010

PROGRESS AND DEVELOPMENT REPORT

on

Twenty-One (21) Mining Claims

RYAN TOWNSHIP

Sault Ste. Marie Mining Division

District of Algoma

Ontario

for

PERIOD

February 27th, 1964 to August 21st, 1964

DATED - October 15th, 1964. BY - A. W. Jeckell, B.A.Sc., P.Eng.

Report donated to O.D.M. by A. W. Jeckell.

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ADDITIONAL -- IN ENVELOPE POCKET

MAPS 1 - Surface Plan - 200 scale

2 - (a) Geological Section on Line 200 East - 40 scale
(b) " " " Line 100 East - " "

3 - (a) Sampling and Assay Sheet Line 200 East - 40 scale
(b) " " " " Line 100 East - " "

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5 Walmsley Blvd.,
TORONTO 7, Ontario.

October 15th, 1964

The President and Directors,
JOGRAN MINES LIMITED,
366 Bay Street,
TORONTO, Ontario.

PROGRESS AND DEVELOPMENT REPORT

on

Twenty-One (21) Mining Claims

RYAN TOWNSHIP

Sault Ste. Marie Mining Division

District of Algoma

Ontario

Identification of Property and Location

The contiguous group of 21 non-patented mining claims are located in the north-east quarter of Ryan Township and are identified as being:-

Claim Number	Mining Licence	Recording Date	As of July 21/64 Assessment Filed in Days: Geophysical	Diamond Drilling	Total
SSM-59846	D-11056	7/12/60	--	*(80) 140	220
" -62886	D-11897	5/29/62	54	111	165
" -62888	"	8/13/62	--	170	170
" -62889	"	"	54	90	144
" -62890	"	"	54	90	144
" -62891	"	9/10/62	54	90	144
" -62917	D-12617	6/5/62	--	200	200
" -62918	"	"	--	200	200
" -64225	D-11897	9/10/62	--	170	170
" -65883	D-12617	6/20/63	--	120	120
" -65884	"	"	--	120	120
" -66421	D-13057	7/17/63	54	66	120
" -66422	"	"	54	66	120
" -66423	"	"	54	66	120
Net Totals Forward			378	(80) 1699	2157

Claim Number	Mining Licence	Recording Date	As of July 21/64 Assessment Filed in Days Geophysical	Diamond Drilling	Total
Net Totals Forward			378	(80) 1699	2157
SSM-66424	D-13057	7/17/63	54	66	120
" -66425	"	"	54	90	144
" -66426	"	"	54	90	144
" -66427	"	"	54	66	120
" -66428	"	"	--	80	80
" -66429	"	"	--	80	80
" -66430	"	"	--	80	80
TOTALS			594	(80) 2251	2925

NOTE - *(80) on SSM-59846 - Filed in 1961 and 1962.

PREAMBLE

Subsequent to my General Report of November 8th, 1963, which was used to qualify an underwriting of McKinney Gold Mines Ltd. shares, a geophysical survey by Magnetometer and Electromagnetic methods was completed on the greater part of eleven (11) eastern claims. (See Table above for claim numbers). Final maps and reports were received late January, 1964.

Based on the findings of this Geophysical Report and other data contained in my November 8th, 1963 Report, a preliminary Diamond Drilling Program, for a minimum 2500 footage to be expended in six (6) holes, was recommended in my Report of February 27th, 1964.

A contract covering this drilling and dated May 6th, 1964, was signed with Continental Diamond Drilling Company Limited of Rouyn, Quebec on or about May 11th, 1964.

A drill camp was located on Claim SSM-66421 at the shore of the north-west bay of Mamainse (Smith) Lake. Service to this camp was via the Carp River Road (Mileage 43 on Highway 17 North from Sault Ste. Marie) for a distance of some 8 miles by Jeep and Truck to the north end of Mamainse Mountain. At this point a bridge was built by Continental to cross the Carp River and a drill-tractor trail was cut for 1½ miles to the drill camp.

Flying service can also be used from Sault Ste. Marie, a distance of 38 miles to Mamainse Lake.

The first hole was started on May 24th, 1964.

On or before this date, McKinney Gold Mines Ltd., (Ontario Mining Licence A-37025) transferred title to all of the mining claims

mentioned herein to JOGRAN MINES LTD. (Ontario Mining Licence A-37315)

The diamond drilling program was suspended August 21st, 1964.

DEVELOPMENT BY DIAMOND DRILLING - Preliminary Contract.

Five (5) of the preliminary diamond drill holes, namely, Nos. 1, 3, 4, 5 and 6, were completed by June 26th for a total footage of 2335 feet.

The site location for No. 2 Hole proved unsatisfactory for a suitable drill "set-up" and has not, to the date of this report, been drilled.

These preliminary holes were sited to test individual and/or multiple electromagnetometer cross-overs (anomalous zones). Nos. 1 and 3 Holes collared 250 feet apart, and on Line 200 East, were drilled to test two anomalous cross-overs. Nos. 4, 5 and 6 Holes were drilled to test similar cross-overs on Lines 1000 West, 1200 West and 1400 West, respectively. Each of these three cross-overs were individual anomalous zones and, as such, had no connection one with the other, nor with Nos. 1 and 3 Holes.

The sulphide mineralization intersected in Diamond Drill Holes 4, 5 and 6 returned indications of copper thus:-

NO. 4 HOLE - Line 1000 West - 1800 feet north.

210.5 to 211.5	- 1 Foot @ 1.02% Copper.
214 to 225	- 11 Feet @ 0.10% Copper.

NO. 5 HOLE - Line 1200 West - 1300 feet north.

235 to 235.5	- 0.5 Feet - 6" fault seam @ 30 to 35 Degrees C/A
235.5 to 238.5	- 3.0 Feet @ 0.12% Copper.
305 to 310	- 5 Feet @ 0.11% Copper.
310 to 315	- 5 Feet @ 0.10% Copper.
315 to 320	- 5 Feet @ 0.11% Copper.

NO. 6 HOLE - Line 1330 West - 650 feet north.

172.7 to 173.9	- 1.2 Feet @ 0.21% Copper.
181.6 to 188.2	- 6.6 Feet @ 0.14% Copper.
280.9 to 292.2	- 11.3 Feet @ 0.06% Copper.

Extensive sulphide mineralization was intersected in Holes Nos. 1 and 3.

HOLE NO. 1 - Line 200 East - 1250 feet north.

\- Drilled S 27 W at 45 Degrees.

Indications of chalcopyrite in seams and fractures were evident throughout the total length of 560 feet. However, none of this mineralization returned economic copper content.

Twenty-nine (29) samples were taken for a total length of 192 feet of core. (Length of Hole - 560 feet)

The sections and average assays were:-

130 to 216 - 86 Feet @ 0.15% Copper.
High Assay - 0.36% over 2 feet.
Low Assay - 0.11% over 11 feet.

250.5 to 258.5 - 8 Feet @ 0.03% Copper.

277 to 354 - 77 Feet @ 0.09% Copper, in Quartz Felsite Porphyry.
High Assay - 0.14% over 5 feet.
Low Assay - 0.05% over 5 feet.

354 to 375 - 21 Feet @ 0.10% Copper.

HOLE NO. 3 - Line 200 East - 1500 feet north.

- This hole was drilled at 45° on the same line and section, north of, behind and below No. 1 Hole.

Thirty-four (34) samples were taken for a total length of 270 feet. (Length of Hole - 498 feet)

The sections and average assays were:-

100 to 225 - 125 Feet @ 0.092% Copper.
High Assay - 0.18% over 10 feet.
Low Assay - 0.05% over 10 feet.

249 to 253 - 4 Feet @ 0.58% Copper.

274 to 362 - 88 Feet @ 0.12% Copper.
High Assay - 0.21% over 10 feet.
Low Assay - 0.04% over 6 feet.

362 to 379.5 - 17.5 Feet @ 1.73% Copper.
High Assay - 3.12% over 5 feet.
Low Assay - 0.40% over 2.3 feet.
(SEE DETAIL SECTION BELOW.)

379.5 to ~~405~~ 415 - 25.5 Feet @ 0.20% Copper.
High Assay - 1.04% over 6 inches.
Low Assay - 0.12% over 9 feet.

NOTE - The continuous section, from 274 to ~~405~~ 415 feet or ~~131~~ 141 feet, averaged 0.342% Copper.

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The DETAIL SAMPLING and individual assays of the Section 362 to 379.5 feet or 17.5 feet of core follows:-

362 to 363.5 - 6" of well disseminated sulphides and 1 foot of fine disseminated - also ¼" seam, iron stained and carbonate filled, some molybdenite.
- SAMPLE NO. 1 - for 1.5 Feet @ 0.54% Copper.

363.5 to 366.2 - Highly fractured, Quartz filled with 3% sulphides, pyrite and chalcopyrite.
- SAMPLE NO. 2 - for 2.7 Feet @ 2.50% Copper.

366.2 to 366.4 - 2" Fault seam, iron stain and carbonate filled at 30 Degrees to core-axis, no mineral.
- NO SAMPLE - for 0.2 Feet @ nil.

366.4 to 368 - Highly fractured Quartz diabase, 5% sulphides in dissemination and threads.
- SAMPLE NO. 3 - for 1.6 Feet @ 2.24% Copper.

368 to 373 - Highly fractured, 5 to 7½% sulphides, pyrite, chalcopyrite, iron stain and some rose Quartz.
- SAMPLE NO. 4 - for 5.0 Feet @ 3.12% Copper.

373 to 375.3 - Fractured Quartz diabase, minor threads and seams, pyrite and chalcopyrite.
- SAMPLE NO. 5 - for 2.3 Feet @ 0.40% Copper.

375.3 to 379.5 - Fractured reddish brown Quartz, minor pyrite and chalcopyrite threads in all directions.
- SAMPLE NO. 6 - for 4.2 Feet @ 0.61% Copper.

NOTE - Sample No. 2 assayed Gold 0.01 ounce and Silver 0.17 ounce.
Sample No. 4 " " 0.02 " and " 0.34 ounce.

DEVELOPMENT BY DIAMOND DRILLING - Additional Contract.

With immediate and required assessment work completed, the next 2651 feet of diamond drilling was distributed to Holes Nos. 7, 8, 9, 10, 11 and so directed as to define and extend the intersection, given above in detail, of No. 3 Hole.

The following table lists, by date, the sequence in which the various holes were drilled:-

Preliminary Holes

Date - 1964 From	—	To	Hole No.	Feet	Cumulative Footage
May 24	-	May 29	1	560	560
June 1	-	June 7	3	498	1058
June 8	-	June 14	5	390	1448
June 16	-	June 18	6	400	1848
June 20	-	June 21	4A	84	1932
June 23	-	June 26	4	403	2335

Additional Contract

Date - 1964 From	-	To	Hole No.	Feet	Cumulative Footage
June 27	-	July 2	7	450	2785
July 4	-	July 9	8	499	3284
July 10	-	July 13	9	500	3784
July 16	-	July 18	7	200 (deepen)	3984
July 20	-	July 24	10	503	4487
July 26	-	July 31	11	498	4986

Assessment Hole

Aug. 1	-	Aug. 6	"A"	398	5384
Aug. 21	-	Aug. 21	"A"	53	5437

HOLE NO. 7 - Line 200 East - 1410 feet north.

- This hole was drilled at 45° on same line and section at one-half way between Nos. 1 and 3 Holes.

Forty-one (41) samples were taken for a total length of 232 feet. (Length of Hole - 650 feet)

NOTE - This hole was originally drilled to 450 feet. Sample No. 85 for 447 to 449 feet or 2.0 feet assayed 2.22% Copper, (See Detail Section below, - 416 to 464 feet.) and was later deepened to 650 feet.

There was evidence of chalcopyrite mineralization in 74% of the core (480 feet) with the barren sections amounting to 118 feet of scattered volcanics, 40 feet of Quartz Felsite Porphyry and 12 feet in one fault. Some 48.3% of the mineralized core was sampled and assayed.

The sections and average assays were:-

104.5 to 125 - 20.5 Feet @ 0.18% Copper.
High Assay - 0.27% over 5 feet.
Low Assay - 0.08% over 5 feet.

167.5 to 170 - 2.5 Feet @ 0.41% Copper.

181.0 to 192.5 - 11.5 Feet @ 0.10% Copper.

295 to 300 - 5.0 Feet @ 0.20% Copper.

404.5 to 416 - 11.5 Feet @ 0.114% Copper.

416 to 464 - 48 Feet @ 0.50% Copper.

- In Detail:-

- 416.0 to 419.0 —	3.0 Feet	@ 0.75%	
419.0 to 423.3 —	4.3 "	@ 0.11%	
423.3 to 428.3 —	5.0 "	@ 0.18%	
428.3 to 430.0 —	1.7 "	@ 0.07%	- Low Assay.
430.0 to 433.0 —	3.0 "	@ 1.62%	
433.0 to 440.0 —	7.0 "	@ 0.06%	
440.0 to 447.0 —	7.0 "	@ 0.11%	
447.0 to 449.0 —	2.0 "	@ 2.22%	- High Assay.
449.0 to 455.0 —	6.0 "	@ 0.22%	
455.0 to 459.0 —	4.0 "	@ 0.42%	
459.0 to 464.0 —	5.0 "	@ 1.37%	

464 to 536.5 -72.5 Feet @ 0.132% Copper.
High Assay - 0.51% over 5 feet.
Low Assay - 0.01% over 8 feet.

536.5 to 548.5 - 12 Feet - FAULT.

564 to 604 - Quartz Felsite Porphyry.

604 to 642 - 38 Feet @ 0.324% Copper.

- In Detail:-

- 604 to 610 —	6 Feet	@ 0.32%	
610 to 615 —	5 "	@ 0.25%	
615 to 620 —	5 "	@ 0.35%	
620 to 624 —	4 "	@ 0.36%	
624 to 627 —	3 "	@ 0.46%	
627 to 635 —	8 "	@ 0.16%	
635 to 642 —	7 "	@ 0.47%	

NOTE - At 648 feet a SPECIMEN, showing Quartz Stringers containing cluster chalcopyrite and bornite, is held for inspection.

HOLE NO. 8 - Line 100 East - 1500 feet north.

- Drilled S 27 W at 45 Degrees, this hole is parallel to and 100 feet west of No. 3 Hole.

Forty-four (44) samples were taken for a total length of 307 feet. (Length of Hole - 499 feet)

The sections and average assays were:-

10 to 18.5 - 8.5 Feet @ 0.11% Copper.

18.5 to 50.0 - 31.5 Feet @ 0.435% Copper.

OR

18.5 to 28.5 - 10.0 Feet @ 0.983% Copper.

- In Detail:-

- 18.5 to 23.0 -- 4.5 Feet @ 1.45%
  23.0 to 27.0 -- 4.0 Feet @ 0.56%
  27.0 to 28.5 -- 1.5 Feet @ 0.71%

50.0 to 104.5 - 54.5 Feet @ 0.09% Copper.

116.0 to 135.0 - 19.0 Feet @ 0.13% Copper.

151 to 160 - 9.0 Feet @ 0.09% Copper.

168 to 169 - 1.0 Feet @ 0.32% Copper.

289 to 418 - 129.0 Feet @ 0.132% Copper.
High Assay - 0.90% over 5 feet.
Low Assay - 0.02% over 10 feet.

418 to 444.5 - 26.5 of FAULT.

444.5 to 475.0 - 30.5 Feet @ 0.264% Copper.

- In Detail:-

- 444.5 to 456.5 -- 12.0 Feet @ 0.13%
  456.5 to 463.0 -- 6.5 Feet @ 0.27%
  463.0 to 467.0 -- 4.0 Feet @ 0.52%
  467.0 to 472.5 -- 5.5 Feet @ 0.19%
  472.5 to 475.0 -- 2.5 Feet @ 0.65%

475 to 499 - 24.0 Feet @ 0.127% Copper.

HOLE NO. 9 - Line 200 East - 1650 feet north.

- Drilled S 27 W at 45 Degrees. This hole was collared 155 feet north of No. 3 Hole to drill behind and underneath No. 3 and in the same section as Holes No. 7 and No. 1 which are south of Hole No. 3.

Twenty-four (24) samples were taken for a total length of 142.6 feet. (Length of Hole - 500 feet)

The sections and average assays were:-

90.5 to 124.5 - 34.0 Feet @ 0.222% Copper.
High Assay - 0.99% over 1.5 feet.
Low Aseay - 0.05% over 4.5 feet.

124.5 to 125.3 - 10 inch FAULT.

137.0 to 143.6 - 6.6 Feet @ 0.09% Copper.

267.0 to 340.0	-	73 Feet @ 0.135% Copper. High Assay - 0.48% over 4.5 feet. Low Assay - 0.04% over 10 feet.
340.0 to 360.0	-	20 Feet @ 0.055% Copper.
451.0 to 458.0	-	7 Feet @ 0.215% Copper.
477.0 to 479.0	-	2 Feet @ 0.20% Copper.

HOLE NO. 10 - Line 100 East - 1650 feet north.

\- Drilled S 27 W at 45 Degrees. This hole was collared 150 feet north of No. 8 Hole and is parallel to and 100 feet west of No. 9 Hole.

Fourteen (14) samples were taken for a total length of 89 feet. (Length of Hole - 503 feet)

The sections and average assays were:-

28 to 29.5	-	1.5 Feet @ 0.84% Copper.
97.0 to 102.5	-	5.5 Feet @ 0.25% Copper.
228.0 to 236.0	-	8 Feet @ 0.40% Copper.
266.0 to 286.0	-	20 Feet @ 0.125% Copper.
449.0 to 482.0	-	33 Feet @ 0.22% Copper. High Assay - 0.80% over 1 foot. Low Assay - 0.08% over 5 feet.
482 to 503	-	21 Feet @ 0.114% Copper.

HOLE NO. 11 - Line 200 West - 1940 feet north.

\- Drilled S 27 W at 45 Degrees.

\- This hole was collared some 400 feet true north and 100 feet true west of the collar of No. 10 Hole to intersect an anomalous cross-over on line 200 West at 1740 feet north.

At this stage in the drilling program, it was becoming evident that the major structural control of brecciation, certain faulting with attendant chalcopyrite mineralization, might lie in a N 17 W direction with a possible steep dip to the south-west.

On the basis of this assumption and in keeping with the program of testing the multiple E-W cross-overs, two holes, Nos. 11 and 12, were spotted.

Structure in No. 11 Hole was similar to that intersected in Nos. 1, 3, 7, 8, 9 and 10. However, the degree of chalcopyrite mineralization was not as strong, although the incidence of mineralization throughout the range of the hole was greater than the sampling as listed.

The sampling and average assays were:-

31.5 to 33.0	-	1.5 Feet @ 0.81% Copper.
82.0 to 104.0	-	22.0 Feet @ 0.085% Copper.
173.0 to 181.0	-	8.0 Feet @ 0.20% Copper.
200 to 237.8	-	37.8 Feet @ 0.138% Copper. High Assay - 1.75% over 0.8 foot. Low Assay - 0.11% over 12 feet.
~~408~~ 409 ~~300~~ to ~~408~~	-	1.0 Foot @ 1.00% Copper.

Ans.

ASSESSMENT HOLE NO. "A" - Line 200 West - 1150 feet south.

- Drilled N 27 E at 45 Degrees.
(Length of Hole - 451 feet)

- This hole was drilled to supplement assessment work for one of two contiguous groups of Claims and in order to test the strongest area of a Self-Potential Geophysical Survey which had been undertaken under vendor auspices. The locale also was the site of a smaller Low-High-Low Magnetic anomalous area, with a weak electromagnetic anomalous cross-over some 200 feet to the east.

There was scattered sulphide mineralization noted in the core. A fault zone from 327 to 340 feet was intersected. None of the mineralization required sampling.

Special specimens at 377 to 378 feet of 1" Quartz Stringers containing chalcopyrite were held for visual inspection.

GEOLOGY AND STRUCTURE - Local.

Rock classification is within a narrow range.

The greater proportion of the mass intersected by the drill holes has been identified as Quartz diabase which, by granular texture, grades into a phase that could be considered a gabbroic diabase. Lesser sections of core appear to have the appearance of volcanic lavas, but it is difficult to establish exact contacts. It is, however, noted that the

siliceous content of the various rock formations changes in a marked degree at a point of carbonate filled fault markers, viz., a sudden cut-off of a granular diabase to a phase of volcanic lava or fine grained Quartz diabase. At this date, it is considered that the volcanics have a general E-W strike and a flat dip to the north.

A single intrusive rock type has been noted and classified as a Quartz Felsite Porphyry. It is fine grained and uniform throughout to either contact with no alteration to the contacted rock formation. This porphyritic formation is considered to occur as steep dipping dikes along a general N-S strike.

Copper sulphide mineralization does not appear to be confined or controlled by any particular rock formation as it is found in varying degree in all classifications.

Such mineralization is associated with a Quartz or siliceous phase of intrusion which has followed and filled channels originally opened by N-S faulting which shattered adjacent formations.

The resultant channels comprise Quartz filled brecciated faults, stringers from ½ inch up, seams at ¼ inch and numerous cracks which, in the Drill Logs, are noted as "threads". It is also noted that certain "granitization" or siliceous alteration generally carries appreciable copper values, particularly in the vicinity of Quartz filled brecciated faults.

There is a paucity of pyrite throughout the shattered and mineralized zones and therefore such zones cannot be classified as replacement type deposits.

Later major faulting, typified by barren carbonate filled breccia, has offset such mineralized shatter zones and also the porphyritic dikes. The attitude of such later faulting is still unknown but, by intersection in three holes, might be flat lying (near horizontal).

Accordingly, the sense without proof or argument is that the attitude and degree of copper sulphide mineralization is controlled by early N-S faulting in a vertical plane, all of which has been offset by later flat lying major faulting.

GEOLOGY - ECONOMIC - Local.

A perusal of the samplings and assays as given herein (Holes Nos. 1, 3, 7, 8, 9, 10 and 11) shows that no economic copper ore has been found in this preliminary drilling.

However, certain sections of core have returned appreciable values and/or impressive lengths of consistent copper content. It will be noted that such sections have been reported "In Detail".

At the same time, it should be appreciated that the drill hole sections (some 300 feet on line by 400 feet at 45 Degrees on one section and 100 feet on line by 400 feet at 45 Degrees on a second section which is 100 feet distant) have tested a relatively small proportion of the overall dimension of the anomalous formation or mass. Such anomalous formation is considered to have a length of 2400 feet and potential maximum width of 800 feet.

The degree of mineralization, hence grade of copper, is in proportion to the degree of brecciation and shattering. The preliminary drilling was directed to test anomalous conditions and determine whether sulphides and of what type were the causation of such anomalies. As this has now been determined, it should follow that testing should continue in order to locate and define the zonal areas that carry the maximum brecciation and shattering.

The magnetometer survey and E-M anomalous "cross-overs" suggest a potential fractured and mineralized zonal trend along a N 18 W axis, namely, the 2400 feet mentioned above.

GEOLOGY AND STRUCTURE - General.

Certain current diamond drilling on property held by McKinney Gold Mines Ltd., notably on Claim SSM-67726, Kincaid Township and some 1¼ miles distant in a N 30 W direction from the location of Jogran Mines drilling, is testing a mineralized formation, viz., a fault zone having a similar N W strike trend.

This fault zone trend is also noticeable as crossing the intervening acreage on strike between the two drilling sites. This intervening or middle acreage is the locale of iron formation which, according to air-borne magnetometer survey, shows a "break" or separation in magnetic intensity which coincides with the above-mentioned fault trend. The eastern portion of the iron formation is displaced southerly in relation to the western portion.

A perusal of Aeromagnetic Map 2188G - Mica Bay Sheet also shows that a series of magnetic contours suggest faulting of similar strike at and west of the Pancake - Mamainse Lakes area.

It is also noted that the "C" zone and the zone of "Old Indian Copper Diggings" on and at the mining property of Coppercorp Ltd. (Montreal Mining Co. - Sand Bay Location), show a N 15 W and N 20 W strike length respectively. NOTE - See Ontario Department of Mines Map No. 1953-1, Mamainse Point Copper Area.

ASSESSMENT REQUIREMENTS AND STATUS.

Sufficient diamond drilling has been completed to cover the total assessment work of 200 days per Claim as required by the Ontario Mining Act.

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For 21 claims, 4200 days of work are required. Diamond drilling has amounted to 5437 feet or days.

However, all of this assessment work has not been filed at this date. It will be noted that all of the 21 claims are secured by filed and accepted "Reports of Work" up to and including 1965, and all but 6 claims until 1966.

See Table under "Identification of Property and Location" herein.

CONCLUSIONS.

In my Report of November 8th, 1963, I stated under "Conclusions" that --

Quote - "It is considered that prior to the current summer (1963) season, the use of modern geophysical survey methods has not played a part in wide-spread and detailed prospecting of this area."

"Therefore, it is possible that the use of such methods and application to the greater proportion of the area may be instrumental in locating additional copper deposits."

"Such deposits are likely to be located in and along the juncture of or trace of structural faulting and in the near vicinity of minor and mineralized 'showings' which have been identified in the past."

"These conditions have been established, in part, within the boundary of the mining claims discussed herein." - Unquote.

The ground geophysical survey of the area of the aeromagnetic "Low" anomaly was instrumental in guiding the subsequent Preliminary Diamond Drilling Program into structural formation that disclosed copper sulphide mineralization which was new and heretofore unknown.

Although the diamond drilling, so far, has failed to disclose economic copper ore, there is no reason to terminate development.

It is my contention that a very small percentage of the anomalous mass has been partially tested.

The anomalous conditions persist south-easterly from the sections exemplified by Diamond Drill Holes 1, 3, 5, 7, 8, 9 and 10 for a distance of some 1200 feet.

In addition, and at this stage of development, an effort should be made to expurgate the probability that the control of mineralization might be in a horizontal attitude.

With these factors in mind and accepting the fact that weather conditions of this area will deteriorate in late November to a point where diamond drilling is difficult and costly, a recommendation on immediate and additional development is modified by specific reservations.

Therefore, for the remaining current season, a minimum program of diamond drilling which could lead to, locate and find structural conditions, hence tonnage, that would yield a copper content of economic grade, should be considered and does not detract in any manner the potential characteristics and merit of the property and the mineralization therein.

RECOMMENDATION.

Based on the premises expounded under "Conclusions", a program of diamond drilling in the amount of 2500 feet to be expended in five (5) holes is recommended.

The arrangement of the five (5) holes is described thus:-

First Hole - At site of No. 1 (Preliminary Program).
To be drilled @ 90 Degrees for 500 feet to determine and/or disprove the probability of a flat dip to the attitude of known mineralization.

Second Hole -Site of collar at 700 North and 450 East.
To be drilled N 80 E @ 45 Degrees for 500 feet to test the E-M anomalous "cross-over" and "High-Low" magnetometer contact at the site of the original and undrilled No. 2 Hole of the Preliminary Program.

Third Hole - To be drilled parallel to and 300 feet south of the second hole @ 45 Degrees for 500 feet.

Fourth Hole -To be drilled parallel to and 600 feet south of the second hole @ 45 Degrees for 500 feet.

Fifth Hole - To be drilled parallel to and 900 feet south of the second hole @ 45 Degrees for 500 feet.

NOTE - The third, fourth and fifth holes are exploratory or preliminary holes located in such a manner as to test the south-easterly extension of the assumed N 18 W strike fault zone.

COST OF ADDITIONAL DRILLING PROGRAM.

1. Diamond Drilling, extras - 2500 feet at $4.00 per foot	$10,000.00
2. Supervision, travel, assaying, et al.	$ 5,000.00
Total ...	$15,000.00

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NOT TO BE REMOVED FROM
THE OFFICE OF THE RESIDENT
GEOLOGIST, ONT. DEPT. OF MINES
SAULT STE. MARIE, ONT.

This is my Progress and Development Report for the

Period:- February 27th to August 21st, 1964.

Respectfully submitted,

Allen W. Jeckell, B.A.Sc., P.Eng.,
Consulting Mining Engineer.

Dated - October 15th, 1964.

REGISTERED PROFESSIONAL ENGINEER
A. W. JECKELL
PROVINCE OF ONTARIO

- C E R T I F I C A T E -

I, ALLEN WRAY JECKELL, of the City of Toronto, in the County of York, do hereby certify as follows:-

1. THAT I am Consulting Mining Engineer and have practised my profession in excess of thirty years.

2. THAT I live at 5 Walmsley Boulevard, Toronto 7, Ontario.

3. THAT I am a Registered Professional Engineer in the Province of Ontario and in the Province of Quebec.

4. THAT I am a Graduate Mining Engineer with the Degree of Bachelor of Applied Science (1927) of the University of Toronto.

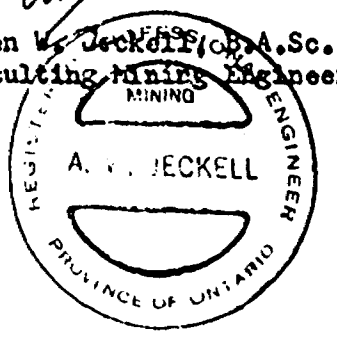
5. THAT this Progress and Development Report, dated October 15th, 1964, which covers the development work undertaken on the Jogran Mines Ltd. mining property in Ryan Township, has been made on behalf of McKinney Gold Mines Ltd., Suite 506, 540 Burrard Street, Vancouver, British Columbia.

6. THAT the content of this Progress and Development Report is based on personal supervision and resident direction of the Diamond Drilling and other development during the period February 27th to August 21st, 1964.

7. THAT I have no interest either directly or indirectly in this mining property nor do I expect to receive any interest directly or indirectly in the securities of Jogran Mines Ltd. or McKinney Gold Mines Ltd.

DATED this 15th day of October, 1964.

Allen W. Jeckell, B.A.Sc., P.Eng.,
Consulting Mining Engineer.



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PROGRESS AND DEVELOPMENT REPORT

on

Twenty-One (21) Mining Claims

RYAN TOWNSHIP

Sault Ste. Marie Mining Division

District of Algoma

Ontario

for

PERIOD

August 22nd, 1964 to June 11th, 1965

Jogran Mines Ltd.

DATED - June 11th, 1965.

BY - A. W. Jeckell, B.A.Sc., P.Eng.

INDEX

ALLEN W. JECKELL
PROFESSIONAL MINING ENGINEER

ALLEN W. JECKELL
PROFESSIONAL MINING ENGINEER

MEMBER
ENGINEERING INSTITUTE OF CANADA
CANADIAN INSTITUTE OF MINING AND METALLURGY
AMERICAN INSTITUTE OF MINING, METALLURGICAL AND PETROLEUM ENGINEERS
ASSOCIATION OF PROFESSIONAL ENGINEERS OF ONTARIO
CORPORATION OF PROFESSIONAL ENGINEERS OF QUEBEC

5 Walmsley Blvd.,
TORONTO 7, Ontario

June 11th, 1965

The President and Directors,
JOGRAN MINES LIMITED
244 Bay Street,
TORONTO, Ontario

PROGRESS AND DEVELOPMENT REPORT on Twenty-One (21) Mining Claims RYAN TOWNSHIP Sault Ste. Marie Mining Division District of Algoma Ontario

Identification of Property and Location

The contiguous group of 21 non-patented and unsurveyed mining claims are located in the north-east quarter of Ryan Township, District of Algoma and are identified as being:-

Claim Number	Mining License	Recording Date	As of March 23/65 Assessment Filed in Days Previous	Diamond Drilling	Total
SSM-59846	D-11056	7/12/60	220	-	220
" -62886	D-11897	5/29/62	165	40	205
" -62888	"	8/13/62	170	-	170
" -62889	"	"	144	-	144
" -62890	"	"	144	-	144
" -62891	"	9/10/62	144	-	144
" -62917	D-12617	6/5/62	200	-	200
" -62918	"	"	200	-	200
" -64225	D-11897	9/10/62	170	-	170
" -65883	D-12617	6/20/63	120	80	200
" -65884	"	"	120	80	200
" -66421	D-13057	7/17/63	120	80	200
" -66422	"	"	120	80	200
" -66423	"	"	120	80	200
Net Totals Forward			2157	440	2597

Claim Number	Mining License	Recording Date	As of March 23/65 Assessment Filed in Days Previous	Diamond Drilling	Total
Net Totals Forward			2157	440	2597
SSM-66424	D13057	7/17/63	120	80	200
" -66425	"	"	144	-	144
" -66426	"	"	144	-	144
" -66427	"	"	120	80	200
" -66428	"	"	80	120	200
" -66429	"	"	80	120	200
" -66430	"	"	80	120	200
TOTALS			2925	960	3885

NOTE - Assessment Required and Date Due.

Claim Number	Recording Date	Assessment Required Date Due	Days Due
SSM-62888	8/13/62	8/13/66	30
" -62889	"	"	56
" -62890	"	"	56
" -62891	9/10/62	9/10/66	56
" -64225	9/10/62	9/10/67	30
" -66425	7/17/63	9/10/67	56
" -66426	"	9/10/67	56
TOTAL			340

PREAMBLE

Subsequent to my General Report of November 8th, 1963, which was used to qualify an underwriting of McKinney Gold Mines Ltd. shares, a geophysical survey by Magnetometer and Electromagnetic methods was completed on the greater part of (11) eleven eastern claims. Final geophysical maps and reports were received late January 1964.

Based on the findings of this Geophysical Report and other data contained in my November 8th, 1963 Report, a preliminary Diamond Drilling Program, for a minimum 2500 footage to be expended in six (6) holes was recommended in my Report of February 27th, 1964.

This diamond drilling program covered the period, - May 24th to August 21st, 1964 and was expanded to twelve (12) holes totalling 5437 feet following on the finding and intersecting of copper sulphide mineralization.

A Progress Report, dated October 15th, 1964, covered the results and findings from this diamond drilling, and under Recommendations, page 14, a further program involving five (5) holes for 2500 feet was suggested.

This program was underway by December 3rd, 1964 with No. 12 Hole completed to 500 feet by December 13, 1964.

Following the holiday season continuous drilling, of Holes No. 13 to No. 21 inclusive, was undertaken. These nine (9) holes were located in an area somewhat removed to the south-east from the earlier area of drilling. The nine (9) holes were located or positioned to intersect geophysical data and geological suppositions which were described within the text of the October 15th, 1964 report.

In total, this drilling program which was recommended at five (5) holes for 2500 feet was increased to ten (10) holes and a total footage of 5698 feet.

Therefore, as of March 21st, 1965, a grand total of 11,135 feet of AXT Diamond Drilling in 21 holes has been completed.

A complete set of reports, maps, plans, cross-sectional drawings, diamond drill records including sampling and assaying records have been presented to the Regional and Resident Geologist and are on file at his office at Sault Ste. Marie, Ontario.

DIAMOND DRILL HOLES

NO. 12 HOLE - This hole was drilled vertically to a depth of 500 feet for the purpose of determining and/or disproving the attitude of known Copper Mineralization previously cut in Hole No. 3 (17.5 feet @ 1.73% Copper, - at 290 foot vertical depth below the collar of No. 1 Hole); in Hole No. 7 (48 feet @ 0.50% Copper, - at 318 to 357 feet vertical depth); and in Hole No. 8 (30.5 feet @ 0.264% Copper, - at 333 to 355 foot vertical depth).

Several sections of copper mineralization were intersected in No. 12 Hole thus:-

13	to	54.5 ft.	or	41.5	ft.	@	0.272%
58.5	to	83 ft.	or	24.5	ft.	@	0.205%
105	to	125 ft.	or	20	ft.	@	0.332%
174	to	177 ft.	or	3	ft.	@	0.45%
194	to	200 ft.	or	6	ft.	@	0.25%
254	to	260 ft.	or	5.5	ft.	@	0.21%
and at 316.5	to	322 ft.	or	5.5	ft.	@	4.03%

The latter section was made up of two consecutive samples, namely:- 2.5 feet @ 5.46% Copper, - 0.035 oz. Gold and 1.13 oz. Silver and 3.0 feet @ 2.84% Copper, - 0.01 oz. Gold and 0.35 oz. Silver. The section was at a vertical depth of 315 to 322 feet in relation to intersections in Holes 3, 7 and 8 mentioned above.

The hole also intersected the postulated north-south fault at 475 to 497 feet, in keeping with the pre-determined dip of 60 to 75 degrees to the East.

QUARTZ FELDSPAR PORPHYRY AREA

As stated above, holes No. 13 to 21 inclusive were located south-east of previous drilling and at a much lower but unknown horizon. (Estimated 150 to 250 feet lower than the collar of No. 1 Hole).

NO. 13 HOLE - This hole was positioned to cross-section certain geophysical data and geological suppositions which were arrived at from previous drilling.

It was directed S-50-W at 45 degrees for 500 feet and cut 483 feet of continuous mineralization averaging 0.270% Copper and 0.068% Molybdenite (MoS_2). The first 197 feet of core showed iron stained reddish brown quartz feldspar porphyry which averaged 0.263% Copper and 0.082% MoS_2. This was followed by 31.5 feet of sheared and fractured volcanic lava which averaged 0.345% Copper and 0.130% MoS_2. Porphyry was then intersected for an additional 82 feet averaging 0.300% Copper and 0.052% MoS_2. The next 45.5 feet of volcanics averaged 0.437% Copper and 0.041% MoS_2.

NO. 14 HOLE - This hole was spotted prior to receiving core from No. 13 Hole. It was collared some 125 feet north of No. 13 but drilled S-76-W at 45 degrees and at a diverging angle of 26 degrees northerly from the direction of No. 13.

