

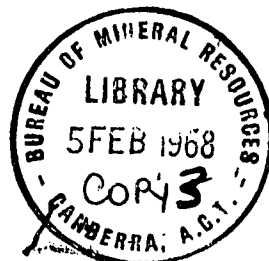
1967/75(6)
c.3

COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF NATIONAL DEVELOPMENT
BUREAU OF MINERAL RESOURCES
GEOLOGY AND GEOPHYSICS

RECORDS:
1967/75

008871



MINOR METALLIFEROUS INVESTIGATIONS
NORTHERN TERRITORY RESIDENT GEOLOGICAL SECTION
PINE CREEK 1:250,000 SHEET AREA 1965

The information contained in this report has been obtained by the Department of National Development, as part of the policy of the Commonwealth Government, to assist in the exploration and development of mineral resources. It may not be published in any form or used in a company prospectus without the permission in writing of the Director, Bureau of Mineral Resources, Geology and Geophysics.

MINOR METALLIFEROUS INVESTIGATIONS

NORTHERN TERRITORY RESIDENT GEOLOGICAL SECTION

PINE CREEK 1:250,000 SHEET AREA 1965

RECORDS 1967/75

The information contained in this report has been obtained by the Department of National Development, as part of the policy of the Commonwealth Government, to assist in the exploration and development of mineral resources. It may not be published in any form or used in a company prospectus without the permission in writing of the Director, Bureau of Mineral Resources, Geology and Geophysics.

MINOR METALLIFEROUS INVESTIGATIONS
NORTHERN TERRITORY RESIDENT GEOLOGICAL SECTION
PINE CREEK 1:250,000 SHEET AREA 1965

Records 1967/75

CONTENTS

	<u>Page</u>
<u>THE FRANCES CREEK GOLD MINE, AGICONDI GOLDFIELD N.T. by J.W. Shields</u>	
Summary	1
Introduction	1
Situation and Access	1
Topography	1
History	1
Geology	2
Production and Grade	3
Conclusion and Recommendations	3
References	3
Plate 1 : Frances Creek gold mine. Scale 40' = 1"	

REPORT ON THE DIAMOND DRILLING AT KOHINOOR AND ELEANOR LEASES, PINE CREEK,
AGICONDI GOLDFIELD, NORTHERN TERRITORY. by J.W. Shields

Summary	4
Introduction	4
Regional Geology	4
History and Previous Diamond Drilling	4
Kohinoor Lode	5
Discussion	5
Conclusion	7
Eleanor Lode System	7
Discussion	7
Conclusion	8
References	8

The information contained in this report has been obtained by the Department of National Development, as part of the policy of the Commonwealth Government, to assist in the exploration and development of mineral resources. It may not be published in any form or used in a company prospectus without the permission in writing of the Director, Bureau of Mineral Resources, Geology and Geophysics.

Contents

(ii)

	<u>Page</u>
<u>Appendix</u> - Logs of diamond drill holes 3, 3A, 4 and 5 (1965)	
Plate 2 : Locality sketch and plan of gold mining leases, Pine Creek. Locations of diamond drill hole collars. Scale 300' = 1"	
Plate 3 : Kohinoor lease, Pine Creek. Plan and section showing DD2 (1911) and DD3 and 3A (1965)	
Plate 4 : Eleanor lease plan and sections. Diamond drill holes 4 & 5 (1965). Scale 100' = 1"	

DIAMOND DRILLING RESULTS, RISING TIDE AREA, BROCKS CREEK, N.T. by A. Taube

Summary	9
Introduction	9
Previous Work	9
Geology	10
Drilling Results	10
Conclusions	11
References	11

Appendices

- Appendix 1 - Assay results on P.D. No. 5, Brocks Creek, N.T.
Appendix 2 - Geological log of drill hole

Plate 5 : Geological and Geophysical map of Rising Tide,
Brocks Creek, N.T. Scale 1" = 40'

(Plate 5 appears immediately after Plate 4)

THE FRANCES CREEK GOLD MINE

AGICONDI GOLDFIELD N.T.

by

J.W. Shields

SUMMARY

The Frances Creek gold mine could produce about 10,000 tons of ore assaying less than 10 pennyweights of gold per ton. Haulage of the ore over 14 miles of bush track to the battery at Mount Wells would be difficult.

A parcel of ore from this mine treated at the Mount Wells battery in the latter part of 1965 gave the following:-

357.95 tons for 83.25 ounces bullion tailings.

The average of 27 surface sample assays is 7.3 pennyweights of gold per ton over a width of 28 inches.

INTRODUCTION

The Frances Creek gold mine was mapped by plane table in June 1965 at the request of the leaseholders, the Frances Creek syndicate, Messrs. C.E. Casey, W.E. Casey and J. Racz. A geological map was prepared at a scale of 40 feet to 1 inch. Sampling was not attempted as Northern Mine Development had carried out a surface sampling programme in 1954.

SITUATION AND ACCESS

The Frances Creek gold mine is 14 miles by bush track from the Mount Wells battery (see Plate 1). Good roads connect Mount Wells with Darwin.

TOPOGRAPHY

The lode formation crops out on a ridge which is approximately 300 feet above an extensive valley flat.

A thin capping of Cretaceous rocks occurs to the south of the reefs. The base of these rocks is 30 - 40 feet higher than the present outcrop of the gold reefs.

HISTORY

The Frances Creek gold mine was first mentioned in the reports of the Administrator of the Northern Territory for the years 1936 and 1938.

In 1936, Mr. S. Murphy, manager for Mineral Investments Limited, sank two shafts approximately 1 mile north of the present workings. Gold values were reported as low.

In 1937, Mr. Murphy and his son erected a five-head battery near the Frances Creek gorge.

During 1938, 130 tons of ore (believed to come from between 300 N and 400 N, 20 E - 40 E; see plate 1), were treated at the battery for a return of 52 ounces of gold.

Northern Mines Development, N.L. took an option over the area in 1953 - 54, and carried out surface sampling and started a diamond drilling programme.

P.W. Crohn of the Resident Geological Section, Darwin, carried out further surface sampling in 1963.

During 1964, 60 tons of ore were mined and treated at the Mount Wells battery for a return of about 6 dwt of gold per ton.

In 1965, the shaft (Co-ordinates 00-00 on plate 1) was sunk to 98 feet and an adit was driven from the side of the hill to connect with the bottom of the shaft.

Ore from near the shaft was taken to Mount Wells in the second half of 1965.

GEOLOGY

The lode at the Frances Creek gold mine is in tightly folded rocks of the Masson Formation which Malone (1962) describes as 'quartz greywacke and quartz sandstone, pyritic and silicified in places, pyritic carbonaceous siltstone and siltstone'.

The country rock at the mine is a quartz sandstone, coarse-grained in places. Shale bands within the sandstone contain the mineralization. The rocks are intensely folded, the sandstone being competent, whereas the shale is strongly sheared and broken.

The lode formation consists of a sheared shale band with the shears infilled by quartz and hematite containing gold.

No sulphides have been found even at the bottom of the 98-foot shaft indicating that the hematite could be a primary constituent of the lode. The Frances Creek hematite lodes are within 10 miles of the mine and consist of primary hematite; it is therefore possible that the Frances Creek gold lode also contains primary hematite.

The lode varies considerably in width along strike and the same order of variation can be expected vertically.

PRODUCTION AND GRADE

The recorded production from the area mapped on Plate 1 is as follows:

- 1938 130 tons ore for 52 ozs gold (grade 8 dwts/ton).
 (Believed to be from between 300 N and 400 N Plate 1)
- 1964 60 tons ore for 15 ozs (approx.) (grade 6 dwts/ton).
 (This tonnage is from the pit at 450 N - 500 N on Plate 1).
- 1965 357.95 tons ore for 83.25 ozs Bullion tailings. As far as
 is known no gold was produced from two shafts about 1 mile
 north of the present workings.

Oxidation and enrichment of the lode may have produced higher gold values within 150 to 300 feet of the surface. The Cretaceous rocks 30 to 40 feet above the present top of the lode indicate that at least two periods of weathering could have caused the oxidation and enrichment.

Surface assays carried out by Mining and Prospecting Services for Northern Mines Development N.L. in 1954 are shown on Plate 1; they average 7.3 dwts Au/ton over a width of 28 inches.

Crohn (1962) took 4 samples of the lode between 300 N and 500 N (approx. 30E) (Plate 1), which averaged 4.8 dwts Au/ton over an average width of 22½ inches.

CONCLUSIONS AND RECOMMENDATIONS

The evidence indicates ore reserves of about 10,000 tons. The grade of the ore is probably less than 10 dwt gold per ton.

