

Lat. 49⁰ 29'

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Suite 214-850 WEST HASTINGS STREET, VANCOUVER, B.C. TELEPHONE (604) 681-0191 V6C 1E1

GEOLOGICAL AND GEOCHEMICAL REPORT

on the

TULAMEEN RIVER PROPERTIES Locu I, II

Similkameen Mining Division - British Columbia

Long. 120⁰ 50' W

N.T.S. 92H/7W

for

LODESTONE MINING CORPORATION

GEOLOGICAL BRANCH ASSESSMENT REPORT

12,506

D.G. Allen, P. Eng. (B.C.)

December 30, 1983

Vancouver, B.C.

TABLE OF CONTENTS

SUMMARY	1 /
CONCLUSION	2 🗸
RECOMMENDATIONS	3 /
ESTIMATED COSTS OF RECOMMENDATIONS	5 /
INTRODUCTION	7,
LOCATION, ACCESS, PHYSIOGRAPHY	7 /
HISTORY	8 /
PROPERTY OWNERSHIP	9 /
GEOLOGY	10,
Regional Geology	10 /
Local Geology	10 /
MINERALIZATION	12 /
Lode Deposits	12,
Placer Deposits	14,
GEOCHEMICAL SURVEY	16/
EXPLORATION POTENTIAL	17 /
REFERENCES /	
CERTIFICATE /	

FIGURES

Figure	1	Location and Regional Geology	1:333,400	After p. 7 /
Figure	2	Access Map	1:250,000	After p. 7 /
Figure	3	Geology, Claims and Placer Leases	1:50,000	After p. 9 /
Figure	4	Geology and Structure of the Tulameen Complex	1:135,000	After p. 10 '
Figure	5	Geochemical Map	1:5,000	In pocket

TABLE

TABLE I /

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APPENDICES

APPENDIX	I	Analytical Results 🖌	
APPENDIX	II	Affidavit of Expenses /	

SUMMARY

Lodestone Mining Corporation holds four claims (Lode I to IV - 78 claim units) and 13 placer leases in the Tulameen River area of southern British Columbia. The properties are situated 20 to 25 kilometres east of Princeton and are accessible by road. The mineral claims cover parts of the Tulameen ultramafic-gabbro complex which has potential for hosting iron, copper, nickel, platinum, and chromite deposits. Large low-grade iron deposits exist on Lodestone Mountain and probably exist on the Lode claims. The nearby Placer Leases cover the upper parts of Blakeburn Creek in the Tulameen gold-platinum placer district.

The Lode claims are underlain by sheared Nicola Group metavolcanic rocks and syenogabbro and pyroxenite of the Tulameen complex. Some drilling has been undertaken in the past on the Lode I claim but it appears to have been undertaken with little direction. Rock types observed in drill cores are sheared andesite containing scattered barren quartz veins. Elsewhere in the claim area, outcrops are few confined to ridges and a few local steep areas.

The Placer Leases cover tributaries of Granite Creek, one of the major gold producing creeks in the district.

During the period July 6 and 7, 1983 and September 15 to 17, 1983, a program of road construction, preliminary geochemical sampling and geological mapping were carried out.

Geochemical sampling revealed scattered copper and nickel anomalies which warrant follow-up.

CONCLUSION

The Tulameen complex has been prospected for copper, platinum, diamond, iron and chromite deposits in the past, however, the area of interest is one of difficult explorability because of widespread glacial drift and forest cover. A study of assessment and government reports indicates that except for drilling undertaken on the magnetite deposits on Lodeston Mountain, little systematic exploration for these minerals has been undertaken.

Although best platinum grades known to date are obtained from chromite-rich peridotites in the Tulameen intrusions, economic concentrations of platinum in most ultramafic complexes (e.g. Stillwater complex, Montana; and Bushveld complex, South Africa) are associated with nickel-copper sulfide enrichments. Because of the difficult explorability as mentioned above, little exploration has been carried out to look for such concentrations. The Tulameen area is considered to be amenable to the application of modern geochemical techniques. Soil sampling and copper-nickel geochemistry is warranted.

The syenogabbroic and syendiorite phases of the Tulameen complex have been compared with those of the Copper

Mountain intrusions. Similar ages and similar parent magmas indicate that the Tulameen phases and surrounding volcanic rocks might be favorable hosts for porphyry copper or gold deposits of the Copper Mountain or "alkalic" type.

A systematic exploration program consisting of geological mapping, soil sampling and magnetic surveys is warranted to evaluate the Lode claims.

Because of their proximity to rich placer creeks, the Placer Leases should be mapped and tested.

RECOMMENDATIONS

A two stage exploration program is recommeded to evaluate the Lode claims and placer leases as follows:

Lode Claims

The Stage I program will consist of soil geochemical surveys (analysis for copper, nickel, lead, zinc, silver, gold, chroumium on a grid covering both the metavolcanic and intrusive rocks. Magnetic surveys are recommended to outline structures and magnetite distribution. Should results be favorable, then a Stage II program of trenching and diamond drilling should be undertaken.

Placer Leases

The Stage I program will consist of geological mapping, preliminary test pitting in accessible areas and geophysical surveys. Purpose of the work would be to locate any bench

gravels or possible buried channels. Magnetic surveys are recommended to outline any magnetite-rich sands in bench gravels or buried channels. Should results be favorable, then a Stage II program of road construction, test pitting with backhoe and/or overburden drilling should be undertaken.

Estimated costs of Stage I and II are \$63,000 and \$154,000 respectively, for a grand total of \$217,000.