The hole was originally scheduled to be drilled to 500 feet with later instruction to continue as long as copper mineralization was noted. The hole ended at 678 feet. The upper 522 feet of continuous mineralization averaged 0.180% Copper and 0.053% MoS_2. However, the porphyry was noted only in the first 77 feet of core and averaged 0.260% Copper and 0.117% MoS_2. A faulted zone in volcanics, from 352.5 to 395 or 42.5 feet averaged 0.415% Copper and 0.057% MoS_2. At 485 feet a highly fractured Quartz Felsite was encountered, continuing for 168 feet. The upper 47 feet, above a 5 to 7 foot fault, averaged 0.212% Copper and 0.037% MoS_2. This fault is considered to be the southward and down-dip extension of the north-south fault postulated from the 1964 drill program.

- - - - - - - - - - - - - - - - - - -

Subsequent drilling plans were changed in order to primarily outline the vertical dimension and some of the lateral dimension of the porphyry.

NO. 15 HOLE - This was a vertical hole some 50 feet S-50-W of the collar of No. 13 hole. Instructions were given to drill as long as mineralized porphyry was being recovered (700 rod limit). Continuous porphyry was intersected to 575 feet. The upper 381 feet of porphyry averaged 0.227% Copper and 0.050% MoS_2. The lower contact in relation to the similar porphyry - volcanic contact in No. 13 hole returned a plus-minus angle of 80 degrees to the north-east.

NO. 16 HOLE - Collared 220 feet east of No. 13, was drilled S-48-W at 45 degrees parallel to and some 100 feet south-east of No. 13. The greater length of core for 543.5 feet averaged 0.232% Copper and 0.054% MoS_2. The porphyry section of 500 feet averaged 0.230% Copper and 0.056% MoS_2.

NO. 17 HOLE - Collared at the same set-up as No. 16, but drilled N-48-E at 45 degrees or in the opposite direction to No. 16 intersected 459.5 feet of continuous porphyry establishing one horizontal dimension on cross-section of the porphyry at 650 feet. The entire length of porphyry to 459.5 feet was mineralized with the upper 133.5 feet averaging 0.143% Copper and 0.043% MoS_2.

NO. 18 HOLE - Collared at the site of No. 16 and No. 17 and drilled vertically intersected continuous mineralization in porphyry to the total depth of hole at 680 feet. The upper 250 feet of core averaged 0.174% Copper and 0.033% MoS_2.

NO. 19 HOLE - Collared some 110 feet north of the site of holes 16, 17 and 18 was directed S-80-W at 50 degrees in the same general direction and underneath No. 14. Mineralization was noted in the first or upper 351.5 feet of core. The upper 227.5 feet (215 feet of porphyry) averaged 0.201% Copper and 0.042% MoS_2.

NO. 20 HOLE - Collared at the same location as No. 19, the hole was directed S-55-W at 50 degrees toward and underneath No. 13 hole. The hole intersected 724 feet of continuous mineralized porphyry with the upper 400 ft. averaging 0.159% Copper and 0.048% MoS_2.

NO. 21 HOLE - Collared at the same location as No. 19 and 20 holes, was drilled vertically to 497 feet. It intersected 254 feet of porphyry averaging 0.129% Copper and 0.047% MoS_2, with a greater length of core including 66 feet of underlying volcanics for a total depth length of 320.5 feet averaging 0.130% Copper and 0.057% MoS_2.

ALLEN W. JECKELL
PROFESSIONAL MINING ENGINEER

Indications of Tonnage and grade of Mineralization

The dimension of tonnage potential and uniform distribution of mineralization combined with certain topographical features and the very shallow depth of overburden allow consideration of an open-pit mining operation. It is admitted that, at first instance, the measured percentages of Copper and Molybdenite appear to be below economic value.

It is proper and expedient to mention that certain but incalculable losses of mineralization were incurred during drilling with AXT core. This was noticeable in the more heavily Copper mineralized sheared zones and multiple Quartz stringer zones. Molybdenite loss was the more important or severe. It was noted that wider (1" to 2") intersected quartz stringers and fault seams which carried coarse crystal Molybdenite failed to remain intact, being recovered with visible loss of the soft but massive molybdenite. Sludge samples were not taken during this drilling. It is doubtful if such samples would be of use to prove or disprove such loss.

The nine (9) holes which have been drilled in the Porphyry Area can only be considered as "indicators" of grade of mineralization and are of a preliminary nature in outlining the dimension and extent of mineralization in the porphyry and attendant fault shearing within the western third of the mass.

Therefore, it is premature at this stage of development to attempt to arrive at a concise or intelligible estimate of tonnage and/or grade of mineralization. Such estimates can only be arrived at through further drilling, large NXR core drilling and underground bulk sampling.

The nine (9) holes, however, may be grouped in and according to what is considered to be three (3) cross-sections at right angles to the structural features (faults and drag-shears) of the mineralized mass (porphyry and volcanics).

(1) Grouped as the "Northern Section" (S-76-W) are Holes No. 14, 19 and 21.

The lineal footage of sampled and assayed core which might be part of and within an open-pit dimension amounts to 1070 feet and averages 0.170% Copper and 0.052% of MoS_2.

An indicated tonnage potential as ascertained from below the collars of the holes and not including potential tonnage from the rise of hill over the western hole No. 14 amounts to 14,210 tons per lineal foot of "strike" length or 1,421,000 tons per 100 feet of "strike"length (50 feet either side of section). Factor used as 12.

(2) Grouped as the "Center Section" (S-50-W) are Holes No. 13, 15, 20 and 21.

The lineal footage of sampled and assayed core which might be part of and within an open-pit dimension amounts to 1,584.5 feet with an average of 0.204% Copper and 0.057% MoS_2.

An indicated tonnage potential as ascertained from below the collars of the holes and not including potential tonnage from the rise of hill over the western hole No. 13, amounts to 22,345 tons per lineal foot of "strike" length or 2,234,500 tons per 100 foot "strike length".

(3) Grouped as the "Southern Section" (S-48-W) are Holes 16, 17 and 18.

The lineal footage of sampled and assayed core which might be part of and within an open-pit dimension amounts to 912 feet and averages 0.204% Copper and 0.047% MoS_2.

An indicated tonnage potential as ascertained below the collars of the holes amounts to 25,380 tons per lineal foot "strike" length or 2,538,000 tons per 100 feet of "strike" length.

The Over-all Average grade of mineralization based on the lineal footage of sampled and assayed core of the nine (9) holes and/or that part of the mass which might be within an open-pit dimension becomes 3,566.5 lineal feet averaging 0.1935% Copper and 0.0528% MoS_2.

At this point, it should be pointed out that the potential "strike" length dimension within the boundaries of the property and along which copper mineralization and some molybdenite mineralization has been disclosed, is considered to be 3,200 feet in a general north-south direction.

The potential "width" within which this mineralization may be present is 600 to 800 feet.

The "porphyry" portion as outlined at present by the nine (9) holes covers some 400 feet of the "strike" length with horizontal widths of 600 feet on all three cross-sections.

A narrow strip to the north and on the western limits of an 1100 foot length and 100 feet plus width has been partially drilled by the preliminary holes reported October 15th, 1964. It is now considered that this preliminary drilling was directed in a direction somewhat parallel to the structural (faulting) characteristic of this length. Although some molybdenite was noted along this strip, no systematic assaying for this mineral was undertaken.

The porphyry area is open to the south-east for some 4 to 600 feet on "strike" length.

CONCLUSIONS

The latter diamond drilling program, described herein, has disclosed a comparatively large and partially dimensioned igneous mass of quartz feldspar porphyry which is mineralized with chalcopyrite, molybdenite, and lesser amounts of pyrite, pyrrhotite, barium, titanium, zirconium and vanadium.

The chalcopyrite-molybdenite percentages are of a higher tenor in the western one-third of the mass, due to a second-stage period of mineralization through and following channels opened by faulting and drag folding and shearing.

It has been proved that the incidence of the aerial magnetic "low" anomaly and the ground magnetometer "low" anomaly is due to the existance of this mass of porphyry.

The resident government geologist, Dr. Giblin, has commented (verbally) that this porphyry is the first and only occurrence of a "copper porphyry" intrusive that has come to his attention within the area of the District of Algoma. He considers that it is unique in this respect and whether it carries sufficient mineralization to be classed as an economic deposit or not, it is of academic and geological importance in so far as it assists in establishing one type of igneous magmatic source for the wide-spread distribution and deposit of copper bearing minerals within the general Batchawana Area.

It should follow that the immediate area of such an intrusive porphyry is a most likely area in which to explore for and develop mineralized structural faults, shear, shattered and/or brecciated zones.

It is my premise that such structural conditions occur within the boundaries of your property and, also by inference and demonstrated fact to occur along a fault zone and within an elongated area to the north for a distance of one and three quarter (1-3/4) miles to the location where diamond drilling on the property of McKinney Gold Mines Ltd. (just south of Pancake Lake) has disclosed copper mineralization of appreciable amount.

It is my opinion that acquisition of additional claims located between the two tested zones be undertaken in the near future. Such acquisition has been outlined in my letter (including maps) of November 20, 1964. My recommendations, as stated in that letter are still valid at current date.

The next stage in development, by necessity, must be undertaken within the terms of a program requiring the supply of funds on a larger scale than have previously been available.

To this end, overtures should be made to the exploration departments of the larger and more affluent mining organizations in order to solicit their interest and financial assistance in furthering the development of

your property. The optioning of the additional and intervening claims, at this stage and under Company auspices, appears to be an expedient acquisition.

RECOMMENDATIONS

Further and continued development of this property is recommended.

In order to carry this development forward, several current, initial and/or imperative expenditures should be provided for.

Item 1.

Sufficient funds must be provided to maintain current Company expenditures for legal, registration, consultant services, travelling and general expenses. (Rental at Sault, etc.).

Item 2.

An initial grid and transit survey at 200 foot intervals or stations, oriented on a north-south axis and complete with elevation control and topographical contouring at 5 foot interval is requisite. At the present time it is impossible to accurately orient or establish elevation control of the completed diamond drill holes and their content.

Item 3. Company Accommodation

A start on accommodation at the property for Company personnel must be considered. This accommodation should be of semi-permanent construction (not tents) and of such a design that it can be winterized (insulated).

Certain delayed operations must also be considered and funds provided for:-

Item 4. Property (claims acquisition)

The acquisition by option of a minimum four (4) claims should be advanced. These claims are: SSM - 59850, 1 and 3; also 69515, restaked as 74754, Ryan Township.

Item 5.

A base-line transit survey of one and 3/4 miles connecting the two known mineralized zones and with elevation control and stations at 400 foot spacing is required prior to the advancement of Item 6.

Item 6.

Subsequent line cutting, geophysical and geochemical survey over a minimum 600 foot width to either side of the above base-line should be the first operation in exploring the intervening acreage on line of "strike".

Item 7. Laboratory Metallurgical Testing

Certain initial laboratory grinding and flotation tests should be advanced using the sample rejects from completed drill hole core.

Tests should cover (a) Porphyry type copper-molybdenite mineralization, (b) Volcanic type copper-molybdenite mineralization and (c) probably a test of combined product (a) and (b).

Item 8.

Additional diamond drilling and assaying account.

Item 9.

Employment of resident geological and assistant personnel.

Item 10.

Acquisition of surveying and draughting equipment.

Item 11.

Senior supervision and/or consulting services.

COSTS

The posting of an itemized and estimated cost of a feasible development program requires the absorption and consideration of a numerous quantity of variable alternatives and with the exception of Item 1, listed under imperative expenditures, such an itemized estimate would be superfluous at this date.

Item 1. Current Company Expenditure

The sum of $3,000. to $3,500. per month is considered requisite for this purpose.

Item 2.

The grid and contour survey, while not an imperative and immediate item, is requisite to co-relate and intelligently present the two stages of diamond drill holes on and to a common and combined basis. The cost is estimated at $3,500. It would be performed by a four (4) man crew at a base cost of at least $120. per elapsed day and $6.00 per hour for draughting time.

Item 3.

Suitable accommodation at the property can be progressive. For summer use, the sum of $6,000. would be sufficient with approximately $1,500. for winterizing the buildings.

Item 4.

The cost of property acquisition is unknown and subject to negotiation.

Item 5.

The cost of the surveyed base-line would be appropriate to the rates quoted under Item 2, and could approximate $1,800.

Item 6.

The amount of and cost of geophysical and geochemical survay is subject to future discussion and decision as to the type of survey and the mileage or acreage covered.

Item 7.

Laboratory testing would range up to an estimated $2,000.

Item 8.

Diamond drilling base rates as currently experienced, viz., $3.00 per foot for actual hole and at $4.25 including moves, etc. Total cost, including assaying, core trays and racking, but not supervision for AXT core is estimated at $6.00 per foot.

The dimension of the indicated and mineralized area is large and 15 to 20,000 feet is not considered excessive or beyond the applicable "target" objective.

Item 9.

Services of one geologist and two assistant personnel is estimated at $2,200 per month.

Item 10.

Survey and draughting equipment is estimated at $1,800.

Item 11.

Senior supervision and/or consulting fee and expense estimated at $2,500. per month.

ALLEN W. JECKELL
PROFESSIONAL MINING ENGINEER

In general, the sum of $150,000. minimum should be considered as a requisite sum to further and to expedite the next phase of development. This amount should be made available at the rate of $22,000. per month over a seven month program.

The above minimum fund, is considered in my opinion, as an equitable expenditure for the continued development of your claims and acquired claims but if the property of McKinney Gold Mines Ltd., the acquired claims and your property were amalgamated under a new consolidation, a further sum would be required to expedite a still larger program.

I am thoroughly convinced that the mineralized structural zones that have been indicated by the development undertaken during the last year are only part of a larger and intruguing structure that could contain deposits leading to a large scale tonnage mining operation.

In other words, your property can be classed as one of only three development operations which have disclosed mineralization and potential tonnage in the general Batchawana Area of the District of Algoma.

This is my progress report on development operations during the period August 22nd, 1964 to June 11th, 1965.

NOT TO BE REMOVED FROM
THE OFFICE OF THE RESIDENT
GEOLOGIST, ONT. DEPT. OF MINES
SAULT STE. MARIE, ONT.

Dated - June 11th, 1965.

Respectfully submitted,

A.W. Jeckell

Allen W. Jeckell, B.A.Sc., P.Eng.,
Consulting Mining Engineer.

REGISTERED PROFESSIONAL ENGINEER
MINING
A. W. JECKELL
PROVINCE OF ONTARIO

- C E R T I F I C A T E -

I, ALLEN WRAY JECKELL, of the City of Toronto, in the County of York, do hereby certify as follows:-

1. THAT I am Consulting Mining Engineer and have practised my profession in excess of thirty years.

2. THAT I live at 5 Walmsley Boulevard, Toronto 7, Ontario.

3. THAT I am a Registered Professional Engineer in the Province of Ontario and in the Province of Quebec.

4. THAT I am a Graduate Mining Engineer with the Degree of Bachelor of Applied Science (1927) of the University of Toronto.

5. THAT this Progress and Development Report, dated June 11th, 1965, which covers the development work undertaken on the Jogran Mines Ltd. mining property in Ryan Township, District of Algoma, Ontario.

6. THAT the content of this Progress and Development Report is based on personal supervision and resident direction of the Diamond Drilling and other development during the period August 22nd, 1964 to June 11th, 1965.

7. THAT I have no interest either directly or indirectly in this mining property nor do I expect to receive any interest directly or indirectly in the securities of Jogran Mines Ltd. or McKinney Gold Mines Ltd.

DATED this 11th day of June, 1965.

A. W. Jeckell

Allen W. Jeckell, B.A.Sc., P.Eng.,
Consulting Mining Engineer.

REGISTERED PROFESSIONAL ENGINEER
A. W. JECKELL
PROVINCE OF ONTARIO

JOGRAN MINES LTD.
RYAN TOWNSHIP PROPERTY
DISTRICT OF ALGOMA
ONTARIO

SAMPLING AND ASSAYING RECORD

No. 13 DIAMOND DRILL HOLE 13

FEBRUARY 1965 PAGE 1. of 3.

SAMPLE No.	FOOTAGE FROM	FOOTAGE TO	CORE LENGTH	ASSAYS %CU.	ASSAYS %FeS_2	ROCK FORMATION
310	17	25	8	.24	.02	QUARTZ
1	25	35	10	.31	.12	FELDSPAR
2	35	45	10	.25	.15	PORPHYRY
3	45	55	10	.28	.05	"
4	55	65	10	.28	.08	"
5	65	75	10	.27	.15	"
276	75	85	10	.21	.05	"
7	85	95	10	.28	.05	"
8	95	105	10	.24	.08	"
294	105	115	10	.34	.02	"
6	115	125	10	.22	.24	"
7	125	135	10	(L) .18	.13	
8	135	145	10	.24	.04	
9	145	155	10	.18	.07	
301	155	165	10	.27	.04	
2	165	175	10	.26	.05	"
3	175	185	10	.26	.04	"
4	185	195	10	(H) .42	.07	"
5	195	200	5	.26	.05	"
289	200	205	5	.28	.09	"
290	205	210	5	.24	.05	"
1	210	214	4	.26	.19	"
AVERAGE	17	214	197	0.263	0.082	
-	214	216	2	-	-	FAULT
251	216	220	4	.58	.08	Fractured
2	220	225	5	.18	.06	and
3	225	227	2	1.19	1.21	Faulted
4	227	235	8	.21	.07	VOL.
5	235	237.5	2.5	.44	.04	LAVA
6	237.5	243	5.5	.20	.04	"
7	243	247.5	4.5	.31	.05	"
AVERAGE	216	247.5	31.5	0.345	0.13	

SAMPLING AND ASSAYING RECORD

No 13 DIAMOND DRILL HOLE

SAMPLE No	FOOTAGE FROM	FOOTAGE TO	CORE LENGTH	ASSAYS %CU.	ASSAYS %MoS_2	ROCK FORMATION
AVERAGE	247.5	329.5	82	0.300	0.052	
262	329.5	335	5.5	.34	.04	VOL.
3	335	340	5	.15	.03	LAVA
4	340	343	3	.20	.05	"
5	343	343.5	.5	3.15	.04	"
6	343.5	354.5	11	.22	.04	"
7	354.5	358	3.5	.69	.03	"
8	358	360.5	2.5	.21	.03	"
9	360.5	365.5	5	.88	.07	"
270	365.5	368	2.5	.87	.08	"
1	368	371	3.	.19	.03	"
2	371	375	4	.65	.01	"
AVERAGE	329.5	375	45.5	0.437	0.041	
273	375	385	10	.21	.03	VOL
4	385	395	10	.26	.04	LAVA
5	395	405	10	.16	.02	"
AVERAGE	375	405	30	0.210	0.030	
637	405	413	8	.07	.04	"
-	413.	413.5	.5	-	-	FAULT
638	413.5	421.5	8	.10	.03	VOL
9	421.5	425	3.5	.18	.08	LAVA
AVERAGE	405	425	20	0.099	0.042	
279	425	431.5	6.5	.15	.05	VOL
280	431.5	433	1.5	.31	1.65	LAVA
1	433	440	7	.23	.05	QTZ
2	440	450	10	.25	.04	DIABASE
3	450	460	10	.16	.03	"
4	460	466	6	.32	.03	"
AVERAGE	425	466	41	0.226	0.098	
-	466	468.5	2.5	-	-	FAULT
285	468.5	475	6.5	.19	.02	
6	475	485	10	.17	.03	
640	485	496.5	11.5	.20	.03	
287	496.5	500	3.5	.22	.03	
AVERAGE	468.5	500	31.5	0.190	0.028	

END of HOLE

SUMMARY - NEXT PAGE

PROFESSIONAL ENGINEER MINING A. JACKELL PROVINCE OF ONTARIO

SAMPLING AND ASSAYING RECORD

No 13 DIAMOND DRILL HOLE

SUMMARY

SAMPLE No	FOOTAGE FROM	FOOTAGE TO	CORE LENGTH	ASSAYS %CU.	ASSAYS $\%MoS_2$	
	17	214	197	0.263	0.082	
	214	216	2	-	-	FAULT
	216	247.5	31.5	0.345	0.130	
	247.5	329.5	82	0.300	0.052	
	329.5	375	45.5	0.437	0.041	
Average	17	375	358	0.300	0.074	
	375	405	30	0.210	0.030	
	405	425	20	0.099	0.042	
	425	466	41	0.226	0.098	
	466	468.5	2.5	-	-	FAULT
	468.5	500	31.5	0.190	0.028	
Average	375	500	125	0.190	0.053	
AVERAGE	17	500	483	0.270	0.068	

PROFESSIONAL ENGINEER
MINING
A. J. JECKELL
PROVINCE OF ONTARIO

JOGRAN MINES LTD.

RYAN TOWNSHIP PROPERTY
DISTRICT OF ALGOMA
ONTARIO

SAMPLING AND ASSAYING RECORD

N2 14 DIAMOND DRILL HOLE 14

FEBRUARY 1965

SAMPLE Nº	FOOTAGE FROM	FOOTAGE TO	CORE LENGTH	ASSAYS %CU.	ASSAYS %MoS2	ROCK FORMATION
316	10	20	10	.24	.10	QTZ
7	20	30	10	.21	.11	FELDSPAR
8	30	40	10	.22	.17	PORPHYRY
9	40	50	10	.25	.11	"
320	50	59	9	.40	.09	"
Average	10	59	49	0.260	0.117	
608	59	70	11	.10	.02	QTZ.
9	70	80	10	.10	.02	DIABASE
610	80	84.5	4.5	.05	.05	"
-	84.5	86.5	2	-	-	FAULT
1	86.5	97	10.5	.09	.02	SIL.
2	97	105	8	.23	.03	VOLCANIC
3	105	115	10	.21	.03	"
4	115	125	10	.10	.04	"
7	125	135	10	.11	.04	"
8	135	145	10	.14	.07	"
9	145	155	10	.07	.04	"
620	155	165	10	.11	.03	"
1	165	175	10	.08	.02	"
615	175	185	10	.08	.11	"
6	185	195	10	.09	.06	"
622	195	205	10	.13	.03	"
3	205	214.5	9.5	.07	.11	"
Average	59	214.5	155.5	0.109	0.044	
-	214.5	215.5	1	-	-	FAULT
624	215.5	225	9.5	.04	.05	VOL.
5	225	235	10	.06	.04	LAVA
6	235	237.5	2.5	.32	.27	with
7	237.5	245	7.5	.24	.06	IT
8	245	255	10	.16	.05	Scattered
9	255	265	10	.13	.06	Fault
630	265	275	10	.12	.04	Seams.
1	275	285	10	.13	.05	"
2	285	294	9	.17	.04	"
3	294	304	10	.10	.03	"
4	304	313.5	9.5	.21	.07	"
5	313.5	323.5	10	.19	.04	"
6	323.5	333	9.5	.12	.03	"
649	333	340	7	.29	.04	"
650	340	346.5	6.5	.23	.05	"
1	346.5	352.5	6	.13	.05	"
Average	215.5	352.5	137	0.152	0.050	

A. L. BECKLEY — PROFESSIONAL ENGINEER — MINING

SAMPLE No.	FOOTAGE FROM	FOOTAGE TO	CORE LENGTH	ASSAYS % CU.	ASSAYS % MoS_2	ROCK FORMATION
321	352.5	360	7.5	.20	.03	VOL.
2	360	367	7	.10	.06	LAVA
300	367	372	5	1.12	.04	Contact
323	372	377	5	.23	.05	Diabase
4	377	380	3	1.12	.07	"
5	380	383.5	3.5	.25	.06	"
6	383.5	385.5	2	1.01	.07	SIL.
7	385.5	395	9.5	.26	.08	VOL.C.
Average	352.5	395	42.5	0.415	0.057	
328	395	405	10	.22	.05	SIL.
9	405	415	10	.15	.05	VOL.C.
330	415	425	10	.25	.04	"
1	425	432	7	.15	.04	"
2	432	439	7	.19	.05	"
3	439	450	11	.14	.04	"
4	450	459	9	.11	.04	"
5	459	469	10	.11	.03	"
6	469	473	4	.18	.02	"
—	473	473.5	.5	-	-	FAULT
7	473.5	475	1.5	.61	.04	?
8	475	485	10	.17	.06	QTZ-DIAB
Average	395	485	90	0.171	0.042	
339	485	491.5	6.5	.25	.03	FRACT.
340	491.5	495	3.5	.18	.01	QTZ
1	495	502	7	.14	.02	FELSITE
2	502	510	8	.16	.02	PORPHYRY
3	510	515	5	.22	.11	"
4	515	522	7	.12	.04	"
—	522	522.2	.2	-	-	FAULT
5	522.2	532	9.8	.36	.04	Q.F.P.
Average	485	532	47	0.212	0.037	
—	532	537	5	-	-	FAULT
—	537	539	2	-	-	BROKEN CORE
601	539	545	6	.18	.03	Fractured
2	545	555	10	.32	.02	QTZ.
3	555	565	10	.23	.05	FELSITE
4	565	575	10	.10	.01	PORPHYRY
5	575	580	5	.09	.02	"
6	580	590	10	.15	.04	"
7	590	600	10	.11	.03	"
641	600	605	5	.20	.01	"
2	605	615	10	.12	.04	"
3	615	625	10	.15	.02	"
4	625	635	10	.07	.02	"
5	635	645	10	.09	.04	"
6	645	653	8	.16	.03	"
Average	539	653	114	0.151	0.028	
7	653	664	11	.10	-	VOLC.
8	664	680	16	.19	-	"

SAMPLING AND ASSAYING RECORD

No 14 DIAMOND DRILL HOLE

SUMMARY

FOOTAGE FROM	FOOTAGE TO	CORE LENGTH	ASSAYS %CU.	ASSAYS %MoS_2	
10	59	49	0.260	0.117	
59	214.5	155.5	0.109	0.044	
215.5	352.5	137	0.152	0.050	
352.5	395	42.5	0.415	0.057	
Average 10	395	385	0.177	0.057	
395	485	90	0.171	0.042	
485	532	47	0.212	0.037	
Average 395	532	137	0.186	0.041	
AVERAGE 10	532	522	0.180	0.053	
532	539	7	-	-	FAULT
539	653	114	0.151	0.028	
NOTE - Fractured Quartz Felsite Porphyry					
485	653	168	0.162	0.030	

THE ASSOCIATED PROFESSIONAL ENGINEERS OF ONTARIO
MINING
A. JECKELL

JOGRAN MINES LTD.

RYAN TOWNSHIP PROPERTY

DISTRICT OF ALGOMA

ONTARIO

SAMPLING AND ASSAYING RECORD

Nº 15 DIAMOND DRILL HOLE 15

FEBRUARY 1965

SAMPLE Nº	FOOTAGE FROM	FOOTAGE TO	CORE LENGTH	ASSAYS % CU	ASSAYS % MoS_2	ROCK FORMATION
652	19	30	11	.15	.04	QUARTZ
3	30	45	15	.27	.03	FELDSPAR
4	45	58	13	.30	.04	PORPHYRY
5	58	64	6	.43	.18	"
6	64	75	11	.27	.01	"
7	75	85	10	.20	.06	"
8	85	100	15	.21	.03	"
Average	19	100	81	0.250	0.045	
659	100	110	10	.21	.01	"
660	110	125	15	.27	.04	"
1	125	136.5	11.5	.43	.02	"
2	136.5	143.5	7	.26	.03	"
3	143.5	156.5	13	.18	.03	"
4	156.5	168	11.5	.25	.11	"
5	168	180	12	.13	.03	"
6	180	190	10	.18	.02	"
7	190	200	10	.14	.04	"
Average	100	200	100	0.230	0.037	
668	200	205	5	.15	.05	"
9	205	212	7	.17	.22	"
670	212	225	13	.18	.02	"
1	225	237.5	12.5	.22	.03	"
2	237.5	250	12.5	.18	.12	"
3	250	262.5	12.5	.26	.04	"
4	262.5	275	12.5	.28	.03	"
5	275	287.5	12.5	.27	.02	"
6	287.5	300	12.5	.24	.03	"
Average	200	300	100	0.224	0.056	
677	300	306	6	.21	.02	"
8	306	315	9	.18	.27	"
9	315	330	15	.20	.10	"
680	330	340	10	.27	.03	"
1	340	350	10	.28	.02	"
2	350	360	10	.16	.03	"
3	360	370	10	.18	.02	"
4	370	380	10	.18	.05	"
5	380	390	10	.16	.02	"
6	390	400	10	.25	.03	"
Average	300	400	100	0.207	0.060	

REGISTERED PROFESSIONAL ENGINEER MINING A. V. JECKELL PROVINCE OF ONTARIO

SAMPLING AND ASSAYING RECORD

No 15 DIAMOND DRILL HOLE

SAMPLE No	FOOTAGE FROM	FOOTAGE TO	CORE LENGTH	% CU.	% MoS_2	ROCK FORMATION
6817	400	413	13	.22	.04	QUARTZ
8	413	425	12	.14	.03	FELDSPAR
9	425	437.5	12.5	.14	.03	PORPHYRY
6820	437.5	450	12.5	.14	.02	"
1	450	462.5	12.5	.07	.04	"
2	462.5	475	12.5	.17	.03	"
3	475	487.5	12.5	.14	.08	"
4	487.5	500	12.5	.14	.01	"
Average	400	500	100	0.145	0.035	
6825	500	512.5	12.5	.15	.01	"
6	512.5	525	12.5	.14	.03	"
7	525	537.5	12.5	.10	.02	"
8	537.5	550	12.5	.25	.02	"
9	550	562.5	12.5	.31	.06	"
6830	562.5	575	12.5	.20	.04	"
1	575	578	3	.14	.03	"
Average	500	578	78	0.190	0.030	

END OF HOLE

SUMMARY

19	100	81	0.250	0.045
100	200	100	0.230	0.037
200	300	100	0.224	0.056
300	400	100	0.207	0.060
Average 19	400	381	0.227	0.050
400	500	100	0.145	0.035
500	578	78	0.190	0.030
AVERAGE 19	578	559	0.207	0.045

REGISTERED PROFESSIONAL ENGINEER
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PROVINCE OF ONTARIO

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RYAN TOWNSHIP PROPERTY

DISTRICT OF ALGOMA

ONTARIO

SAMPLING AND ASSAYING RECORD

Nº 16 DIAMOND DRILL HOLE 16

FEBRUARY 1965 PAGE 1 of 2.

SAMPLE Nº	FOOTAGE FROM	FOOTAGE TO	CORE LENGTH	ASSAYS % CU.	ASSAYS % MoS_2	ROCK FORMATION
702	17	25	8	.35	.03	QUARTZ
3	25	30	5	.33	.55	FELDSPAR
4	30	35	5	.36	.04	PORPHYRY
5	35	40	5	.32	.08	"
6	40	45	5	.26	.03	"
7	45	55	10	.26	.03	"
8	55	70	15	.27	.04	"
9	70	80	10	.23	.04	"
710	80	90	10	.20	.07	"
1	90	100	10	.34	.11	"
Average	17	100	83	0.283	0.082	
712	100	107	7	.30	.35	"
3	107	120	13	.28	.05	"
4	120	135	15	.29	.02	"
5	135	145	10	.32	.03	"
6	145	155	10	.24	.02	"
7	155	165	10	.21	.03	"
8	165	177.5	12.5	.21	.11	"
9	177.5	187.5	10	.22	.05	"
720	187.5	197.5	10	.18	TR	"
Average	100	197.5	97.5	0.250	0.062	
721	197.5	208.5	11	.21	.02	"
2	208.5	209.5	1	.59	.10	"
3	209.5	220	10.5	.20	.02	"
4	220	230	10	.23	.09	"
5	230	239	9	.26	.03	"
6	239	242.5	3.5	.72	.01	"
7	242.5	255	12.5	.20	.01	"
8	255	265	10	.20	TR	"
9	265	275	10	.17	.04	"
730	275	287.5	12.5	.33	.01	"
1	287.5	300	12.5	.39	.01	"
Average	197.5	300	102.5	0.267	0.024	
732	300	305	5	.21	.03	"
3	305	314	9	.15	.03	"
4	314	322.5	8.5	.26	.03	"
5	322.5	328.5	6	.13	.06	"
6	328.5	335	6.5	.29	.03	"
7	335	345	10	.20	.09	"
8	345	355	10	.12	.04	"
9	355	365	10	.17	.04	"
740	365	375	10	.12	.03	"
1	375	380	5	.17	.03	"

PROFESSIONAL ENGINEER MINING A. W. JEFFREL TIMMINS ONTARIO

SAMPLING AND ASSAYING RECORD

Nº 16 DIAMOND DRILL HOLE

SAMPLE Nº	FOOTAGE FROM	FOOTAGE TO	CORE LENGTH	ASSAYS % CU.	ASSAYS % MOS$_2$	ROCK FORMATION
742	380	390	10	.14	.03	QTZ
3	390	400	10	.13	.04	FELOSPAR
Average	300	400	100	0.169	0.048	PORPHYRY
744	400	405	5	.25	.03	"
5	405	412	7	.38	.04	"
6	412	420	8	.26	.07	"
7	420	425	5	.48	.05	"
8	425	433.5	8.5	.10	.03	"
9	433.5	439	5.5	.09	.04	"
750	439	444	5	.09	.02	"
1	444	450	6	.12	.22	"
2	450	460	10	.14	.12	"
3	460	470	10	.18	.03	"
4	470	481.5	11.5	.27	.01	"
5	481.5	488.5	7	.14	.01	"
6	488.5	495	6.5	.20	.01	"
7	495	500	5	.15	.01	"
Average	400	500	100	0.202	0.055	
758	500	505	5	.15	.01	"
9	505	512.5	7.5	.12	.04	"
760	512.5	512.7	.2	.15	11.64	"
1	512.7	517	4.3	.12	.05	"
Average	500	517	17	0.145	0.17	
-	517	518	1	-	-	FAULT
762	518	525	7	.12	.05	DIABASE
3	525	535	10	.21	.04	"
4	535	545	10	.21	.04	"
5	545	555	10	.41	.03	"
6	555	560.5	5.5	.43	.04	"
Average	517	560.5	43.5	0.264	0.039	
-	560.5	575	14.5	-	-	FELSITE

SUMMARY

17	100	83	0.283	0.082	
100	197.5	97.5	0.250	0.062	
197.5	300	102.5	0.267	0.024	
300	400	100	0.169	0.048	
400	500	100	0.202	0.055	
500	517	17	0.145	0.170	
Average 17	517	500	0.230	0.056	
517	560.5	43.5	0.264	0.039	
AVERAGE 17	560.5	543.5	0.232	0.054	

JOGRAN MINES LTD

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DISTRICT OF ALGOMA

ONTARIO

SAMPLING AND ASSAYING RECORD

№ 17 DIAMOND DRILL HOLE 17

MARCH 1965

SAMPLE №	FOOTAGE FROM	FOOTAGE TO	CORE LENGTH	ASSAYS % CU.	ASSAYS % MoS_2	ROCK FORMATION
767	19	25	6	.14	.03	QUARTZ
8	25	40	15	.19	.03	FELDSPAR
9	40	52.5	12.5	.19	.03	PORPHYRY
770	52.5	60	7.5	.21	.03	"
1	60	75	15	.13	.02	"
2	75	90	15	.12	.02	"
3	90	105	15	.13	.04	"
4	105	112.5	7.5	.14	.03	"
5	112.5	120	7.5	.11	.04	"
Average	19	120	101	0.150	0.029	
776	120	128.5	8.5	.15	.06	"
7	128.5	136.5	8	.11	.01	"
8	136.5	141.5	5	.10	.01	"
9	141.5	142.5	1	.15	1.98	"
780	142.5	152.5	10	.11	.02	"
Average	120	152.5	32.5	0.120	0.087	
781	152.5	161	8.5	.08	.04	"
2	161	166.5	5.5	.08	.03	"
3	166.5	176.5	10	.14	.03	"
4	176.5	185	8.5	.12	.02	"
-	185	187	2	-	-	Lost Core
5	187	200	13	.09	.04	"
6	200	215	15	.07	.03	"
7	215	216	1	.11	.41	"
8	216	224.5	8.5	.06	.01	"
Average	152.5	224.5	72	0.100	0.050	

SAMPLING AND ASSAYING RECORD

No 17 DIAMOND DRILL HOLE

SAMPLE No	FOOTAGE FROM	FOOTAGE TO	CORE LENGTH	ASSAYS %CU.	ASSAYS %MoS_2	ROCK FORMATION
797	325	337.5	12.5	.08	.01	QUARTZ
8	337.5	350	12.5	.08	NIL	FELDSPAR
9	350	362.5	12.5	.08	NIL	PORPHYRY
800	362.5	375	12.5	.07	NIL	"
1	375	387.5	12.5	.04	.02	"
2	387.5	400	12.5	.07	.03	"
3	400	410	10	.06	.04	"
4	410	421	11	.03	.03	"
5	421	430	9	.06	.01	FAULT
6	430	435	5	.03	.02	"
7	435	445	10	.06	.03	"
8	445	459.5	14.5	.06	.03	"
Average	325	459.5	134.5	0.062	0.018	
-	459.5	466	16	-	-	Fractured VOL. LAVA

SUMMARY

19	120	101	0.150	0.029
120	152.5	32.5	0.120	0.087
AVERAGE 19	152.5	133.5	0.143	0.043
152.5	224.5	72	0.100	0.050
224.5	325	100.5	0.089	0.040
325	459.5	134.5	0.062	0.018

REGISTERED PROFESSIONAL ENGINEER
MINING
A. W. FOKELL
PROVINCE OF ONTARIO

JOGRAN MINES LTD.
RYAN TOWNSHIP PROPERTY
DISTRICT OF ALGOMA
ONTARIO

MARCH 1965

SAMPLING AND ASSAYING RECORD

Nº 18 DIAMOND DRILL HOLE 18

SAMPLE Nº	FOOTAGE FROM	FOOTAGE TO	CORE LENGTH	ASSAYS %CU.	ASSAYS %MoS2	ROCK FORMATION
809	15	22.5	7.5	.22	.03	QUARTZ
810	22.5	30	7.5	.30	.07	FELDSPAR
1	30	37.5	7.5	.24	.04	PORPHYRY
2	37.5	42.5	5.0	.38	.03	"
3	42.5	51.5	9	.20	.04	"
4	51.5	65.5	14.5	.22	.02	"
5	65.5	82	16.5	.22	.02	"
6	82	95	13	.05	.03	"
7	95	105	10	.21	.03	"
Average	15	105	90	0.20	0.032	
818	105	120	15	.21	.03	"
9	120	130	10	.15	.04	"
820	130	145	15	.18	.03	"
1	145	155	10	.12	.03	"
2	155	165	10	.14	.02	"
3	165	181	16	.15	.01	"
4	181	185	4	.17	.22	"
5	185	200	15	.10	.01	"
Average	105	200	95	0.153	0.031	
826	200	210	10	.09	TR	"
7	210	215	5	.23	.31	"
8	215	225	10	.12	.01	"
9	225	237.5	12.5	.18	.03	"
830	237.5	250	12.5	.15	TR	"
1	250	262.5	12.5	.11	.02	"
2	262.5	275	12.5	.10	NIL	"
3	275	287.5	12.5	.06	.02	"
4	287.5	300	12.5	.09	TR	"
Average	200	300	100	0.119	0.025	
835	300	308	8	.10	.01	"
6	308	320	12	.10	.07	"
7	320	330	10	.10	.02	"
8	330	336	6	.09	.18	"
9	336	345	9	.09	.10	"
840	345	360	15	.07	.03	"
1	360	370	10	.08	.02	"
2	370	377	7	.08	.42	"
3	377	390	13	.04	.04	"
4	39	405	15	.22	.03	"
Average	300	405	105	0.10	0.077	

REGISTERED PROFESSIONAL ENGINEERS MINING A. W. ECKELL PROVINCE OF ONTARIO

SAMPLING AND ASSAYING RECORD

No. 18 DIAMOND DRILL HOLE

SAMPLE No.	FOOTAGE FROM	FOOTAGE TO	CORE LENGTH	ASSAYS % CU.	ASSAYS % MOS$_2$	ROCK FORMATION
845	405	415	10	.14	.01	QUARTZ
6	415	425	10	.07	TR	FELDSPAR
7	425	436	11	.07	.01	PORPHYRY
8	436	444	8	.06	TR	"
9	444	452	8	.08	TR	"
850	452	465	13	.15	.01	"
1	465	480	15	.12	.02	"
2	480	495	15	.14	.02	"
3	495	510	15	.14	TR	"
Average	405	510	105	0.113	0.009	
854	510	525	15	.15	.01	"
5	525	537.5	12.5	.11	.02	"
6	537.5	549	11.5	.12	.04	"
7	549	557.5	8.5	.14	.01	"
8	557.5	567.5	10	.08	.03	"
9	567.5	578	10.5	.08	.01	"
860	578	589	11	.09	.01	"
1	589	600	11	.11	.02	"
2	600	614	14	.16	.03	"
Average	510	614	104	0.130	0.020	
863	614	625	9	.09	.01	"
4	625	633.5	8.5	.10	.03	"
5	633.5	642	8.5	.08	.02	"
6	642	652	10	.13	.02	"
7	652	662	10	.10	.04	"
8	662	672	10	.09	.02	"
9	672	680	8	.08	.13	"
870	680	687.5	7.5	.08	.05	"
Average	614	687.5	73.5	0.09	0.037	

SUMMARY

15	105	90	0.200	0.032
105	200	95	0.153	0.031
200	300	100	0.119	0.025
300	405	105	0.100	0.077
405	510	105	0.113	0.009
510	614	104	0.130	0.020
614	687.5	73.5	0.090	0.037
AVERAGE 15	250	235	0.174	0.033

REGISTERED PROFESSIONAL ENGINEER
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A. W. ECKELL
ONTARIO

BULK 18

BULK 18

JOGRAN MINES LTD.

