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SML 419

OLARY

PROGRESS REPORTS TO LICENCE EXPIRY/SURRENDER FOR THE PERIOD 21/5/1970 TO 20/5/1972

Submitted by
Australian Gold and Uranium Pty Ltd
1972

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Minerals and Energy Resources
7th Floor
101 Grenfell Street, Adelaide 5000

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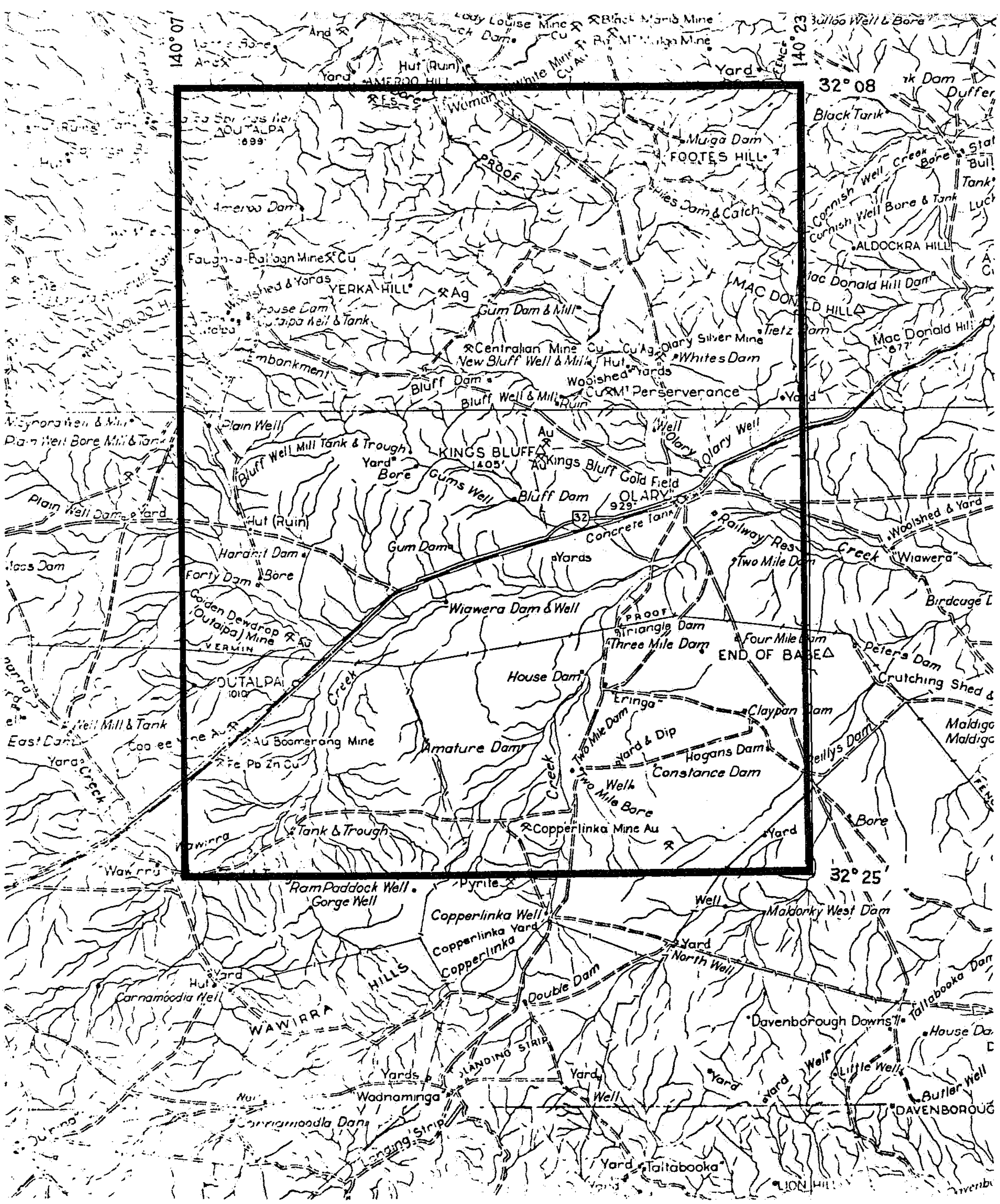
Government of South Australia
Primary Industries and Resources SA



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AUSTRALIAN GOLD AND URANIUM PTY. LTD.

DOCKET DM. 517/70 AREA 309 SQ MILES

1:250000 PLANS .OLARY

LOCALITY

S.M.L. No. 419 EXPIRY DATE 20·5·72

CONTENTS ENVELOPE 1436

TENEMENT: S.M.L. 419 - Olary Area.

TENEMENT HOLDER: Australian Gold & Uranium Pty. Ltd.

Australian Gold and Uranium Pty. Ltd.
Special Mining Lease 419
OLARY AREA, SOUTH AUSTRALIA
Report on Exploration
20.5.70 - 20.8.70

By
J. Westhoff B.Sc. (Hons)

of
Minoil Services Pty. Ltd.,
ADELAIDE

INTRODUCTION

S.M.L. 419 which is the western part of former S.M.L. 207, is approximately 310 square miles in area and is situated in the Olary district, north-eastern South Australia.

The present survey involved a geological inspection of several prospects on the lease, followed by geophysical investigation in the case of the Olary Silver Mine. Some of these prospects have been previously inspected, and surface sampling, geophysical surveys and drilling have been done in some cases. Records of this work can be found in reports on S.M.L. 207 (Lopes, 1969, 1970). All prospects on the lease are shown on Plan AGU 33.

(i) OLARY SILVER MINE

(a) General

This mine can be considered together with the Mt. Perserverance mine area, since they form part of a mineralized belt that extends for about 2 miles. (See plan AGU 34).

The Olary Silver Mine consists of a vertical shaft sunk to 110' on the northern side of a large siliceous ironstone outcrop. This shaft intersected massive pyrite mineralization containing silver and minor amounts of gold and copper. A further shaft was sunk on the southern side of the outcrop, but no significant mineralization was encountered. Similar but smaller ironstones outcrop up to 1500' S.W. of the main body. About 2000' N.W. of the shafts there are shallow pits on three gossanous ironstone outcrops, but no mineralization is visible.

In the Mt. Perserverance mine area there are numerous minor workings along two zones of copper mineralization. These workings consist of shafts up to 25' in depth, shallow trenches and numerous shallow test pits. In the northern area, copper mineralization consists of malachite with minor

azurite and chalcocite within schists, pegmatites and gneisses. The mineralization occurs in a zone up to 2' wide, with small, rich pockets of malachite associated with minor fold crests. In the southern area, the mineralization consists of malachite and minor azurite associated with a series of ferruginous quartz veins. These veins which form a zone up to 200' wide, appear to strike and dip with the country rock. To the south of this area, further ironstone and ferruginous gneiss can be found. A shallow shaft in the ironstone did not locate any mineralization.

(b) Previous Investigations

Eight percussion drill holes previously have been drilled in the Olary Silver Mine area to test the ironstone at depth. These holes were restricted by the water table, and a maximum vertical depth of 81' was reached. This drilling showed that pyrite is associated with all the ironstone bodies drilled in places constituting 25% of the sample. Two drill holes were sited so as to intersect extensions of the main ironstone body several yards along strike from the last of the outcrop. However, no sign of ironstone or pyrite mineralization was found. From this it was inferred that the ironstone bodies are discontinuous, at least at shallow depths.

(c) Magnetometer Survey

Due to the high magnetite content of the ironstone outcrops, it was decided to conduct a magnetometer survey over the area. The results of this survey have been contoured on the locality plan, and indicate that the ironstones may be continuous at depth. The ironstones near the Olary Silver Mine strike in the same direction, but are progressively offset slightly to the left. It is therefore possible that there is an apparent discontinuity in the ironstones due to minor strike-slip faulting.

The magnetometer results also indicate that there is no direct connection between the Olary Silver Mine and the southern Mt. Perserverance workings. The high magnetic zone swings to the south of these workings, coinciding with the outcrop of the ironstone and ferruginous gneiss in that region.

(d) Induced Polarization Survey

The possibility of a continuously mineralized zone of considerable extent beneath the ironstone made an induced polarization survey worthwhile. Initially, four lines with an electrode interval of 200' were completed. A strong anomaly was detected on the northern end of the three lines near the Olary Silver Mine. Line 400W was extended to determine the full extent of this anomaly, and resurveyed with 100 feet electrode intervals to define the source of the anomaly more closely. (See Plan AGU34 for line localities, and the appendix for the results and interpretation of the I.P. survey). Outcrop is poor over the anomaly, consisting of quartzite, adamellites, schists and gneisses with minor quartz veining.

(e) Recommendations

A diamond drill hole should be sited so as to intersect both the source of the strong I.P. anomaly and the ironstone body. Further exploration and drilling would be dependant on the results from this hole.

(ii) FAUGH-A-BALLAGH MINE

The Faugh-a-Ballagh Mine area contains numerous copper occurrences in a variety of environments. The country rock consists of granite gneisses, adamellite granites, quartzites, pegmatites and minor schists. A quartzite containing epidote and occasionally actinolite or hornblende often is closely associated with the copper occurrences and has been described as a factor in controlling the mineralization. (Campana and King, 1958). The area is relatively rugged, and the outcrop is good in many places.

The copper occurrences in the area can be divided into three main groups (See Plan AGU 35).

(a) In the northern part of the area, the copper is associated with magnetite veins, several feet in width, which transgress the strike of the country rock. Malachite occurs as staining along planes of weakness in the magnetite and surrounding country rock. Sulphide mineralization, including minor chalcopyrite, can be found in places within the magnetite trenches and minor pits have been sunk at various points along the veins.

(b) In the south-western part of the area, copper mineralization is associated with a ferruginous quartz vein about 2' thick. About 10 feet north of this vein there is a bed of ferruginous gneiss and gossanous iron oxide up to 2 feet thick. Both these units are concordant with the country rock, which strikes at 85° and dips vertically or steeply to the south. Malachite occurs sporadically within the vein, ironstone and closely associated country rock, usually as staining along fractures. The copper mineralization can be traced for a strike length of over 1000 feet.

(c) In the south-western part, there are numerous copper occurrences within quartzites, gneisses and schists. One 20 ft. shaft and several shallow pits have been dug on these occurrences. In every case, the mineralization consists of low grade malachite staining.

It is possible that the copper occurrences (b) and (c) all fall within a relatively restricted stratigraphic zone. Outcrops of the epidote quartzite can be found in the vicinity of every known occurrence. However, due to the poor exposure in many cases, it is difficult to determine whether the copper bearing rocks bear the same relationship to the epidote quartzite in every case. This problem could not be satisfactorily resolved without detailed mapping, which is not warranted at this stage.

In the north-western part of the area, there are large and prominent ironstone outcrops, consisting of massive haematite and of narrow, closely spaced haematite/limonite veins within quartzites and gneisses.

Elsewhere in the area, sparse, narrow, concordant veins of magnetite, occasionally with minor pyrite, can be found. It is possible that the haematite on the large ironstone outcrops is underlain by magnetite at depth, since there are considerable compass deflections in places on the outcrop. There is no sign of any copper mineralization associated with these ironstones.

(d) Recommendations

It is proposed that initially several percussion holes be drilled in this area. It is considered that I.P. Surveys would be inconclusive, due to the abundance of magnetite which itself can give rise to an I.P. anomaly. Holes would be drilled to test the copper occurrences (a), (b) and the large ironstone. Any further work subsequent to drilling should include detailed mapping and a detailed magnetometer survey.

(iii) GOLDEN DEWDROP MINE

The Golden Dewdrop gold mine is situated on the eastern end of a group of very low hills, with outcrops concealed on three sides by sand and alluvium. The country rock consists of Proterozoic siltstones, slates, schists and sandstones, slightly calcareous in places. The bedding in these sediments is often obscure, but it seems to have variable attitude and usually low dip. The most prominent surface within these rocks is a cleavage or parting which strikes at 70° and dips steeply to the south.

The mineralization in the area is associated with ferruginous quartz veins which vary in width up to 1 foot, and which are usually concordant with the prominent parting.

The main group of workings consisted of two shafts and two inclined drives (Brown 1908). At the present time, however, only one 60 ft shaft is still open. It is reported that pyrite mineralization is associated with the quartz veins below the water table. The only surface indication of mineralization is quartz vein material stained with sulphur in the mine dumps.

There is a further group of workings several hundred yards west of the main shaft. These workings consist of shallow trenches and pits on similar quartz veins (see Plan AGU 36).

Several barren, milky quartz veins in the district have been tested with shallow pits with no success.

Recommendations

Outcrop in the area is very restricted, so little idea of the extent of mineralization can be gained on the surface. Since the gold is associated with pyrite below the water table, it is recommended that a modest I P programme be undertaken in this area.

(iv) AMEROO HILL AREA

This area is located near the northern edge of a rugged range of hills, astride the northern boundary of the S.M.L. Copper mineralization is associated with a dyke that varies from an amphibolite to a diorite in composition. Epidote is a very common accessory mineral, occurring as small veins and pods within the amphibolite and within the adjacent quartzites and gneisses.

There are three known copper occurrences within the lease (see Plan AGU 37).

(a) Location A is the only occurrence where the copper is found within the amphibolite. There are

several very minor pits in which the copper occurs as malachite staining the amphibolite along joint planes.

(b) Location B is adjacent to the dyke, within quartzic gneisses containing much epidote and hornblende. Mineralization consists of malachite and minor chalcocite.

(c) Location C consists of malachite and azurite as joint fillings within quartzite, schists and gneisses, over a width of about five feet. These rocks also carry radiating zeolite crystals, and are about 100 yards from the edge of the amphibolite. A shaft, now largely collapsed, was sunk on this prospect.

Shafts have also been sunk on two further copper occurrences in quartzite and schist north of the lease boundary. These occurrences have no apparent direct connection with the amphibolite dyke.

Recommendations

The copper occurrences in this area seem to be of low grade and small extent. Therefore, no further work is recommended at this stage.

OTHER PROSPECTS

Several other prospects on the lease were inspected briefly. These include the Centralia Mine, Copperlinka mine, and the Eringa and Eringa South prospects. Previously recommended programmes for these areas appear to be satisfactory. Several magnetometer traverses were made over the ironstone at the Eringa South prospect without detecting an anomaly.

It has been recommended in previous reports on this lease that the north western portion of the lease is worthy of further investigation. A brief visit to this area substantiated this view. It is recommended that such an investigation should initially include surface inspection and sampling of all ironstones, amphibolite dykes and gossanous outcrops in this area.

28/9/70

J. Westhoff,
Geologist,
Minoil Services Pty. Ltd.

REFERENCES:

Brown H.Y.L. — 1908 "Record of Mines in S.A." Fourth Edition. Dept. of Mines of S.A.

Campana B. & King D. — 1958 "Regional Geology and Mineral Resources of the Olary Province" Bulletin No. 34 Dept of Mines, Geol. Survey of S.A.

Lopes D. — 1969 S.M.L. 207 "Report on Exploration for Year ending 30th June 1969.

Lopes D. — 1970 S.M.L. 207 "Report on Exploration During period 1st July 1969 to 30th March 1970.

APPENDIX

I.P. Results

AMDEL Report

REPORT ON

INDUCED POLARIZATION SURVEY

AT

OLARY SILVER MINE
(via Olary S.A.)

for

Australian Gold & Uranium Pty. Ltd.

by

John E. Webb

August, 1970.

AUSTRAL EXPLORATION SERVICES PTY. LTD.

INTRODUCTION

Four lines were covered by the variable frequency method of induced polarization using frequencies of 3.0 and 0.3 cycles per second.

The work revealed one well defined zone of possible sulphide mineralisation and on one line a second anomalous zone was outlined. Further I.P. work will be necessary on both anomalies.

Discussion of Results

Line 1500W (200 ft. dipoles) There is one anomaly on this line between 6N and 1S and is present in all parameters. The results suggest a source extending from near surface to depth.

Line 400W (100 ft. and 200 ft. dipoles) There are two anomalies in Metal Factor on this line.

The first from 4N to 8N is undoubtedly from the same source as the anomaly on line 1500W and is again present in all parameters and suggest depth penetration as before.

The second anomaly lies between 13N and 24N and is present in Metal Factor and Frequency Effect. The Resistivity is low, but the centre of the low is further north under 22N. This suggests a wide zone of mineralisation with a deep centre under 16N to 18N and a shallow Resistivity centre between 20N and 24N where the mineralisation would be secondary as there is no accompanying Frequency Effect high.

The 100 ft. dipoles between 12N and 30N would help outline a drill target on the northern anomaly.

Line 00 (200 ft. dipoles) There is a well expressed anomaly in all parameters between 2N and 10N and possibly extending further north. It is from the same source as the anomaly in the same position on previous lines.

..2/

An extension of the line to the north is necessary to outline fully the anomaly.

Line 200E (200 ft. dipoles) There is an incomplete anomaly in all parameters extending north from 4N. The centre of the anomaly has not been covered and an extension of the line to the north is necessary.

There is one well defined anomaly on all lines and appears to be widening on the eastern traverses. It will be necessary to extend the lines to the north and recommendations are made below.

It is considered that this anomaly has a good chance of representing economic mineralisation and on the induced polarization above is the largest centre of interest of any of the prospects in this area examined to date.

A second anomaly was located on line 400W further north (13N to 24N) and although not as well shaped as the first anomaly (which is an almost ideal theoretical shape on line 400W) it is extremely interesting and worthy of further examination. It suggests deep sulphide mineralisation under 14N to 16N and secondary mineralisation near surface further north.

This anomaly requires further induced polarization coverage on this and other lines before selecting a drill target.

Conclusions and Recommendations

The results indicate two areas of high interest and further I.P. work is set out below and is recommended before selecting a drill site:-

Line	Coverage	Dipole Length	
400W	20N to 36N	200 feet	
	12N to 30N	100 feet	Defer until after 200 feet work on all lines.
00	4N to 30N	200 feet	To cover both anomalies.
200E	4N to 30N	200 feet	

Line	Coverage	Dipole Length	
600E	00 to 30N	200 feet	Definitely 00 to 20N further if second anomaly still present on 200E.

100 ft. fill in will be recommended after the above work has been completed.

It is considered that the Olary Silver Mine area is extremely interesting as a mineral prospect.

John E. Webb

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SERVICES PTY LTD

[illegible]

[illegible] AUST GOLD & URANIUM

[illegible] OLARY SILVER MINE

[illegible] 8 th. AUGUST 1970

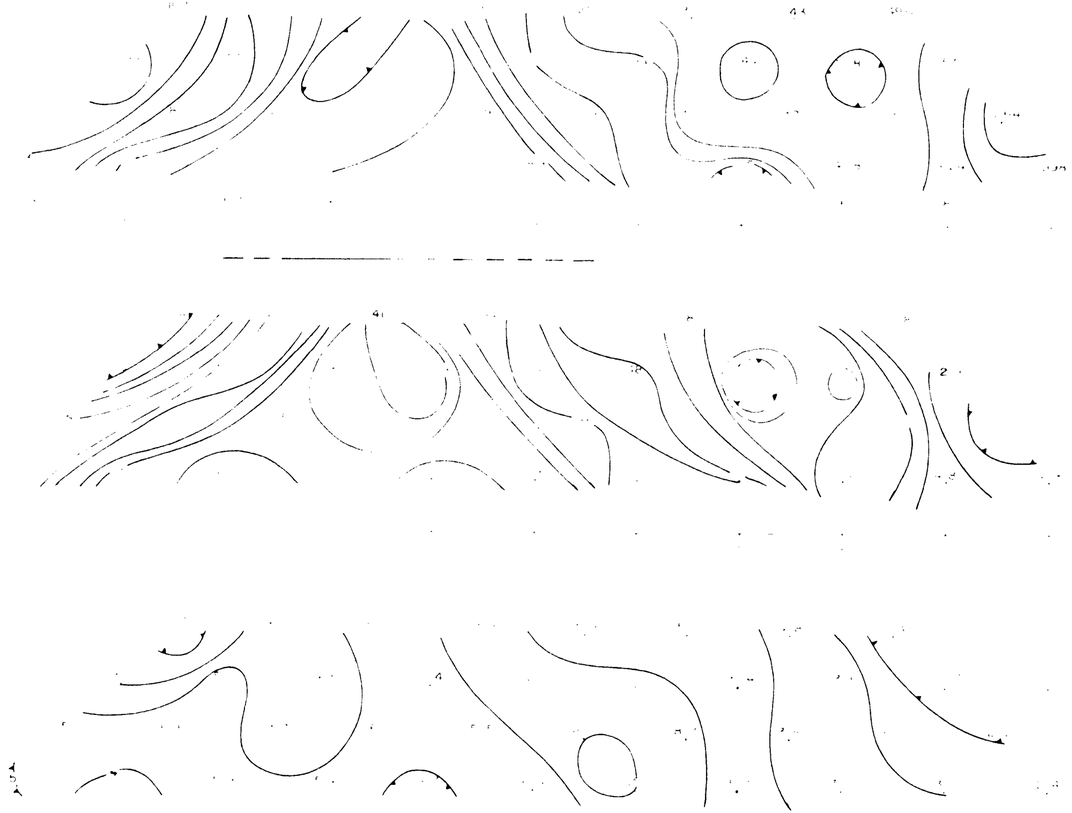
[illegible] 1500 W BASE 0

[illegible] 200'

[illegible] 0·3 - 3·0 c.p.s.

[illegible] 1" reps 200'

[illegible] S B



$\rho_a/2\pi$

M.F.

F.E.

1436-12

AUSTRAL EXPLORATION
SERVICES PTY. LTD.

