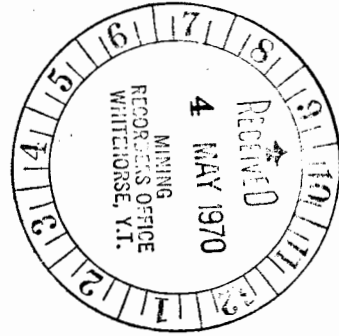


MACDONALD CONSULTANTS LTD.

SUITE 12-425 HOWE STREET, VANCOUVER 1, B.C.



Report on the
Hayes Creek Property
of
Delta International Minerals Ltd. (N.P.L.)
by
MacDonald Consultants Ltd.
E. D. Dodson, P. Eng.
February 3, 1970



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 \$~~100,000.00~~ 3812.46

D.B. Craig

Resident Geologist or
Resident Mining Engineer

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

[Signature]

Commissioner of Yukon Territory

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MAPS

279-1	Location Map
279-2	Detailed Location Map
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INTRODUCTION

The writer visited the property described herein for a period of approximately one and a half hours on October 25, 1969. The weather was clear and cool and there was only a slight dusting of snow so conditions were excellent for the examination.

PROPERTY

The property consists of the following claims:

<u>Name</u>	<u>Grant No.</u>	<u>Staker</u>
Hayes 1 - 8	Y35038 - Y35045	J. Lerner
Hayes 9 - 16	Y35046 - Y35053	Myer C. Currie
Hayes 17 - 20	Y38054 - Y38057	Pat Burns
Hayes 21 - 28	Y38829 - Y38836	R. L. McKamey
Hayes 29 - 32	Y38837 - Y38840	C. B. Rouleau

The claims are plotted on claim sheet 115112.

LOCATION

The property is located on Hayes Creek, approximately ten miles from its junction with the Selwyn River. The Selwyn flows northerly into the Yukon River a distance of about six miles from the junction. The nearest town is Carmacks approximately 70 air miles to the southeast.

HISTORY

Previous workers on a regional prospecting program detected anomalous metal values in the silts of Hayes Creek and its tributaries in 1965. A few claims were staked but apparently no follow-up work was done.

In March Jeff Lerner and associates staked the Hayes 1 - 20 claims. In October R. L. McKamey and C. B. Rouleau staked the remaining claims.

Some geochemical sampling has been done by the current owners the results of which are quoted in this report.

PHYSIOGRAPHY

The area lies on the east flank of the Dawson Range. Elevations range from 1,500 feet above sea level to 4,500 feet on the local summits. The topography has that of a sub-mountainous uplifted and dissected plateau area. Summits are rounded, minor tributaries are poorly incised and major tributaries flow in deep, steep sided valleys.

Northerly slopes are covered with stunted spruce and south slopes are covered with fairly open stands of poplar.

GEOLOGY

a.) Regional

The property lies on the west edge of the Carmacks map sheet (Geological Survey of Canada Memoir 189, Carmacks District, Yukon by H. S. Bostock - includes map 340A). The Dawson Range and the east flank thereof is characterized by a northwesterly trending belt of Tertiary intrusives. These young intrusives cut both older intrusives and sedimentary and volcanic rocks of Precambrian (?) to Cenozoic age.

b.) Local

The property, like other unglaciated areas of the Yukon, is mantled by an extensive layer of residual overburden. Outcrop is rare and is generally

confined to ridges and local stream canyons. Surface mantle, except in valley bottoms would seldom exceed several feet in depth.

Bostock indicates that the property is underlain by Precambrian (?) rocks of the Yukon Group and possibly by Jurassic intrusives adjacent to Hayes Creek.

The writer observed two distinct rock-types on the portions of the claims he traversed. The first is an amphibolitic schist thought to belong to the Yukon group. The second is a quartz-feldspar porphyry. The porphyry is a medium grained rock with aphanitic groundmass. It is crowded with phenocrysts, feldspar in 1/8 inch phenocrysts predominates but rounded quartz eyes up to 3/8 inch in diameter make up perhaps 5% of the rock. Books of biotite, largely altered to chlorite are the only other prominent mineral.

Hayes Creek, which forms the west boundary of the claim group is a pronouncedly linear feature and may represent a fault zone. On the adjoining property on the west side of the creek at the mouth of Kline's Gulch, the writer observed outcrops of a rusty weathering, bleached, altered and silicified porphyry (?). This rock is mineralized with disseminated pyrite, chalcopyrite and some molybdenite.

The possibility of continuation of this body on to the Hayes group exists but insufficient work has been done to establish or eliminate such an extension.

No mineral showings are known on the Hayes claims. However, preliminary geochemical work on portions of the ground indicate the likelihood of the occurrence of silver-lead bearing veins. This possibility and the work done to date are more fully described under the section on geochemistry.

GEOCHEMISTRY

A limited soil sampling program was undertaken by the owners of the Hayes group in the fall of 1969. The extent of the sampling is shown in figure 279-2. Most of the work was done on the Hayes 7, 8, 9, 10, 31 and 32 claims. Line spacing is 400 feet except in two instances where the interval is 800 and 900 feet. Sample interval is 50 feet. A total of 4.3 miles of line were run and 375 soil samples taken. These samples were analysed for silver, lead, copper and molybdenum by Vancouver Geochemical Laboratories.