RYAN TOWNSHIP PROPERTY
DISTRICT OF ALGOMA
ONTARIO

BULK SAMPLING AND ASSAYING RECORD

Nº 18 DIAMOND DRILL HOLE

SAMPLE Nº	CORE LENGTH	CALC. ASSAY %CU	CALC. ASSAY - %MoS_2	BULK ASSAYS - %CU.	BULK ASSAYS - %MoS_2	BULK ASSAYS - %BARIUM	BULK ASSAYS - %TiO_2	BULK ASSAYS - %V_2O_5	BULK ASSAYS - %ZrO_2
18 - 15 - 250	235	0.174	0.033	- 0.17	0.05	0.07	0.10	0.017	0.015
18 - 250 - 510	260	0.104	0.035	- 0.10	0.04	0.06	0.11	0.016	0.010
18 - 510 - 687	177.5	0.113	0.027	- 0.11	0.03	0.08	0.12	0.013	0.012
AVERAGE	672.5	0.131	0.032	- 0.127	0.041	0.069	0.109	0.016	0.012

REGISTERED PROFESSIONAL ENGINEER
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A. W. JECKELL
PROVINCE OF ONTARIO

BROWN & GOLLETT LTD.
8 SQUARES TO THE INCH
FORM NO. 1810

JOGRAN MINES LTD
RYAN TOWNSHIP PROPERTY
DISTRICT OF ALGOMA
ONTARIO

SAMPLING AND ASSAYING RECORD

Nº 19 DIAMOND DRILL HOLE 19

MARCH 1965 PAGE 1. of 3.

SAMPLE Nº	FOOTAGE FROM	FOOTAGE TO	CORE LENGTH	ASSAYS %CU	ASSAYS %MoS2	ROCK FORMATION
871	23	32	9	.20	.02	QUARTZ
2	32	42.5	10.5	.19	.02	FELDSPAR
3	42.5	47.5	5	.09	TR	PORPHYRY
4	47.5	58	10.5	.29	.10	"
5	58	65	7	.27	TR	"
6	65	75	10	.25	.02	"
7	75	86	11	.21	.01	"
8	86	100	14	.15	.04	"
Average	23	100	77	0.222	0.030	
879	100	110	10	.10	.01	"
880	110	120	10	.15	TR	"
1	120	130	10	.13	NIL	"
2	130	140	10	.16	.02	"
3	140	150	10	.19	.01	"
4	150	160	10	.17	.01	"
5	160	170	10	.17	.01	"
6	170	180	10	.17	.03	"
7	180	195	15	.25	.04	"
Average	100	195	95	0.170	0.016	"
888	195	205	10	.24	.03	"
9	205	215	10	.23	.12	"
890	215	216	1	.22	3.64	"
1	216	225	9	.21	.03	"
2	225	238	13	.15	TR	"
3	238	243	5	.56	.05	Fractured
4	243	250.5	7.5	.27	.04	LAVA
Average	195	250.5	55.5	0.244	0.107	
	250.5	272	21.5	-	-	FAULT ZONE
931	272	278.5	6.5	.16	.02	VOL
2	278.5	285	6.5	.15	.04	LAVA
3	285	295	10	.18	.03	"
4	295	306	11	.14	.09	"
Average	272	306	34	0.158	0.05	
935	306	309.5	3.5	.08	.03	PPY DIKE
895	309.5	320	10.5	.21	TR	SIL.
6	320	330	10	.12	.01	VOL
7	330	340	10	.12	.02	LAVA
8	340	351.5	11.5	.14	.03	"
Average	306	351.5	45.5	0.143	0.017	

REGISTERED PROFESSIONAL ENGINEER MINING A. W. JECKELL PROVINCE OF ONTARIO

SAMPLING AND ASSAYING RECORD

Nº 19 DIAMOND DRILL HOLE

SAMPLE Nº	FOOTAGE FROM	FOOTAGE TO	CORE LENGTH	ASSAYS %CU	ASSAYS %MoS_2	ROCK FORMATION
899	351.5	357.5	6	.06	.04	SIL VOL. LAVA
900	357.5	370	12.5	.04	.02	GTZ. DIABASE
-	370	402	32	-	-	"
-	402	405.7	3.7	-	-	FAULT
-	405.7	435	29.3	-	-	SIL. VOL. LAVA
-	435	438	3	-	-	FR. FELSITE
-	438	442	4	-	-	SIL. VOL. LAVA
-	442	479	37	-	-	FELSITE
-	479	506	27	-	-	SIL. VOL. LAVA

SUMMARY

23	100	77	0.222	0.030
100	195	95	0.170	0.016
195	250.5	55.5	0.244	0.107
AVERAGE 23	250.5	227.5	0.201	0.042

REGISTERED PROFESSIONAL ENGINEER
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PROVINCE OF ONTARIO

JOGRAN MINES LTD
No 19 D.D.H.

March 17th, 1965

Note - On February 24th, the rods were stuck in No 19 Hole at 276 feet. In pulling, a coupling stripped, allowing 95 feet of rods, 15-foot core barrel and bit to be stuck in the hole. On February 28th, a wedge was used at 170 feet and the rods were by-passed by re-drilling the hole. Subsequently, two cuts of core were available for inspection and sampling.

The following table shows the Assays from Samples for the original run and the second re-run:-

ORIGINAL RUN								SECOND RE-RUN							
Sample No	From	To	Core Length	%Cu	%ft	%FeS_2	%ft	Sample No	From	To	Core Length	%Cu	%ft	%FeS_2	%ft
886	170	180	10	.17		.03		901	171	181	10	.15		.01	
7	180	195	15	.25		.04		2	181	196	15	.20		.10	
8	195	205	10	.24		.03		3	196	206	10	.15		.02	
9	205	215	10	.23		.12		4	206	211	5	.14		.01	
890	215	216	1	.22		3.64		5	211	212	1	.22		4.20	
1	216	225	9	.21		.03		6	212	226	14	.18		.03	
2	225	238	13	.15		TR		7	226	237.5	11.5	.18		.08	
AVERAGE	170	238	68	0.209		0.092		AVERAGE	171	237.5	66.5	0.173		0.111	

REGISTERED PROFESSIONAL ENGINEER
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A. W. JECKELL
PROVINCE OF ONTARIO

No 19 D.D.H.

JOGRAN MINES LTD.
RYAN TOWNSHIP PROPERTY
DISTRICT OF ALGOMA
ONTARIO

SAMPLING AND ASSAYING RECORD

Nº 20 DIAMOND DRILL HOLE 20

MARCH 1965 PAGE 1. of 2.

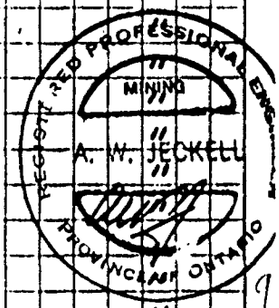
SAMPLE Nº	FOOTAGE FROM	FOOTAGE TO	CORE LENGTH	ASSAYS %CU	ASSAYS %MoS_2	ROCK FORMATION
908	25	35	10	.18	.02	QUARTZ
9	35	44.5	9.5	.18	TR	FELDSPAR
910	44.5	50 (FAULT)	5.5	.08	.01	PORPHYRY
1	50	60	10	.20	.02	"
2	60	70	10	.20	.04	"
3	70	80	10	.22	.06	"
4	80	90	10	.23	.12	"
5	90	100	10	.12	.01	"
6	100	112.5	12.5	.17	.01	"
7	112.5	125	12.5	.20	.03	"
Average	25	125	100	0.183	0.030	
918	125	137	12	.13	.03	"
3014	137	143.3 (FAULT)	6.3	.12	.02	"
919	143.3	155	11.7	.17	.02	"
920	155	165	10	.16	.02	"
1	165	175	10	.18	.02	"
2	175	187.5	12.5	.22	.02	"
3	187.5	200	12.5	.20	.02	"
4	200	210	10	.19	.03	"
5	210	215	5	.21	.07	"
6	215	220.5	5.5	.21	.08	"
—	220.5	222 (FAULT)	1.5	-	-	"
Average	125	222	97	0.168	0.027	
927	222	237	15	.20	.02	"
8	237	250	13	.14	.02	"
9	250	260	10	.15	.04	"
930	260	265	5	.15	.06	"
936	265	275	10	.13	.03	"
7	275	280	5	.14	.06	"
8	280	290	10	.20	.01	"
9	290	300	10	.14	.08	"
940	300	310	10	.15	.03	"
1	310	315	5	.10	.26	"
2	315	325	10	.15	.03	"
Average	222	325	103	0.155	0.045	
943	325	335	10	.14	.04	"
4	335	340	5	.19	.20	"
5	340	347	7	.16	.13	"
6	347	355	8	.12	.06	"
7	355	364.5	9.5	.15	.05	"
8	364.5	375	10.5	.13	.02	"
9	375	385	10	.16	.03	"
950	385	395	10	.13	.04	"

PROFESSIONAL ENGINEER A. W. ROCKELL PROVINCE OF ONTARIO

SAMPLING AND ASSAYING RECORD

No. 20 DIAMOND DRILL HOLE

SAMPLE No.	FOOTAGE FROM	FOOTAGE TO	CORE LENGTH	ASSAYS % CU.	ASSAYS % MoS_2	ROCK FORMATION
951	395	405	10	.12	.08	QUARTZ
2	405	415	10	.10	.13	FELDSPAR
3	415	425	10	.10	.25	PORPHYRY
Average	325	425	100	0.133	0.088	
954	425	435	10	.12	.02	"
5	435	445	10	.32	.04	"
6	445	455	10	.14	.02	"
7	455	465	10	.09	.01	"
8	465	475	10	.14	TR	"
9	475	485	10	.14	.02	"
960	485	495	10	.12	TR	"
1	495	508	13	.14	.01	"
2	508	520	12	.11	.03	"
Average	425	520	95	0.146	0.017	
963	520	530	10	.09	.01	"
4	530	540	10	.07	.20	"
5	540	550	10	.07	.02	"
6	550	560	10	.04	.02	"
7	560	570	10	.09	.17	"
8	570	580	10	.08	.01	"
9	580	590	10	.09	.08	"
970	590	600	10	.10	.01	"
1	600	610	10	.08	.01	"
2	610	620	10	.10	.03	"
Average	520	620	100	0.081	0.056	
973	620	630	10	.12	.01	"
4	630	645	15	.16	.01	"
5	645	660	15	.13	.02	"
6	660	670	10	.15	.06	"
7	670	680	10	.14	.03	"
8	680	692.5	12.5	.12	.03	"
9	692.5	705	12.5	.16	.01	"
980	705	715	10	.20	.03	"
1	715	724	9	.14	.03	"
Average	620	724	104	0.146	0.024	



SUMMARY

	25	125	100	0.183	0.030
	125	222	97	0.168	0.027
	222	325	103	0.155	0.045
	325	425	100	0.133	0.088
AVERAGE	25	425	400	0.159	0.048
	425	520	95	0.146	0.017
	520	620	100	0.081	0.056
	620	724	104	0.146	0.024
AVERAGE	25	724	699	0.144	0.041

JOGRAN MINES LTD.

RYAN TOWNSHIP PROPERTY

DISTRICT OF ALGOMA

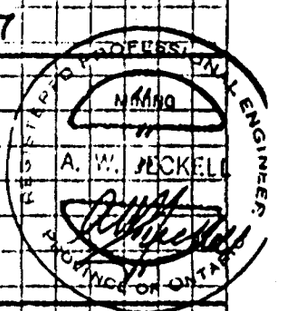
ONTARIO

SAMPLING AND ASSAYING RECORD

Nº 21 DIAMOND DRILL HOLE 21

MARCH 1965 PAGE 1. of 1.

SAMPLE Nº	FOOTAGE FROM	FOOTAGE TO	CORE LENGTH	ASSAYS %CU	ASSAYS %MoS_2	ROCK FORMATION
9822	17	30	13	.16	.02	QUARTZ
3	30	40	10	.17	.03	FELDSPAR
4	40	48	8	.12	.12	PORPHYRY
5	48	55.5	7.5	.27	.02	"
6	55.5	65	9.5	.20	.01	"
7	65	75	10	.16	.05	"
8	75	85	10	.14	.03	"
9	85	90	5	.22	.10	"
9900	90	100	10	.10	.02	"
1	100	108.5	8.5	.10	.01	"
2	108.5	116.5	8	.11	.01	"
Avera	17	1165	99.5	0.155	0.034	
9933	116.5	125	8.5	.19	.02	"
4	125	136.5	11.5	.13	.03	"
5	136.5	146.5	10	.08	.04	"
6	146.5	155	8.5	.13	.02	"
7	155	165	10	.17	.03	"
8	165	181	16	.17	.01	"
9	181	182	1	.21	3.24	"
10000	182	194	12	.07	.07	"
30001	194	205	11	.08	.03	"
2	205	215	10	.11	.07	"
Average	116.5	215	98.5	0.126	0.067	
30033	215	225	10	.07	.03	"
4	225	235	10	.14	.03	"
5	235	240	5	.07	.14	"
6	240	250	10	.09	.02	"
7	250	260	10	.09	.03	"
8	260	271	11	.05	.02	"
Average	215	271	56	0.086	0.036	
30039	271.5	285	13.5	.14	.15	VOLC
30310	285	295	10	.11	.07	LAVA
1	295	310	15	.13	.07	"
2	310	325	15	.15	.10	"
3	325	337.5	12.5	.13	.08	"
Average	271.5	337.5	66	0.133	0.095	



DIAMOND DRILL RECORD

JOGRAN MINES LIMITED

D.D. HOLE No "A"

LOCATION - 540'S and 960'W of No 1 Post.
- Geophysical Survey 1150'S on LINE 2+00'W.

DIRECTION - N 27 E or 027°

CLAIM - S.S.M. - 62589
RYAN TOWNSHIP
District of Algoma
ONTARIO

DIP - 45°
FOOTAGE - 451 ft.

DATE - August 1-6 and 21 - 1961

Drilled by - Continental D. D. Co.

Logged by - A.W. Jeckell, P. Eng.

FROM	TO	FOOTAGE	DESCRIPTION-
0	14		- Casing
14	95	81	- Volcanic, medium siliceous, mostly massive SPECIMENS at - 57, 88, 113, 120, 142, 193, 217 - 14 to 16.5' - Rusty, fractured, Qtz filled, pyrite - 75 to 95 - flow top, some vesicles
95	135	40	- Fine grained siliceous chloritic to Qtz diabase - One 1/4" Qtz seam and one 1/8" seam with chalcopyrite 2" apart at 110' @ 50° C/A - One 1" Qtz Stringer with Chalcopyrite (SPECIMEN 120) at 120' @ 55° - 1 1/2" fault seam, carbonate and Qtz Carbonate with little pyrite at 135' @ 40°
135	216	81	- Medium grained Qtz Diabase, few scattered threads pyrite & chalcopyrite
216	300	84	- Gradual change to dense fine grained Qtz Diabase - At 223' Qtz Stringer between 3" @ 60° - At 225' Seams 1/4" pyrite at opposite diagonal angles - at 249 to 250 Qtz Stringers 1/2" and 3/4" some 4" apart, cluster pyrite & chalcopyrite SPECIMEN 249-250 - From 250 on to fault at 327, considerable fracturing. - At 262.5 a 1/4" Qtz Carb. seam, 40 stain @ 35° - At 277.5 a 1/2" $CaCl_3$ seam at 20° - At 278.3 a 1/2" Qtz Carb seam, little chalco @ 40° opposing above 20° - At 279 a 1/4" Qtz Stringer, & little chalco @ 45° - From 279 to 300, fair fracturing, scattered threads with chalco with 1/2" Qtz Carb stringer seam @ 20° at 296.5' ft.
300	327	27	- Appears to be a flow top with siliceous alteration, some [illegible] threads with chalco but not enough to show more than 0.1% Cu/ft - At 310.5 - fault breccia seam @ 30° along 2 feet of core.
327	340	13	- FAULT, with - Qtz Carbonate and Breccia at 327 & 327.5

REGISTERED PROFESSIONAL ENGINEER
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A. W. JECKELL
PROVINCE OF ONTARIO

JOGRAN MINES LTD

D.D. HOLE No "A"

FROM	TO	FOOTAGE	DESCRIPTION -
			- Shear at 330.5 @ 25° C/A
			- Stony breccia 332 to 332.5 feet
			- " " 337 to 339, & shear @ 25 to 30°, also fracture plane parallel to C/A
340	451	111	- Siliceous volcanic ? - SPECIMEN at 362'
			- Scattered seams & few threads
			- Special SPECIMEN 377 to 375 ft showing two 1" qtz stringers @ 50 and 45° with chalcopyrite
			- At 379' a 1" fault seam @ 20° C/A
			- At 388' a 1" qtz Carbonate seam
			- At 395.5 a 1/8" to 1/4" seam of sulphide, pyrite and chalcopyrite @ 90° C/A
			- At 401 a 1/8" seam pyrite, & silty sericite
			- Some mineralization 406 to 418 ft., 12 threads mostly pyrite. 1/8" seams at 407.5, 412, 413, 417, 419.5. - 1/2" sulphides, mostly pyrite at 407 @ 60° C/A
			- 1/2" sulphides, some chalcopyrite at 445.5 ft @ 60° (disrupted ?)
			- Scattered threads of pyrite 446 to 450.

END of HOLE

Date of Examination - 0 to 327 - On August 8th.
- 327 to 340 - On August 12th } 1964
- 340 to 451 - On September 26th }

TEST ANGLE - Misplaced ?

PROFESSIONAL ENGINEER
MINING
A. F. JECKELL
PROVINCE OF ONTARIO

DIAMOND DRILL RECORD

JOGRAN MINES LIMITED

D.D. HOLE No 7

Location - 550'S and 0'E of No 4 Post.
- Geophysical Survey 14+10' North on Line 200 East

Direction - S 27 W or 207°

CLAIM - S.S.M. 66422
RYAN TOWNSHIP.
District of Algoma
ONTARIO

DIP - -45°
FOOTAGE - 650'

DATE - 0-450' June 27 to July 2-1964
450'-650' July 16 to July 18-1964

Drilled by - Continental D.D. Co.

Logged by - A. W. Jeckell, P Eng.

FROM	To	Footage	Description
0	12	12'	- Casing
12	55'	43'	- Ath Diabase - 1/8" seam Py + Chalco at 40'5 and 2" at 48'
55'0	55'3	0.3'	- Fault at 75° C/A, H2O stain, Qtz Carb and Carbonate
55'3	225'	169.7'	- Siliceous Volcanics
- 55'3	to - 60	4.7	- 1" Qtz and Blebs of chalcopyrite @ 57' - 6 threads sulphides
60	to 65'	5.0	- mostly barren, some alteration, 1" seam at 64.5'
65	to 70	5.0	- 6 threads
70	to 74	4.0	- 6 threads
74	to 76	2.0	- altered, multiple threads, pyrite + chalco
76	to 80	2.0	- Barren
80	to 85'	5.0	- 10 threads and 1 seam 1/8"
85	to 90	5.0	- 11 threads
90	to 95	5.0	- 6 threads
95	to 100	5.0	- 4 threads
100	to 104	4.0	- 6 threads
At 104		0.5'	- Broken core 6", and one 1/2" Carbonate shear fault remnant, no sulphide mineralization improves at this fault.
104.5	to 110	5.5	- fractured, 1" Qtz Stringer 50 °C/A w.m. chalco - 17 threads
110	to 115'	5.0	- 19 threads and one 1/8" seam
115'	to 120	5.0	- 12 threads, some dissemination Ref dense bars
120	to 125'	5.0	- 4 threads, 7 seams 1/8" Py + chalco. At 124 Qtz & 1" seam 1/2" at 45° to C/A
125'	to 131	6.0	- Mostly barren, 8 threads, 1/2" Qtz Carb fault at 45° to C/A
131	to 144.5'	13.5	- 20 threads and 3 seams 1/8"
144.5'	to 170	25.5'	- Scattered seams pyrite + chalco. - At 155' fault seam at 45° to C/A H2O stain - Qtz Carb. - 167.5' to 170 - Altered fractured section, Py. Chalco, Qtz

No 67 - 5.5' @ 0.27% Cu.
No 68 - 5.0 @ 0.27% Cu
No 69 - 5.0 @ 0.08% Cu
No 70 - 5.0 @ 0.12% Cu
No 71 - 2.5' @ 0.41% Cu

REGISTERED PROFESSIONAL ENGINEER
MINING
A. W. JECKELL
PROVINCE OF ONTARIO

NOT TO BE REMOVED FROM
THE OFFICE OF THE RESIDENT
GEOLOGIST, ONT. DEPT. OF MINES
SAULT STE. MARIE, ONT.

JOGRAN HINES LTD

D.D. HOLE No 7.

FROM	TO	FOOTAGE	Description
170	to 181	11.0	- mostly barren dease
181	to 184.5	3.5	- Siliceous alteration, folding at 30° to C/A some fine threads — No 72 - 3.5' @ 0.08% Cu
184.5	to 192.5	5.0	- 20 threads and 2 elongated 1/4" seams @ 30° Py + Chalco — No 73 - 5.0 @ 0.12% Cu
192.5	to 197.5	5.0	- less fracturing, more dense
197.5	to 209.	11.5	- altered by siliceous solution, seams + threads all directions — No 74 - 11.5 @ 0.14 % Cu
209	to 220	11.0	- fractured, threads 5% — No 75 - 11.0 @ 0.07 % Cu
220	to 225	5.0	- 5 threads, 3 seams.
			Hardness of rock changes 223' to 225' but no particular contact
225	to 230	5.0	- 3 seams 1/8" to 1/4" and one 1/2" Qtz seam @ 60° to C/A
230	to 235	5.0	- 1/2" fault at 231' @ 45° C/A - balance of Qtz fault is :- barren Qtz Diabase and mineralization increases.
231	HCO	169'	- Quartz Diabase
235	to 235.5	3.5	- mostly barren
235.5	to 240	1.5	- folded with parallel C/A Qtz Stringer, pyrite and chalco
240	to 245	5.0	- 17 threads all directions, pyrite, chalco
245	to 250	5.0	- 15 threads " " "
250	to 255	5.0	- 3 threads and one 1/2" Qtz Stringer pyrite, chalco
255	to 260	5.0	- 7 threads, otherwise barren
260	to 265	5.0	- 7 threads, " "
265	to 270	5.0	- 5 threads, " "
270	to 275	5.0	- 6" patch of disseminated sulphides, 3 threads and 2 only 1/4" seams, Qtz, sulphides
275	to 285	10.0	- 6 only 1/8" seams, sulphides
285	to 290	5.0	- 2 threads
290	to 295	5.0	- threads parallel to C/A (290 to 291), 1/8" seam sulphides at 291 @ 35° to C/A, 5 threads
295	to 300	5.0	- 3 threads at 35 to 40° C/A and at 295.5' at 45° - 1 1/2" of siliceous alteration with blebs of pyrite and chalco — No 80 - 5.0 @ 0.20% Cu
300	to 305	5.0	- 8 threads
305	to 310	5.0	- 5 threads and at 309' a 3/8" Qtz Stringer @ 40° C/A
310	to 315	5.0	- 9 threads
315	to 320	5.0	- barren but at 319' a 3/4" Qtz Carb seam with pyrite + chalco @ 40° C/A
320	to 325	5.0	- 2 threads
325	to 330	5.0	- one Qtz seam 1/8"
330	to 335	5.0	- 7 threads
335	to 340	5.0	- 336 to 337 a Qtz filled 3/4" fracture seam, pyrite, chalco, some fine sulphides and threads in balance - 337 to 339.8 Quartz + Chlorite porphyry

JOGRAN MINES LTD

D.D. HOLE No 7.

FROM	TO	FOOTAGE	Description
340	to 345	5.0	- 6 threads and at 344' Qtz seam 3/8" @ 45° C/A
345	to 350	5.0	- 14 threads and two 1/4" Qtz seams - 70° @ 345' and 45° @ 349'
350	to 355	5.0	- 8 threads and 1/2" Qtz seam @ 70° at 352.5' and 1" Qtz Carb. @ 90° at 353.5'
355	to 360	5.0	- 15 threads, FeO stain & sulphides - at 357' a 2" alteration @ 70°, sulphides
360	to 365	5.0	- 22 threads
365	to 370	5.0	- 12 threads
370	to 375	5.0	- One 1/8" Qtz seam @ 40° C/A
375	to 380	5.0	- 3 FeO + $CaCO_3$ seams
380	to 385	5.0	- 2 " " "
385	to 390	5.0	- 2 " " " @ 20 to 25° C/A
390	to 395	5.0	- One 3/8" Qtz Stk @ 25° C/A at 392.5' and one 1/4" at 394 @ 70°
395	to 400	5.0	- 1" well mineralized stringer 40° C/A at 398', - 5 threads and at 398.3 an 1" Qtz Carbonate and Carbonate fault @ 45° C/A
400	564	164.0	- Looks like Siliceous Volcanic
400	to 404.5	4.5	- barren, some alteration paralleling core axis, at 404.5' a 3/8" $CaCO_3$ seam at 45° C/A
404.5	to 408.	3.5	- Pyrite and molybdenum indications - Alteration and 1/2" Qtz seam, chalco and pyrite 40° C/A at 406.5', also 3/8" Qtz Stk at 407.5' →
408	to 416	8.0	- Fractured and alteration, no mineralization → No 81 - 3.5 @ 0.19 % Cu → No 132 - 8.0 @ 0.11 % Cu.
416	to 419	3.0	- 5/8" of massive sulphide @ 80° C/A also 3/8" Qtz Carbonate seam at 419' at angle 15° C/A.
419	to 423.3	4.3	- Two 1/8" Qtz seams @ 15 to 20° C/A
423.3	to 428.3	5.0	- At 423.9 a 1/2" seam of sulphide @ 45° C/A also 1/4" seam at 40° (opposite angle) - At 428' a 3/8" altered seam of sulphide
428.3	to 430	1.7	- Barren
430	to 433	3.0	- At 430.3 seam and breccia 1/2" with sulphide - At 432 to 432.8 heavy disseminated sulphides and a 1/2" Qtz seam at 50° C/A
433	to 440	7.0	- Mostly barren
440	to 447	7.0	- " "
447	to 449	2.0	- At 447 a 1/2" Qtz Bert. fault seam @ 50° and fine disseminated sulphides in fracturing
447	to 450	1.0	- Broken Core - Hole stopped at 450 feet See Page 4 for subsequent deepening.

No 82 - 3.0 @ 0.75 % Cu.
No 133 - 4.3 @ 0.11 % Cu

No 83 - 5.0 @ 0.18 % Cu.
No 134 - 1.7 @ 0.07 % Cu.

No 84 - 3.0 @ 1.62 % Cu.
No 135 - 7.0 @ 0.08 % Cu.
No 136 - 7.0 @ 0.11 % Cu.

No 85 - 2.0 @ 2.22 % Cu.

REGISTERED PROFESSIONAL ENGINEER
MINING
A. W. JECKELL
PROVINCE OF ONTARIO

JOGRAN MINES LTD

200' Deepening of — to 650 ft.

D.D. HOLE No 7

FROM	TO	FOOTAGE	Description	
449	to 455	6.0	- 10 plus threads and three 1/8" seams	No 161 - 6.0 @ 0.22 % Cu.
455	to 459	4.0	- well mineralized, numerous threads	No 162 - 4.0 @ 0.42 % Cu.
459	to 464	5.0	- well mineralized breccia fault zone, Fe O stain, quartz filling, typical of zone Hole No 3	No 163 - 5.0 @ 1.37 % Cu.
Total 416	to 464	48.0	- AVERAGE ASSAY 0.50 % COPPER	
464	to 471	7.0	- some broken core not well mineralized, some threads with Fe O Stain - one slip plane @ 35° C/A at 466	No 164 - 7.0 @ 0.11 % Cu.
471	to 472	1.0	- 2 stringer seams 1/4" & 1/2" about 2" apart well mineralized chalcopyrite and molybdenite (0.04 %)	No 165 - 1.0 @ 0.36 % Cu.
472	to 480	8.0	- dense siliceous volcanic, few fine threads	No 166 - 8.0 @ 0.01 % Cu.
480	to 485	5.0	- " " " " "	No 167 - 5.0 @ 0.07 % Cu.
485	to 490	5.0	- seam 1/8" Fe O C O3 @ 40° at 485.5 - 25 threads - 2 qtz 1/8"	No 168 - 5.0 @ 0.15 % Cu.
490	to 495	5.0	- alteration, in diagonal 1/8" seam, chalco, numerous threads	No 169 - 5.0 @ 0.51 % Cu.
495	to 505	10.0	- mostly dense sil. volcanic, six 1/8" Fe O C O3 seams 45 to 50°	No 170 - 10.0 @ 0.03 % Cu.
505	to 515	10.0	- same as above, few chalco threads	No 171 - 10.0 @ 0.12 % Cu.
515	to 525	10.0	- " " " " "	No 172 - 10.0 @ 0.12 % Cu.
525	to 531.5	6.5	- some fractures, several small slugs chalco in alteration	No 173 - 6.5 @ 0.14 % Cu.
531.5	to 531.75	0.25	- Qtz and Qtz Carbonate filled fault, no mineral 55° C/A	0.25 @ -
531.75	to 536.5	4.75	- fractured and altered, some clusters of chalco	No 174 - 4.75 @ 0.24 % Cu.
536.5	to 548.5	12.0	- FAULT ZONE, barren, Fe O Stain, Carbonate F.N. 45° 11 W. 55°	
548.5	to 564	15.5	- fractured sil. volcanic minor chalco seams	
564	604	40.0	- QUARTZ FELSITE PORPHYRY	
604	to 610	6.0	- Siliceous Volcanic - 42 threads, chalco, pyrite	No 175 - 6.0 @ 0.32 % Cu.
610	to 615	5.0	- " " 22 threads, one 1/8" seam	No 176 - 5.0 @ 0.25 % Cu.
615	to 620	5.0	- " " 34 " , 7 seams	No 177 - 5.0 @ 0.35 % Cu.
620	to 624	4.0	- " " 35 "	No 178 - 4.0 @ 0.36 % Cu.
624	to 627	3.0	- " " 3" Qtz Str. diss. Chalco, threads in balance	No 179 - 3.0 @ 0.46 % Cu.
627	to 635	8.0	- " " 22 threads dense + barren balance	No 180 - 8.0 @ 0.16 % Cu.
635	to 642	7.0	- " " well fractured 62 threads - 2 seams, chalco + Qtz	No 181 - 7.0 @ 0.47 % Cu.
Total 604	to 642	38.0	- AVERAGE ASSAY 0.324 % COPPER	

REGISTERED PROFESSIONAL ENGINEER MINING W. J. ECKELL PROVINCE OF ONTARIO

JOGRAN MINES LTD

D.D. HOLE No 7

FROM	TO	FOOTAGE	DESCRIPTION -
642	to 650	8.0	- Change in colour of Siliceous volcanic to light grey-green at 642, - 1/4" Qtz Carbonate seam @ 35° C/A - 8 threads at 648', - 1" Qtz stringer, cluster c'alcopyrite and bornite

SPECIMEN - 648'

END of HOLE

ANGLE TESTS

425' - 54°
640' - 55°

SUMMARY -

0 - 12	Casing
12 - 55	Qtz. Diabase
55.3 - 225	siliceous volcanic
225 - 231	fault + transition zone
231 - 400	Quartz Diabase
400 - 564	Siliceous volcanics (536.5 to 545.5 - FAULT)
564 - 604	Quartz Felsite porphyry
604 - 650	siliceous volcanic

TOTAL SAMPLING AND ASSAYING

104.5 to 125	- 20.5 ft	@ 0.180 % Cu	High Assay 0.27%	low Assay 0.08
167.5 to 170	- 2.5 ft	@ 0.41 % Cu		
181 to 192.5	- 11.5 ft	@ 0.10 % Cu		
197.5 to 220	- 22.5 ft	@ 0.105 % Cu.		
295 to 300	- 5.0 ft	@ 0.20 % Cu.		
404.5 to 416	- 13.5 ft	@ 0.114 % Cu		
416 to 464	- 48.0 ft	@ 0.50 % Cu.	High 2.22%	low 0.06%
464 to 536.5	- 72.5 ft	@ 0.132 % Cu.	High 0.51%	low 0.01%
604 to 642	- 38.0 ft	@ 0.324 % Cu.	High 0.47%	low 0.16%
Total	- 234.0 ft	or 36% of core.		

REGISTERED PROFESSIONAL ENGINEER MINING A. W. JECKELL PROVINCE OF ONTARIO

Date of Examination - June 30, July 4, July 20 th, 1964.

A.W. Jeckell

DIAMOND DRILL RECORD

JOGRAN MINES LIMITED

D.D. HOLE No 8

LOCATION - 400' S and 50' W of No 4 Post

- Geophysical Survey 1500' North on 100 East.