INDUCED POLARIZATION
SURVEY

CLIENT: AUST. GOLD & URANIUM

LOCALITY: OLARY SILVER MINE

10th. AUG. & 6th. SEPT. 1970

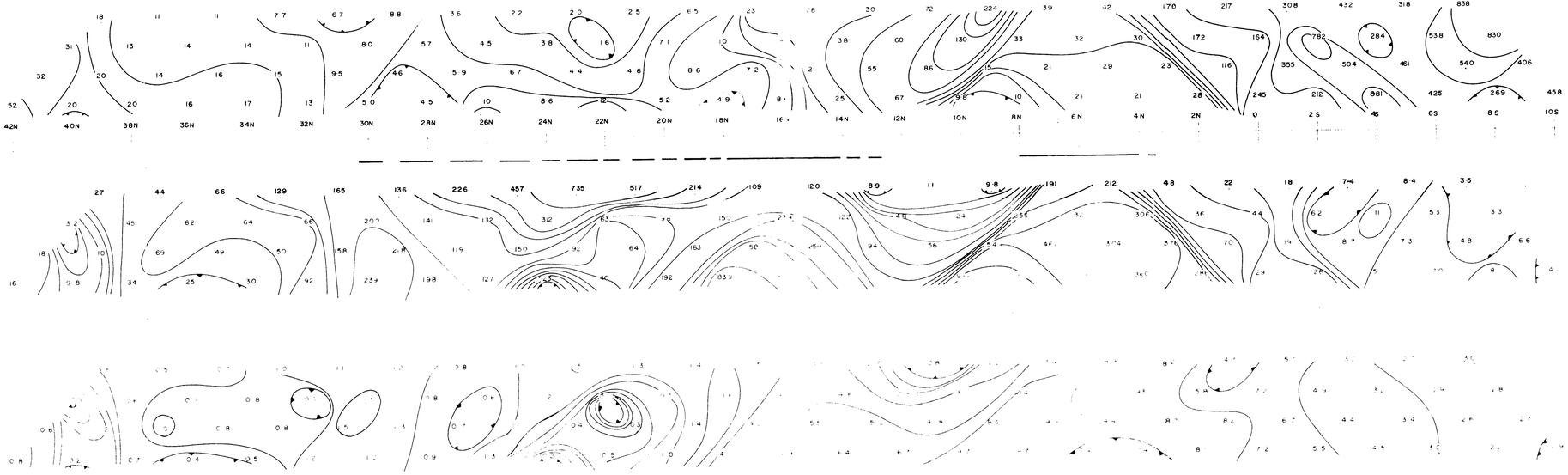
400W BASES 32N, 16N, 0

200'

FREQUENCY 3.0 - 0.3 c p s

1" reps 200'

4P



AUSTRAL EXPLORATION SERVICES PTY LTD

INDUCED POLARIZATION SURVEY

CLIENT: AUST. GOLD & URANIUM

LOCALITY: OLARY SILVER MINE

11th AUG 7th SEPT. 1970

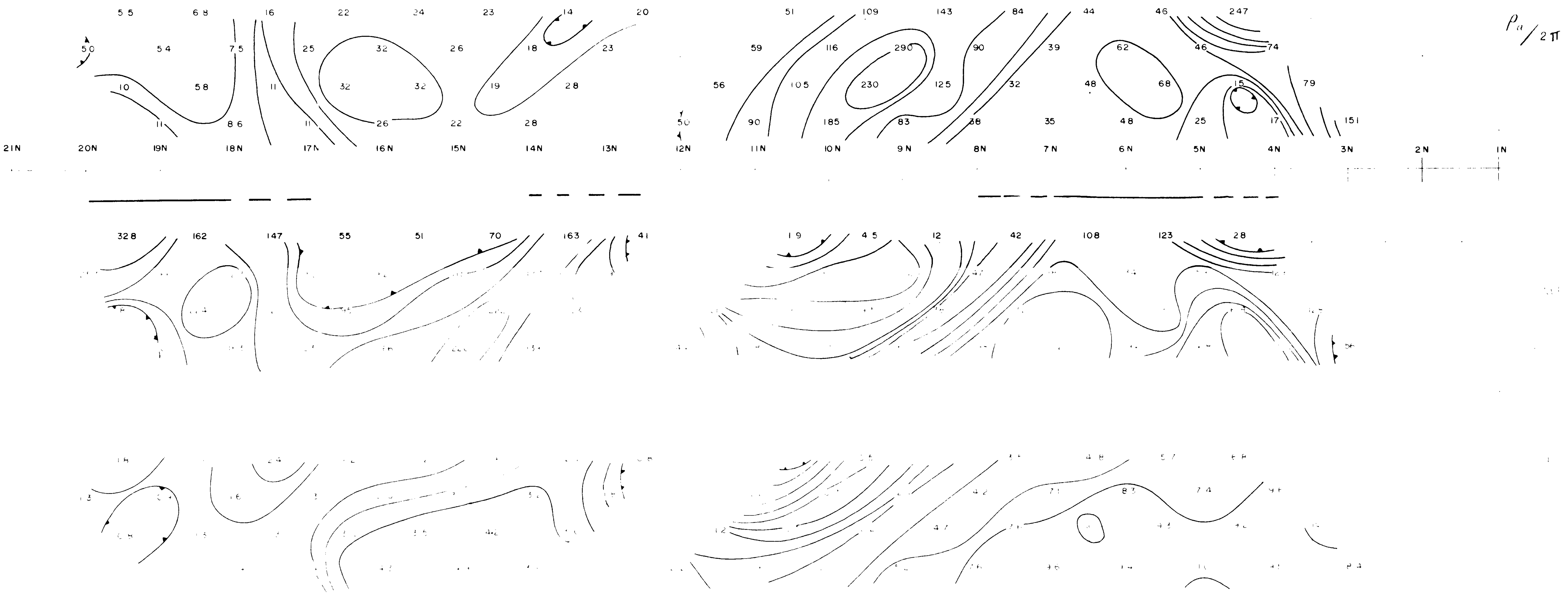
400W BASES 8N, 16N

100'

0·3 - 3·0 cps

1" reps 100'

S.B. AP



ρa/2π
21N 20N 19N 18N 17N 16N 15N 14N 13N 12N 11N 10N 9N 8N 7N 6N 5N 4N 3N 2N 1N
55 68 16 22 24 23 14 20 51 109 143 84 44 46 247
50 54 75 25 32 26 18 23 59 116 290 90 39 62 46 74
10 58 11 32 32 19 28 56 105 230 125 32 48 68 15 79
11 86 11 26 22 28 50 90 185 83 38 35 48 25 17 151
328 162 147 55 51 70 163 41 19 45 12 42 108 123 28

1136-13

AUSTRAL EXPLORATION
SERVICES PTY. LTD

INDUCED POLARIZATION
SURVEY

CLIENT AUST GOLD & URANIUM

LOCALITY OLARY SILVER MINE

DATE 7th. AUG., 6th, 7th, SEPT 1970

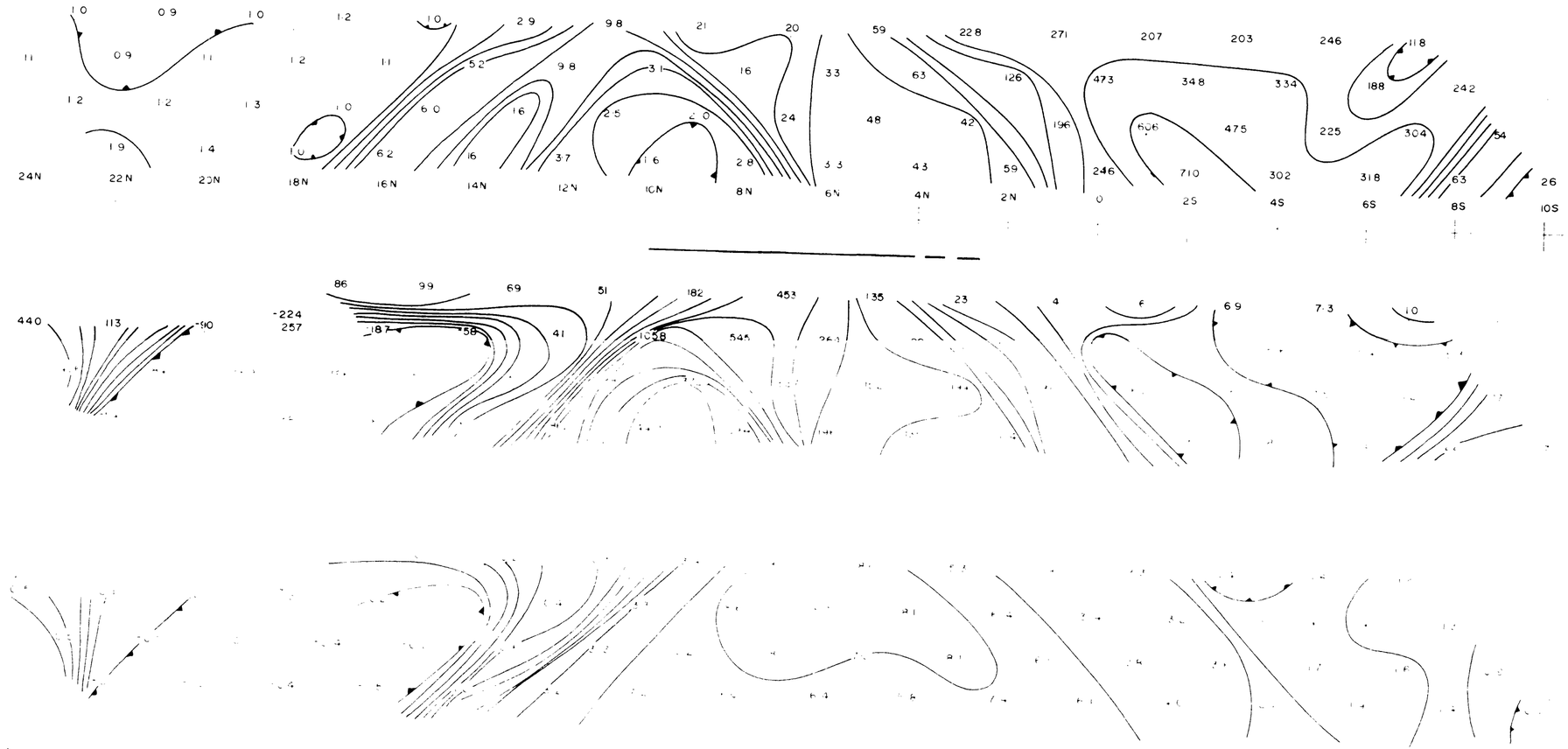
00 BASES 16N, 0

200'

3.0 - 0.3 cps

1" reps 200'

S B



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AUSTRAL EXPLORATION
SERVICES PTY LTD

INDUCED POLARIZATION
SURVEY

CLIENT AUST. GOLD & URANIUM

LOCALITY OLARY SILVER MINE

DATE 6 th. AUGUST 1970

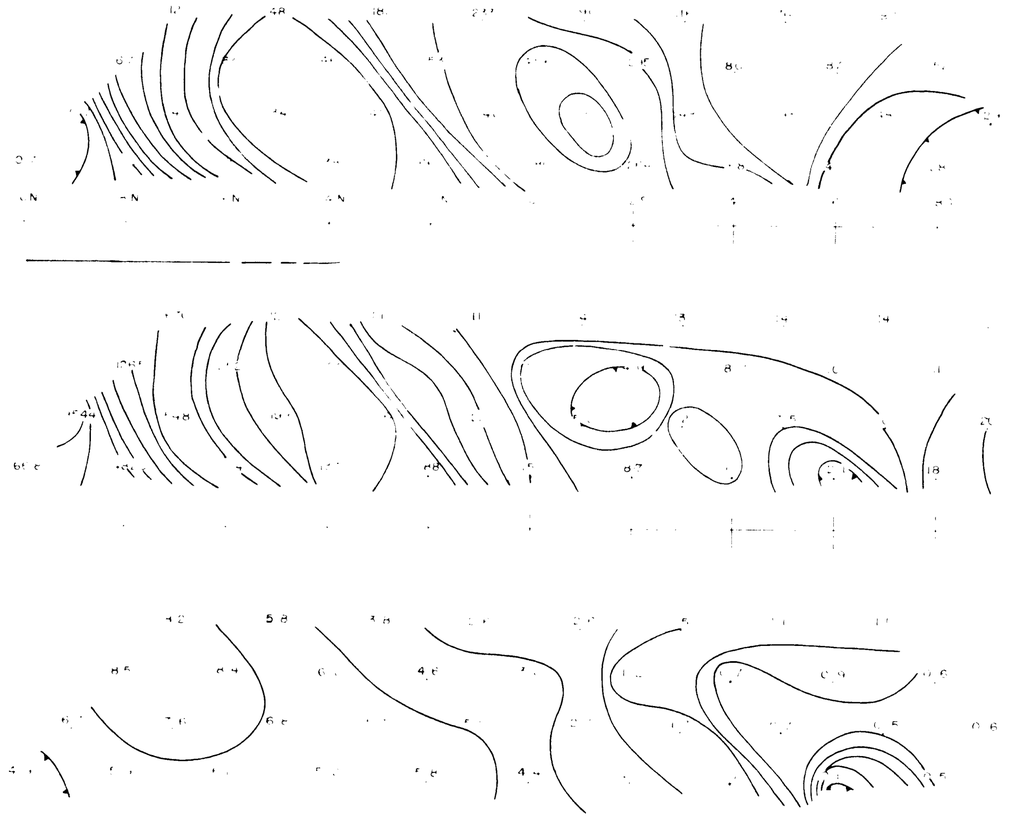
LINE 200 E BASE 0

ELECTRODE INTERVAL 200'

FREQUENCY 3·0 - 0·3 c.p.s.

SCALE 1" reps. 200'

DRAWN BY S. B.



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CONYNGHAM ST. FREWVILLE SOUTH AUSTRALIA 5063 TE' 'PHONE 79 1662 TELEGRAM_ ..LEX' AA82520

0 12

THE AUSTRALIAN MINERAL DEVELOPMENT LABORATORIES

PLEASE ADDRESS ALL CORRESPONDENCE TO THE DIRECTOR.

OUR REFERENCE: AN3/320/0 879/71
YOUR REFERENCE:

23 September 1970

The Geologist
Australian Gold and Uranium
C/- Minoil Services Pty Limited
105 Gouger Street
ADELAIDE SA 5000

REPORT AN879/71

YOUR REFERENCE:	Application dated 21/8/70
MATERIAL:	Rock
IDENTIFICATION:	As listed
DATE RECEIVED:	24/8/70

Enquiries quoting AN879/71 to Officer in Charge please.

Spectrographic analysis by: R.R. Robinson

Officer in Charge, Analytical Section: A.B. Timms

for N. Draper
Director

pkm

AMDEL ANALYTICAL SERVICE

JOB: ..527/71.

Semi-Quantitative Spectrographic Analysis Schemes A1,A2,A3,A4,A5 & A6 BATCH .....

... Results in ppm unless otherwise stated. Detection limits in brackets

Sample No.	F1	F2	F3	F4	F5	F6	F7	Sample No.	F1	F2	F3	F4	F5	F6	F7
A1								A2 Contd.							
Co (5)	100	70	100	200.	5	20	150	Ge (1)	X	X	X	X	X	X	X
Ni (5)	50	100	70	30.	5	5	80	As (50)	X	X	X	X	X	X	X
Cr (20)	80	30	20	100	200	80	80	Sb (30)	X	X	X	X	X	X	X
V (10)	30	30	50	70	50	300	150	A3							
W (50)	X	X	X	X	X	X	X	Te (20)							
Mo (3)	X	X	X	X	X	X	10	Tl (1)							
Mn (10)	200	200	200	400	200	150	200	P (100)							
Ta (100)	X	X	X	X	X	X	X	A4							
Nb (20)	X	X	X	X	X	X	X	Na (50)							
Be (1)	X	X	X	1	3	5	1	Li (1)							
Th (100)	X	X	X	X	X	X	X	A5							
Pt (10)	X	X	X	X	X	X	X	K (5)							
Pd (10)	X	X	X	X	X	X	X	Rb (10)							
Os (10)	X	X	X	X	X	X	X	Cs (30)							
Ir (2)	X	X	X	X	X	X	X	A6							
Rh (2)	X	X	X	X	X	X	X	Ba (50)							
Ru (2)	X	X	X	X	X	X	X	Sr (10)							
A2								Y (10)							
Cu (0.5)	600	>10,000	>10,000	>10,000	>10,000	>10,000	300	La (100)							
Pb (1)	5	10	10	.5	10	10	3	Ce (300)							
Zn (20)	X	X	X	X	X	X	X	Nd (300)							
Sn (1)	10	10	10	5	3	15	5	Pr (100)							
Cd (3)	X	X	X	X	X	X	X	Ti (100)							
Bi (1)	X	X	X	X	X	X	X	Er (100)							
Ag (0.1)	1	1	2	3	0.5	5	X	Sc (50)							
Au (3)	X	X	X	X	X	X	X	Eu (50)							
Ga (1)	10	30	30	20.	30	30	30								

Results are semi-quantitative. Elements apparently present in concentrations of economic interest should be redetermined

AMDEL ANALYTICAL SERVICE

JOB: ...S.7.1/71. Semi-Quantitative Spectrographic Analysis Schemes A1,A2,A3,A4,A5 & A6 BATCH 0 14 .....

Results in ppm unless otherwise stated. Detection limits in brackets

Sample No.	FS	Fq	F10	A1	A2	A3	Sample No.	FS	Fq	F10	A1	A2	A3
A1							A2 Contd.						
Co (5)	50	40	50	X	5	10	Ge (1)	X	X	X	X	X	X
Ni (5)	100	30	50	5	10	15	As (50)	X	X	X	X	X	X
Cr (20)	100	150	100	100	100	150	Sb (30)	X	X	X	X	X	X
V (10)	200	100	100	30	70	100	A3						
W (50)	X	X	X	X	X	X	Te (20)						
Mo (3)	20	X	X	X	X	X	Tl (1)						
Mn (10)	200	100	100	500	1000	1500	P (100)						
Ta (100)	X	X	X	X	X	X	A4						
Nb (20)	X	X	X	X	X	X	Na (50)						
Be (1)	10	3	2	1	1	1	Li (1)						
Th (100)	X	X	X	X	X	X	A5						
Pt (10)	X	X	X	X	X	X	K (5)						
Pd (10)	X	X	X	X	X	X	Rb (10)						
Os (10)	X	X	X	X	X	X	Cs (30)						
Ir (2)	X	X	X	X	X	X	A6						
Rh (2)	X	X	X	X	X	X	Ba (50)						
Ru (2)	X	X	X	X	X	X	Sr (10)						
A2							Y (10)						
Cu (0.5)	400	70	200	1500	10,000	10000	La (100)						
Pb (1)	5	3	3	3	10	10	Ce (300)						
Zn (20)	X	X	X	X	X	X	Nd (300)						
Sn (1)	15	10	1	2	2	2	Pr (100)						
Cd (3)	X	X	X	X	X	X	Ti (100)						
Bi (1)	X	X	X	30	30	30	Er (100)						
Ag (0.1)	X	X	X	X	0·2	0·2	Sc (50)						
Au (3)	X	X	X	X	X	X	Eu (50)						
Ga (1)	30	30	30	30	20	30							

Results are semi-quantitative. Elements apparently present in concentrations of economic interest should be redetermined

AUSTRALIAN GOLD AND URANIUM PTY. LTD.

THREE MONTHLY REPORT TO 20/11/70
SPECIAL MINING LEASE 419
SOUTH AUSTRALIA

INTRODUCTION

S.M.L. 419 covers an area of approximately 300 square miles in the Olary District.

Minoil Services Pty. Ltd. has managed the exploration programme for Australian Gold and Uranium Pty. Ltd. Exploration geologists were Messrs. D. Lopes and B. Rebuli.

Drilling contractors were Northbridge Pty. Ltd. and the Department of Mines of South Australia.

EXPLORATION - Olary Silver Mine Area

(a) Diamond Drilling
One diamond drill hole (OD/H1) was completed during the period. Total footage was 325'.

(b) Percussion Drilling
Two pre-collaring holes (OD/H3, OD/H4) have been completed. The total footage was 228'.

RESULTS

Drilling

DDH.	OD/H1	intersected only weak amounts of pyrite, arsenopyrite and chalcopyrite in granite gneiss around 258'. Drilling was discontinued at 325'
PDH.	OD/H3	intersected unmineralized granite gneiss. Drilling was discontinued at 102' after water was struck.

PDH. OD/H4 intersected unmineralized granite gneiss. Drilling was discontinued at 126' due to mechanical failure.

SUMMARY

The target depth of 500' on the DDH. OD/H1 was not reached and so the source of the I.P. anomaly is still not known.

Subsequent geological mapping and geochemical sampling in the following 3 months should provide information for the location of further drill sites and extension of the geophysical programme.

C. D. A. Coin.

Adelaide.
12/1/71

C.D.A. Coin
Geologist
MINOIL SERVICES PTY. LTD.

LIST OF PLANS INCLUDED

A.G.U.	33	Prospect Location
A.G.U.	34	Sketch Plan Olary Silver Mine
A.G.U.	35	Sketch Plan Faugh-a-Ballagh Mine
A.G.U.	36	Sketch Plan Golden Dewdrop Mine
A.G.U.	37	Sketch Plan Ameroo Mine

Plan of I.P. Grid and Anomalies

Olary Silver Mine

ENV: 1436

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AUSTRALIAN GOLD AND URANIUM PTY. LTD.

SPECIAL MINING LEASE 419

OLARY AREA,
SOUTH AUSTRALIA

THREE MONTHLY REPORT

FOR PERIOD ENDING 17/2/71

By

C.D.A. COIN, D. LOPES, K.C. MORIARTY,

MINOIL SERVICES PTY. LTD.
ADELAIDE.

71-11

AUSTRALIAN GOLD AND URANIUM PTY. LTD.

SPECIAL MINING LEASE 419

OLARY AREA,

SOUTH AUSTRALIA

REPORT ON EXPLORATION TO

31/1/71

By

D. LOPES

MINOIL SERVICES PTY. LTD.