This preliminary work indicates the presence of coincident or near coincident anomalies in silver, lead and copper. Molybdenum shows some slight correspondence to the other metals (Figures 279-4, 5, 6 and 7). Lead and silver give perhaps the most striking anomalies. In view of the limited amount of work done to date interpretation is difficult.

High silver and lead values in the southeast corner of the grid appear to represent vein type mineralization over a length of 1,200 feet or more. Unfortunately continuity cannot be firmly established as the line spacing on the last two lines is 800 feet.

On the extreme northeast, line 24E was run well beyond all other lines and between 1,800 feet north and 2,500 feet north shows good anomalous lead and silver. As the line crosscuts the apparent trend of all other anomalies this area would appear to represent either a series of veins or a broad zone of mineralization.

CONCLUSIONS

The Hayes Creek property, like others in the general area is underlain by Yukon group rocks cut by Tertiary (?) intrusives. Such an environment

is potentially favourable to the occurrence of both porphyry copper type mineralization and precious-metal bearing veins. Work to date has not indicated the presence of porphyry copper type material but geochemical results do indicate the probability of silver-bearing veins.

RECOMMENDATIONS

The writer recommends the following work on the Hayes claims:

- 1.) Geochemical survey on the entire claim group by soil sampling. All samples to be analysed for Lead and Copper. Samples showing high copper values will be analysed for molybdenum at a later date.
- 2.) Geological mapping of the claim group, mapping both outcrops and pre-dominant float types.
- 3.) Diamond drilling (AQ) of geochemical and geological targets evolving from the above programs.

BUDGET

1. Geochemical Survey

Line cutting 32 miles @ \$125/mile	\$ 4,000.00
Sample collection - 2,000 samples @ \$1.50/sample	3,000.00
Analysis @ \$3.00/sample	6,000.00

2. Geology & Supervision

3 months @ \$1,600/month	4,800.00
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3. Diamond Drilling

3,000 feet AQ @ \$15.00/foot	45,000.00
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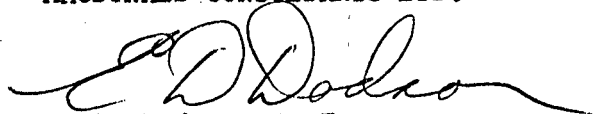
4. Camp Costs

	10,000.00
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<u>5. Helicopter - 100 hours</u>	\$ 30,000.00
<u>6. Transportation & Communication (excluding helicopter)</u>	6,000.00
<u>7. Consulting Charges</u>	4,500.00
<u>8. Engineering and Assays</u>	<u>5,500.00</u>
	\$118,800.00
<u>Contingencies</u>	<u>12,000.00</u>
	<u><u>\$130,800.00</u></u>

Respectfully submitted,

MACDONALD CONSULTANTS LTD.



E. D. Dodson, P. Eng.

EDD/st

MACDONALD CONSULTANTS LTD.

SUITE 12 - 425 HOWE STREET, VANCOUVER 1, B. C.

February 3, 1970


CERTIFICATE

I, Earl D. Dodson, do hereby declare that:

- 1.) I reside at 2990 St. Kilda Avenue, North Vancouver, B. C. and have business address at 12 - 425 Howe Street, Vancouver 1, B. C.
- 2.) I am a graduate in geology of the University of British Columbia 1954.
- 3.) Since 1954 I have been employed in various phases of mineral exploration; in the latter years in posts of considerable responsibility.
- 4.) I am a professional engineer registered in the Associations of Professional Engineers of the Province of British Columbia and the Yukon Territory.
- 5.) I visited the property for approximately one and a half hours on October 25, 1969.
- 6.) I have no interest, direct or indirect, nor do I expect to receive either directly or indirectly any interest in the properties or securities of Delta International Minerals Ltd. (N.P.L.).

Respectfully submitted,

MACDONALD CONSULTANTS LTD.



E. D. Dodson, P. Eng.

MACDONALD CONSULTANTS LTD.
SUITE 12.425 HOWE STREET, VANCOUVER 1, B.C.

February 3, 1970

To Whom It May Concern:

This is to certify that on October 25, 1969 I examined portions of the staking on the Hayes Creek Property and found them to be staked in accordance with the Yukon Quartz Mining Act.

Yours very truly,

MACDONALD CONSULTANTS LTD.



E. D. Dodson, P. Eng.

EDD/st

MACDONALD CONSULTANTS LTD.

SUITE 12.425 HOWE STREET, VANCOUVER 1, B.C.

February 3, 1970

To Whom It May Concern:

I, Earl D. Dodson, hereby give my consent to the inclusion, in full, of my report on the Hayes Creek Property in the prospectus of Delta International Minerals Ltd. (N.P.L.).

Yours very truly,

MACDONALD CONSULTANTS LTD.



E. D. Dodson, P. Eng.

EDD/st

HAYES GROUP

o Dawson

o Mayo

o Carmacks

YUKON

o Whitehorse

N. W. T.

BRITISH
COLUMBIA

o Prince Rupert

o Dawson
Creek

o Prince
George

ALBERTA

SASK.

o EDMONTON

o VANCOUVER

MacDonald Consultants Ltd.

