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REPORT on the INK & LIN CLAIMS

for MONTANA MINES LTD.

Sutlahine River Area

Map Sheet 104-K-10

Atlin Mining District, B.C.

by

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REPORT on the INK & LIN CLAIMS  
for MONTANA MINES LTD.  
Sutlahine River Area  
Map Sheet 104-K-10  
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1. INTRODUCTION

The claims are located along a creek flowing northwest into the Sutlahine River about 12 miles above its confluence with the Inklin and some 24 miles east southeast of Tulsequa, B.C. The INK (1 - 10) group is centered about a fork in the creek about 4 miles from its mouth and the LIN (1 - 8) group on the north slope of a mountain about 3 miles to the east.

Staking was done by G.W.B. Watson on July 1st and 2nd, 1968, during which time the present examination was also carried out. Access is best gained by helicopter or by a combination of helicopter and fixed wing aircraft. The latter can land at several lakes in the area including King Salmon Lake, 12 miles to the north of the claims and Trapper Lake, 7 miles southeast or on a 1,500 foot strip in a meadow about 4 miles northeast of the INK group.

Tent frames erected several years ago by The Julian Mining Company on what are now the INK claims are still largely in useable condition and are centrally located with respect to known showings in the area, at the junction of the two main creeks.

The camp is at an elevation of about 2,300 feet and relief in the immediate area is about 4,500 feet with the mountain peaks averaging about 6,500 feet above sea level.

The creek valleys in which the mineralization occurs on the INK claims are steep sided, fairly narrow and forested with balsam, birch

and poplar. Dense underbrush is made up of alder, devils club and a variety of other smaller plants.

The LIN group is largely above tree line and exposures are in the valley of a creek flowing northwest from a small glacier.

2. GENERAL GEOLOGY

The claim groups lie just east of the limit of the main body of the coast intrusions in the area and in a belt of triassic volcanic rocks. These are intruded by a number of tertiary felsite or granite stocks and possibly by isolated plugs related to the Coast Range Batholiths. Other rocks of possible significance in the area are the clastic sediments of the lower Jurassic which may be represented locally by a boulder conglomerate.

THE INK GROUP

Intermediate volcanic rocks of unit 7 on the geological map (Tulsequa, G.S.C. Map 6 - 1960, 104-K, J.G. Souther, 1959) appear to be the oldest in the claim area. They are of triassic age and occur to the west of the mineralized area. North and east of the area are the late Cretaceous or early tertiary rhyolitic and dacitic rocks of the Sloko Group. In the general vicinity of the camp, both units are in contact with an intrusive porphyritic granite body trending roughly northwest-southeast and closely related to the occurrences of sulphide minerals. The dimensions of this body are unknown although it tentatively appears to have quite an irregular shape. Where observed in the vicinity of the camp it is buff to rusty in colour and so well weathered that it can often be pulled apart by hand. The rock is composed of serricitized white feldspar and quartz with little or no mafic material. Quartz occurs as fine to medium grained anhedral crystals or phenocrysts or as

coarse doubly terminated euhedral, but somewhat eroded looking phenocrysts. Pyrite is nearly always present, usually sparsely disseminated but in places forming massive veins and lenses occasionally with disseminated and massive tetrahedrite.

Tetrahedrite bearing veins cutting the quartz porphyry were examined and sampled in two general localities and have been reported to occur in three more.

On the west side of the main creek, opposite the camp is a large slide area and gossan extending along the creek for about 300 feet and vertically for over 400 feet. At the north limit of the slide is the sheared contact between the volcanic rocks and the porphyry. The slide itself is principally porphyry although a small amount of boulder conglomerate is exposed near its base. A basic dike striking at  $42^{\circ}$  follows nearly parallel to the contact along the shear zone. Slickensides on the dike suggests strike slip movement.