ADELAIDE.

1. INTRODUCTION

The following is a summary report of work conducted on S.M.L. 419 (previously eastern half of S.M.L. 207) by Minoil Services Pty. Ltd., for Australian Gold and Uranium Pty. Ltd., during the period 1/7/68 to 31/1/71.

Recommendations are made on the basis of a low cost budget.

The author refers the reader to previous reports by D. Lopes 1969, 1970, B. Rebuli 1970, J. Westhoff 1970, for greater detail.

2. SUMMARY

The author recommends that three areas in particular should be thoroughly investigated.

(a) Outalpa Hill Area; where geological environments are most encouraging.

(b) Olary Silver Mine and Mt. Perseverance Mine; because of the existence of strong I.P. anomalies and persistent silver mineralization in the western workings.

(c) Faugh-a-ballagh Mine Area; where numerous occurrences of copper have been found over a wide area.

(1) OLARY SILVER MINE & MT. PERSEVERANCE MINE A.G.U. Plan No. 34

Previous Work

During March 1969 a reconnaissance of the mine area was undertaken and followed by a shallow percussion drilling programme to test a series of ironstone outcrops. Eight holes were drilled to water table, total

footage 587'. No mineralization of any consequence was intersected. (Vide D. Lopes "Report on Exploration 1/7/69 - 30/6/70).

The area was revisited by J. Westhoff (Report on Exploration 20/5/70 - 20/8/70) who conducted a magnetometer and induced polarization survey. Several strong I.P. anomalies were detected and a diamond drilling programme was recommended.

In November 1970 a diamond drilling programme consisting of 4 holes (OD/H 1-4) at an average depth of 600' was embarked upon. OD/H2 and 4 were pre-collared by percussion. (OD/H 1 was drilled to 426' Target depth 500') and intersected a zone of graphitic mica schists with minor amounts of pyrite. Coring proved extremely difficult. At this point the drilling programme was discontinued and further detailed geological mapping was undertaken to determine whether the anomalies may be caused by the graphitic schists in the area.

During December 1970 and January 1971 C.D. Coin and K. Moriarty conducted a detailed mapping programme and a limited chip sampling along I.P. line 1500W. (Vide A.G.U. Plan No. 38). Results showed that at least some of the anomalies may be caused by the graphitic schist, it should be noted however, that mineralization in the most westerly workings abutts on to these schists.

Chip sampling results further confirmed the existence of silver mineralization located during previous surveys (up to 14 oz Ag/ton in the Mt. Perseverance Area).

Recommendations

(a) Geochemical chip sampling on I.P. line 1500W should be continued to the north to include mineralized areas near the "Abminga" wool shed.

(b) A close spacing chip sampling survey should be undertaken in the Mt. Perseverance area. Traverse spacings of 200' and sample spacings of 25' are suggested in order to accurately delineate the copper and silver mineralization in this area (Vide A.G.U. Plan No 34.).

(c) Geological mapping and systematic geochemical chip sampling is recommended in an area west of Mt. Perseverance where several random samples have assayed greater than 1% copper and up to 14 oz. of silver per ton.

(d) A percussion drilling programme is strongly recommended and sites will be chosen following the completion of the above work..

(2) FAUGH-A-BALLAGH MINE AREA (A.G.U. Plan No. 35)

There are numerous copper occurrences in this area generally associated with ironstone (magnetite at depth) and/or shears.

The area was first visited briefly by the author (1969) then revisited by J. Westhoff ("Report on Exploration" 20/5/70 - 20/8/70). In the latter programme random chip samples were taken of which some assayed much greater than 10.000 p.p.m. (1%) Cu. However not all the ironstones were found to be mineralized.

During December 1970 and January 1971 geochemical and magnetometer surveys were conducted by C.D.A. Coin and K. C. Moriarty. Results have shown no mineralization in the largest ironstone hill but significant copper values in shears or sheared ironstone bands.

Detailed geological mapping is in progress in order to establish the exact relation between structure and mineralization.

Recommendations

(a) A 3000' x 1500' grid area should be mapped in detail with the objective of tracing shear zones. The relationship between the magnetite rich quartzite bands, the shears and the copper occurrences should also be determined.

(b) The geochemical survey results should be correlated with the geology and further sampling done over the shears. This programme could be completed in a very short time.

(3) AMEROO HILL AREA (A.G.U. Plan No. 37).

Previous Work

Reconnaissance of this area was conducted by J. Westhoff (July 1970). Sampling and geological investigations were discouraging. Mineralization was found to be of a very low grade and highly localized. No further work is recommended.

(4) GOLDEN DEWDROP MINE AREA (A.G.U. Plan No. 36).

Previous Work

This area was visited by J. Westhoff (August 1970) and reported on 20.8.70. A broad examination was made of the geology and mineralization. Gold mineralization was said to be associated with pyrite. Alluvial and scree cover make geological investigations very difficult.

Recommendations

Because of the scarcity of outcrops a modest V.L.F. survey is suggested consisting of 5 traverses at 100' interval across the strike of mineralization.

(5) BOOMERANG AND COO-EE MINE AREA (A.G.U. Plan No's 19 & 25)

Previous Work

This mine was investigated (D. Lopes July 1969) I.P. and magnetometer surveys were run and reported (Report on Exploration During period 1/7/69 - 30/6/70 D. Lopes, Report on Induced Polarization Surveys, May 1970, J. E. Webb). Mineralization appears as narrow veinlets containing galena and chalcopyrite in a 2'-4' quartz vein which strikes in a north easterly direction.

Recommendations

(a) It is recommended that a detailed geological map of the area be compiled.

(b) Existing I.P. Results should be related to the geology and re-assessed.

(6) KINGS BLUFF MINE AREA (A.G.U. Plan No. 20).

Previous Work

This area was investigated in 1968-69 (Report on Exploration 1/7/68 - 30/6/69 D. Lopes). Broad geological mapping and sampling were conducted to establish the loci of mineralization. B. Rebuli (1970) re-visited the mine workings in May 1970. Records show that very little gold was mined from extensive and deep operations (470'). The area appears to have little scope for further work.

(7) CENTRALIA MINE AREA (A.G.U. Plan No. 11)

Previous Work

A geological survey of this mine was made during

April 1969. (D. Lopes, Report on exploration during period 1/7/67 - 30/6/70). A low grade ore body averaging 6' wide and 500' long is indicated. Copper carbonates are evident at surface and sulphides are reported at 140' (Brown, Record of Mines). Chip samples averaged 2.5% copper but much richer grades are reported at depth. Chalcopyrite, bornite, tenorite and chalcocite can be seen in the mullock heaps.

An induced polarization survey was carried out in July 1969 (J.E. Webb, J.A. Iredale, Austral Exploration Services Pty. Ltd.).

The author re-visited the area during March 1970 to locate possible drill sites.

Recommendations

(a) Percussion drilling to test the oxide zone is suggested before attempting to intersect the rather deep I.P. targets. (D. Lopes 1969-70).

(8) COPPERLINKA - (TRINKALEENA?) MINE AREA (A.G.U. Plan No. 33.).

Previous Work

The only work conducted on this mine has been of a reconnaissance nature (D. Lopes 1969-70). The exact location of this mine is not accurately known in respect to the southern lease boundary. It has been recently noted that existing maps are slightly incorrect. The author believes that the lease boundary passes through the workings. At this time (22/1/70) the lease adjoining is held by Burbank Explorations N.L..

(9) ERINGA MINE AREA (A.G.U. Plan No. 26).

Previous Work

Reconnaissance surveys were conducted by the author. (D. Lopes, Report on Exploration 1/7/69 - 30/6/70).

Results showed significant amounts of base and noble metals in a siliceous vein 5'-6' wide. An induced polarization and magnetometer survey was undertaken in October 1969. Four metal factor and frequency effect anomalies were located, one of which appears directly below the workings.

Recommendations

(a) I.P. results reported previously should be re-assessed (D. Lopes 1969-70).

(b) Depending on this assessment a modest percussion drill programme, consisting of approximately 400' of drilling is suggested.

(10) ERINGA SOUTH MINE AREA (A.G.U. Plan No. 28)

Previous Work

Geological exploration during 1969-70 located anomalous amounts of base metals in a narrow ironstone body. J. Westhoff, (Report on Exploration 20/5/70 - 20/8/70) revisited the area and carried out several magnetometer traverses. No significant anomalies were located. Because of the extremely small appearance of this body no further work is recommended at this stage.

(11) OLARY NORTH PROSPECT (A.G.U. Plan No. 33)

Previous Work

A brief chip sampling survey was conducted (D. Lopes Report on Exploration 1/7/69 - 30/6/70) on a large siliceous outcrop in the Olary Silver Mine area. Results were not encouraging. No further work is recommended.

(12) OUTALPA HILL AREA (A.G.U. Plan No. 33).

Previous Work

Exploration in this area has been of a prospecting nature only.

There are several geological rock units which require close investigations. Several copper occurrences have been reported in this area.

In particular the author feels that the numerous amphibolite bodies which intrude the granites are worthy of special note.

Recommendations

(a) Prospect the area thoroughly.

(b) Conduct chip sampling surveys over the amphibolites.

(c) Compile a preliminary geological map of the mineralized areas from prospecting results and aerial photos.

31/1/71

D. Lopes
Geologist
Minoil Services Pty. Ltd.

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Australian Gold and Uranium Pty. Ltd.

Special Mining Lease 419
Report on Exploration
30/11/70 - 31/12/70

FAUGH-a-BALLAGH MINE AREA

By
K.C. Moriarty B.Sc. (Hons)

of
Minoil Services Pty. Ltd.
ADELAIDE.

1. INTRODUCTION

S.M.L. 419 is situated in the Olary District of north-eastern, South Australia.

This report covers the geological exploration carried out in the Faugh-a-Ballagh Mine area in the period 30/11/70 - 31/12/70.

Previous work in the area has included reconnaissance and chip sampling surveys (D. Lopes 1969-70, J. Westhoff.)

2. GENERAL

A geological reconnaissance was carried out in 1970 by J. Westhoff.

To facilitate geological and geophysical surveying, three 500' spacing lines were laid over the mine area giving a total of 600' of grid.

3. GEOLOGY

The mine is situated within a sequence of arkosic quartzites and granitic gneisses with apparently conformable ironstone bands at intervals.

There is a shear near the mine which strikes at 130° and is apparently vertical. The more resistant quartz - magnetite rocks form the backbone of the hills near the mine. These have weathered on the surface to several feet of massive, black ironstone with no magnetite detectable.

The strike of the rocks varies between 90° and 110° (mag) with steep dips on the contacts.

4. MINERALIZATION

Copper mineralization occurs in a 3 foot wide shear zone near the mine which consists of two feet of brecciated gneiss and one foot of massive ironstone.

There has been much secondary deposition of iron oxide along joints and fractures.

All rocks contain an abundance of limonite, in some cases pseudomorphs after pyrite.

5. EXPLORATION

Geochemistry

Rock chip samples were taken over the three lines as follows:

Lines OOW and IOW	:	50' samples over 2000'
Line O5W	:	25' samples over 2000'

The results of this will be included in a later report.

Geophysics

A magnetometer survey was completed on line O5W at 25' spacing in order to determine the depth extent of the ironstone bands.

An anomaly of 40,000 gamma above background was encountered.

6. CONCLUSIONS AND RECOMMENDATIONS

(a) Detailed geological mapping of the mine area is recommended. This could be accomplished within a short period. All other recommendations are dependant on the geochemical results and reductions of present geophysical data.

(b) Three V.L.F. traverses are recommended to outline the shear system and hence the mineralization.

per K. Moriarty

31/12/70

K. Moriarty.
Geologist.
Minoil Services Pty. Ltd.

REFERENCES

Lopes, D. — Report on Exploration for year ending 30th June 1969 Olary District, South Australia. S.M.L. 207.

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71-12

AUSTRALIAN GOLD AND URANIUM PTY. LTD.

SPECIAL MINING LEASE 419

OLARY SILVER MINE
- MT. PERSEVERANCE AREA

By

C.D.A. COIN B.Sc(hons)

Of

MINOIL SERVICES PTY. LTD.

ADELAIDE.

1. INTRODUCTION

S.M.L. 419 is situated in the Olary District of north-eastern South Australia.

This report covers the geological exploration carried out in the Olary Silver Mine - Mount Perseverance area in the period 30/11/70 to 31/12/70.

Previous work on the area has included reconnaissance and chip sampling surveys (D. Lopes 1969-70), a magnetometer survey (J. Westhoff, 1970) and an induced polarization survey (J.E. Webb, August - September 1970). On the basis of these results two percussion drill holes and one diamond drill hole were put down. (OD/H1, OD/H3 and OD/H4) in the Olary Silver Mine area.

2. GENERAL

Description of the Olary Silver Mine operation can be found in the report of D. Lopes 1969-70 and J. Westhoff 1970.

To facilitate general development and geological mapping a rectangular grid at 500 feet spacing was set out. The grid was laid with the grid north at 45° magnetic to cover a rectangular area 3,500' (NW-SE) x 10,000' (NE-SW). The Olary Silver Mine having co-ordinates of 12.50E, 50.00N. This was later extended to include another area of 2000' x 2000' on the SE of the grid.

Details of the limit of the grid can be found on the accompanying geological map (A.G.U. 38).

3. GEOLOGY

The dominant lithologies in the area mapped are Archaean schists, gneisses, granite gneisses, and pegmatites. These comprise the hills which rise out of the plains of later alluvial sediments.

Most of the old mine workings in the Mount Perseverance area are situated on, or in close proximity to, quartz reefs. The longest exposure of one of these mineralized reefs is about 2000'. Pegmatite veins also are very abundant, and these, along with the quartz reefs, tend to be concordant with the schistosity and gneissocity

of the country rock. The occurrence of graphitic schists has been noted in contact with the heavily mined quartz reef, running from 10S, 2Se, to 10N, 17.5E.

4. MINERALIZATION

(a) Olary Silver Mine area

These diggings are west of the Olary Silver Mine and consist of shallow shafts sunk in the mineralized schists. The mineralization has been seen up to 6 feet wide and some pockets are associated with minor fold crests, (J. Westhoff, 1970).

There are a few occurrences where amphibolitic bands contain malachite. The amphibolite bands in some areas have very little surface expression and are most commonly encountered in old diggings. The apparent lack of interest in these by past prospecting operations may be a result of this factor.

The quartz reefs are commonly iron stained and in part gossanous; the gossans probably representing pyrite veinlets within the quartz. Malachite and azurite occurs far less commonly and, where present, it is intimately associated with the ironstaining (limonite).

The pegmatites appear to have no mineralization of copper or iron.

(b) Mount Perseverance Area

The mineralization around the Olary Silver Mine appears to be restricted to the massive hematitic ironstones which are in part gossanous.

There is a similar occurrence 3200 feet away in the Mount Perseverance area and the results of the magnetometer survey indicates that the trend of the ironstone bodies is a real one.

Drilling has indicated that these ironstone bodies become pyritic at depth and that the bodies are discontinuous along strike.

There are also traces of malachite, but mineralization was only reported from one drill hole (02) and this was less than 0.5% Cu. It appears that the copper minerals in this area occur sporadically within the pyrite and are of little economic significance.

5. EXPLORATION

(a) Geological Mapping

The gridded area was mapped in a scale of 1": 200' (1:2400) to help with further investigations. A copy of the preliminary geological map (AGU 38) accompanies this report.

(b) Geochemistry

All but one of the I.P. lines were found to be unsuitable for either geochemical chip or soil sampling. The 1500W line (I.P. grid) was sampled at 25 feet spacing over the anomalous area. The results of this sampling will be included in a later report.

6. CONCLUSIONS & RECOMMENDATIONS

(a) The mineralization expressed on the surface does not seem to indicate a large orebody at shallow depth as most occurrences are sporadic and rarely consist of little more than staining. The mineralization in the quartz does tend to be restricted to certain areas. This may indicate a remobilisation.

(b) It is recommended that the I.P. survey be continued to the south to cover the southern mineralized area.

(c) It is also recommended that the geochemical chip sampling programme be extended so as to more accurately delineate the copper and silver mineralization in the Mount Perseverance Area.

Signed for C.D.A. Coin

C.D.A. COIN
Geologist
Minoil Services Pty. Ltd.

31/12/70

REFERENCES

LOPES, D. — Report on Exploration for year ending 30th June 1969 Olary District, South Australia. S.M.L. 207.

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MINOIL SERVICES

GIST B. REBULI. CLIENT Australian Gold and Uranium

LER DEPT. OF MINES. WELL No. O. D/H 1

CORE DRILLING DIAMOND DRILL ANGLE 55° BEARING ~~325~~ 305° MAG.

ATE LOGGED 11/10/70 TOTAL DEPTH AIM 500'

FORM RF

INTERVAL	RECOVERY FOOTAGE	%	DESCRIPTION
-3'10"	6"	13	0 - 3'10"
			Kunkar
10"-7'2"	4"	10	Calcareous, with weathered mica schist.
			remnants.
2"-9'6"	1'	40	
			3'10" - 10'
6"-10'	6"	100	Granite gneiss.
			Weak layering of biotite and sericite.
'-15'9"	4'3"	73	
			10' - 12'6"
'9"-17'2"	1'5"	100	Weathered biotite schist.
			Black biotite (fine to medium), with some
2"-17'4"	7"	100	sericite and a brown fine grained mica.
.6"-21'	2'9"	85	12'6" - 15'9"
			Quartz-biotite-sericite schist.
'-22'5"	1'5"	100	Mainly biotite and sericite banding
			with quartz porphyroblasts.
2'5"-24'6"	1'	50	
			15'9" - 66'
4'6"-33'9"	9'3"	100	Granite gneiss.
			Alternating sections of quartz - biotite -
3'9"-43'6"	7'9"	80	muscovite (sericite) schist with quartz
			porphyroblasts, and a quartz rich rock
3'6"-54'2"	10'8"(?)	(?)	with up to 10% biotite. Distortion of
			bands is on a small scale indicating
4'2"-64'4"	10'2"	100	only minor subsequent folding.

MINOIL SERVICES

GEOLOGIST D Lopes — CLIENT Australian Gold & Uranium

DRILLER Dept. of Mines S.A. — WELL No. OD / H1

WELL LOG Diamond — Drill Angle 55° Bearing ~~305~~ ° Mag.

DATE LOGGED 27/10/70 — TOTAL DEPTH AIM 500'

FORM L

INTERVAL	~~XXXXXXXX~~ Recovery Footage	%	DESCRIPTION
64'4"-74'4"	10'	100	70' - 110'
			Anatectic granite
74'4" - 84'4"	"	"	Sometimes medium - coarse grained approaching a pegmatite. Composed
84'4" - 94'	9'8"	"	of anhedral quartz and K - felspars, with minor muscovite and sericite.
94' - 104'2"	10'2"	"	
			110' - 133'10"
104'2"-106'	1'10"	"	Granite gneiss
			Well banded. Highly convoluted. Well
106' -115'3"	9'3"	"	developed micro folding with approx.
			N - S trends. Schistosity near vertical
115'3"-116'10"	1'7"	"	Minor splashes of pyrite & chalcopyrite
116'10"-125'10"	9'	"	in fractures.
			133'10" - 178'
125'10"-136'	10'2"	"	Anatectic granite.
			Medium grained, unmineralized.
136' -139'3"	3'3"	"	Occasional narrow quartzite bands.
139'3" -139'8"	5"	"	Fractures near vertical and often iron stained.
Change from NQ to BQ			
139'8" -143'6"	3'10"	"	178' - 204'10"
			Granite gneiss.
143'6" -155'11"	12'5"	?	Well banded with narrow granite zones.
155'11"-165'1"	9'2"	100	204'10"-210'
			Anatectic granite
165'1" -175'2"	10'1"	"	Unmineralized. Much the same as in previous granite zones.
175'2" -180'10"	5'8"	"	
180'10"-186'4"	5'6"	"	
186'4" -195'11"	9'7"	"	
195'11"-206'1"	10'2"	"	

MINOIL SERVICES

GEOLOGIST....D.Lopes..a..... CLIENT....Australian Gold & Uranium N.L.....

DRILLER..... WELL No.....OD/H1..Cont.....

WELL LOG.....

DATE LOGGED..... TOTAL DEPTH.....

FORM L

INTERVAL	~~LITHOLOGY~~ Recovery Footage	%	DESCRIPTION
206'1" -216'	9'11"	100	210'-306'
			Granite gneiss.
216' -225'3"	9'3"	"	As for interval 178'-204'10". Seams of pyrite, arsenopyrite and minor chalcopyrite from 257'3" to 258'7" and from 304'10" to 305'5". Becoming fine grained granitic.
225'3" -235'5"	10'2"	"	
235'5" -236'3"	10'10"	?	
236'3" -245'5"	9'2"	"	306'-312'
			Anatectic granite
245'5" -255'7"	10'2"	"	Composed of Quartz 50-60%
			K - Felspar ? 30-40%
255'7" -265'9"	"	"	Sericite & Biotite accessories.
265'9" -275'11"	"	"	312' -
			Quartz - Biotite gneiss.
275'11"-282'6"	6'7"	"	Fine grained and obscure banding.
			Occasionally containing flecks of pyrite
282'6" -285'11"	3'5"	"	in fractures.
285'11"-295'5"	9'6"	"	
295'5" -305'7"	10'2"	"	
305'7" -315'9"	"	"	
315'9" - 325'	9'3"	"	

MINOIL SERVICES PTY. LTD.

GEOLOGIST B. Rebuli

CLIENT Aust. Gold & Uranium Pty. Ltd.

DRILLER Mines Dept.