**DELTA INTERNATIONAL
MINERALS LTD.**

SCALE 1" = ± 190 mi.

DRAWN *ghs*

DATE DEC 69

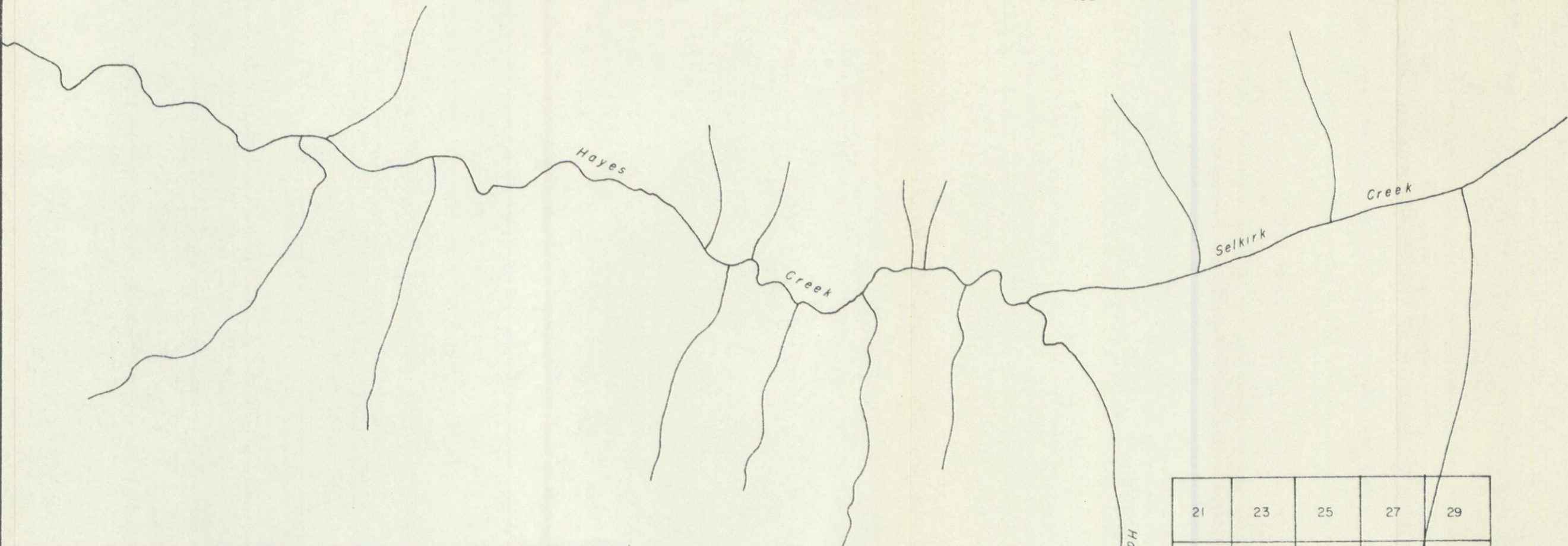
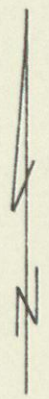
NO. 279-1

HAYES GROUP

**LOCATION
MAP**

138°

62°40'