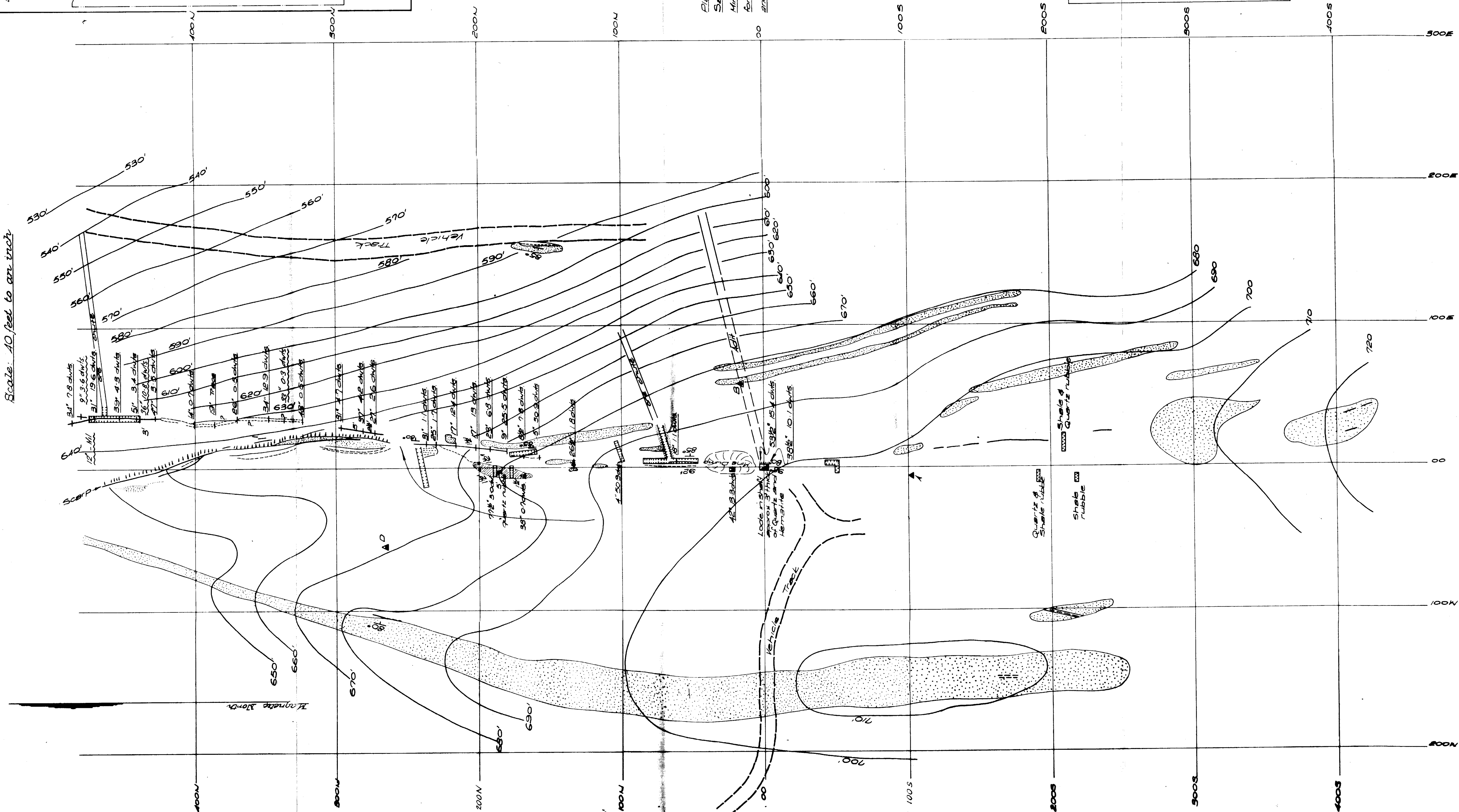
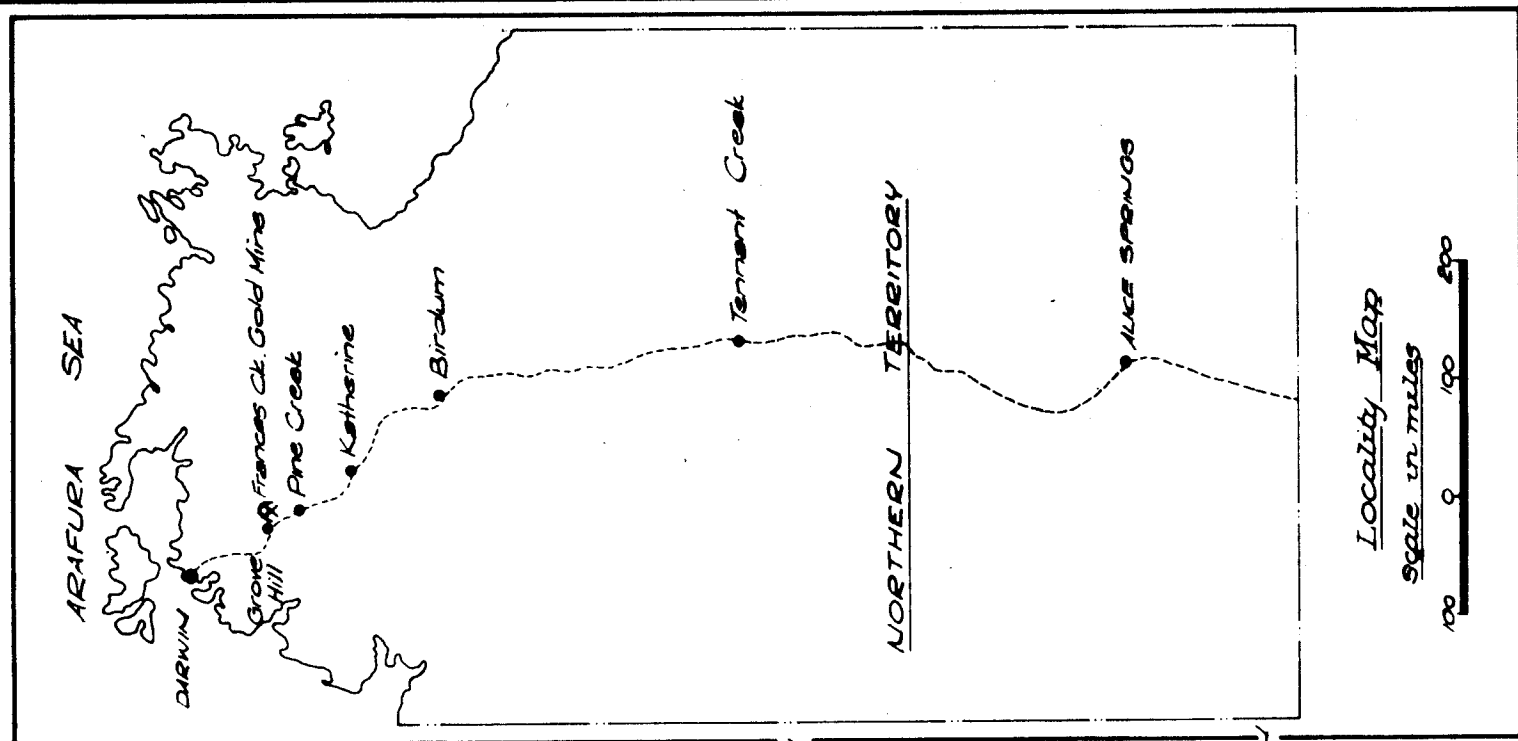
Driving and stoping from the bottom of the shaft is the best method of further assessing the potential of this mine.

REFERENCES

- CROHN, P.W., 1962 - Frances Creek Gold Mining Syndicate. Bur. Min. Resour. Aust. Rec. 1963/32 (unpubl.)
- MALONE, E.J., 1962 - Pine Creek, N.T. 1:250,000 Geological Series Bur. Min. Resour. Aust. explan. Notes D/52-8
- NORTHERN MINING DEVELOPMENT, N.L., 1954 - Surface Geology Plan, Murphy's Lode. Mining and Prospecting Services Pty Ltd. (unpubl.)

FRANCES CREEK GOLD MINE

Scale: 10 feet to an inch



LEGEND

- Quartz Sandstone
- Slate
- Rubble
- Quartz lode outcrop with assays over specified widths in chits d/t/ton (MPS samples)
- Planned delum shaft collar
- Planned shaft samples
- 85° Dip and strike of bedding
- Inclined shaft
- Mining trench
- Contour - topographic - assumed delum shaft collar at 60-700'
- Plane table station

Plane Tabling by J. Shields, 1965
Sampling and Assaying by
Murray and Prospecting Services Pty. Ltd.
for Northern Mines Development N.L. 1964
and by P.M. O'Brien 1962

REPORT ON THE DIAMOND DRILLING AT KOHINOOR AND ELEANOR LEASES, PINE CREEK,
AGICONDI GOLDFIELD, NORTHERN TERRITORY

by

J.W. Shields

SUMMARY

Four diamond drill holes were drilled on the old Kohinoor and Eleanor leases at Pine Creek during 1965. From the results of this drilling and a review of previous drilling at Pine Creek it is concluded that the quartz-gold reefs are irregularly distributed in a wide zone of rocks of the Burrell Creek Formation and that the gold content of the reefs at depth is low.

INTRODUCTION

Four diamond drill holes (Nos. 3, 3A, 4 and 5) were drilled by the Mines Branch, Northern Territory Administration on the old Kohinoor and Eleanor gold leases (Plate 2) at Pine Creek. The work was commenced in January and completed in May 1965.

