

79-#419-#7549

GEOCHEMICAL AND GEOLOGICAL REPORT
ON THE CU, AG, AL, NORM CLAIMS
(EAST AND WEST GROUPS)
OSOYOOS MINING DIVISION, B.C.
(N.T.S. RCL. 92H/1W, Lat. 49°05'N, Long. 120°20'W)

on behalf of

ASHNOLA MINING COMPANY LIMITED
(owners and operators)

by

J.H. Montgomery, Ph.D., P.Eng.

January 20, 1980

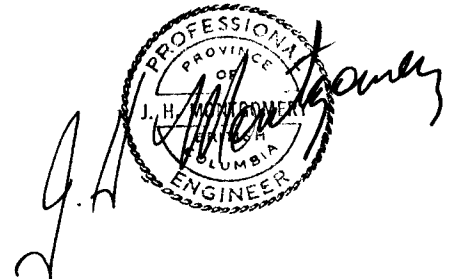
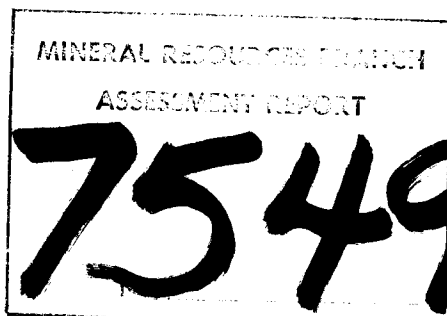


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1.0 SUMMARY AND CONCLUSIONS

Ashnola Mining Company Limited of Vancouver, B. C. holds title by agreement to 12 mineral claims (61 units) located on the west side of Ashnola River about 50 kilometers southwest of Keremeos.

The area of interest is underlain by rhyolite porphyry believed to be of the Kingsvale Group and of Lower Cretaceous age. These rocks are cut by a diatreme composed of angular fragments of rhyolite porphyry. Mineralization consists of secondary copper minerals (malachite, cuprite and chalcocite). Assays from surface outcrops ranged from about 0.1 to 0.3 percent copper.

The claim-area has been mapped geologically and a total of 1870 geochemical soil samples taken. The main anomalous zone is centred on the breccia pipe and contains values in copper ranging from 200 to 15,000 ppm and 5 to 34 ppm molybdenum. One other area on the northwest part of the property is weakly anomalous in copper. Further geochemical sampling and possibly trenching should be done here.

One BQ diamond-drill hole has been completed. Preliminary core sampling has shown values ranging from 0.014 to 1.30 percent copper. The hole was drilled at -50 degrees across the breccia pipe to a length of 460

feet. The entire hole was in the oxidized and leached zone. Drilling at greater depths will be necessary to test grades in the primary sulfides and in a possible enriched zone.

A program of continuing exploration is recommended for the property to consist of additional drilling of the breccia pipe at depth and investigation of the other geochemical anomaly.

Some additional drilling for a total of 1463 feet was done but not logged or sampled by the writer.

2.0 INTRODUCTION

The CU, AG, AL, NORM claims are located on the west side of Ashnola River south of McBride Creek (N.T.S. Ref. 92H/1W, Lat. $49^{\circ}05'N$; Long. $120^{\circ}20'W$) and are accessible from Keremeos, B.C. by means of the Ashnola River Forest Access Road (50 kilometers) and a FWD road which runs westerly from McBride Creek (8 kilometers) to base camp.

The property was discovered in 1976 by prospecting and optioned by Santa Sarita in 1977. After only minor work, they dropped the option and the property was acquired by Ashnola Mines Limited, the current owner and operator. The main interest in the property centers on a rhyolite breccia pipe containing secondary copper minerals and minor molybdenite.

During 1978 and 1979 Ashnola Mines Limited contracted the establishment of a grid approximately 73 kilometers long, geological mapping of an area of 9.6 square (enclosed maps reduced 50%) kilometers on a scale of 1:5000, and a geochemical survey consisting of approximately 1870 soil samples.

The location of the surveyed area with respect to claim boundaries is shown in Figure 2-1. The claims on which work was performed are DA1, DA2, CU1, CU2, CU3, CU4, CU5, CU6, AG1, AG2, AL1 and NORM 2.

During the period of the writer's supervision, one diamond-drill hole was completed to a depth of 140 meters, and a second was in progress. Assays are available only from the first hole.