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ESTIMATED COSTS OF RECOMMENDATIONS

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Stage I	
A. Lode Claims: geochemical sampling, magnetic su geological mapping.	irveys,
Geologist 1 month @ \$6000.	\$ 6,000
Soil sampling crew and magnetometer operator 4 men @ \$2500/mo	10,000
Magnetometer rental	1,000
Room and board 150 man days @ \$35	5,250
Vehicle and travel expenses	2,000
Material and supplies	500
Geochemical analyses 1000 samples @ \$7	7,000
Maps, reports, draughting	1,500
Contingencies	\$ 33,250 3,750
Lode Claim Total	\$ 37,000
B. Placer Leases: mapping, test pitting in selec areas and magnetic surveys.	ted
Geologist 1 month @ \$6000	\$ 6,000
Assistants 2 men @ \$2500/mo	5,000
Magnetometer rental	1,000
Room and board 90 man days @ \$35	3,150
Vehicle and travel expenses	1,500
Assay 100 @ \$20	2,000
Backhoe rental 50 hours @ \$80 (all incl.)	4,000
Contingencies	\$ 22,650 3,350
Placer Leases Total	\$ 26,000
Total Stage I	\$ 63,000

ESTIMATED COSTS OF RECOMMENDATIONS (cont.)

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<u>Stage II</u>	
A. Lode Claims: trenching and drilling.	
Bulldozer: trenching, road construction and drill site preparation 200.hours @ \$80/hr (all incl.)	\$ 16,000
Drilling 1500 feet @ \$35/ft (all incl.)	52,500
Engineering, supervision, assays	15,000
Contingencies	\$ 83,500 8,500
Lode Claims Total	\$ 92,000
B. Placer Leases: systematic testing. Bulldozer and backhoe rental	
200 hours @ \$80/hr (all incl.)	\$ 16,000
Placer equipment rental	10,000
Operation of equipment	5,000
Material and supplies	5,000
Labour 2 men @ \$2500/mo	5,000
Room and board 60 man days @ \$35	2,100
Vehicle rental and operation	1,500
Assays	5,000
Geologist 1 month @ \$6000	6,000
Contingencies	\$ 55,600 6,400
Placer Leases Total	\$ 62,000
Total Stage II	\$154,000
Total Stage I	\$ 63,000
Total Stage II	154,000
Grand Total	\$217,000

INTRODUCTION

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Lodestone Mining Corporation holds 13 Placer Leases and four mineral claims, Lode I to IV, totalling 78 claim units in the Tulameen River area of southern British Columbia. The mineral claims cover parts of the Tulameen ultramaficgabbro complex which has potential for hosting iron, copper, nickel, platinum and chromite deposits. The nearby Placer Leases cover the upper parts of Blakeburn and Badger Creeks, both tributaries of Granite Creek. The latter creek was one of the most prolific producers of gold and platinum in the Tulameen placer gold camp.

The Lode claims and several of the Placer Leases were examined by the writer on July 6 and 7, 1983. Glen Partridge, Kevin and Bruce Stewart, field technicians for Lodestone Mining, assisted the writer. Road construction and several lines of soil geochemical sampling were carried out during the period September 15 to 17, 1983. Work was carried out by S. Travis, J. Travis, K. Stewart and Bruce Stewart. Bulldozer work was carried out by Dr. Rice.

LOCATION, ACCESS, PHYSIOGRAPHY

The Lode claims and Placer Leases held by Lodestone Mining are situated in the Tulameen River area, 20 to 25 kilometres east of Princeton (Figures 1 and 2).



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The Lode claims cover the ridge south of Olivine Mountain between Champion and Slate Creeks (Figure 3). Elevations range from 4500 to 6000 feet (1400 to 1800 metres). Topography in the claim area is gentle with a few local steep bluffs. Outcrops are confined to these bluffs and ridge tops. Slopes are covered with a virgin growth of Jack pine and balsam fir which have been logged in places.

The Placer Leases cover parts of Blakeburn and Badger Creeks, both of which are tributaries of Granite Creek. Slopes in the area range from gentle to moderately steep.

HISTORY

The Tulameen area is one of British Columbia's oldest placer camps, having been discovered prior to 1885. In 1891 the camp was recognized as an important producer of platinum. Recorded gold production from the camp from 1886 to 1941 is 37,422 ounces of gold (Holland, 1950). Platinum production is not well documented but has been estimated by O'Neill and Gunning (1934) at about 20,000 ounces.

The Olivine-Lodestone Mountain area has been prospected and repeatedly staked in recent years, but as far as the writer is aware, no systematic exploration for platinoid minerals, chromite or copper-nickel deposits has been carried out. Imperial Metals and Power Ltd have carried out drilling on their adjacent claims on Lodestone Mountain and have outlined a total of 176.9 million tonnes grading 14.5% iron (B.C. Ministry of Mines Mineral Deposits File).

Various government workers have mapped the Tulameen area, e.g., Camsell (1913), Rice (1947), Eastwood (1959), Findlay, (1969). Raicevic and Cabri (1976) have studied the mineralogy and concentration of placer material from the Tulameen River.

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Some drilling was undertaken on the Lode I claims as is evident by drill core lying on the property, however, there are no known records of results, nor of any prior geochemical or geophysical surveys to guide drilling.

PROPERTY OWNERSHIP

The property holdings of Lodestone Mining Corporation include the following claims and leases:

<u>Claim</u>	Name	<u>No. of Units</u>	Record No.	Expiry Date
Lode	Ι	20	1223 (11)	November 5, 1983
Lode	II	20	1240 (11)	November 13, 1983
Lode	III	20	1713 (9)	September 17, 1983
Lode	IV	18	1712 (9)	September 17, 1983
Placer	Lease	e No.		Expiry Date
480	1-4806	5		November 13, 1984
557	6-5579)		December 31, 1983
833	8-8339)		March 24, 1984
925	8			-



N.T S. 92 H/7W

Geology after Camsell (1913) and Ruckmick (1956).