Massive pyrite is present in narrow veins and lenses in the porphyry within about 100 feet of its contact with the volcanics to the north and about 150 to 200 feet above the creek bed. Similar occurrences were seen further upstream in an exposure in the creek itself. There seems to be no preferred orientation to these bodies, all of which are small, a few inches wide, and visible over 10 or 15 feet. No other sulphides were observed in these showings.

Further up the slide and about 400 feet above the creek is a sheared area on the north contact of the porphyry. Immediately adjacent the shear to the south is a 4 foot wide basic dike striking  $42^{\circ}$  and dipping  $82^{\circ}$  E. To the north is a pyrite and chalcopryrite bearing quartz vein nearly parallel to the dike and about 40 inches wide. Sample #22254

was taken across this. Adjoining the vein to the south are 32 inches of barren gouge, then 54 inches of rhyolitic rock with sparse disseminated pyrite and chalcopyrite from which sample #22255 was taken. Between the mineralized rhyolitic material and the dike is about 8 feet of apparently unmineralized and badly fractured volcanic rock which was not sampled. At a distance of about 40 feet at 130° from the foregoing is a foot wide vein of massive pyrite with tetrahedrite. It does not appear to be consistent in width along its assumed strike but narrows and widens to form other similar pockets of mineralization within a few feet of one another. Sample #22256 is a high grade grab from three of these localities all within about 30 feet of one another.

About 20 feet further south is a zone of massive pyrite containing bands of massive tetrahedrite, disseminated chalcopyrite and possibly some chalcocite across an apparent width of 4 feet. Massive tetrahedrite and pyrite also occur about 3 feet down the slope from this exposure suggesting a fairly steep dip to any vein like structure that may be present. Sample #22257 is across 4 feet of vein material. Sample #22260 is a grab sample of pyrite and tetrahedrite containing narrow veins of epidote from the slide about 175 feet below the above showings. It may represent another vein or an extension of the veins found higher up.

### 3. TABLE OF RESULTS FROM SLIDE AREA

<u>Number</u>	<u>Width</u>	<u>Description</u>	Results =			
			<u>Cu</u>	<u>Au</u>	<u>Ag</u>	<u>MoS<sub>2</sub></u>
22254	40"	Quartz chalcopyrite vein	5.14	.16	18.94)	.074
22255	56"	Mineralized shear with pyrite & chalcopyrite	1.04	.08	1.04)	
22256	Grab	Massive pyrite and disseminated tetrahedrite	3.94	.06	9.94	-
22257	48"	Massive pyrite, chalcopyrite & tetrahedrite	2.37	.02	3.14	.043
22260	Grab	Pyrite & tetrahedrite from slide below vein.	3.80	.005	6.68	-

On the south side of the creek which forks to the east of the camp and about 1,300 feet above it's mouth is an area of sulphide veining in a rusty quartz porphyry.

Sample #22251 was taken from a 3 inch wide vertical vein striking at 100° in a 10 foot shear zone.

About 150 feet west of the above is a similar shear containing a 4 inch wide vein of quartz, pyrite and tetrahedrite from which sample #22252 was taken. It strikes at 90° and appears to widen and possibly flatten near the base of a rock slide where a 6 inch quartz band containing massive pyrite and tetrahedrite occurs. Sample #22253 and #22261 were taken of this material.

4. TABLE OF SAMPLES FROM EAST FORK AREA

<u>Number</u>	<u>Width</u>	<u>Description</u>	<u>Values</u>			
			<u>Cu</u>	<u>Au</u>	<u>Ag</u>	<u>MoS2</u>
22251	3"	Disseminated sulphides in vein 1,300' up east fork.	0.07	.08	3.78	-
22252	4"	Disseminated sulphides in vein 1,100 up east fork.	2.96	.14	16.04	-
22253	Grab	Massive sulphides from 6" band at locality #22252	1.33	.005	1.76	-
22261	Grab	Massive sulphides from 6"	6.26	.20	33.80	.091

About 100 feet downstream from the above locality additional float containing massive tetrahedrite and pyrite was found in a slide. No assay, however, was run on this sample.