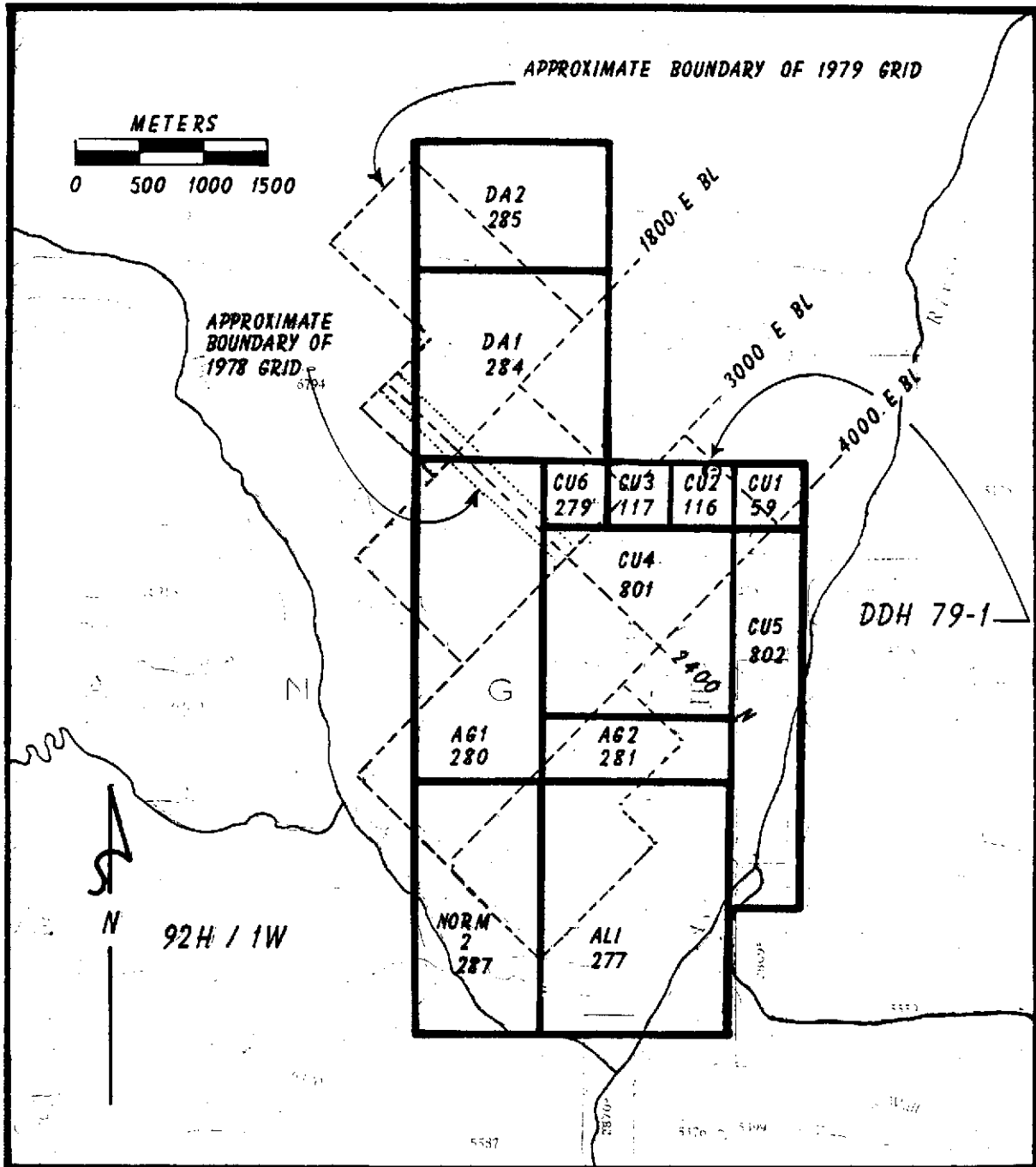


FIGURE 2-1 SURVEY LOCATION MAP

ASHNOLA MINES LIMITED

3.0 LOCATION AND ACCESS

The Ashnola River prospect is located on the west side of Ashnola River south of McBride Creek and about 50 kilometers southwest of Keremeos, B.C. (see Figure 3-1). Mile Post 28 on the Ashnola River Forest Access Road is adjacent to the claim area. Elevations of the claim-area range from 1130 meters to 1950 meters.

Access to the property is from Keremeos, B.C. southwesterly by gravel road, a distance of 50 kilometers. From this point, a cat road runs westerly up McBride Creek for about 3 kilometers and then southerly for about 5 kilometers to the showings.

A tent camp with facilities for eight people is established. Water for camp purposes and drilling is available from a spring about 1 kilometer from camp and 2.5 kilometers from the drill site.

