PRELIMINARY GEOCHEMICAL AND GEOLOGIC REPORT

on the

ORION MINERAL CLAIMS

N.T.S. 106-E-1

65°02'N 134°20W

December, 1976

by

D. Yeager - Geologist
C.K. Ikona - P. Eng.

090201

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of

$ 5200

Resident Geologist or
~~Resident Mining Engineer~~

Considered as representation work under Section 53 (4) Yukon Quartz Mining Act.

B. R. BAXTER
Supervising Mining Recorder

Commissioner of Yukon Territory

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INTRODUCTION

The ORION mineral claims were staked in January, 1976 by Andrew Harman to cover geologic units in the Quartet Lakes region favourable to copper and uranium mineralization.

During the period July 30 to August 6, 1976, a preliminary prospecting and geochemical investigation was carried out by Harman Management Ltd.

LIST OF CLAIMS

Claim Name	Recording Date	Grant No.
ORION 1-52	February 3, 1976	YA1704-YA1754

LOCATION AND ACCESS

The ORION claims are located in the Mayo Mining District at 65°02'N. latitude and 134°20'W. longitude on N.T.S. 106-E-1.

Access to the property is by float equipped aircraft from the town of Mayo, Y.T. to Quartet Lakes, a distance of 115 miles. Both helicopter and fixed wing aircraft as well as full expediting services are available in Mayo.

From Quartet Lakes it is approximately 8 miles southwest to the property. Helicopter support from Quartet Lakes is necessary to establish a camp within the claims area.

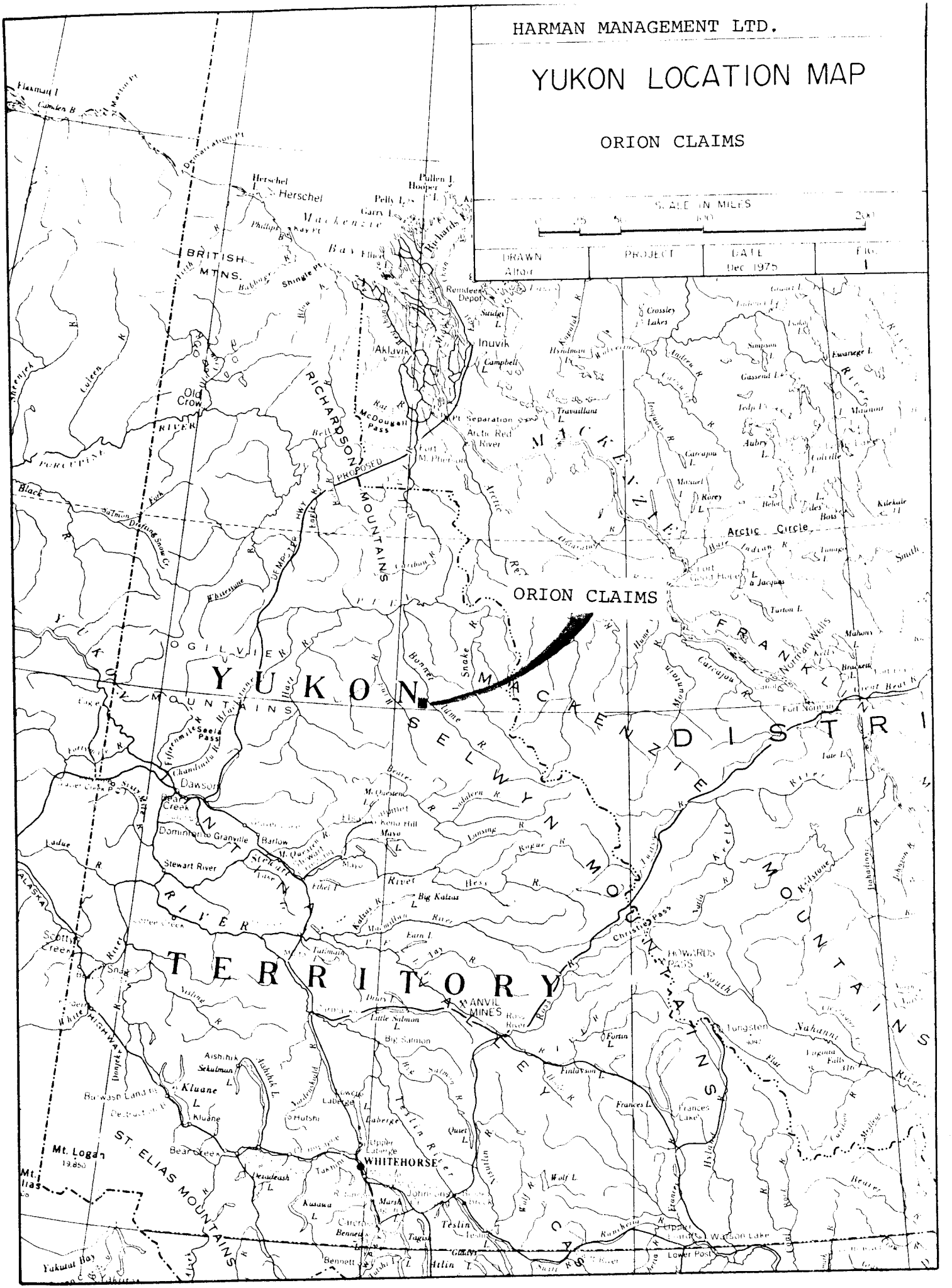
HARMAN MANAGEMENT LTD.