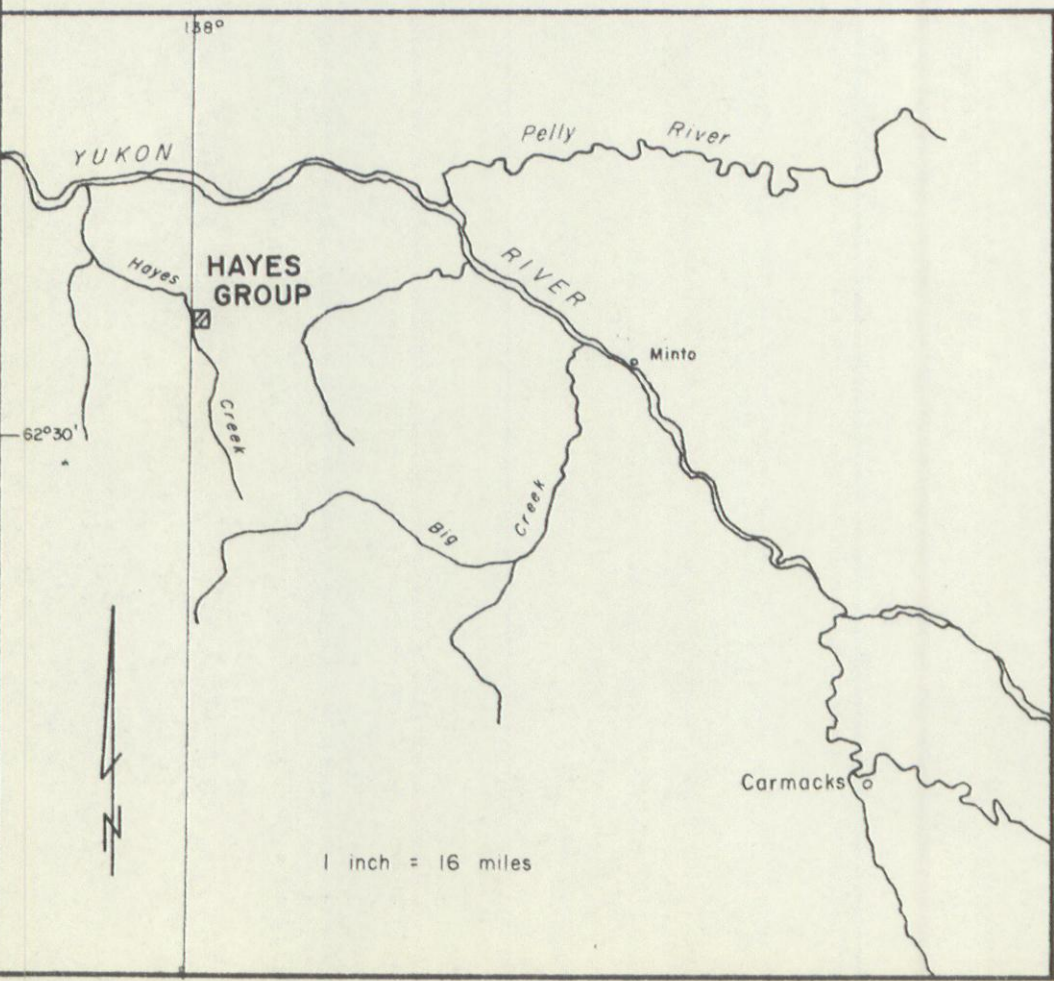


21	23	25	27	29
22	24	26	28	30

1	3	5	7	9	31
2	4	6	8	10	32
11	13	15	17	19	
12	14	16	18	20	

Should be 1 claim to west

Soil Sampling Lines



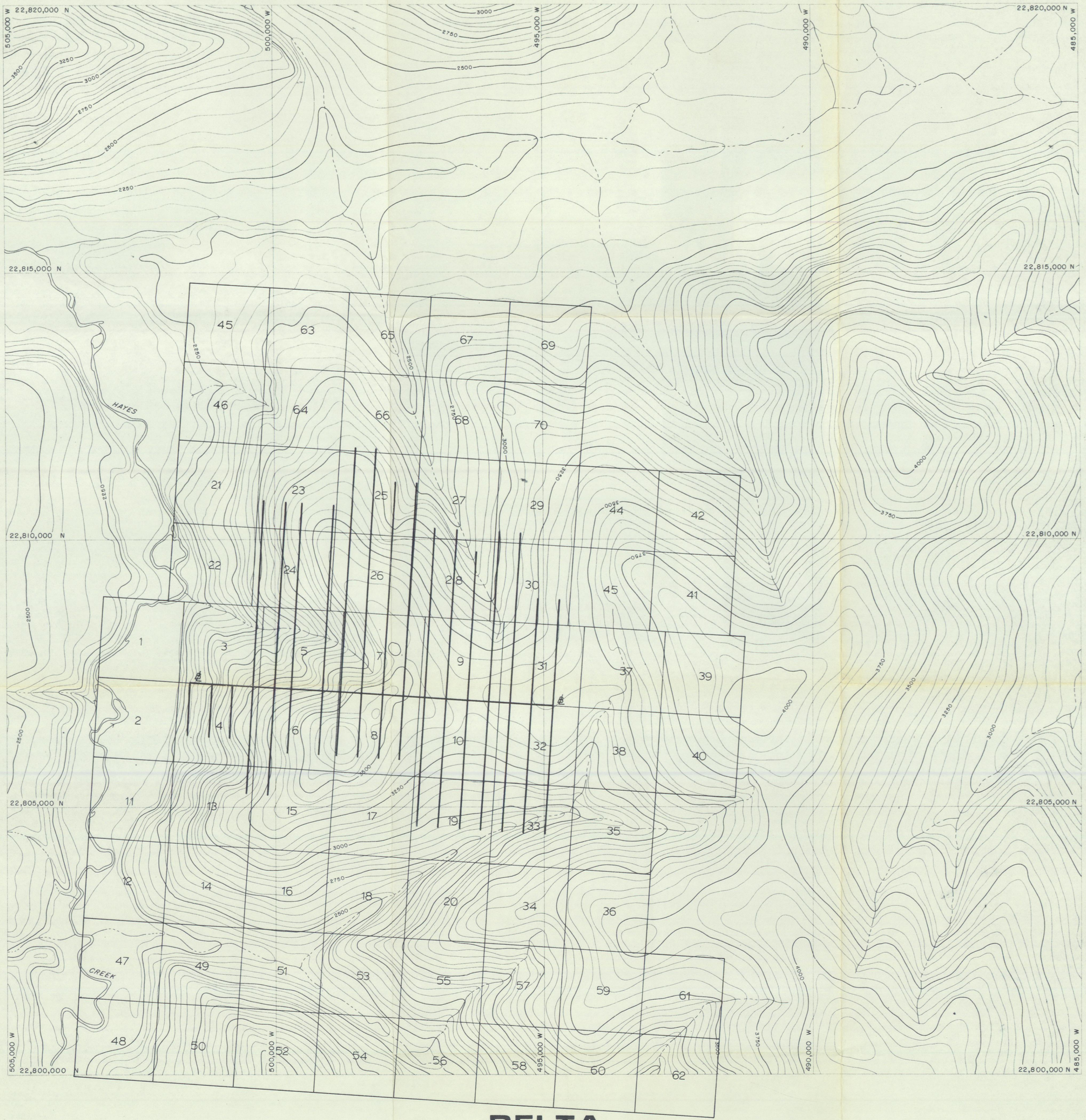
62°30'