LEGEND

PRINCETON GROUP Basalt

EAGLE INTRUSIONS Granodiorite

TULAMEEN ULTRAMAFIC COMPLEX Dunite

Peridotite

6

5

4

3

2

1

Pyroxenite

Syenogabbro, syenodiorite

NICOLA GROUP Metavolcanic and metasedimentary rocks

<u>SYMBOLS</u>

Magnetic greater than 20%.

Claim, placer lease boundaries.

Rock sample site, sample number.

Sediment sample site, sample number.

access load (AWD)



LODESTONE MINING CORPORATION LTD. GEOLOGY, CLAIMS & PLACER LEASES exploration ltd. Figure 3

GEOLOGY

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Regional Geology

The Lodestone Mining Properties are situated in the Princeton Map Area (Rice, 1947). The Tulameen River area is underlain by metasedimentary and metavolcanic schists of the Upper Triassic Nicola Group (unit 1, Figure 1) that have been intruded by syenogabbroic and ultramafic rocks of the Tulameen complex. According to Findlay (1969) Nicola rocks in the Tulameen area are dominantly albite-epidoteamphibole schists and calcareous greenschists derived from andesitic to basaltic flows. Metasediments, including argillaceous quartzites, quartz-mica-plagioclase schists, and crystalline limestone bands are subordinate. Other intrusions in the area include the Eagle granodiorite (a member of the Coast Plutonic Complex, unit 3) and the Copper Mountain intrusions. The latter are indicated by Findlay to be related to the gabbroic phases of the Tulameen complex. Tertiary sedimentary rocks (units 6 and 7) outcrop to the east and southeast of the complex.

Local Geology

The Lode claims cover part of the Tulameen ultramaficgabbroic complex and Nicola group volcanic rocks on the west side of the complex (Figures 3 and 4). The Placer Leases lie on streams that drain the complex. The geology and various aspects of the economic geology of the complex



Figure 4. Geology and structure of Tulameen Complex (after Findlay, 1969).

have been well described by Camsell (1913), Ruckmick (1956), Eastwood (1959), Findlay (1969) and Roberts et al (1970).

The Tulameen complex is an "Alaskan-type" ultramafic complex. According to Findlay

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"...the ultramafic units for an elongate body that dips steeply to the west and is bordered by, and partly overlain by gabbroic rocks (Fig. 2). Gabbroic and ultramafic rocks occur in about equal amounts, but their distribution is asymmetric, with the former mainly restricted to the eastern and southeastern parts of the complex. The total exposure area of the complex is about 22 sq. mi. (57 km²).

Ultramafic rocks outcrop in three areas within the complex....

The principal ultramafic rocks are dunite, olivine clinopyroxenite, and hornblende clinopyroxenite. Peridotite, clinopyroxenite, hornblende-olivine clinopyroxenite, and hornblendite are subordinate and generally not mappable units. A minor feldspathic rock - mafic pegmatite - is probably a late differentiate of the ultramafic suite.

In the northern part of the complex, the ultramafic units display the characteristic zonal pattern of similar intrusions in Alaska and U.S.S.R., comprising a dunite core surrounded by shells of olivine clinopyroxenite and hornblende clinopyroxenite. South of Olivine Mountain, where dunite is not exposed, the two main ultramafic zones contain a median zone of olivine clinopyroxenite bounded by hornblende clinopyroxenite. In the Tanglewood Hill area, hornblende clinopyroxenite is the principal ultramafic type exposed.

The principal gabbroic types are syenogabbro and syenodiorite with the former most abundant. In addition to forming the large mass lying to the east of Lodestone Mountain, gabbroic rocks occur elsewhere as smaller bands and lenses, notably south of Olivine Mountain along the west margin of the complex, on the northeast flank of Olivine Mountain, and on Lodestone Mountain."

Outcrops on the Lode claims are not abundant because of glacial drift and forest cover. The Lode claims are underlain mainly by syenogabbro, peridotite (olivine clinopyroxenite) and pyroxenite (hornblende clinopyroxenite) and Nicola group metavolcanic rocks. Metavolcanic rocks observed in drill core (Sample Site 206) and on surface on the Lode II claim are chlorite schists.

MINERALIZATION

Lode Deposits

In addition to the large tonnage low-grade iron deposits, minor amounts of copper, chromite, platinum, and diamonds have been reported in the ultramafic-gabbroic phases of the Tulameen complex. However, except for drilling by Imperail Metals on their magnetite deposit

there appears to have been little systematic exploration for such deposits. This may in part be due to extensive forest cover and lack of outcrops.

<u>Magnetite:</u> magnetite in the Tulameen complex was studied by Eastwood (1959) and Ruckmick (1956). Abundant magnetite occurs in the pyroxenite phase and locally in the peridotitedunite. Mapping by Ruckmick outlined a large area containing greater then 20% magnetite, including parts of the Lode claims. Drilling by Imperial Metals on Lodestone Mountain and Tanglewood Hill has outlined 176.9 million tonnes grading 14.5% iron. Two samples of magnetite-rich pyroxenite (samples 207 and 210) sampled by the writer were found to contain 15 to 20% Fe_2O_3 indicating that a large tonnage of similar material may be present on the Lode claims.

<u>Copper:</u> copper occurrences are reported in the Olivine Mountain area. According to Camsell (1913) they appear to be confined to east-west zones of shearing although chalcopyrite is a primary mineral in places. Several rusty shear zones were examined and sampled by the writer. Copper values obtained were up to 430 ppm (0.043% Cu - see Appendix I).

<u>Chromite:</u> chromite occurs near the outer borders of the peridotite phase of the Tulameen complex. It is a primary mineral and occurs as disseminated grains scattered throughout the peridotite and locally as irregular veins or masses up to 10-15 centimetres in diameter.

<u>Platinum:</u> the ultramafic complex is undoubtedly the source of platinoid minerals in the Tulameen placer deposits. Findlay (1963) studied the distribution of platinum in the major rock types of the complex and found highest concentrations (up to 0.0225 ppm Pt) in the dunites and peridotites. Sulfide-rich differentiates however, host platinoid minerals in most mineable deposits of the world. These should be explored for in the Tulameen area.