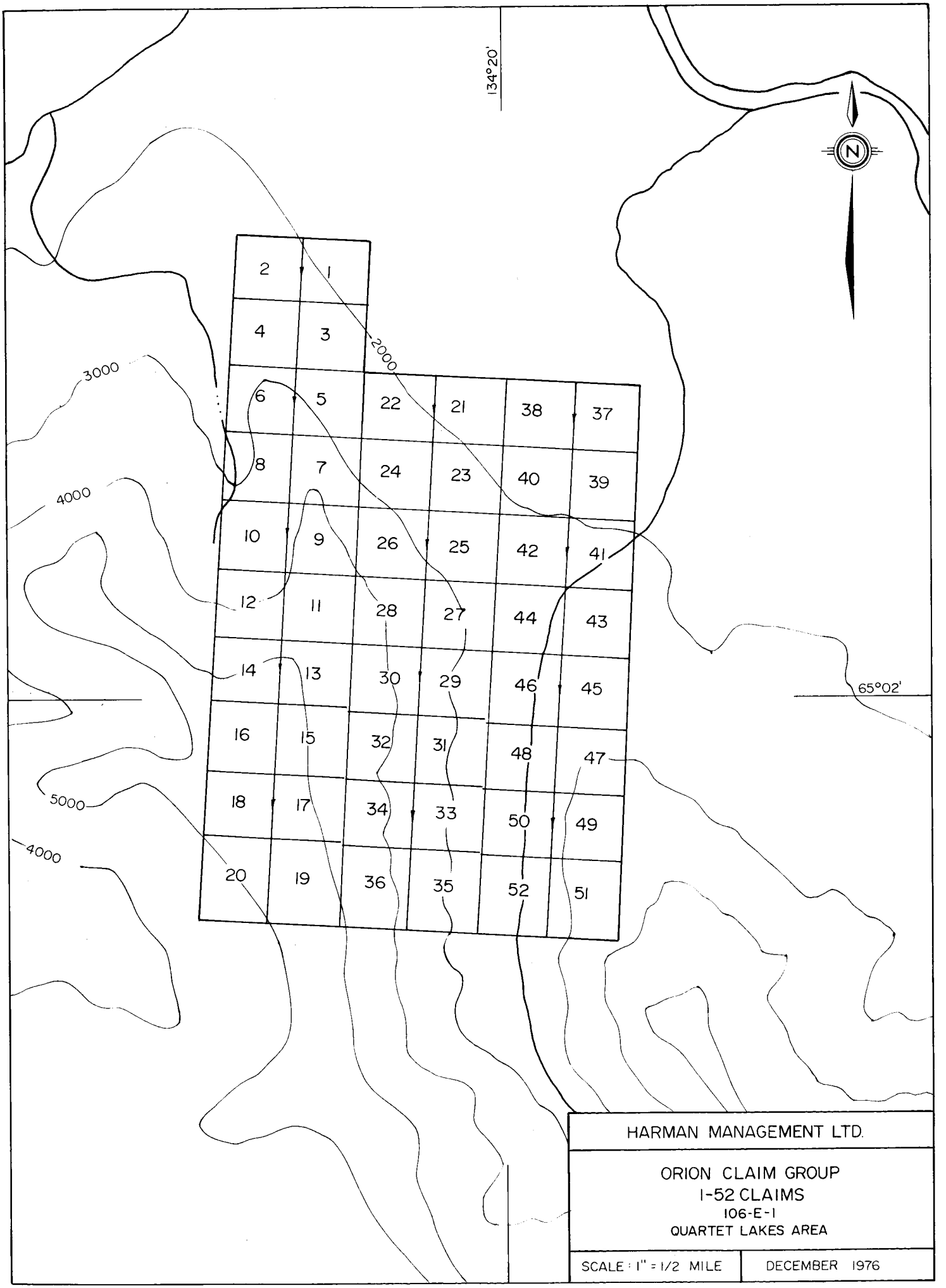
YUKON LOCATION MAP

ORION CLAIMS

SCALE IN MILES

DRAWN	PROJECT	DATE	FIG.
Allan		Dec 1975	1




134°20'
65°02'
N
2000
3000
4000
5000
4000
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52
51
HARMAN MANAGEMENT LTD.
ORION CLAIM GROUP
1-52 CLAIMS
106-E-1
QUARTET LAKES AREA
SCALE : 1" = 1/2 MILE
DECEMBER 1976

REGIONAL GEOLOGY

The Quartet Lakes region lies in the Wernecke Mountains of the north eastern Yukon Territory. In the general area, the Werneckes consist of local ranges which include the Rackla Range, Bonnet Plume Range and Knorr Range. Topography is normally moderate to rugged with elevations ranging from 2,000 to 6,500 feet. The major river valleys are broad, timbered and extensively overburden covered, while most mountain slopes present greater than 60% outcrop above the 4,000 foot level.

The entire area has been mapped by the Geological Survey of Canada and three separate publications are presented. The following memoir and open file reports give 1" = 4 miles geological coverage of the Nash Creek, Nadaleen River, Wind River and Snake River map areas.

(1) Geology of Nash Creek, Larsen Creek and Dawson Map-Area, Yukon Territory by L.H. Green 1972 (Memoir 364).

(2) Open File 205 (Geology of Nadaleen River and Bonnet Plume Lake Map sheets by S. Blusson) 1975.

(3) Open File 279 (Geology of Snake River and Wind River sheets by D.K. Norris) 1975.

In the Quartet-Fairchild-Gillespie Lakes region Helikian rocks are exposed over an area of some 1,500 square miles in a

roughly circular fashion centered near Longitude 134°00'W and Latitude 65°00'N.

These rocks, which represent early deposition in the northern portion of the Selwyn Basin or Richardson Trough, have been described as Units 1 & 2 by L. Green on the Nash Creek Sheet.

Unit 1 is composed of a thick succession of moderately metamorphosed slates, argillites, phyllites and quartzites with interbedded dolomites. The lowest subdivision of Unit 1, whose base is not exposed, consists of chloritic-schists and calc-silicates all probably of volcanic origin.

Unit 2, which conformably overlies the uppermost slate-quartzite section of Unit 1, consists mainly of thickly bedded orange weathering dolomites. The base of the Unit is marked by a series of transitional beds of alternating buff weathering dolomites and interbedded slates and quartzites.

