit of probable turbidite origin which comprises interbedded shale, argillite and quartzite. This sequence grades conformably into the shallow water carbonate beds of the overlying Gillespie Lake Group. Orange weathering carbonates, chert, and minor shale predominate in this group and stromatolites are locally significant constituents.

The Wernecke Supergroup is overlain with angular unconformity by the Pinguicula Group. This sequence of clastic and carbonate platformal rocks is marked at its base by a distinctive clastic unit and a green and maroon siltstone unit of variable thickness. These are in turn overlain by buff and orange weathering carbonates. In many areas the unconformity between Wernecke and Pinguicula Groups is not well exposed and the unconformity may not be detected.

In Coal Creek Dome area the Pinguicula Group is mapped as Unit 2c (Delaney, 1981). The age of the Pinguicula is unknown. It lies between the upper Hadrynian Ekwi Supergroup and the Wernecke Supergroup of probable Helikian age.

The Ekwi Supergroup, the youngest of the three pre-Cambrian divisions overlies the Pinguicula Group with angular unconformity. This relationship is only demonstrated in certain localities in Wernecke Mountains. An area of western Coal Creek Dome, mapped as Unit 2e, has been assigned to Ekwi Supergroup (Delaney, 1981).

6. PROPERTY GEOLOGY

Previous mapping by Dynasty Exploration was not filed for assessment. Only a small area mapped by Dean in 1974 is available in the assessment records.

The Harp claims are underlain primarily by carbonate rocks of the Gillespie Lake Group of the Wernecke Supergroup. The lowest exposures of the Gillespie Lake Group are silty, buff to orange weathering, dolomites. These rocks are overlain to the southwest by a thin horizon of interbedded argillites and siltstones which are in turn overlain by a pale grey variety of the Gillespie Lake dolomite. The argillite horizon is exposed intermittently along the east-west trending creek which parallels the claim line. Strikes are sub-parallel to the creek and dips are highly variable, ranging from steeply north-dipping, vertical, to steeply south-dipping over short distances. It appears that the argillite-siltstone horizon was a zone of weakness during deformation. Movement occurred parallel to this horizon and at acute angles to the strike direction along conjugate joint sets. The scale of fault displacement is obscured by overburden but appears to be in the metre to tens of metre scale, based on outcrop observations.

Basic dykes and sills of unknown but possible Proterozoic age (Abbot pars. comm., 1996) intrude these lithologies in several locations. The dykes are from 1 to 5 metres in width and have a limited strike length. They occur both near and away from mineralization and were observed only in the Gillespie Lake Group.

The purpose of the 1996 examination was to assess known showings, to confirm that previous drill holes adequately tested the surface showings and to confirm that the showings are located on the claims. This was accomplished along with some preliminary prospecting and mapping.

Mineralization

The main showing on the property consists of massive galena-sphalerite mineralization which is exposed in two trenches and abundant float on the west side of Harp 3. In outcrop this mineralization is hosted by a silicified brecciated argillite. A 1.5 metre by 2.5 metre hand trench was excavated west of previous trenches and up slope from several large mineralized boulders (trench 3). The trench was not completed because groundwater was encountered

before reaching bedrock.