<u>Diamonds:</u> Camsell (1913) reports the presence of diamonds, which are associated with chromite in the dunite. The diamonds are small and of good quality but break up on exposure to the atmosphere.

Placer Deposits

The Tulameen River area is well-known for its placer gold and platinum deposits. The placer deposits were described by Camsell (1913), O'Neill and Gunning (1934) and Raicevic and Cabri (1976). The placer leases held by Lodestone Mining Corporation cover tributaries of Granite Creek which was one of the most productive creeks in the Tulameen camp.

The gold and platinoid minerals in the camp are accompanied by chromite, magnetite, and in places native copper. The platinoid minerals, chromite, and magnetite were derived by erosion of the ultramafic rocks of the Tulameen complex. The gold is thought to have originated from gold-bearing veins in Nicola group rocks in the vicinity of Grasshopper

Mountain, but this has not been proven. According to Raicevic and Cabri:

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"The gold and platinum of the placers must have been released from the parent rocks in preglacial time and deposited in preglacial placers, because, since glacial times, although canyons have been cut in the floors of some of the valleys, erosion has not succeeded in removing the mantle of glacial debris over most of the area, much less eroding any quantity of the underlying rock. Some dissipation of preglacial placers must have occurred, as well as further concentration during postglacial times by reworked deposits in the present river beds. The ice-sheet also filled up some valleys with detritus so that, in some cases, the streams did not re-occupy their original channels after the retreat of the ice. There is, therefore, the possibility of the occurrence of buried placer deposits."

Test pitting was carried out by Lodestone Mining personnel in 1980 and 1982 on Blakeburn and Olivine Creek. Mason (1981) reports significant gold and platinum assays on concentrates. Reconnaissance panning was carried out by the writer on tributaries of Blakeburn Creek (sample sites 212 and 213, Figure 3). Only minor gold values were obtained (see assay of panned concentrate - Appendix I) however, only surface gravels could be sampled. Gravels at or near bedrock should be sampled with backhoe or drill.

GEOCHEMICAL SURVEY

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Several test lines of soil geochemical sampling (85 samples) were carried out on the Lode III and IV claims. Soil material was taken at depths of up to 25 centimetres in the B Horizon and consisted mainly of glacial till. Soil was placed in paper sample bags and shipped to Rossbacher Laboratory Ltd. for nine element analyses by standard atomic absorption techniques. In addition, a number of rock samples were taken where outcrops were encountered (Table I).

Sample sites are plotted on Figure 5 and analytical results presented in Appendix I. Anomalous geochemical results for copper (>60 ppm), nickel (>60 ppm) and silver (>1.0 ppm) are also presented on Figure 5.

Many of the soil samples taken on the Lode IV claim revealed weakly to mederately anomalous copper values (60 to 152 ppm). Scattered mickel anomalies with or without copper were obtained in the southwest part of the Lode III claim.

Two rock samples of magnetite-rich pyroxenite were checked for iron (207 and 210) and found to contain up to 20% Fe. Gold values on selected rock samples were found to be negative. Significant lead and silver values were obtained on sample ST 31 (1080 and 3.0 ppm, respectively).

TABLE I

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Sample No.	Sample Descriptions
83 AT 206	Drill core: selected quartz vein material in foliated chlorite schist.
207	Magnetite-rich pyroxenite.
208	Siliceous altered pyroxenite? with dissem- inated pyrite.
209	Rusty shear zone with trace pyrite, minor quartz.
210	Rusty carbonatized pyroxenite with chlorite- rich layers; disseminated magnetite and minor pyrite and chalcopyrite.
211	Quartz veined chloritized andesite.
83 AL 212	Panned concentrate.
213	Panned concentrate.
203 ST 31	Diorite?

EXPLORATION POTENTIAL

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The Tulameen complex is an "Alaskan-type" ultramafic complex, i.e., a concentrically zoned ultramafic body resulting from successive intrusions of liquid basic and ultrabasic magmas. Cabri (1981) in a study of the association of platinum with ultramafic bodies concluded that although "Alaskan-type" complexes are known worldwide, few have been studied from the point of view of determining zones of economic interest. Placer platinum deposits derived from erosion of these types are common. Bedrock mining has been undertaken from such types in the Ural Mountains of the U.S.S.R. but they are not well documented.

Small high grade platiniferous dunite pipes are known in the Bushveld layered ultramafic complex of South Africa (e.g., see Stumpfl and Rucklidge, 1982). According to Boyle (1982) they are not known in the Canadian Cordillera and should be sought in or near any ultrabasic-basic complexes.

Comparisons have been made of the syenogabbro and syenodiorite of the Tulameen and Copper Mountain intrusions. The latter intrusions and surrounding Nicola group volcanic rocks, 27 kilometres to the southeast, host the Copper Mountain and Ingerbelle deposits (1975 reserves: 55.7 million tons containing 0.53% copper and 0.18 grams/tonne gold). The Ingerbelle and Copper Mountain deposits are two of a number of "alkalic-type" copper and gold deposits

associated with Upper Triassic volcanic and intrusive rocks throughout Central British Columbia.

In summary, all rock types in the Lode claim area warrant exploration.

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CERTIFICATE

I, Donald G. Allen certify that:

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- 1. I am a Consulting Geological Engineer, resident at 4570 Hoskins Road, North Vancouver, B.C.
- I am a graduate of the University of British Columbia with degrees in Geological Engineering. (B.A.Sc., 1964; M.A.Sc., 1966).
- 3. I have been practising my profession since 1964.
- 4. I am a member in good standing of the Association of Professional Engineers of British Columbia.
- 5. This report is based on fieldwork carried out personally on July 6 and 7, 1983, on fieldwork carried out by S. Travis and J. Travis on September 15 to 17, 1983, and on information listed under References.
- 6. I hold no interest, nor do I expect to receive any, in the LODE claims, placer leases in question, or in Lodestone Mining Corporation.
- 7. I consent to the use of this report in a Statement of Material Facts or in a Prospectus by Lodestone Mining Corporation.