REGIONAL GEOLOGY

The quartz-gold reefs at Pine Creek occur in rocks of the Burrell Creek Formation, which Malone (1962) describes as: "Greywacke, siltstone, greywacke-siltstone locally metamorphosed to andalusite-mica schist and mica schist in west of Pine Creek sheet area." The Burrell Creek Formation at Pine Creek is almost entirely surrounded by granite. To the north-west, the Burrell Creek Formation contains the Union Reefs gold-mineralized areas.

HISTORY AND PREVIOUS DIAMOND DRILLING

Hossfeld (1936) described the early mining operations at Pine Creek. His work included plane table maps at a scale of 100' = 1" over some of the mining areas.

The history of Pine Creek mining dates back to the discovery of gold during the construction of the overland telegraph line (Jensen and Oliver 1914). Chinese labour was used and poorly constructed workings resulted.

Records of gold produced were not kept before 1894, although there is little doubt that much gold was obtained before that. Known total production up to 1915 is 54,354 tons of ore treated at batteries and mills for a yield of 59,179 ounces of gold, and 67,145 tons of ore treated at cyanide works for a return of 16,929 ounces of gold. This gave an average gold yield per ton of 1 oz. 1 dwt. by crushing, and 5 dwt. by cyanidation.

Diamond drilling was commenced in 1906 to test the reefs at depth and has continued sporadically to the present day.

The Enterprise Mine, which is considered the most important prospect, has been worked intermittently with Government assistance since 1914. The shaft was originally sunk on evidence provided by a drill hole, D.D.H. 11 (1915) which was reported by Hossfeld (1936) to have yielded values of 4½ ounces gold/ton. although other sources reported a value of 3 ounces 7 dwts. gold/ton. Drives on the 260 ft. level led to the quartz body which the diamond drill hole had intersected. Samples taken from this 5 ft. wide solid quartz body proved an average value between 4 and 5 dwts. gold per ton.

The Enterprise was re-opened recently, and an association between arsenopyrite and the primary ore has been identified.

Two diamond drill holes were put down near this mine by Mines Branch, Northern Territory Administration, in 1963-64 (Vanderplank 1965). The drill holes were put down on the old Enterprise lease No. 2 and the Monarch lease No. 1.

Details of diamond drilling carried out by the Government before 1920 are not complete. Furthermore, assays of the core produced were evidently only of 'chip' or 'spot' samples. These results are not very enlightening as the gold in the reefs is known to be irregular and patchy, and even split cores do not give entirely dependable assay results. The irregular distribution of the gold values is shown by the previously mentioned sample from diamond drill hole No. 11, which yielded an assay result of over 3 ounces/ton of gold while the quartz body from which it came only averaged 4-5 dwts of gold/ton.

Positions of diamond drill holes, where known, are shown on Plate 2, together with their lengths, directions and inclinations. Other details are presented on the table below. Blanks in this table indicate that the information is not known.

KOHINOOR LODGE

Discussion

The open cut on the Kohinoor lease (Plate 3) is 500 feet long with a maximum width of 30 feet, and has been mined to a maximum depth of 20 feet. Jensen (1919) states that the the lode worked was a saddle-shaped quartz body averaging 2-3 dwt gold per ton.

Diamond drill holes 3 and 3A were put down to test for continuations or repetitions of this lode. Neither hole encountered significant mineralization.

Both holes intersected vertical beds of coarse-grained greywacke beneath the open cut. The bedding measured in Jensen's Adit (Plate 3) is also vertical. South-west of the open cut, the bedding dips approximately 70° to the south-west. An anticlinal structure is indicated with mineralization associated with the axial plane.

TABLE OF PINE CREEK DIAMOND DRILLING AND MAIN ASSAY RESULTS

D.D.Hole No.	Year Drilled	Depression	Total Length	Lease Hole Collared on	Results and assays
1	1906-7	45°	1,338'	New Year	720' 3 dwts Au/ton. 1,228' Visible gold, 2" quartz. 1,271' 2 dwts Au/ton, 1,286' 3 dwts Au/ton.
2	1911		701'	Michaelmas	
3	1911		513'	Eleanor	
4				New Thunderer	
5	1912-13	45°	800'	Sagabiel	704-709' 2 dwts Au/ton. 709-715' 1 dwt Au/ton. 715/722' 2 dwts Au/ton. 722'-748' Trace Au. 748-754' Trace Au 754-761' 6" 2 dwts Au/ton.
6	1913	50°	625'	Czarina	
7	1913	65°	718' 8"	North Star	Did not intersect quartz or lode formation
8	1915	65°	720' 3"	North Star	No lode material intersected
9	1915	65°	500' 1"	North Star	No lode material intersected
10	1915	50°	665'	Enterprise	187-199' Trace - 15 dwts Au/ton. 267-330' Trace-1 dwt Au/ton. 514-549' Trace- 15 dwts Au/ton.
11	1915	45°	405'	Enterprise	182' 4" -340' 6" Trace to 3 oz. 7 dwt Au/ton at 340' 6".
1	1964	50°	271' 6"	Monarch	40-42' 2.0 dwts Au/ton. 62' 6"-63' 5.2 dwts Au/ton. 122' 10"-127' 3.9 dwts. Au/ton. 192' 6"-198' 2" 21.7 dwts Au/ton 220' 3"-225' 5.4 dwts. Au/ton.
2	1964	53°	510'	Enterprise	345' 4"-349' 4" 3.7 dwts Au/ton. 349' 4"-354' 2.9 dwts Au/ton. 386-389' 3.5 dwts Au/ton. 406' 6"-410' 2.7 dwts Au/ton. 435' 8"-436' 4" 3.9 dwts Au/ton.
3	1965	47°	400'	Kohinoor	328' 10"-329' 6" 3.4 dwts Au/ton.
3A	1965	62°	360'	Kohinoor	58' - 61' 0.6 dwts Au/tons
4	1965	Vertical	433'	Eleanor	No lode material
5	1965	60°	400'	Eleanor	310-310' 6" 0.8 dwts Au/ton. 324-325' 2 dwts Au/ton. 342' 7" -343' 11" 1 dwt Au/ton.

Plate 3 shows the positions of these diamond drill holes and a section through them. Also shown is diamond drill hole No. 2 which was drilled beneath the north-western end of the open cut in 1911. This hole did not intersect any mineralization.

Conclusions

Mineralization, if present beneath the Kohinoor lease, is very patchy. The lode worked at the surface was almost certainly enriched by oxidation and weathering and averaged only 2-3 dwt gold per ton. It is therefore reasonable to assume that any lode beneath this lease would yield less than 3 dwt gold per ton.

ELEANOR LODE SYSTEM

Discussion

The Eleanor lease has many shafts from the surface and is mostly covered with rubble, mine spoil and alluvium.

Jensen (1919) published a plan of the 170 feet level on the Eleanor lease showing the location of stopes. This plan is reproduced on Plate 4. The irregular nature of the ore shoots is known from the following information from Jensen (1919):

"The auriferous veins are short shoots somewhat pancake shaped and occur parallel or sub-parallel at frequent though irregular intervals. The richest shoots, and in fact the whole of the payable shoots, strike at right angles to the strike of the country, namely north easterly, with a dip to the south east at 30 degrees. The zone in which the shoots are contained is bounded by slides or fault lenses striking 320 degrees and dipping south west at high angles. These slides are indicated by bands of chloritic slate and cut off the flat dipping auriferous shoots on either side. The auriferous shoots occur at various intervals and very irregularly, which fact renders prospecting underground much akin to blind stabs and accounts for the tortuous nature of the underground workings."

From the plan of the prospect (Plate 4) it appears that the size of the largest opening from which ore was mined was about 200' x 20' x 50'. This particular shoot was intersected down-dip by D.D.H. 5 (1965) approximately 100 feet from the lowest point worked.

At this point, the shoot consisted of alternating bands of quartz with pyrite, calcite, arsenopyrite and chlorite and greywacke-slate. The gold content of the quartz assayed up to 2 dwt per ton (full details in Appendix).

Diamond drill hole No. 4 was drilled to the east of this large shoot but failed to intersect any mineralization.

Conclusion

The lenticular shoots of ore in the Eleanor lease which were worked in the past have an irregular distribution, making exploration for further ore both difficult and costly. Furthermore, the shoots are small and their grade is largely unknown, analyses of lode intersected by diamond drilling indicating a low grade. The near-surface shoots which were mined probably had a higher gold content than those at depth, due to oxidation and secondary enrichment.

REFERENCES

- BROWN, H.Y.L., 1908 - Government Geologist's Reports on Recent Mineral Discoveries and Further Record of Northern Territory Boring Operations. S. Aust. parl. Pap., 85.
- HOSSFELD, P.S., 1936 - The Pine Creek Gold Field. Aer. Surv. N. Aust. N. Terr. Rep., 1.
- JENSEN, H.I., 1915 - Report on Diamond Drilling in the N.T. Bull. N. Terr. Aust., 12
- JENSEN, H.I., 1919 - Report on the Geology of the Agicondi Province of the N.T. Bull. N. Terr. Aust. 19
- JENSEN, H.I., and OLIVER, T.G., 1914 - Progress Report on the Geological Survey of the Pine Creek District, N.T. Bull. N. Terr. Aust., 10A
- MALONE, E.J., 1962 - Pine Creek, N.T. - 1:250,000 Geological Series. Bur. Min. Resour. Aust. explan. Notes, D52-8.
- VANDERPLANK, A., 1965 - Diamond drilling results at the Enterprise Mine, Pine Creek. Bur. Min. Resour. Aust. Rec., 1965/127 (unpubl.).