Erratically distributed throughout the Proterozoic metasediments are irregularly shaped breccia bodies. The breccia zones vary from tens of feet to several thousand feet in size and appear as cross cutting pipe-like features at all levels in the stratigraphic column. Several varieties exist but all exhibit an assortment of angular clasts derived from rock types common to the area. Hornfels margins observed at several localities indicate an intrusive origin.

A common association with many of the breccia bodies are zones of veining or locally pervasive feldspar alteration seen as internal features within the breccias or in host rocks adjacent to them.

The alteration zones are pink in colour due to either K-spar or strong hematization and in some instances contain varying amounts of specularite, chalcopyrite and minor uranium mineralization.

STRUCTURE

Two major periods of deformation have taken place within the Wernecke Mountain region. During the first period or Racklan Orogeny, the Proterozoic rocks of Units 1 and 2 underwent intense folding and faulting. Folds are tight to isoclinal with the development of strong axial plane cleavage and commonly an almost vertical foliation.

A major unconformity of Lower Hadrynian age forms the upper contact of Unit 2. In many localities, erosion beneath this unconformity has resulted in the complete removal of Unit 2 and the strong angular relationship between the relatively flat lying Cambrian and younger rocks directly overlying Unit 1 is apparent.

Further unconformities near the Upper Hadrynian, Lower Cambrian and Upper Cambrian margins leave Devonian carbonates directly over the Helikian section.

The second period of deformation, which involves both Paleozoic and Proterozoic strata, is weak compared to the

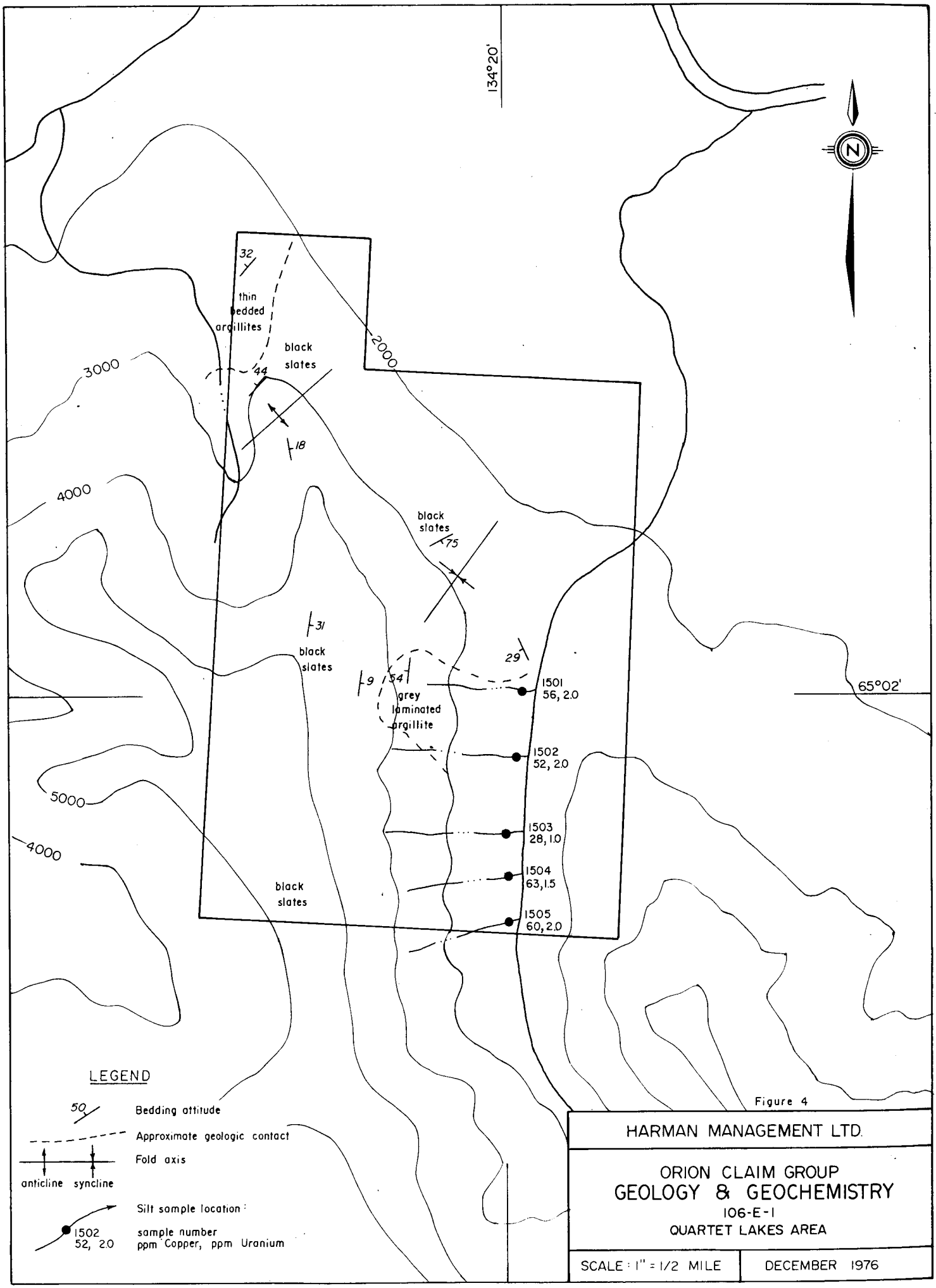
first. This is particularly evident in the younger Carbonate sections to the west and southwest where deformation consists mainly of broad open folding and minor overthrusting.