CLAIM - SSM - 66422
RYAN TOWNSHIP
District of Algoma
ONTARIO

DATE - July 4 to 9, 1964

Drilled by - Continental D.D. Co.

Logged by - A.W. Jeckell, P. Eng.

Direction - S 27 W or 207°

DIP - 45°
FOOTAGE - 499'

REGISTERED PROFESSIONAL ENGINEER
MINING
A. W. JECKELL
PROVINCE OF ONTARIO

FROM	TO	Footage	Description	
0	10	10'	- Casing	
10	45	35'	- Qtz. Diabase	
- 10 to	- 16	- 6'	- 22 threads	No 88 - 6' @ 0.10 % Cu.
16 to	18.5	2.5	- siliceous and granitic alteration, fractured, disseminated sulphides + threads	No 89 - 2.5 @ 0.13 % Cu.
18.5 to	23	4.5	- well mineralized, dissemination 3 to 4 % Sulphides Chalcopyrite. Felsite alteration 21 to 22.5	No 90 - 4.5 @ 1.45 % Cu.
23 to	27	4.0	- somewhat fractured, 17 threads	No 91 - 4' @ 0.56 % Cu.
27 to	28.5	1.5	- 2" seam, well mineralized 7 % Sulphides 7 threads	No 92 - 1.5 @ 0.71 % Cu.
28.5 to	35	6.5	- fairly massive, 22 threads, at 35' CaCO3 fault 3/4 seam @ 35° C/A	No 93 - 6.5 @ 0.08 % Cu.
35 to	40	5.0	- 20 threads, at 36' fault seam 1/2" FeOStain @ 60° C/A	No 94 - 5.0 @ 0.13 % Cu.
40 to	45	5.0	- 21 threads, 1 seam 1/4	No 95 - 5.0 @ 0.11 % Cu.
45 to	45.5	0.5	- AT 45' - 6" FAULT @ 40°, $CaCO_3$ + FeO Stain, no min.	- 0.5 -
45.5 to	50	4.5	- Felsitic alteration, scattered blebs of Chalc, numerous threads	No 96 - 4.5 @ 0.48 % Cu.
TOTAL 18.5 to	50.0	31.5	- AVERAGE - 0.435 % Cu.	
OR 18.5 to	28.5	10.0	- AVERAGE - 0.983 % Cu.	
45	101.5	56.5	- Appears to be SILICEOUS VOLCANIC after 6" FAULT.	
50 to	60	10.0	- Fairly massive, few threads at 15 to 20° C/A	No 97 - 10.0 @ 0.06 % Cu.
60 to	70	10.0	- " " SPECIMEN AT 52'	No 98 - 10.0 @ 0.12 % Cu.
70 to	77	7.0	- same as above	No 99 - 7.0 @ 0.04 % Cu.
77 to	83.5	6.5	- Three 1/4" seams, FeOStain CaCO3, 21 threads	No 100 - 6.5 @ 0.10 % Cu.
83.5 to	93.5	10.0	- 13 threads, one 1/2" Breccia Qtz seam, mineralized, 20°	No 101 - 10.0 @ 0.08 % Cu.

JOGRAN MINES LTD

REGISTERED PROFESSIONAL ENGINEER
MINING
A. W. JECKELL
PROVINCE OF ONTARIO

D.D. HOLE No 8.

FROM	TO	FOOTAGE		DESCRIPTION	
-93.5	to 101.5	-8.0		- fairly massive, 12 threads	No 102 - 8.0 @ 0.07 % Cu.
101.5	to 104.5	3.0		- Appears to be contact zone turning to Qtz Diabase or Gabbro, well fractured and mineralized, 17 threads and seams, all directions	No 103 - 3.0 @ 0.14 % Cu.
101.5	286	184.5		- - Quartz Diabase 101.5 to 126 (24.5) Qtz GABBRO 126 to 208.5 (82.5) Qtz Diabase 208.5 to 286 (77.5)	
-104.5	to 116	11.5		- Fairly massive fine gr. Qtz Diabase, At 107.5 $CaCO_3$ seam 1/4 @ 45°	
116	to 126	10.0		- Fine grained dense, 1/4" seam sulphides (chalco) 20° at 116.5 1/2" Qtz seam, mineralized, at 123' @ 50°, 21 threads - At 126', Qtz Carb FeO Stain fault seam @ 60°, no min	No 104 - 10.0 @ 0.18 % Cu.
126	to 135	9.0		- Qtz Gabbro, 15 threads,	No 105 - 9.0 @ 0.08 % Cu.
135	to 208	73.0		- Coarse Grained Gabbro	
				- At 151' seam 1/4" $CaCO_3$ @ 30°	
			SPEC - 147' →	- 151' to 160', Fractured, three 1/2" Qtz seams, mineralized at 153.5, 154 and 157, otherwise massive, few threads	No 106 - 9.0 @ 0.09 % Cu.
				- 160' to 164' Strong FAULT, breccia, slight mineralization at 162.5 to 164 - 20° to 45° average 25°.	
			SPEC - 167' →	- 164' to 178' - massive Gabbro 168' to 169' or 1 ft one 1/2" seam, mineralized	No 107 - 1.0 @ 0.32 % Cu.
				- 178' to 179' - one 1/4" Qtz Carb seam @ 45° and one 1 1/2" FeO stained breccia seam @ 40°	
				- 179' to 182.5 - massive gabbro	
				- At 182.5 - One 1" Qtz Carbonate, FeO Stained seam @ 75°	
				- 182.5 to 183.5 - 5 Chalcopyrite threads	
				- 183.5 to 208 - fairly massive gabbro, alteration and splashes of chalcopyrite over 4" of core at 188.5 and 196'	
				- at 208.5', one 1" Qtz + Qtz Carb seam @ 45° and one 1/2" @ 70°	
			SPEC - 212' →	- 208.5 to 286, Quartz Diabase, few threads to complexity 262 to 263, a mis-match junction of Qtz Carb seam faults @ 25°	
				- AT 286' a 2 1/2" Qtz + Qtz Carbonate filled FAULT Seam @ 65° C/A	

JOGRAN MINES LTD

D.D. HOLE No 8

REGISTERED PROFESSIONAL ENGINEER — MINING — A. W. JECKELL — PROVINCE OF ONTARIO

FROM	TO	FOOTAGE	DESCRIPTION	
286	418	132'	— SILICEOUS VOLCANIC	
- 286	to - 289	- 3.0	- broken core, very little mineral	No 108 - 3.0 @ 0.18 % Cu.
289	to 292	3.0	- fractured, threads + seams, all directions	No 109 - 5.0 @ 0.90 % Cu.
292	to 297	5.0	- well mineralized, fractured, breccia, Silicic alteration At 296 one 1" Qtz stringer @ 65°; chalcopyrite	
297	to 307	10.0	- 7 threads and 1 seam 1/4"	No 110 - 10.0 @ 0.02 % Cu.
307	to 317	10.0	- 18 threads and seams, chalcopyrite	No 111 - 10.0 @ 0.17 % Cu.
317	to 327	10.0	-	No 112 - 10.0 @ 0.05 % Cu.
327	to 337	10.0	-	No 113 - 10.0 @ 0.14 % Cu
337	to 347	10.0	- multiple threads, chalcopyrite	No 114 - 10.0 @ 0.12 % Cu.
347	to 357	10.0	-	No 115 - 10.0 @ 0.14 % Cu.
357	to 367	10.0	-	No 116 - 10.0 @ 0.08 % Cu.
367	to 373.5	6.5	-	No 117 - 6.5 @ 0.06 % Cu.
373.5	to 374.5	1.0	- 6" of well mineralized, altered zone. chalcopyrite	No 118 - 1.0 @ 0.31 % Cu.
374.5	to 386.5	12.0	- some threads, one 1" Qtz carb seam almost parallel C/A	No 119 - 12.0 @ 0.09 % Cu.
386.5	to 396.5	10.0	-	No 120 - 10.0 @ 0.05 % Cu.
396.5	to 405.5	9.0	-	No 121 - 9.0 @ 0.07 % Cu.
405.5	to 406.	0.5	- 6" FAULT SEAM, breccia, Qtz Carbonate and FeO stain	- 0.5 —
406.	to 412	6.0	- well sheared alteration, sulphides	No 122 - 6.0 @ 0.13 % Cu
412	to 418	6.0	- " " ", fair mineralization, several seams @ 70°	No 123 - 6.0 @ 0.15 % Cu.
418	444.5	26.5'	- FAULT no mineralization, heaviest gouge at 415 to 419. Angle approx. 15° @ 415', 20° @ 437', otherwise 80° particularly at 418	
444.5	475	30.5'	— SILICEOUS VOLCANIC	
- 444.5	to 456.5	- 12.0	- Fractured but dense fair to poor mineralization	No 124 - 12.0 @ 0.13 % Cu.
456.5	to 463.	6.5'	- Massive, 1/4" seam sulphide, four 1/4" Qtz + sulphide and one 1 1/4" Qtz and sulphide stringer	No 125 - 6.5 @ 0.27 % Cu
463.	to 467	4.0	- well mineralized along 3" with large crystals chalcopyrite, 2 - 1/2" Qtz stks, chalco	No 126 - 4.0 @ 0.52 % Cu
467	to 472.5	5.5	- At 470' a 1/2" seam @ 50° C/A	No 127 - 5.5 @ 0.19 % Cu
472.5	to 475	2.5	- One 1/2" Stringer and one crossing it @ 25°, section grading to Gabbro	No 128 - 2.5 @ 0.65 % Cu
TOTAL 444.5	to 475	30.5'	- AVERAGE - 0.26+ % COPPER	

310' filed March 22/65

JOGRAN MINES LTD

D.D. HOLE Nº 8

FROM	TO	FOOTAGE	DESCRIPTION
475	499	24.0	- GABBRO, gradational from 472.5
- 475	to 480	- 5.0	- } fine threads
480	to 488	- 8.0	
488	to 499	- 11.0	- }

END of HOLE

Nº 129 - 5.0 @ 0.15 % Cu.
Nº 130 - 8.0 @ 0.13 % Cu.
Nº 131 - 11.0 @ 0.10 % Cu.

ANGLE TESTS

499' - 48°

SUMMARY -

0 - 10	- Casing
10 - 45	- Qtz Diabase
45 - 101.5	- Siliceous Volcanic
101.5 - 126	- Qtz Diabase
126 - 208.5	- Gabbro
208.5 - 286	- Qtz Diabase
286 - 418	- Siliceous Volcanic
418 - 444.5	- FAULT
444.5 - 475	- Siliceous Volcanic
475 - 499	- Gabbro

TOTAL SAMPLING AND ASSAYING

10	to 18.5	- 8.5 @	0.11 % Cu
18.5	to 50.0	- 31.5 @	0.435 % Cu.
OR 18.5	to 28.5	- 10.0 @	0.983 % Cu.
50	to 104.5	- 54.5 @	0.089 % Cu.
116	to 135	- 19.0 @	0.13 % Cu
151	to 160	- 9.0 @	0.09 % Cu.
168	to 169	- 1.0 @	0.32 % Cu.
289	to 418	- 129.0 @	0.132 % Cu.
444.5	to 475	- 30.5 @	0.264 % Cu.
475	to 499	- 24.0 @	0.127 % Cu.

Date of Examination - July 14th, 1964

A.R. Heckell

PROFESSIONAL ENGINEER
MINING
A.R. HECKELL
PROVINCE OF ONTARIO

DIAMOND DRILL RECORD

JOGRAN MINES LIMITED

D.D. HOLE N° 1

LOCATION - 330'S and 110'E of N°4 Post
- Geophysical Survey 1650' North on LINE 200 East

DIRECTION - S 27 W or 207°

CLAIM - S.S.M. - 66422
RYAN TOWNSHIP
District of Algoma
ONTARIO

DIP - 45°
FOOTAGE - 500'

DATE - JULY 10-13, 1964

Drilled by - Continental D.D. Co.

Logged by - A.W. Jeckell, P.Eng.

FROM	TO	FOOTAGE	DESCRIPTION
0	10	10	— Casing
10	37	27	— Quartz Diabase
- 37	to - 39	- 2	- Contact phase, 2 slips @ 40° at 37 & 37.5 - specks of sulphides
37	90.5'	53.5	— Quartz Diabase, grading to coarse Gabbro
- 66	to - 68	- 2	- Alteration and 4 to 5 threads chalcopyrite also at 76.5
90.5	124.5'	34.-	— Mostly fine grained dense Quartz Diabase, could be form of Silicified Volcanic, some felsitic alteration 118.5 to 120.
- 90.5	to - 95'	- 4.5	- Well mineralized, 93 to 95, seams @ 90°
95	to 97	2.0	- mostly barren
97	to 100	3.0	- fair mineralization, seam @ 25° at 98.5
100	to 104	4.0	- mostly barren
104	to 106	2.0	- Chlorite alteration, fair min. One 1½' Qtz Cpy pen @ 45°
106	to 108.5'	2.5	- Mostly barren
108.5'	to 110	1.5	- very well mineralized ½" seam of chalcopyrite @ 60° C/A
110	to 115'	5.0	- 7 threads
115'	to 120	5.0	- 5 threads, 2" Fault seam @ 30° C/A at 118.5
120	to 124.5'	4.5	- Coarse grained, mostly barren
124.5	125.3	0.8	— 10" FAULT, $CaCO_3$ + Fe'd stain, 40° to C/A, No Mineral
125.3	137	11.7	— Qtz Diabase, mostly dense, minor fracturing
137	143.6	6.6	— appears to be contact zone chloritic alteration, one ½" Qtz Stringer, chalcopyrite and Molybdenum and one ¼" seam at 30° and one 1/8" @ 45°
143.6	203	59.4	— Quartz Diabase gradational to Gabbroic
-191.5	to -203	- 11.5	- coarse grained, 5 scattered qtz and qtz carbonate stringers, v.f.m., numerous scattered threads, sulphides

PROFESSIONAL ENGINEER
MINING
A. W. JECKELL
PROVINCE OF ONTARIO

N° 137 - 4.5 ft @ 0.66 % Cu.
N° 138 - 2.0 ft @ 0.33 % Cu.
N° 139 - 3.0 ft @ 0.33 % Cu.
N° 140 - 4.0 ft @ 0.33 % Cu.
N° 141 - 2.0 ft @ 0.07 % Cu.
N° 142 - 2.5 ft @ 0.07 % Cu.
N° 143 - 1.5 ft @ 0.11 % Cu.
N° 144 - 5.0 ft @ 0.13 % Cu.
N° 145 - 5.0 ft @ 0.07 % Cu.
N° 146 - 5.0 ft @ 0.07 % Cu.

AVERAGE - 90.5 to 124.5'
- 34 FT. @ 0.222 % COPPER

N° 147 - 6.6 ft @ 0.07 % Cu.

JOGRAN MINES LTD

D.D. HOLE No. 9

FROM	TO	FOOTAGE	DESCRIPTION
203	208	5	— FAULT, breccia, $CaCO_3$ filled, some Fe O stain little or no mineral — U.C. 45 to 50° — L.C. 45°
208	226.5	18.5	— Coarse Qtz Diabase 208-213 : fine grained 213-226.5 fractured, some $FeCO_3$ seams, little or no mineral ½" Fault seam at 215 @ 90° 2" " " " 221.5 @ 45° 3" " " " 223.5 @ 75° 1" " " " 225 @ 65° ½" " " " 226 @ 90°
226.5	232	6.5	— Fine grained dense Qtz Diabase, 11 threads, Chalcopyite
232	277	45.0	— Medium to Coarse Qtz Diabase v.p.m. but some scattered threads with chalcopyite
-267	-277	- 10.0	- 4.4 threads and one ¼" Qtz seam, Chalcopyite
-277	-281.5	- 4.5	- FAULT and Breccia, f.w.m. N.W. - 35 to 46° - F.W. 65°
281.5	330	48.4	— Coarse grained diabase, gabbroic
-281.6	-290	- 8.5	- 2-½" Qtz Stks, Chalco and Molybdenum, 25 to 30° C/A
290	300	10.0	- seams cross cris and Lengthwise core
300	310	10.0	-
310	320	10.0	- Good mineralization lengthwise core 312 to 314
320	330	10.0	- 16 threads
330	384	54.0	— fine grained and dense Qtz Diabase
-330	-340	- 10.0	- 26 threads and Five ¼" seams Qtz & Chalcopyite
TOTAL - 267 to 340		- 73.0	— — AVERAGE - 0.135 % COPPER
-340	-350	- 10.0	- 29 threads and three ¼ to ½" Qtz Stks, little chalcopyite
350	360	- 10.0	- 18 threads and Two ¼" Seams, Quartz
360	370	10.0	- 7 threads
370	384	14.0	- 5 threads and Two ¼" Qtz seams v.l.m
384	386	2.0	— 4 to 6" fractured seam, $CaCO_3$ + Fe O stain Angle ?? - 45° and 90°

No. 148 - 10.0 ft @ 0.12 % Cu.
No. 149 - 4.5 ft @ 0.48 % Cu.

No. 150 - 5.5 ft @ 0.08 % Cu.
No. 151 - 10.5 ft @ 0.04 % Cu.
No. 152 - 10.0 ft. @ 0.12 % Cu.
No. 153 - 10.0 ft. @ 0.19 % Cu.
No. 154 - 10.0 ft @ 0.06 % Cu.

No. 155 - 10.0 ft @ 0.17 % Cu.

No. 156 - 10.0 ft @ 0.05 % Cu.
No. 157 - 10.0 ft @ 0.06 % Cu.

REGISTERED PROFESSIONAL ENGINEER MINING A. [illegible] BECKELL PROVINCE OF ONTARIO

JOGRAN MINES LTD

D.D. HOLE No 9.

FROM	TO	FOOTAGE	DESCRIPTION	
386	500	114	– Coarse grained Diabase to Gabbroic, scattered Threads and Stringers.	
-386	to -425	-39'	– Threads 40 in 39 ft. – Qtz Strs one 1" at 386, chalco clusters @ 75° 1/4" seams at 416, 417 (60° at opposite angles, chalco & Molybdenum, 391, 392, 397.5, 398, 398.5.	
425	to 451	26'	– 22 threads and one 1/2" seam @ 45°	
451	to 477	26'	– 1/2" fault 451 @ 45° : 1" fault 456 @ 80° ; 1" fault 458 @ 45° : 1 1/2" fault 468 @ 55°	
451	to 456	5.0	– 11 threads and six 1/4" seams, Qtz, chalco + Molybdenum	No 158 – 5 ft @ 0.19 % Cu.
456	to 458	2.0	– 12 threads and one 1/8" seam, also disseminated sulphides	No 159 – 2 ft @ 0.23 % Cu.
477	To 479	2.0	– 1/2" fault seam 60° at 479, One 1" Qtz Carb and Qtz Stringer FeO stain, few blebs chalcopyrite, indications molybdenum	No 160 – 2 ft @ 0.20 % Cu.
479	to 500	21.0	– Scattered FeO stained seams 1/8" and 1/4" little chalco in Qtz stringer at 492.3 SPECIMEN – 496'	

END OF HOLE

ANGLE TESTS – 490' @ 50°

SUMMARY –

0 – 10 – Casing
10 – 37 – Qtz Diabase
37 – 90.5 – " " grading to Coarse Gabbro
90.5 – 124.5 – fine gr. Diabase, maybe Volcanic
124.5 – 125.3 – 10" Fault
125.3 – 203 – Qtz diabase grading to Gabbroic
203 – 208 – FAULT, 5 feet
208 – 226.5 – Coarse Qtz Diabase
226.5 – 232 – fine grained Qtz Diabase
232 – 277 – Medium to coarse Qtz Diabase
277 – 281.5 – FAULT 4.5 feet (0.15% Cu)
281.5 – 330 – Coarse grained diabase
330 – 386 – fine grained diabase
386 – 500 – Coarse grained diabase

TOTAL SAMPLING AND ASSAYING

90.5 to 124.5 – 34.0 @ 0.222 % Cu HIGH 0.44 % Low 0.05
137.0 to 143.6 – 6.6 @ 0.09 % Cu.
267.0 to 340 – 73.0 @ 0.135 % Cu. H – 0.48 % L – 0.04
340.0 to 360 – 20.0 @ 0.055 % Cu
451.0 to 458.0 – 7.0 @ 0.215 % Cu H – 0.23 % L – 0.19 %
477 to 479 – 2.0 @ 0.20 % Cu.

Date of Examination – July 18th, 1964.

PROFESSIONAL ENGINEER
MINING
PROVINCE OF ONTARIO

DIAMOND DRILL RECORD

NOGRAN MINES LIMITED

D.D. HOLE № 10

LOCATION - 280'S and 30'E of No 4. Post.
- Geophysical Survey 1650' North on 1100 E.

Direction - S 27W or 207°

CLAIM - SSM - 66422
NYAN TOWNSHIP
District of Algoma
ONTARIO

DIP - 45°
FOOTAGE - 503'

DATE - July 20 to 24th, 1964
Drilled by - Continental D.D. Co.
Logged By - A.M. Jeckell, P. Eng.

FROM	TO	FOOTAGE	DESCRIPTION
0	26	26	— Casing
26	236	210	— Qtz Diabase, fine grained, widely scattered threads, little chalcopyrite
-28 to	-29.5	-1.5	- fractured, some chalco in slips, veins @ 45° opposed — № 182 - 1.5 ft @ 0.54 % Cu.
-97 to	-102.5	-5.5	- Altered Zone, some sulphides No faults but 4 seams @ 45 to 50° C/A, Quartz filled some chalco — № 183 - 5.5 ft @ 0.25 % Cu.
-152 to	-154	-2.0	- TWO FOOT FAULT, barren, Qtz Carb and Opaque Quartz filled, 50° C/A
154 to	170	16.0	- Dense, some Fe O Stained fractures and mineral Qtz filled 1/2" seams with a little chalco
170 to	172	2.0	- 1/2" seam parallel to core, $Ca CO_3$ - Fe O Stain
172 to	215.5	43.5	- Dense Quartz Diabase, widely scattered threads @ 50 to 60°, with chalco.
215.5 to	216	0.5	- 6" FAULT, Qtz Carb, Qtz, Fe O Stain, no mineral
216 to	228	12.0	- Dense Quartz Diabase, 8 threads
228 to	236	8.0	- " " " , 32 threads and four - 4" to 5" sections of disseminated sulphides, qtz alteration — № 184 - 8.0 @ 0.40 % Cu.
236.	402	166.	— Fine grained Qtz Diabase becoming coarser to Qtz Gabbro at 238' - then scattered threads, some chalco.
-265.5 to	-266.0	-0.5	- 6" FAULT, Qtz Carb, Qtz, Fe O Stain 60° to C/A
266.0 to	276.0	10.0	- 12 threads and seams 1/8" — № 185 - 10.0 @ 0.10 % Cu.
276.0 to	286.0	10.0	- Same as above, 1½" Fault seam @ 40°, some quartz chalco — № 186 - 10.0 @ 0.15 % Cu.
286. to	380	94.0	- scattered Qtz Stks & threads, also scattered patches of Granitic & Felsitic alteration which is fair to well mineralized. Py & chalco - SPECIMENS - 311, 349, 359, 374.

JOGRAN MINES LTD

D.D. HOLE No 10

FROM	TO	FOOTAGE	DESCRIPTION	
380	to 402	12'	- Mixture of coarse, medium and mostly fine grained Qtz Diabase SPECIMEN-388'	
402	445	43.0	- Fine grained dense Quartz Diabase, scattered seams and threads, chalco filled. - Two 1/2" Seams @ 65° C/A Ca CO_3, little chalcopyrite at 414.5' One 1" barren seam @ 60° at 419'	
445	445.5	0.5	- FAULT, 6"	
445.5	449	3.5	- Medium to coarse grained Quartz Diabase to Gabbro, not very much mineral	
449	451	2.0	- One 1" Stringer with Qtz Carbonate, Qtz, chalco at 10° C/A	No 187 - 2.0 @ 0.50 % Cu.
451	503	52.0	- Coarse grained GABBRO	
- 451	to -456	- 5.0	- nearly barren, 8 threads and one 1/4" seam	No 188 - 5.0 @ 0.08 % Cu.
456	to 461	5.0	- 41 threads	No 189 - 5.0 @ 0.19 % Cu.
461	to 466	5.0	- 18 threads, Four 1/4" seams One 2" Qtz Stk, all Qtz, chalco	No 190 - 5.0 @ 0.20 % Cu.
466	to 467	1.0	- Qtz Carb fault 1" @ 60°, Qtz Stk 3/4" Qtz-chalco, also 1 1/2" of heavy disseminated chalcopyrite	No 191 - 1.0 @ 0.80 % Cu.
467	to 472	5.0	- 30 threads and one 1" of Qtz, FeO Stain, disseminated and small cluster Chalcopyrite	No 192 - 5.0 @ 0.22 % Cu.
472	to 482	10.0	- 38 threads	No 193 - 10.0 @ 0.20 % Cu.
TOTAL 449	to 482	or 33 feet	- AVERAGE 0.222 % COPPER	
482	492	10.0	- 49 threads and Two 1" Qtz Stks, disseminated Chalco	No 194 - 10.0 @ 0.14 % Cu.
492	503	11.0	- 40 threads and one 1/2" " " - -	No 195 - 11.0 @ 0.09 % Cu.

SUMMARY -

0 - 26 Casing
26 - 236 Quartz Diabase
236 - 402 Gabbro
402 - 445 Quartz Diabase
445 - 445.5 FAULT 6"
445.5 - 503 Gabbro

Date of Examination - July 27 + 30th, 1964

R. W. Jeckell

END OF HOLE

ANGLE TESTS - 490' @ 49°

28 to 29.5	- 1.5 ft @ 0.84 % Cu.
97 to 102.5	- 5.5 ft @ 0.28 % Cu.
228 to 236.0	- 8.0 ft @ 0.40 % Cu.
266 to 286	- 20.0 ft @ 0.175 % Cu.
449 to 482	- 33.0 ft @ 0.220 % Cu.
482 to 503	- 21.0 ft @ 0.114 % Cu.
OR - 449 to 503	- 54 ft @ 0.18 % Cu.

TOTAL SAMPLING AND ASSAYING

PROFESSIONAL ENGINEER MINING R. W. JECKELL PROVINCE OF ONTARIO

High 0.80 % Low 0.08 %

DIAMOND DRILL RECORD

JOGRAN MINES LIMITED

D.D. HOLE Nº 11.

LOCATION - 110' N and 100' W of Nº 2 Post
- Geophysical Survey 1940' N on LINE 2200W

DIRECTION - S 27 W @ 207°

CLAIM - S.S.M. - 66 A.T.H
RYAN TOWNSHIP
District of Algoma
ONTARIO

DIP - 45°
FOOTAGE - 498'

DATE - July 26-31, 1964

Drilled by - Continental D.D. Co.,

Logged by - A.W. Jeckell, P. Eng.

REGISTERED PROFESSIONAL ENGINEER MINING A. W. JECKELL PROVINCE OF ONTARIO

FROM	TO	FOOTAGE	DESCRIPTION
0	16	16	- Casing
16	108	92	- fine grained dense Quartz Diabase - At 23', a Qtz Carbonate 1/4" Fault @ 30° - At 33', a 1/2" Qtz Stk, blebs Chalcopyrite @ 50°
-38.5	-38	-1.5'	- Fractured, siliceous, well mineralized Nº 197 - 1.5 ft @ 0.81 % Cu.
			- At 42', a 1/2" Qtz Carb. fault @ 35° C/A - At 47', a 1/4" " " @ 25° - At 72.5', a 1/2" fracture with 2-1/16" seams & chalco @ 40° - At 71.5', a 1/8" seam @ 60°
-82	-93		- 82 to 93 is the start of a zone of scattered chalcopyrite & threads + altered sections Nº 198 - 11.0 ft @ 0.13 % Cu.
-93	-104	-11	- Same as above Nº 199 - 11.0 ft @ 0.04 % Cu.
-104	-108	-11	- Fault Qtz Carb, 70 Stair - parallel to nearly parallel to C/A
108	190	82	- Gradation to coarse grained Quartz diabase, scattered threads and seams chalcopyrite - At 173' Quartz Carbonate Fault 2° @ 40°
-145	-151	-8	- Mineralized section, 3" alteration chalco @ 55° and 1/2" of same @ 40° Numerous threads all directions Nº 200 - 5.6 ft @ 0.20 % Cu
			- 181 to 188, fractured, very little mineral, 70 Stair seams. - 188 to 190, broken core remnants of fault angle ??
190	383.5	193.5	- Siliceous Hydrothermic - Note SPECIMEN at 199, black-brown dikes, intermittent over 10 ft. - SEE ALSO - SPECIMENS at 262 and 354.
-200	-212.8	-12.8	- Fault section, 29 threads, three 1/4" seams, all with chalcopyrite - Three 1/4 Qtz seams @ 30-40-35° at 202-204-206 - Two Qtz Carb seams @ 206.5' angles 45 and 50° - 2° Qtz & Qtz Carb fault seam at 213 @ 60° Nº 301 - 12.8 ft @ 0.12 % Cu.

JOGRAN MINES LTD

D.D. HOLE No 11.

FROM	TO	FOOTAGE	DESCRIPTION	
212.8	213	0.2	FAULT	No SAMPLE – Nil over 0.2 feet
213	225	12	30 threads, two 1/4" Qtz seams @ 30°	No 302 – 12 ft @ 0.11 % Copper.
225	237	12	18 threads, one 1/2" Qtz Str, chalco	No 303 – 12 ft @ 0.08 % "
237	237.8	0.8	3/4" Qtz Str. slebs of chalcopyrite @ 30° Also 1/2" Felsitic alteration	No 304 – 0.8 ft @ 1.75 % "
237.8	250	12.2	10 threads	
250	275	25.0	fractures & seams, threads all directions but predominantly 30 to 40° Eight 1/8" seams, 15 threads, all with chalcopyrite	
275	300	25.0	Seven 1/8" seams, 24 threads, chalcopyrite, angles mostly 35 to 45 – some 60 and 80°	
300	325	25.0	Six 1/8" " , 36 " , chalcopyrite; some of core blocky (broken).	
325	350	25.0	Five 1/8" " , 20 " , One 1/2" with Qtz and one 1/2" Qtz, Qtz Carb, Fe O Stains 35 to 40°	
350	358.5	8.5	See Specimen at 354 feet.	
358.5	385.5	27.0	Over-all General FAULT ZONE, multiple Iron stained Carbonate seams, threads all directions, very little to no mineral. – First shear at 358.5 to 359.5 angle 50 to 60° – Second " at 374 to 375 angle 30° – Third " at 376 to 377.6 angle 40° – Strong parallel and long diagonal seam from 377.5 to 380 – Qtz Felsitic porphyry 380 to 383.5, mostly fractured, core broken up.	
383.5	400		Change of Rock, Feldspar to coarse Gabbroic, very little fracturing	
400	437		Gabbroic diabase gradational after 437 to diabase ? see later. chalcopyrite mineralization starts to show at 407 feet.	
408	409	1.0	Quartz and Felsitic alteration, [illegible] chalcopyrite. Slip joint at 40°	No [illegible] – 1.0 foot @ 1.0 % Copper
415.5	416	1.5	Qtz Felsite porphyry, irregular diagonal [illegible]	
416	425	9.0	Four 1/8" [illegible], [illegible] chalcopyrite, no threads	
425	437	12.0	37 threads, 2 seams, chalcopyrite in all.	
437	498	61	Diabase, although [illegible], looks volcanic after 462'. No mineralization after 462' – At 452' a 1/8" [illegible] pyrite and chalcopyrite @ 40° – Iron Carbonate seams at 453 (30°), 460.5 (65°), 462 @ 65°, One 1/2" seam Qtz at [illegible] @ 40° White CalCtz seam at 467.5' @ 55°	

Angle Test at 490' – 48°-30'

END of HOLE – 498'

Date of Examination – July 30 and Aug 6, [illegible]

[signature]

PROFESSIONAL ENGINEER

DIAMOND DRILL RECORD

JOGRAN MINES LIMITED

D. D. HOLE Nº 12.

LOCATION - 695'S and 150'W of Nº 4 Post.
- Geophysical Survey 1260'N and 1+35'E

DIRECTION - Vertical

CLAIM - S.S.M - 66422
RYAN TOWNSHIP
District of Algoma
ONTARIO

DIP - 90°
FOOTAGE - 500

DATE - December 3 to 13 th, 1964.

Drilled by - Continental D.D. Co.

Logged by - A.W. Jeckell, P. Eng.

FROM	TO	FOOTAGE	DESCRIPTION -
0	13	13.	- Casing
13	54.5	41.5	- Quartz Diabase, some threads boxy axis 20° - one 1/2" Qtz Stg at 23'; one 1/2" at 30.5' and one 3/4" at 34.5'. All with chalcopyrite - 13 to 23' or 10 ft. Nº 229 - 10 ft. @ 0.28 % Cu. - 23 to 30' Nº 230 - 7 ft. @ 0.22 % Cu. - 30 to 40' Nº 231 - 10 ft. @ 0.41 % Cu. - 40 to 50' Nº 232 - 10 ft @ 0.20 % Cu. - 50 to 54.5 Nº 233 - 4.5 ft. @ 0.19 % Cu. Average - 13 to 54.5 - - 41.5 ft @ 0.272 % Cu.
54.5	105.0	50.5	- Fractured Granite - similar in part to Quartz Feldspar porphyry in Nº 1 and 7. - Inclusion qtz diabase fractured, seams and threads with chalco - One 1/4" seam at 80° - Granite, fractured, qtz threads and seams, chalco - Inclusion qtz diabase fractured, some threads, chalcopyrite - Granite, fractured, qtz seams, & threads. Disseminated chalco along 2 ft. - 58.5 to 61.0 Nº 234 - 2.5 ft @ 0.23 % Cu. - 61.0 to 74.0 Nº 235 - 13.0 ft @ 0.11 % Cu. - 74.0 to 78.5 Nº 236 - 4.5 ft @ 0.18 % Cu. - 78.5 to 83.0 Nº 237 - 4.5 ft @ [illegible] Cu. Average - 58.5 to 83.0 - - 24.5 ft @ [illegible] - 100 to 105.0 Nº 238 - 5.0 ft @ 0.[illegible] Cu.

Diamond Drill Record.

D.D. HOLE Nº 12

FROM	TO	FOOTAGE	DESCRIPTION -
105.0	125.0	20.0	- Quartz Diabase numerous threads long axis angles 10 to 20° - No seams but good fracturing and disseminated sulphides 118 to 125 - LOST CORE 109 to 111

- 105.0 to 115.0 Nº 239 - 10.0 ft @ 0.13 % Cu.
- 115.0 to 120.0 Nº 240 - 5.0 ft @ 0.48 % Cu.
- 120.0 to 125.0 Nº 241 - 5.0 ft @ 0.54 % Cu.

Average - 105.0 to 125.0 — 20.0 ft @ 0.332 % Cu.

125.0	160.0	35.0	- Fractured Granite, some fine chalco in threads and patches - NOTE, lost core.

- 126.0 to 128.0 - 2.0 ft @ LOST CORE
- 128.0 to 130.0 Nº 242 - 2.0 ft @ 0.76 % Cu.
- 130.0 to 135.0 - 5.0 ft @ LOST CORE
- 135.0 to 144.0 Nº 243 - 9.0 ft @ 0.13 % Cu.
- 144 to 146.5 - 2.0 ft @ LOST CORE
- 146.5 to 150.0 Nº 244 - 2.5 ft @ 0.11 % Cu.
- 150.0 to 151.5 - 1.5 ft @ LOST CORE.
- 151.5 to 160.0 Nº 245 - 8.5 ft @ 0.17 % Cu.

160.0	282.0	122.0	- Quartz Diabase - 160 to 165 or 5.0 ft. - fair mineralization, seams and threads - seams @ 90° threads, - threads near parallel to long axis. NOTE - MISSED IN NUMBERING SAMPLES. - 165 to 174 or 9.0 ft. - marine, very little mineral

- 174.0 to 177.0 Nº 246 - 3.0 ft @ 0.45 % Cu.

- one 1½", one ¾" and one ½" seams at 75 to 80° heavy chalco and Iron Silicate
- 177 to 188.5 or 11.5 ft - very little mineral
- 188.5 to 192.0 or 3.5 ft - LOST CORE
- 192.0 to 194.0 or 2.0 ft - CORE CRUSHED, - No sulphides in remnants.

Two seams (188.5 & 200) at 60 and 35° respectively.

- Two seams ½" and ¾" at 194 and 198.5 at 90° - one ⅛" at 197. del chalco field

- 194 to 210.0 Nº 247 - 6.0 ft @ 0.25 % Cu.

Diamond Drill Record.

D.D. HOLE Nº 12.

