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PROPOSED EXPLORATION TARGET
EAGLE VEIN
KENO HILL DISTRICT, YUKON TERRITORY

June 24, 1973

Alan R. Archer

Consulting Engineer

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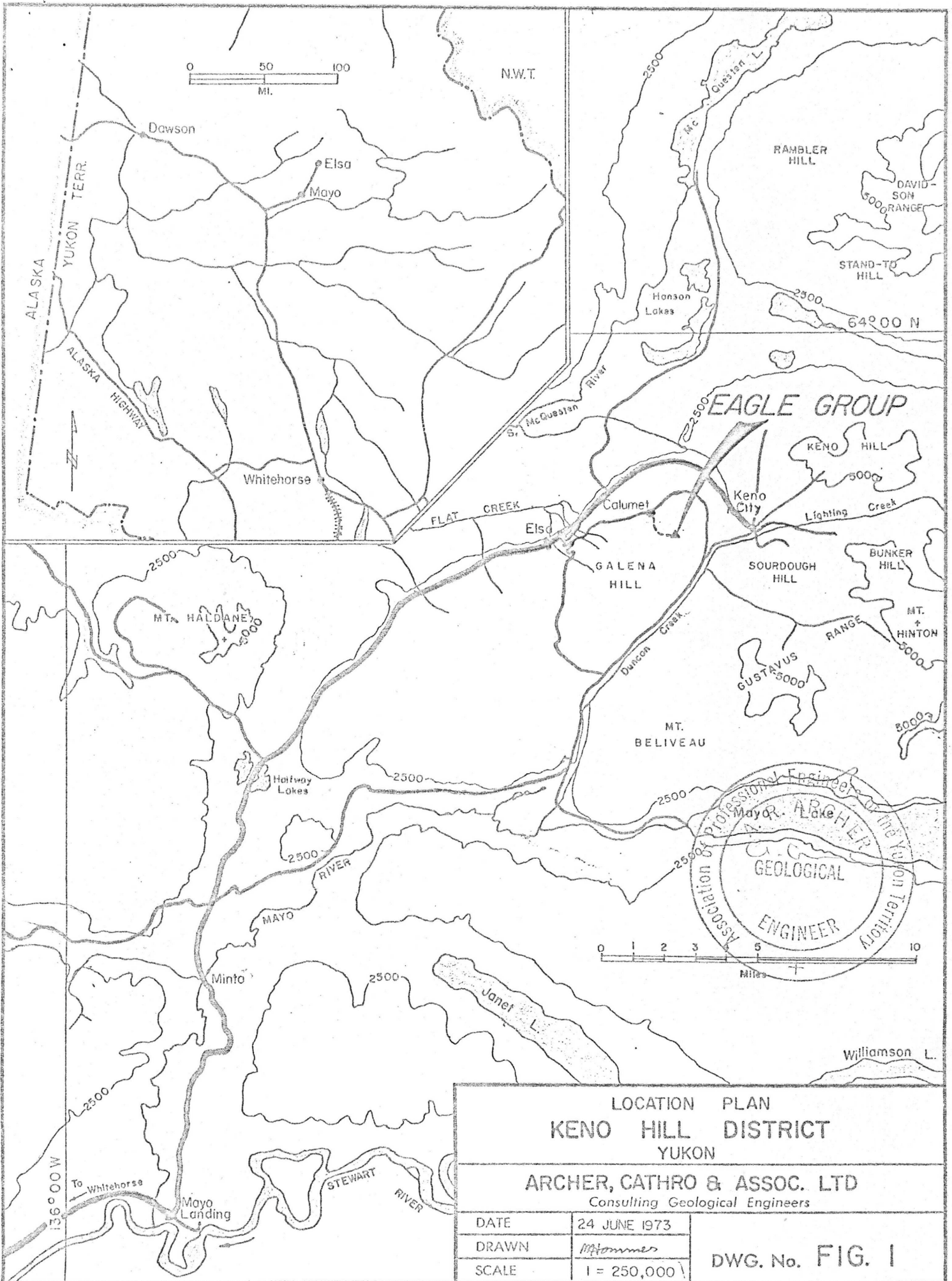
INTRODUCTION

This report describes a silver-lead exploration target on the Eagle vein in the Keno Hill district, Yukon which the writer believes to be one of the better unexplored prospects with significant potential not controlled by United Keno Hill Mines Ltd. Data for this report is derived largely from the writers personal knowledge of the Keno Hill District gained while Chief Geologist for United Keno Hill Mines Ltd. during the period 1963 to early 1966. Additional data has been obtained from (a) a series of short field progress reports submitted by Jersey Consolidated Mines Ltd. which cover portions of the period August 4 to November 24, 1964, when the Eagle Vein was intensively explored by bulldozer trenching and diamond drilling and (b) an undated summary report of the 1964 exploration results by A.R. Bullis, P.Eng., submitted by Conwest Explorations Co. Ltd.