APPENDIX

BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

GEOLOGICAL LOG OF DRILL HOLE

PROJECT: PINE CREEK DIAMOND DRILLING N.T. REMARKS: Hole not surveyed
 HOLE No. DIAMOND DRILL HOLE 3 CO-ORDINATES: 75° 30' N R.L. GROUND: 75° 30' N
 LOCATION: KOHINOOR LEASE AGICONDI GOLD FIELD ANGLE FROM HORIZONTAL: 47° DIRECTION: 241° Mag

DESCRIPTION OF CORE	GRAPHIC LOG	DEPTH SIZE OF CORE	LOG	LIFT D CORE RE COVERY %	SAMPLES	REMARKS	ASSAYS
0-55' Greywacke, medium grained, rare slate.							
12' Bedding 30° NE							
13' Slate - greywacke contact, bedding 75° NE							
13' graded bedding? showing that beds are right way up.							
20' Quartz vein, possible dip 60° NE if strike of vein is at right angles to direction of hole.							
55'-64' Brecciated greywacke with irregular quartz veins. Hematite and limonite fill small cavities in quartz veins. Greywacke 90% quartz veins 30%							
64'-72' Medium grained greywacke							
72'-78' Greywacke chloritized, brecciated irregular veins of quartz. Greywacke 90% quartz 10%							
78'-84' do for 72'-78'							
84'-93' Greywacke, medium to fine grained, rare 1/2" quartz veins.							
93' Quartz 2"							
96' Quartz 6"							
98'-99' Greywacke coarse grained							
99'-100' Medium grained greywacke							

DRILL NO.	EXPLANATION	HEAD OFFICE
TYPE	CASING IN HOLE DURING DRILLING $\frac{1}{2}$ < 2 means "less than 2 dwt/long ton"	LOGGED BY <u>A.V.</u>
DRILLER <u>MINES BRANCH</u>	REFERENCES	DRAWN BY
COMMENCED <u>NORTHGOM TERRITORY</u>	Dip of Bedding is measured assuming that strike of hole and bedding is at right angles to direction of hole and that dip is not vertical and not near horizontal.	CHECKED BY
COMPLETED <u>1964-5</u>		SHEET <u>1</u> OF <u>4</u>
		DRAWING NO.

GEOLOGICAL LOG OF DRILL HOLE

PROJECT PINE CREEK DIAMOND DRILLING N.T. REMARKS.....
 HOLE No. DDH 3 CO-ORDINATES..... R.L. GROUND.....
 LOCATION KOHINOOR LEASE AGCONDI GOLD FIELD ANGLE FROM HORIZONTAL..... DIRECTION.....

DESCRIPTION OF CORE	GRAPHIC LOG	DEPTH SIZE OF CORE	LOG	LIFT OF CORE RE COVERY %	SAMPLES	REMARKS	ASSAYS
99'-108' greywacke medium grained.		101'7"					Au data/long ton
		4'6"					Ag data/long ton
108'-114' greywacke, coarse grained, slightly brecciated & chloritoid with rare quartz veins		108'					< 0.2
		7'	CORE SPLIT				< 2
114'-120' greywacke, coarse grained		115'					< 0.2
		7'					< 2
120'-154' greywacke, medium grained, rare thin bands coarse grained greywacke.		121'					
124'6" - 125' Quartz, massive.		6'					
		125'					
		4'					
		132'					
		7'					
137' greywacke		138'6"	CORE SPLIT				< 0.2
		6'					< 2
		146'					
		2'3"					
		149'					
		7'					
154'-169' greywacke coarse grained with rare slate		156'					
163' Faulted bedding plane Bedding 50° NE ??		14'					
169'-179' greywacke, medium grained.		170'					
		8'					
179'-193' greywacke medium grained with rare coarse grained greywacke bands.		178'					
182' Thin slate band with minor pyrite and chloropyrite		8'					
		180'				180' Approximate base of weathering influence.	
		4'					
		190'1"					
193'-210'6" Slate with rare pyrite.		5'11"					
193'-198'5" Quartz vein, minor pyrite.		191'8"					
		8'					

DRILL NO.	EXPLANATION	HEAD OFFICE
TYPE	CASING IN HOLE DURING DRILLING <input checked="" type="checkbox"/>	LOGGED BY
	REFERENCES	DRAWN BY
		CHECKED BY
		SHEET <u>2</u> OF <u>4</u>
		DRAWING NO.

GEOLOGICAL LOG OF DRILL HOLE

PROJECT PINE CREEK DIAMOND DRILLING N.T. REMARKS.....
 HOLE No. DDH 3 CO-ORDINATES..... R.L. GROUND.....
 LOCATION KOHINOOR LEASE (ACCORD) GOLDFIELD ANGLE FROM HORIZONTAL..... DIRECTION.....

DESCRIPTION OF CORE	GRAPHIC LOG	DEPTH SIZE OF CORE	LOG	LIFT OF CORE RE COVERY %	SAMPLES	REMARKS	Av dwt/long ton	ASSAYS dwt/long ton
							< 0.2	< 2
200'-201'4" Quartz with approx. 1% pyrite Slate with rare pyrite								
210'6" - end of hole. Greywacke, fine grained with rare thin bands of slate.								
245'-252' Core cut by numerous small chlorite filled shear zones.								
271'-271'3" Quartz blks up to 1/2" diameter in slate.								
280'-300' Core very broken								
300' Quartz pyrite vein in slate. Vein in slate up to 1/2" wide								

DRILL NO.....	EXPLANATION	HEAD OFFICE
TYPE.....	CASING IN HOLE DURING DRILLING <input checked="" type="checkbox"/>	LOGGED BY.....
DRILLER.....	REFERENCES	DRAWN BY.....
COMMENCED.....		CHECKED BY.....
COMPLETED.....		SHEET <u>3</u> OF <u>4</u>
		DRAWING NO.....

GEOLOGICAL LOG OF DRILL HOLE

PROJECT PINE CREEK DIAMOND DRILLING N.T. REMARKS
 HOLE No. DDH 3 CO-ORDINATES R.L. GROUND
 LOCATION KOHINOOR LOTSE AGICOND GOLDFIELD ANGLE FROM HORIZONTAL DIRECTION

DESCRIPTION OF CORE	GRAPHIC LOG	DEPTH SIZE OF CORE	LOG	LIFT OF CORE RE COVERY %	SAMPLES	REMARKS	ASSAYS
306' Fine grained greywacke with rare slate.		300'					
306'6" Quantity 20% Pyrite 80%		4'					
306'6" Fine grained greywacke with rare slate.		312'					
		314'6"					
		318'					
		5'6"					
		327'					
328'10" 329'6" Quartz 70% Pyrite 30% minor chalcophyte							
329'6" Very minor galena and chalcophyte in small shear.		6'6"					
330'3" 2 x 1/4" quartz pyrite veins							
334' Quartz pyrite vein 1/4", angular in shape.		336'					
		5'					
		342'					
		8'					
		351'					
		5'9"					
		359'					
		6'					
		369'					
		4'9"					
376'6" Bedding (70°W)		376'					
		6'6"					
380' Bedding (60°W)		383'					
		4'					
		387'6"					
		6'3"					
		394'					
		4'9"					
396'-396'2" Quartz with minor pyrite							
400' END OF HOLE		400'					

DRILL NO.	EXPLANATION	HEAD OFFICE
TYPE	CASING IN HOLE DURING DRILLING <u>H</u>	LOGGED BY
		DRAWN BY
		CHECKED BY
DRILLER	REFERENCES	SHEET <u>4</u> OF <u>4</u>
COMPLETED		DRAWING NO.

GEOLOGICAL LOG OF DRILL HOLE

PROJECT: PINE CREEK DIAMOND DRILLING N.T. HOLE No. DIAMOND DRILL HOLE No. 3A CO-ORDINATES: LOCATION KOTIKOOR LEASE AGICOND GOLDFIELD R.L. GROUND 750' ANGLE FROM HORIZONTAL 150' 30" DIRECTION 241' Mag.

DESCRIPTION OF CORE

GRAPHIC
LOGDEPTH
SIZE OF
CORE

LOG

LIFT
CORE
RE
COVERY
%

SAMPLES

REMARKS

ASSAYS

0-58' Greywacke, medium grained,
rare slate bands, weathered.

5'

50'

3'6"

57'

5'6"

SPLIT CORE

Au
duty/long tonAg
duty/long ton

0.6

4"

63'

2'

66'

2'

SPLIT CORE

< 0.2

24

68'

3'9"

72'

9"

73'

4'

81'

4'9"

SPLIT CORE

< 0.2

2

86'

6'

92'

2'

94'

6"

97'

5

Quartz 85% Greywacke, shaly & chertified 27'

Quartz has rare unfilled cavities

61'-66' Greywacke medium grained

65' Two quartz veins 1x1', 1x2'

Quartz with rare cavities containing
hematite & limonite - brownish streaked

68'3"-127' Greywacke, medium grained
Rare veinlets quartz.