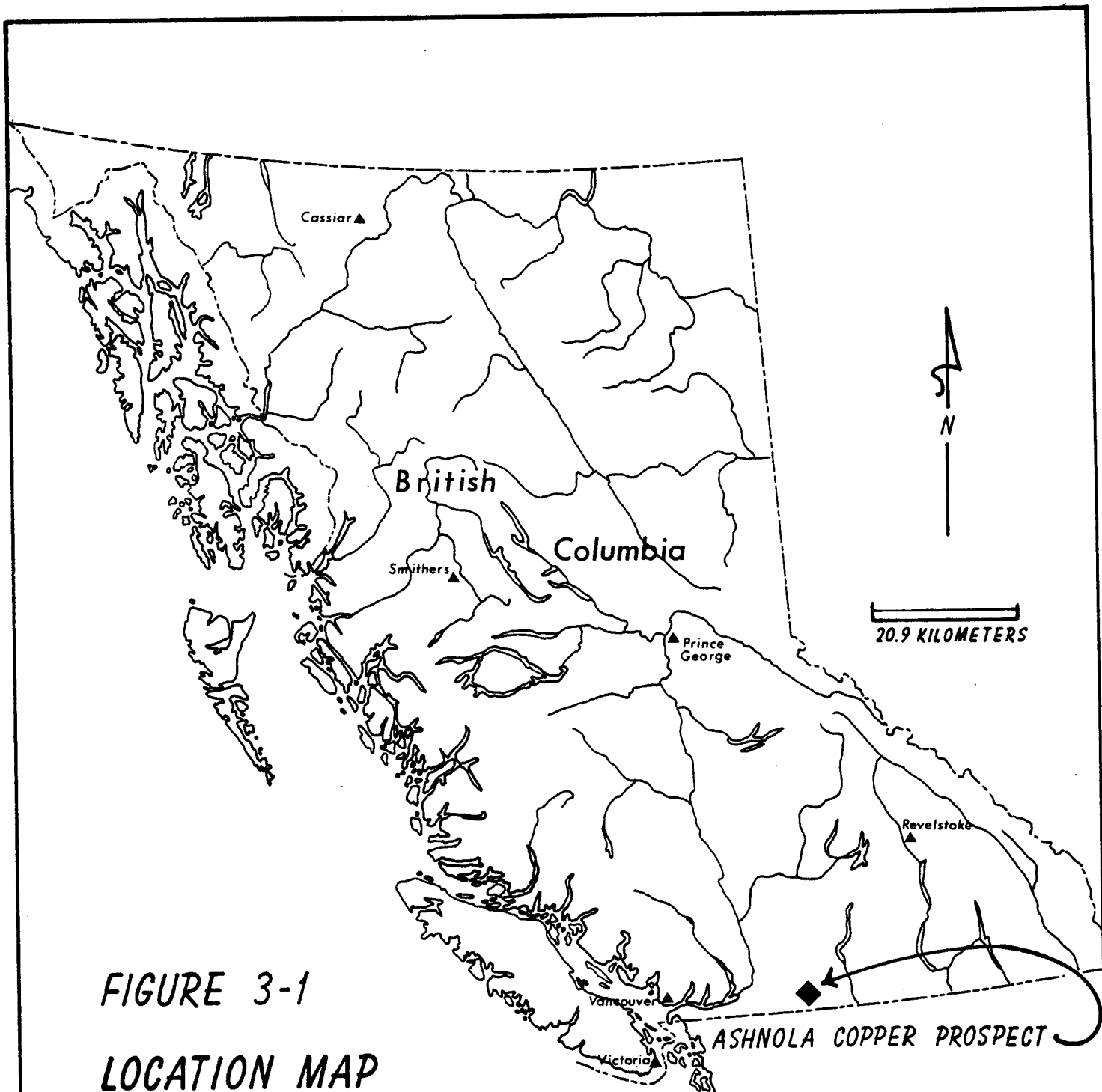


FIGURE 3-1

LOCATION MAP

ASHNOLA RIVER COPPER PROSPECT

ASHNOLA MINES LIMITED

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JANUARY 15, 1980

4.0 CLAIM INFORMATION

The claims are located near Mile 28 on the Ashnola River Forest Access Road in the Osoyoos Mining Division. See Figure 2-1. The N.T.S. Map Reference is 92 H/IW, Latitude $49^{\circ}05'N$; Longitude: $120^{\circ}20W$.

Claim information is listed in the following table:

<u>CLAIM</u>	<u>RECORD</u>	<u>EXPIRY DATE</u>
CU 1 (1)	59	April 2, 1980
CU 2 (1)	116	September 2, 1980
CU 3 (1)	117	September 2, 1980
CU 4 (9)	801	August 15, 1980
CU 5 (6)	802	August 15, 1980
CU 6 (1)	279	May 24, 1980
DA 1 (9)	284	May 24, 1980
DA 2 (6)	285	May 24, 1980
AG 1 (10)	280	May 24, 1980
AG 2 (3)	281	May 24, 1980
NORM 2 (8)	287	May 24, 1980
AL 1 (12)	277	May 24, 1980

The above claim information was obtained from principals of the company and from claim maps and records obtained from the Mining Recorder's Office in Vancouver. The locations of the claims shown in Figure 2-1 are approximate only.

5.0 GEOLOGY

The entire survey area was mapped on a scale of 1:5000 using the established grid for base map control. Figure 5-1 (pocket) has been reduced to 1:10,000 to conform to size requirements under Mineral Act Regulations. The mapping was done by C. Ditson assisted by C. Karchewski under the supervision of the writer. Mapping is based on examination of all outcrops in the area and on the predominant rock types present in overburden.

The map-area is underlain mainly by rhyolite porphyry which is without obvious structure except that in the vicinity of the breccia pipe, a very strong jointing is present. The attitude of this jointing varies widely. The rock is composed of phenocrysts of quartz, feldspar and mica in an aphanitic matrix which ranges in color from white to dark grey. Apparently overlying the rhyolite unit is an andesite porphyry which contains feldspar and amphibole phenocrysts in a dark grey, aphanitic matrix. A related rock unit, andesite porphyry containing basaltic hornblende occupies a prominent topographic rise and appears to be a volcanic neck.

The diatrema or breccia pipe consists of fragments

of rhyolite porphyry (mainly angular) ranging in size from dust to several meters. Similar fragments also occur in a small breccia dyke about 20 meters north of the pipe. Mineralization in the upper 100 meters of the diatreme consists of limonite, malachite, chalcocite, cuprite and minor remnant pyrite and chalcopyrite. The original sulfides occupied mainly interstices between fragments. These now contain limonite with traces of original sulfides and secondary copper minerals.

Two areas of collapse breccia occur in the andesite porphyry. These contain tuffaceous and breccia fragments of both andesite and rhyolite.

On the south of the map-area the volcanic rocks are in contact with granite and granodiorite of the Coast Range Batholith. The volcanic rocks in this area have been mapped as Kingsvale Group of lower Cretaceous age by Rice (1960).

6.0 GEOCHEMISTRY

A total of 1870 soil samples were taken on the property. The samples were taken at intervals of 50 meters along lines spaced 100 meters apart. All samples were taken from a poorly-developed B horizon at depths between 10 and 30 cm. and analyzed for copper and molybdenum.

Samples were taken with a mattock and put in geochemical samples bags (manila envelopes) which were marked with grid locations.

Background values for both metals are rather low: about 1 to 5 ppm for molybdenum and 5 to 50 ppm for copper. Anomalous values in the vicinity of the breccia pipe range from 200 to 15,000 ppm copper and 5-34 ppm molybdenum. A number of other samples from the northwest part of the property contain anomalous values of up to 300 ppm copper. This area requires some additional sampling and possibly trenching.

The values for copper are plotted on Figure 6-1 (in pocket) and the values for molybdenum are plotted on Figure 6-2 (in pocket). After air-drying, the samples were shipped to MIN-En Laboratories in North Vancouver, B.C. for analysis.