CLAIM LOCATION AND ACCESS

Jersey Consolidated Mines Ltd. presently hold fourteen leased mineral claims on Galena Hill, Yukon of which six cover the southwestern end of the Eagle Vein. These six claims, which are the subject of this report, are recorded in the Mayo Mining District under 21 year lease as follows:

<u>Claim Name</u>	<u>Grant Number</u>	<u>Quartz Lease No.</u>	<u>Expiry Date</u>
Eagle Fraction	16171	707	29 April, 1979
Eagle No. 1	38815	708	29 April, 1979
Alexandra	14871	709	29 April, 1979
Eagle No. 2	38811	710	29 April, 1979
Jean	55482	712	29 April, 1979
Nathalie	14873	719	29 April, 1979

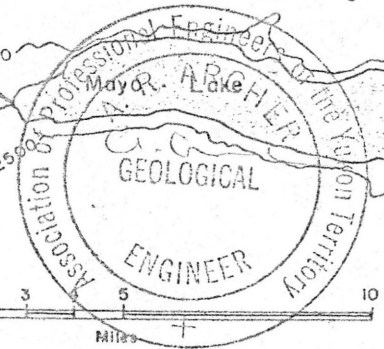


LOCATION PLAN
 KENO HILL DISTRICT
 YUKON

ARCHER, CATHRO & ASSOC. LTD
 Consulting Geological Engineers

DATE	24 JUNE 1973
DRAWN	<i>M. Thomas</i>
SCALE	1 = 250,000

DWG. No. FIG. 1



The six claims, called the Eagle group, lie on the eastern slope of Galena Hill and are surrounded to the northwest and southeast by leased claims held by United Keno Hill Mines Ltd. and to the south by the Tin 1 and Can 1 claims (Grant Numbers Y68353 and Y68354 respectively) owned by W.T. Synott of Keno City, Yukon. The Eagle group is accessible by a two mile tote road from the now abandoned townsite of Calumet which is approximately four road miles from Elsa, the site of United Keno's ore concentrator. Elsa is 281 road miles from Whitehorse, Yukon.

HISTORY

The first discovery in the Keno Hill district was the Silver King vein on Galena Hill which was high-graded from 1913 to 1915. Silver rich float was found on Keno Hill in 1919 and was mined briefly by Keno Hill Ltd. in 1921. In 1921 Treadwell Yukon Co. Ltd. entered the area under the direction of Livingstone Wernecke and during the period 1921 to 1924 acquired the better showings, shipped hand cobbled ore, and built a 150 ton concentrator on Keno Hill. The concentrator operated until 1933, was moved to Elsa on Galena Hill in 1935, and continued operation until 1941. United Keno Hill Mines Ltd. acquired the Treadwell assets in 1945 and has continued production without interruption to present. Total silver production from the district to the end of 1971 was 172,954,367 ounces from 3,960,909 tons ore. Of this, approximately 80 per cent was recovered from the Hector-Calumet, Elsa, Silver King, and McLeod vein systems on Galena Hill.

The Eagle group covers a portion of the Eagle vein where silver-lead mineralization was found in the early 1920's and subsequently explored by four hand shafts the deepest of which probably did not exceed 40 feet. The vein was further explored in 1950 and 1951 by a series of shallow prospect shafts and bulldozer trenches. The Eagle group was acquired by Jersey Yukon Mines Ltd. in 1951 and in 1963 the company traced the vein for a length of 1100 feet, which included direct exposure of more than 400 feet of vein, by bulldozing. Jersey Yukon Mines Ltd. was re-organized to Jersey Consolidated Mines Ltd. in 1964 and the property explored under option to Conwest Explorations Co. Ltd. by 6,561 feet of diamond drilling (29 holes), additional bulldozer trenching, and construction of a tote road to a proposed adit site lower on the hill. No significant work has been done since 1964.