WELL No. ODH 1

WELL LOG

DATE LOGGED 4/11/70

TOTAL DEPTH

FORM L

INTERVAL	LITHOLOGY	%	DESCRIPTION
331'1"-			
335'6"	4'5"	100	325'-355'
335'6"-	10'2"	100	Quartzite
345'8"			Mainly a quartzite with small
345'8"-			granitic zones with quartz,
355'10"	10'2"	100	feldspar and muscovite
355'10"-			The quartzite is highly
366'	10'2"	100	fractured, the fractures being
			lined with sericite.
			Also have green epidote.
			Mineralization is restricted
			to trace amounts of pyrite,
			chalcopyrite, and a small
			occurrence of what appears
			to be cerargyrite at 341'.
366'-376'	10'	100	355'-376' Mica schist Graphitic schist
376'-380'	6"	13	Quartz and banding
			Schistosity well defined in mica
380'-380'6"	3"	50	bands - mainly biotite, muscovite and
			graphite in the foliation.
			Mineralization is in the form of
			pyrite and chalcopyrite. Occurs
			along mica foliation planes
			as a thin film, and as thin
			veinlets filling small shears.
			Schistosity and banding is 20° to
			drill angle.
380'6"-381'8"	1'2"	100	376'-391'
			The 6" recovered from 379'6"-
381'8"-383'2"	2"	11	380' has a high graphite content
			and shears brake along the
383'2"-386'	2'4"	18	foliation planes
386'-388'	6"	25	Between 380'6"-381' and

MINOIL SERVICES PTY. LTD.

GEOLOGIST B. Rebuli

CLIENT Aust. Gold & Uranium 0 47

DRILLER Mines Dept.

WELL No. ODH 1

WELL LOG

DATE LOGGED 4/11/70

TOTAL DEPTH

FORM L

INTERVAL	LITHOLOGY	%	DESCRIPTION
388'-389'8"	6"		383'2"-386' the rock has been
			reduced to sand-sized
389'8"-391'	1'4"	100	Unconsolidated, grains. Appears
391'-394'5"	3'5"	100	to be a broken down granite gneiss.
			Mineralization only minor
394'5"-401'7"	7'	100	as above - pyrite mainly
401'7"-404'7"	3'	100	391'-421'
			Granite Gneiss
404'7"-414'5"	9'10"	100	Quartz and mica layering schistosity
414'5"-423'9"	8'11"	100	is well displayed in the mica layers
			- main micas are biotite and sericite
423'9"-426'6"			Little graphite
			Minor pyrite chalcopyrite
			421'-426'11" (cont)
			Anatectic granite
			Quartz, feldspar with 10% biotite
			Rock highly fractured, fractures
			being lined by a purple amorphous
			powder - presumably cerargyrite.

MINOIL SERVICES

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GEOLOGIST D. LOPES. CLIENT A.G.U.

DRILLER NORTHBRIDGE PTY. LTD. WELL No. D D/H 3

WELL LOG PERCUSSION DRILL ANGLE 55° BEARING 305° MAG.

DATE LOGGED 16/10/70 TOTAL DEPTH 102'

FORM L

INTERVAL	LITHOLOGY	%	DESCRIPTION
0-46'	Granite	Qtz. 60-70	Weathered partly decomposed felspars.
	Gneiss	Fels. 20-30	Biotite altered to sericite. Surface
		Micas 10-20	evidence suggests a ENE schistosity.
			Jointing and fractures approx. vertical
			Less defined fractures in approx.
			N-S direction.
46'-102'	"		As above but relatively unweathered.
			Biotite content increasing. Drilling
			indicated numerous fractures and
			small scale shears. Struck water
			at approx. 100' unable to obtain
			satisfactory samples.
	END PERCUSSION		

MINOIL SERVICES

0 49

GEOLOGIST D. LOPES. CLIENT A.G.U.

DRILLER NORHTBRIDGE PTY. LTD. WELL No. O D/H 4

WELL LOG PERCUSSION DRILL ANGLE 55° BEARING 305° MAG.

DATE LOGGED 16/10/70 TOTAL DEPTH 126'

FORM L

INTERVAL	LITHOLOGY	%	DESCRIPTION
0'-16'	Granite Gneiss		Weathered, high mica content. Felspars partly decomposed to clay. Limonite in fractures.
16'-28'	"		Less weathered. Gneissic banding well defined. Increase of dark micas.
28'-52'	"	Qtz. 40 Fels. 20 Biot. 20 Serp. 20	Relatively unweathered. Occasional schistose mica rich bands. Felspars often iron stained.
52'-126'	"		As above but unweathered and increase in quartz content. Water at 90'. Wet samples from 110' to 126'. Drilling discontinued because of hydraulic drive failure (worn sprocket).

AUSTRALIAN GOLD AND URANIUM PTY. LTD.

Special Mining Lease Number 419

Olary Area
South Australia

3 Monthly Report To 19.5.1971

By
T. Wilkin-Smith, B.Sc.

of
MINOIL SERVICES PTY. LTD.

May, 1971.

CONTENTS

SUMMARY

Diamond drilling on the Mt. Perseverance prospect did not satisfactorily explain the induced polarization anomaly nor did the hole intersect the silver bearing quartz reef. Percussion drilling to test the reef at a shallow depth is recommended.

1. INTRODUCTION

Special Mining Lease (S.M.L.) No. 419, held by Australian Gold and Uranium Pty. Ltd., covers an area of 309 square miles in the Olary District of South Australia.

Diamond drilling on the Mt. Perseverance prospect constituted the main work carried out on the lease during the three monthly period. This work followed on from previous I.P. work and the mapping carried out by Coin (1971).

The Mt. Perseverance prospect area is located approximately four miles north of Olary near the Abminga Woolshed.

2. DIAMOND DRILLING

2.1. GENERAL

Diamond drill hole ODH - 4 was designed to test an induced polarization (I.P.) anomaly on line 1500W and to intersect at depth the Mt. Perseverance quartz reef which contains up to 14 ozs/ton of silver on the surface. The hole was collared 355 feet horizontally from the quartz reef at a depressed angle of 55^{o} and bearing 312^{o} magnetic along the 1500W I.P. line. Projection shows that the quartz reef should then be intersected 600 feet down the hole.

2.2. DRILLING

The hole was drilled by Northbridge Pty. Ltd. using a wire line diamond coring rig. Drilling commenced on Tuesday, 30th March and concluded on Tuesday, 6th April 1971.

A total of 696 feet 6 inches was drilled, recovery of core being almost 100 per cent, except for the first 50 feet of the hole. Logs of the drill core are appended. The core

consists mainly of mica gneiss with some granitic gneiss and microgranite, and pegmatite especially in the upper part. The gneiss becomes partly graphitic between 300 and 400 feet. Pyrite and pyrrhotite are common in the core and appear as fine laminae along foliation directions or as small patches. Chalcopyrite is very sparsely spread in the interval 342 feet 4 inches to 401 feet, but occurs only in trace amounts elsewhere in the hole. It exists usually as tiny blebs surrounded by either pyrite or pyrrhotite.

The difficulty encountered in lowering a wire line device down the hole suggests that the hole is not straight and has probably flattened considerably. Attempts to measure deviations from the planned inclination and bearing using the acid etch method were not successful. Neither Australian Gold and Uranium Pty. Ltd., Minoil Services Pty. Ltd., nor the drilling contractor had a Tropari instrument to properly survey the hole. The Mines Department did not have one available at the time of drilling.

The Mt. Perseverance quartz reef, was not intersected in the drill hole although because of the probable flattening of the hole it might have been expected at a shallower hole depth than the predicted 600 feet. It appears that the quartz reef may lens out or in some other way disappear at depth. However it is also possible that the hole may have deviated either easterly or westerly to such an extent that the projected position of the reef was not reached.

The graphitic schists (Coin, 1971) that flank the southern side of the quartz reef on the surface may be the equivalents of the graphitic gneisses encountered between 300 and 400 feet in the drill hole. If this is so it

would support the suggestion that the quartz reef may have lensed out in depth but would also suggest some structural complexity in the area. However, the difficulty in correlating surface geology with the core and the lack of information about the hole trajectory leave this problem unresolved.

2.3. CORE ASSAY RESULTS

The interval 342 feet 4 inches to 401 feet, where mineralization can be seen, was split and sent for assay in 10 foot lengths. In addition 5 feet in every 50 feet of the entire drill core was similarly prepared for assay.

The samples were analysed for silver, copper and gold. The results are shown in the following table:

Footage interval	p.p.m. Ag	p.p.m. Cu	ozs/long ton Au
50 - 55	1	95	<0.01
100 - 105	2	160	<0.01
150 - 155	<1	110	<0.01
200 - 205	<1	50	<0.01
250 - 255	<1	50	<0.01
300 - 305	<1	110	<0.01
342'4"- 351	<1	240	<0.01
351 - 361	<1	210	<0.01
361 - 371	<1	65	<0.01
371 - 381	<1	450	<0.01
381 - 391	1	100	<0.01
391 - 401	<1	55	<0.01
450 - 455	<1	20	<0.01
500 - 505	<1	10	<0.01
550 - 555	<1	10	<0.01
600 - 605	<1	5	<0.01
650 - 655	<1	5	<0.01
691'6"- 696'6"	<1	20	<0.01

3. CONCLUSIONS

The low sulphide assay results indicate that the graphitic content in gneisses and the presence of some barren sulphide mineralization probably are responsible for the I.P. anomaly in the area.

The persistence in depth of the Mt. Perseverance quartz reef (which contains interesting silver values at the surface) cannot be ruled out despite the failure of the hole to intersect it.

Therefore, the Mt. Perseverance Mine area is still considered to be prospective.

4. RECOMMENDATIONS

A shallow percussion drill hole to test the quartz reef is recommended. It should be collared near the 1500W I.P. line and drilled to intersect the reef at a vertical depth of 200 feet. If the reef is intersected and assay results are encouraging, further percussion drilling along strike may be warranted.

T. Wilkin-Smith Ltd.

May, 1971.

T.Wilkin-Smith
Geologist.
Minoil Services Pty. Ltd.

REFERENCE

Coin, C.D.A., 1971. Olary Silver Mine - Mt. Perseverance Area S.M.L. 419. Three Monthly Report to 17.2.1971.

MINOIL SERVICES PTY. LTD. : CORE DRILLING LOG

CLIENT: A.G.U. PROSPECT: Mt. Perseverance HOLE NUMBER: ODH 4 TYPE: Diamond Drill
DRILLER: Northbridge Pty. Ltd. GEOLOGIST: T. Wilkin-Smith DATE LOGGED: 1/4/71
COLLAR CO-ORDS: 145N 1497 (Yds)W ANGLE: -55° BEARING: 312° Mag LOCATION PLAN NO.: A.G.U. - 38

INTERVAL CORED		CORE RECOVERY		LITHOLOGY			COMMENTS
FROM	TO	FOOTAGE	%	FROM	TO	DESCRIPTION	(Min., etc.)
0	8	.5	6	0	8	Fine granite gneiss at top; feldspar, quartz 60%, mica 20%, mafic 20%, then mica schist.	
8	12	2	50	8	12	Micaceous granite gneiss; lineation 10-30° quartz 70% - mica feldspar 30%.	
12	14'9"	2¼	80	12	14¾	Micaceous granite gneiss; lineation 40° to 80° at bottom; quartz (+ feldspar?) 70%; mica 30%; Mn - possible; Fe staining, Fracturing at 90° at 15 feet.	
14¾	15¾	¾	75	14¾	15¾	Gneiss becomes schistose and very micaceous fracturing at 90°, lineation 40° quartz 40%, mica 40% orthoclase? 20% Fe staining, also matt grey white stain.	
15¾	19 1/3	3'7"	100	15¾	19 1/3	Lineation 40°, granite gneiss-quartz feldspar 65% mica 35%.	
19 1/3	28¼	9	100	19 1/3	28¼	Granite gneiss, lineation 60° - 20° at bottom. Quartz (+feldspar) 65% mica 35% Fe stain, grey white stain near bottom.	
28¼	29'7"	1'4"	100	28¼	29'7"	Fractured zone - fractures at 0°, Fe oxides in granite gneiss. Lineation 40°.	

MINOIL SERVICES PTY. LTD. : CORE DRILLING LOG

CLIENT: A.G.U. PROSPECT: Mt. Perseverance HOLE NUMBER: ODH 4 TYPE: Diamond Drill
DRILLER: Northbridge Pty. Ltd. GEOLOGIST: T. Wilkin-Smith DATE LOGGED: 1.4.71
COLLAR CO-ORDS: 145N 1497 (Yds)W ANGLE: -55° BEARING: 312° Mag. LOCATION PLAN NO.: A.G.U. - 38

INTERVAL CORED		CORE RECOVERY		LITHOLOGY			COMMENTS
FROM	TO	FOOTAGE	%	FROM	TO	DESCRIPTION	(Min., etc.)
29'7"	39'	9'	95	29'7"	39"	Granite gneiss-lineation 40°, fractures at 80° at 39'.	
39	42'	3	100	39	42'	Fragmented granite gneiss - fractures at 90°, Fe oxides, very grey white stain, lineation 50°.	
42	42'6"	½	100	42	42'6"	Granite gneiss, lineation 70°.	
42'6"	43'9"	1'3"	100	42'6"	43'9"	Schistose granite gneiss, lineation 45°	
43'9"	47'	3'	95	43'9"	47'	Possibly graphitic quartz mica gneiss lineation 60° at top to 10° at bottom.	
47'	60'2"	13'2"	100	47'	60'2"	Quartz, biotite gneiss, lineation approx. 45°, trace graphite.	
60'2"	76'6"	16'4"	100	60'2"	76'6"	Quartz mica gneiss, some scattered pyrite trace chalco, poss graphite, lineation 60°-10°	pyrites dissemination & small
76'6"	86'6"	10'	100	76'6"	86'6"	Quartz feldspar mica gneiss, pegmatite band at 80' containing pyrite, lineation 70°.	patches pyrite trace chalcopyrite odd patch pyrite
86'6"	95'	8'6"	100	86'6"	95'	Quartz, mica, gneiss with pegmatitic bands, patches pyrite in upper part, trace pyrrhotite - average lineation 45°	pyrite; trace pyrrhotite

MINOIL SERVICES PTY. LTD. : CORE DRILLING LOG

CLIENT: A.G.U. PROSPECT: Mt. Perseverance HOLE NUMBER: QDH 4 TYPE: Diamond Drill

DRILLER: Northbridge Pty. Ltd. GEOLOGIST: T. Wilkin Smith DATE LOGGED: 1/4/71

COLLAR CO-ORDS: 145N ... 1497yds W. ANGLE: -55° BEARING: 312° Mag LOCATION PLAN NO.: AGU-38

INTERVAL CORED		CORE RECOVERY		LITHOLOGY			COMMENTS
FROM	TO	FOOTAGE	%	FROM	TO	DESCRIPTION	(Min., etc.)
95'	102'	7'	100	95	102	Quartz feldspar pegmatite or coarse granite, micaceous darker laminated band at 98-99', where laminated at 45°	only trace pyrite
102'	109'3"	7'3"	100	102	109'3	Quartz feldspar mafic gneiss - pyrite rich, pyrite along lamination - lineation 45°, pyrite decreases in last 2'	pyrite common
109'3"	117'	7'9"	100	109'3"	117'	Pegmatite or coarse granite - quartz felspar, some more mafic laminated patches - lineation 35°	trace pyrite
117'	127'6"	10'6"	100	117'	127'6"	Well lineated, pyritic quartz felspar mafic gneiss or schist, slightly micaceous - pegmatitic band at 118' for 1', trace steel grey metallic mineral - trace pyrrhotite, pyrite decreasing towards bottom.	pyrite common
127'6"	128'9"	1'3"	100	127'6"	128'9"	Pegmatite - quartz feldspar, felspar dominates	
128'9"	129'9"	1'	100	128'9"	129'9"	Quartz felspar mafic gneiss, lineation 70°	pyrite
129'9"	132'3"	2'6"	100	129'9"	132'3"	Felspar quartz pegmatite - felspar dominates some mafic lineated bands carrying pyrite. Trace pyrite in pegmatite, lineation 60-70°	pyrite
132'3"	138'6"	6'3"	100	132'3"	138'6"	Lineation 50°, Quartz felspar mafic pyritic gneiss, slightly micaceous. Some non mafic pegmatitic bands	pyrite
138'6"	143'	4'6"	100	138'6"	143'	Pegmatite - quartz felspar, biotite laths near base from 139-140', more granitic. patch pyrite and pyrrhotite	pyrite & pyrrhotite
143'	153'6"	10'6"	100	143'	153'6"	Lineation 50° to 70° at base. Well lineated, quartz felspar mafic (biotite?) gneiss, bands of pegmatitic material. pyrrhotite or sphalerite at147' and trace	pyrite common along lineation

MINOIL SERVICES PTY. LTD. : CORE DRILLING LOG

CLIENT: A.G.U. PROSPECT: Mt Perseverance HOLE NUMBER: ODH. 4 TYPE: Diamond

DRILLER: Northbridge. Pty. Ltd GEOLOGIST: T. Wilkin-Smith DATE LOGGED: 2/4/71

COLLAR CO-ORDS: 145N. 149.7 yds W. ANGLE: -55° BEARING: 312° mag LOCATION PLAN NO.: AGU-38

INTERVAL CORED		CORE RECOVERY		LITHOLOGY			COMMENTS
FROM	TO	FOOTAGE	%	FROM	TO	DESCRIPTION	(Min., etc.)
153'6"	159'	5'	90	153'6"	159'	Quartz felspar mafic (biotite) gneiss with coarser pegmatitic bands. Wavy lineation at approx. 45°. pyrite and some pyrrhotite	pyrite pyrrhotite
159'	160'	1'	100	159'	160'	Quartz felspar muscovite, pegmatite,	
160'	167'6"	7'6"	100	160'	167'6"	Banded gneiss - quartz, felspar bands interspersed with laminated darker mafic micaceous bands - pyrite common at top then sparse - trace phrrhotite. 45° lineation	
167'6"	186'6"	19'	100	167'6"	186'6"	Well lineated to finely banded gneiss. sparse pyrite & pyrrhotite. Pyrite pyrrhotite increases at interval 180-182' and has associated trace chalcopyrite odd 2-3" pegmatitic band. Average lineation 50°. Increase in muscovite content. Some augen structure.	trace chalco 180'
186'6"	193'6"	7'	100	186'6"	193'6"	Well lineated gneiss as above, micaceous. Average lineation 70-80° Sparse pyrite and pyrrhotite - trace chalcopyrite. Pyrite and pyrrhotite more common at 191'	
193'6"	194'6"	1'	100	193'6"	194'6"	Fine well lineated gneiss. Lineation 70° Pyrite & pyrrhotite	
194'6"	196'	1'6"	100	194'6"	196'	Coarser gneiss with granitic bands - pyrite common, lineation 60°	
196'	197'	1'	100	196'	197'	Fine well lineated gneiss containing pyrite along lineations - lineation 50°	
197'	212'	15'	100	197'	212'	Gneiss with wavy lineation - trace grey blue metallic mineral at 200' - pyrite common over first 2', falls off. pyrite and some pyrrhotite over bottom 3/4 of section. lineation 50-60°	

MINOIL SERVICES PTY. LTD. : CORE DRILLING LOG

CLIENT:....AGU..... PROSPECT:..Mt. Perseverance HOLE NUMBER:...ODH.4..... TYPE:.....Diamond.....

DRILLER:..Northbridge Pty. Ltd..... GEOLOGIST:T..Wilkin.Smith..... DATE LOGGED:2/4/71.....

COLLAR CO-ORDS:...145N..149.7ydsW ANGLE:...-55°... BEARING:....312°..mag..... LOCATION PLAN NO.:..AGU-38.....

INTERVAL CORED		CORE RECOVERY		LITHOLOGY			COMMENTS
FROM	TO	FOOTAGE	%	FROM	TO	DESCRIPTION	(Min., etc.)
212'	214'	2'	100	212'	214'	Pegmatitic and granitic material with couple gneissic zones - occasional patch pyrite	
214'	222'6"	8'6"	100	214'	222'6"	Finely banded gneiss - pyrite common along lineations - lineation 50-60°	
222'6"	224'6"	2'	100	222'6"	224'6"	Fine lineated granite and some pegmatite, trace pyrite, lineation 60-70°	
224'6"	229'6"	5'	100	224'6"	229'6"	Banded gneiss - sparse pyrite - trace pyrrhotite, lineation 70°	
229'6"	231'6"	2'	100	229'6"	231'6"	Fine gneiss - very finely banded, well lineated, some pyrite along lineation and possible chalcopyrite, lineation 60-70°	chalco?
231'6"	233'6"	2'	100	231'6"	233'6"	Granite with pegmatitic bands - lineation 80°	
233'6"	243'	9'6"	100	233'6"	243'	Banded gneiss - some coarse pegmatite especially near base of interval - pyrite and pyrrhotite and some chalcopyrite - wavy lineation near base - average lineation 70° At 234'6" fractures at 45° directly opposed to lineation.	chalco
243'	247'6"	4'6"	100	243'	247'6"	Quartz felspar pegmatite - trace pyrite	
247'6"	257'	9'6"	100	247'6"	257'	Banded gneiss - lineation 60-70° band pegmatite at 248'6" and fracture at 20° - sparse pyrrhotite in upper part common pyrite in lower part - trace chalcopyrite at 256'.	chalco
257'	261'	4'	100	257'	261'	Pegmatite with trace pyrite -Gneissic band at 260' carrying pyrite	
261'	294'	32'	96	261'	294'	Gneiss - lineation 60° lineation variable and sometimes wavy - slightly graphitic near 290' . Carrying pyrite and pyrrhotite especially in upper part.	

MINOIL SERVICES PTY. LTD. : CORE DRILLING LOG

CLIENT: AGU ..... PROSPECT: Mt. Perseverance. HOLE NUMBER: ODH 4 ..... TYPE: Diamond .....

DRILLER: Northbridge Pty. Ltd. ..... GEOLOGIST: T. Wilkin Smith ..... DATE LOGGED: 2/4/71 .....