LOCAL GEOLOGY

The ORION claims are underlain by rock types assigned to the Lower Proterozoic Unit Ho as described in the G.S.C. Open File 279, covering the geology of the Wind River and Snake River map sheets. The unit is lithologically described as containing mainly dark grey, grey green, and black, thin bedded argillite, slate, and phyllite; minor grey quartzite, orange weathering dolomite, and conglomerate.

The majority of the rocks on the property are fine grained, thin bedded, black slates. In many localities limonite on bedding and cleavage surfaces forms noticeable gossanous zones that extend for several hundred feet. Some chloritization associated with quartz veining was also noted.

The extreme variations in bedding attitudes of the slates indicates intense folding within the unit. Two fold structures were recognized; an anticline in the northwest portion of the claims and a syncline in the north central area. The anticlinal fold axis trends approximately 045° with limbs dipping 44° to the northwest and 18° to the east. The synclinal fold axis trends approximately 035° with limbs dipping 75° to the southeast and 29° to the southwest. Other


134°20'
65°02'
N
32
thin bedded argillites
black slates
44
18
2000
3000
4000
5000
4000
black slates
75
31
black slates
29
54
9
grey laminated argillite
1501
56, 2.0
1502
52, 2.0
1503
28, 1.0
1504
63, 1.5
1505
60, 2.0
black slates
LEGEND
50
Bedding attitude
Approximate geologic contact
Fold axis
anticline
syncline
Silt sample location:
1502
52, 2.0
sample number
ppm Copper, ppm Uranium
Figure 4
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ORION CLAIM GROUP
GEOLOGY & GEOCHEMISTRY
106-E-1
QUARTET LAKES AREA
SCALE: 1" = 1/2 MILE
DECEMBER 1976

fold structures were seen, however the degree of intense minor folding makes structual interpretation difficult without detailed geologic mapping. The thickness of the slate unit is difficult to determine due to the high degree of deformation; it is felt that the unit has been considerably thickened by tight to isoclinal folding.

The slates are overlain conformably by fine grained, thin bedded, multicoloured argillites striking approximately 040° and dipping 32° to the northwest. Grey, thinly laminated argillites striking approximately north-south and dipping 54° to the west apparently underlie the slates.

GEOCHEMISTRY

Five silt samples were taken from streams flowing easterly into the main stream on the property. All samples were selected from silt and sand size sediments and special care was taken to ensure that no organic material was included. The samples were placed in numbered Kraft envelopes in which they were dried prior to shipment to Chemex Labs Ltd. in North Vancouver, B.C.