FROM	TO	FOOTAGE	DESCRIPTION -
			- 200.0 to 210.0 or 10 ft. - very little mineral, - 5 only 1/4" seams chalco.
			- 210.0 to 213.0 or 3 ft. - One 1/4" seam @ 50° and 6 threads chalco
			- 213.0 to 217.0 or 4 ft. - LOST CORE
			- 217.0 to 220.0 or 3 ft. - One 1/2" seam @ 90°
			- 220.0 to 225.0 or 5 ft. - Threads at 10 to 15° and one 1/2" seam at 80°
			- 225.0 to 230.0 or 5 ft. - One 3/4" seam @ 50° and two 1/4" seams at 50° and 30°
			- 230.0 to 235.0 or 5 ft. - Two 1/4" seams @ 80° and 4 threads
			- 235.0 to 241.0 or 6 ft. - very little mineral, four 1/8" seams and three 1/2" Calcium carbonate fault seams at 30° - 239, 240 and 241 feet.
			- 241.0 to 243.0 or 3 ft - LOST CORE
			- 243.0 to 254.5 or 11.5 ft - very little mineral, not worth sampling.
			- 254.5 to 260.0 Nº 248 - 5.5 ft @ 0.21% Cu.
			- 260.0 to 270.0 or 10.0 ft - Mostly lost core - 1261 to 262) - 13 threads r.l.m.)
			- 270.0 to 282.0 or 12.0 ft - very little mineral or fracturing.
282.0	475.0	193.0	- Quartz Diabase or Volcanic Lava. (Specimen at 313)
			- 282 to 316.5 or 34.5 ft - Numerous threads, mostly parallel to less than 30° to C/A
			- Granitized, silicified sulphidized with shear lines at 66°. fractured very well mineralized with 10 to 15% sulphides - 316.5 to 319.0 Nº 249 - 2.5 ft @ 5.46% Cu. Also - Gold 0.035 oz. and Silver 1.13 oz.
			- Partly Volcanic Lava, well fractured. Partly same as above - heavy disseminated sulphides, very well mineralized with chalco-pyrite. Lower Contact 70°. One 1/4" Qtz stringer at 322 @ 55°. - 319.0 to 322.0 Nº 250 - 3.0 ft @ 2.84% Cu. Also - Gold 0.01 oz. and Silver 0.35 oz.
			AVERAGE - 316.5 to 322 - 5.5 ft @ 4.03% Cu.

ONTARIO PROFESSIONAL ENGINEER
MINING
A. [illegible] BICKELL
PROVINCE OF ONTARIO

Diamond Drill Record.

D.D. HOLE Nº 12.

FROM	TO	FOOTAGE	DESCRIPTION.
			- 322 To 325 or 3 feet - near massive Diabase ? (SPECIMEN at 322.5 ft)
			- 325 to 350 or 25 feet - Diabase, mostly massive, few threads, - One seam 1/2" to 1" at 338.5 @ 70° and one 1/8" at 339 @ 25°.
			- 350 to 450 or 100 feet - Diabase, few threads long axis parallel to 20° One 1½" Quartz Carbonate slip or fault at 420.5 @ 30°.
			- 450 to 475 or 25 feet - Same as above, Granite alteration with 1" Quartz Stringer at 467' @ 80 to 90°, few chalco crystals.
475.0	497.0	22.0	- FAULT, Interior @ 23°, Lower Contact 30°, Gouge at 475 and 476' Same type as cut in Nº 1, 7, and 8 Holes.

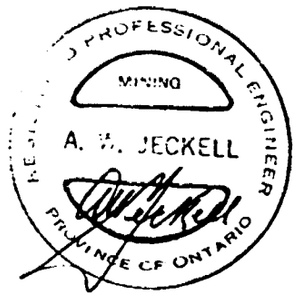
END of HOLE

500 feet

Rock Specimens - 73
252
313
322.5
349

Angle Test at 495 feet @ 88°

Date of Examination January 14 and 15th, 1964



55M 839

Gibbons

RECEIVED
DEC 28 1964
RESIDENT GEOLOGIST
SAULT STE. MARIE

JOGRAN MINES LIMITED

PROSPECTUS FOR FILING AND AS FILED WITH THE ONTARIO SECURITIES COMMISSION PURSUANT TO THE SECURITIES ACT (ONTARIO)

1. JOGRAN MINES LIMITED (hereinafter referred to as "the Company") was incorporated under the laws of the Province of Ontario by letters patent dated the 20th day of May, 1964. The head office of the Company is located at the Fifth Floor, 244 Bay Street, Toronto 1, Ontario.

2. The names, occupations and addresses of the officers and directors and promoter of the Company are as follows:

(a) Officers and Directors:

President and a Director	ALEXANDER STEEL, 972 Eglinton Avenue East, Toronto, Ontario. Executive.
Vice-President and a Director	RAYMOND WILLIAM HUNSTONE, 3336 Radcliffe Avenue, West Vancouver, B.C., Contractor.
Secretary-Treasurer and a Director	WILLIAM LONGMUIR HENDERSON, 19 Wincrest Drive, Scarborough, Ontario. Accountant.
Director	JOHN EDWARD ROGERS WOOD, 1551 Angus Drive, Vancouver, B.C. Mining Engineer.
Director	ORSON GUTHRIE, 131 Burnhamthorpe Road, Islington, Ontario. Executive.

(b) Promoter:

McKinney Gold Mines Limited (Non-Personal Liability), a public company, listed on the Canadian and Vancouver Stock Exchanges, might be considered the promoter of the Company as it caused its incorporation and is the vendor of the mining claims referred to in paragraph 10 hereof.

3. Messrs. Fairley, Welsh & Co., 1815 Yonge Street, Toronto, Ontario, are the auditors for the Company.

ONTARIO SECURITIES COMMISSION 1964

4. Guaranty Trust Company of Canada, 366 Bay Street, Toronto, Ontario, is the stock registrar and transfer agent of the Company.

5. The authorized capital of the Company consists of 3,000,000 shares of the par value of $1.00 each, all of one class, namely, common, of which 1,020,005 shares, fully paid and non-assessable have been allotted and issued to date.

6. The Company has issued no bonds or debentures nor does it presently propose to issue any.

7. Of a total of 750,000 shares of the Company issued for properties as referred to in paragraph 10 hereof (hereinafter referred to as "vendor shares") certificates representing 675,001 of such shares are presently held in escrow with Guaranty Trust Company of Canada, 366 Bay Street, Toronto, Ontario, subject to pro rata release amongst the persons entitled thereto only upon the written consent of the Ontario Securities Commission and the Company. Any dealings with such shares within the escrow require the written consent of the Ontario Securities Commission. The 74,999 vendor shares presently free from escrow and held as set out in item 10 hereof may be pledged or sold at the current offering price for shares of the Company but the proceeds from the sale of such shares will not go into the treasury of the Company.

8. As of the date of this prospectus five shares of the Company (incorporators' shares) have been sold for $1.00 each and 270,000 shares were issued to McKinney Gold Mines Limited (Non-Personal Liability) in settlement of $27,000 advanced to the Company to defray exploration work, engineering fees and diamond drilling on the claims referred to in paragraph 10 hereof. No commissions were paid or are payable in connection with the above mentioned shares. Before all or any part of the 270,000 shares are sold or offered for sale, an amendment to the prospectus will be filed.

9. No securities of the Company other than those above set out have been sold or issued as of the date of this prospectus.

10. By an agreement dated the 25th day of May, 1964, made between McKinney Gold Mines Limited (Non-Personal Liability) of the first part (hereinafter referred to as "McKinney") and the Company of the second part, the Company acquired the following unpatented mining claims situated in Ryan Township, Sault Ste. Marie Mining Division, Province of Ontario, described as follows:-

SSM 66421 to SSM 66430 inclusive
SSM 62886
SSM 62888 to SSM 62891 inclusive
SSM 64225
SSM 62917 and SSM 62918
SSM 65883 and SSM 65884
SSM 59846

(hereinafter referred to as the "Mining Claims"), for and in consideration of 750,000 fully paid and non-assessable shares of the capital stock of the Company, of which 10% were free shares and the balance were placed in escrow with the stock registrar and transfer agent of the Company, subject to the terms of escrow set forth in paragraph 7 hereof, and the following royalties -

(a) a royalty of 6-2/3 cents per ton for each and every ton of ore taken from Mining Claims SSM 62886, SSM 62888 to SSM 62891 inclusive and SSM 64225;

(b) a royalty of 10 cents per ton for each and every ton of ore taken from Mining Claims SSM 59846, SSM 62917, SSM 62918, SSM 65883 and SSM 65884;

(c) a royalty of 10 cents per ton for each and every ton of ore taken from Mining Claims SSM 66421 to SSM 66430, inclusive.

The only persons who have received or are entitled to receive an interest in the said 750,000 vendor shares are as follows:

		Free Shares	Escrowed Shares
Clifford Bridge, P.O. Box 96, Sault Ste. Marie, Ontario	-	11,250	101,250
William John Richards, 15 Lansdowne Avenue, Sault Ste. Marie, Ontario, and John Haugeneder, 718 Wellington St. East, Sault Ste. Marie, Ontario, jointly	-	12,500	112,503
Herman O. Kell 253 Wellington St. East, Sault Ste. Marie, Ontario	-	6,041	54,369
The Vendor	-	45,208	406,879

The only persons who are entitled to receive an interest in the said royalties are as above set forth.

11. The mining claims referred to in paragraph 10 hereof are located in the north-east quarter of Ryan Township, Sault Ste. Marie Mining Division, Province of Ontario.

For further particulars of the location and accessibility of the mining claims and the work done on same, including the setting up of a drill camp, the building of a bridge, the carrying out of a geophysical survey by magnetometer and electromagnetic methods and the completion of a diamond drilling program of 5,437 feet; the general geology and structure of the mining claims, particulars of the assessment work done on the claims and their present status; the recommendations of the Company's Engineer and the estimate of the costs of the recommended diamond drilling program, reference is made to the Report of Allen W. Jeckell, B.A.,Sc., P.Eng., dated the 15th day of October, 1964, which Report accompanies and forms part of this prospectus.

There is no plant or equipment on the mining claims. Particulars of the work done on the mining claims by the Company are set out in the said Report.

12. So far as the signatories hereto are aware, no shares or cash consideration have been issued or paid or are proposed to be issued or paid to any promoter other than the vendor shares referred to in paragraph 7 hereof and the 270,000 shares referred to in paragraph 8 hereof.

13. By an agreement dated the 30th day of September, 1964, made between the Company and W.D. Latimer Co. Limited (hereinafter referred to as the "Underwriter-Optionee"), the Underwriter-Optionee, acting on behalf of clients, agreed to purchase 200,000 fully paid shares of the Company at 10 cents per share, payable within two days from the date such shares are qualified for sale in the Province of Ontario (which date is hereinafter referred

to as the "effective date") and in consideration therefor the Company granted to the Underwriter-Optionee, acting on behalf of clients, the exclusive right or option to purchase all or any part of an additional 800,000 shares as follows:

No. of shares	Price per share	Time within which option must be exercised.
200,000	10 cents	3 mos. from effective date
200,000	12½ cents	6 mos. from effective date
200,000	15 cents	9 mos. from effective date
200,000	17½ cents	12 mos. from effective date

The agreement provides that if default occurs in making any of the option payments as therein due and such default is not waived by the Company or the option dates not extended by mutual consent then in each of said cases the option, insofar as same is not exercised, will terminate upon the Company giving 10 days' written notice of termination to the Underwriter-Optionee. The parties to the said agreement understand that in the event of default or waiver thereof or extension of any option, an amendment to this prospectus must be filed with the Ontario Securities Commission within 20 days thereof if the shares of the Company are then in primary distribution.

W. D. Latimer Co. Limited in entering into the said agreement was acting on behalf of Richfield Securities Limited, 244 Bay Street, Toronto, Ontario, as to a 50% interest, Northwood Mining Limited, Suite 506, 540 Burrard Street, Vancouver, B.C., as to a 25% interest, and McKinney Gold Mines Limited (Non-Personal Liability), Suite 506, 540 Burrard Street, Vancouver, B.C., as to a 25% interest.

The only persons owning a greater than 5% interest in Richfield Securities Limited are as follows:- Beatrice Latimer, Jane Latimer and Anne Latimer, all of 29 Edgehill Road, Islington, Ontario, and Audrey MacGregor of 128 Glen Manor Drive, Toronto, Ontario.

The only person owning a greater than 5% interest in Northwood Mining Limited is as follows:- John Edward Rogers Wood, 1551 Angus Drive, Vancouver, B.C.

McKinney Gold Mines Limited (Non-Personal Liability) being a public Company whose shares are widely distributed, the signatories hereto are unaware as to what persons hold a greater than 5% interest therein.

There are no sub-underwritings or sub-options outstanding or proposed to be made. In the event that at any time a sub-underwriting or sub-option is given the parties hereto understand that an appropriate amendment to this prospectus must be filed by the Company within the required statutory period if the shares of the Company are in the course of primary distribution.

14. The preliminary and organizational expenses in an administrative sense, including legal and audit fees, corporation costs, costs of filing and printing of this prospectus and other related items are estimated at $4,500.00. None of these expenses have been paid to date but are to be paid out of monies to be received by the Company from the Underwriter-Optionee as disclosed in paragraph 13 hereof. Future administrative and minimum development expenses (in addition to the development expenses already incurred and paid for) for the current year are estimated at $3,000.00 and $25,000.00 respectively.

15. The monies the Company receives from the underwritten shares and such monies as it receives from optioned shares as are sold will be used to defray the expenses of the incorporation and organization of the Company and its ordinary operating expenses and in carrying out the recommendations of the Company's engineer as set out in the report accompanying this prospectus insofar as there are funds available. If at any time in the future the

Company decides to spend any of the proceeds from the underwritten or optioned shares other than as set out herein, the signatories hereto understand that an amendment to this prospectus should be filed.

16. No indebtedness is to be created or assumed by the Company save and except the payment of the royalties referred to in paragraph 10 hereof and except for legal fees, printing costs of the prospectus and ordinary operating expenses of the Company which are not shown in the balance sheet of the Company reported upon by Messrs. Fairley, Welsh & Co., 1815 Yonge Street, Toronto, Ontario, as of the 30th day of September, 1964, which balance sheet accompanies and forms part of this prospectus.

17. The particulars as regards the business in which each director and officer has been engaged during the past three years are as follows:

Alexander Steel	President and a Director - has been Vice-President of Borden Co. Limited, 1275 Lawrence Avenue East, Toronto, Ontario, for more than 3 years.
Raymond W. Hunstone	Vice-President and a Director - has been President of Hunstone Contracting Co. Ltd., 626 West Pender Street, Vancouver, B.C., for more than 3 years.
William L. Henderson	Secretary-Treasurer and a Director - has been Accountant with W.D. Latimer Limited and then with W.D. Latimer Co. Limited, 244 Bay Street, Toronto, Ontario, for the past 2 years and previously with E.T. Lynch & Company, 55 Yonge Street, Toronto, Ontario.
John E.R. Wood	Director - has been President of Northwood Construction Company Limited, Suite 506, 540 Burrard St., Vancouver, B.C. and its American associate, Northwood, Inc. for more than 3 years.
Orson Guthrie	Director - has been Sales Manager of Nabisco Limited, 55 Eglinton Avenue East, Toronto, Ontario, for more than 3 years.

18. No director of the Company now has or ever had any interest directly or indirectly in the properties acquired by the Company, save that Messrs. Alexander Steel, Raymond W. Hunstone, William L. Henderson, J. E. R. Wood and Orson Guthrie, the directors of this Company, are also directors of McKinney Gold Mines Limited (Non-Personal Liability), the vendor of the said mining claims.

19. No director or officer has been paid or is proposed to be paid a salary as such. Each director will receive a fee of $25.00 for each meeting of the board of directors which he attends.

20. No dividends have been paid to date.

21. McKinney Gold Mines Limited (Non-Personal Liability), by reason of beneficial ownership of vendor shares of the Company, is in a position to elect or cause to be elected a majority of directors of the Company.

22. The 75,000 free vendor shares, being 10% of those shares listed in Item 10 hereof, may be sold or offered for sale but the proceeds will not accrue to the benefit of the treasury of the Company. Other than as shown above, the signatories hereto are not aware of any present or proposed arrangement whereby vendor shares of the Company were sold or given or will be sold or given to any person or persons as a bonus or otherwise. If any such arrangement is made and comes to the knowledge of the signatories hereto, an appropriate amendment to this prospectus will be filed within twenty days thereof if the securities of the Company are then in the course of primary distribution.

23. There are no other material facts in relation to the securities of the Company which require disclosure other than those above set forth.

DATED this 9th day of November, 1964.

WE, the undersigned directors and promoter hereby certify that the foregoing constitutes full, true and plain disclosure of

all material facts in respect of the offering of securities referred to above as required under Section 38 of The Securities Act (Ontario) and there is no further material information applicable other than under the financial statements or reports where required.

DIRECTORS:

ALEXANDER STEEL

RAYMOND WILLIAM HUNSTONE

WILLIAM LONGMUIR HENDERSON

JOHN EDWARD ROGERS WOOD

ORSON GUTHRIE

PROMOTER:

McKINNEY GOLD MINES LIMITED
(Non-Personal Liability)

By:
"Allan H. Ainsworth"

AND WE, the undersigned Underwriter-Optionee, hereby certify that to the best of our knowledge, information and belief, the foregoing constitutes full, true and plain disclosure of all material facts in respect of the offering of securities referred to above as required under Section 38 of The Securities Act (Ontario), and there is no further material information applicable other than under the Financial Statements or Reports where required. In respect of matters which are not within our knowledge, we have relied upon the accuracy and adequacy of the foregoing.

UNDERWRITER-OPTIONEE:

W. D. LATIMER CO. LIMITED

By:
"W. D. Latimer"

FAIRLEY, WELSH & CO.

Chartered Accountants

AUDITORS' REPORT

To the Directors
Jogran Mines Limited

We have examined the accompanying balance sheet of Jogran Mines Limited as at September 30, 1964 and the related statement of deferred exploration, development and administration expenses for the period from the date of incorporation, May 20, 1964 to September 30, 1964 and have obtained all the information and explanations we have required. Our examination included a general review of the accounting procedures and such tests of accounting records and other supporting evidence as we considered necessary in the circumstances.

In our opinion, the accompanying balance sheet and the related statement of deferred exploration, development and administration expenses present fairly the financial position of the company as at September 30, 1964 and the results of its operations for the period ended on that date, in accordance with generally accepted accounting principles.

"FAIRLEY, WELSH & CO."

Fairley, Welsh & Co.
Chartered Accountants

Toronto 7, Canada
November 3, 1964

JOGRAN MINES LIMITED
(Incorporated under The Corporations Act, Ontario)

BALANCE SHEET, SEPTEMBER 30, 1964

A S S E T S

CURRENT ASSETS		
Cash		$ 5.00
MINING CLAIMS AT COST BEING THE VALUE ASSIGNED TO 750,000 SHARES ISSUED THEREFOR		45,000.00
DEFERRED EXPENDITURE		
Exploration, development and administrative expenses	$ 29,423.23	
Incorporation expense	2,642.91	32,066.14
		$ 77,071.14

L I A B I L I T I E S

CURRENT LIABILITIES		
Accounts payable - estimated	$ 1,500.00	
Advances by McKinney Gold Mines Limited (Note 3)	30,566.14	$ 32,066.14
SHAREHOLDERS' EQUITY		
Capital stock		
Authorized		
3,000,000 shares, par value $1.00		
Issued and fully paid (Note 3)		
5 for cash	$ 5.00	
750,000 for mining claims	750,000.00	
Less discount	(705,000.00)	45,005.00
		$ 77,071.14

Approved on behalf of the board

"O. GUTHRIE"
Director

"W. L. HENDERSON"
Director

JOGRAN MINES LIMITED

STATEMENT OF DEFERRED EXPLORATION, DEVELOPMENT AND ADMINISTRATION EXPENSES

FOR THE PERIOD FROM THE DATE OF INCORPORATION, MAY 20, 1964 TO SEPTEMBER 30, 1964

EXPLORATION AND DEVELOPMENT		
Diamond drilling	$ 19,547.25	
Engineering fees	4,200.00	
Engineering expenses and supplies	2,083.97	
Assaying, splitting and hauling core	2,005.26	$ 27,836.48
ADMINISTRATION		
Telephone	$ 86.75	
Legal and audit	1,500.00	1,586.75
		$ 29,423.23

JOGRAN MINES LIMITED

NOTES TO FINANCIAL STATEMENTS

SEPTEMBER 30, 1964

(1) UNDERWRITING AND OPTION AGREEMENT

Under the terms of an agreement dated September 30, 1964, the company has agreed to sell 200,000 shares of its capital stock at 10¢ per share for a total of $20,000.00 payable within 48 hours of the date of acceptance for filing of the company's prospectus by the Ontario Securities Commission, referred to as the "effective date."

By the same agreement, the company has granted options to purchase a further 800,000 shares as follows:

200,000 shares at	10¢	within 3 months of the effective date
200,000 shares at	12½¢	within 6 months of the effective date
200,000 shares at	15¢	within 9 months of the effective date
200,000 shares at	17½¢	within 12 months of the effective date

(2) ROYALTY OBLIGATIONS

As part consideration for the purchase of 21 mining claims in Ryan Township, Sault Ste. Marie Mining Division, the company assumed royalty obligations whereby in the event that a mill is erected to treat ore from the mining claims, royalties are payable in the amount of 6 2/3¢ per ton in respect of 6 claims and 10¢ per ton in respect of the other 15 claims.

(3) REPAYMENT OF ADVANCES

The company and McKinney Gold Mines have agreed that the latter accept 270,000 shares of the company in settlement of $27,000.00 of the advances by McKinney Gold Mines. These shares were issued on November 3, 1964.

ALLEN W. JECKELL

Professional Mining Engineer

5 Walmsley Blvd.
TORONTO 7, Ontario.

October 15th, 1964

The President and Directors,
JOGRAN MINES LIMITED,
366 Bay Street,
TORONTO, Ontario.

PROGRESS AND DEVELOPMENT REPORT

on

Twenty-One (21) Mining Claims

RYAN TOWNSHIP

Sault Ste. Marie Mining Division

District of Algoma

Ontario

Identification of Property and Location

The contiguous group of 21 non-patented mining claims are located in the north-east quarter of Ryan Township and are identified as being:-

Claim Number	Mining Licence	Recording Date	As of July 21/64 Assessment Filed in Days		
			Geophysical	Diamond Drilling	Total
SSM-59846	D-11056	7/12/60	--	*(80) 140	220
" -62886	D-11897	5/29/62	54	111	165
" -62888	"	8/13/62	--	170	170
" -62889	"	"	54	90	144
" -62890	"	"	54	90	144
" -62891	"	9/10/62	54	90	144
" -62917	D-12617	6/5/62	--	200	200
" -62918	"	"	--	200	200
" -64225	D-11897	9/10/62	--	170	170
" -65883	D-12617	6/20/63	--	120	120
" -65884	"	"	--	120	120
" -66421	D-13057	7/17/63	54	66	120
" -66422	"	"	54	66	120
" -66423	"	"	54	66	120
" -66424	D-13057	7/17/63	54	66	120
" -66425	"	"	54	90	144
" -66426	"	"	54	90	144
" -66427	"	"	54	66	120
" -66428	"	"	--	80	80
" -66429	"	"	--	80	80
" -66430	"	"	--	80	80
TOTALS			594	(80)2251	2925

NOTE - *(80) on SSM-59846 - Filed in 1961 and 1962

PREAMBLE

Subsequent to my General Report of November 8th, 1963, which was used to qualify an underwriting of McKinney Gold Mines Ltd. shares, a geophysical survey by Magnetometer and Electromagnetic methods was completed on the greater part of eleven (11) eastern claims. (See Table above for claim numbers). Final maps and reports were received late January, 1964.

Based on the findings of this Geophysical Report and other data contained in my November 8th, 1963 Report, a preliminary Diamond Drilling Program, for a minimum 2500 footage to be expended in six (6) holes, was recommended in my Report of February 27th, 1964.

A contract covering this drilling and dated May 6th, 1964 was signed with Continental Diamond Drilling Company Limited of Rouyn, Quebec on or about May 11th, 1964.

A drill camp was located on Claim SSM-66421 at the shore of the north-west bay of Mamainse (Smith) Lake. Service to this camp was via the Carp River Road (Mileage 43 on Highway 17 North from Sault Ste. Marie) for a distance of some 8 miles by jeep and truck to the north end of Mamainse Mountain. At this point a bridge was built by Continental to cross the Carp River and a drill-tractor trail was cut for 1½ miles to the drill camp.

Flying service can also be used from Sault Ste. Marie, a distance of 38 miles to Mamainse Lake.

The first hole was started on May 24th, 1964.

On or before this date, McKinney Gold Mines Ltd., (Ontario Mining Licence A-37025) transferred title to all of the mining claims mentioned herein to JOGRAN MINES LTD. (Ontario Mining Licence A-37315).

The diamond drilling program was suspended August 21st, 1964.

DEVELOPMENT BY DIAMOND DRILLING - Preliminary Contract.

Five (5) of the preliminary diamond drill holes, namely, Nos. 1, 3, 4, 5 and 6, were completed by June 26th for a total footage of 2335 feet.

The site location for No. 2 Hole proved unsatisfactory for a suitable drill "set-up" and has not, to the date of this report, been drilled.

These preliminary holes were sited to test individual and/or multiple electromagnetometer cross-overs (anomalous zones). Nos. 1 and 3 Holes collared 250 feet apart, and on Line 200 East, were drilled to test two anomalous cross-overs, Nos. 4, 5 and 6 Holes were drilled to test similar cross-overs on Lines 1000 West, 1200 West and 1400 West, respectively. Each of these three cross-overs were individual anomalous zones and, as such, had no connection one with the other, nor with Nos. 1 and 3 Holes.

The sulphide mineralization intersected in Diamond Drill Holes 4, 5 and 6 returned indications of copper thus:-

NO. 4 HOLE - Line 1000 West - 1800 feet north.

210.5 to 211.5 - 1 Foot @ 1.02% Copper.

214 to 225 - 11 Feet @ 0.10% Copper.

NO. 5 HOLE - Line 1200 West - 1300 feet north.

235 to 235.5 - 0.5 Feet - 6" fault seam @ 30 to 35 Degrees C/A

235.5 to 238.5 - 3.0 Feet @ 0.12% Copper.

305 to 310 - 5 Feet @ 0.11% Copper.

310 to 315 - 5 Feet @ 0.10% Copper.

315 to 320 - 5 Feet @ 0.11% Copper.

NO. 6 HOLE - Line 1330 West - 650 feet north.

172.7 to 173.9 - 1.2 Feet @ 0.21% Copper.

181.6 to 188.2 - 6.6 Feet @ 0.14% Copper.

280.9 to 292.2 - 11.3 Feet @ 0.06% Copper.

Extensive sulphide mineralization was intersected in Holes Nos. 1 and 3.

HOLE NO. 1 - Line 200 East - 1250 feet north.

- Drilled S 27 W at 45 Degrees.

Indications of chalcopyrite in seams and fractures were evident throughout the total length of 560 feet. However, none of this mineralization returned economic copper content.

Twenty-nine (29) samples were taken for a total length of 192 feet of core. (Length of Hole - 560 feet).

The sections and average assays were:-

130 to 216 - 86 Feet @ 0.15% Copper.
High Assay - 0.36% over 2 feet.
Low Assay - 0.11% over 11 feet.

250.5 to 258.5 - 8 Feet @ 0.03% Copper

277 to 354 - 77 Feet @ 0.09% Copper, in Quartz Felsite Porphyry.
High Assay - 0.14% over 5 feet.
Low Assay - 0.05% over 5 feet.

354 to 375 - 21 Feet @ 0.10% Copper.

HOLE NO. 3 - Line 200 East - 1500 feet north.

- This hole was drilled at 45° on the same line and section, north of, behind and below No. 1 Hole.

Thirty-four (34) samples were taken for a total length of 270 feet. (Length of Hole - 498 feet)

The sections and average assays were:-

100 to 225 - 125 Feet @ 0.092% Copper
High Assay - 0.18% over 10 feet.
Low Assay - 0.05% over 10 feet.

249 to 253 - 4 Feet @ 0.58% Copper

274 to 362 - 88 Feet @ 0.12% Copper
High Assay - 0.21% over 10 feet.
Low Assay - 0.04% over 6 feet.

362 to 379.5 - 17.5 Feet @ 1.73% Copper.
High Assay - 3.12% over 5 feet.
Low Assay - 0.40% over 2.3 feet.
(SEE DETAIL SECTION BELOW)

379.5 to 415 - 35.5 Feet @ 0.20% Copper.
High Assay - 1.04% over 6 inches.
Low Assay - 0.12% over 9 feet.

NOTE - The continuous section, from 274 to 415 feet or 141 feet, averaged 0.342% Copper.

The DETAILED SAMPLING and individual assay of the Section 362 to 379.5 feet or 17.5 feet of core follows:-

362 to 363.5 - 6" of well disseminated sulphides and 1 foot of fine disseminated - also ½" seam, iron stained and carbonate filled, some molybdenite.
- SAMPLE NO. 1 - for 1.5 Feet @ 0.54% Copper.

363.5 to 366.2 - Highly fractured, Quartz filled with 3% sulphides, pyrite and chalcopyrite.
- SAMPLE NO. 2 - for 2.7 Feet @ 2.50% Copper.

366.2 to 366.4 - 2" Fault seam, iron stain and carbonate filled at 30 Degrees to core-axis, no mineral.
- NO SAMPLE - for 0.2 Feet @ nil.

366.4 to 368 - Highly fractured Quartz diabase, 5% sulphides in dissemination and threads.
- SAMPLE NO. 3 - for 1.6 Feet @ 2.24% Copper.

368 to 373 - Highly fractured, 5 to 7½% sulphides, pyrite, chalcopyrite, iron stain and some rose Quartz.
- SAMPLE NO. 4 - for 5.0 Feet @ 3.12% Copper.

373 to 375.3 - Fractured Quartz diabase, minor threads and seams, pyrite and chalcopyrite.
- SAMPLE NO. 5 - for 2.3 Feet @ 0.40% Copper.

375.3 to 379.5 - Fractured reddish brown Quartz, minor pyrite, and chalcopyrite threads in all directions.
- SAMPLE NO. 6 - for 4.2 Feet @ 0.61% Copper.

NOTE - Sample No. 2 assayed Gold 0.01 ounce and Silver 0.17 ounce.
Sample No. 4 " " 0.02 " and " 0.34 ounce.

DEVELOPMENT BY DIAMOND DRILLING - Additional Contract.

With immediate and required assessment work completed, the next 2651 feet of diamond drilling was distributed to Holes Nos. 7, 8, 9, 10, 11 and so directed as to define and extend the intersection, given above in detail, of No. 3 Hole.

The following table lists, by date, the sequence in which the various holes were drilled:-

Preliminary Holes

Date - 1964 From	-- To	Hole No.	Feet	Cumulative Footage
May 24	- May 29	1	560	560
June 1	- June 7	3	498	1058
June 8	- June 14	5	390	1448
June 16	- June 18	6	400	1848
June 20	- June 21	4A	84	1932
June 23	- June 26	4	403	2335

Additional Contract

Date - 1964 From	-- To	Hole No.	Feet	Cumulative Footage
June 27	- July 2	7	450	2785
July 4	- July 9	8	499	3284
July 10	- July 13	9	500	3784
July 16	- July 18	7	200 (deepen)	3984
July 20	- July 24	10	503	4487
July 26	- July 31	11	498	4986

Assessment Hole

Aug. 1	- Aug. 6	"A"	398	5384
Aug. 21	- Aug. 21	"A"	53	5437

HOLE NO. 7 - Line 200 East - 1410 feet north.
- This hole was drilled at 45° on same line and section at one-half way between Nos. 1 and 3 Holes.

Forty-one (41) samples were taken for a total length of 232 feet. (Length of Hole - 650 feet)

NOTE - This hole was originally drilled to 450 feet. Sample No. 85 for 447 to 449 feet or 2.0 feet assayed 2.22% Copper. (See Detail Section below, - 416 to 464 feet.) and was later deepened to 650 feet.

There was evidence of chalcopyrite mineralization in 74% of the core (480 feet) with the barren sections amounting to 118 feet of scattered volcanics, 40 feet of Quartz Felsite Porphyry and 12 feet in one fault. Some 48.3% of the mineralized core was sampled and assayed.

The sections and average assays were:-

104.5 to 125 - 20.5 Feet @ 0.18% Copper.
High Assay - 0.27% over 5 feet.
Low Assay - 0.08% over 5 feet.

167.5 to 170 - 2.5 Feet @ 0.41% Copper.

181.0 to 192.5 - 11.5 Feet @ 0.10% Copper.

295 to 300 - 5.0 Feet @ 0.20% Copper.

404.5 to 416 - 11.5 Feet @ 0.114% Copper.

416 to 464 - 48 Feet @ 0.50% Copper.

- In Detail:-

416.0 to 419.0 --	3.0 Feet @ 0.75%	
419.0 to 423.3 --	4.3 " @ 0.11%	
423.3 to 428.3 --	5.0 " @ 0.18%	
428.3 to 430.0 --	1.7 " @ 0.07%	- Low Assay.
430.0 to 433.0 --	3.0 " @ 1.62%	
433.0 to 440.0 --	7.0 " @ 0.06%	
440.0 to 447.0 --	7.0 " @ 0.11%	
447.0 to 449.0 --	2.0 " @ 2.22%	- High Assay.
449.0 to 455.0 --	6.0 " @ 0.22%	
455.0 to 459.0 --	4.0 " @ 0.42%	
459.0 to 464.0 --	5.0 " @ 1.37%	

464 to 536.5 - 72.5 Feet @ 0.132% Copper.
High Assay - 0.51% over 5 feet.
Low Assay - 0.01% over 8 feet.

536.5 to 548.5 - 12 Feet - FAULT.

564 to 604 - Quartz Felsite Porphyry.

604 to 642 - 38 Feet @ 0.324% Copper.

- In Detail:-

604 to 610 --	6 Feet @ 0.32%
610 to 615 --	5 " @ 0.25%
615 to 620 --	5 " @ 0.35%
620 to 624 --	4 " @ 0.36%
624 to 627 --	3 " @ 0.46%
627 to 635 --	8 " @ 0.16%
635 to 642 --	7 " @ 0.47%

NOTE - At 648 feet a SPECIMEN, showing Quartz Stringers containing cluster chalcopyrite and bornite, is held for inspection.

HOLE NO. 8 - Line 100 East - 1500 feet north.

- Drilled S 27 W at 45 Degrees, this hole is parallel to and 100 feet west of No. 3 Hole.

Forty-four (44) samples were taken for a total length of 307 feet. (Length of Hole - 499 feet)

The sections and average assays were:-

10 to 18.5 -- 8.5 Feet @ 0.11% Copper.

18.5 to 50.0 -- 31.5 Feet @ 0.435% Copper.

OR

18.5 to 28.5 -- 10.0 Feet @ 0.983% Copper.

- In Detail:-

18.5 to 23.0 --	4.5 Feet @ 1.45%
23.0 to 27.0 --	4.0 Feet @ 0.56%
27.0 to 28.5 --	1.5 Feet @ 0.71%

50.0 to 104.5 - 54.5 Feet @ 0.09% Copper.

116.0 to 135.0 - 19.0 Feet @ 0.13% Copper

151 to 160 - 9.0 Feet @ 0.09% Copper

168 to 169 - 1.0 Feet @ 0.32% Copper

289 to 418 - 129.0 Feet @ 0.132% Copper.
High Assay - 0.90% over 5 feet.
Low Assay - 0.02% over 10 feet.

418 to 444.5 - 26.5 of FAULT.

444.5 to 475.0 - 30.5 Feet @ 0.264% Copper.

- In Detail:-

- 444.5 to 456.5 -- 12.0 Feet @ 0.13%
456.5 to 463.0 -- 6.5 Feet @ 0.27%
463.0 to 467.0 -- 4.0 Feet @ 0.52%
467.0 to 472.5 -- 5.5 Feet @ 0.19%
472.5 to 475.0 -- 2.5 Feet @ 0.65%

475 to 499 - 24.0 Feet @ 0.127% Copper.

HOLE NO. 9 - Line 200 East - 1650 feet north.

- Drilled S 27 W at 45 Degrees. This hole was collared 155 feet north of No. 3 Hole to drill behind and underneath No. 3 and in the same section as Holes No. 7 and No. 1 which are south of Hole No. 3.

Twenty-four (24) samples were taken for a total length of 142.6 feet. (Length of Hole - 500 feet)

The sections and average assays were:-

90.5 to 124.5 - 34.0 Feet @ 0.222% Copper.
High Assay - 0.99% over 1.5 feet.
Low Assay - 0.05% over 4.5 feet.

124.5 to 125.3 -10 inch FAULT.

137.0 to 143.6 - 6.6 Feet @ 0.09% Copper.

267.0 to 340.0 - 73 Feet @ 0.135% Copper.
High Assay - 0.48% over 4.5 feet.
Low Assay - 0.04% over 10 feet.

340.0 to 360.0 - 20 Feet @ 0.055% Copper.

451.0 to 458.0 - 7 Feet @ 0.215% Copper.

477.0 to 479.0 - 2 Feet @ 0.20% Copper.

HOLE NO. 10 - Line 100 East - 1650 feet north.

- Drilled S 27 W at 45 Degrees. This hole was collared 150 feet north of No. 8 Hole and is parallel to and 100 feet west of No. 9 Hole.

Fourteen (14) samples were taken for a total length of 89 feet. (Length of Hole - 503 feet)

The sections and average assays were:-

28 to 29.5 - 1.5 Feet @ 0.84% Copper.

97.0 to 102.5 - 5.5 Feet @ 0.25% Copper.

228.0 to 236.0 - 8 Feet @ 0.40% Copper.

266.0 to 286.0 - 20 Feet @ 0.125% Copper.