COLLAR CO-ORDS: 145N. 1497ydsW. ANGLE: -55° ..... BEARING: 312° MAG. ..... LOCATION PLAN NO.: AGU-38 .....

INTERVAL CORED		CORE RECOVERY		LITHOLOGY			COMMENTS
FROM	TO	FOOTAGE	%	FROM	TO	DESCRIPTION	(Min., etc.)
294'	301'	7'	100	294'	301'	Poorly lineated gneiss or micro granite trace pyrite and pyrrhotite, lineation 50°	
301'	304'	3'	100	301'	304'	Gneiss grading to dark slaty schist - possibly slightly graphitic - average lineation 80° - lineation often wavy - abundant pyrite trace pyrrhotite, chalcopyrite	trace chalco
304'	317'6"	13'6"	100	304'	317'6"	Quartz - felspar pegmatite	
317'6"	320'6"	3'	100	317'6"	320'6"	Poorly lineated gneiss or micro granite, sparse pyrite and pyrrhotite, average lineation 60°	
320'6"	333'6"	13'	100	320'6"	333'6"	Fine grey gneiss, pyrite, average lineation 70-80° Schistose and possibly graphitic for 6" at 326'. Pegmatitic band at 329'6". Odd fracture at 45° opposed to lineation. Pyrite. Trace chalcopyrite in pyrite at 332'6"	" "
333'6"	342'4"	9'	100	333'6"	342'4"	Gneiss with coarser banding and wavy lineation - some large augen structure, pyrite common. Pyrrhotite and trace chalcopyrite in 3". Quartz zone at 336'6" ↓2" Sparse pyrrhotite, pyrite & trace chalcopyrite in quartz band at 337'6". Trace chalcopyrite between 337'6" and 342'4". Slightly graphitic	" " chalco
342'4"	344'	1'8"	100	342'4"	344'	Quartz with patches pyrite containing some chalcopyrite, some dark graphitic and micaceous bands.	chalco
344'	346'8"	2'8"	100	344'	346'8"	Gneiss as above - very sparse amounts pyrite, pyrrhotite and chalcopyrite	"
346'8"	347'8"	1'	100	346'8"	347'8"	Quartz - scattered small patches of pyrrhotite and chalcopyrite.	"

MINOIL SERVICES PTY. LTD. : CORE DRILLING LOG

CLIENT: AGU PROSPECT: Mt. Perseverance HOLE NUMBER: QDH. 4 TYPE: Diamond

DRILLER: Northbridge Pty. Ltd GEOLOGIST: T. Wilkin Smith DATE LOGGED: 3/4/71

COLLAR CO-ORDS: 145N. 1497ydsW. ANGLE: -55° BEARING: 312° mag. LOCATION PLAN NO.: AGU-38

INTERVAL CORED		CORE RECOVERY		LITHOLOGY			COMMENTS
FROM	TO	FOOTAGE	%	FROM	TO	DESCRIPTION	(Min., etc.)
347'8"	364'	16'4"	100	347'8"	364'	1' adamellite then passes below into partly graphitic white and dark banded gneiss and pyrite sparse to common - very sparse to trace amounts pyrrhotite and chalcopyrite Average lineation 60° -, 354-357' - increases in chalcopyrite content together with pyrrhotite. Chalcopyrite decreases in the bottom 1/3 of the section - pyrrhotite remains in trace amounts.	chalco
364'	372'4"	8'4"	100	364'	372'4"	Micro granite or poorly lineated gneiss average lineation 50-70° - some dark graphite bands - odd 3" quartz band - sparse pyrrhotite pyrite - trace chalcopyrite	
372'4"	374'6"	2'2"	100	372'4"	374'6"	Gneiss with graphitic bands and some 3" quartz bands, average lineation 60-70° sparse pyrite and pyrrhotite with some chalcopyrite. Speck blue grey sulphide (?bornite) at 374'	"
374'6"	375'6"	1'	100	374'6"	375'6"	Well lineated fine gneiss - lineation 70-60°	
375'6"	379'	3'6"	100	375'6"	379'	Gneiss with some quartz bands - pyrrhotite and chalcopyrite present + bornite? Chlorite and chalcopyrite obvious at 379' also unidentified grey mineral	"
379'	381'6"	2'6"	100	379'	381'6"	Quartz with some gneissic bands. Chloritic band near base. Sparse pyrrhotite, chalcopyrite and little bornite? chalcopyrite, bornite? obvious at 381'6". Average lineation 60°	"
381'6"	391'6"	10'	100	381'6"	391'6"	Gneiss becoming fine in lower part Lineation 70-80° Pyrite common in upper part. Sparse to trace chalcopyrite pyrrhotite.	"

MINOIL SERVICES PTY. LTD. : CORE DRILLING LOG

CLIENT: AGU PROSPECT: Mt Perseverance HOLE NUMBER: ODH 4 TYPE: Diamond

DRILLER: Northbridge Pty Ltd GEOLOGIST: T. Wilkin. Smith DATE LOGGED: 4/4/71 & ...

COLLAR CO-ORDS: 145N. 1497yds W... ANGLE: -55°. BEARING: 312° mag. LOCATION PLAN NO.: AGU-38...5/4/71..

INTERVAL CORED		CORE RECOVERY		LITHOLOGY			COMMENTS
FROM	TO	FOOTAGE	%	FROM	TO	DESCRIPTION	(Min., etc.)
391'6"	401'	9'6"	100	391'6"	401'	Coarser gneiss, grey graphitic, banded, some lighter coloured bands containing large felspars. Pyrite, sparse chalcopyrite	chalco
						Average lineation 60°	
						Mineralization along lineation	
401'	403'	2,	100	401'	403'	Microgranite-grey, sparse pyrrhotite.	
403'	412'6"	9'6"	100	403'	412'6"	Well lineated gneiss - partly graphitic, partly micaceous	
						Lineation 70° at top, 50° at bottom.	
						Sparse pyrite, pyrrhotite, trace chalcopyrite	
412'6"	413'9"	1'3"	100	412'6"	413'9"	Microgranite	
413'9"	418'6"	4'9"	100	413'9"	418'6"	6" gneiss as above, then fine microgranite,	
						sparse pyrrhotite and faint trace chalcopyrite	
						at 417'. lineation 70°	
418'6"	437'3"	18'3"	95	418'6"	437'3"	Gneiss as for 403-412'6"-non-graphitic	
						Micro granitic for 1'6" from 420',	
						lineation 60-70°, sparse pyrrhotite and	
						trace chalcopyrite to 430'. Bit chalcopyrite	
						at 436'	
437'3"	438'	9"	100	437'3"	438'	Granite and microgranite	
438'	483'	45'	100	438'	483'	Banded and well lineated gneiss - lineation	
						60-70°. Very sparse pyrite and pyrrhotite	
						and trace chalcopyrite mainly above 445' -	
						pyrrhotite and some chalcopyrite at 440'6"	
						Odd grain pink mineral in gneiss. Almost	
						no trace mineralization below 450'.	
483'	496'6"	13'6"	100	483'	496'6"	Well lineated and finely banded gneiss -	
						finer over first 4'. Pyrrhotite with	
						some chalcopyrite at 491'9". Trace pyrite	
						Average lineation 60°	

MINOIL SERVICES PTY. LTD. : CORE DRILLING LOG

CLIENT: AGU PROSPECT: Mt Perseverance HOLE NUMBER: ODH.4 TYPE: Diamond

DRILLER: Northbridge Pty. Ltd. GEOLOGIST: T. Wilkin Smith DATE LOGGED: 5.&.6/4/71

COLLAR CO-ORDS: 145N 1497ydsW ANGLE: -55° BEARING: 312° mag. LOCATION PLAN NO.: AGU-38

INTERVAL CORED		CORE RECOVERY		LITHOLOGY			COMMENTS
FROM	TO	FOOTAGE	%	FROM	TO	DESCRIPTION	(Min., etc.)
496'6"	499'	2'6"	100	496'6"	499'	Fine gneiss (almost microgranite) and trace pyrite. Average lineation 50-60°	
499'	536'6"	37'6"	100	499'	536'6"	Banded and schistose gneiss, micaceous, chloritic in parts. Pyrrhotite with some chalcopyrite at 514'6". Pegmatite band for 6" at 518'. Pod muscovite at 519'6"	
						Pyrrhotite with some chalcopyrite at 531'6"	
						" " " " at 534'	
						In ~~general negligible mineralization~~ over the interval.	
536'6"	566'6"	30'	100	536'6"	566'6"	Micaceous schistose gneiss, in part chloritic	
						Pyrrhotite with some chalcopyrite at 540'6"	
						1' pegmatitic band with trace pyrite at 543'	
						~~Trace pyrrhotite with chalcopyrite in~~ fine gneiss at 544'6"	
						Pyrrhotite and trace chalcopyrite at 555'3" in fine gneiss	
						Some 6" bands of fine gneiss with very planer lineation.	
						~~Lineation 80°~~ at top 70° at bottom	
						~~Trace pyrrhotite and pyrite scattered~~ throughout.	
566'6"	636'6"	70'	100	566'6"	636'6"	Banded and schistose gneiss, chloritic	
						Faint trace ~~chalcopyrite~~ at 574'	Average lineation 70°
						Faint trace chalcopyrite in pyrrhotite at 589'6". At 618'6" for 2' more genuinely gneissic gand - less micaceous, partly	
						pegmatitic. Microgranitic for 2' at 633'	
						Trace pyrite	

0 67

MINOIL SERVICES PTY. LTD. : CORE DRILLING LOG

CLIENT: AGU PROSPECT: Mt. Perseverance HOLE NUMBER: ODH 4 TYPE: Diamond

DRILLER: Northbridge Pty. Ltd. GEOLOGIST: T. Wilkin Smith DATE LOGGED: 6/4/71

COLLAR CO-ORDS: 145N 1497ydsW. ANGLE: -55° BEARING: 312 mag LOCATION PLAN NO.: AGU-38

INTERVAL CORED		CORE RECOVERY		LITHOLOGY			COMMENTS
FROM	TO	FOOTAGE	%	FROM	TO	DESCRIPTION	(Min., etc.)
636'6"	696'6"	60'	100	636'6"	696'6"	Micaceous gneiss - microgranitic and pegmatitic bands, 6" quartz trace pyrite at 638'. Microgranitic for 2' at 639'6" Pegmatitic band at 645' Micro granite for 1'6" at 646'. 1' pegmatite at 684'6". Talcose at 686'6" Average lineation 70°	trace pyrite

AUSTRALIAN GOLD & URANIUM PTY. LTD.

SPECIAL MINING LEASE 419

OLARY AREA

SOUTH AUSTRALIA

REPORT ON DRILLING

AT

OLARY - MT. PERSEVERANCE
CENTRALIA
ERINGA
FAUGH-A-BALLAH

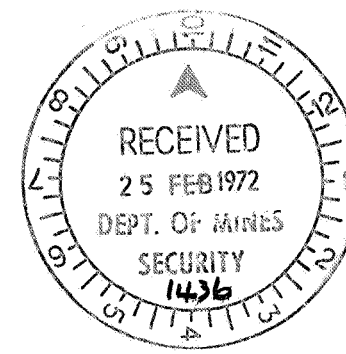
BY

R. GRASSO M.Sc.

OF

MINOIL SERVICES PTY. LTD.

ADELAIDE S.A.



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SUMMARY

Although previous diamond drilling failed to intersect significant mineralization at the Olary and Mt. Perseverance prospect it was decided to further test the geochemical and I.P. anomaly of the Olary - Mt. Perseverance area by three shallow percussion holes. At the same time the Centralia, Eringa and Faugh-a-ballah prospects were also drilled.

Although mineralization was intersected in most holes, no economic grades were cut.

No further work is proposed for the prospects tested except that V.L.F. traverses are suggested to follow up the secondary I.P. anomaly recorded on line 400 West between 1400 and 1800 N. This may result in further drilling targets.

INTRODUCTION

Special Mining Lease No. 419 covers an area of approximately 309 square miles in the Olary district of South Australia. This lease expires on the 20th May 1972. Its location is shown on plan AGU 33.

Previous geochemical and I.P. surveys indicated a significant I.P. anomaly supported by anomalous surface silver values (up to 14 ozs of silver per ton) (plan AGU 34).

Australian Gold & Uranium Pty. Ltd. previously drilled the Olary Silver Mine but because of drilling difficulties the hole did not reach target depth. The Mt. Perseverance prospect was also drilled by the company but no economic intersection was cut.

None of the other prospects had previously been drilled.

The current drilling was designed to check the prospects to see whether or not they warranted further diamond drilling.

DRILLING

In all, 9 holes with a total of 1008 feet were drilled in 4 prospects.

Prospect	Hole	Depth Reached	
Olary - Mt. Perseverance	OP1	100'	
	OP2	90'	
	OP3	90'	
Centralia	CP1	144'	
	CP2	183'9"	143'-183'9" diamond drilled

Prospect	Hole	Depth Reached	
Eringa	EP1	170'	
	EP2	90'	
Faugh-a-ballah	FP1	40'	
	FP1A	100'	74'-100' diamond drilled

1. The Olary - Mt. Perseverance Prospect

Three shallow percussion holes were drilled on this prospect near Mt. Perseverance OP1, OP2 and OP3. These holes were sited nearest to the location of the anomalous geochemical silver values. Plan AGU 34 shows their location.

Mineralization was intersected on all three holes as is seen in the lithologic logs in Appendix I and in the assay results in Appendix II.

The results show that no economic grade over reasonable width were intersected in any of the holes.

The strong I.P. anomaly recorded is apparently mainly due to graphite and magnetite and to a less extent to sulphides.

2. Centralia Prospect

Two holes were drilled on this prospect, CP1 was later deepened by diamond drilling to 183'9". The location of both holes is shown in plan AGU 11. Although abundant copper values had been recorded in surface sampling and an I.P. anomaly was recorded in the zone of mineralization, the drilling failed to intersect economic mineralization. A 40 foot composite sample of the mineralized intersection gave only 0.1% copper.

No further work is proposed for this prospect.

3. Eringa Prospect

Two holes were drilled on this prospect on either side of the surface expression of a quartz vein (plan AGU 26).

No economic mineralization was cut in either of these two holes and no further work is proposed for this prospect.

4. Faugh-a-Ballah

The Faugh-a-Ballah prospect consists of siliceous and ferruginous outcrops. FP1 was sited to cut the most extensive of these outcrops at about 50 feet below the surface. Drilling difficulties were experienced and the hole was later redrilled and deepened by diamond drilling to 100 feet. Apart from abundant pyrite mineralization with a trace of cobalt (250 parts per million) no other significant mineralization was cut. Plan AGU 35 shows the location of the holes.

No further work is proposed for this prospect.

CONCLUSIONS & RECOMMENDATIONS

The drilling results indicate that no further work is warranted for any of the prospects tested. However, it is proposed to follow up the secondary I.P. anomaly north west of the main Olary I.P. anomaly by V.L.F. traverses, in an effort to establish drilling targets. The anomaly may be similar to that representing non economic mineralization of the Olary - Mt. Perseverance lode but the secondary anomaly should be checked as it could represent a sulphide differentiate of economic significance.

R. Grasso

R. Grasso M.Sc.

Adelaide
31st January, 1972.

APPENDIX 1

Lithologic Logs

MINOIL SERVICES PTY. LTD.

OLOGIST D. LOPES

CLIENT Australian Gold & Uranium Pty. Ltd

ILLER Northbridge Pty. Ltd.

WELL No. O.P. 1

DRILL ANGLE -62°

BEARING 295° mag.

TE LOGGED 29/4/71

TOTAL DEPTH 100'

LOCATION . MT. PERSEVERANCE

FORM L

INTERVAL	LITHOLOGY	%	DESCRIPTION
o' - 16'	Granite Gneiss	50% Qtz. 40% Fels 10% Access. Pred. white micas	Top soil & decomposed granite gneiss becoming schistose.
16' - 25'	" "		As above with limonite staining
25' - 35'	Alternating granite gneiss & narrow bands of mica schist.	40% Qtz. 30% fels ≈30%micas	Highly weathered schistose gneiss and mica schist
35' - 40'	Granite gneiss	50%Qtz. 40%Fels 10%Micas	Weathered with narrow veinlets of pegmatite? Often fractured.
40' - 42'	Mica schist	60% micas 40%Qtzt. &Felsp.	Weathered. Soft drilling
42' - 56'	Granite gneiss	50% Qtz. 30% Fels. 20% micas	Weathered. Occasional micaceous bands. Highly fractured.
56' - 58'	Schist/Gneiss mixture	50%micas 30%Qtz. 20%Fels.	Highly weathered puggy material no visible mineralization.
58' - 75'	Qtz vein & biotite graphite schist.		Alternating bands of graphitic biotite, schist and quartz veins. Highly fractured. Minor copper staining is only visible mineralization as 2' composite samples.

MINOIL SERVICES PTY. LTD.

LOGIST D. Lopes

CLIENT Australian Gold & Uranium Pty. Ltd

LLER Northbridge Pty. Ltd.

WELL No. O. P. 1 continued

DRILL ANGLE -62°

BEARING 295° mag.

TE LOGGED 29/4/71

TOTAL DEPTH 100'

LOCATION: MT. PERSEVERANCE

FORM L

NTERVAL	LITHOLOGY	%	DESCRIPTION
75' - 90'	Pegmatite & biotite-graphite schist		Alternating pegmetite & graphitic biotite schist, Highly fractured. Bands often less than 2'.
90'-100'	Pegmatite	70%Qtz 25% Fels 5% Musc.	Relatively unweathered. Pegmatite well exposed on north side of quartz vein.
END			Suggested assays from 56' - 90' composite 2' samples.

MINOIL SERVICES PTY. LTD.

0 78

FOLOGIST D. Lopes

CLIENT Australian Gold & Uranium Pty. Ltd.

RILLER Northbridge Pty. Ltd.

WELL No. O.P. 2

~~XXXXXXX~~ DRILL ANGLE -62°

BEARING 290° mag.

ATE LOGGED 28/4/71

TOTAL DEPTH 90'

LOCATION MT. PERSEVERANCE

FORM L

INTERVAL	LITHOLOGY	%	DESCRIPTION
0' - 12'	Granite Gneiss	50% Qtz 40%Felsp 10%Access (Pred. white micas)	Top soil and decomposed granite gneiss.
12' - 16'	As above	"	Slightly ferruginous - (limonite staining)
16' - 20'	" "	"	Less weathered
' - 38'	" "	"	Weathered - increasing amounts of visible micas Muscavite/Sericite, Biotite.
38' - 41'	" "	"	Ferruginous again
41' - 55'	" "	"	Difficulty drilling because of fractures
55' - 65'	" "	50-60 Qtz 30-40felsp ≈ 10 micas	Small amount of malachite Increasing amount of quartz
65' - 84'	Qtz vein (highly fractured)	90% qtz. 10% Jasp. & Musc.	Varying amounts of jaspilite No visible mineralization vughy in places (occasionally large chips
84' - 90'	Biotite - graphite schist	60% Biot. 10-20% Graph. ≈20% Qtz. & Access.	Graphite - biotite schist with quartz veinlets.
End			Suggested assay interval 54' - 84' as 2' composite samples.

MINOIL SERVICES PTY. LTD.

LOGIST D. Lopes

CLIENT Australian Gold & Uranium Pty. Ltd.

RILLER Northbridge Pty. Ltd.

WELL No. O.P. 3

~~HOLE LOG~~ DRILL ANGLE - 62°

BEARING 295°

ATE LOGGED 29/4/71

TOTAL DEPTH 90'

LOCATION MT. PERSEVERANCE

FORM L

INTERVAL	LITHOLOGY	%	DESCRIPTION
0' - 14'	Granite Gneiss	50% Qtz 40% Fels. 10% Acces.	Decomposed, fragments coated with calcrete. Silt/sand top soil.
14' - 25'	" "	"	Less weathered - containing schistose fragments.
25' - 34'	" "	"	Highly weathered. Extremely fractured Hole caving in much of material coming from top 10' of the hole. Necessary to case top 10'.
1' - 62'	Granite Gneiss/ biotite schist	40% Qtz. 30% Fels. 30% Micas	Less weathered. Mixture of granitic material and biotite schist.
62' - 68'	Granite Gneiss	50% Qtz. 40% Fel. 10% Micas (sericite? biotite phlogopite)	Slightly weathered. Occasional fractures. Difficult to drill.
68' - 87'	Qtz/biotite schist	40% Qtz 30%Biotite 10%white micas & graphite & feldspars	Qtz vein? Highly broken. No visible mineralization.
87' - 90'	graphitic biotite schist	70%biotite 20% Qtz. 10%Felds & graphite	Schist exposed to north of shaft correlates with drill samples
nd			Suggested assay interval 68'-90'

MINOIL SERVICES PTY. LTD.

0 80

OLOGIST D. LOPES — CLIENT Australian Gold & Uranium Pty. Ltd.

RILLER Northbridge Pty. Ltd. — WELL No. C.P. 1

~~EXXXXXXX~~ DRILL ANGLE -60° — BEARING 198°

ATE LOGGED 5/6/71 — TOTAL DEPTH 144'

LOCATION - CENTRALIA PROSPECT — FORM L

INTERVAL	LITHOLOGY	%	DESCRIPTION
0' - 10'	Granite Gneiss	50% Qtz. 30% Felds 10% micas 10% magnet ite	Highly weathered iron stained minor amounts of copper carbonates from mullock heap (drilling under mullock heap)
10' - 32'	" "	"	Less weathered as above but no traces of copper
32' - 108'	" "	"	Unweathered unmineralized
' - 144'	" "	"	Occasional traces of chalcopyrite and copper carbonates. Increasing magnetite.
	Hole abandoned at 144' - broken tungsten. Failed to clear hole. Intersection expected circa 130' - 160'. Water at 143'.		
			Suggested assay interval 100' - 144' consisting of 4' composite samples.
	Cored 144' - 183'9" - logged by T. J. Kennedy 30/9/71.		