G.W.B. Watson reports that similar occurrences of pyrite and tetrahedrite occur further up the east fork and a mile or so further up the main fork of the creek on the north and east banks respectively. Neither of these showings were examined. Another reported locality is about 500 feet up the main fork and on the west side of the creek. This showing was inaccessible at the time of the examination and it was not seen either.



THE LIN GROUP

The Lin claims (1 - 8) are located on a northerly flowing tributary of the east fork about 3 miles above the camp. Some work including an IP survey and some diamond drilling was carried out in this area several years ago, but the results are not available at present.

Although in an unmapped area, the rocks appear to belong to the Coast intrusive group (unit 6 on G.S.C. Map 6 - 1960) being mainly medium grained, massive granodiorite, granite and possibly syenite locally. These have been cut by fine grained phases, probably of similar composition and over a distance of at least 400 feet along the creek are sparsely mineralized with chalcopyrite. Both fine and medium grained rocks contain the sulphide which appears to form medium to coarse grained euhedral or subhedral crystals in places. Generally however, it is either disseminated or in small massive pods.

Sample #22258 is a chip sample across 20 feet of sulphide bearing granite rock starting at the south limit of the mineralized area. Sample #22259 is its continuation to the north but is separated from #22258 by 15 feet of slide material.

LIN GROUP ASSAY RESULTS

<u>Number</u>	<u>Width</u>	<u>Description</u>	Results = <u>Cu</u>	<u>Au</u>	<u>Ag</u>	<u>MoS<sub>2</sub></u>
22258	20'	Chip sample of disseminated chalcopyrite in granite rock.	0.15	tr.	.26)	.026
22259	20'	Chip sample of disseminated chalcopyrite in granite rock.	0.37	tr.	.22)	

5. DISCUSSION ON RECOMMENDATIONS

THE INK GROUP

Near the top of the slide area on the east side of the main creek opposite the camp is a zone of disseminated sulphide mineralization

grading 1.65% Cu, .085 oz/ton Au, and 6.38 oz/ton Ag over 10.6 feet. The mineralization is partly in a quartz sulphide vein near a granite contact and partly in the adjacent sheared and brecciated rocks. At current prices it would have a value of just over \$30.00 per ton.

The grade of the 4 foot sulphide body about 60 feet south of the above is 2.37% Cu, .02 oz/ton Au, and 3.14 oz/ton Ag for a value at current prices of about \$28.00 per ton.

Encouraging values were obtained from the east fork area, but exposure there is limited and no accurate sampling could be carried out. Assuming however, that the wall rock is barren, the value over a width of three feet would be \$24.00 per ton.

In all of the above localities difficulties were encountered in getting fresh material for a sample and in the last two these were compounded by limited exposure. It seems likely that better values might be obtained by a more thorough sampling job after some hand trenching and stripping. This would also be likely to increase the number of known showings.

Tonnages envisioned for individual bodies is modest although an aggregate could reasonably be expected to be of economic proportions.

#### THE LIN GROUP

The average grade of the chalcopyrite bearing granite sampled over 40 feet is .21% Cu, Trace Au, and .24 oz/ton Ag. Mineralization similar to that sampled occurs over a length of 400 feet or more along a northwesterly flowing creek. Although dimension of any mineralized area are not known, the scope of previous work suggests that a large area, perhaps 50 or 60 acres, may merit investigation.

## 6. GENERAL

Although in a comparatively inaccessible part of the province, the claim groups are only about 50 miles from tidewater at the mouth of the Taku River. The general area is known to be well mineralized and one former producer, the Polaris-Taku Mine, is situated 32 miles to the northwest near Tulsequah. In addition, exploration and development is being carried out in the Mount Ogden area 20 miles to the west and elsewhere in the vicinity at the present time and the discovery of any ore body would considerably enhance the transportation situation. Consideration should also be given to such developments in transportation methods as the freight carrying hovercraft, which might be particularly applicable in this area where many of the rivers are characterized by wide and open gravel flats.