69'6"-69'10" Quartz

Quartz, white, massive

87'-87'6" Quartz

91'-91'9" Broken quartz with minor hematite
& limonite.

92'9"-93' Quartz

93'6"-94'3" Quartz

L NO.

CASING IN HOLE DURING DRILLING

EXPLANATION

H (< 2 means less than 2 duty/ton)

HEAD OFFICE

LOGGED BY

DRAWN BY

CHECKED BY

SHEET 1 OF 4

DRAWING NO.

REFERENCE

Log of bedding is measured assuming that strike of bedding is at right angles to direction of hole and that dip is not vertical and not near horizontal.

GEOLOGICAL LOG OF DRILL HOLE

PROJECT PINE CREEK DIAMOND DRILLING N.T. REMARKS _____
 HOLE No. DDH 3A CO-ORDINATES _____ R.L. GROUND 750'
 LOCATION KOHINOOR LEASE AGICONDOL GOLD FIELD ANGLE FROM HORIZONTAL _____ DIRECTION _____

DESCRIPTION OF CORE	GRAPHIC LOG	DEPTH SIZE OF CORE	LOG	LIFT & CORE RE COVERY %	SAMPLES	REMARKS	ASSAYS
102'-102'6" Slate			102'				
106'-106'6" Slate				6'			
			113'	2'3"			
			116'	4'7"			
			121'	3'4"			
			124'	3'			
127'-148' greywacke medium grained interbedded with slate			127'	2'3"			
			130'	2'			
			132'	5'6"			
			135'	4'			
			139'	6'			
			145'				
148'-151' greywacke coarse grained				11'			
151'-157' Slate broken Two 1' bands of coarse grained greywacke			157'				
157'-167'6" greywacke coarse grained				10'		160' Approximate base of weathering	
167'6"-173' greywacke medium grained			167'	3'			
			170'				
173'-180' greywacke coarse grained				9'			
			179'				
180'-209' greywacke medium grained with rare thin coarse greywacke				5'			
			184'				
				12'			
			196'				
				5'			

DRILL NO.	EXPLANATION CASING IN HOLE DURING DRILLING <u>H</u>	HEAD OFFICE	
TYPE		LOGGED BY	DRAWN BY
DRILLER	REFERENCES	CHECKED BY	
COMMENCED		SHEET <u>2</u> OF <u>4</u>	
COMPLETED		DRAWING NO.	

PROJECT PINE CREEK DIAMOND DRILLING N.T. REMARKS
HOLE No. D.D.H. 3A CO-ORDINATES R.L.GROUND
LOCATION KOTINDOR LEASE ABACANDI GOLD FIELD ANGLE FROM HORIZONTAL DIRECTION

Au Ag
đặt / long term

GD130 EJ

GEOLOGICAL LOG OF DRILL HOLE

PROJECT PINE CREEK DIAMOND DRILLING N.T. REMARKS
 HOLE NO. DDH 3A CO-ORDINATES
 LOCATION Koitenood L.F. 15E A-100000 GOLD FIELD R.L. GROUND
 ANGLE FROM HORIZONTAL DIRECTION

DESCRIPTION OF CORE

GRAPHIC
LOGDEPTH
SIZE OF
CORE

LOG

LIFT
O
CORE
RE
COVERY
%

SAMPLES

REMARKS

ASSAYS

Intersbedded slate and graywacke
 303' Quatz vein 1" minor arsenopyrite

17'

313' Quatz pyrite 1/4"

314'

6'

320'

18'

330' Quatz 50% Pyrite 50% minor chalcopyrite

SPLIT CORE

As
dust/long ton
 < 0.2

As
dust/long ton
 14

331' - 331' 6" Small anastomosing quatz pyrite veins

333' - 333' 6" 3 x 1/4" quatz pyrite veins

336' Quatz-pyrite veins (large) in graywacke

SPLIT CORE

< 0.2

< 2

Intersbedded slate and graywacke

220'

360' END OF HOLE

360'

DRILL NO.

TYPE

CASING IN HOLE DURING DRILLING

EXPLANATION

REFERENCES

HEAD OFFICE

LOGGED BY

DRAWN BY

CHECKED BY

SHEET

DRAWING NO.

OF

4

BUREAU OF MINERAL RESOURCES, METALLOGY AND GEOPHYSICS
GEOLOGICAL LOG OF DRILL HOLE

9

PROJECT: PINE CREEK DIAMOND DRILLING N.T. MARKS
HOLE No. DIAMOND DRILL HOLE No. 4 CO-ORDINATES P.L. GROUND
LOCATION: ELEANOR LEASE, AG-ICOND, GOLDFIELD ANGLE FROM HORIZONTAL: VERTICAL DIRECTION

DESCRIPTION OF CORE	GRAIN LOG	DEPTH SIZE OF CORE	LOG	LIFT OF CORE RE COVERY %	SAMPLED	REMARKS	ASSAYS
0-44' Not cored.							
44'-77' Intersbedded geyrocker and slate, very weathered and broken				12'			
				65'	2' 6"		
77'-117' Slate, weathered				70'	7' 6"		
				80'			
				11'			
89'-91' Geyrocker, fine grained, weathered.				89' 6"			
				5'			
				95'	5'		

DRILL NO.	EXPLANATION	HEAD OFFICE	
TYPE	CASING IN HOLE DURING DRILLING	LOGGED BY
PINES BRANCH DRILLER, ARIZONA TERRITORY COMMERCIAL ADMINISTRATION COMPLETED 1965	REFERENCES	DRAWN BY
		CHECKED BY
		SHEET 1 OF 5	
		DRAWING NO.	

PROJECT PINE CREEK DIAMOND DRILLING UNIT

HOLE No. DDH 14 4

CO-ORDINATES

Dr. L. G. G. G. G.

LOCATION ELEANOR LEHSG ARICOND1 G-0-071510

ADVICE FROM PSYCHOLOGICAL

DIRECTION

GD 130

GEOLOGICAL LOG OF DRILL HOLE

PROJECT PINE CREEK DIAMOND DRILLING PT. REMARKS
 HOLE No. DDH No. 4 CO-ORDINATES R.L. GROUND
 LOCATION ELEANOR LEASE, ARIZONA GOLD FIELD ANGLE FROM HORIZONTAL DIRECTION

DESCRIPTION OF CORE	GRAPHIC LOG	DEPTH SIZE OF CORE	LOG	LIFT IN CORE RE COVERY %	SAMPLES	REMARKS	ASSAYS
200' - 230' graywacke fine grained with very rare slate and very rare quartz veins up to 2" wide.			200'	4'6"			
			204'6"	5'			
			209'6"	3'3"			
			212'9"	10'3"			
			223'	5'			
			228'	5'3"			
230' - 255' Interbedded graywacke & slate. At 231' 1/4" - 1/2" quartz vein with pyrite, carbonate (calcite?), chalcophyite, chlorite and sphalerite?			233'3"	7'3"			
			240'6"	4'6"			
At 245' Quartz vein 1/2" with chlorite and very minor chalcophyite.			245'	3'			
			248'	6'			
			254'	13'			
255' Medium grained graywacke			267'3"	5'			
			272'3"	4'			
			276'3"	6'			
			282'4"	8'			
292' Quartz vein 3"			291'	9'6"			
292'6" - 294' Slate							

DRILL NO.	EXPLANATION CASING IN HOLE DURING DRILLING <u>H</u>	HEAD OFFICE	
TYPE		LOGGED BY	DRAWN BY
DATE	REFERENCES	CHECKED BY	SHEET <u>3</u> OF <u>5</u>
COMPLETED		DRAWING NO.	

GEOLOGICAL LOG OF DRILL HOLE

PROJECT PINE CREEK DIAMOND DRILLING N.T. REMARKS
HOLE No. DDH 4 CO-ORDINATES R.L. GROUND
LOCATION ELEANOR LEASE AGICONGI BOULDER FIELD ANGLE FROM HORIZONTAL DIRECTION

DESCRIPTION OF CORE	GRAPHIC LOG	DEPTH SIZE OF CORE	LOG	LIFT & CORE RECOVERY %	SAMPLES	REMARKS	ASSAYS
Medium grained greywacke		303'		5'6"			
303'-307' Slate		306'					
				15'			
		321'		4'6"			
		325'6"		8'6"			
Rare Slate		334'		9'6"			
		343'6"		9'6"			
343' Rusty "							
		353'		9'8"			
		362'8"		3'4"			
		366'		5'			
364'6"-370' Rusty-cherty mss in slate		371'		5'9"			
370' Slate - greywacke contact plane at angle of 45° to core direction.		376'9"		10'			
376' Slate - greywacke boundary 30° to core direction.		386'9"		6'3"			
		393'		8'9"			

CLOG	CLOG	CLOG	CLOG	CLOG	CLOG	EXPLANATION		HEAD OFFICE	
						CLOG	CLOG	LOGGED BY	
								DRAWN BY	
								CHECKED BY	
								REFERENCES	
		DRAWING NO.							