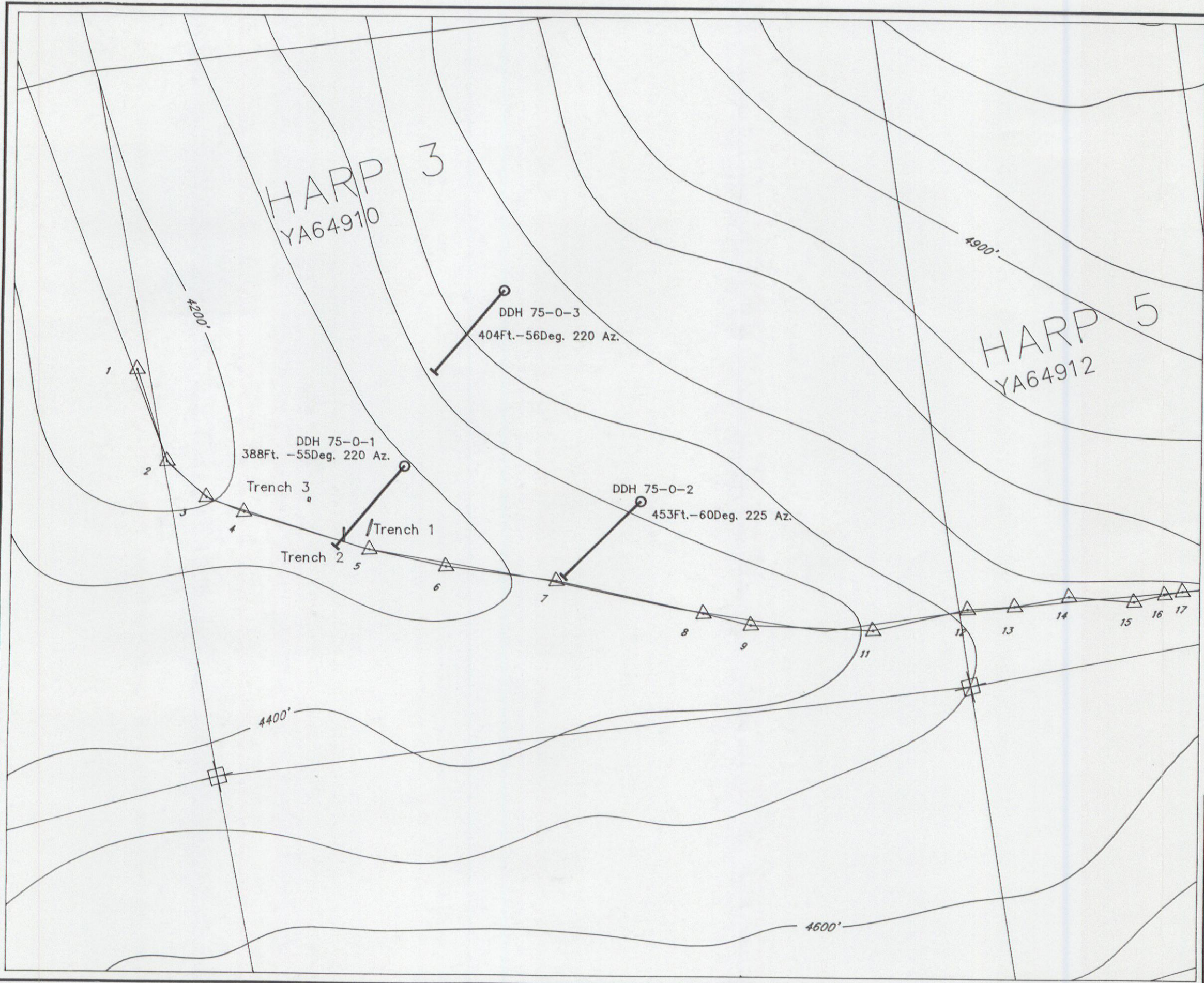
A second style of lead-zinc mineralization occurs near the silty dolomite argillite contact. Coarse galena and less frequently, sphalerite occur along fracture sets in the dolomite up to about 10 metres from the argillite contact. Mineralized fractures are typically 1 to 2 cm wide. Mineralization eroded from these fractures occurs as nuggets of coarse, rounded, galena aggregates in the creek sediments.

Fragments of coarse to massive galena/sphalerite replacement mineralization in dolomite were also found on talus slopes of Gillespie Lake Group, near the east end of the property, on Harp 10. Numerous dolomite fragments containing iron oxide filled veins were also found on these talus slopes. The oxides are probably derived from weathered Zn-Pb mineralization. This mineralized talus also occurs near limited exposures of shale and argillite.





Iron oxide deposits also occur south and west of the main showings. These transported ferricrete deposits are covered by talus of light grey Gillespie Lake Group dolomite derived from the south.

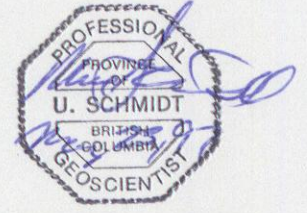
7. CLAIM SURVEY

One of the goals of this project was to determine the location of the Harp claims relative to previous work. To achieve this, a GPS survey of all the Harp and Corn claim posts was carried out. The survey used a single Magellan GPS NAV 100 PRO. This technique has a number of limitations over differential GPS surveys but errors were minimized by averaging readings and using only those readings which had low standard deviations of position errors. Although manufacturers often quote position errors of 15 metres these are only theoretically achievable with a single unit. Atmospheric errors and intentionally introduced errors such as Selective Availability (SA) cannot be removed without a reference point and post processing. This technique was beyond the scope of the project. With SA, a position accuracy of 100 metres or better can be achieved 95% of the time. Claim positions based on their GPS positions are plotted on Fig. 2. Circles representing the standard deviation of an average of 32 readings are also plotted. These error circles are intended to show relative statistical error and are not



LEGEND

-  Diamond Drill Hole
-  Trench
-  Survey Point
-  Claim Post



Harp Property
DDH & Trench
Survey

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SCALE	NTS	DATE	Fig.
1:2,500	116B/12	May 97	3

intended to show actual position errors. GPS generated coordinates were used for post locations with the exception of Corn 3,4,5,6 common posts which are located on the west side of the creek.