138°

1 inch = 16 miles



MacDonald Consultants Ltd.	
DELTA INTERNATIONAL MINERALS LTD.	
SCALE	1" = 1/2 mi
DRAWN	ghs
DATE	DEC 69
NO.	279-2
HAYES GROUP	
DETAILED LOCATION MAP	

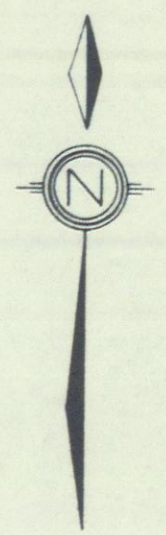


DELTA
INTERNATIONAL MINERALS LTD.

HAYES GROUP

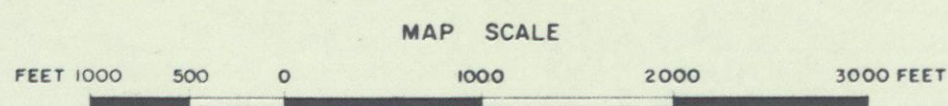
YUKON TERRITORY

HAYES CLAIM OUTLINE and GRID PATTERN



LEGEND

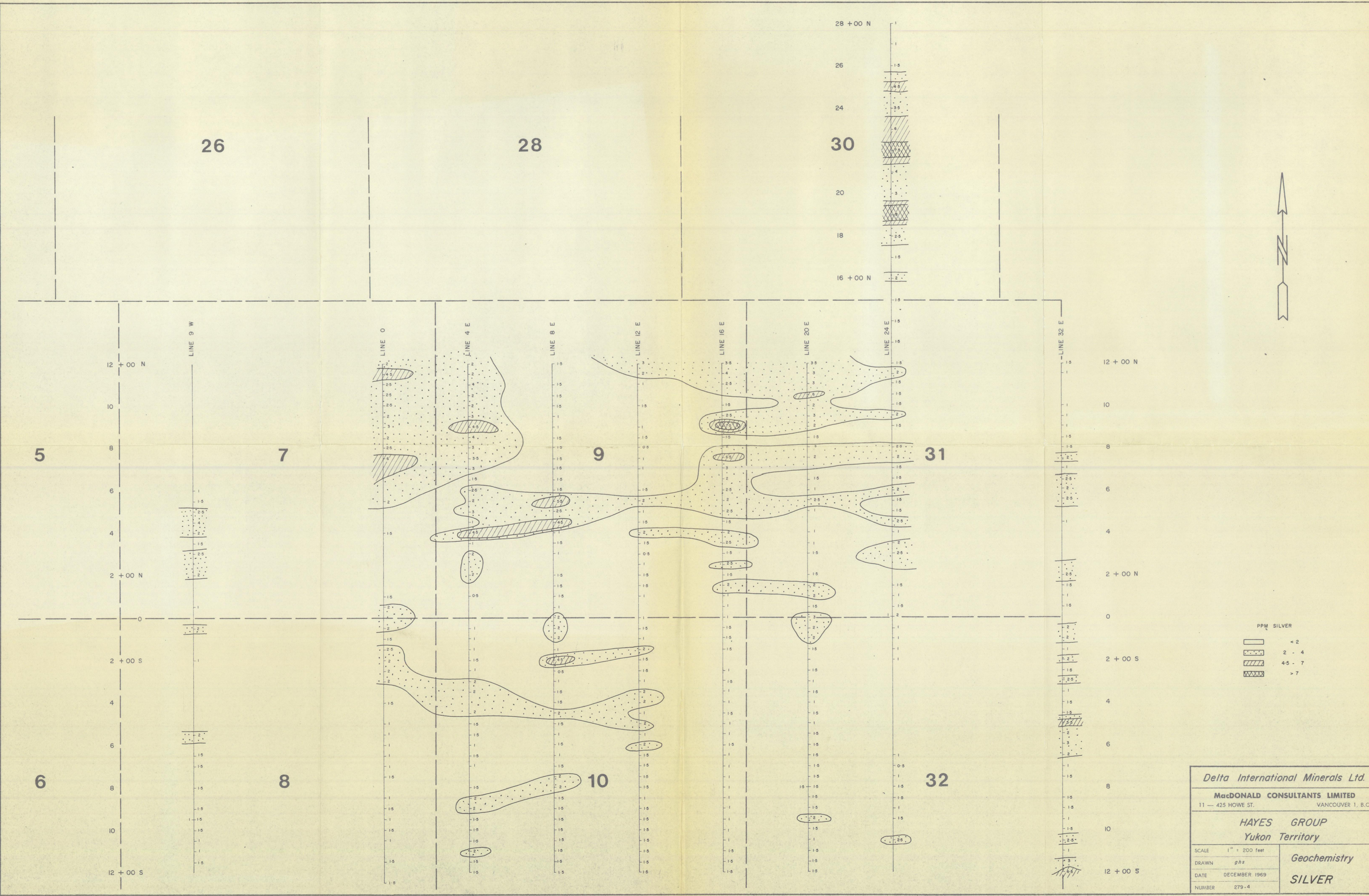
- Improved road _____
- Secondary road _____
- Track or trail _____
- Railway _____
- Contours _____ 4500
- Cut line _____
- River _____
- Stream _____
- Intermittent stream _____
- Swamp _____
- Spot elevation _____ 4190
- Horizontal control _____ Δ STA 16
- Vertical control _____ v-4710-51