PROJECT	PINE CREEK DIAMOND DRILLING N.T.	REMARKS
HOLE No.	DDH 4	R.L.GROUND
LOCATION	ELEANOR LEASE AGEDNO1 GOLDFIELD	ANGLE FROM HORIZONTAL
		DIRECTION

הבית

GEOLOGICAL LOG OF DRILL HOLE

PROJECT, PING CREEK DIAMOND DRILLING 1957

HOLE No. DOLL 5

CO-ORDINATES

RT GROUP

LOCATION ELKHORN

LEASE

A 10000

ZND 15000

ANGLE FROM

DIRECTION

DESCRIPTION OF CORE

GRAIN
LOGDEPTH
SIZE OF
CORE

LOG

LIST
CORE
RE
COVERY
%

SAMPLES

REMARKS

ASSAYS

0-8' Quartz, white, broken
& laminated along joints or
fractures (over foot only)8'-29' graywacke, medium grained
10'-11'6" quartz broken (6" only)29'-96' interbedded graywacke
& slateNon-coring bit used
between 50 ft. & 70 ft.85' Lenticular manganese along
a joint plane94'6"-95' angular quartz veins in
graywacke96'-150' graywacke, medium grained,
massive. Rare quartz veins

1'

8'

10'

11'6"

13'6"

3'

19'6"

2'

22'

2'

24'

1'3"

26'

3'6"

29'6"

3'6"

33'

2'3"

36'

4'

40'

3'

43'

2'6"

46'

2'6"

49'

1'6"

7'6"

7'

70'

3'

82'

4'4"

87'6"

7'

95'

8'

DRILL NO.

TYPE

CASING IN HOLE DURING DRILLING

EXPLANATION

REFERENCES

DRILLER

COMMENCED

COMPLETED

HEAD OFFICE

LOGGED BY

DRAWN BY

CHECKED BY

SHEET 1 OF 4

DRAWING NO.

GEOLOGICAL LOG OF DRILL HOLE

PROJECT PINE CREEK DIAMOND DRILLING N.T. REMARKS
HOLE No. DDH 5 CO-ORDINATES R.L. GROUND
LOCATION ELEANDR LEASE AGROUND GOLDFIELD ANGLE FROM HORIZONTAL DIRECTION

DESCRIPTION OF CORE	GRAPHIC LOG	DEPTH SIZE OF CORE	LOG	LIFT OF CORE RE COVERY %	SAMPLES	REMARKS	ASSAYS
Medium grained gneiss.			103' 6"				
105' Minor slate and shear plane eschists.			6'				
			110'				
			3'				
			113'				
			6' 6"				
			119' 6"				
			8'				
128' 6" - 128' 10" Quartz			123' 6"				
			1'				
Run slate			9' 6"				
			139' 6"				
			10' 6"				
			149'				
5 150' - 157' Sheared chloritic slate, spotted.			9' 6"				
			158' 6"				
157' - 163' Gneiss, medium grained.			5' 2"				
			163' 8"				
163' - 170' Slate, chloritic, spotted.			3' 3"				
			168'				
			2' 6"				
170' - 225' Intersbedded gneiss and slate in approximately equal proportions.			170'			170' Approximate base of weathering	
			7' 6"				
			178'				
			4'				
			182'				
			4'				
			186'				
			4'				
			190'				
192' Quartz pyrite 2"			10'				
			200'				

EXPLANATION

CASING IN HOLE DURING DRILLING

REFERENCES

HEAD OFFICE

LOGGED BY

DRAWN BY

CHECKED BY

SHEET 2 OF 4

DRAWING NO.

GEOLOGICAL LOG OF DRILL HOLE

PROJECT PINE CREEK DIAMOND DRILLING REMARKS
 HOLE No. DDH 5 CO-ORDINATES R.L. GROUND
 LOCATION ELEANOR LEASE AGICOND GOLDFIELD ANGLE FROM HORIZONTAL DIRECTION

DESCRIPTION OF CORE	GRAPHIC LOG	DEPTH SIZE OF CORE	LOG	LIFT & CORE RE COVERY %	SAMPLES	REMARKS	ASSAYS
Interbedded greywacke & slate							
greywacke predominates in slate in volume in this section of hole.							
217' Locusty 2"							
225' 226' 9" greywacke, quartzite, pyrite 1"							
226' 9" - 310' greywacke fine grained massive.							
238' Shasty 1 1/2"							
243' Shasty 1"							
245' Shasty - minor pyrite 1"							
258' Locusty 1" in diameter with quartz crystals							
258' 3" - 258' 9" greywacke coarse grained							
277' 6" - 279' Slate							
282' - 283' Slate							

DRILL NO.	EXPLANATION	HEAD OFFICE
TYPE	CASING IN HOLE DURING DRILLING <u>H</u>	LOGGED BY
DRILLER	REFERENCES	DRAWN BY
COMMENCED		CHECKED BY
COMPLETED		SHEET <u>3</u> OF <u>4</u>
		DRAWING NO.

GEOLOGICAL LOG OF DRILL HOLE

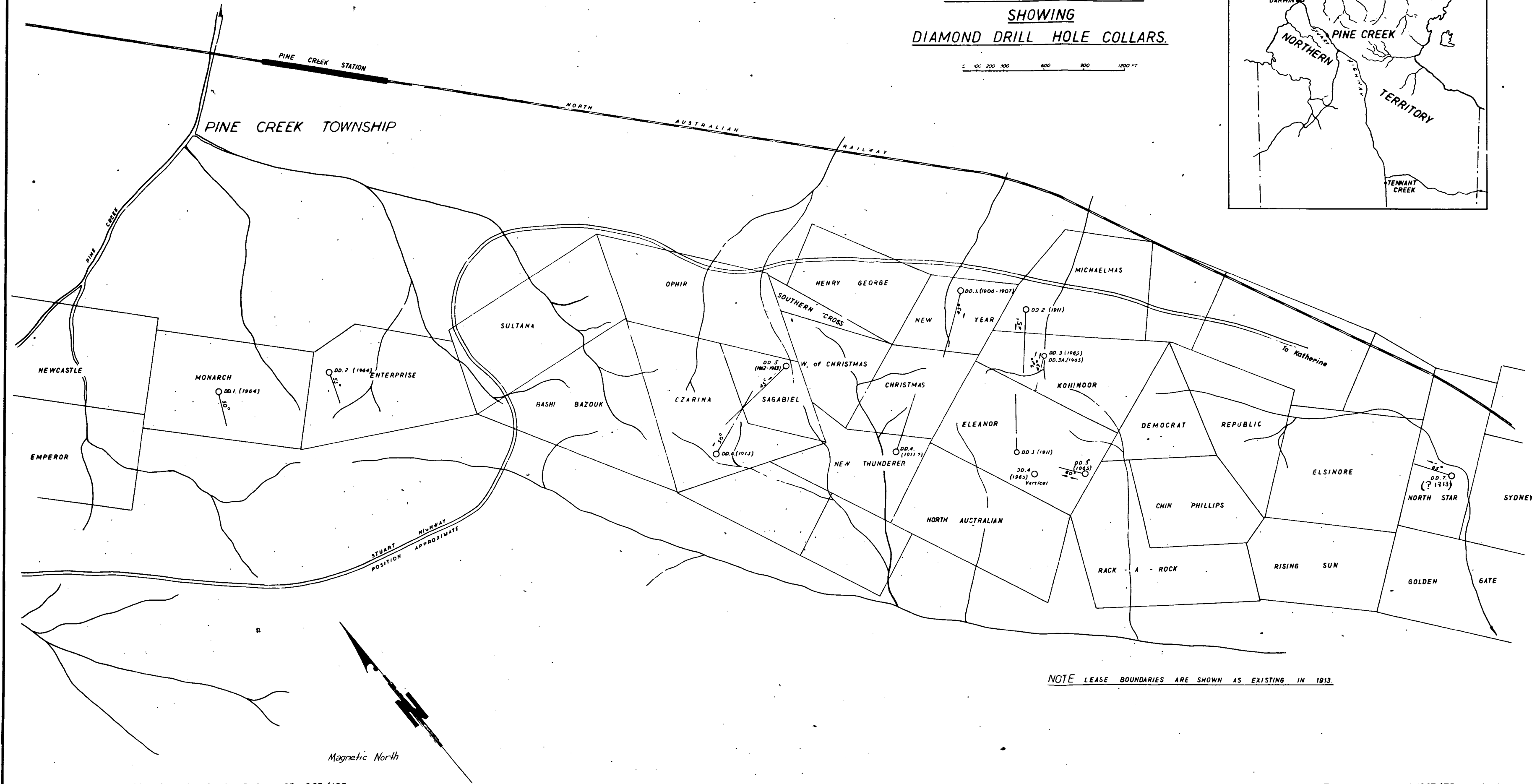
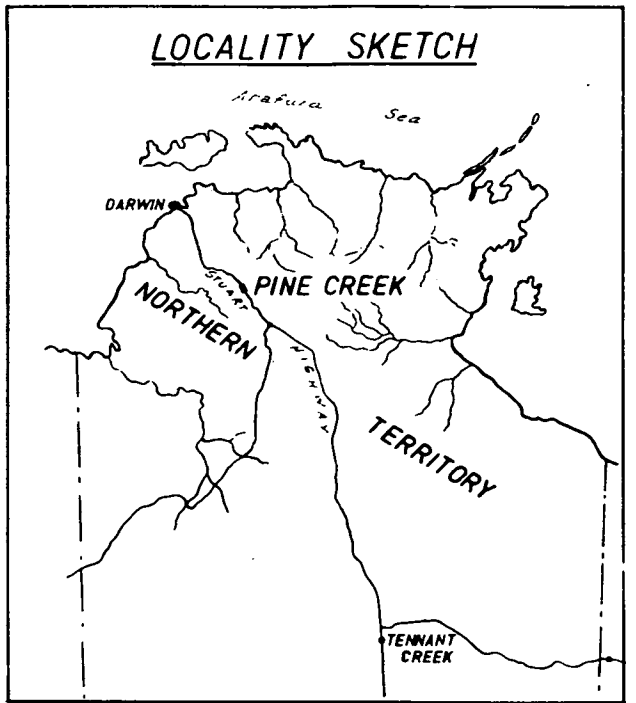
PROJECT: PINE CREEK DIAMOND DRILLING N.T. MARKS
 HOLE No. DDH 5 CO-ORDINATES R.L. GROUND
 LOCATION: ELEANOR LEASE ACROSS GOLD FIELD ANGLE FROM HORIZONTAL DIRECTION