449.0 to 482.0 - 33 Feet @ 0.22% Copper.
High Assay - 0.80% over 1 foot.
Low Assay - 0.08% over 5 feet.

482 to 503 - 21 Feet @ 0.114% Copper.

HOLE NO. 11 - Line 200 West - 1940 feet north.

- Drilled S 27 W at 45 Degrees.

- This hole was collared some 400 feet true north and 100 feet true west of the collar of No. 10 Hole to intersect an anomalous cross-over on line 200 West at 1740 feet north.

At this stage in the drilling program, it was becoming evident that the major structural control of brecciation, certain faulting with attendant chalcopyrite mineralization, might lie in a N 17 W direction with a possible steep dip to the south-west.

On the basis of this assumption and in keeping with the program of testing the multiple E-M cross-overs, two holes, Nos. 11 and 12, were spotted.

Structure in No. 11 Hole was similar to that intersected in Nos. 1, 3, 7, 8, 9 and 10. However, the degree of chalcopyrite mineralization was not as strong, although the incidence of mineralization throughout the range of the hole was greater than the sampling as listed.

The sampling and average assays were:-

31.5 to 33.0 - 1.5 Feet @ 0.81% Copper.

82.0 to 104.0 - 22.0 Feet @ 0.085% Copper.

173.0 to 181.0 - 8.0 Feet @ 0.20% Copper.

200 to 237.8 - 37.8 Feet @ 0.138% Copper.
High Assay - 1.75% over 0.8 foot.
Low Assay - 0.11% over 12 feet.

408 to 409 - 1.0 Foot @ 1.00% Copper

ASSESSMENT HOLE NO. "A" - Line 200 West - 1150 feet south.

- Drilled N 27 E at 45 Degrees.
(Length of Hole - 451 feet)

- This hole was drilled to supplement assessment work for one of two contiguous groups of Claims and in order to test the strongest area of a Self-Potential Geophysical Survey which had been undertaken under vendor auspices. The locale was also the site of a smaller Low-High-Low Magnetic anomalous area, with a weak electro-magnetic anomalous cross-over some 200 feet to the east.

There was scattered sulphide mineralization noted in the core. A fault zone from 327 to 340 feet was intersected. None of the mineralization required sampling.

Special specimens at 377 to 378 feet of 1" Quartz Stringers containing chalcopyrite were held for visual inspection.

GEOLOGY AND STRUCTURE - Local.

Rock classification is within a narrow range.

The greater proportion of the mass intersected by the drill holes has been identified as Quartz diabase which, by granular texture, grades into a phase that could be considered a gabbroic diabase. Lesser sections of core appear to have the appearance of volcanic lavas, but it is difficult to establish exact contacts. It is, however, noted that the siliceous content of the various rock formations changes in a marked degree at a point of carbonate filled fault markers, viz., a sudden cut-off of a granular diabase to a phase of volcanic lava or fine grained Quartz diabase. At this date, it is considered that the volcanics have a general E-W strike and a flat dip to the north.

A single intrusive rock type has been noted and classified as a Quartz Felsite Porphyry. It is fine grained and uniform throughout to either contact with no alteration to the contacted rock formation. This porphyritic formation is considered to occur as steep dipping dikes along a general N-S strike.

Copper sulphide mineralization does not appear to be confined or controlled by any particular rock formation as it is found in varying degree in all classifications.

Such mineralization is associated with a Quartz or siliceous phase of intrusion which has followed and filled channels originally opened by N-S faulting which shattered adjacent formations.

The resultant channels comprise Quartz filled brecciated faults, stringers from ½ inch up, seams at ¼ inch and numerous cracks which, in the Drill Logs, are noted as "threads". It is also noted that certain "granitization" or siliceous alteration generally carries appreciable copper values, particularly in the vicinity of Quartz filled brecciated faults.

There is a paucity of pyrite throughout the shattered and mineralized zones and therefore such zones cannot be classified as replacement type deposits.

Later major faulting, typified by barren carbonate filled breccia, has offset such mineralized shatter zones and also the porphyritic dikes. The attitude of such later faulting is still unknown but, by intersection in three holes, might be flat lying (near horizontal).

Accordingly, the sense without proof or argument is that the attitude and degree of copper sulphide mineralization is controlled by early N-S faulting in a vertical plane, all of which has been offset by later flat lying major faulting.

GEOLOGY - ECONOMIC - Local.

A perusal of the samplings and assays as given herein (Holes Nos. 1, 3, 7, 8, 9, 10 and 11) shows that no economic copper ore has been found in this preliminary drilling.

However, certain sections of core have returned appreciable values and/or impressive lengths of consistent copper content. It will be noted that such sections have been reported "In Detail".

At the same time, it should be appreciated that the drill hole sections (some 300 feet on line by 400 feet at 45 Degrees on one section and 100 feet on line by 400 feet at 45 Degrees on a second section which is 100 feet distant) have tested a relatively small proportion of the overall dimension of the anomalous formation or mass. Such anomalous formation is considered to have a length of 2400 feet and potential maximum width of 800 feet.

The degree of mineralization, hence grade of copper, is in proportion to the degree of brecciation and shattering. The preliminary drilling was directed to test anomalous conditions and determine whether sulphides and of what type were the causation of such anomalies. As this has now been determined, it should follow that testing should continue in order to locate and define the zonal areas that carry the maximum brecciation and shattering.

The magnetometer survey and E-M anomalous "cross-overs" suggest a potential fractured and mineralized zonal trend along a N 18 W axis, namely, the 2400 feet mentioned above.

GEOLOGY AND STRUCTURE - General

Certain current diamond drilling on property held by McKinney Gold Mines Ltd., notably on Claim SSM-67726, Kincaid Township and some 1¼ miles distant in a N 30 W direction from the location of Jogran Mines drilling, is testing a mineralized formation, viz., a fault zone having a similar N W strike trend.

This fault zone trend is also noticeable as crossing the intervening acreage on strike between the two drilling sites. This intervening or middle acreage is the locale of iron formation which, according to air-borne magnetometer survey, shows a "break" or separation in magnetic intensity which coincides with the above-mentioned fault trend. The eastern portion of the iron formation is displaced southerly in relation to the western portion.

A perusal of Aeromagnetic Map 2188G - Mica Bay Sheet also shows that a series of magnetic contours suggest faulting of similar strike at and west of the Pancake - Mamainse Lakes area.

It is also noted that the "C" zone and the zone of "Old Indian Copper Diggings" on and at the mining property of Coppercorp Ltd. (Montreal Mining Co. - Sand Bay Location), show a N 15 W and N 20 W strike length respectively. NOTE - See Ontario Department of Mines Map No. 1953-1, Mamainse Point Copper Area.

ASSESSMENT REQUIREMENTS AND STATUS.

Sufficient diamond drilling has been completed to cover the total assessment work of 200 days per Claim as required by the Ontario Mining Act.

For 21 claims, 4200 days of work are required. Diamond drilling has amounted to 5437 feet or days.

However, all of this assessment work has not been filed at this date. It will be noted that all of the 21 claims are secured by filed and accepted "Reports of Work" up to and including 1965, and all but 6 claims until 1966.

See Table under "Identification of Property and Location" herein.

CONCLUSIONS

In my Report of November 8th, 1963, I stated under "Conclusions" that --

Quote - "It is considered that prior to the current summer (1963) season, the use of modern geophysical survey methods has not played a part in wide-spread and detailed prospecting of this area."

"Therefore, it is possible that the use of such methods and application to the greater proportion of the area may be instrumental in locating additional copper deposits."

"Such deposits are likely to be located in and along the juncture of or trace of structural faulting and in the near vicinity of minor and mineralized 'showings" which have been identified in the past."

"These conditions have been established, in part, within the boundary of the mining claims discussed herein." - Unquote.

The ground geophysical survey of the area of the aero-magnetic "Low" anomaly was instrumental in guiding the subsequent Preliminary Diamond Drilling Program into structural formation that disclosed copper sulphide mineralization which was new and heretofore unknown.

Although the diamond drilling, so far, has failed to disclose economic copper ore, there is no reason to terminate development.

It is my contention that a very small percentage of the anomalous mass has been partially tested.

The anomalous conditions persist south-easterly from the sections exemplified by Diamond Drill Holes 1, 3, 5, 7, 8, 9 and 10 for a distance of some 1200 feet.

In addition, and at this stage of development, an effort should be made to expurgate the probability that the control of mineralization might be in a horizontal attitude.

With these factors in mind and accepting the fact that weather conditions of this area will deteriorate in late November to a point where diamond drilling is difficult and costly, a recommendation on immediate and additional development is modified by specific reservations.

Therefore, for the remaining current season, a minimum program of diamond drilling which could lead to, locate and find structural conditions, hence tonnage, that would yield a copper content of economic grade, should be considered and does not detract in any manner the potential characteristics and merit of the property and the mineralization therein.

RECOMMENDATION

Based on the premises expounded under "Conclusions", a program of diamond drilling in the amount of 2500 feet to be expended in five (5) holes is recommended.

The arrangement of the five (5) holes is described thus:-

First Hole - At the site of No. 1 (Preliminary Program).
To be drilled @ 90 Degrees for 500 feet to determine and/or disprove the probability of a flat dip to the attitude of known mineralization.

Second Hole -Site of collar at 700 North and 450 East.
To be drilled N 80 E @ 45 Degrees for 500 feet to test the E-M anomalous "cross-over" and "High-Low" magnetometer contact at the site of the original and undrilled No. 2 Hole of the Preliminary Program.

Third Hole - To be drilled parallel to and 300 feet south of the second hole @ 45 Degrees for 500 feet.

Fourth Hole- To be drilled parallel to and 600 feet south of the second hole @ 45 Degrees for 500 feet.

Fifth Hole - To be drilled parallel to and 900 feet south of the second hole @ 45 Degrees for 500 feet.

NOTE - The third, fourth and fifth holes are exploratory or preliminary holes located in such a manner as to test the south-easterly extension of the assumed N 18 W strike fault zone.

COST OF ADDITIONAL DRILLING PROGRAM.

1.	Diamond Drilling, extras - 2500 feet at $4.00 per foot	$ 10,000.00
2.	Supervision, travel, assaying, et al.	5,000.00
	Total	$ 15,000.00

This is my Progress and Development Report for the

Period: February 27th to August 21st, 1964.

Respectfully submitted,

"A. W. JECKELL"

Allen W. Jeckell, B.A.Sc., P.Eng.,
Consulting Mining Engineer.

Dated - October 15th, 1964.

C E R T I F I C A T E

I, ALLEN WRAY JECKELL, of the City of Toronto, in the County of York, do hereby certify as follows:-

1. THAT I am Consulting Mining Engineer and have practised my profession in excess of thirty years.

2. THAT I live at 5 Walmsley Boulevard, Toronto 7, Ontario.

3. THAT I am a Registered Professional Engineer in the Province of Ontario and in the Province of Quebec.

4. THAT I am a Graduate Mining Engineer with the Degree of Bachelor of Applied Science (1927) of the University of Toronto.

5. THAT this Progress and Development Report, dated October 15th, 1964, which covers the development work undertaken on the Jogran Mines Ltd. mining property in Ryan Township, has been made on behalf of McKinney Gold Mines Ltd., Suite 506, 540 Burrard Street, Vancouver, British Columbia.

6. THAT the content of this Progress and Development Report is based on personal supervision and resident direction of the Diamond Drilling and other development during the period February 27th to August 21st, 1964.

7. THAT I have no interest either directly or indirectly in this mining property nor do I expect to receive any interest directly or indirectly in the securities of Jogran Mines Ltd. or McKinney Gold Mines Ltd.

DATED this 15th day of October, 1964.

A. W. JECKELL

Allen W. Jeckell, B.A.Sc., P.Eng.,
Consulting Mining Engineer.

PLAN OF

MINING CLAIM
S.S.M. 62886

IN THE

TOWNSHIP OF RYAN

DISTRICT OF ALGOMA

SCALE 1" = 300'

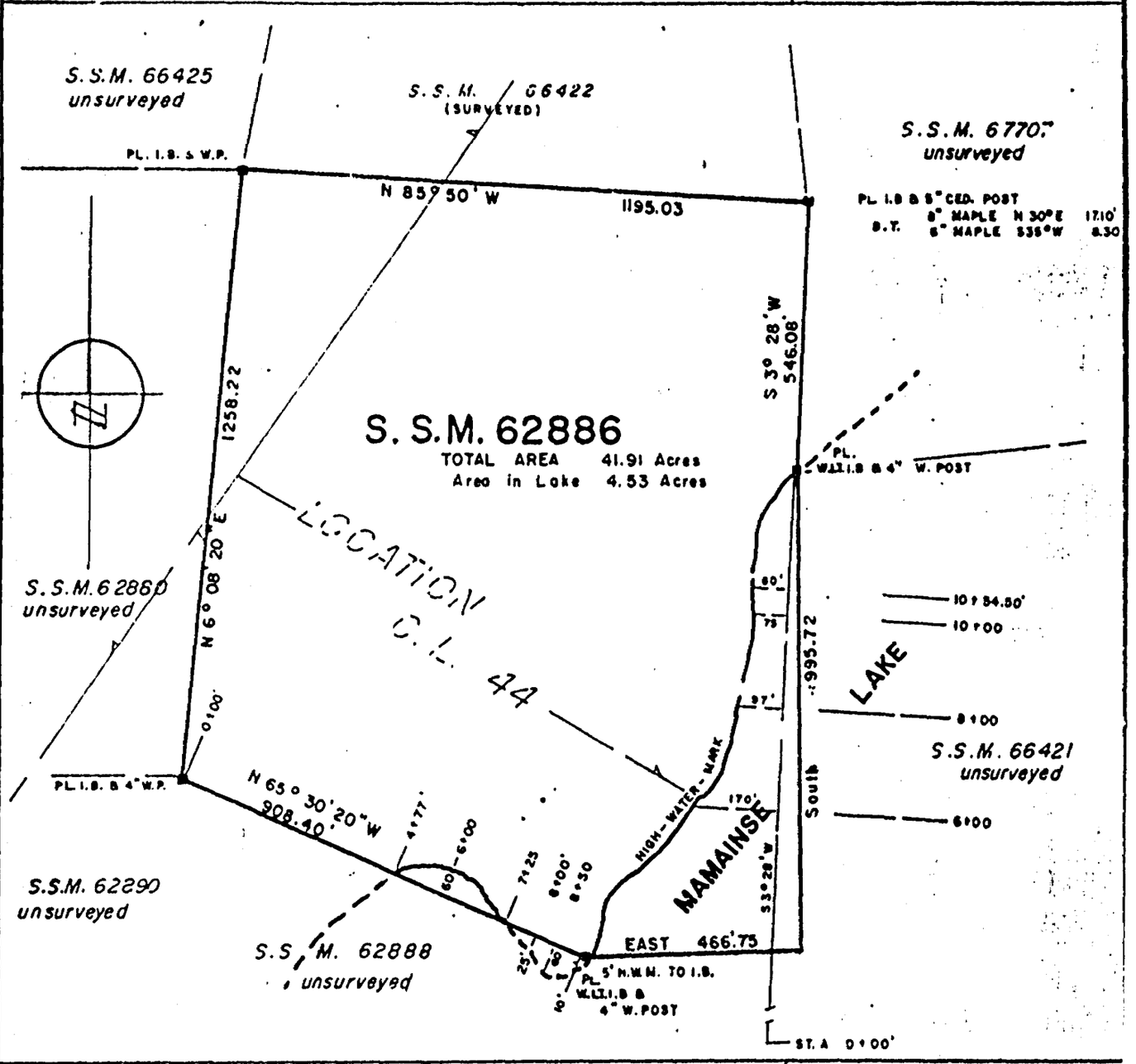
F. C. WILSON, O.L.S.

1968

AR 790

APPROVED JAN. 22 19 69

FOR SURVEYOR GENERAL
OF ONTARIO



SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY:

1) THAT THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE MINING ACT, THE LAND TITLES ACT AND THE REGULATIONS MADE THEREUNDER,
2) THAT I WAS PRESENT AT AND DID PERSONALLY SUPERVISE THE SURVEY REPRESENTED BY THIS PLAN;
3) THAT A TRUE COPY OF FIELD NOTES OF SURVEY IS FILED UNDER NUMBER MISC. 46 IN THE OFFICE OF THE LAND TITLES AT SAULT STE. MARIE;
4) THAT THE SURVEY WAS COMPLETED ON THE 30TH DAY OF OCTOBER, 1968.

OCT. 31, 1968
SAULT STE. MARIE, ONTARIO

F C Wilson
F. C. WILSON,
ONTARIO LAND SURVEYOR

BEARING NOTE

BEARINGS ARE ASTRONOMIC AND ARE DERIVED FROM OBSERVATION ON POLARIS AND ARE REFERRED TO THE MERIDIAN THRU THE CENTRE OF THE TOWNSHIP OF RYAN.

RECEIVED
JAN 3 1969
RESIDENT GEOLOGIST
SAULT STE. MARIE

FOR DEPT. OF MINES USE ONLY

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OFFICE FILE NO....	1338
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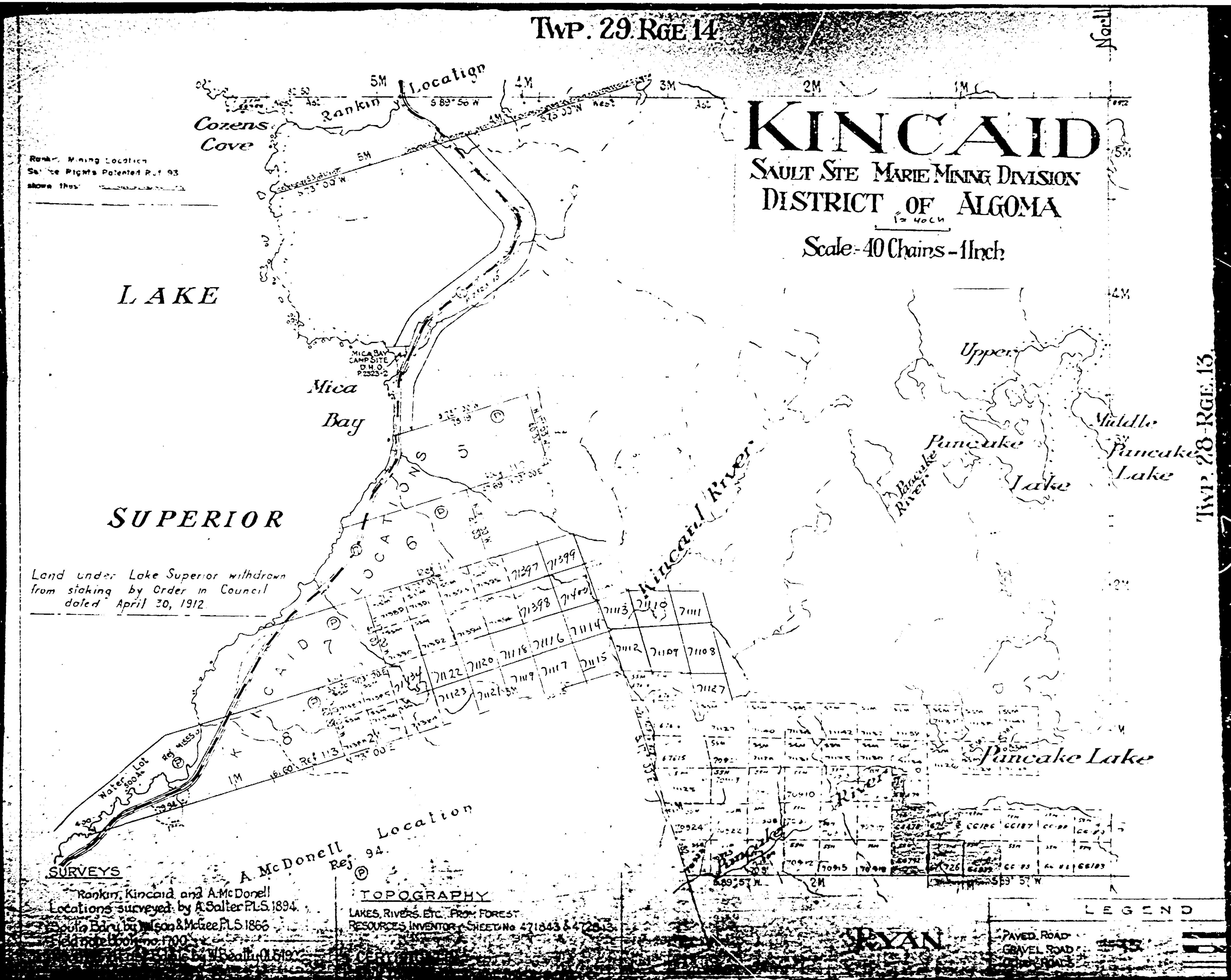
68-25



TWP. 29 RGE 14
KINCAID
SAULT STE MARIE MINING DIVISION
DISTRICT OF ALGOMA
Scale:- 40 Chains - 1 Inch
TWP. 28 RGE 13
LAKE SUPERIOR
Cozens Cove
Rankin Location
Mica Bay
Kincaid River
Upper Pancake Lake
Middle Pancake Lake
Pancake River
Pancake Lake
A. McDonell Location
Land under Lake Superior withdrawn from staking by Order in Council dated April 30, 1912
Water Lot
SURVEYS
Rankin, Kincaid and A. McDonell Locations surveyed by A. Salter P.L.S. 1894.
TOPOGRAPHY
LAKES, RIVERS, ETC. FROM FOREST RESOURCES INVENTORY SHEET No 471843 & 472843
RYAN
LEGEND
PAVED ROAD
GRAVEL ROAD

ROY J. RUPERT
CONSULTING GEOLOGIST
28 WELCOME AVENUE
SAULT STE. MARIE ONTARIO
P6A 5A5

PHONE (705) 254 4130

April 30, 1980,

Mr. Dave McAuslan,
Manager Exploration, Eastern Division,
Shell Canada Resources Ltd.,
505 University Avenue,
TORONTO, Ontario.

Dear Mr. McAuslan:

Following my conversation earlier this week with Mr. Ernie Gallo, we are enclosing a proposal for an exploration agreement with Shell. The Jogran property is one of the outstanding exploration prospects in the Batchawana area which has only recently been consolidated under our ownership. This molybdenum-copper-tungsten occurrence not only has significant drill-indicated reserves but also has outstanding exploration potential. It deserves the attention of any company interested in building molybdenum reserves or exploring for tungsten.

We also have a number of other claim groups in the same area which are held by myself and my partner Mr. Palumbo, or by myself. These properties may also be included if you wish.

The Jogran prospect was discovered in the 1960's and tested by nearly 20,000 feet of drilling, worth over a quarter million dollars at today's prices. Although the prospect was uneconomical in 1960, the drilling may be considered successful under today's conditions. Over 14 million tons of reserves containing 0.2% Cu and 0.05% MoS_2 are drill indicated, with much larger tonnages in the prospective category since the drill indicated zone is open in all directions.

In addition to the indicated reserves, the prospect has value because there are excellent chances for discovery of higher grade zones or new zones at depth. Recent discoveries in similar environments clearly indicate that deep exploration of this area for copper, molybdenum and tungsten is warranted. Exploration models are discussed in the proposal.

Continued Page 2 -----

We own the Jogran property outright and are in a position to deal it to Shell on an option basis or other arrangement. Our objectives in such a deal are to obtain a cash payment, royalty or retained interest and a work or expenditure commitment to ensure that the property will be thoroughly tested and brought to production. If it is satisfactory to your company, I would also be interested in managing the project subject to your direction.

Subject to further discussion and review in terms of your company's objectives and strategy, tentative proposed terms for sale of this property are as follows:

1) Shell shall commit to expend at least $100,000 in exploring the property in the first year.

2) Shell shall make cash option payments to the vendors as follows, which shall not be considered exploration expenditures:

   a) on signing - $75,000
   b) annually for 3 years - $100,000
   c) on exercise of option for 80% $500,000

3) Shell will earn an interest in the property for expenditures as follows:

   a) for first $500,000 in exploration expenditures within 4 years - 40%

   b) for next $1,000,000 in exploration or development expenditures within 4 years - 40%

   80%

4) The vendors will retain a 20% interest which will become a participating interest for any expenditures beyond 1.5 million.

5) At the option of the vendors, the 20% participating interest may be converted to either:

   a) a 2% non-assessable N.S.R. royalty

   b) a 10% non-participating net profits interest

Continued Page 3 ------

We would appreciate the opportunity to meet with you to discuss these terms with you further to see how they can best be fitted to your company's objectives. An inspection of the records and the property can also be arranged soon, as the snow is now gone and the lake is open.

Yours very truly,

Roy J. RUPERT.

RJR/vm
Encl.

318245

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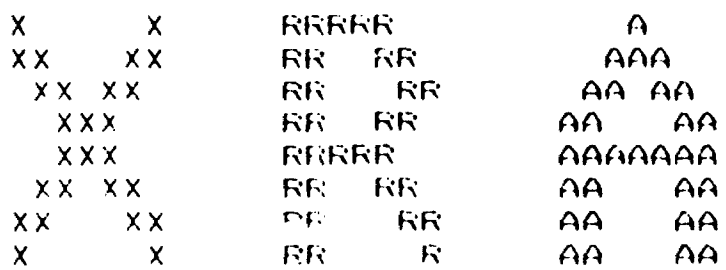

MAJOR ELEMENTS

SHELL CANADA RESOURCES LTD.

TOTAL IRON REPORTED AS FEO
THE CONTRIBUTION OF TOTAL IRON TO THE SUM
IS CALCULATED AS FE2O3

REPORT NO 7395 16-JUN-80

SAMPLES RECEIVED FROM D MCAUSLAN REF FILE 3550-15

16-JUN-80 X-RAY ASSAY LABORATORIES

SAMPLE	SiO2	Al2O3	CaO	MgO	Na2O	K2O	Fe2O3	MnO	TiO2	P2O5	LOI	SUM
A	75.6	12.4	0.74	0.19	1.12	4.46	1.[illegible]	[illegible]	[illegible]	[illegible]	0.31	99.9
B	74.5	13.9	0.66	0.12	1.54	3.91	1.[illegible]	0.14	[illegible]	[illegible]	0.46	[illegible]
C	74.9	13.9	0.42	0.32	1.[illegible]	3.92	1.49	0.12	0.1[illegible]	0.11	1.15	99.7
D	73.5	14.1	0.51	0.08	1.47	3.41	1.[illegible]	[illegible]	0.04	0.16	1.15	99.5
E	75.6	12.6	0.57	0.19	1.15	4.32	1.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	99.3
F	75.3	12.6	0.57	0.24	1.22	4.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.21	[illegible]
G	77.2	11.4	0.68	0.24	1.65	4.[illegible]	1.[illegible]	[illegible]	[illegible]	[illegible]	0.2[illegible]	[illegible]
H	7[illegible]	13.4	1.[illegible]	[illegible]	[illegible]	4.45	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
J	71.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
K	75.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

16-JUN-80 X RAY ASSAY LABORATORIES 318252

SAMPLE	RB	SR	ZR
A	350	0	90
B	490	10	20
C	630	10	70
D	730	20	10
E	440	30	50
F	490	10	90
G	280	20	120
H	260	70	150
J	130	40	120
K	150	50	110

X-RAY ASSAY LABORATORIES LIMITED

1885 LESLIE STREET, DON MILLS, ONTARIO [illegible] 3J4

PHONE 416-445-[illegible] [illegible] 06-[illegible]947

CERTIFICATE OF ANALYSIS

TO: SHELL CANADA RESOURCES LIMITED,
ATTN: DAVID A. [illegible],
MINERALS DEPT.,
P.O. BOX 400, TERMINAL "A",
TORONTO, ONT. [illegible]

REPORT 7395 [illegible]. [illegible] [illegible]-77

15 [illegible] [illegible] [illegible] [illegible] [illegible] 30

[illegible] ANALYSIS [illegible]:

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[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

X-RAY ASSAY LABORATORIES LIMITED

DATE 04-JUL-[illegible]

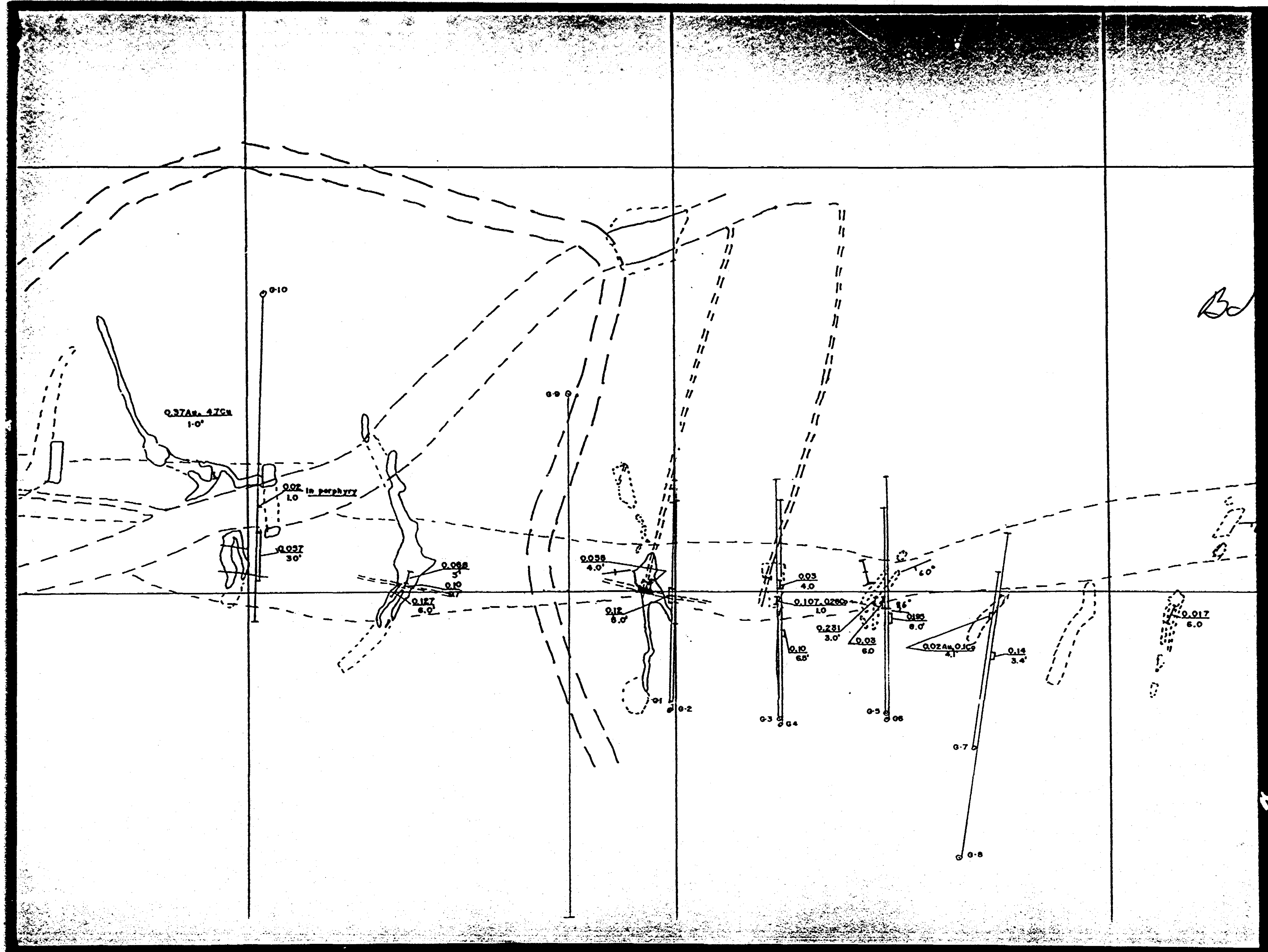
CERTIFIED BY ....

J.H. [illegible]

SAMPLE	[illegible] PPM	[illegible] PPM	[illegible] PPM	[illegible] PPM	[illegible] PPM
A	50	1300	--	--	300
B	130	4500	--	--	540
C	250	2700	--	--	400
D	320	2100	--	--	840
E	70	1400	--	--	540
F	80	2400	--	--	560
G	27	1200	--	--	250
H	22	1400	--	--	410
I	--	--	[illegible]	--	--
J	4	[illegible]	1170	[illegible]	200
K	7	740	[illegible]	47	270
L	--	--	[illegible]	--	--
M	--	--	174000	--	--
N	--	--	[illegible]	--	--
O	--	--	1,[illegible]	--	--
P	19	470	[illegible]	[illegible]	[illegible]

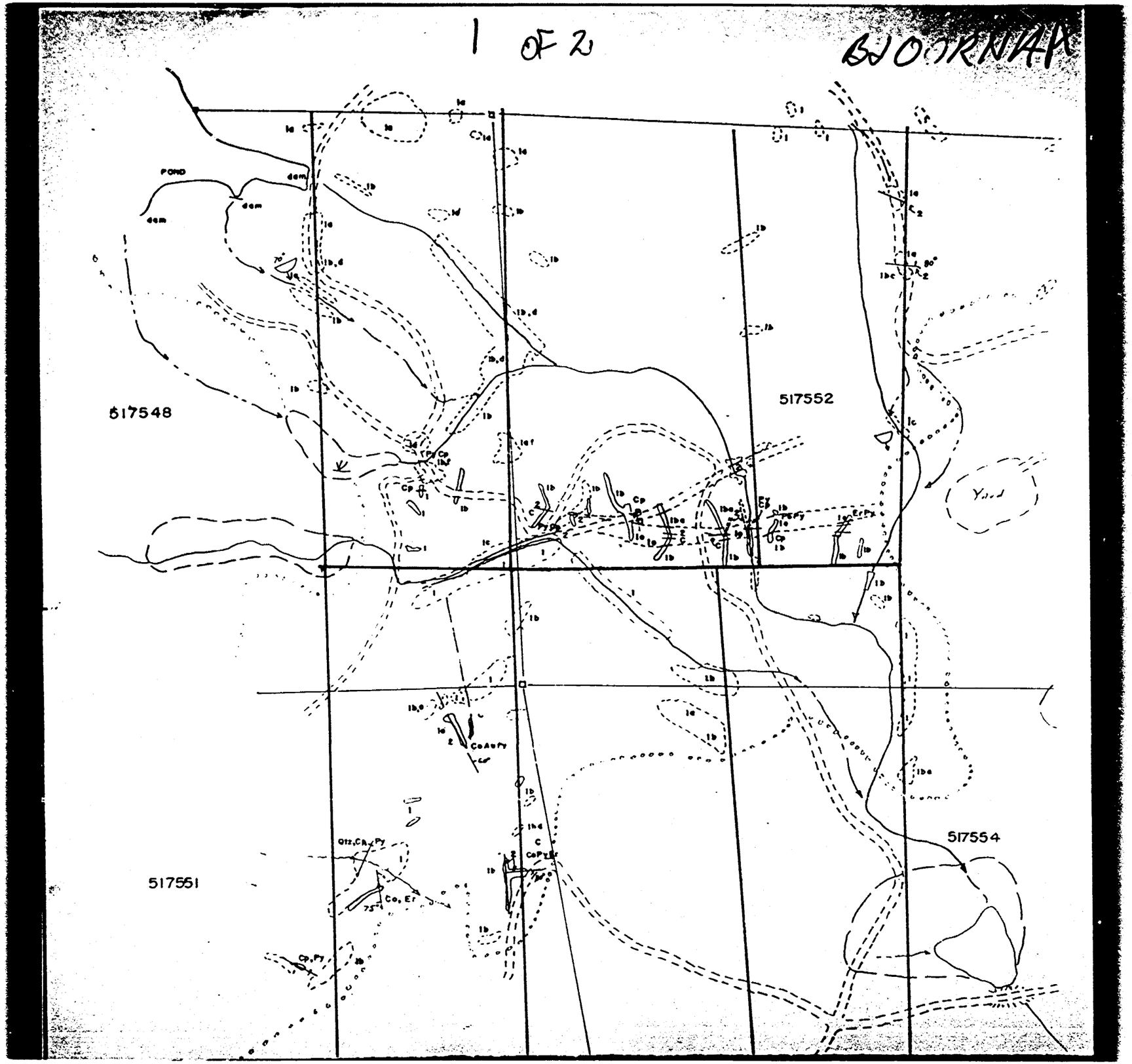
X-RAY ASSAY LABORATORIES [illegible] PAGE [illegible] FILE [illegible] PAGE

SAMPLE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
A	[illegible]	--	[illegible]	[illegible]	[illegible]
B	[illegible]	--	[illegible]	[illegible]	[illegible]
C	[illegible]	--	[illegible]	[illegible]	[illegible]
D	[illegible]	--	[illegible]	[illegible]	[illegible]
E	[illegible]	--	[illegible]	[illegible]	[illegible]
F	[illegible]	--	[illegible]	[illegible]	[illegible]
G	[illegible]	--	[illegible]	[illegible]	[illegible]
H	[illegible]	--	[illegible]	[illegible]	[illegible]
I	--	[illegible]	--	[illegible]	--
J	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
K	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
L	--	[illegible]	[illegible]	[illegible]	--
M	--	[illegible]	[illegible]	[illegible]	--
N	--	[illegible]	[illegible]	[illegible]	--
O	--	[illegible]	[illegible]	[illegible]	--
P	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