In addition to the GPS survey, a "Hip-Chain" and "Suunto" direct sighting compass survey of previous work was carried out. This was necessary because work filed by Cyprus-Anvil (Dean, 1975b) had insufficient detail to allow an assessment of the success of the 1975 drilling program. A survey was carried out along the main creek using painted lath pickets as station markers. Trenches and drill holes were tied into this survey (see Fig.3). All distances were slope corrected and surveys of this type are usually within distance errors of +/- 2% and angular errors of +/- 1/2 degree. This level of accuracy is sufficient for the purposes of this examination.

8. CONCLUSIONS

The 1996 examination of the Harp claims indicates that diamond drill hole 75-O-1 extended past surface high grade Pb-Zn showings found in trenches 1 and 2. The surface mineralization is structurally controlled but the trend of the mineralization is not clear and therefore leaves the testing of this zone at depth in doubt. Hole 75-O-2 was drilled toward a 15 metre long rusty zone on the north side of the creek which contains abundant iron oxide- filled breccia fragments and a 1 metre square outcrop of siliceous breccia, mineralized with pyrite and sphalerite. This zone lies along strike with the high grade galena showings. Lithologies dip variably from 83 degrees to the south in some outcrops to 50 degrees to the north in others. Drill hole 75-O-3 was collared too far north to test mineralization in the creek but this hole is situated in an area of very anomalous zinc and lead geochemical soil analyses.

Massive and fracture-filled Pb-Zn mineralization on the Harp claims is structurally controlled and occurs within or near an argillite horizon in the Gillespie Lake Group. Barren basic dykes occur near mineralization in this setting but also occur elsewhere on the property without mineralization.

Ferricrete deposits south and west of the main showing have not been previously tested. They

are covered by unmineralized talus of the Gillespie Lake Group dolomite and may indicate mineralization to the south and west.

9. RECOMMENDATIONS

Detailed grid mapping and additional hand trenching of the mineralized areas is recommended to resolve the structural controls and trends of the mineralization.

A 50 metre by 100 metre grid soil sampling program is recommended at the west and east ends of the property to help define the source of mineralized float at the east end and to define the limits of very anomalous lead and zinc soil anomalies at the west end. Prospecting and mapping of these areas is also recommended.

10. BIBLIOGRAPHY AND REFERENCES

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- Thompson, R.I. and Roots, C.F. (1982): Ogilvie Mountains Project, Yukon: Part A: A New Regional Mapping Program; G.S.C. Paper 82-1A,
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11. STATEMENT OF EXPENDITURE

I. Field Expenses (Aug. 11-20, 1996)

1) Labour

U.Schmidt (Project Geologist) Aug. 11(1/2),15-20, 1996

6 1/2 days @\$360/day \$2,340.00

A. Schmidt (Field Assistant) Aug. 11(1/2),15-20, 1996

6 1/2 days @ \$100/day \$650.00

\$2,990.00

2) Consumables and Supplies

\$303.74

3) Camp and Equipment Rental

\$162.50

4) Transportation

Truck Rental

\$390.00

Helicopter Aug. 15, 20

\$2,222.81

\$3,079.05

II. OFFICE

Data compilation, Plotting, Report Writing

U. Schmidt during the period from May 21-23, 1997

24 hours @ \$45.00 \$1,080.00

Reproduction, Photocopy, Expenses \$50.00

\$1,130.00

PROJECT TOTAL \$7,199.05

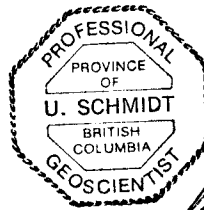
Appendix A


STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, Uwe Schmidt, of 656 Foresthill Place, Port Moody, B.C. do hereby declare:

- (1) I am a consulting geologist and controlling shareholder of Northwest Geological Consulting Ltd.
- (2) I am a 1971 graduate of the University of British Columbia with a B.Sc. degree in Geology.
- (3) I am a member of The Association of Professional Engineers and Geoscientists of British Columbia and a Fellow of the Geological Association of Canada.
- (4) I have practised my profession continuously since graduation.
- (5) This report is based on work carried out by me or by workers under my supervision.




Uwe Schmidt, B. Sc., P. Geo.

May 23, 1997
Port Moody, B.C.