DESCRIPTION OF CORE	GRANITE LOG	DEPTH SIZE OF CORE	LOG	LIFT & CORE RECOVERY %	SAMPLES	REMARKS	ASSAYS
gneiss fine grained			303'6"				Au dusts/long ton Ag dusts/long ton
310' 3" gneiss 10' pyrite, hematite						SPLIT CORE	0.2 <2
310'6" 314' gneiss coarse grained			17'6"				
314' 315'6" gneiss coarse grained						SPLIT CORE	<0.2 <2
315'6" 319' gneiss fine grained with 5x 1/8" - 1/4" pyrite nodules							
319' 320'6" gneiss with 1/2" - 1" pyrite nodules			321'			SPLIT CORE	0.2 <2
320'6" 324' slate with 2x 1/2" pyrite nodules							
324' 325' gneiss - coarse grained - chert - chert			9'			SPLIT CORE	2 <2
325' 329'9" gneiss & slate							
329'9" 330'9" gneiss - coarse grained			330'			SPLIT CORE	<0.2 <2
330'9" 335'9" gneiss, coarse grained			6'				
335'9" 337' gneiss medium to coarse grained			336'			SPLIT CORE	<0.2 <2
337' 342'7" medium to coarse grained gneiss			6'8"				
342'7" 343'11" gneiss, chert - calcite - chert with pyrite crystals			342'8"			SPLIT CORE	1 <2
343'11" 349' coarse to medium grained gneiss			9'10"				
349' 356' slate							
356' 356' - 368' gneiss fine grained			352'6"				
368' 369'6" gneiss fine grained			7'				
369'6" 371' gneiss fine grained			7'6"				
371' 373'6" gneiss fine grained			367'			SPLIT CORE	<0.2 <2
373'6" 377'6" gneiss fine grained			6'6"				
377'6" 384'6" gneiss fine grained			373'6"				
384'6" 390' gneiss fine grained			4'				
390' 396' gneiss fine grained			377'6"				
396' 400' gneiss fine grained			7'				
400' 400' gneiss fine grained			384'6"				
400' 400' gneiss fine grained			5'6"				
400' 400' gneiss fine grained			390'				
400' 400' gneiss fine grained			7'				
400' 400' gneiss fine grained			396'				
400' 400' gneiss fine grained			1'				
400' 400' gneiss fine grained			END OF HOLE				

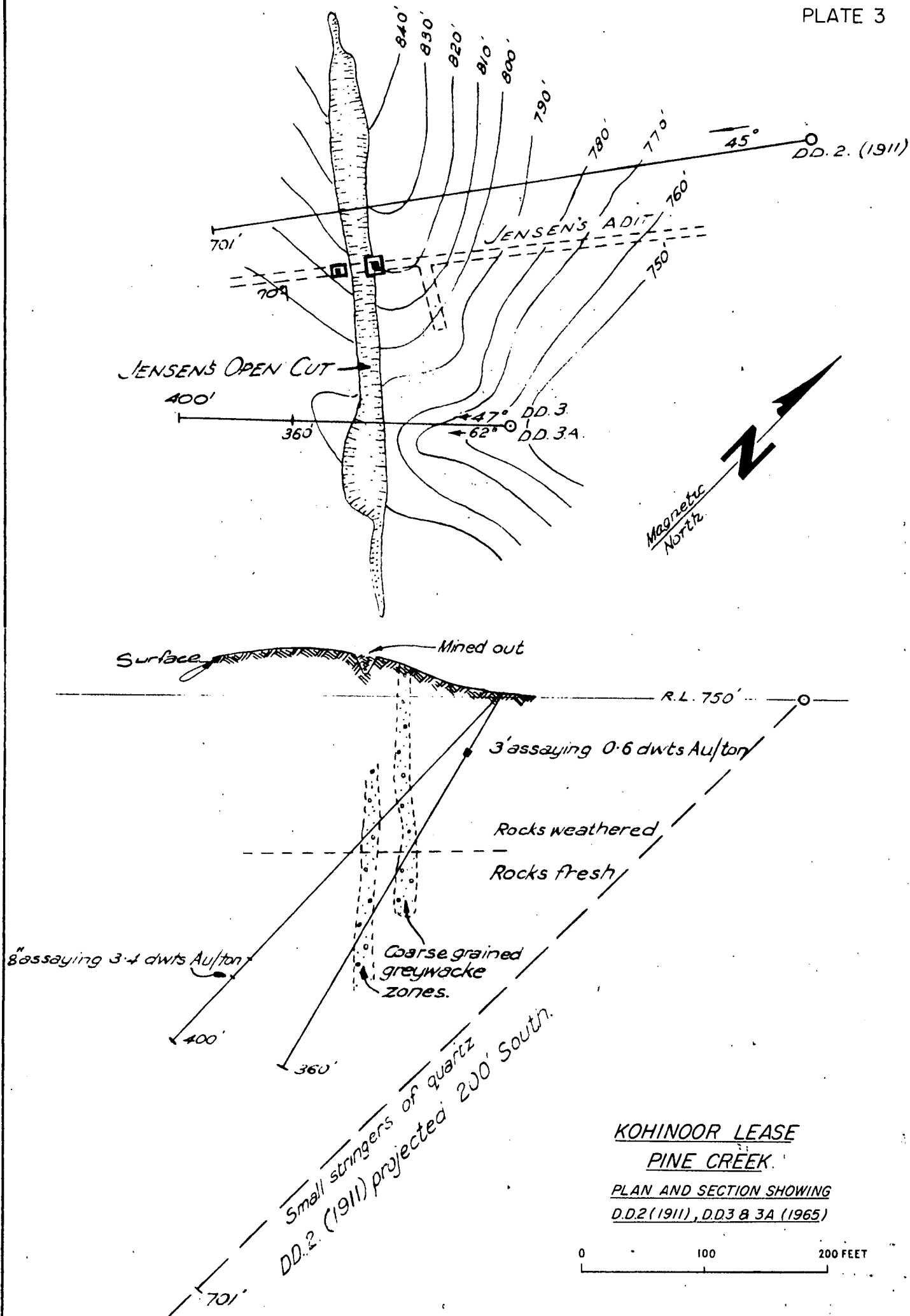
NO.	EXPLANATION	HEAD OFFICE
TYPE	CASING IN HOLE DURING DRILLING	LOGGED BY
FILLER		DRAWN BY
COMPLETED		CHECKED BY
	REFERENCES	SHEET 4 OF 4
		DRAWING NO.

PLAN
of
GOLD MINING LEASES, PINE CREEK.
AGICONDI GOLDFIELD N.T.
SHOWING
DIAMOND DRILL HOLE COLLARS.