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Donald G. Allen, P. Eng. (B. C.)

December 30, 1983 Vancouver, B. C. APPENDIX I

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ANALYTICAL RESULTS

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Kossbacher Laboratory Ltd. BURNABY CANADA TELEPHO

BURNABY, B.C. TELEPHONE: 299-6910

GEOCHEMICAL ANALYSTS & ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 83462-1 3267 INVOICE NO.

TO: A & M EXPLORATION LTD.

DATE ANALYSED OCT 5, 1983

ample 7-TS-2/ 2B 3 4 5 6 7 8 9 -TS- IC 11 12 13 14 15 16 17 8 9 -TS- IC 11 12 13 14 15 16 17 18 19 19 19 19 19 19 19 19 19 19	PH	Mo / / / / / / / / / / / / / / / / / / /	2 264 5 2 3 9 5 3 3 8 5 4 3 3 4 8 5	Ag 10 0.4 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	22 80 74 64 46 58 76 58 76 80 80 64 64 54 64	PB 186 2 7 7 7 7 4 4 4 4 4 4 4 7 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2	Ni 60 54 54 54 54 54 54 54 54 52 22 36 68 46	LO 28 26 27 24 32 16 26 10 16 27 18	MA 780 900 760 520 720 580 440 1240 300 380 380	Fen 4.7 6.3 7.1 5.6 5.0 10.8 3.7 5.2 4.4 4.9		No. 01 02 03 04 05 06 07 08 09 10 11
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28 3 4 5 6 7 8 9 -Ts- 10 13 13 14 13 14 13 14 13 14 13 14 13 14 13 14 13 14 13 14 13 14 14 13 14 14 13 14 14 14 14 14 14 14 14 14 14 14 14 14			26 54 52 30 58 30 26 4 33 38 80 5	0.4 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	74 64 46 58 76 82 64 64 64 54 64	6 2 2 2 2 4 4 4 4 4 4 4 4 4 4 7	54 44 54 54 60 94 52 22 36 68 46	28 26 22 24 36 26 26 10 16 27 18	900 760 520 720 580 440 1240 300 380 860	6.3 7.1 5.6 5.0 10.8 3.7 5.2 4.2 5.4 4.9		02 03 04 05 06 07 08 09 10 11
3 4 5 6 7 8 9 - 7 - 10 - 11 2 8 - 11 2 8 - 12 - 11 2 - 12 - 12			5 5 7 3 9 5 3 3 8 5 X 3 3 4 8 5	0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	64 46 58 76 80 64 64 64 54 64	2 2 2 4 4 4 4 4 4 4 4 4 7	44 54 60 94 52 36 68 46	26 22 32 16 26 10 16 27 18	760 520 720 580 440 1240 300 380 880	7.1 5.6 5.0 10.8 3.7 5.2 4.2 5.4 4.9		03 04 05 06 07 08 09 10 11
-Ts- 10 -Ts- 10 -Ts- 10 -Ts- 11 -Ts- 12 -Ts- 12 -Ts			5 72 60 58 30 80 7 33 80 5	0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	46 58 76 82 64 66 64 54 66	2 2 4 4 4 4 4 4 4 4 2	54 54 60 94 52 22 36 68 46 40	22 24 31 16 26 10 16 27 18	520 720 580 440 1240 300 380 880	5.6 5.0 10.8 3.7 5.2 4.2 5.4 4.9		04 05 06 07 08 09 10 11
5 6 7 8 9 -Ts- IC 12 -Ts- IC 12 13 14 13 14 15 19 19 18 			72 30 50 30 20 X 33 80 X	0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	66 58 76 80 64 64 64 54 54	2 2 4 4 4 4 4 4 4 2	54 60 94 52 22 36 68 46	24 32 16 26 10 16 22 18	720 580 440 1240 300 380 880	5.0 10.8 3.7 5.2 4.2 5.4 4.9		05 06 07 08 09 10 11
6 7 8 9 -Ts- 10 11 12 13 14 15 14 15 16 18 18 19 18 19			2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	58 76 82 64 64 64 54 54	2 4 4 4 4 4 4 4 2	60 94 52 36 68 46	31 16 26 10 16 22 18	580 440 1240 300 380 880	10.8 3.7 5.2 4.2 5.4 5.4 4.9		06 07 08 09 10 11
7 8 9 -Ts- 10 12 13 13 14 15 14 15 14 15 19 18 19 18 19			958 30 200 X 334 8 5	0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	76 82 64 64 64 64 54 64	4 4 4 4 4 4 2	94 52 22 36 68 46 40	16 26 10 16 22 18	440 1240 300 380 880	3.7 5.2 4.2 5.4 4.9		07 08 09 10
8 9 -Ts- 10 11 12 13 13 14 15 15 15 15 15 18 18 19		} 	58 8 8 2 2 3 8 8 4 8 4 8 4 4 8 4 8 4 8 4 8 4 8 4 8 4 8 4 8 4 8 4 4 8 4 8 4 4 8 4 4 8 4 4 8 4 4 8 4 4 4 8 4 4 4 8 4 4 4 8 4 4 4 8 4 4 4 8 4	0. 2 0. 2 0. 2 0. 2 0. 2 0. 2 0. 2	82 64 60 64 54 54	4 4 4 4 4 2	52 22 36 68 46 40	26 10 16 22 18	1240 300 380 880	5.2 4.2 5.4 4.9		08 09 10 11
9 Ts 11 		1 f 1 1 1 5 f 1 1	3 2 2 2 3 3 2 4 2 4 4 4 4 4 4 4 4 4 4 4	0.2 0.2 D.4 D.2 0.2 0.2	64 64 64 54 66	4 4 4 4 2	22 36 68 46 40	10 16 22 18	300 380 880	4.2 5.4 4.9		09 10 11
<u>-Ts- K</u> 2 2 3 3 2 2 4 5 5 5 12 12 12 12 12 12 12 12 12 12		{ } } } }	200 X 33 40 X	0.2 D.4 0.2 0.2	66 80 64 54 64	4 4 4 2	36 68 46	16 22 18	380 880	5.4 4.9		<u>10</u>
 2 3 3 4 4 4 5 6 5 6 12 12 12 12 12 12 12 12 12 12) 		D.4 D.2 0.2 0.2		4 4 2	68 46 40	22	880	4.9		11
2 3 4 4 5 5 5 5 5 5 1 5 1 1) 	- XU 3X 34 - 80 - 55	0.2 0.2	64 54 bb	4	46	18	lina		↓	
13 14 15 16 10 18 18 18		 	32 34 180	0.2	_54 	2,	U.O.		700	4.5		12
14 15 16 17 18)) (34 180 5,8	0.2	66	11	TX	<u>z6</u>	540	7.6		13
15 16 17 18 18 18		1 1	180 51	1 11	the second se	4	38	16	340	4.1		14
		<u> </u>	/ ~~/P	_1_4_	76	6	112	16	1643	3.4		15
1) 18 18 19		, ,		0.2	_58	4	50	27	320	49		16
		,	18	0.2	52	4	78	-16	240	4.4		17
<u> </u>		<u> </u>	24	D. Z.	76	2		36	340	.9.0		18
7. Tr '1-			12	0.7	64	4	30	27	360	.6.5		19
<u>ىلە - دا ،</u>		. 1	30	o. 4.	50	4	50	18	300	4.1		20
al		1		0.2	66	Ļ	54	20	380	4.9		21
2		1	-18	0.2	40		54	.18	150	3.2		22
		1	20	0.2	_54	6	46	14	320	4.5		23
<u></u>		<u> </u>		0, 2	58	4	30	14	32.0	3.9		24
<u>2</u>		1	<u>38</u>	0.2	- 68	4	60	z'a	440	4.8		25
2	•		HD	0.2	- 48	4	36	_16_	300	4.5		26
		1	68	0.2	58	4	58	16	540	3.6		27
28			30	02	60	6	60	16	320	4.0		28
24	 	/	_50	02	60	2	-38	22	6.00	5-6		29
<u>7-75-30</u>		ζ [118	0.4	64		16	14	543	40	<u> </u>	30
31		1	_ 52	6.2	60	6	16	14	420	4.7	<u> </u>	31
2		1		a. 7.	- 64		26	14	300	4.6		32
33		1	_90	0.2	02	4	82	z6	1340	42		33
34		1	_86	0.4	. 82	4	5-2	20	1400	4.5		34
35		1	78	0.4	52	4	-38	12	780	2.6	ļ	35
36			28	0.2	48,	6	-18-	6_	220	3.2	 	36
<u> </u>			_56	0.2	16	6	47	12	840	3		37
Л			28	0.2	30	4	26	10	260	<u>3.7</u>	·	38
58	1 1		60	0.2	70	4	40	70	760	4.4	.	/3'9
<u></u>	↓	28	156	0.8	154		16	7	140	2.9		<u> </u>
· · · ·	20 2	24 2-TS-30 31 22 33 34 35 35 35 37 58 17-TS-34 17-R-34	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