MINOIL SERVICES PTY. LTD. : CORE DRILLING LOG

CLIENT: Australian Gold & Uranium PROSPECT: Centralia HOLE NUMBER: C.P. 1 TYPE:
DRILLER: Northbridge Pty. Ltd. GEOLOGIST: T. J. Kennedy DATE LOGGED: 30/9/71
COLLAR CO-ORDS: ANGLE: -60° BEARING: 198° LOCATION PLAN NO.:

INTERVAL CORED		CORE RECOVERY		LITHOLOGY			COMMENTS
FROM	TO	FOOTAGE	%	FROM	TO	DESCRIPTION	(Min., etc.)
143	183'9"	40'9"	100	143	163'5"	GNEISS. Hard and grey. Well foliated and consists mainly of quartz and mica. Some minor graphitic bands of up to ⅛" wide at from 30° to 60° to core axis. Soft green band ½" across at 45° to core axis at 163'.	Blebs of chalcopyrite up to 1/8" at 144'6" and 150'10"
				163'5"	165'5"	MICA SCHIST. Grey, medium grained. Consists entirely of quartz and mica.	Lineation at 45° to core axis
				165'5"	169'	GNEISS. Hard and grey, coarse to medium grained. Well foliated in parts. Consists mainly of quartz and mica. A few narrow graphitic bands.	Lineation direction variable
				169'	172'9"	GRANITE GNEISS. Hard, grey and pink, with narrow graphite bands. Narrow quartz vein crossing at 20° to core axis.	contains isolated blebs of chalcopyrite.
				172'9"	183'9"	MICRO-GRANITE. Hard, pink and grey. Medium to coarse grained. Consists essentially of quartz, feldspar and mica.	

MINOIL SERVICES PTY. LTD. 0 82

LOGIST D. LOPES

CLIENT Australian Gold & Uranium Pty. Ltd.

LLER Northbridge Pty. Ltd.

WELL No. C.P. 2

DRILL ANGLE -56°

BEARING 46° mag.

TE LOGGED 6/6/71

TOTAL DEPTH 58'

LOCATION: CENTRALIA PROSPECT

FORM L

NTERVAL	LITHOLOGY	%	DESCRIPTION
0' - 12'	Granite Gneiss	50% Qtz 30% Fels 10% Micas 10% Magnetite &/or limonite	Highly weathered - some mullock contamination
2' - 28'	" "	"	Relatively unweathered Minor silicious veinlets.
8' - 58'	" "	Increase in magnetite	Traces of chalcopyrite, however running field tests detected no copper.
	END OF HOLE		Suggested assay interval 30'-58' with 4' composite samples depending on results of C.P. 1 assays.

MINOIL SERVICES PTY. LTD.

0 83

LOGIST D. Lopes

CLIENT Australian Gold & Uranium Pty. Ltd

LLER Northbridge Pty. Ltd.

WELL No. E.P. 1

~~kkxLOGxx~~ DRILL ANGLE -61°

BEARING 140° mag.

TE LOGGED 30/4/71

TOTAL DEPTH 170'

LOCATION - ERINGA PROSPECT

FORM L

NTERVAL	LITHOLOGY	%	DESCRIPTION
0' - 12'	Top soil & decomp. silt-stone & slates	sand clay rock frag.	Decomposed siltstone and slates with calcrete fragments.
2' -170'	Slates & silt stones		Finely alternating beds of fine grained siltstones and siliceous slates with traces fine grained pyrite probably as an original constituent.
ND OF HOLE			No assays recommended.

MINOIL SERVICES PTY. LTD. 0 84

LOGIST D. LOPES

CLIENT Australian Gold & Uranium Pty. Ltd.

LLER Northbridge Pty. Ltd.

WELL No. E.P. 2

~~L LOG~~ DRILL ANGLE

BEARING 318° mag.

E LOGGED 3/4/71

TOTAL DEPTH 90'

LOCATION ERINGA PROSPECT

FORM L

NTERVAL	LITHOLOGY	%	DESCRIPTION
0' - 8'	Top soil and decomposed siltstone & slates.		Decomposed siltstone and slates with calcrete fragments in first ten feet.
8' -90'	Slates & silt stones		Alternating beds of slates and siltstones. Traces of very fine grained pyrite probably as original constituent.
ND OF HOLE			No assays recommended.

MINOIL SERVICES PTY. LTD.

0 85

OLOGIST D. LOPES

CLIENT Australian Gold & Uranium Pty. Ltd.

RILLER Northbridge Pty. Ltd.

WELL No. F.P. 1

DRILL ANGLE -60°

BEARING 35° mag.

ATE LOGGED 6/5/71

TOTAL DEPTH 40'

LOCATION: FAUGH-A-BALLAGH

FORM L

INTERVAL	LITHOLOGY	%	DESCRIPTION
0' - 14'	Granite Gneiss	40% Qtz 30% Fels 20% Mag/ hematite 10%Micas	Highly weathered with hematite hill wash
14' - 28'	" "	"	As above hematite changing to magnetite. Traces of pyrite at 24'
28' - 40'	Grading to a silicious ironstone	50% Qtz 30% Mag. 10% Pyrite 10% fels.	Relatively unweathered Approx 10% pyrite. Occasional speck of chalcopyrite.?
Hole abandoned			Compressor clutch break down Suggested assay interval 28' - 40' of 4' composite samples.

MINOIL SERVICES PTY. LTD. : CORE DRILLING LOG

0 86

CLIENT: Australian Gold & Uranium Pty. Ltd. PROSPECT: Faugh-a-ballah HOLE NUMBER: FP1A TYPE:

DRILLER: K. Phillips GEOLOGIST: P. C. Smith DATE LOGGED: 20/6/71

COLLAR CO-ORDS: 5'SSE of F.P.1. ANGLE: 042° BEARING: Dpn 60° LOCATION PLAN NO.:

INTERVAL CORED		CORE RECOVERY		LITHOLOGY			COMMENTS
FROM	TO	FOOTAGE	%	FROM	TO	DESCRIPTION	(Min., etc.)
0'	40'					As for FP1 logged by D. Lopes	
40'	42'		100			Ironstone - dark grey colour - minor fragments of overlying gneiss - possibly pyrite and or chalcopyrite	
42'	44'		"			Ditto	
44'	46'		"			Ditto	
46'	48'		"			Ditto	
48'	50'		"			Ditto	
50'	52'		90			Ironstone - contaminated - dilution by gneiss from above	
			10	Gneiss		(change of drill rods)	
52'	54'		95	Ironstone		Poor recovery - small % of gneiss contaminated	
			5	gneiss			
54'	56'					Ironstone, minor gneiss - recovery poor	
56'	58'		<100			Ironstone, recovery a little better - less contamination	
58'	60'					Ironstone, very poor recovery - small %age of contamination by gneiss - minor gneiss	
60'	62'					Very poor recovery - contamination too large to take valid sample.	
62'	64'					Ironstone, very poor contaminated - no sample taken	
64'	66'					Ironstone - change of bit - sample however poor unreliable analysis?	
66'	68'					Ironstone, better recovery - small amount of gneiss contamination - visible pyrite	
68'	70'		<100			Minor contamination lighter colour and finer, possible change in the type? Ironstone	
70'	72'		<100			Ditto	
72'	74'		<100			Ditto	

MINOIL SERVICES PTY. LTD. : CORE DRILLING LOG

CLIENT: A.G.U. PROSPECT: Faugh-a-Ballah HOLE NUMBER: FP1A TYPE:

DRILLER: K. Phillips GEOLOGIST: P.C. Smith DATE LOGGED: 20/6/71

COLLAR CO-ORDS: 5' SSE of F.P.1. ANGLE: 042° BEARING: Dpn 60° LOCATION PLAN NO.:

INTERVAL CORED		CORE RECOVERY		LITHOLOGY			COMMENTS
FROM	TO	FOOTAGE	%	FROM	TO	DESCRIPTION	(Min., etc.)
74'	76'		100			Ironstone fine dark grey colour with some visible pyrite	
76'	78'		100			Much more quartz rich than previously - less visible sulphide. Ironstone	
78'	80'		100			Ditto	
80'	82'		100			Ironstone perhaps slightly more iron than above.	
82'	84'		100			Ironstone getting more siliceous	
84'	86'		100			Ditto	
86'	88'		100			Ditto	
88'	90'		100			Ditto	

APPENDIX II

ASSAY RESULTS

JOB: 5398/71....

Semi-Quantitative Spectrographic Analysis Schemes A1,A2,A3,A4,A5 & A6

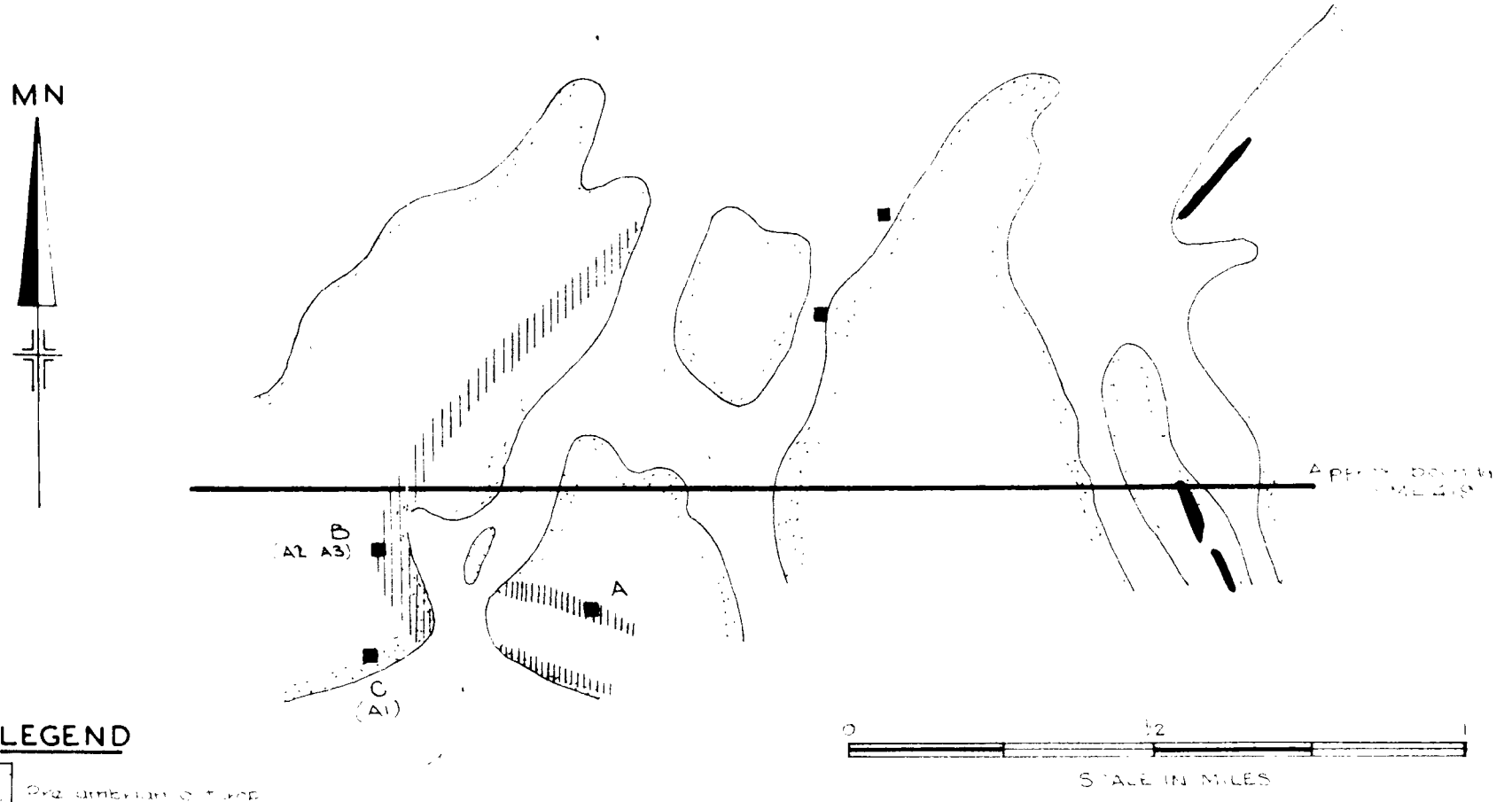
BATCH .....

Results in ppm unless otherwise stated. Detection limits in brackets

Sample No.	OP1 56'-90'	OP2 54'-84'	OP3 68'-90'	CP1 104'-144'	FP1 28'-40'
A1					
Co (5)	40	60	80	10	250
Ni (5)	60	40	60	20	40
Cr (20)	200	180	150	150	60
V (10)	100	80	100	80	100
W (50)	x	x	x	x	x
Mo (3)	8	8	3	x	x
Mn (10)	250	400	800	200	150
Ta (100)	x	x	x	x	x
Nb (20)	x	x	x	x	x
Be (1)	30	10	20	5	3
Th (100)	x	x	x	x	x
Pt (10)	x	x	x	x	x
Pd (10)	x	x	x	x	x
Os (10)	x	x	x	x	x
Ir (2)	x	x	x	x	x
Rh (2)	x	x	x	x	x
Ru (2)	x	x	x	x	x
A2					
Cu (0.5)	1,000	2,000	2,000	1,000	20
Pb (1)	1,200	1,500	1,500	5	3
Zn (20)	600	800	600	x	x
Sn (1)	x	x	1	1	1
Cd (3)	3	3	3	x	x
Bi (1)	1	3	3	x	x
Ag (0.1)	5	5	5	0.1	x
Au (3)	x	x	x	x	x
Ga (1)	20	3	25	25	8

Sample No.	OP1 56'-90'	OP2 54'-84'	OP3 68'-90'	CP1 104'-144'	FP1 28'-40'
A2 Contd.					
Ge (1)	x	x	x	x	x
As (50)	x	x	x	x	x
Sb (30)	x	x	x	x	x
A3					
Te (20)					
Tl (1)					
P (100)					
A4					
Na (50)					
Li (1)					
A5					
K (5)					
Rb (10)					
Cs (30)					
A6					
Ba (50)					
Sr (10)					
Y (10)					
La (100)					
Ce (300)					
Nd (300)					
Pr (100)					
Ti (100)					
Er (100)					
Sc (50)					
Eu (50)					

Results are semi-quantitative. Elements apparently present in concentrations of economic interest should be redetermined



LEGEND

- Pre-Cambrian Outcrop
- Amphibolite
- Pegmatite
- B — Diamond Drill Hole
- (A1) — Sample Location

AUSTRALIAN GOLD AND URANIUM PTY. LTD.

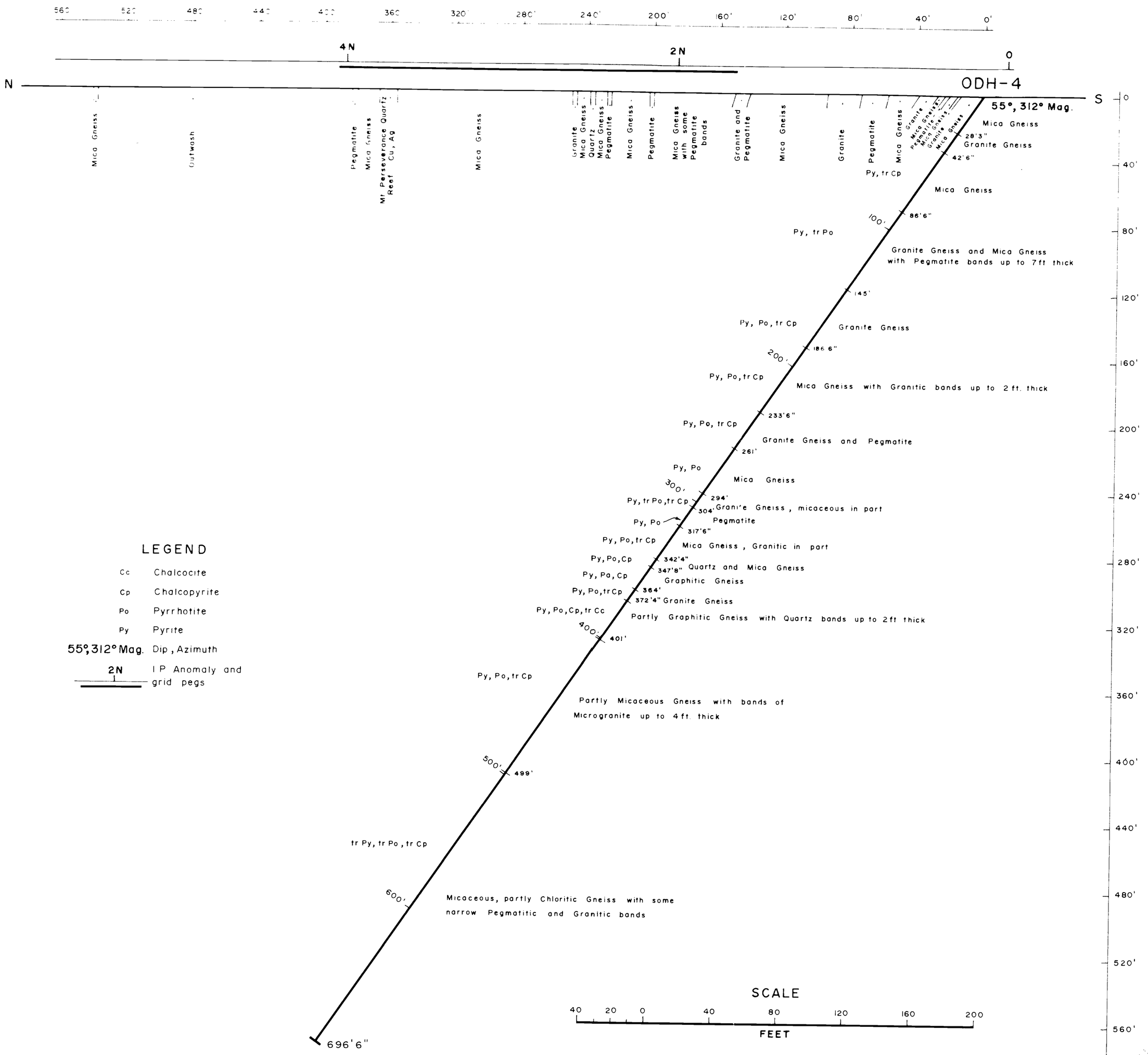
SPECIAL MINING LEASE 419.

SKETCH PLAN

AMEROO MINE AREA

OLARY DISTRICT	SOUTH AUSTRALIA	GEOLOGIST J. WESTHOFF 1436
DATE AUGUST 28 1970		MINOIL SERVICES PTY. LTD. ADELAIDE SA

AGU.37.



LEGEND

Cc	Chalcocite
Cp	Chalcopyrite
Po	Pyrrhotite
Py	Pyrite
55°, 312° Mag.	Dip, Azimuth
2N	I P Anomaly and grid pegs

SCALE

40 20 0 40 80 120 160 200

FEET

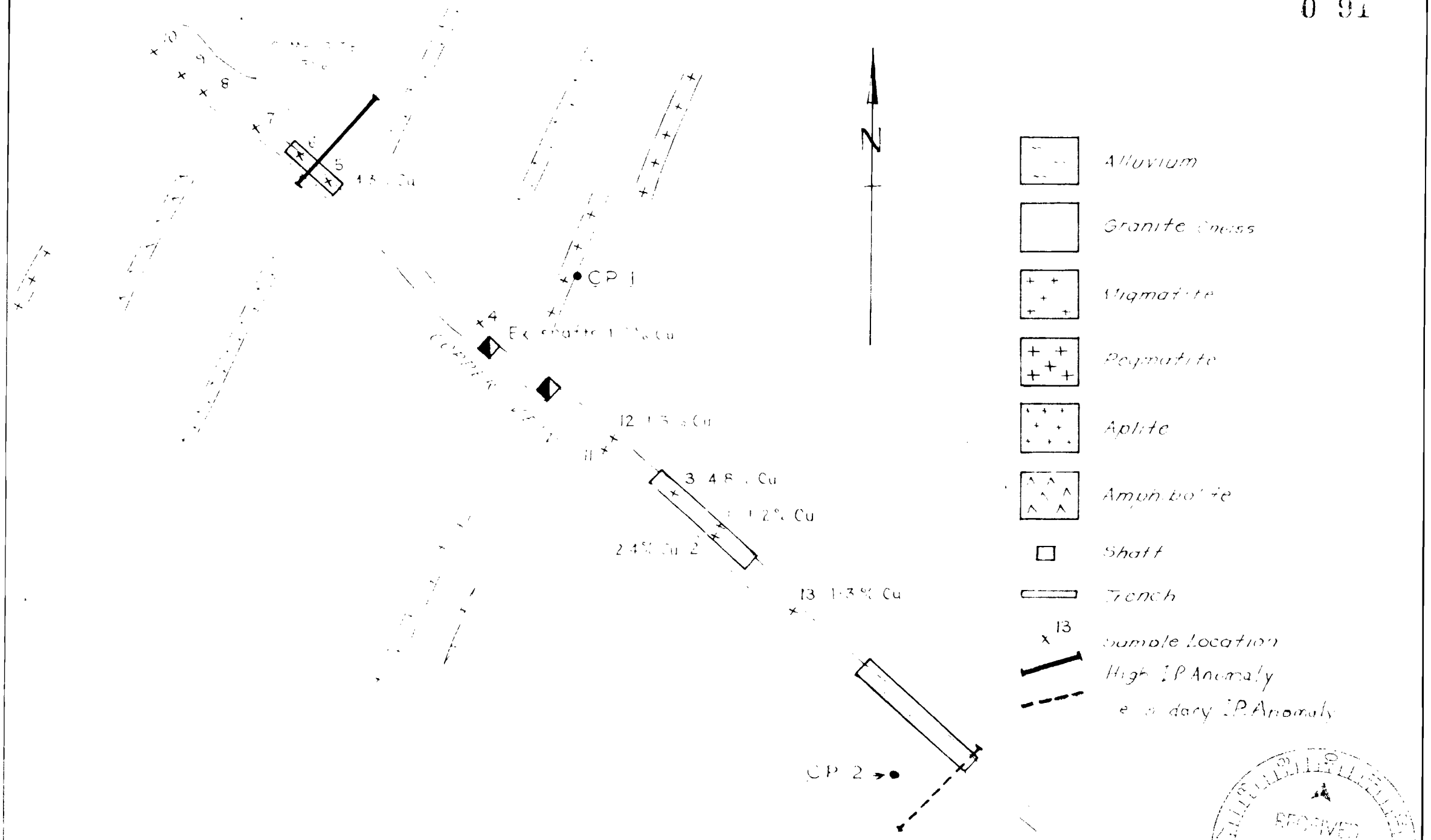
AUSTRALIAN GOLD AND URANIUM PTY. LTD.