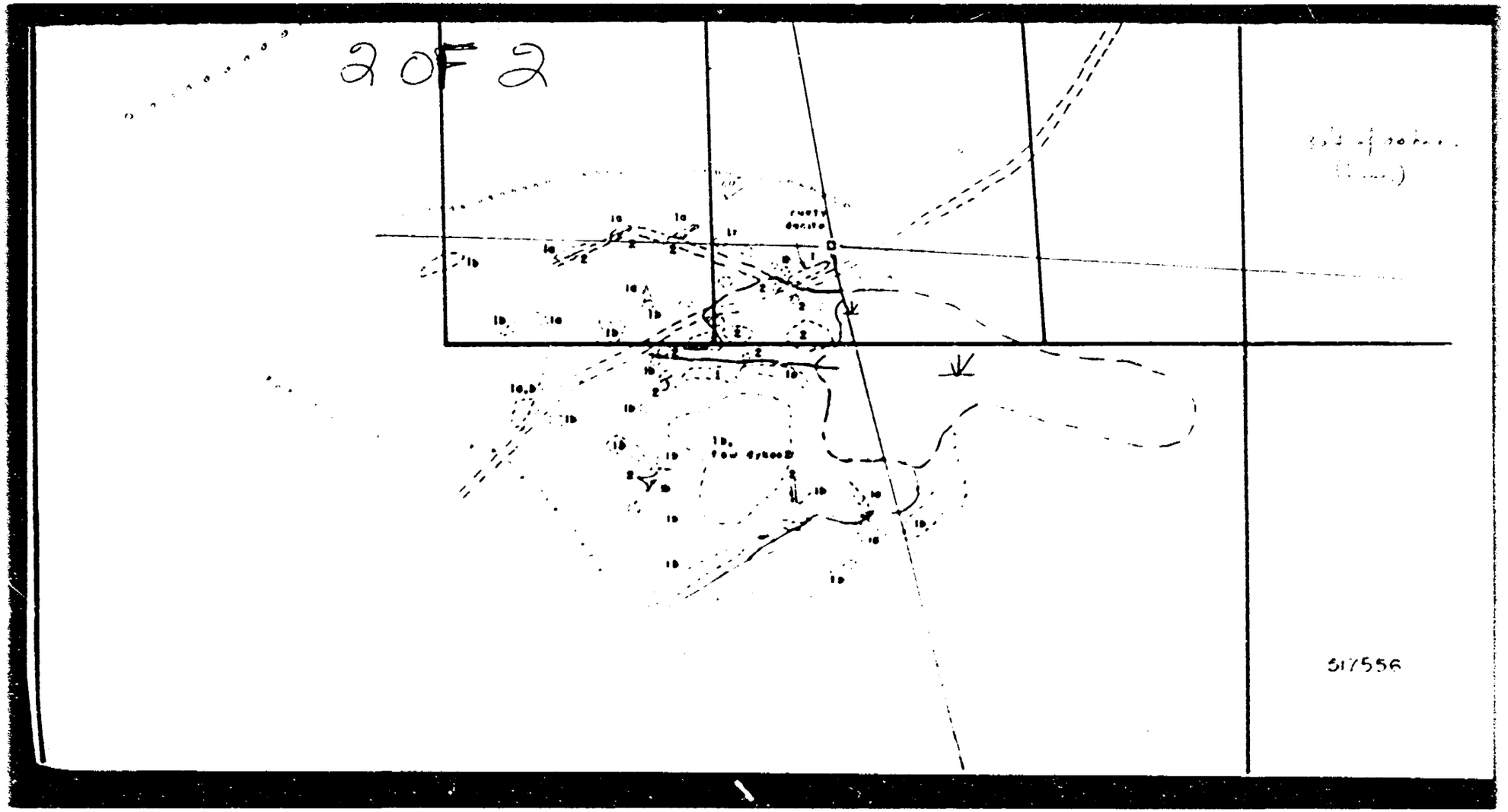

G-10
G-9
0.37Au, 4.7Cu
1.0'
0.02
1.0
in porphyry
0.037
30'
0.088
5'
0.10
2.7
0.127
6.0'
0.038
4.0'
0.12
6.0'
G-1
G-2
0.03
4.0
0.107, 0.28Cu
1.0
0.10
6.5'
G-3
G4
0.281
3.0'
0.03
6.0
60°
86°
0.195
6.0'
G-5
G6
0.02Au, 0.1Cu
4.1'
0.14
3.4'
G-7
G-8
0.017
6.0

1 OF 2

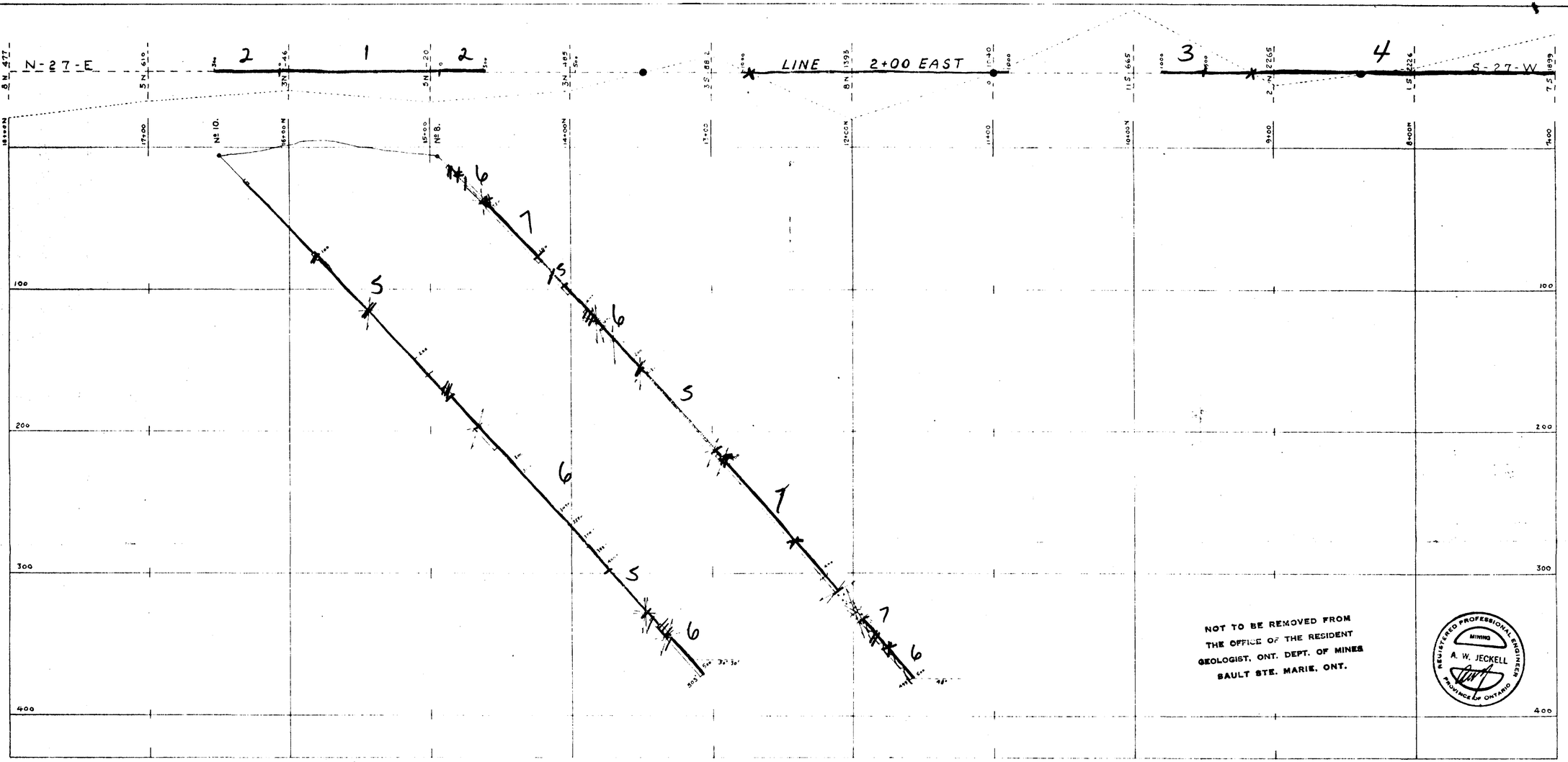
BJORNAX



2 OF 2



517556



GEOPHYSICAL LEGEND

1 - 0 - MINUS 1000
2 - 0 - 300 GAMMAS
[ ] - 300 - 500 "
[ ] - 500 - 1000 "
3 - 1000 - 1500 "
4 - 1500 - PLUS "

● - E M ANOMALY
✕ - REVERSE E M X-OVER

GEOLOGICAL LEGEND

5 - Q D - QTZ DIABASE
6 - Q G - QTZ GABBRO
7 - V O L - VOLCANIC LAVA (Siliceous)
Q F P - QTZ FELSITE PORPHYRY
S-CU - SULPHIDES - COPPER
FAULT - ASSUMED ANGLE
" - ALTERNATE ANGLE
Q - QUARTZ
347✓ - ROCK SPECIMEN

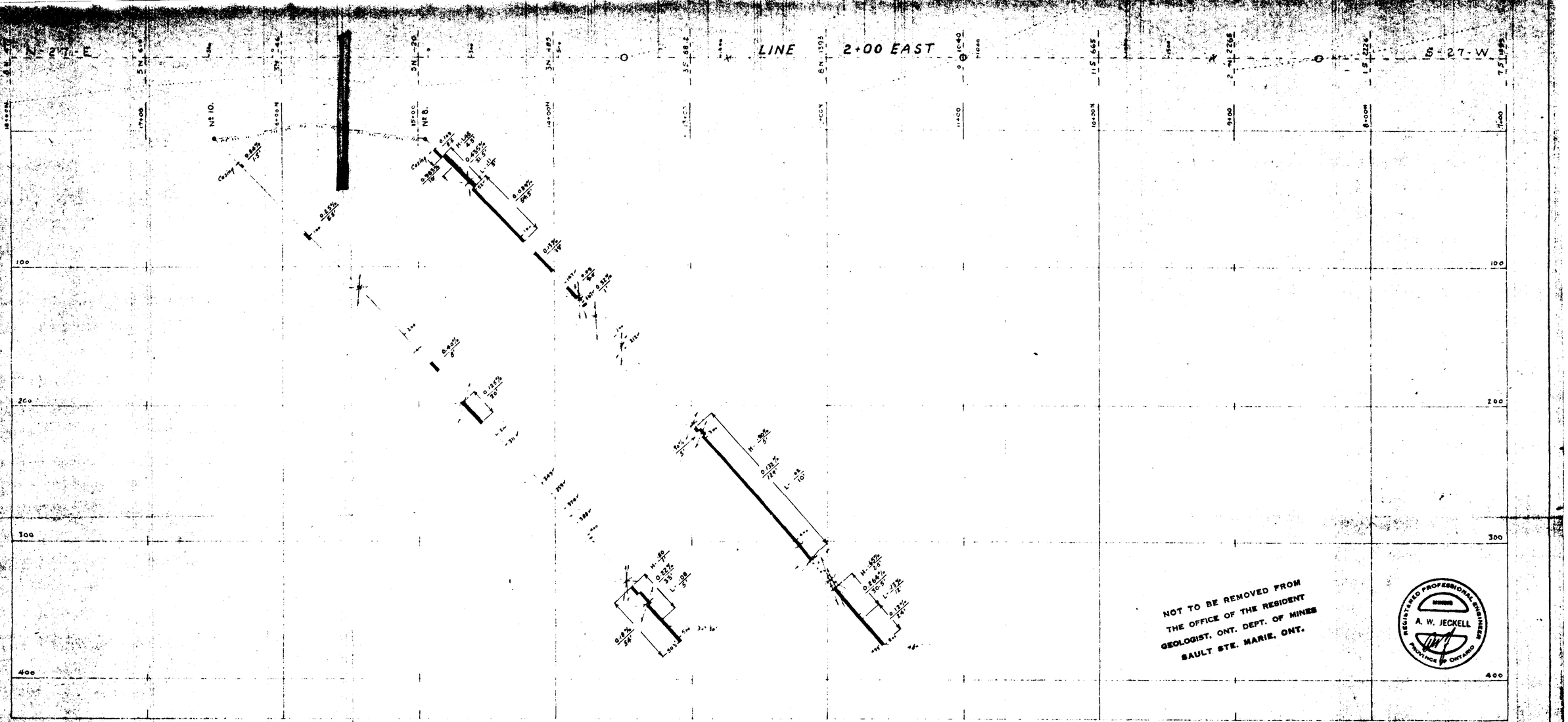
JOGRAN MINES LIMITED
RYAN TOWNSHIP - DISTRICT OF ALGOMA - ONTARIO

SECTION ON LINE 1+00 EAST 7+00 TO 18+00 NORTH

DIAMOND DRILL HOLES - №8. - №10.

SCALE 1" = 40'

A.W. JECKELL P.ENG. [redacted] AUG. 8 - 64.



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REGISTERED PROFESSIONAL ENGINEER — A. W. JECKELL — PROVINCE OF ONTARIO

SAMPLE AND ASSAY SHEET —

GEOPHYSICAL LEGEND

- [ ] - 0 - MINUS 1000
- [ ] - 0 - 300 GAMMAS
- [ ] - 300 - 500 "
- [ ] - 500 - 1000 "
- [ ] - 1000 - 1500 "
- [ ] - 1500 - PLUS "

O - E M ANOMALY
X - REVERSE E M X-OVER

GEOLOGICAL LEGEND

- [ ] - Q D - QTZ DIABASE
- [ ] - Q G - QTZ GABBRO
- [ ] - VOL - VOLCANIC LAVA (Siliceous)
- [ ] - QFP - QTZ. FELSITE PORPHYRY
- [ ] - S-CU - SULPHIDES - COPPER
- FAULT - ASSUMED ANGLE
- " - ALTERNATE ANGLE
- Q. - QUARTZ
- 347✓ - ROCK SPECIMEN

JOGRAN MINES LIMITED
RYAN TOWNSHIP - DISTRICT OF ALGOMA - ONTARIO

SECTION ON LINE 1+00 EAST 7+00 TO 18+00 NORTH

DIAMOND DRILL HOLES - No 8. - No 10.
SCALE 1" = 40'

A.W. JECKELL P.ENG. [redacted] AUG. 17-64

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SAMPLE AND ASSAY SHEET —

GEOPHYSICAL LEGEND

- ▭ - 0 -- MINUS 1000
- ▭ - 0 -- 300 GAMMAS
- ▭ - 300 -- 500 "
- ▭ - 500 -- 1000 "
- ▭ - 1000 -- 1500 "
- ▭ - 1500 -- PLUS "

⊙ - E M ANOMALY
X - REVERSE E M X-OVER

GEOLOGICAL LEGEND.

- ▭ - Q.D -- QTZ DIABASE
- ▭ - Q G -- QTZ GABBRO
- ▭ - VOL -- VOLCANIC LAVA (Siliceous)
- ▭ - Q.F.P. -- QTZ. FELSITE PORPHYRY
- ▭ - S CU -- SULPHIDES - COPPER
- FAULT - ASSUMED ANGLE
- " - ALTERNATE ANGLE
- ▭ - Q. - QUARTZ
- ▭ - 347✓ - ROCK SPECIMEN

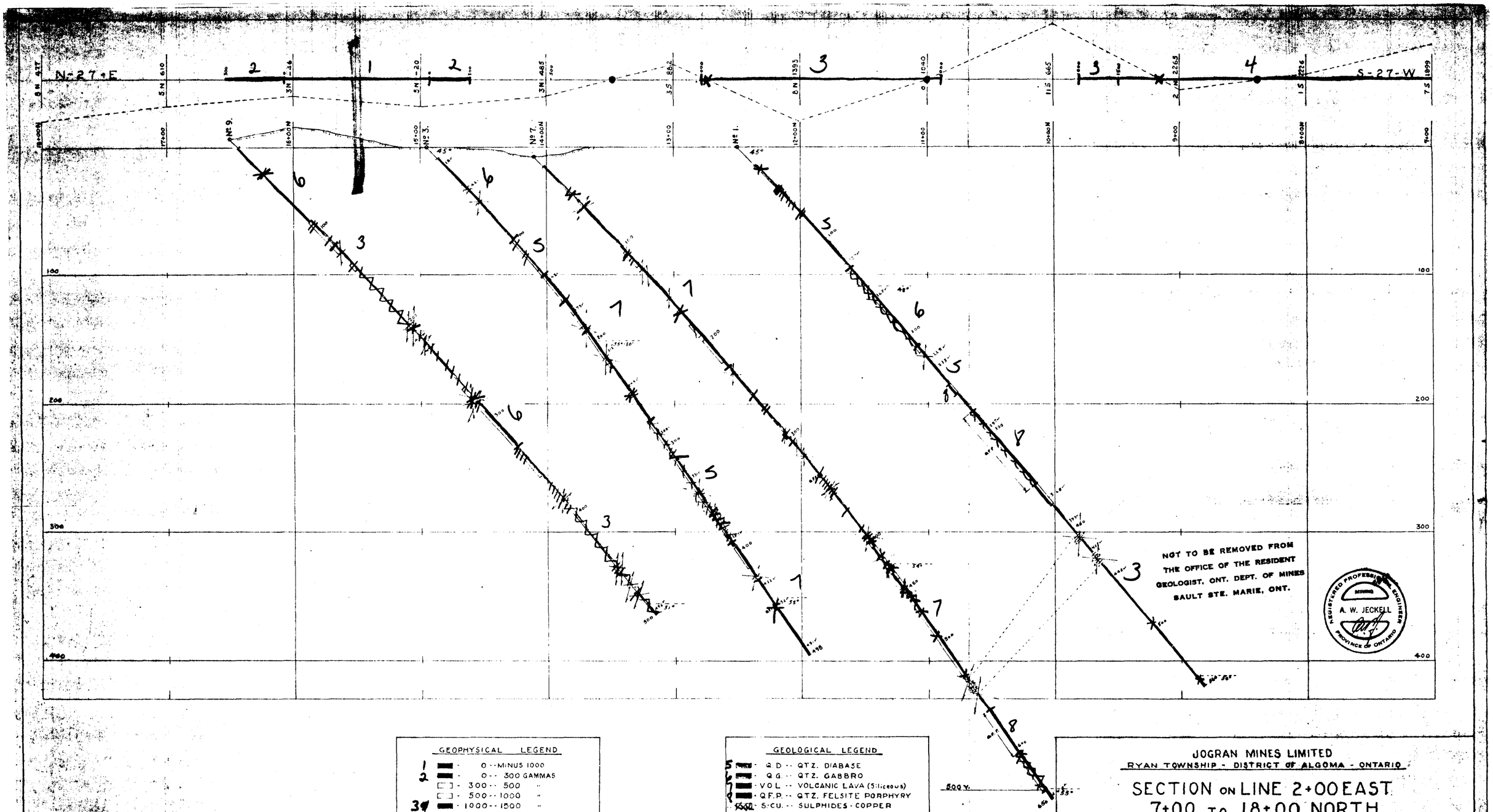
JOGRAN MINES LIMITED
RYAN TOWNSHIP - DISTRICT OF ALGOMA - ONTARIO

SECTION ON LINE 1+00 EAST
7+00 TO 18+00 NORTH

DIAMOND DRILL HOLES - Nº8. - Nº10. - Nº12.
SCALE 1" = 40'

A.W. JECKELL, P. ENG. [redacted] JAN. 11-65.

220



GEOPHYSICAL LEGEND

- 1 - 0 - MINUS 1000
- 2 - 0 - 300 GAMMAS
- 300 - 500 "
- 500 - 1000 "
- 3 - 1000 - 1500 "
- 4 - 1500 - PLUS
- E.M. ANOMALY
- X - REVERSE E.M. ANOMALY

GEOLOGICAL LEGEND

- 5 - Q.D. - QTZ. DIABASE
- 6 - Q.G. - QTZ. GABBRO
- V.O.L. - VOLCANIC LAVA (Siliceous)
- 8 - Q.F.P. - QTZ. FELSITE PORPHYRY
- S-CU. - SULPHIDES - COPPER
- FAULT - ASSUMED ANGLE
- " - ALTERNATE ANGLE
- 9 - Q. - QUARTZ
- 491✓ - ROCK SPECIMEN

JOGRAN MINES LIMITED

RYAN TOWNSHIP - DISTRICT OF ALGOMA - ONTARIO

SECTION ON LINE 2+00 EAST 7+00 TO 18+00 NORTH

DIAMOND DRILL HOLES - No 1. - No 3. - No 7. - No 9.

SCALE 1" = 40'

A.W. JECKELL P. ENG. [redacted] JULY 24 - 64

N-27-E

S-27-W

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REGISTERED PROFESSIONAL ENGINEER MINING A. W. JECKELL PROVINCE OF ONTARIO

GEOPHYSICAL LEGEND

- [ ] - 0 - MINUS 1000
- [ ] - 0 - 300 GAMMAS
- [ ] - 300 - 500 "
- [ ] - 500 - 1000 "
- [ ] - 1000 - 1500 "
- [ ] - 1500 - PLUS "

O - E.M. ANOMALY
X - REVERSE E.M. ANOMALY

GEOLOGICAL LEGEND

- [ ] - Q.D. - QTZ. DIABASE
- [ ] - Q.G. - QTZ. GABBRO
- [ ] - VOL. - VOLCANIC LAVA (Siliceous)
- [ ] - Q.F.P. - QTZ. FELSITE PORPHYRY
- [ ] - S-Cu. - SULPHIDES - COPPER
- FAULT - ASSUMED ANGLE
- " - ALTERNATE ANGLE
- Q - QUARTZ
- [ ] - 491 - ROCK SPECIMEN

500 Y.

SAMPLE AND ASSAY SHEET —

JOGRAN MINES LIMITED
RYAN TOWNSHIP - DISTRICT OF ALGOMA - ONTARIO

SECTION ON LINE 2+00 EAST
7+00 TO 18+00 NORTH

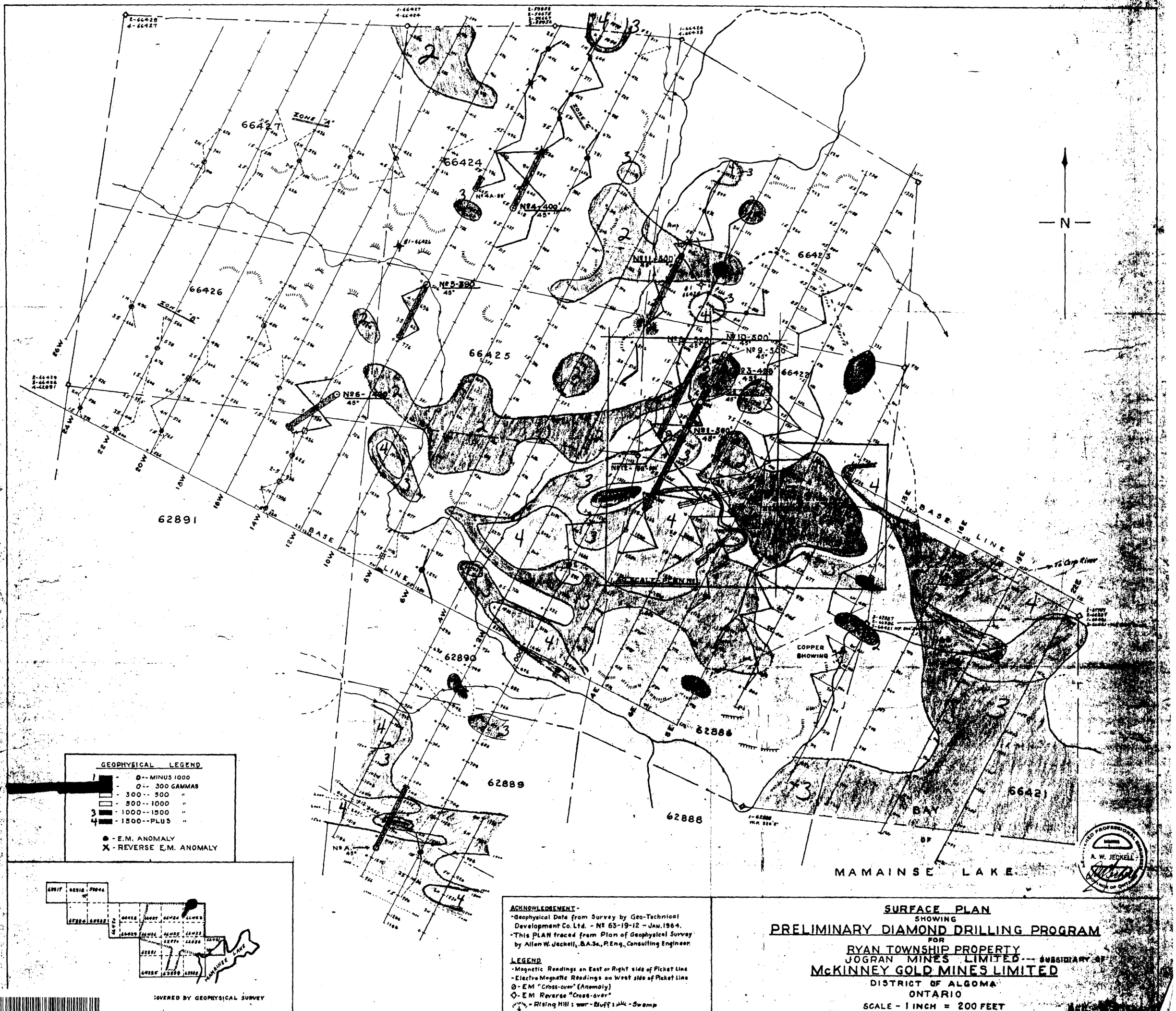
DIAMOND DRILL HOLES - Nº 1. - Nº 3. - Nº 7. - Nº 9.

SCALE 1" = 40'

A.W. JECKELL P. ENG. [redacted] AUG-17-44

41N02SE0142 RYAN38 RYAN

240



GEOPHYSICAL LEGEND

- 1 - 0--MINUS 1000
- 2 - 0-- 300 GAMMAS
- 300-- 500 "
- 500--1000 "
- 3 - 1000--1500 "
- 4 - 1500--PLUS "
- ● - E.M. ANOMALY
- X - REVERSE E.M. ANOMALY

COVERED BY GEOPHYSICAL SURVEY

ACKNOWLEDGEMENT -

-Geophysical Data from Survey by Geo-Technical Development Co. Ltd. - Nº 63-19-12 - JAN. 1964.

-This PLAN traced from Plan of Geophysical Survey by Allen W. Jeckell, B.A.Sc., P.Eng., Consulting Engineer.

LEGEND

- Magnetic Readings on East or Right side of Picket Line
- Electro Magnetic Readings on West side of Picket Line
- Ø - E.M "Cross-over" (Anomaly)
- ◇ - E.M Reverse "Cross-over"
- Rising Hill : Bluff : Swamp

SURFACE PLAN
SHOWING
PRELIMINARY DIAMOND DRILLING PROGRAM
FOR
RYAN TOWNSHIP PROPERTY
JOGRAN MINES LIMITED --- SUBSIDIARY OF
McKINNEY GOLD MINES LIMITED
DISTRICT OF ALGOMA
ONTARIO
SCALE - 1 INCH = 200 FEET

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ASSESSMENT WORK

NOTE - Elevations of No 13 and No 14 HOLES are some 150 to 200 feet LOWER than Elevation of Collar of No 1 HOLE which is DATUM ZERO or SURFACE on SECTIONS

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PROVINCE OF ONTARIO

JOGRAN MINES LIMITED
RYAN TOWNSHIP - DISTRICT OF ALGOMA - ONTARIO

40 SCALE - PLAN No. 1.
CENTRAL PLAN

SAMPLE AND ASSAY SHEET

- DATUM "ZERO" OR SURFACE IS THE COLLAR OF HOLE No 1.
- ALL FOOTAGES MARKED ON SIDE OF HOLES ARE VER
- DEPTH BELOW THE COLLAR OF No 1 HOLE.

DECEMBER 29-64

JOGRAN MINES LIMITED

RYAN TOWNSHIP - DISTRICT OF ALGOMA - ONTARIO

40 SCALE - PLAN Nº. 1.

CENTRAL PLAN

SAMPLE AND ASSAY SHEET

- ASSAYS -- % COPPER - % MoS2 / CORE LENGTH - FEET

- DATUM "ZERO" OR SURFACE IS THE COLLAR OF Nº1 HOLE.
- ALL FOOTAGES MARKED ON SIDE OF HOLES ARE VERTICAL DEPTH BELOW THE COLLAR OF Nº1 HOL

APR - 5 - 65.

SSM -

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ONTARIO

LEGEND-
- QTZ. FELDSPAR PORPHYRY
- FELSITE
- QTZ. DIABASE
- GABBROIC DIABASE
- VOLCANIC LAVA

NOTE - Elevations of Nº13 and Nº14 Holes are some 150 to 200 feet Lower than Elevation of Collar of Nº1 HOLE which is DATUM ZERO or SURFACE on SECTIONS

SAMPLE AND ASSAY SHEET —

GEOPHYSICAL LEGEND

- [ ] - 0 - MINUS 1000
- [ ] - 0 - 300 GAMMAS
- [ ] - 300 - 500
- [ ] - 500 - 1000
- [ ] - 1000 - 1500
- [ ] - 1500 - PLUS

O - E.M. ANOMALY
X - REVERSE E.M. X-OVER

GEOLOGICAL LEGEND

- [ ] - Q.D. - QTZ. DIABASE
- [ ] - Q.G. - QTZ. GABBRO
- [ ] - VOL. - VOLCANIC LAVA (Siliceous)
- [ ] - Q.F.P. - QTZ. FELSITE PORPHYRY
- [ ] - S.CU. - SULPHIDES - COPPER
- FAULT - ASSUMED ANGLE
- " - ALTERNATE ANGLE
- [ ] Q - QUARTZ
- [ ] 347✓ - ROCK SPECIMEN

JOGRAN MINES LIMITED

RYAN TOWNSHIP - DISTRICT OF ALGOMA - ONTARIO

SECTION ON LINE 1+00 EAST
7+00 TO 18+00 NORTH

DIAMOND DRILL HOLES - Nº 8. - Nº 10. - Nº 12.

SCALE 1" = 40'

A.W. JECKELL, P. ENG. [redacted] JAN. 11-65.

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41N02SE0142 RYAN38 RYAN

280

SAMPLE AND ASSAY SHEET —

GEOPHYSICAL LEGEND

- [ ] - 0 - - MINUS 100
- [ ] - 0 - - 300 GAMMAS
- [ ] - 300 - - 500 "
- [ ] - 500 - - 1000 "
- [ ] - 1000 - - 1500 "
- [ ] - 1500 - - PLUS "

O - E.M. ANOMALY
X - REVERSE E.M. ANOMALY

GEOLOGICAL LEGEND

- [ ] Q.D. - QTZ. DIABASE
- [ ] Q.G. - QTZ. GABBRO
- [ ] VOL. - VOLCANIC LAVA (S...)
- [ ] Q.F.P. - QTZ. FELSITE PORPHYRY
- [ ] S.CU. - SULPHIDES - COPPER
- FAULT - ASSUMED ANGLE
- " - ALTERNATE ANGLE
- [ ] - Q - QUARTZ
- [ ] - 491 - ROCK SPECIMEN

JOGRAN MINES LIMITED
RYAN TOWNSHIP - DISTRICT OF ALGOMA - ONTARIO

SECTION ON LINE 2+00 EAST 7+00 TO 18+00 NORTH

DIAMOND DRILL HOLES - Nº 1. - Nº 3. - Nº 7. - Nº 9. - Nº 12.

SCALE 1" = 40'

A.W. JECKELL P. ENG. [redacted] JAN-11-65.

41N02SE0142 RYAN30 RYAN

290

ESTIMATE 150 to 200 FT. BELOW COLLAR NO. 1 HOLE

+100

100

200

300

400

500

600

700 S-48-W

N-48-E 700

13 14 15 20 21

№16 №17 №18

0.283% - 0.082% / 83'

0.250% - 0.068% / 97.5'

0.230% - 0.056% / 500'

0.267% - 0.024% / 102.5'

0.232% - 0.054% / 543.5'

0.169% - 0.048% / 100'

0.202% - 0.055% / 100'

0.145% - 0.170% / 19'

0.264% - 0.039% / 43.5'

0.150% - 0.027% / 101'

0.20% - 0.032% / 90'

0.100% - 0.050% / 184.5'

0.153% - 0.031% / 93'

0.089% - 0.066% / 100.5'

0.062% - 0.018% / 134.5'

0.119% - 0.025% / 100'

0.100% - 0.077% / 108'

0.113% - 0.009% / 108'

0.130% - 0.020% / 104'

0.090% - 0.037% / 73.5'

BULK - 15'-250'
BARIUM - 0.07%
TiO_2 - 0.10%
V_2O_5 - 0.017%
ZrO_2 - 0.015%

BULK-18-15-250 -- 0.17% - 0.05%
0.174% - 0.033% / 235'

BULK-18 - 250'-510' -- 260 FEET
BARIUM -- 0.06%
TITANIUM as TiO_2 -- 0.11%
VANADIUM as V_2O_5 -- 0.016%
ZIRCONIUM as ZrO_2 -- 0.010%

0.104% - 0.035% / 260'

BULK-18-250-510 -- 0.10% - 0.04%

BULK-18-510-687.5 -- 0.11% - 0.03%
0.113% - 0.027% / 177.5'

BULK-510'-687'
BARIUM - 0.08%
TiO_2 - 0.12%
V_2O_5 - 0.013%
ZrO_2 - 0.012%

LEGEND
- QTZ. FELDSPAR PORPHYRY
- FELSITE
- QTZ. DIABASE
- GABBROIC DIABASE
- VOLCANIC LAVA

ASSAYS - % COPPER - % MoS_2

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SECTION ON LINE S-48-W
SAMPLE AND ASSAY SHEET
DIAMOND DRILL HOLES - №16 - №17 - №18
SCALE 1" = 40'

A.W. JECKELL P. ENG. MARCH 30/65

[redacted]

300

MOLYBDENITE - MoS_2 %

▭ - 0.04 & UNDER
▭ - 0.05 -- 0.07
▭ - 0.08 -- 0.10
▭ - 0.11 -- 0.15
▭ - 0.16 & OVER

LEGEND -

▭ - QTZ. FELDSPAR PORPHYRY
▭ - FELSITE
▭ - QTZ. DIABASE
▭ - GABBROIC DIABASE
▭ - VOLCANIC LAVA

ASSAYS - % COPPER - % MoS_2

MINING
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JOGRAN MINES LIMITED

RYAN TOWNSHIP - DISTRICT OF ALGOMA - ONTARIO

SECTION ON LINE S-48-W

MOLYBDENITE DISTRIBUTION

DIAMOND DRILL HOLES - No 16 - No 17 - No 18

SCALE 1" = 40'

A.W. JECKELL, P. ENG.