Upon receipt at Chemex Labs, the samples were screened to -80 mesh. For copper analysis, a 1/2 gram portion of the screened material was digested in perchloric-nitric acid

and ppm copper determined by standard atomic absorption procedures. For uranium analysis, a 1/4 gram portion was digested with dilute HNO_3 and ppm uranium determined by standard flourometric procedures.

The values in parts per million copper and uranium for each of the samples are plotted on Fig. 4 at a scale of 1" = 1/2 mile. Copper values range from 28 ppm to 63 ppm and uranium values range from 1.0 to 2.0 ppm. These values fall within normal background limits for the area.

DISCUSSION AND RECOMMENDATIONS

Preliminary geologic mapping has confirmed that the claims are underlain by favourable Unit Ho rocks. The favourable geology combined with the proximity of the property to known copper and uranium occurrences to the south and west make the ORION claims a favourable exploration target.

It is recommended that a detailed prospecting program be carried out along with additional geochemical sampling of the drainages in the claims area.

Respectfully submitted,

David A. Yeager

D. Yeager - Geologist

APPENDIX I

LIST OF PERSONNEL

W. Harrison, 623 Chatsworth, Richmond, B.C.	Prospector	July 30-August 4/76
D. Fulcher, 918 Leovista Ave., North Vancouver, B.C.	Prospector	July 30-August 4/76
N. DeBock, General Delivery, Clearwater, B.C.	Prospector	July 30-August 4/76
J. Cohn, 4726 West 4th, Vancouver, B.C.	Prospector	July 30-August 4/76
D. Yeager, Box 261, Christina Lake, B.C.	Geologist	July 30-August 4/76 October 18-20/76
A. Harman, 2293 West 33rd Ave., Vancouver, B.C.	Supervisor	August 3/4/76

APPENDIX II

STATEMENT OF EXPENDITURES
ORION MINERAL CLAIM GROUP
FOR THE PERIOD
JULY 1 - AUGUST 31, 1976

Wage Expense	$ 2,150.00
Grocery Expense	328.00
Fuels Expense	188.57
Contract/Rental Expense	665.40
Airfare/Airfreihgt expense	139.60
Fixed Wing Charter Expense	1,156.50
Helicopter Expense	1,839.20
Room & Board Expense	101.75
Sundry/Administration Expense	193.60
TOTAL EXPENSES INCURRED:	$ 6,762.62

CANADA) In the matter of a geological and geochemical survey
) and report on the ORION 1-52 Mineral Claims
)
TO WIT) on behalf of Andrew Harman

I, A.Harman of 2293 West 33rd Ave., Vancouver, B.C. do solemnly declare that geologic mapping and geochemistry programs were carried out on the ORION 1-52 Mineral claims during the period July 1-August 31/76

The following expenses were incurred during the course of this work and in the compiliation and reporting of the results:

Wage Expense	$ 2,150.00
Grocery Expense	328.00
Fuels Expense	188.57
Contract/Rental Expense	665.40
Airfare/Airfreight Expense	139.60
Fixed Wing Charter Expense	1,156.50
Helicopter Expense	1,839.20
Room & Board Expense	101.75
Sundry/Administration Expense	193.60
	$ 6,762.62

And I make this solemn declaration conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath and by virtue of the Canada Evidence Act.

Declared before me at Vancouver)
in the Province of British)
Columbia this 24 day of)
JANUARY, 1977

Andrew Harman

John E Rogers

Commissioner for Oaths for
British Columbia or Notary Public
in and for ~~the~~ B.C.

HARMAN MANAGEMENT LTD.
#907 - 675 West Hastings St.,
Vancouver, B.C.

Andrew Harman,
2293 West 33rd Ave.,
Vancouver, B.C.