A limited program of prospecting, trenching and geological work is recommended as a first stage in evaluation of the showings on the INK claims.

Prospecting should, for the most part, be restricted to detailed work in the vicinity of known showings and float occurrences. Stripping and trenching could profitably be carried out on all mineral occurrences visited on the INK claims with the object of establishing their dimensions and securing detailed assay data on the exposed zones.

The value of geological work in this area would be quite limited without some fairly accurate topographical control. As only 4 mile scale maps exist and the topography makes line cutting impractical, it is recommended that a detailed map of the area be prepared from air photographs and that geological mapping and photo interpretation be combined to establish the geological setting.

The map should cover the 20 square mile area outlined on the accompanying map (sheet 104-K) at a scale of 1,000 feet to the inch.

7. ESTIMATE OF COSTS - INK GROUP

Prospecting, Trenching & Sampling	\$2,500.
Preparation of Topographical Map	1,000.
Geological Mapping, Compilation & Interpretation	2,400.
Camp Operation & Capital: 80 man days	1,500.
Helicopter	3,000.
Fixed Wing Aircraft (Atlin Base)	800.
Assaying	1,000.
Consulting Fees & Expenses	<u>1,200.</u>
	<u>Sub Total</u> \$13,400.
Contingency Allowance - approx. 25%	<u>3,300.</u>
	<u>Total</u> <u>\$16,700.</u>

Final recommendations for work on the LIN group should not be made until the results of the previous surveys have been examined. Geological mapping and reconnaissance geochemical sampling should, however, be given priority. Although topographical mapping on the LIN claims will not be as critical as on the INK group, the proximity of the two areas and the likelihood that they are geologically related makes it expedient to include them both on one map. Geological mapping at a scale of 1,000 feet to the inch and soil geochemical sampling along topographic contours could then be carried out using the map for control. Any targets located in this manner should be considered for detailed grid controlled IP and geochemical work.

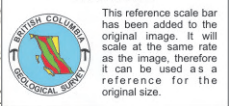
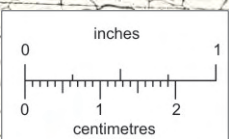
8. ESTIMATE OF COSTS - LIN GROUP

Preparation of Topographical Map	\$ 500.
Geological Mapping, Compilation & Interpretation	1,200.
Camp Operation & Capital: 25 man days	500.
Assaying	500.
Helicopter	1,200.
Fixed Wing Aircraft (Atlin Base)	400.
Consulting Fees & Expenses	<u>1,000.</u>
	<u>Sub Total</u> \$5,300.
Contingency Allowance - Approx. 25%	<u>1,300</u>
	<u>Total</u> <u>\$6,600.</u>

Total cost envisioned for a program as outlined above and including work on both the INK and LIN claims should be to the order of \$23,000. In the case of the INK group where smaller high grade deposits are envisioned, this work should provide a fairly clear picture of the economic possibilities. The LIN group, however, is tentatively viewed as a large low grade copper deposit which will require appreciably more work before any decisions can be reached.

Respectfully submitted,

T. Sadlier-Brown,  
Geologist,  
P.H. Sevensma Consultants Ltd.



This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

December 23rd, 1969.

Mr. Frank Hughes,  
Montana Mines Ltd. (NPL),  
P.O. Box 302,  
Whitehorse, Y.T.

Dear Frank:

One of our geologist's gave me your report on the Ink and Lin claims. Unfortunately, there is no map with the report and I am having a tough time assessing the text without some accompanying diagrams. If such maps exist, would you please forward them to me so that I may more accurately evaluate the geology.

Yours truly,

ATLAS EXPLORATIONS LIMITED,

J. S. Brock,  
Vice-President Exploration

JSB/mp