CONTOUR INTERVAL 50'

Edwards

Compiled by
Northwest Survey Corp. Ltd.
 Edmonton, Grande Prairie, Yellowknife, Whitehorse



26

28

30

5

7

9

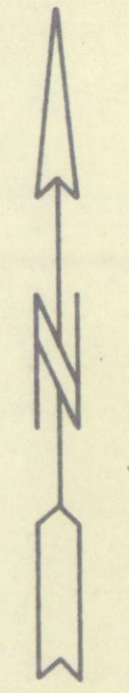
31

6

8

10

32



PPM SILVER

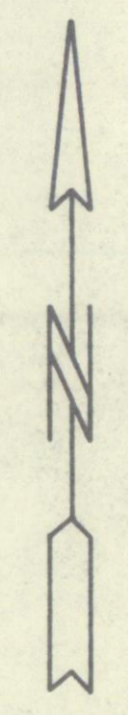
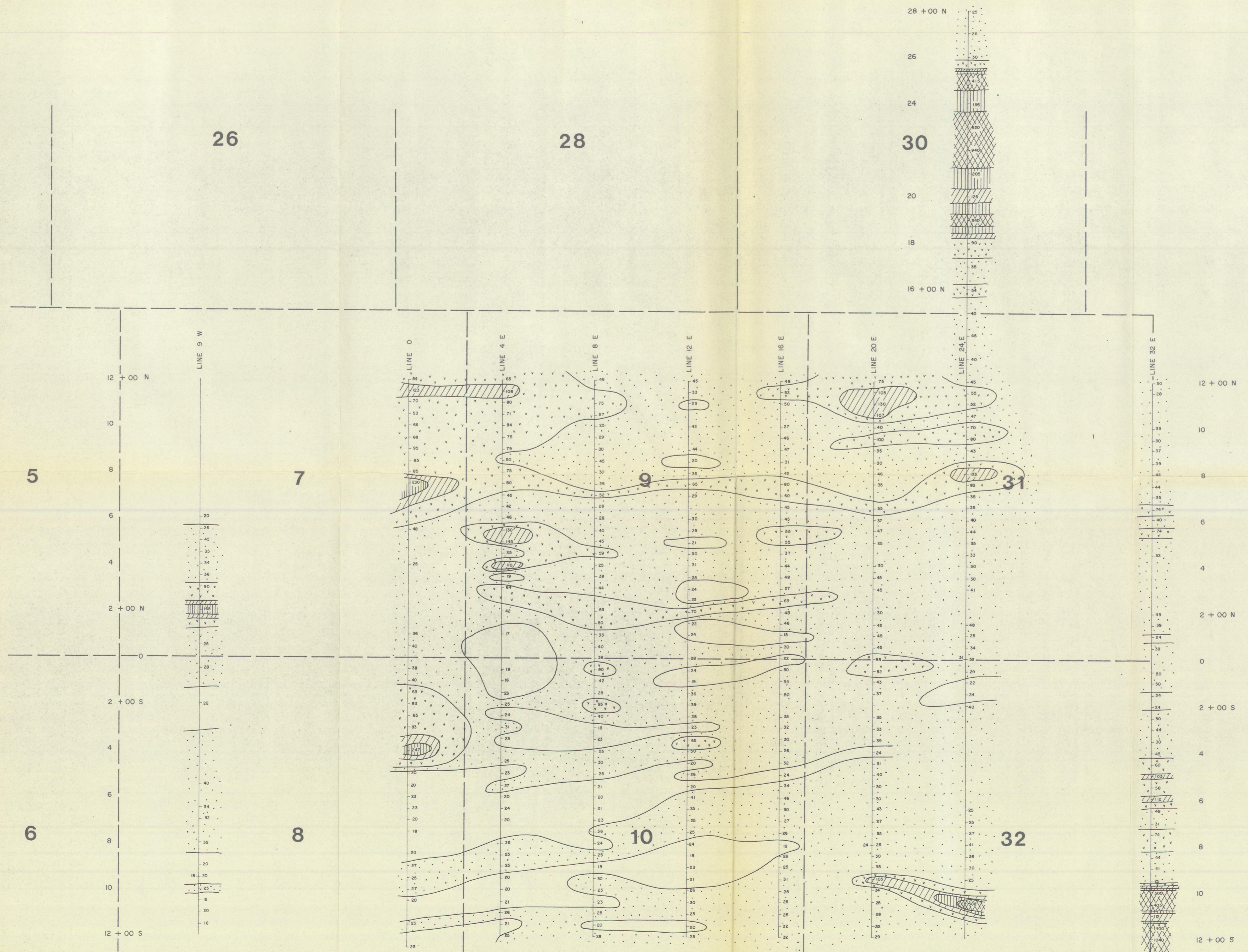
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[Dotted pattern]	2 - 4
[Diagonal lines pattern]	4.5 - 7
[Cross-hatch pattern]	> 7

Delta International Minerals Ltd.