GEOLOGY AND MINERALIZATION

Keno Hill District

All of the economically mineralized veins (with one exception) are found in the Keno Hill (Central) Quartzite Formation, which has been tentatively dated as Lower Cretaceous. The quartzite formation is about 3500 feet thick and is overlain by phyllite and sericite schist and underlain by phyllite, schist and greenstone sills. This sequence was strongly metamorphosed and sheared sub-parallel to the bedding direction under high temperature and pressure. The formations were then folded into a large north-south

anticline (Mayo Lake anticline). The western limb of the Mayo Lake anticline has been folded into an eastwest trending anticline (McQuesten anticline) and its south limb forms the west end of Keno Hill and all of Galena Hill. All ore from the district has been won from vein faults in the south limb of the McQuesten anticline.

Vein faults are of two types, Transverse and Longitudinal, both of which formed after or in a late stage of the anticlinal deformation. The Transverse vein faults strike north to northeast and dip steeply southeast. They have normal left lateral offset, varying from a few feet to several thousand feet, are complex and show evidence of superimposed cycles of movement and ore deposition. The faulting has occurred under tension and mineralization consists typically of siderite, galena, sphalerite, tetrahedrite and pyrite filling open spaces. The silver to lead ratio varies from 3:1 to 11:1, depending on the tetrahedrite (variety freibergite) content. All significant production has been won from Transverse vein faults. The Longitudinal vein faults are found only on Keno Hill and Mt. Hinton. They strike east and dip steeply south, and were formed prior to the Transverse veins. They are mineralized with quartz, arsenopyrite (with a high gold content), pyrite and sulfosalts, together with minor galena, sphalerite and tetrahedrite. Both types of veins are offset by unmineralized cross-faults formed under compression, partially contemporaneous in time with the Transverse vein faulting. Cross-faults all strike northwest and dip about 45° west. They are normal and right handed with movement ranging from a few feet to thousands of feet, and are unmineralized due to lack of open spaces.

Ore controls in Transverse veins are structural complications which allow open spaces to be formed for entry of mineralization. Most vein systems can be followed for considerable length but only have one or two sections that are economically mineralized. For example, the Hector-Calumet vein system has been traced for more than 16,000 feet but only the central 4000 feet is well mineralized. One of the main controls for a mineralized section in a vein system appears to be a minor change in strike on a regional scale. Vein faults can be followed from the quartzite formation into the hanging wall schist but are never mineralized in the schists, probably because these rocks do not form open spaces during faulting.

Eagle Vein

The Eagle vein is a typical Transverse type vein fault with at least 400 feet left lateral displacement. It ranges from several feet to almost fifteen feet in width, strikes an average of N55°E and dips 60° to the southeast. This is a similar attitude to the Hector-Calumet vein fault (the most productive in the Keno Hill district) which lies 4000 feet to the northwest. The Eagle vein has been traced intermittently across the quartzite formation to the northeast for more than 5000 feet with no evidence of mineralization. The only known mineralized portion is the 600 foot section exposed on the Eagle 1 claim where the vein has quartzite on the footwall and schist on the hanging wall. The mineralization is weak and erratic with the best section occurring just northeast of where the vein strikes into schists on both walls. This section grades 12.9 oz/ton silver, 6.5% lead and

3.9% zinc across an average width of eighteen inches for a length of 38 feet. The mineralization occurs as a lens of siderite, galena, sphalerite and pyrite (typical Transverse vein mineralization) on the footwall of the vein shear which varies from 3 to 10 feet in width. It also occurs in a portion of the vein where the strike has changed to N52°E from N59°E.




Of the 29 holes drilled in 1964, 12 were drilled at shallow depth (50 to 80 feet) below the mineralized lens in the trench, 13 were drilled to examine the Eagle vein at greater depth and 4 were drilled to explore the footwall. Of the 13 deeper holes, 7 were drilled so as to also cut a weakly mineralized subsidiary mineralized shear that branches eastward from the hanging wall of the Eagle vein. The first of the 7 holes returned 1.6 feet of core from the branch vein which assayed 160.8 oz/ton silver, 35.0% lead and 7.1% zinc but the remaining six (all within 100 feet of the first hole) were unmineralized. The only significant intersection obtained from the Eagle vein was in Hole 23 (see Figures 2 and 3 on the following pages) which was drilled vertically and assayed as follows:

<u>Footage</u>	<u>Ag(oz/ton)</u>	<u>Pb(%)</u>	<u>Zn(%)</u>	<u>Width</u>	<u>Core Recovered</u>
585-589	222.4	1.2	1.5	4.0	0.5' "
589-593	1.0	0.1	0.7	4.0	not reported
593-597	0.8	--	0.5	4.0	not reported
597-599.5	19.9	11.6	2.6	2.5	1.3'
599.5-604(end)	--	--	--	4.5	nil

A second deep hole, No. 28, was drilled about 200 feet to the



LEGEND

-  Vein exposed by trenching
-  Projected location of vein
-  Tote trail

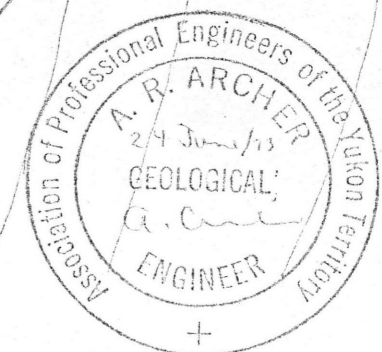
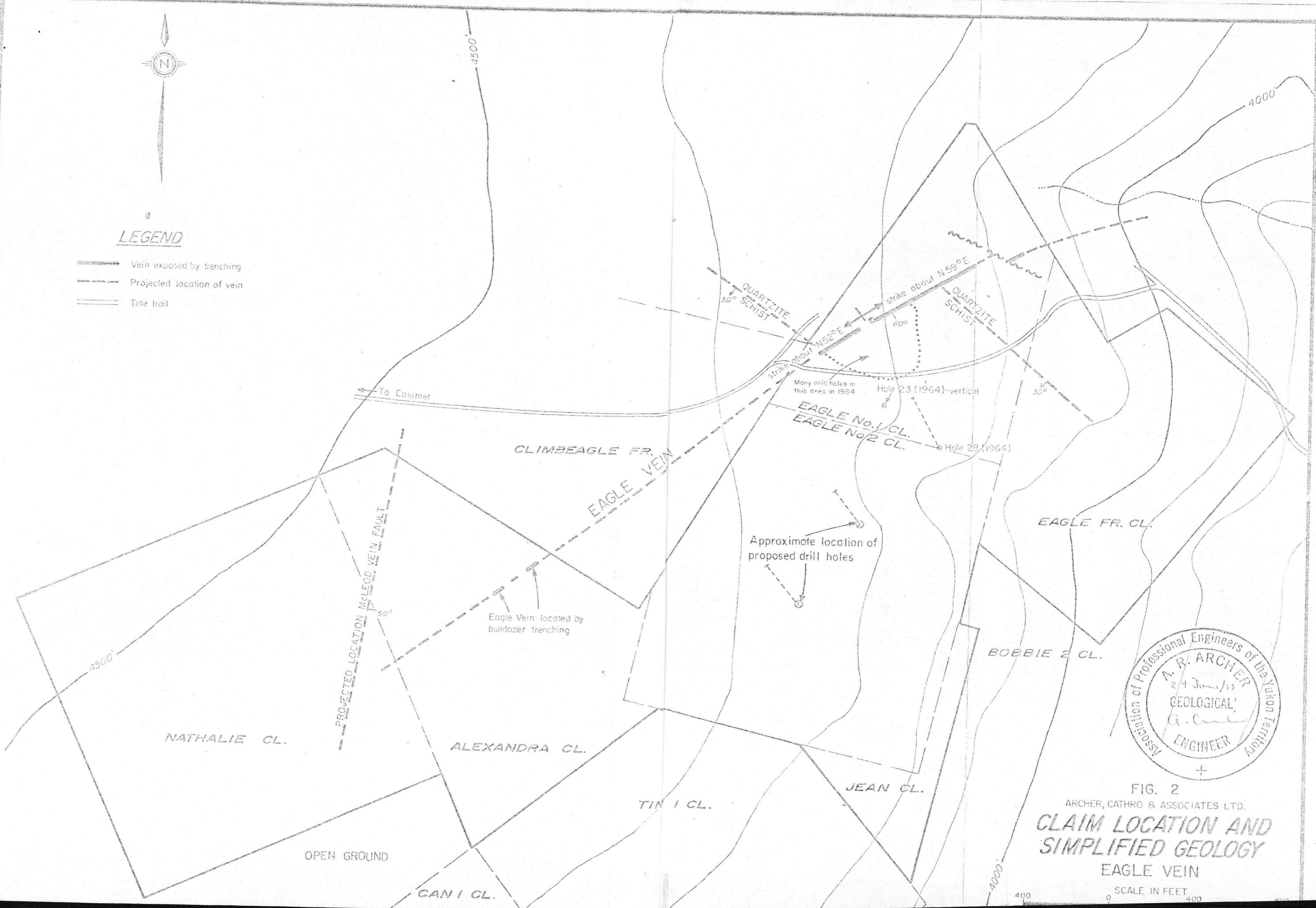