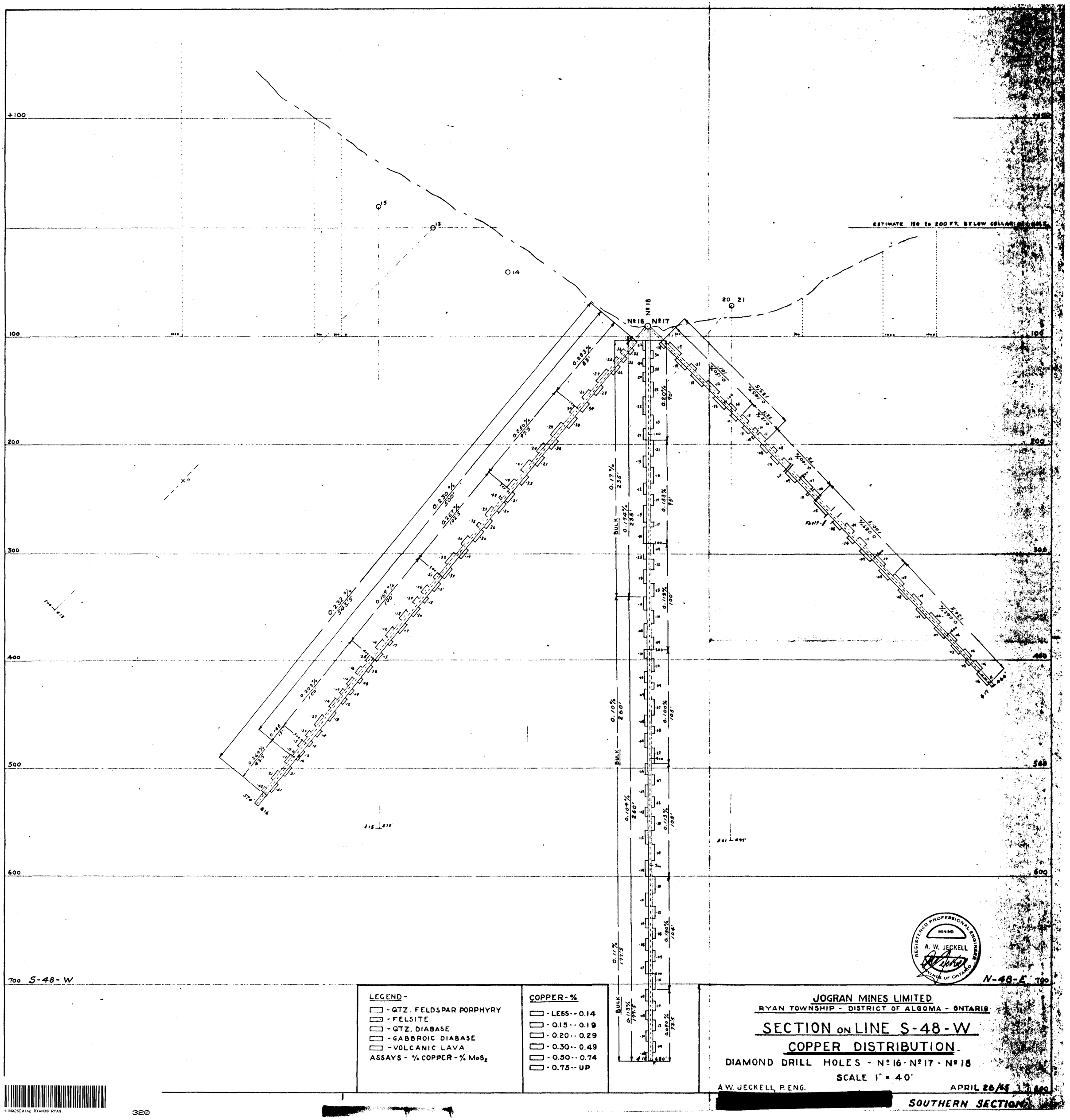
APRIL 24 /6

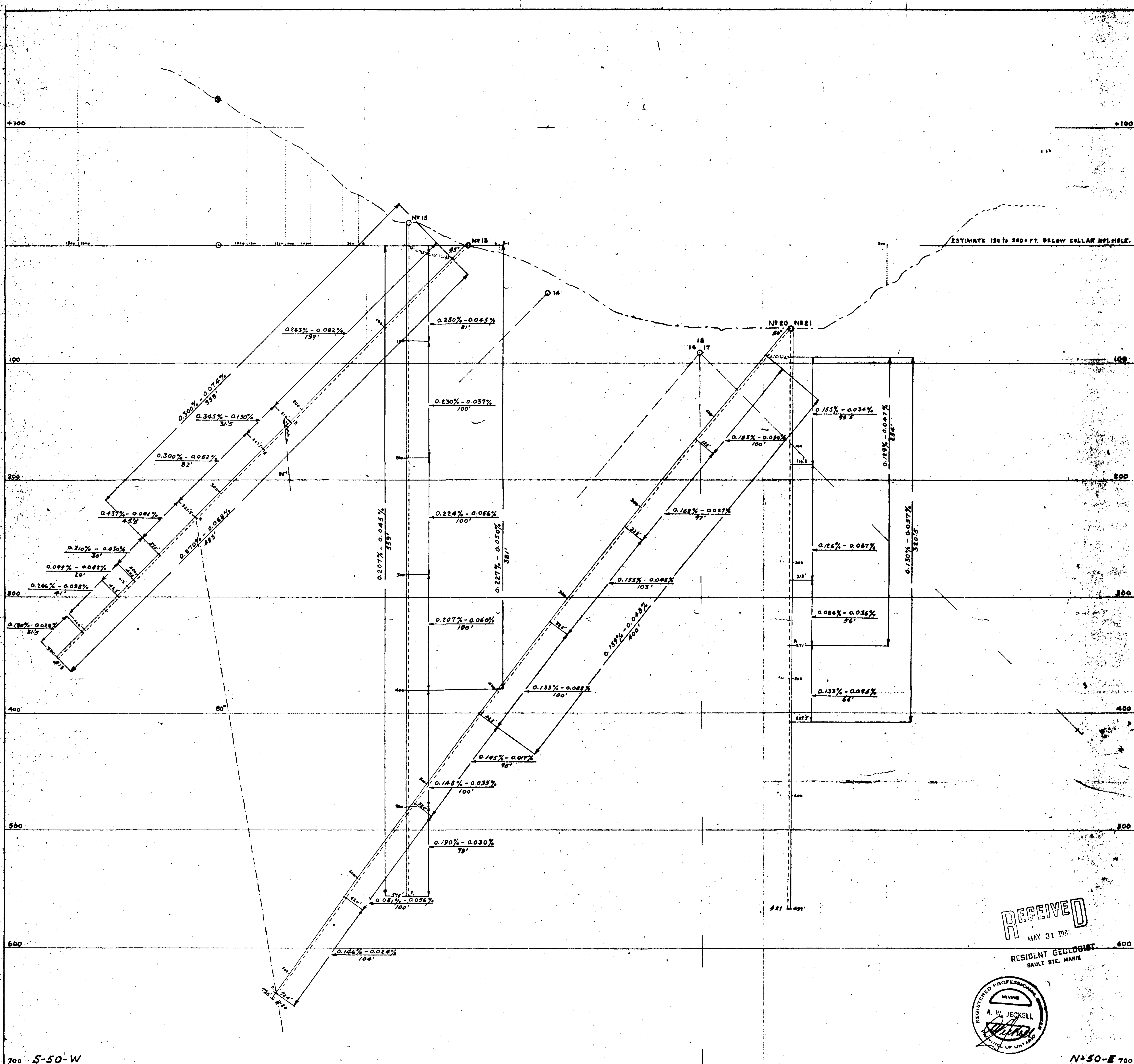
[redacted]

SOUTHERN

41N02SE0142 RYAN30 RYAN

310





ESTIMATE 150 to 200+ FT. BELOW COLLAR No 1 HOLE.
No 15
No 13
14
No 20 No 21
18
16 17
0.263% - 0.082%
197'
0.300% - 0.074%
358'
0.345% - 0.130%
31.5'
0.300% - 0.062%
82'
0.437% - 0.041%
45.5
0.210% - 0.030%
30'
0.099% - 0.042%
20'
0.266% - 0.038%
41'
0.270% - 0.068%
483'
0.250% - 0.045%
81'
0.230% - 0.037%
100'
0.224% - 0.056%
100'
0.207% - 0.060%
100'
0.207% - 0.045%
559'
0.227% - 0.050%
381'
0.081% - 0.056%
100'
0.190% - 0.030%
78'
0.146% - 0.035%
100'
0.145% - 0.017%
95'
0.133% - 0.088%
100'
0.155% - 0.046%
103'
0.158% - 0.048%
400'
0.168% - 0.027%
97'
0.183% - 0.050%
100'
0.146% - 0.024%
104'
0.155% - 0.034%
99.5
0.129% - 0.041%
234'
0.126% - 0.067%
0.130% - 0.057%
320.5
0.086% - 0.036%
36'
0.133% - 0.095%
66'
+100
100
200
300
400
500
600
700 S-50-W
N-50-E 700

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LEGEND -

- QTZ. FELDSPAR PORPHYRY
- FELSITE
- QTZ. DIABASE
- GABBROIC DIABASE
- VOLCANIC LAVA

ASSAYS - % COPPER - % MoS_2

JOGRAN MINES LIMITED

RYAN TOWNSHIP - DISTRICT OF ALGOMA - ONTARIO

SECTION ON LINE S-50-W

SAMPLE AND ASSAY SHEET

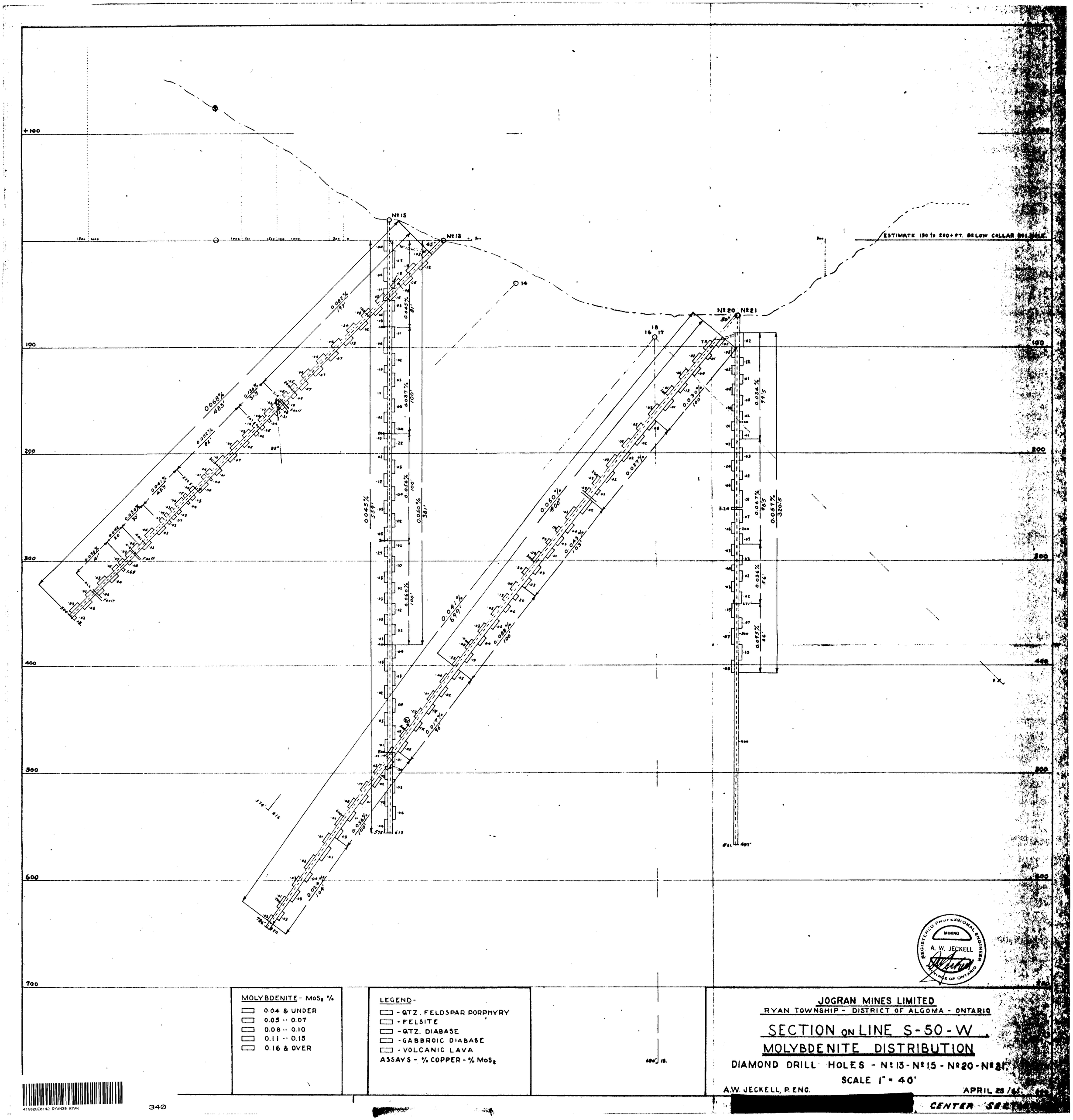
DIAMOND DRILL HOLES - No 13 - No 15 - No 20 - No 21

SCALE 1" = 40'

A.W. JECKELL, P.ENG. [redacted] MARCH 31/64

41K02SE0142 RYAN30 RYAN

330



MOLYBDENITE - MoS_2 %

- 0.04 & UNDER
- 0.05 -- 0.07
- 0.08 -- 0.10
- 0.11 -- 0.15
- 0.16 & OVER

LEGEND -

- QTZ. FELDSPAR PORPHYRY
- FELSITE
- QTZ. DIABASE
- GABBROIC DIABASE
- VOLCANIC LAVA

ASSAYS - % COPPER - % MoS_2

REGISTERED PROFESSIONAL ENGINEER
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A. W. JECKELL
PROVINCE OF ONTARIO

JOGRAN MINES LIMITED

RYAN TOWNSHIP - DISTRICT OF ALGOMA - ONTARIO

SECTION ON LINE S-50-W

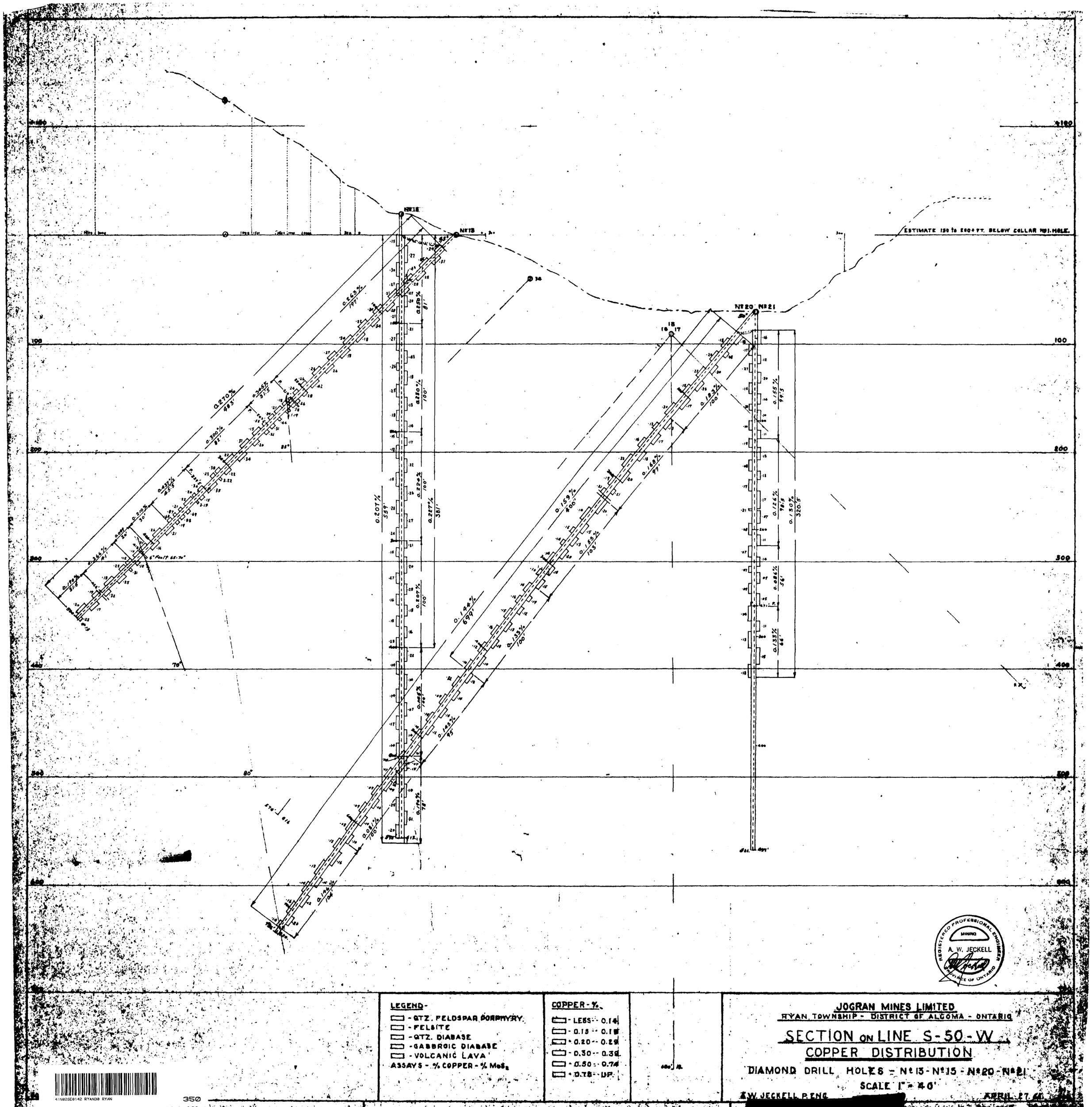
MOLYBDENITE DISTRIBUTION

DIAMOND DRILL HOLES - №13 - №15 - №20 - №21

SCALE 1" = 40'

A.W. JECKELL, P. ENG. [redacted] APRIL 28 / 65

CENTER SEC



LEGEND-

- QTZ. FELDSPAR PORPHYRY.
- FELSITE
- QTZ. DIABASE
- GABBROIC DIABASE
- VOLCANIC LAVA

ASSAYS - % COPPER - % MoS_2

COPPER - %

- LESS -- 0.14
- 0.15 -- 0.19
- 0.20 -- 0.29
- 0.30 -- 0.39
- 0.50 -- 0.74
- 0.75 -- UP.

REGISTERED PROFESSIONAL ENGINEER
MINING
A. W. JECKELL
PROVINCE OF ONTARIO

JOGRAN MINES LIMITED

RYAN TOWNSHIP - DISTRICT OF ALGOMA - ONTARIO

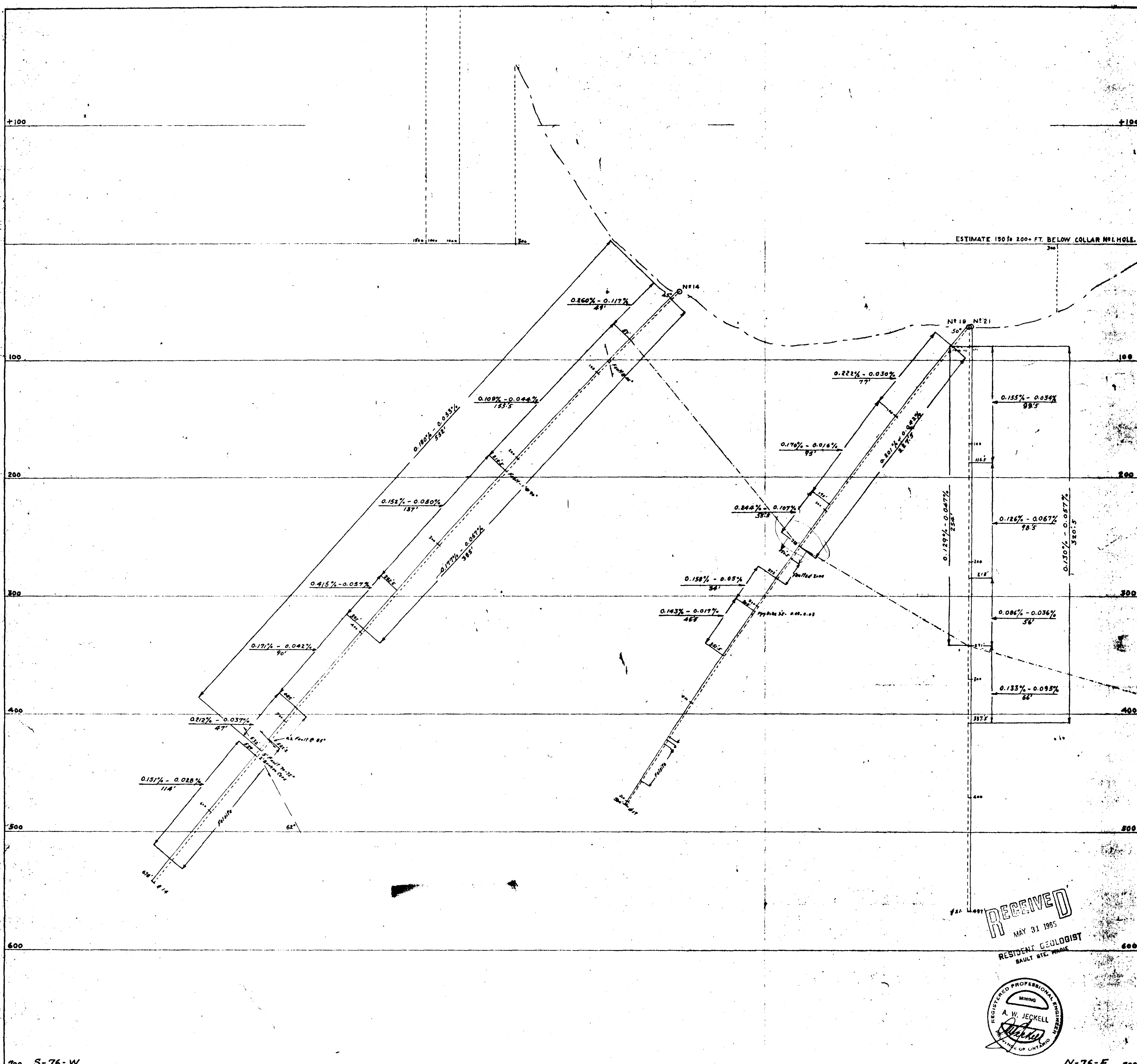
SECTION ON LINE S-50-W

COPPER DISTRIBUTION

DIAMOND DRILL HOLES - No 13 - No 15 - No 20 - No 21

SCALE 1" = 40'

A.W. JECKELL P.ENG. [redacted] APRIL 27 66



+100
ESTIMATE 150 to 200+ FT. BELOW COLLAR No 1 HOLE.
No 14
No 19
No 21
100
200
300
400
500
600
0.260% - 0.117%
49'
0.109% - 0.044%
153.5
0.180% - 0.053%
532'
0.152% - 0.050%
137'
0.177% - 0.057%
385'
0.415% - 0.057%
0.171% - 0.042%
90'
0.212% - 0.037%
47'
0.151% - 0.028%
114'
felsite
62°
0.222% - 0.030%
77'
0.170% - 0.016%
95'
0.244% - 0.107%
0.158% - 0.05%
34'
0.143% - 0.017%
45.5
0.155% - 0.034%
99.5
0.126% - 0.067%
98.5
0.086% - 0.036%
56'
0.133% - 0.095%
66'
0.129% - 0.047%
254'
0.130% - 0.057%
320.5
700 S-76-W
N-76-E 700
RECEIVED
MAY 31 1995
RESIDENT GEOLOGIST
SAULT STE. MARIE
REGISTERED PROFESSIONAL ENGINEER
MINING
A. W. JECKELL
PROVINCE OF ONTARIO

LEGEND -
- QTZ. FELDSPAR PORPHYRY
- FELSITE
- QTZ. DIABASE
- GABBROIC DIABASE
- VOLCANIC LAVA

ASSAYS - % COPPER - % MoS_2.

JOGRAN MINES LIMITED

RYAN TOWNSHIP - DISTRICT OF ALGOMA - ONTARIO

SECTION ON LINE S-76-W

SAMPLE AND ASSAY SHEET

DIAMOND DRILL HOLES - No 14 - No 19 - No 21

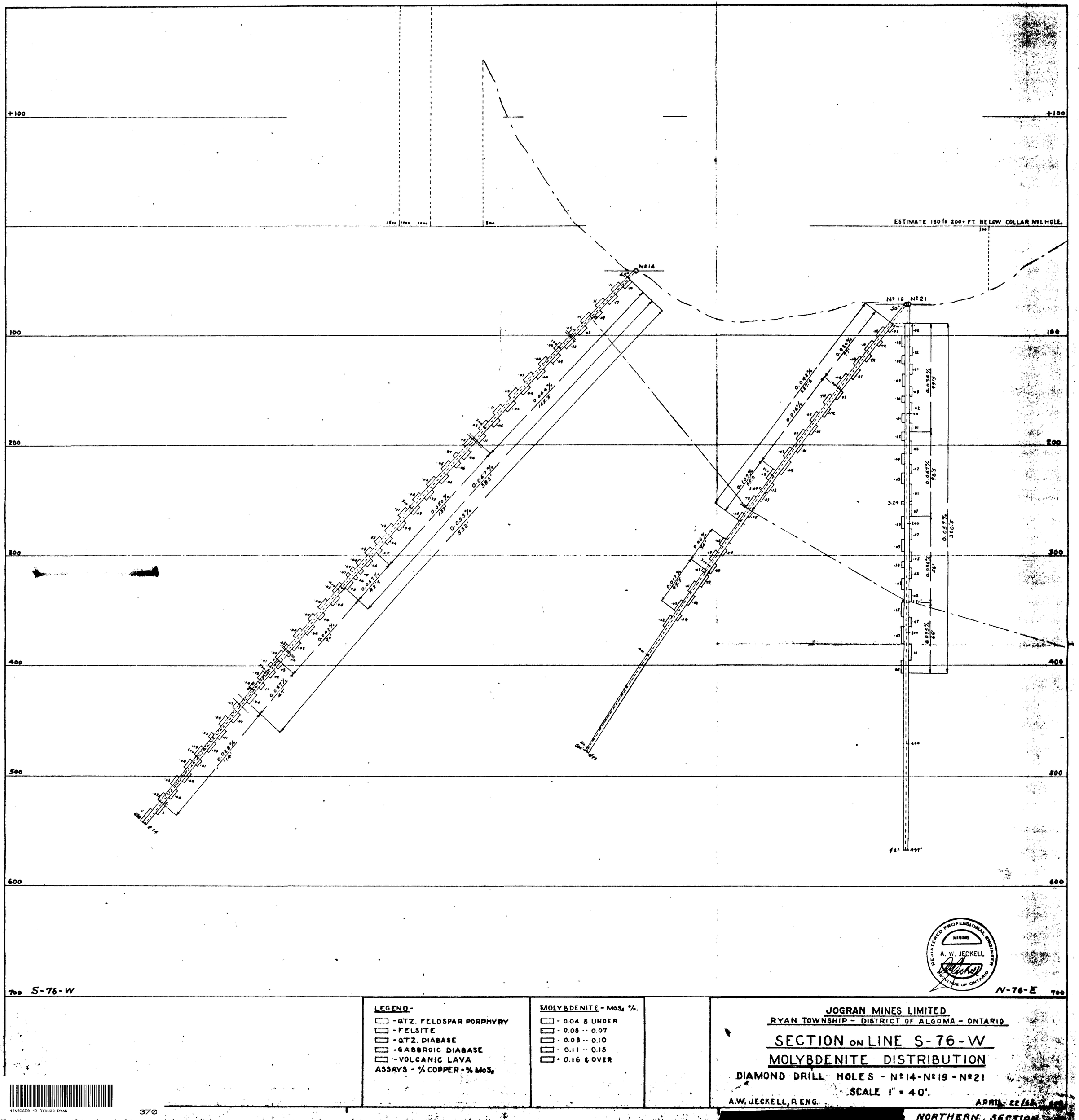
SCALE 1" = 40'

A.W. JECKELL P. ENG.

MARCH 31/65.

41N02SE0142 RYAN30 RYAN

360



LEGEND -

- QTZ. FELDSPAR PORPHYRY
- FELSITE
- QTZ. DIABASE
- GABBROIC DIABASE
- VOLCANIC LAVA

ASSAYS - % COPPER - % MoS_2

MOLYBDENITE - MoS_2 %.

- 0.04 & UNDER
- 0.05 -- 0.07
- 0.08 -- 0.10
- 0.11 -- 0.15
- 0.16 & OVER

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SECTION on LINE S-76-W

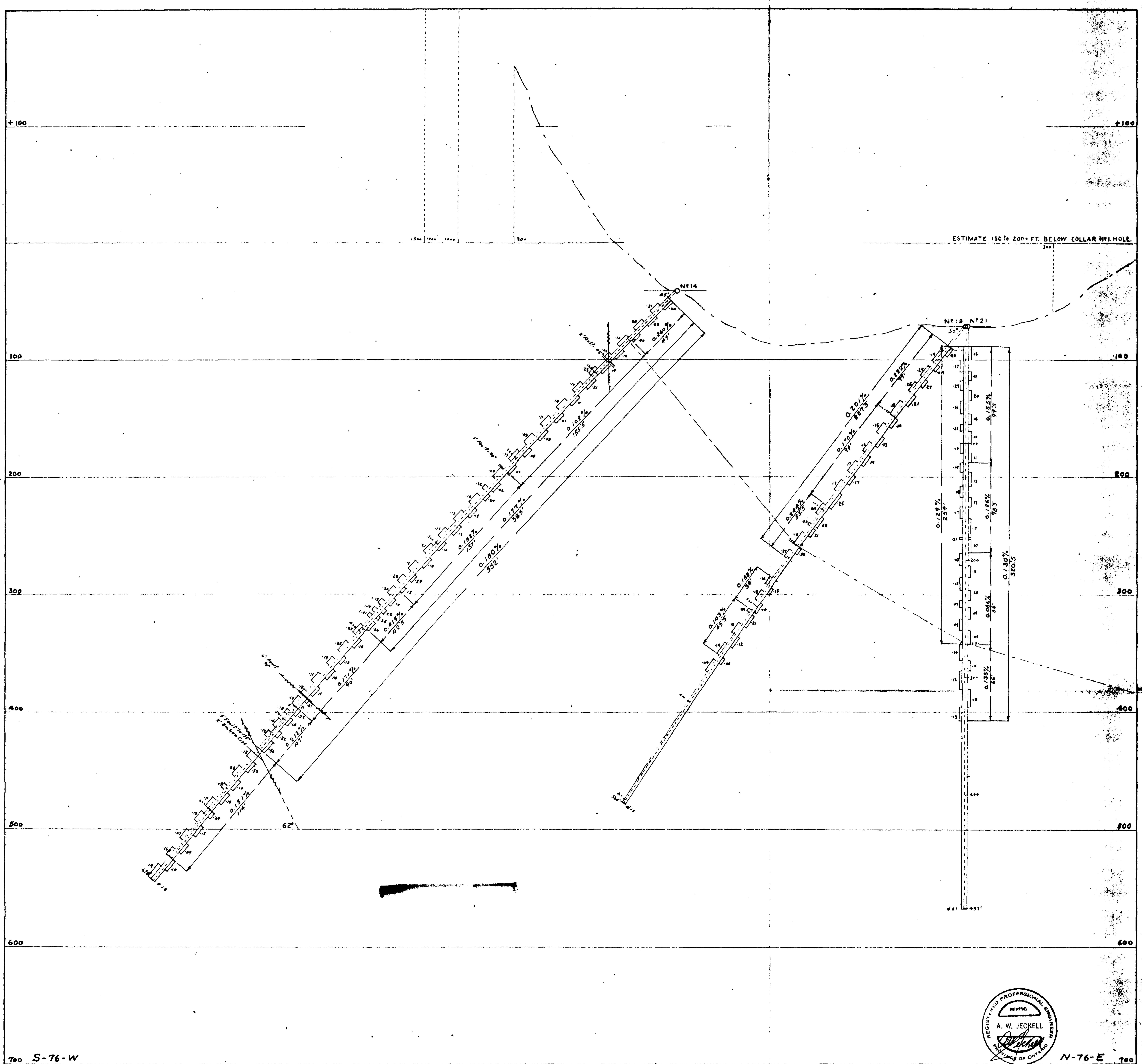
MOLYBDENITE DISTRIBUTION

DIAMOND DRILL HOLES - No 14 - No 19 - No 21

SCALE 1" = 40'.

A.W. JECKELL, P. ENG. APRIL 22/68

[redacted] NORTHERN SECTION



LEGEND -
QTZ. FELDSPAR PORPHYRY
FELSITE
QTZ. DIABASE
GABBROIC DIABASE
VOLCANIC LAVA
ASSAYS - % COPPER - % MoS_2

COPPER - %
LESS - 0.14
0.15 - 0.19
0.20 - 0.29
0.30 - 0.49
0.50 - 0.74
0.75 - UP

REGISTERED PROFESSIONAL ENGINEER
MINING
A. W. JECKELL
PROVINCE OF ONTARIO

JOGRAN MINES LIMITED

RYAN TOWNSHIP - DISTRICT OF ALGOMA - ONTARIO

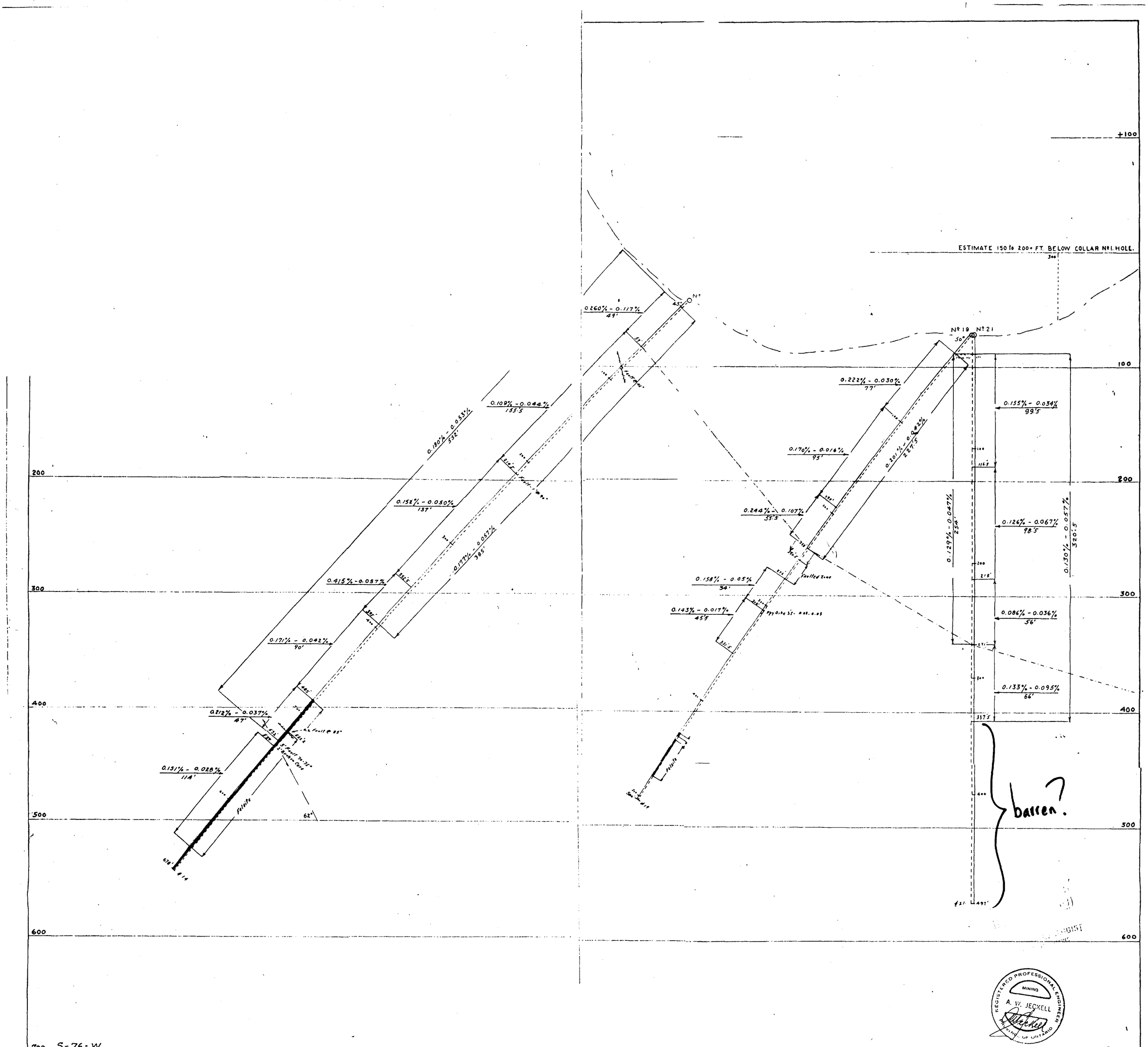
SECTION ON LINE S-76-W

COPPER DISTRIBUTION

DIAMOND DRILL HOLES - No 14 - No 19 - No 21

SCALE 1" = 40'

A.W. JECKELL. P. ENG.



LEGEND -

- ▭ - QTZ. FELDSPAR PORPHYRY
- ▬ - FELSITE
- ▭ - QTZ. DIABASE
- ▭ - GABBROIC DIABASE
- ▭ - VOLCANIC LAVA

ASSAYS - % COPPER - % MoS_2.

JOGRAN MINES LIMITED

RYAN TOWNSHIP - DISTRICT OF ALGOMA - ONTARIO

SECTION on LINE S-76-W

SAMPLE AND ASSAY SHEET

DIAMOND DRILL HOLES - No 14 - No 19 - No 21

SCALE 1" = 40'

A.W. JECKELL P. ENG. MARCH 31/65.

REGISTERED PROFESSIONAL ENGINEER MINING A. W. JECKELL PROVINCE OF ONTARIO

390 30 #20

+100

100

200

300

400

500

600

700

S-50-W

№15

№13

14

№20

№21

18

16

17

ESTIMATE 150 to 200+ FT. BELOW COLLAR NO1. HOLE.

0.263% - 0.082% / 197'

0.300% - 0.074% / 356'

0.345% - 0.130% / 31.5'

0.300% - 0.052% / 82'

0.437% - 0.041% / 45.5'

0.210% - 0.030% / 30'

0.099% - 0.042% / 20'

0.266% - 0.098% / 41'

0.190% - 0.028% / 31.5'

0.270% - 0.068% / 485'

0.250% - 0.045% / 81'

0.230% - 0.037% / 100'

0.224% - 0.056% / 100'

0.207% - 0.045% / 559'

0.227% - 0.050% / 381'

0.207% - 0.060% / 100'

0.145% - 0.017% / 95'

0.145% - 0.033% / 100'

0.190% - 0.030% / 78'

0.081% - 0.056% / 100'

0.146% - 0.024% / 104'

0.155% - 0.034% / 99.5'

0.183% - 0.036% / 100'

0.129% - 0.047% / 254'

0.168% - 0.027% / 97'

0.155% - 0.065% / 103'

0.159% - 0.048% / 400'

0.133% - 0.088% / 100'

0.126% - 0.067%

0.086% - 0.036% / 56'

0.133% - 0.095% / 66'

0.130% - 0.057% / 320.5'

Volcanics

LEGEND -

- QTZ. FELDSPAR PORPHYRY
- FELSITE
- QTZ. DIABASE
- GABBROIDIC DIABA
- VOLCANIIC LAVA

ASSAYS - % CO OPPER - % S_2

680' IB.

A