MacDONALD CONSULTANTS LIMITED
 11 - 425 HOWE ST. VANCOUVER 1, B.C.

HAYES GROUP
Yukon Territory

SCALE	1" = 200 feet	Geochemistry SILVER
DRAWN	ghs	
DATE	DECEMBER 1969	
NUMBER	279-4	



PPM LEAD

[Blank]	< 25
[Dotted]	25 - 50
[Vertical lines]	51 - 100
[Diagonal lines /]	101 - 150
[Diagonal lines \]	151 - 300
[Cross-hatch]	> 300

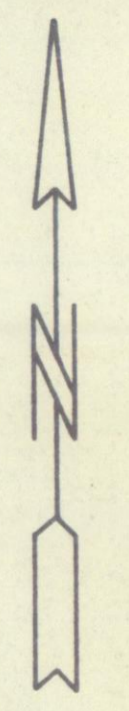
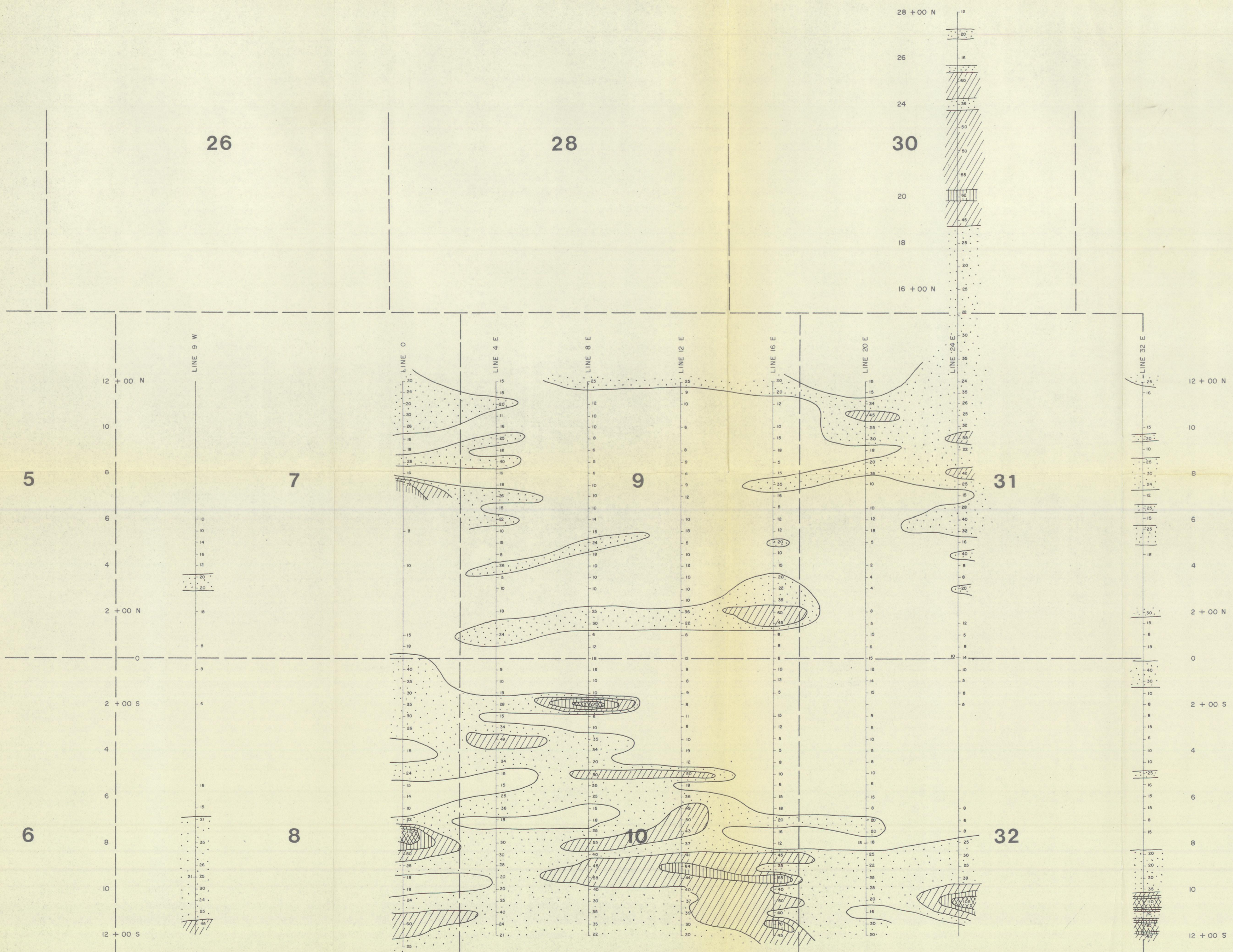
Delta International Minerals Ltd.

MacDONALD CONSULTANTS LIMITED
 11 — 425 HOWE ST. VANCOUVER 1, B.C.