Kossbacher Laboratory Ltd.

GEOCHEMICAL ANALYSTS & ASSAYERS

BURNABY, B.C. CANADA TELEPHONE: 299-6910

CERTIFICATE NO. 83462-2 INVOICE NO. 5267

TO: A & M EXPLORATION LTD.

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CERTIFICATE OF ANALYSIS

DATE ANALYSED OCT 5, 1983 100

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No.	Sample	рΗ	Mo	Cu	Ag	Zn	P6	Ni	6	Ma	Fe			No.
01	83-197-TS-40		1	26	0.7	80	6	42	20	600	4.9			01
02	83-197- TS-41		1	14	02	66	H	32	20	700	5.4			02
03	83-197-55- 1)	20	1.2	.58	4	30	14	280	5.4			03
04	2		2	70	0.2	66	4	56	Z4	720	5.1			04
Q5	3		5	30	0.2	60	2	38	20	340	5.4			05
06	<u> </u>		2	192	0 Z	_72	8	84	- 18	920	5.3			06
07	5		1		02	46	4	56	20	400	6.0			07
08	6			26	0.2	54	2	40	_18_	260	55			08
09	7		2		02	- 52	2	38	18	280	5.2			09
10	<u>83-197-55-8</u>		<u>ا</u>	KD	0.2	76	_2	50	32	440	8.2			10
11			2	381	D.2	_ <u>Z</u> 0		48	_20	400	5-6			11
12	/o		- 1	54	0.2	40	6	104	20	620	<u> 3. Z</u>			12
13	<u>1</u>]			40	0.2	_50	2	38	18	360	4.6		-	13
14	R		2	26	0.2	46	4	64	18	320	<u> 4. </u>			14
15			ſ	.38	0.2	_50	4	40	_14	400	<u> </u>			15
16			}.	_ 30	07	54	2	42	_/8	360	4.6			16
17			2	110	0.2	64	<u> </u>	<u> </u>	Z4	320	4.7			17
18	16		1	30	0.2	52	6	32	16	280	3.9			18
19	<u></u>		3	30	0.2	<u>_ 40</u>	4	_44	18	280	4.7			19
20	<u>83-197-55-18</u>			34	02	<u>50</u>	6	<u> </u>	12	280	3.8			20
21			1	40	0.2	60	2	<u>62</u>	24	420	5.8			21
22	20		3_	38	0.7	56	4	34	16	360	<u>5.3</u>			22
23	2/		- 1	22	0.2	581	2	- 69	30	360	1.2			23
24	22	-+		_ 4.0	0-2	_64	4	_3.8	20	300	5.3			24
25	. 25			106	0.2	- 86	<u> </u>	40	20	543	47			25
26			-1	42	P.2	_76	6	26	_18	480	<u>45</u>			26
27	<u></u>		<u>'</u>	Z	0.2	_84	_ 4	_36	22	620	<u> 4. </u>			27
28	<u></u>		1		02	_66	6	26	6	380	4.1			28
29	27		<u> </u>		2	54	_4	32	18	460	5.0			29
30	85-197-28		Z	<u> </u>	0:2	8		28	20	560	<u> </u>	*		30
31	24			90	02	84		-28	20	480	<u>5,4</u>			31
32	30			102	12	102	6	26	20	- 843	5-8			32
33			I	106	0.2	720	4	<u> </u>	24	5 60	5.0			33
34	72 102 (5 711				0.2			16	-14	439	2)		I	34
35	85-14 1-5 3-54			116	0.6	16	0	<u> </u>	20	480	45		<u> </u>	35
17	C		<i>I</i> 6	164	_0.6	10	_76	_50	-10	113	1, 1,			36
3#										<u> </u>				37
20		+			,									38
37										<u></u>	<u></u>		<i> </i> /	39
		1	1	1			1		- 1	1 /	1	1 /	$\sim U$	40