In the laboratory samples were oven-dried and sieved to obtain a -80 mesh fraction for chemical analysis. For both copper and molybdenum analysis, the samples were digested in a nitric-perchloric mixture. The extracted metals were then diluted and determined by Atomic Absorption.

7.0 DIAMOND DRILLING

One BQ diamond drill hole was completed at a depth of 460 feet (140 meters) and logged by the writer. Several additional holes were also drilled but not sampled or logged by the writer. The first hole was drilled at -50 degrees and an azimuth of 200 degrees. See Figure 7-1. The purpose of the hole was to cut across the pipe and test for copper content to a depth of approximately 100 meters. The hole penetrated breccia for a length of 406 feet (124 meters) and then remained in rhyolite porphyry to the end of the hole.

The breccia in DDH79-1 is mineralized with secondary copper minerals and limonite. The secondary copper minerals consist mainly of malachite but with trace amounts of chalcocite, cuprite and native copper. The original sulfide minerals occurred within the interstices between rhyolite fragments in the breccia and in fractures in the adjacent rhyolite porphyry.

The core was sampled at regular intervals of one meter. These were combined into 3 meter sections and analyzed for copper. Values range from 0.040 to 0.372 percent copper. A drill log is given below:

THE CORE IS STORED ON THE PROPERTY

Drill Hole 79-1

Drilling Company - Interior Diamond Drilling Ltd.

Azimuth - 200 degrees

Declination - -50 degrees

Depth - 140 meters

Co-ordinates - 3770N, 3340E

SAMPLE	FROM	TO	WIDTH (m)	ROCK	%CU
1852-1854	5	- 8	3.0	RHYOLITE BR.	.180
1855-1857	8	- 11	3.0	with Limonite,	.113
1858-1860	11	- 14	3.0	Malachite,	.082
1861-1863	14	- 17	3.0	traces of	.354
1864-1866	17	- 20	3.0	chalcocite,	.265
1867-1869	20	- 23	3.0	cuprite, moly-	.285
1870-1872	23	- 26	3.0	bdenite,	.372
1873-1875	26	- 29	3.0	pyrite and	.115
1876-1878	29	- 32	3.0	chalcopyrite	.151
1879-1881	32	- 35	3.0		.165
1882-1884	35	- 38	3.0		.164
1885-1887	38	- 41	3.0		.078
1888-1890	41	- 44	3.0		.064
1891-1893	44	- 47	3.0		.132
1894-1896	47	- 50	3.0		.112
1897-1899	50	- 53	3.0		.135
1900-1902	53	- 56	3.0		.185
1903-1905	56	- 59	3.0		.088
1906-1908	59	- 62	3.0		.135
1909-1911	62	- 65	3.0		.248
1912-1914	65	- 68	3.0		.160
1915-1917	68	- 71	3.0		.201
1918-1920	71	- 74	3.0		.330
1921-1923	74	- 77	3.0		.135
1924-1926	77	- 80	3.0		.260
1927-1929	80	- 83	3.0		.165
1930-1932	83	- 86	3.0		.148
1933-1935	86	- 89	3.0		.061
1936-1938	89	- 92	3.0		.072
1939-1941	92	- 95	3.0		.138
1942-1944	95	- 98	3.0		.073
1945-1957	98	-101	3.0		.047
1948-1950	101	-104	3.0		.042
1970-1971	104	-106	2.0		.040
1972-1974	106	-109	3.0		.060

SAMPLE	FROM	TO	WIDTH	ROCK	%CU
1975-1977	109	-112	3.0	Rhyolite Br.	.080
1978-1980	112	-115	3.0	(as above)	.192
1981-1983	115	-118	3.0		.185
1984-1986	118	-121	3.0		.095
1987-1989	121	-124	3.0		.092
1990-1992	124	-127	3.0	Rhyolite	.090
1993-1995	127	-130	3.0	Porphyry	.205
1996-1998	130	-133	3.0	(minor pyrite)	.308
1999, 2000, 1851	133	-136	3.0		.282
2901-2903	136	-139	3.0		.072
2904	139	-140	1.0		.042