HAYES GROUP
Yukon Territory

SCALE 1" = 200 feet
 DRAWN ghs
 DATE DECEMBER 1969
 NUMBER 279-5

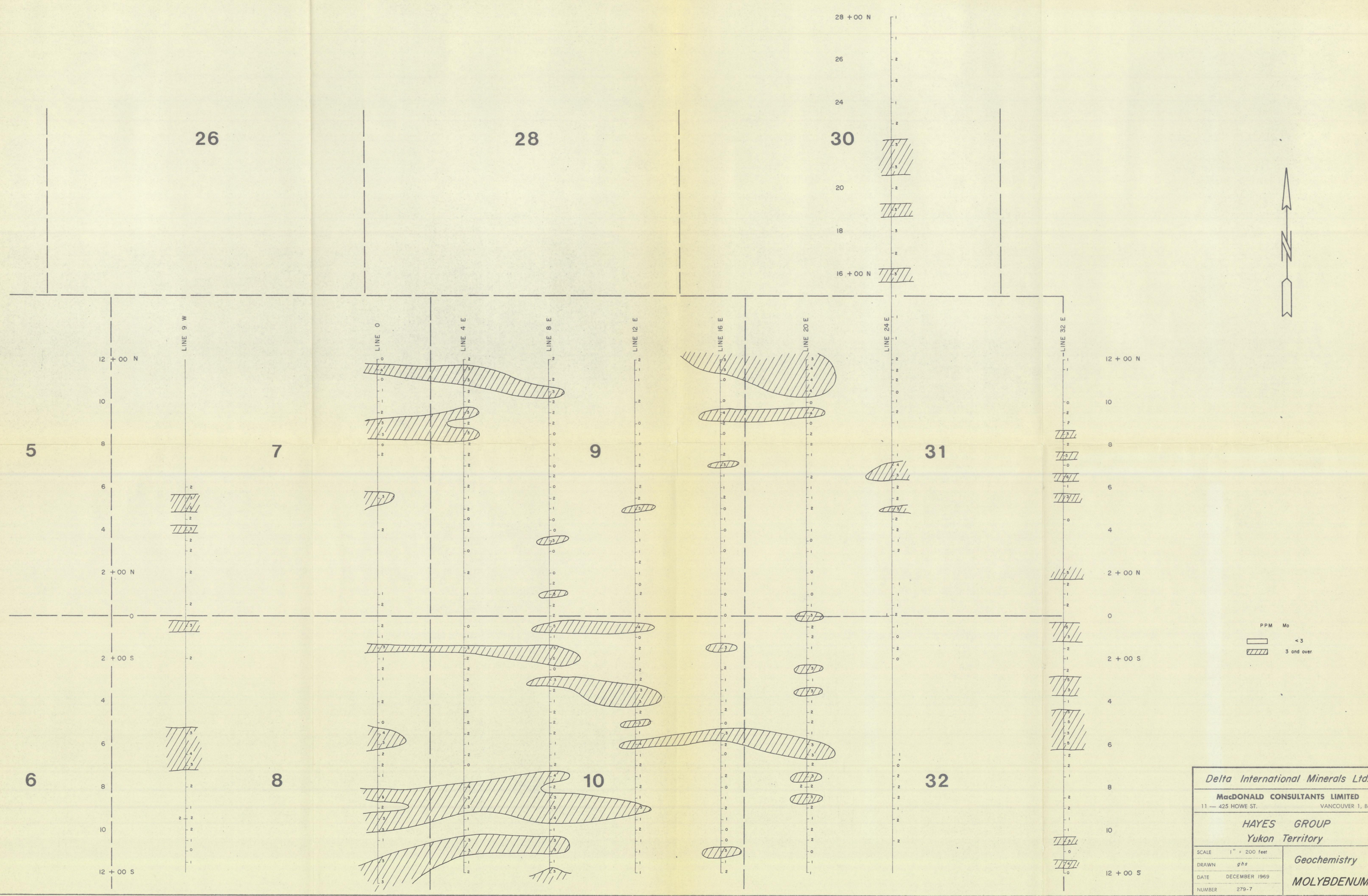
Geochemistry
LEAD



PPM COPPER

[White box]	< 20
[Dotted box]	20 - 40
[Diagonal lines box]	41 - 60
[Horizontal lines box]	61 - 80
[Cross-hatched box]	> 80

Delta International Minerals Ltd.	
MacDONALD CONSULTANTS LIMITED	
11 — 425 HOWE ST.	VANCOUVER 1, B.C.
HAYES GROUP Yukon Territory	
SCALE 1" = 200 feet	Geochemistry COPPER
DRAWN ghs	
DATE DECEMBER 1969	
NUMBER 279-6	



PPM Mo
 [unshaded box] < 3
 [shaded box] 3 and over

Delta International Minerals Ltd.	
MacDONALD CONSULTANTS LIMITED	
11 — 425 HOWE ST.	VANCOUVER 1, B.C.
HAYES GROUP Yukon Territory	
SCALE 1" = 200 feet	Geochemistry
DRAWN ghs	MOLYBDENUM
DATE DECEMBER 1969	
NUMBER 279-7	