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Certified by

Kossbacher Laboratory Ltd.

BURNABY, B.C. CANADA TELEPHONE: 299-6910 CERTIFICATE NO. 83462-3

GEOCHEMICAL ANALYSTS & ASSAYERS

CERTIFICATE OF ANALYSIS

INVOICE NO.

A & M EXPLORATION LTD.

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DATE ANALYSED 83/10/12

No.	Sample	pН	Mo	Cu	Aa	Zn	P6	N Ľ	6	Ma	Fe	,		No.
01	83-197-57-31		2	136	3.0	104	1080	22	30	380	7.1			01
02						_								02
03														03
5														04
05														05
06														06
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40										1 / /	7	1		40

Kossbacher Laboratory Ltd.

BURNABY, B C. CANADA TELEPHONE 299-6910

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GEOCHEMICAL ANALYSTS & ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 83462 - 5 4033 INVOICE NO. DATE ANALYSED 83/10/12

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A & M EXPLORATION LTD. , , ,

PROJECT 147

No. Sample PH Mo Cu Ag 2n Pb Ni Co Mn Fel No 01 83.75.472 2 58 0.2 82 24 510 0.1 00 02 73 1 102 0.2 82 2.18 24 510 57 00 04 445 1 11/6 0.2 78 422 2 440 5.1 00 05 740 1 11/6 0.2 78 422 2 440 5.1 00 05 740 1 74 0.2 78 422 16 420 42 10 16 68 640 5.4 00 5.4 0.0 78 74 2.7 2.0 620 5.8 00 5.6 10 10 5.7 0.2 82 32 2.2 6.0 5.8 00 10 10 10		·		····	· • • • • • • • • • • • • • • • • • • •	. / .				r	ROJECI	19 1			
11 23 58 0.2 68 6 32 24 510 01 02 43 1 102 4.2 28 24 510 6.7 02 03 44 1 102 0.2 78 4 21 2.4 510 5.7 02 04 445 1 102 0.2 78 4 21 2.4 500 5.5 04 05 440 1 62 0.2 78 2 2.4 70 75 04 06 47 1 1 62 0.2 78 2 72 2.6 76 42 1 05 04 05 06 75 1 07 05 1 07 05 1 07 08 09 1 2.6 2.7 2.7 2.0 42.0 1 07 08 09 10 11 10 10 10 101 10 10 10 10 10 10 10	No.	Sampl •	рΗ	Mo	Cu	As	22	PЬ	Ni	6	m	Fel			No
1 1	01	83- TS- 42		2	58	0.2	68	6	32	24	520	6.1			01
03 YU 1 \$\$Z\$ 0.2 7\$ Y 22 2.2 4 \$\$S\$ 04 04 445 1 \$\$I/6 0.2 7\$ \$\$Z\$ \$\$Y\$ 30 \$\$Do \$\$S\$ 04 05 445 1 \$\$D 0.2 \$\$C\$ 4 \$\$Z\$ 1 \$\$Do \$\$S\$ 04 05 445 1 \$\$D \$\$D \$\$Z\$ \$Z\$ \$Z\$ \$Z\$ <t< td=""><td>02</td><td>43</td><td></td><td>1</td><td>102</td><td>0.2</td><td>82</td><td>ス</td><td>23</td><td>24</td><td>560</td><td>5.3</td><td></td><td></td><td>02</td></t<>	02	43		1	102	0.2	82	ス	23	24	560	5.3			02
04 445 1 61/6 0.2 78 2 42 30 800 5.5 44 05 41/6 1 62 0.2 64 A 2.7 16 420 5.5 44 05 47 1 16 0.2 64 A 2.7 16 420 5.5 10 05 07 83-15 41 1 74 0.2 84 43 2 2.4 65 5.1 05 08 56 1 74 0.2 84 43 2 2.4 65 5.1 07 09 50 1 74 0.2 84 2.2 2.0 97.0 4.6 01 11 50 1 72 0.2 82 2.2 2.0 87.0 4.6 11 12 23.57.5 31 1.52 0.2 1.6 2.1 3.6 7.6 6.5 11 13 14 33.57.7 3.6 7.6 3.7 <th< td=""><td>03</td><td>44</td><td></td><td>1</td><td>82</td><td>0.2</td><td>78</td><td>4</td><td>22</td><td>22</td><td>480</td><td>5.1</td><td></td><td></td><td>03</td></th<>	03	44		1	82	0.2	78	4	22	22	480	5.1			03
05 4/b 1 68 0.2 64 2 1 1 65 65 66 72 3 2 2 6 6 6 6 6 6 6 6 6 7 8 99 90 5 1 7 90 9	04	45		Ĩ	116	0.2	78	え	42	30	800	5.5			04
106 47 1 1 1 72 2 3 2 2.6 840 5.4 66 07 83-T5 49 1 74 0.2 84 4 3 2 24 650 5.4 07 07 08 447 1 74 0.2 84 2 3 2 2 640 5.4 07 07 10 51 1 94 0.2 84 2 3 2 2 640 5.6 10 11 50 1 94 0.2 84 2 3 2 2 66 5.6 11 12 23-75 55 1 152 9.2 136 2 22 3 6 6.5 12 13 1 1.52 1.2 1.6 12 13 13 14 13 15 15 15 15 15 16 17 15 16 17 17 16 17 17 19	05	46		. 1	62	0.2	64	l.	27	16	420	4.2			05
