

1978 GEOLOGICAL REPORT on the CHZERPNOUGH CLAIM GROUP

Watson Lake Mining District, Y. T.

N. T. S. 105 F - 9

Lat.  $61^{\circ} 36' N$

Long.  $132^{\circ} 26' W$

by:

J. Mortensen

CYPRUS ANVIL MINING CORPORATION

December 15, 1978.

Field Work Done During the Period: July 24-30, 1978.

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LIST OF CLAIMS

Claims

Grant Nos.

Recording Dates

Chzerpnough 1 - 16

YA 481 - YA 496

August 10, 1976

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INTRODUCTION

The CHZERPNOUGH claim group, consisting of 16 adjacent claims, is located at the headwaters of Cloutier Creek at approximately  $132^{\circ} 26' W$  x  $61^{\circ} 36' N$ . Access is by helicopter from Ross River, 50 km to the north.

The claim group was staked during the 1976 field season, when a regional prospecting and geochemical sampling program detected galena and sphalerite mineralization within pyritic felsic volcanoclastic rocks of Mississippian age, associated with extensive geochemical anomalies and galena-bearing bedded barite in float. The property was subsequently geochemically sampled using a flagged-in grid for sample location. This grid extended over the central portion of the claim group. During the 1977 field season, geological mapping and geophysical surveying were carried out on the claim group, using a cut and picket grid for control. Field work performed during 1978 consisted of further detailed geological mapping, a limited amount of hand trenching, and an extension of geochemical coverage to include the western end of the claim group.

SUMMARY AND CONCLUSIONS

The geochemical sampling failed to define any significant anomalies on the western end of the 1977 grid, although several highly anomalous Pb values were noted. Hand trenching was unsuccessful in locating the source of the mineralized bedded barite float. Detailed mapping has resulted in a general understanding of the stratigraphy and structural geology of the property

# PELLE PROJECT

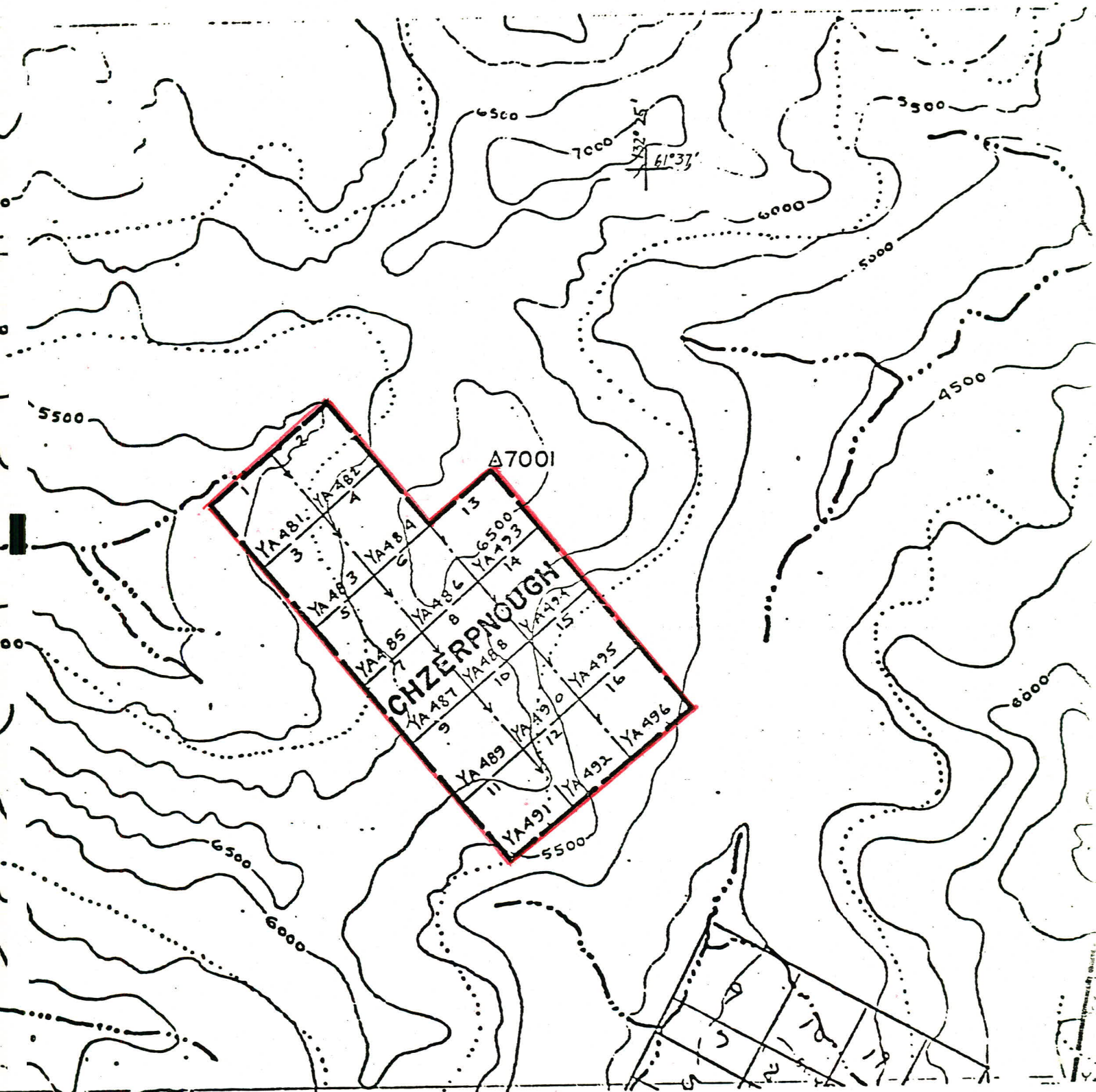
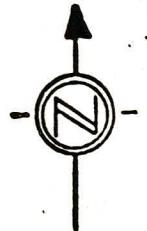


Figure 1

## CHZERPNOUGH CLAIM GROUP

n.t.s. : 105-F-9

scale : 1" = 1/2 mi.



and of the probable setting of the mineralization. The poor exposure of the mineralized section, however, makes the potential of the property difficult to accurately assess.