SML 419 — MT. PERSEVERANCE PROSPECT AREA

VERTICAL DRILL SECTION ODH-4 LOOKING 42° MN

1436-4

GEOLOGIST T. WILKIN-SMITH	OLARY DISTRICT SOUTH AUSTRALIA	MINOIL SERVICES PTY. LTD. ADELAIDE S.A.
DATE APRIL 1971		



APPROX SCALE IN FEET

50 0 50 100

AUSTRALIAN GOLD AND URANIUM PTY. LTD.

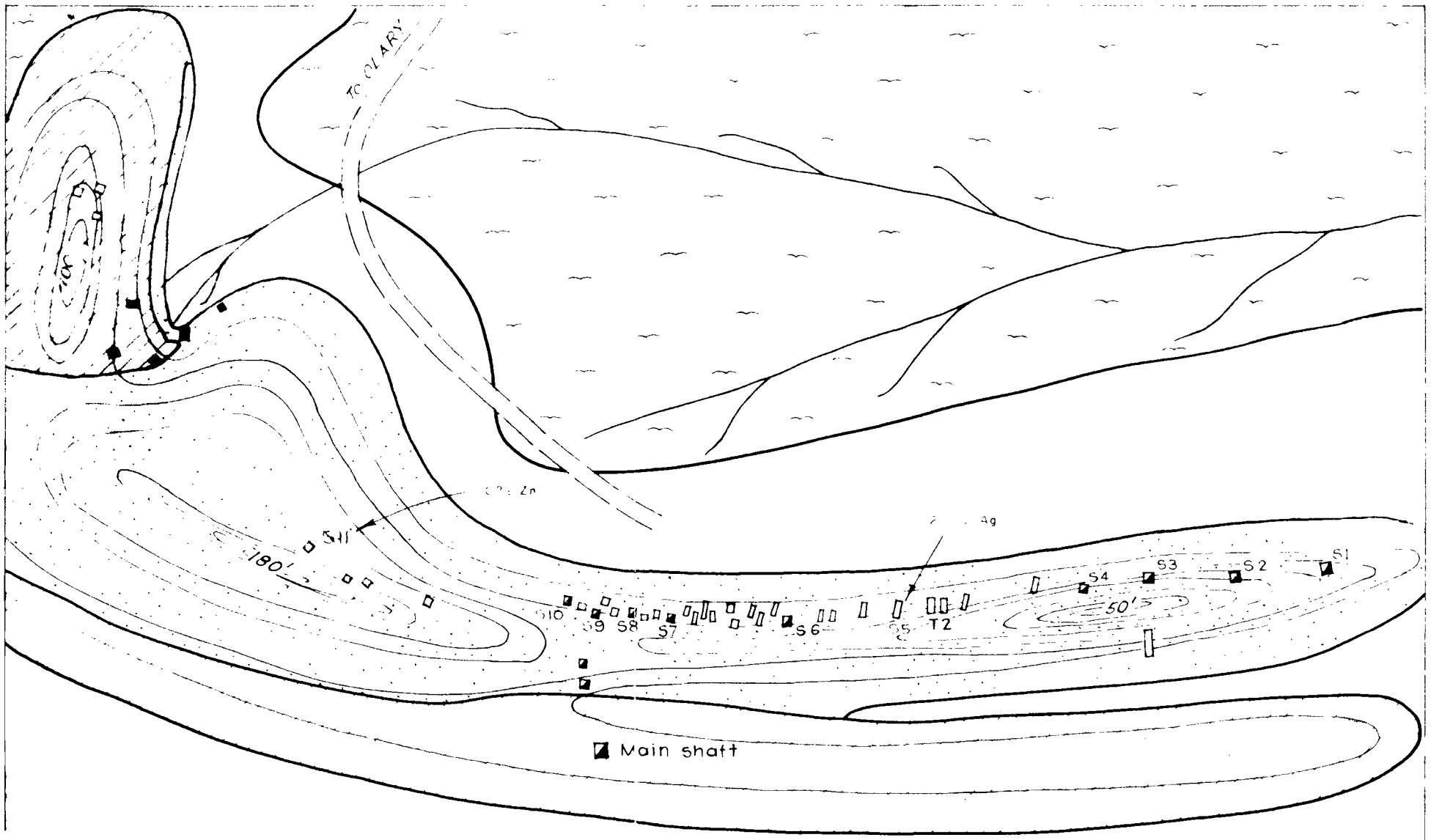
SML 419 OLARY DISTRICT SOUTH AUSTRALIA

CENTRALIA COPPER MINE
GEOLOGICAL SKETCH PLAN

GEOLOGIST: D.LOPEZ	DATE: JUNE 1969	MINOIL SERVICES ADELAIDE

REVISED. 31 JAN. '72

PLAN NO AGU. 11



N

Alluvium

Mt Scree

Quartzite

Slates

(100') Contours (sketched) showing ft above plain level

Huts

Shafts

Trenches

T2 Sample Locations

SCALE IN FEET

500 0 500 1000 1500

(APPROX)

1436

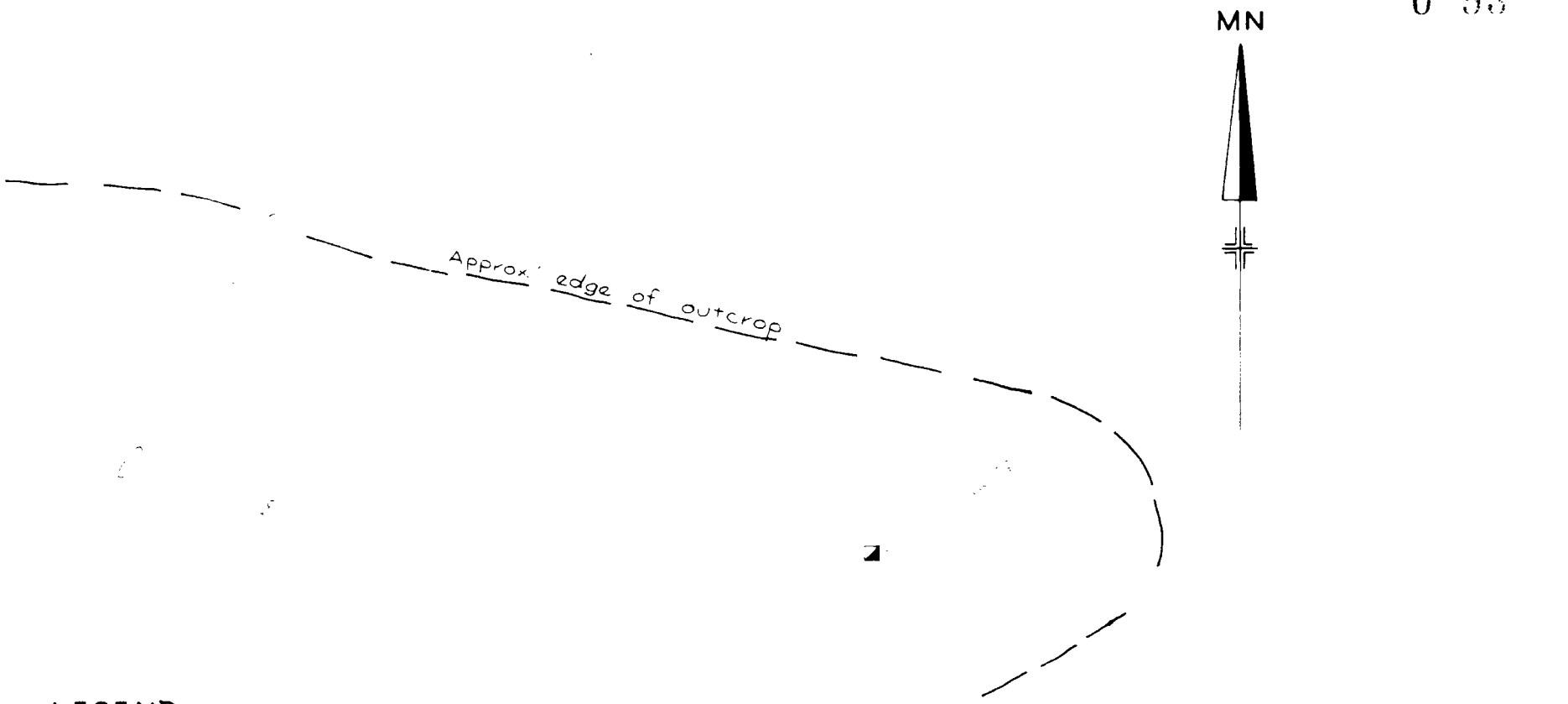
AUSTRALIAN GOLD AND URANIUM PTY. LTD.

SML 419 OLARY DISTRICT SOUTH AUSTRALIA

GEOLOGICAL AND SAMPLING PLAN
KINGS BLUFF MINE

GEOLOGIST: D. LOPEZ REVISED 31·1·71	DATE: JUNE 1969	MINOIL SERVICES ADELAIDE

PLAN NO AGU 20



LEGEND

1436

AUSTRALIAN GOLD AND URANIUM PTY. LTD.

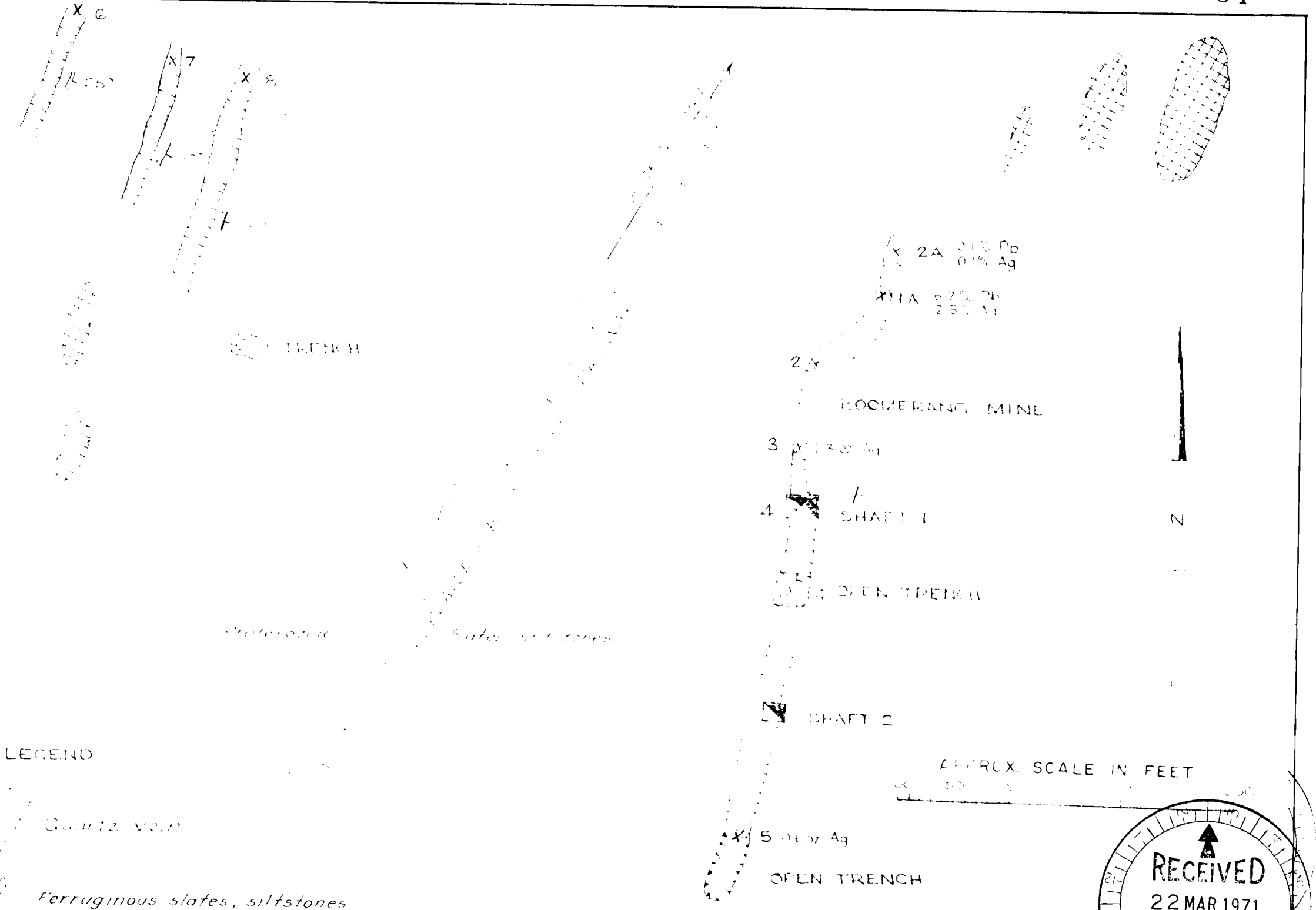
SPECIAL MINING LEASE 419.

SKETCH PLAN

GOLDEN DEWDROP MINE AREA

OLARY DISTRICT.	SOUTH AUSTRALIA	GEOLOGIST J. WESTHOFF
DATE: AUGUST 28 1970		MINOIL SERVICES PTY LTD. ADELAIDE S.A.

SCALE IN FEET



AUSTRALIAN GOLD AND URANIUM PTY. LTD.
SML 419 OLARY DISTRICT SOUTH AUSTRALIA

DIAGRAMATIC SKETCH PLAN
COO-EE & BOOMERANG MINE

GEOLOGIST D LOPEZ Revised 31-1-71	DATE JUNE 1969	MINOIL SERVICES, ADELAIDE

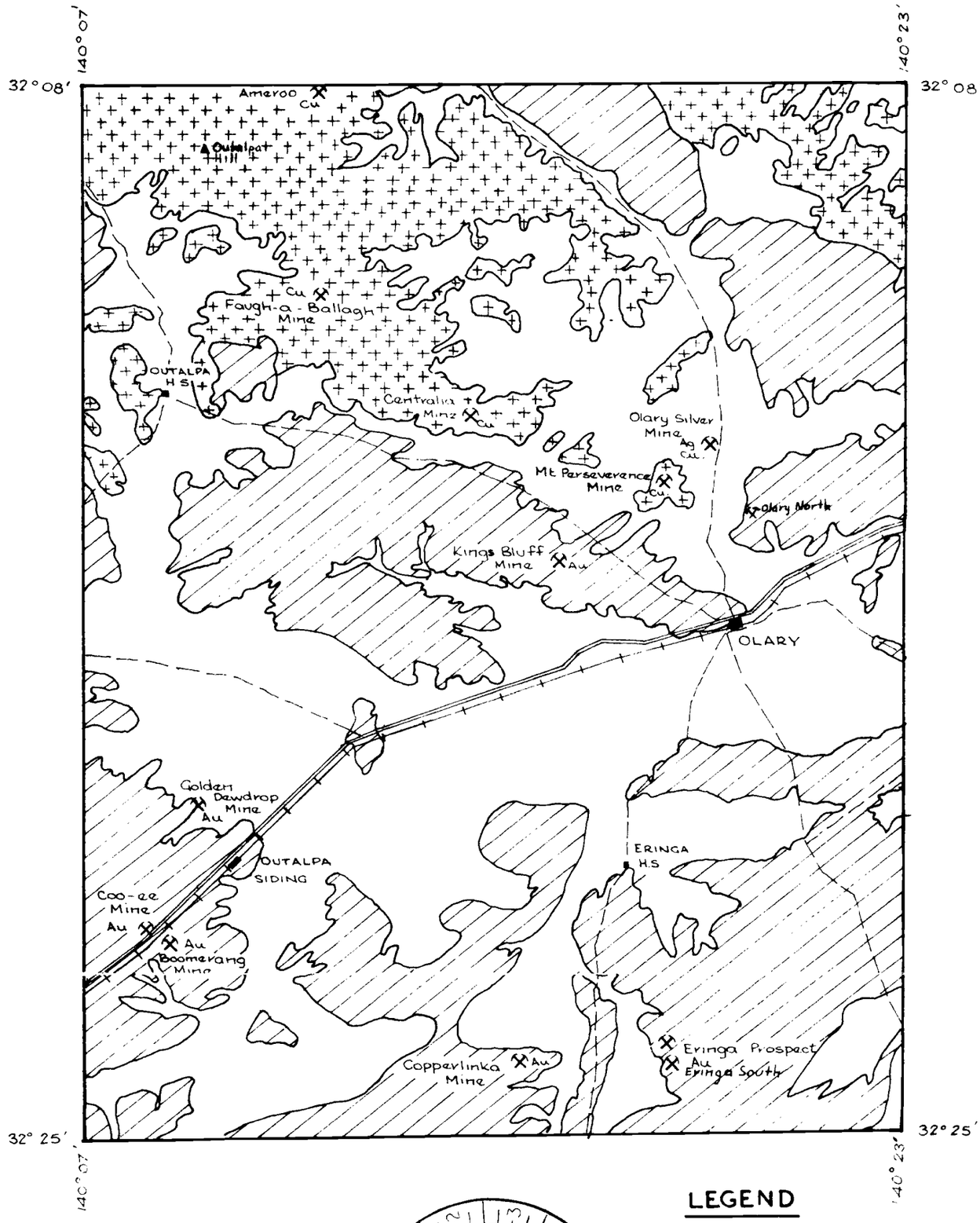
PLAN NO AGU 19

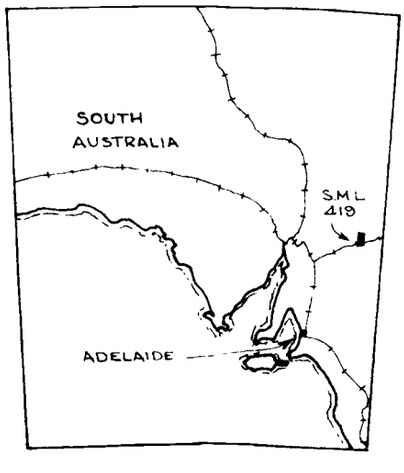
1436

PLAN OF I.P. GRID AND ANOMALIES

OLARY SILVER MINE

1436-1





LEGEND

- UPPER PROTEROZOIC
- LOWER PROTEROZOIC
- PROSPECT LOCATION

2 0 2 4 6

SCALE IN MILES.

AUSTRALIAN GOLD AND URANIUM PTY LTD

SPECIAL MINING LEASE 419.

PLAN SHOWING

PROSPECT LOCATIONS

OLARY DISTRICT	SOUTH AUSTRALIA	GEOLOGIST: J. WESTHOFF
DATE: 28 AUGUST 70'		MINOIL SERVICES PTY. LTD. ADELAIDE S.A.

1436-2

AGU. 33.

MN

F4 > 1% Cu

F 1,2,3 AV > 1% Cu

FP1 & FP1A

F8

F7

F 5,6 AV 1% Cu

MINERALIZED SHEAR

20 SHAFT

20 SHAFT

LEGEND

(Barren)

APPROX. ALL IN FEET

AUSTRALIAN GOLD AND URANIUM PTY. LTD.

SPECIAL MINING LEASE 419.

SKETCH PLAN

FAUGH-A-BALLAGH MINE AREA

OLARY DISTRICT	SOUTH AUSTRALIA	GEOLOGIST J WESTHOFF D LOPEZ
DATE 28 AUGUST 1970		MINOIL SERVICES PTY LTD ADELAIDE SA

REVISED 31-1 72

1436-3

AGU. 35

SHEARING SHED

TN MN

30E 35E 40E 45E

10N 5N 00 5S 10S

1500W

10S 8S 6S 4S 2S 0 2N 4N 6N 8N 10N

ODH4
-55°

Fe

Malachite

Leucocratic pegmatitic gneisses and schists

Mafic gneisses

Micaceous shists

Schists, gneisses
Micaceous quartzites

Quartz bounded by graphitic schists

Schists

Mafic gneisses partially magnetic

Mafic gneisses and quartzites
occasional granitic gneisses

Mafic gneisses, schistose gneisses
occasional pegmatite

80°

Minor amphibolites in schists
Abundant malachite

Non outcropping amphibolites

Granitic gneisses

Cu stained amphibolite

LEGEND

- Pegmatite
- Granite Gneiss
- Gneiss, Schistose Gneiss, Schists
- Alluvium
- Quartz reef
- Fe — Ironstone outcrop
- Area recommended for geochemical survey. (Coin, 1971)

- Fence
- Track
- Shaft
- 10S — I.P. Traverse
- I.P. Anomaly
- ODH4 -55° — Diamond Drill Hole
- 80° — Strike and dip of gneissocity, schistosity
- Strike and dip of lithological contact
- Geological boundary

SCALE

200 100 0 200 400 600 800 1000
FEET

AUSTRALIAN GOLD AND URANIUM PTY. LTD.