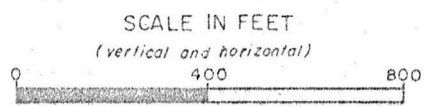
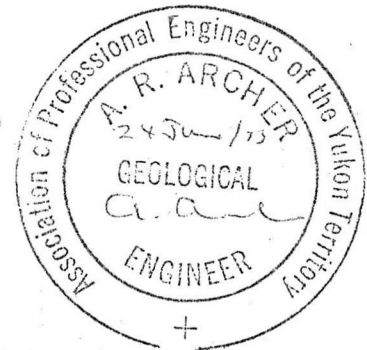
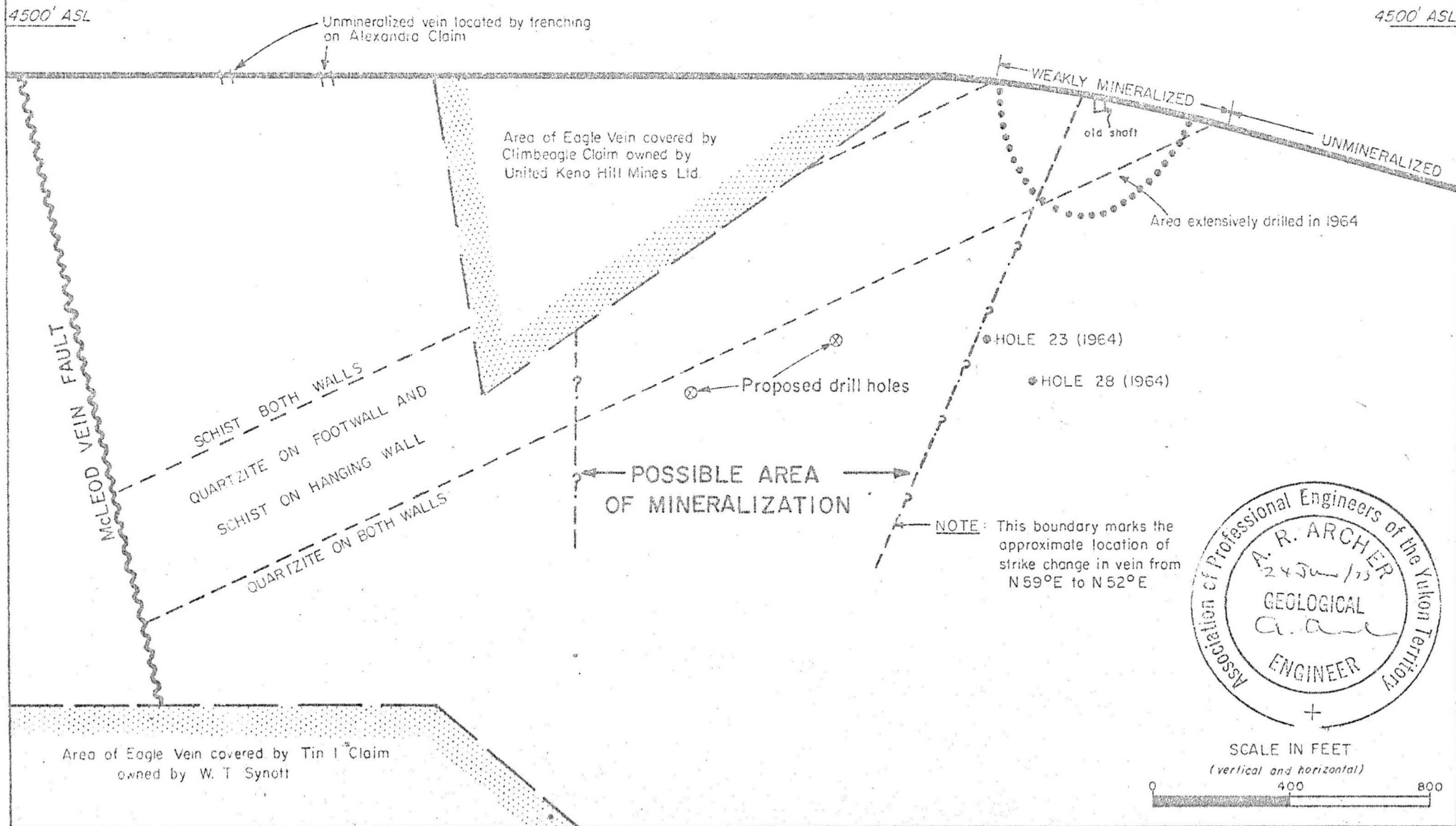
FIG. 2
ARCHER, CATHRO & ASSOCIATES LTD.
**CLAIM LOCATION AND
SIMPLIFIED GEOLOGY**
EAGLE VEIN