107 83-T5 48 1 74 6.7 49 5.1 67 08 49 1 56 0.2 74 4 2.7 2.0 42.9 9 68 09 56 1 94 0.2 74 42 2.7 2.0 42.0 4.6 10 11 50 1 70 0.2 80 2.32 2.0 84.0 4.6 10 11 50 1 70 0.2 80 2.32 2.0 84.0 4.6 10 11 50 1 72 0.2 80 2.12 3.6 80.0 5.7 12 13 - - - - - 13 13 14 55 - 1.02 1.02 1.04 10.0 2.0 3.0 3.0 7.1 14 15 - - 1.02 1.02 1.02 3.0 3.0 7.1 14 16 - - - 0.0<	06	47			116	0.2	100	Z	32	26	680	5.4			06
08 44 1 56 0.2 76 44 2.7 2.0 47.9 08 09 50 1 94 0.2 44 2.37 2.0 66 5.6 09 10 51 1 92 0.2 26 2.37 2.0 670 5.7 10 11 500 11 20 2.2 82 47 32 2.0 500 4.4 11 11 11 12 23-75 500 4.4 11 11 12 23-75 36 760 6.3 12 12 36 760 6.3 12 13 13 14 53-57 37 .2 7.0 70 108 20 2.2 30 380 7.7 14 15 16 1 1 10 10 10 10 10 10 10 16 1 1 1 10 10 10 10 10 10 10 10 10 10 10 <	07	83-75 48			74.	0.2	84	4	32	24	640	5.1			07
1 94 0.2 64 2 32 2 2 66 5.8 69 10 57 1 90 0.2 80 2 32 2 36 66 5.8 10 11 53 1 1 20 0.2 80 472 2 50 64.4 11 12 23-75 53 1 1.32 0.2 1.36 2 22 36 960 6.5 112 13 - - - - - - - 13 14 33-57-3/ -2 1.36 2.0 104/1080 2.2 30 380 7.7 14 16 - - - - - - 11 17 - - - - - - 11 17 18 - - - - - - 11 12 20 - - - - - 21 22	08			<u> </u>	- 58	0.Z	76	4	27	20	420	<u>4.9</u>			08
10 51 1 90 0.2 80 237 20 80 444 10 11 53 1 20 0.2 82 4 32 20 500 444 11 12 23-15-53 1 152 0.2 136 2 22 36 500 444 11 13 - - - - - 13 - - 13 14 73-57 2 2 136 30 380 7.7 14 15 - - - - - - 16 17 - - - - - 17 18 19 - - - - - 19 20 21 20 21 21 21 21 22 23 <td< td=""><td>09</td><td>50</td><td></td><td>1</td><td>94</td><td>0.2</td><td>- 64</td><td>2</td><td>32</td><td>22</td><td>660</td><td>5.8</td><td></td><td></td><td>09</td></td<>	09	50		1	94	0.2	- 64	2	32	22	660	5.8			09
11 SS 1 22 0.2 82 4 37. 2 > 50 > 4.44 11 12 23-15 - 53 1 152 0.2 136 2 22. 36 90 > 4.44 112 13 14 23-15 - 31 2 136 1 137 1 137 118 118 118 118 118 114 133 14 130 14 130 14 131 148 148 155 166 156 166 166 167 166 167 167 167 167 167 168 169 169 169 109 109 100 101 177 188 168 179 100 100 101 179 100 <	10	51		1	- 90	0.2	80	2	32	20	880	4.6			10
12 23-75-55 1 152 0.2 136 2 22 36 760 6.5 113 14 23-57-3/ 2 136 3.0 108 13 14 15 16 16 17 16 16 16 16 16 17 18 18 19 19 10 10 10 10 10 20 11 10	11	52			_72	0.2	82	4	37_	20	500	44			<u> 11</u>
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APPENDIX II AFFIDAVIT OF EXPENSES

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AFFIDAVIT OF EXPENSES

This will certify that geochemical surveys and geological mapping were carried out on July 6, to July 7, 1983, and September 15, to 17, 1983, on the Lode I to IV claims in the Similkameen Mining Division, British Columbia, to the value of the following:

MOBILIZATION AND FIELDWORK

Salaries

D.G. Allen S. Travis L. Travis	3 days @ \$350 4.5 days @ \$120 4.5 days @ \$120	\$1,050.00 540.00
Room and board	4.3 uays & \$120	259.78
Geochemical analy:	ses	682.80
Telephone		3.29
Vehicle rental and	l gas	470.58
REPORT		
Salaries		
D.G. Allen	2.5 days @ \$350	875.00
Draughting, typing	g, còmpilation	
	43 hours @ \$15	645.00
Maps, photocopying	Ţ	212.54
	TOTAL	\$5,278.99

Donald S. allen

Roadwork

\$2721.01 TEK.