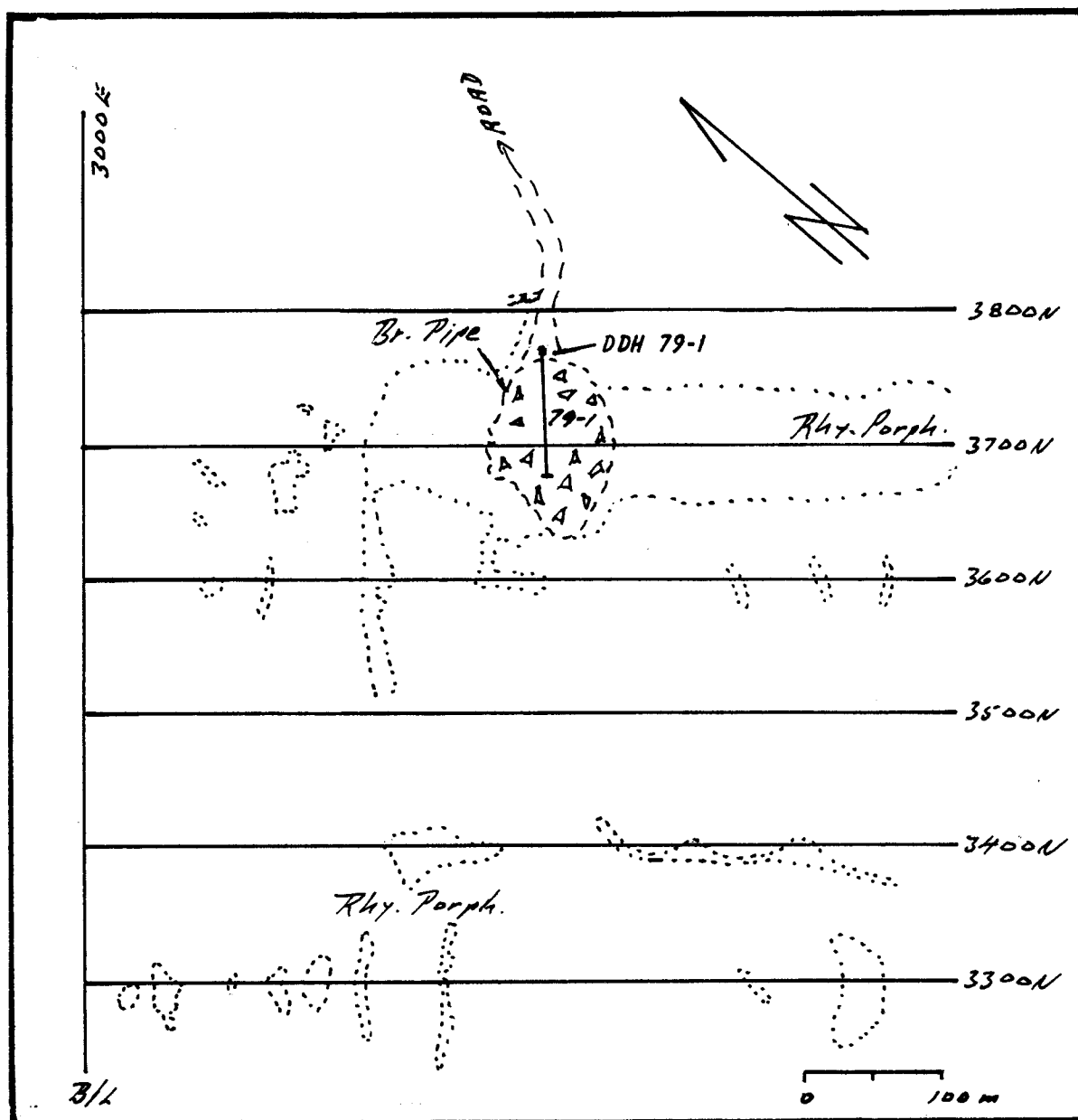


FIGURE 7-1 DRILL HOLE 79-1

ASHNOLA RIVER COPPER PROSPECT

ASHNOLA MINES LIMITED

8.0 PERSONNEL - FIELD CREW

- (a) J.H. Montgomery, Ph.D., P.Eng. - Engineer and Supervisor - see Certificate of qualifications (section 11.0)
- (b) C. Ditson - geologist
Undergraduate geologist
- (c) Shaun Berryman - soil sampler and line-cutter.
Five years experience many parts of Canada and U.S.A., geochemical sampling, line-cutting and geophysical operator and helper.
- (d) Cecelia Karchewski - geological asst., soil sampler. On job training.
- (e) M. Hebert - soil sampler and line-cutter
Three years experience many parts of Canada, geochemical sampling and geophysical helper.
- (f) Sheldon Friesen - soil sampler and line-cutter.
Several summers geochemical sampling and prospecting.
- (g) David Fonseca - soil sampler and Line-cutter.
On job training.
- (h) Hans Madeisky - geologist
Graduate geologist, several years varied experience.
- (i) Norman Bonin - line-cutter and soil sampler
Several years experience exploration work and prospecting.
- (j) David Rondeau - line-cutter and soil sampler.
On job training.
- (k) Susan Berryman - cook and camp accounting.

9.0 COST BREAKDOWN1. WAGES (FIELD CREW)

(a)	Shaun Berryman (\$86.40 per day) to May 31, 1979 (10 days) to June 18, 1979 (18 days) to June 30, 1979 (10 days)	\$3,283.20
(b)	Susan Berryman (\$72.00 per day) to May 31, 1979 (9 days) to June 15, 1979 (15 days) to June 30, 1979 (15 days) to July 15, 1979 (14 days) to July 31, 1979 (11 days)	\$4,608.00
(c)	Norman Bonin (\$72.00 per day) to June 28, 1979 (10 days) to July 15, 1979 (8 days)	\$1,296.00
(d)	Carol Ditson (\$108.00 per day) to June 15, 1979 (7 days) to June 30, 1979 (14 days) to July 15, 1979 (13 days) to July 31, 1979 (14 days) to August 15, 1979 (3 days) to August 31, 1979 (16 days)	\$7,236.00
(e)	David Fonseca (\$67.60 per day) to June 15, 1979 (7 days) to June 30, 1979 (15 days) to July 15, 1979 (14 days) to July 30, 1979 (6 days)	\$2,419.20
(f)	Sheldon Friesen (\$67.60 per day) to end 1978 (26 days)	\$1,497.60
(g)	Michael Hebert (\$72.00 per day) to May 31, 1979 (9 days) to June 15, 1979 (15 days) to June 30, 1979 (15 days) to July 15, 1979 (14 days) to July 31, 1979 (8 days)	\$4,392.00