SCALE IN FEET

FIG. 3
 ARCHER, CATHRO & ASSOCIATES LTD.
DIAGRAMATIC LONGITUDINAL SECTION
(in plane of vein looking northwest)
EAGLE VEIN

← **SOUTHWEST**

NORTHEAST →



northeast but only returned traces of mineralization from 666 feet to 670 feet. Drilling was terminated by cold weather before a third deep hole southwest of Hole 23 could be completed. Average core recovery in vein was reported to be 33 per cent but the writer suspects this figure is on the high side.

EXPLORATION CONCEPT

The Eagle vein is a Transverse type vein similar to the producing vein systems on Galena Hill. The strength (lateral displacement) of the structure is about the same as the Silver King vein and probably a little stronger than the Elsa vein system. As previously mentioned, vein systems on Galena Hill usually have long barren stretches with one or more short sections where they are mineralized well enough to be developed. These mineralized sections often occur where there is a small change of strike in the system. One major exploration problem is that the mineralized sections seldom have more than 25 per cent of their area mineralized. Thus, a wide spaced drill program cutting a well mineralized section of vein might only return one good intersection out of four holes drilled.

Every vein system on Galena Hill has at least one mineralized section and it is reasonable to assume that the Eagle vein is no exception. The only area of mineralization found on the Eagle vein is on the Eagle 1 claim immediately before the vein strikes into schist on both walls. The best lens of surface mineralization is in the southwest most section of vein where there is a 7° change in strike. The writer believes there is a strong

possibility that this surface mineralization represents the northeastern edge of a mineralized section that is obscured from surface by the schist capping. This concept is illustrated on Figure 3. Except for a few shallow holes, most of Jersey Consolidated drilling was directed northeast of the best surface mineralization. The only hole which approached the area of interest was No. 23 which returned ore grade values over a narrow width.

The McLeod vein fault which terminates the Eagle vein to the southwest, as shown on Figure 3, is not considered a worthwhile exploration target and is only shown to illustrate the limits to which the Eagle vein can be explored in this direction.

RECOMMENDATIONS AND BUDGET

The writer believes that there is enough evidence of a mineralized section under the schist capping on the Eagle vein to justify at least two deep drill holes. Their proposed location is illustrated on Figures 2 and 3. Encouragement in one of the two holes would be sufficient to justify continuation of the drill program. The drill holes will cut the vein between 700 and 800 feet vertically below surface and this level can be reached with a 1600 foot cross-cut should underground development be later considered.

The combined length of the two holes is approximately 2000 feet. The drilling will have to be done with great care to ensure the best possible recovery from the vein. For this reason, the following precautions should be taken:

- (1) core size should be NQ

- (2) mud should be used rather than water
- (3) the contract should be let on a cost plus rather than price per foot basis
- (4) consideration should be given to paying the drillers a bonus for increased recovery in the vein zone.

Also, drill holes in the Keno Hill district have a tendency to wander badly. Each hole should be surveyed with a Tro-Pari to determine the magnitude of both horizontal and vertical deflection.

The estimated costs for the program are:

Drilling, 2000 feet NQ @ \$30/ft	\$60,000.
Bulldozer rental to upgrade tote road, prepare drill sites and move drill ..	5,000.
Camp costs, including cook for drillers (assume job takes one month)	4,500.
Supervision, including location drill sites, logging core and report preparation	4,500.
Miscellaneous	4,000.
	<hr/>
	\$78,000.

Respectfully submitted,

ARCHER, CATHRO & ASSOCIATES LTD.

A.R. Archer, B.A.Sc., P.Eng.

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