August 31, 1976

INVOICE

RE: USE OF HELICOPTER CF-OQI
TO SUPPORT A PROPERTY WORK
PROGRAM ON THE ORION 1-52
MINERAL CLAIM GROUP AS FOLLOWS:

July 30	3.4 hours
August 4	5.3 hours
August 5	2.1 hours
	10.8 hours

At a rate of $155.00/hour $1,674.00

APPENDIX V

ENGINEERS CERTIFICATE

I, CHARLES K. IKONA of 2614 St. Johns St., Port Moody, in the Province of British Columbia DO HEREBY CERTIFY that:

1. I am a Consulting MIning Engineer with offices at 610 - 850 West Hastings St., Vancouver, B.C.

2. I am a graduate of the University of British Columbia with a degree in Mining Engineering.

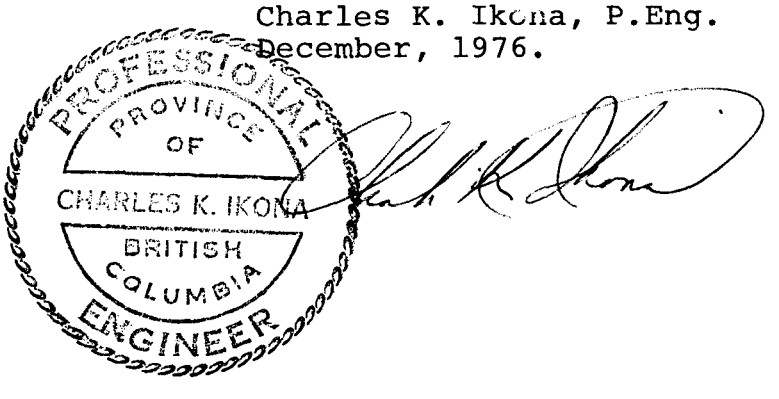
3. I am a member in good standing of the Association of Professional Engineers of British Columbia.

4. I am familiar with the area in which the ORION claim group is located.

5. The accompanying report is based upon the work of D. Yeager, Geologist, whom I have worked with for several years and in whom I have complete confidence.

6. I have examined the data upon which this report is based and am satisfied that the work reported on was conducted in a satisfactory manner.

Charles K. Ikona, P.Eng.
December, 1976.



AREA OF RECENT STAKING

Quartet Lakes

ORION CLAIMS

Fairchild Lake

BONNET

PLUME R.

BEAR R.

WIND

RIVER

McClusky L.

Gillespie

Pinguicula Lake

RACKLA R.

North Rackla R.

134°00'

64°45'

N

LEGEND

CENZOIC — QUATERNARY

26 — Unconsolidated glacial and alluvial deposits.

MESOZOIC — CRETACEOUS & TERTIARY

20a — Orange-to brown-weathering diorite and gabbro; altered equivalents.

PALEZOIC — DEVONIAN

10 — Limestone, dark grey, brown and black, massive to thin-bedded, very fine grained, buff-grey-weathering.

PALEZOIC — ORDOVICIAN & SILURIAN

8 — Grey-and buff-weathering dolomite and limestone, mostly medium to thick bedded; minor platy black argillaceous limestone and dolomite.

PRECAMBRIAN — PROTEROZOIC

2 — Orange-weathering, platy, grey green dolomite, dark slate, minor phyllite and quartzite.

1 — Mainly dark grey, grey green, and black, thin bedded argillite, slate, and phyllite; minor grey quartzite, orange-weathering dolomite and conglomerate.

SYMBOLS

- Geological boundary
- Bedding tops known (horizontal, inclined, vertical)
- Bedding tops unknown (dip known)
- Bedding-foliation; (horizontal, inclined, vertical) (dip, m-medium, s-slight)
- Fault (defined, approximate, assumed)
- Anticline (defined, approximate, arrow indicates plunge)
- Syncline (defined, approximate, arrow indicates plunge)

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GEOLOGY- SECTION OF OGILVLIE MTNS.

OUTLINE OF PROTEROZOIC BASIN

SCALE IN MILES 4 2 0 4 8

DRAWN	PROJECT	DATE	FIG.
Altair		DECEMBER 1976	3