### GEOLOGY

The base of the stratigraphic section exposed on the CHZERPNOUGH claim group is made up of Cambro-Ordovician limy phyllites (Unit 1) which occur in the extreme southwest corner of the property. These rocks are overlain (probably in thrust contact) by approximately 200 m of black carbonaceous to graphitic slates with minor thin-bedded siltstone and coarse-grained intermediate flows or sills (Unit 2). The slates are in turn overlain by a thick sequence of intermediate to felsic volcanoclastic rocks, with intercalated medium-grained flows or sills, lithic greywacke, siltstone, carbonaceous slates, and tuffaceous cherts. Several tops indicators within the siltstone units show that the section is stratigraphically upright over most of the property. In the north-central part of the property, two large felsic dykes or small stocks (Unit 4) cut the lower part of the volcanoclastic section.

The volcanoclastic sequence, which is host to the known showings, can be generally divided into three units, as defined by P. Dean. The lowermost of these, referred to as the "lower lapilli tuff unit" (Unit 3), is approximately 160 m thick, and consists predominantly of variably chloritized, locally slightly calcareous and/or pyritic, buff to medium grey-green weathering lapilli tuffs. Fragments present consist of pale grey, very fine-grained, locally slightly pyritic felsic volcanics, and range from ash size to 15 cm in diameter. Also included in Unit 3 are several narrow (< 20 cm thick) interbeds of rusty weathering pyritic felsic tuff, carbonaceous slate, lithic greywacke, and calcareous siltstone.

Overlying the "lower lapilli tuff" is a moderately to highly pyritic, very rusty-weathering, fine-grained felsic tuff and lapilli tuff (Unit 5). Total thickness of the felsic tuff unit is variable, but never exceeds

100 m. Fragments in the unit range from ash size to 10 cm in diameter. In some cases, the larger fragments present are themselves volcaniclastic. In one area of the property (approximately 20 South 35 East) small fragments (< 1 cm in diameter) of fine-grained galena and sphalerite with minor pyrite are contained in the tuff. The entire felsic tuff unit shows abundant quartz veining. Also included in the unit is a lense of massive to thinly-bedded sucrosic barite, locally with minor amounts of pyrite, and traces of galena. The barite has not yet been located in outcrop, but appears to originate at approximately the same stratigraphic level as does the sphalerite-and galena-bearing lapilli tuff.

The felsic tuff is overlain unconformably by the "upper lapilli tuff unit" (Unit 6), a sequence of thin to thick-bedded, variably calcareous, grey-green to medium brown weathering tuff and lapilli tuff, with thin siltstone interbeds which become increasingly abundant towards the top of the section. Locally the "upper lapilli tuff" is separated from the felsic tuff by lenses of recessive weathering lithic greywacke consisting of fragments and blocks of felsic tuff, fine-grained massive pale grey volcanic, and locally, carbonaceous slate, set in a highly calcareous matrix. These lenses probably represent mudflow deposits. The top of Unit 6 is not seen, but at least 175 m of the unit are exposed on the property.

TABLE 1

CHZERPNOUGH LITHOLOGIC DESCRIPTIONS

UPPER DEVONIAN - MISSISSIPPIAN

Unit 6 (Mva <sub>3</sub> )	thin to thick-bedded, variably calcareous, grey-green to medium brown weathering tuff and lapilli tuff, minor siltstone and lithic greywacke.
~~~~~ unconformity ~~~~~	
Unit 5 (Mva <sub>2</sub> )	pyritic, very rusty weathering, fine-grained tuff and lapilli tuff; contains small fragments of fine-grained pyrite, galena, and sphalerite, and narrow lenses of bedded barite in the upper parts.
Unit 4 (My)	fine-grained dacitic to trachytic intrusives; forms large dykes or small stocks; abundant quartz veining, locally with traces of sulphides on fractures.
Unit 3 (Mva <sub>1</sub> )	variably chloritized, locally slightly calcareous and/or pyritic, buff to medium grey-green weathering lapilli tuffs; minor interbeds of rusty pyritic felsic tuff, carbonaceous slates, lithic greywacke, and calcareous siltstone.
Unit 2 (uDMs)	carbonaceous to graphitic slates; minor medium to coarse-grained intermediate composition flows or sills.

————— thrust (?) contact —————

CAMBRO  
ORDOVICIAN

Unit 1 buff weathering limy phyllites.

DISCUSSION

Both the mineralized barite float, and the galena and sphalerite-bearing felsic tuff occur near the topographically or highest extent of the geochemical anomalies, and are therefore probably the source of those anomalies. Traces of mineralization, primarily chalcopyrite and pyrite, are also found as fracture fillings within the Unit 4 intrusions. These intrusives may have been feeders for the felsic tuff unit (since they do not crosscut units overlying the felsic tuff, and are mineralogically similar to fragments contained in the overlying tuff), and it is conceivable that they represent localized vent zones for mineralization within the felsic tuff.

Mineralization on the property appears to be limited to the uppermost portion of the felsic tuff unit. Mapping has shown that this horizon underlies only a small portion of the property, and is only locally geochemically anomalous. The potential for massive sulphide bodies of significant size to exist on the property are therefore considered to be low.

Respectfully submitted,

J. Mortensen.

December 15, 1978.