(h)	Cecelia Karchewski (\$57.60 per day)	
	May 23-31, 1979 (9 days)	
	June 1 - 15, 1979 (15 days)	
	June 16-30, 1979 (14 days)	
	July 1-15, 1979 (14 days)	
	July 16-31, 1979 (14 days)	
	August 13-15, 1979 (3 days)	
	August 16-31, 1979 (16 days)	
	September 6-8, 1979 (3 days)	\$5,068.80
(i)	Hans Madeisky (\$115.20 per day)	
	May 22 - June 1, 1979 (11 days)	\$1,267.20
(j)	David Rondeau (\$57.60 per day)	
	to June 30, 1979 (9 days)	
	to July 15, 1979 (15 days)	\$1,382.40
		<hr/>
	TOTAL WAGES (FIELD CREW)	\$ 32,450.40
2.	<u>SERVICES</u>	
(a)	Typing and payroll accounting	766.75
(b)	Drafting	381.60
(c)	Assays and Geochemical Analyses	<u>6,844.24</u>
	TOTAL SERVICES	\$ 7,992.59
3.	<u>PROFESSIONAL FEES</u>	
(a)	J.H. Montgomery - Sept. 7-8/78, June 1, /79, June 3, June 7-10, June 22-26, July 4, July 6, July 13, July 16-17, July 20-24, July 26, August 13-15, August 17, August 23, August 31, September 6-8, September 11-13, September 14,	\$ 6,950.00
(b)	G.H. Giroux - Sept. 20-21/78, Nov.8-15/78, July 9-10,79, July 12, July 18, July 26-31, August 1-5.	\$ <u>3,612.50</u>
	TOTAL PROFESSIONAL FEES	\$ 10,562.50
4.	<u>SUPPLIES</u> - field engineering and office supplies and equipment, reproduction	
	TOTAL	\$ 8,216.35

5.	<u>ACCOMODATION</u> - motels, meals, and groceries	\$ 6,597.36
6.	<u>TRANSPORTATION</u> - truck rentals	\$ 6,604.60
7.	<u>COMMUNICATION</u> - telephone and radio telephone	\$ 198.83
		<hr/>
	SUB-TOTAL	\$ 72,622.63
8.	<u>DIAMOND DRILLING</u> - 1463 ft.	\$ 50,658.80
		<hr/>
	TOTAL	\$123,281.43



10.0 BIBLIOGRAPHY

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"Geophysical and Geochemical Report on Prism Resources Ashnola Property". Private report for Prism Resources Ltd. submitted for assessment work in 1970.
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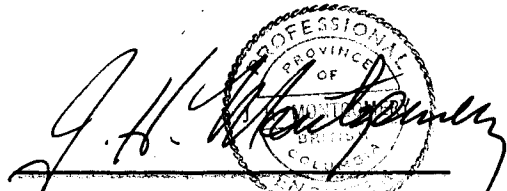
7. Sinclair, A.J. (1975) - "The Relationship between sulphides and Wallrock Alteration, and its Importance to Exploration, Ashnola Property". Private report for Prism Resources Ltd., submitted for assessment work in 1975.
8. Montgomery, J.H. (1977) - "Report on the Cu Group of Mineral Claims, Ashnola River, B.C.". - Private report for Santa Sarita Mining Co. Ltd. - published in Statement of Material Facts.

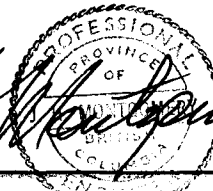
11.0 CERTIFICATE

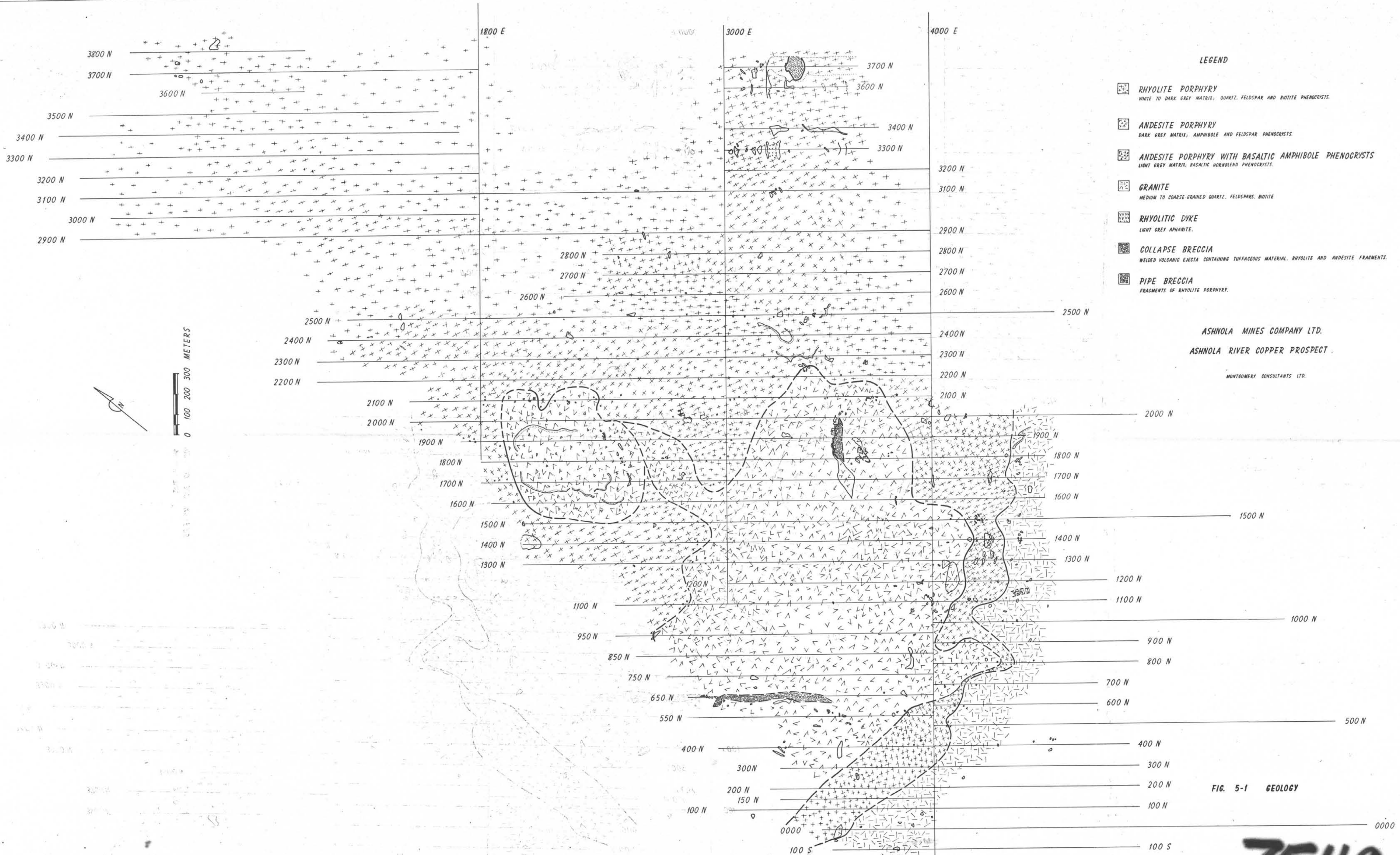
I, J.H. Montgomery of Vancouver, British Columbia, hereby certify that:

1. I am a geological engineer and that I reside at 4153 West 11th Ave., Vancouver, 8, B. C.
2. I am a graduate of the University of British Columbia; B.Sc. in 1959, M.Sc. in 1960 Ph.D. in 1967.
3. I have practiced my profession since 1959.
4. I am a member of the Association of Professional Engineers of British Columbia and of the Yukon Territory.
5. I have no interest, direct or indirect, in Ashnola Mining Company Limited or their affiliates nor do I expect to receive any.
6. I have based this report on many previous personal visits to the property and on a previous report by the writer on a personal knowledge of the general area, and on previous reports and government publications.

Dated at Vancouver, B.C., this 15th day of January 1980.


J.H. Montgomery, Ph.D., P.Eng.
4153 West 11th Avenue,
Vancouver, B.C.





LEGEND

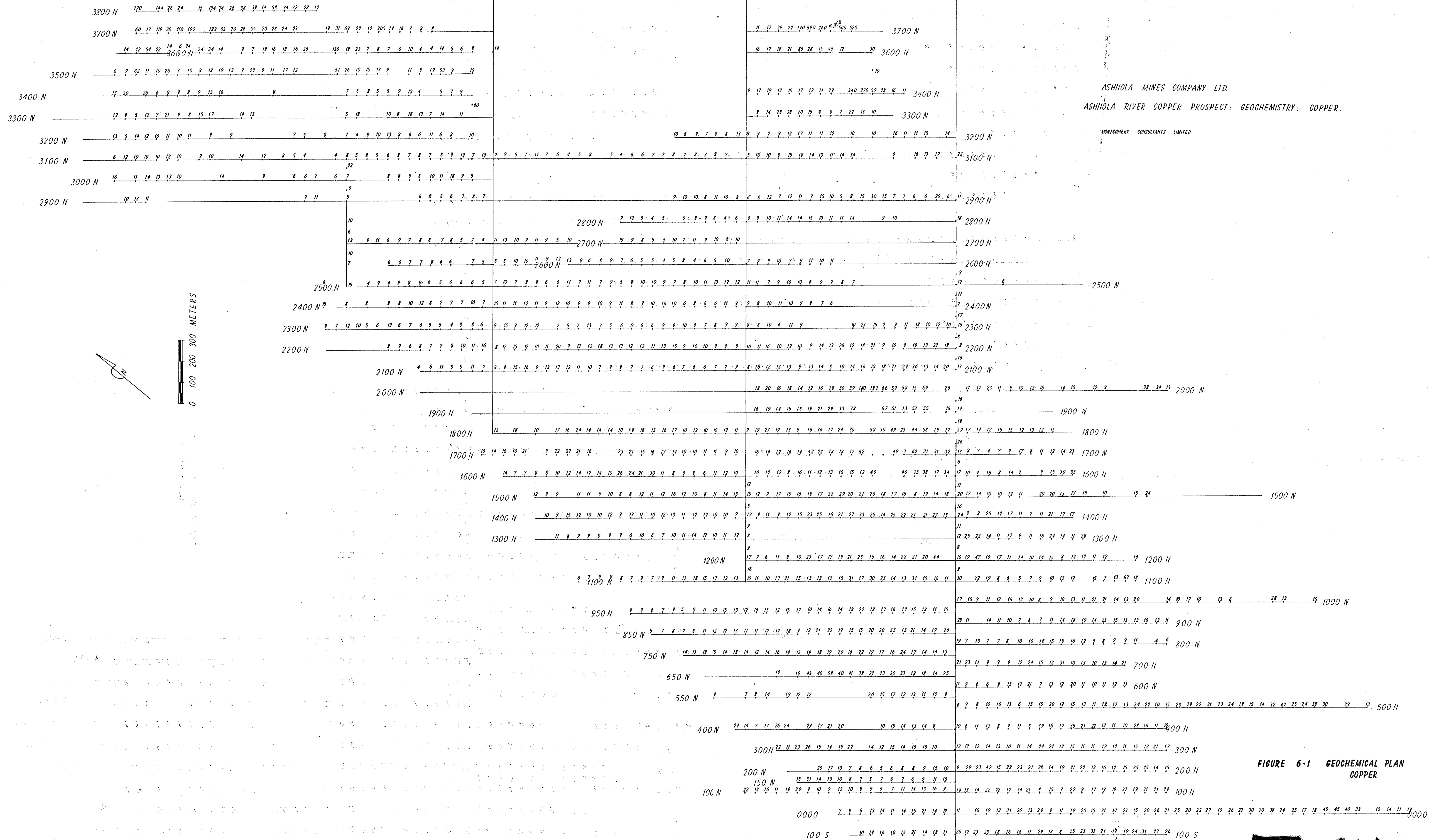
- RHYOLITE PORPHYRY**
WHITE TO DARK GREY MATRIX; QUARTZ, FELDSPAR AND BIOTITE PHENOCRYSTS.
- ANDESITE PORPHYRY**
DARK GREY MATRIX; AMPHIBOLE AND FELDSPAR PHENOCRYSTS.
- ANDESITE PORPHYRY WITH BASALTIC AMPHIBOLE PHENOCRYSTS**
LIGHT GREY MATRIX; BASALTIC HORNBLEND PHENOCRYSTS.
- GRANITE**
MEDIUM TO COARSE-GRAINED QUARTZ, FELDSPARS, BIOTITE
- RHYOLITIC DYKE**
LIGHT GREY APHANITE.
- COLLAPSE BRECCIA**
WELDED VOLCANIC EAECTA CONTAINING TUFFACEOUS MATERIAL, RHYOLITE AND ANDESITE FRAGMENTS.
- PIPE BRECCIA**
FRAGMENTS OF RHYOLITE PORPHYRY.