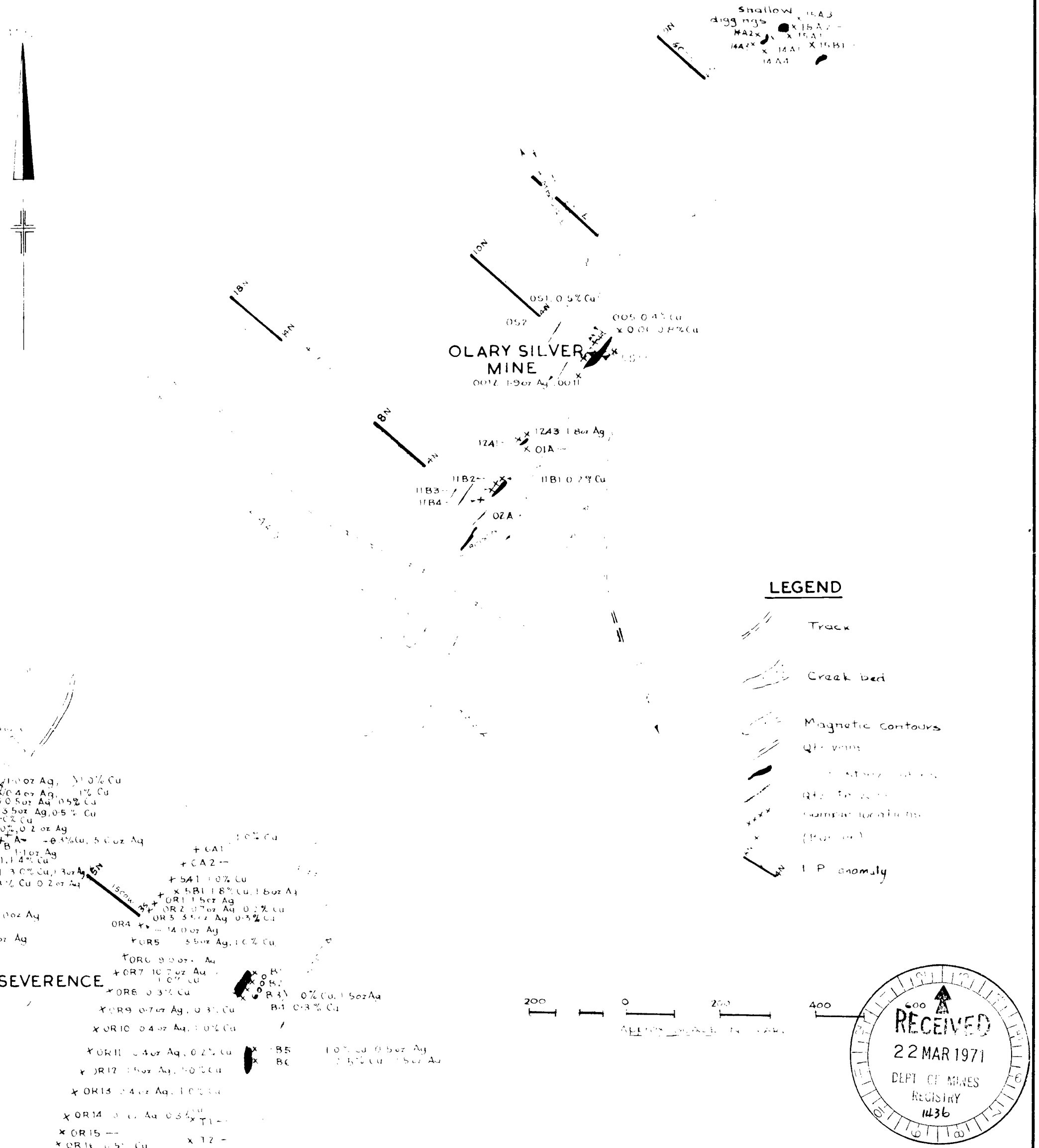
MT. PERSEVERANCE PROSPECT AREA

DIAMOND DRILL HOLE ODH4 LOCATION PLAN 1436-5

GEOLOGIST: T. WILKIN-SMITH	OLARY AREA SOUTH AUSTRALIA	MINOIL SERVICES PTY LTD ADELAIDE S.A.
DATE: APRIL 1971		

SECURITY 1436

AGU-52



LEGEND

- Track
- Creek Bed
- Magnetic Contours
- Qtz veins
- Qtz [illegible]
- Diamond boreholes
- (Proposed)
- I P anomaly

AUSTRALIAN GOLD AND URANIUM PTY. LTD.

SPECIAL MINING LEASE 419.

SKETCH PLAN SHOWING

OLARY SILVER MINE AREA

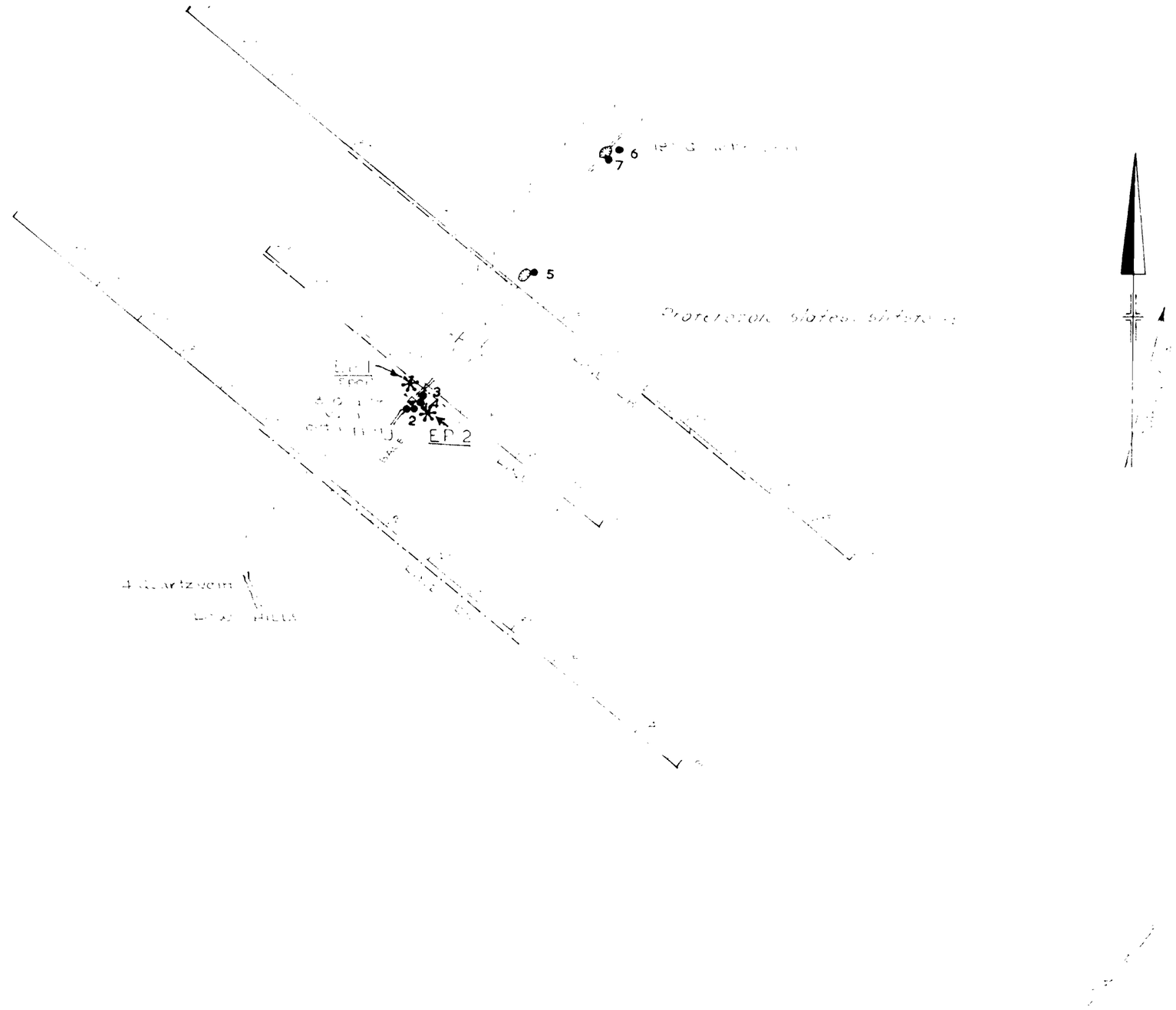
MAGNETIC CONTOURS AND I.P. LINES. 1436-6

OLARY DISTRICT.	SOUTH AUSTRALIA	GEOLOGIST J WESTHOFF D LOPEZ
DATE AUGUST 28th 1970		MINOIL SERVICES PTY LTD ADELAIDE SA

REVISED [illegible]

AGU.34.

SAMPLE NUMBER	Cu %	Pb %	Zn %	Bi %	oz/ton Ag	oz/ton Au



LEGEND

TYPES OF I.P. ANOMALIES

400 0 400 800

SCALE IN FEET

ERINGA PROSPECT

AUSTRALIAN GOLD AND URANIUM PTY. LTD.

SPECIAL MINING LEASE 419

PLAN SHOWING

SURFACE SAMPLES

AND

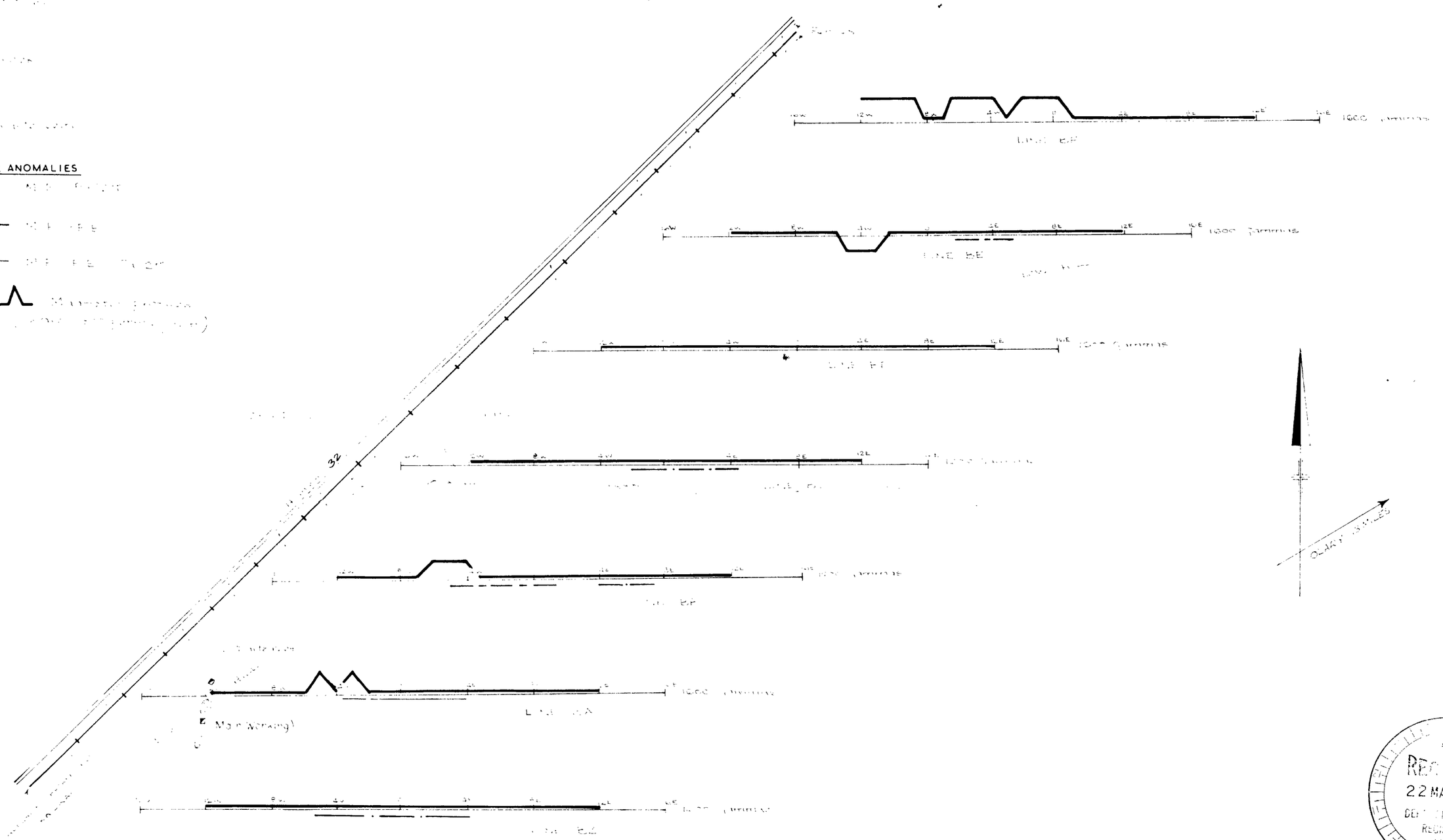
I.P. TRAVERSES

OLARY DISTRICT	SOUTH AUSTRALIA	GEOLOGIST: D. LOPES.
DATE: 30-4-70		MINOIL SERVICES ADELAIDE.

REVISED 31-1-72

LEGEND

TYPES OF I.P. ANOMALIES



500 0 500 1000

SCALE IN FEET

BOOMERANG MINE AREA

AUSTRALIAN GOLD AND URANIUM PTY. LTD.

SPECIAL MINING LEASE 419

PLAN SHOWING

I.P. ANOMALIES

AND

MAGNETOMETER TRAVERSES

OLARY DISTRICT	SOUTH AUSTRALIA	GEOLOGIST: D. LOPES.
DATE: 23-4-70.		MINOIL SERVICES ADELAIDE.

REVISED 31-1-71

1436-8

AGU. 25.

140° 07'

140° 23'

32° 08'

32° 25'

Fs, Cu

Ipa Springs Well

OUTALPA

22 OUT R4

Mulga Dam

FOOTES HILL

Hiles Dam & Catch

Ameroo Dam

Faugh-a-Ballagh Mine Cu
300 - 3000 p.p.m Cu (7 samples)

YERKA HILL Ag

Woolshed & Yards

House Dam

Outalpa Well & Tank

Tank Outalpa

EMBANKMENT

Gum Dam & Mill

65 OUT R5

Cu
Cu Centralia Mine
1·5% Cu Composite samples

Cu Olary Silver Mine
Ag Whites Dam

Olary Creek

New Bluff Well & Mill

Woolshed (6 samples)
5000 - 10000 p.p.m Cu
< 3·5 oz Ag

Olary Reef (8 samples along strike)
250 - > 10000 p.p.m Cu
< 14 oz Ag < 1500 p.p.m Co

Cu Mt Perseverance
< 3·0% Cu

10 Random samples
250 - > 10000 p.p.m Cu
oz Ag

Tietz Dam

Bluff Dam

Bluff Well & Mill

Ruin

Yard

Main Well

Drain Well Bore Mill & Tank

Bluff Well New Tank & Trough

Bore

Gums Well

Au
KINGS BLUFF GOLD FIELD
< 1·0 oz Au
< 2·0 oz Ag

Well

Channel

Olary Creek

2 oz. Ac (W)

OLARY
928

Railway Res

Drain

Bluff Dam

Gum Dam

Haughts Dam

Bore

Forty Dams

Golden Dewdrop Mine
Au, Fe, Fs

Yards

Two Mile Dam

Wirrowirra Creek

Four Mile Dam

Vermin Proof Fence

House Dam

Outalpa RS
01010"

Coo-ee Mine
Au

Boomerang Mine
Au
6·7% Pb

Fe Pb Zn Cu

Mature Dam

Yard & Dip

Two Mile Dam

Two Mile Bore

Constance Dam

Eringa Mine
300 - > 10,000 p.p.m. Cu
1500 - > 10000 p.p.m. Pb
400 - > 10000 p.p.m. Zn
< 2500 p.p.m. Bi < 11 oz. Ag

Eringa Sth. Mine
< 8000 p.p.m. Cu
< 2500 p.p.m. Pb
< 6000 p.p.m. Zn

Tank & Trough

Wawirra Creek

Tank & Trough

RECEIVED
22 MAR 1971
DEPT. OF MINES
REGISTRY
1436

SCALE

60 0 60 120 180 240

CHAINS

LEGEND

- Cu Field test results only
- 1%Cu AMDEL results
- Main Road
- Railway
- River or creek
- Track
- Mine
- Homestead

AUSTRALIAN GOLD AND URANIUM PTY. LTD.

SML 419 — OLARY DISTRICT

MINERAL OCCURRENCES AND CHIP SAMPLING RESULTS

1436-9

GEOLOGIST: D. LOPES

DATE: FEBRUARY 1971

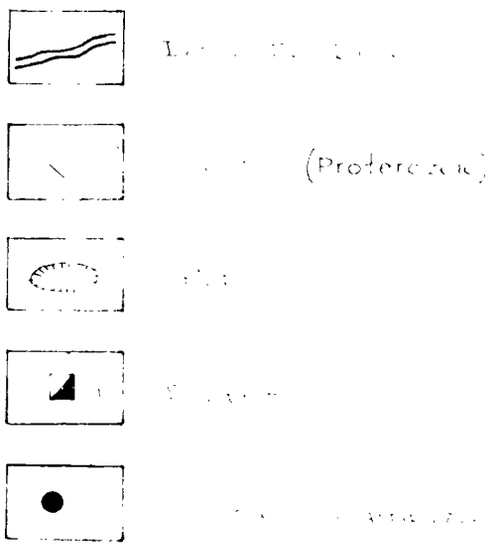
SOUTH AUSTRALIA

MINOIL SERVICES PTY LTD
ADELAIDE S.A.


OLARY SILVER MINE
OLARY CREEK
SHEARING SHED
LEGEND
Fence
Road
Track
Shaft
IP Anomaly
Diamond Drill Hole, Percussion Drill Hole
Dip and Strike of Gneissosity, Schistosity
Dip and strike of lithological contact
Fold axis
Geological boundary
Geological boundary, inferred or indefinite
Pegmatite
Granite Gneiss
Gneiss, Schistose Gneiss, Schists
Alluvium
Quartz reef
Ironstone outcrop
Area recommended for geochemical survey
Geochemical Anomaly
SCALE
AUSTRALIAN GOLD AND URANIUM PTY. LTD.
OLARY SILVER MINE PROJECT
PRELIMINARY GEOLOGICAL MAP
1436-10
DATE
GEOLOGIST
OLARY AREA
SOUTH AUSTRALIA
MINOL SERVICES PTY. LTD.
ADELAIDE S.A.
RECEIVED
22 MAR 1971
DEPT. OF MINES
NORTH
ADELAIDE

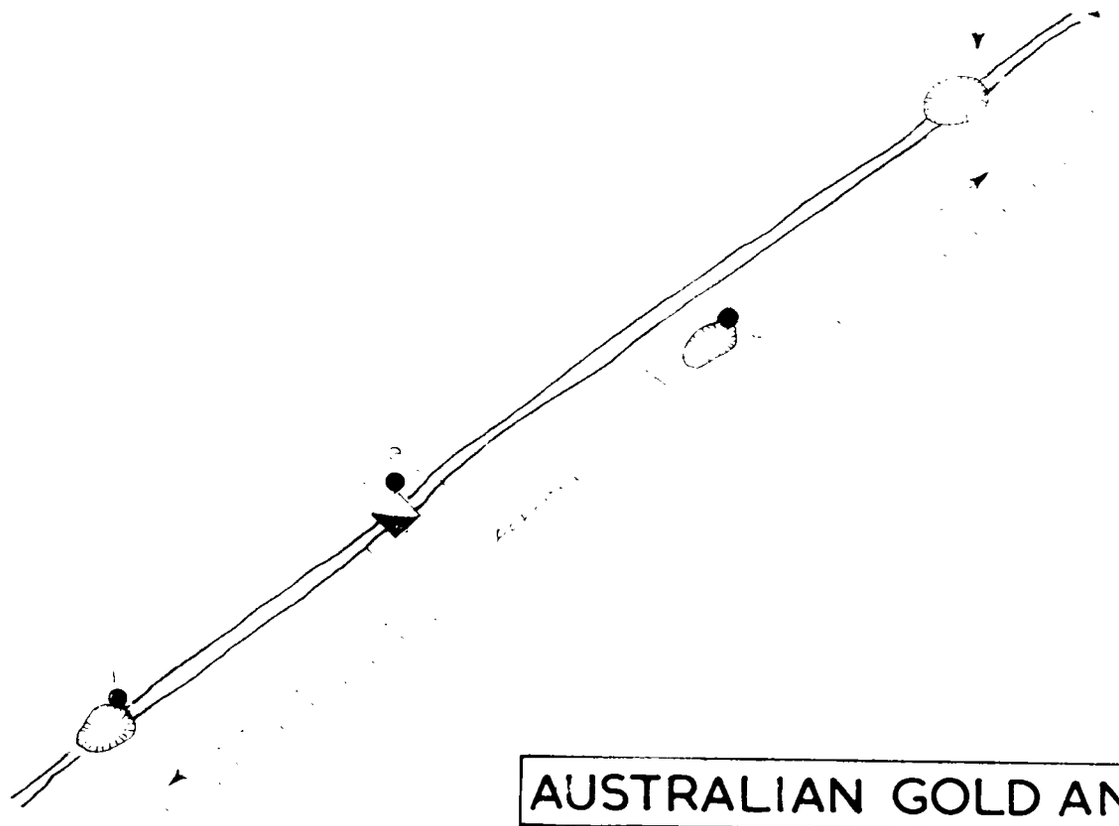
TABLE OF ASSAY RESULTS

SAMPLE NUMBER	Cu %	Pb %	Zn %	Co %	oz/ton Au %



LEGEND

(Proterozoic)



AUSTRALIAN GOLD AND URANIUM PTY. LTD.

SPECIAL MINING LEASE 419

SKETCH PLAN 1436-11

ERINGA SOUTH PROSPECT

OLARY DISTRICT	SOUTH AUSTRALIA	GEOLOGIST: D. LOPES.
DATE: 27-4-70.		MINOIL SERVICES ADELAIDE.

REVISED 31 1 71

AGU. 28.