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 ASHNOLA RIVER COPPER PROSPECT.

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FIG. 5-1 GEOLOGY

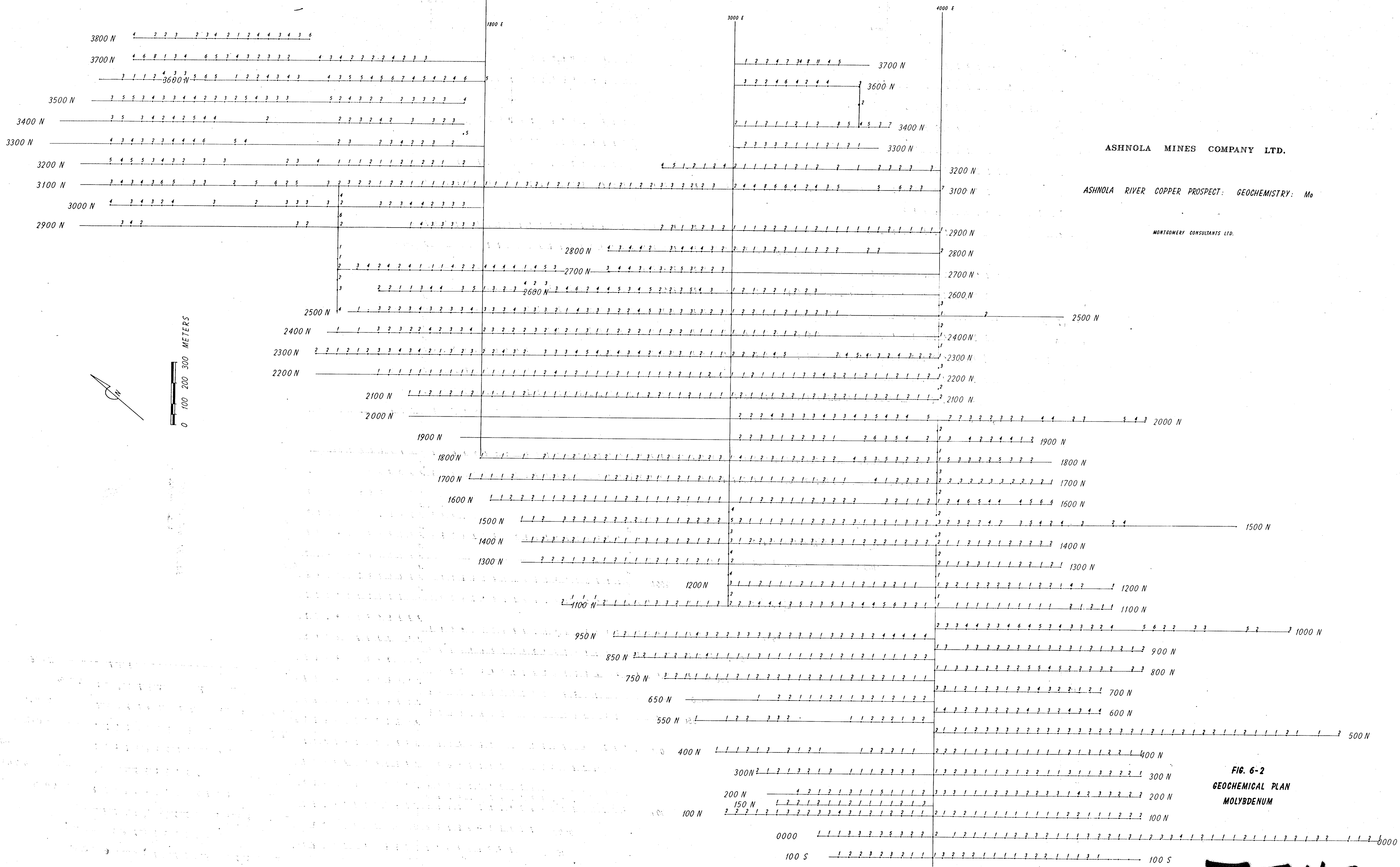
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FIGURE 6-1 GEOCHEMICAL PLAN COPPER

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ASHNOLA RIVER COPPER PROSPECT: GEOCHEMISTRY: Mo

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FIG. 6-2
GEOCHEMICAL PLAN
MOLYBDENUM

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