0 100 200 300 400 500 600 700 800 900 1000 1100 1200 FT



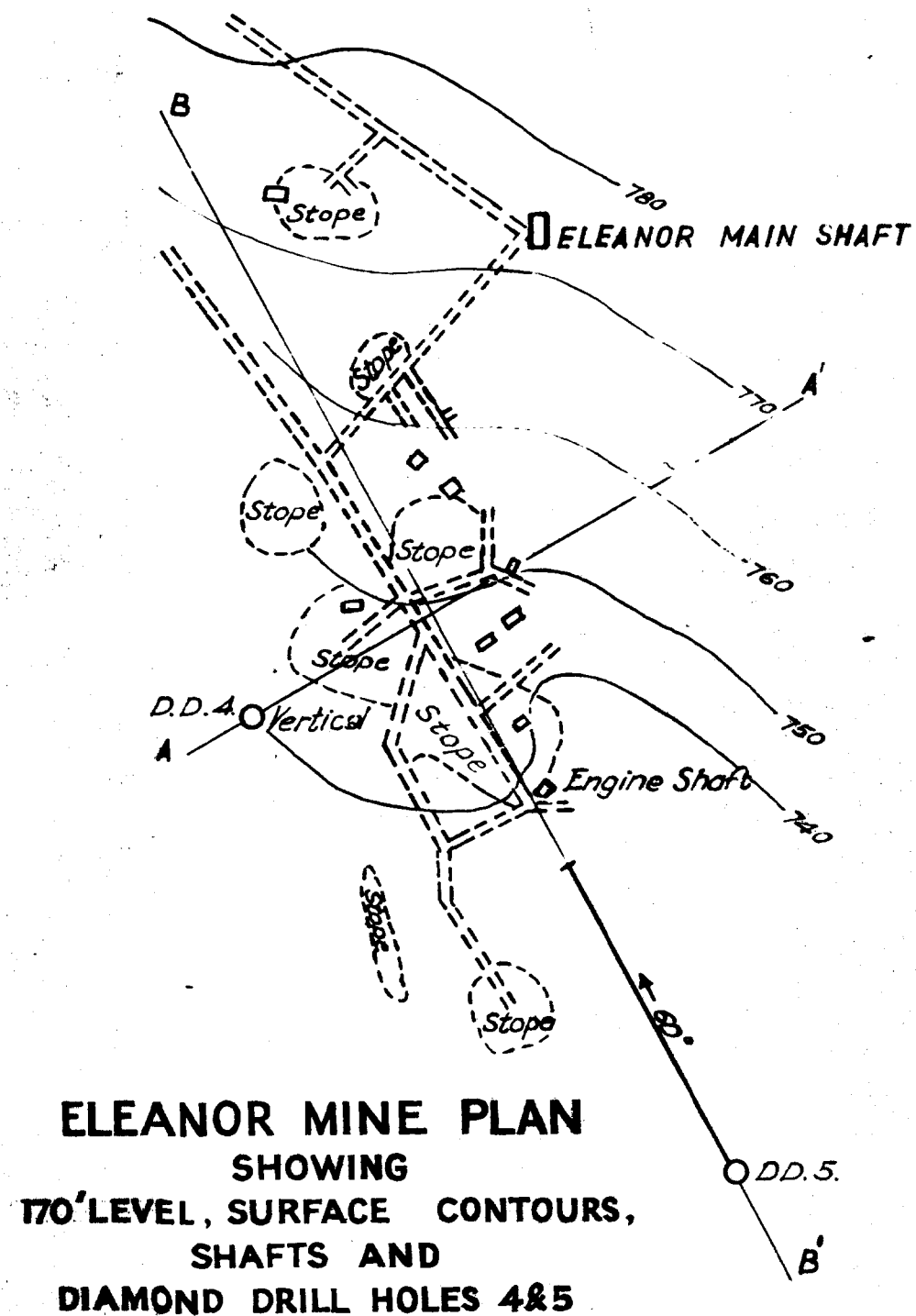
NOTE LEASE BOUNDARIES ARE SHOWN AS EXISTING IN 1913.



CROSS SECTION THROUGH
PLANE OF D.D.H's. 3 and 3A

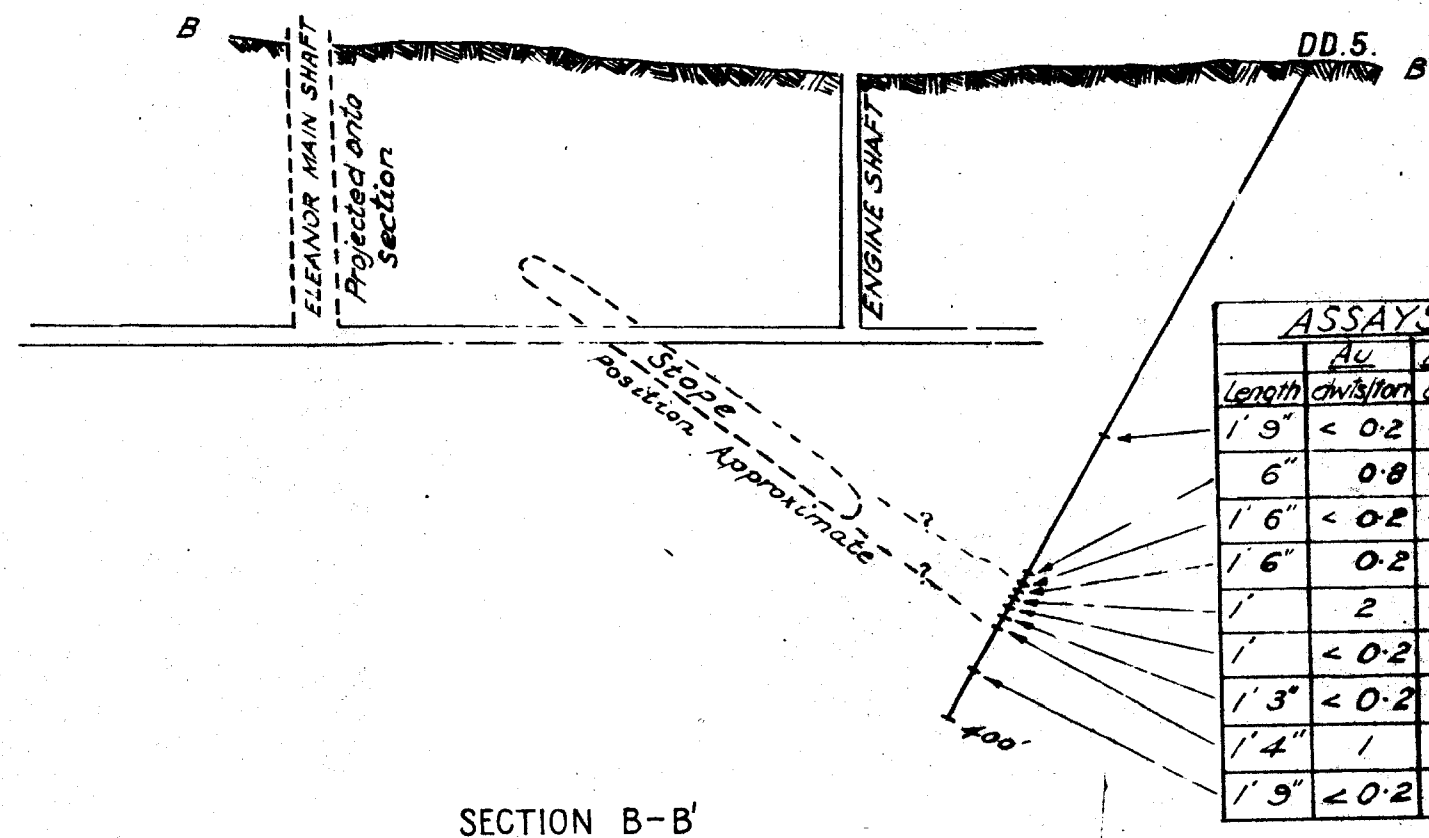
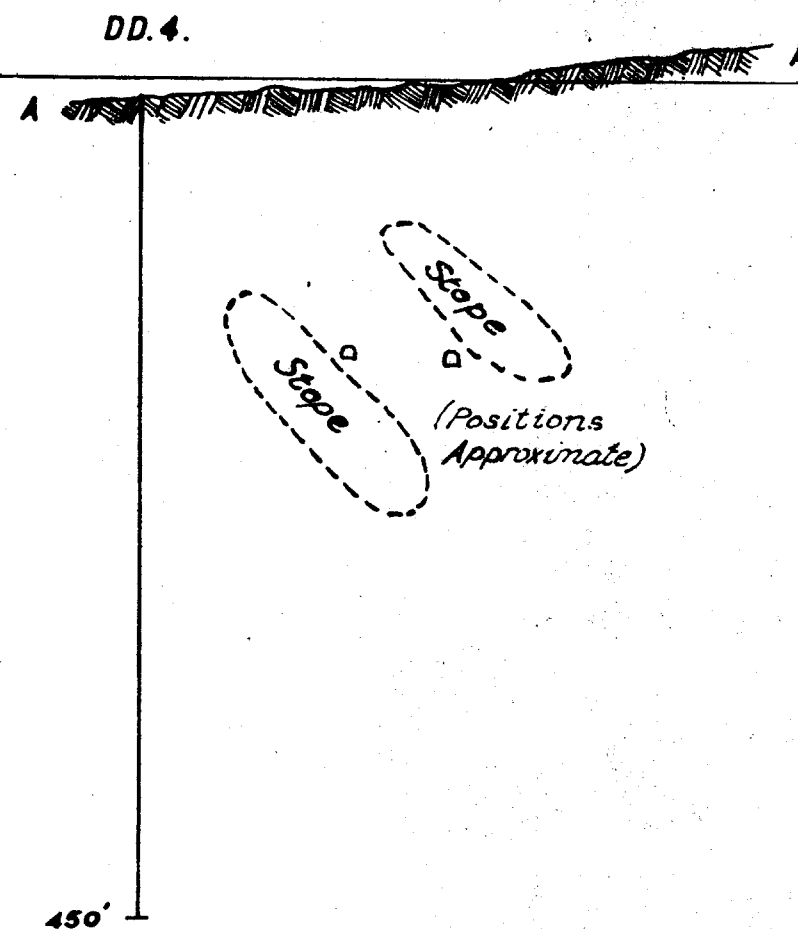
Compiled by Resident Geological Section, DARWIN 1965. G65/18E

To accompany record 1967/75 052/A8/222



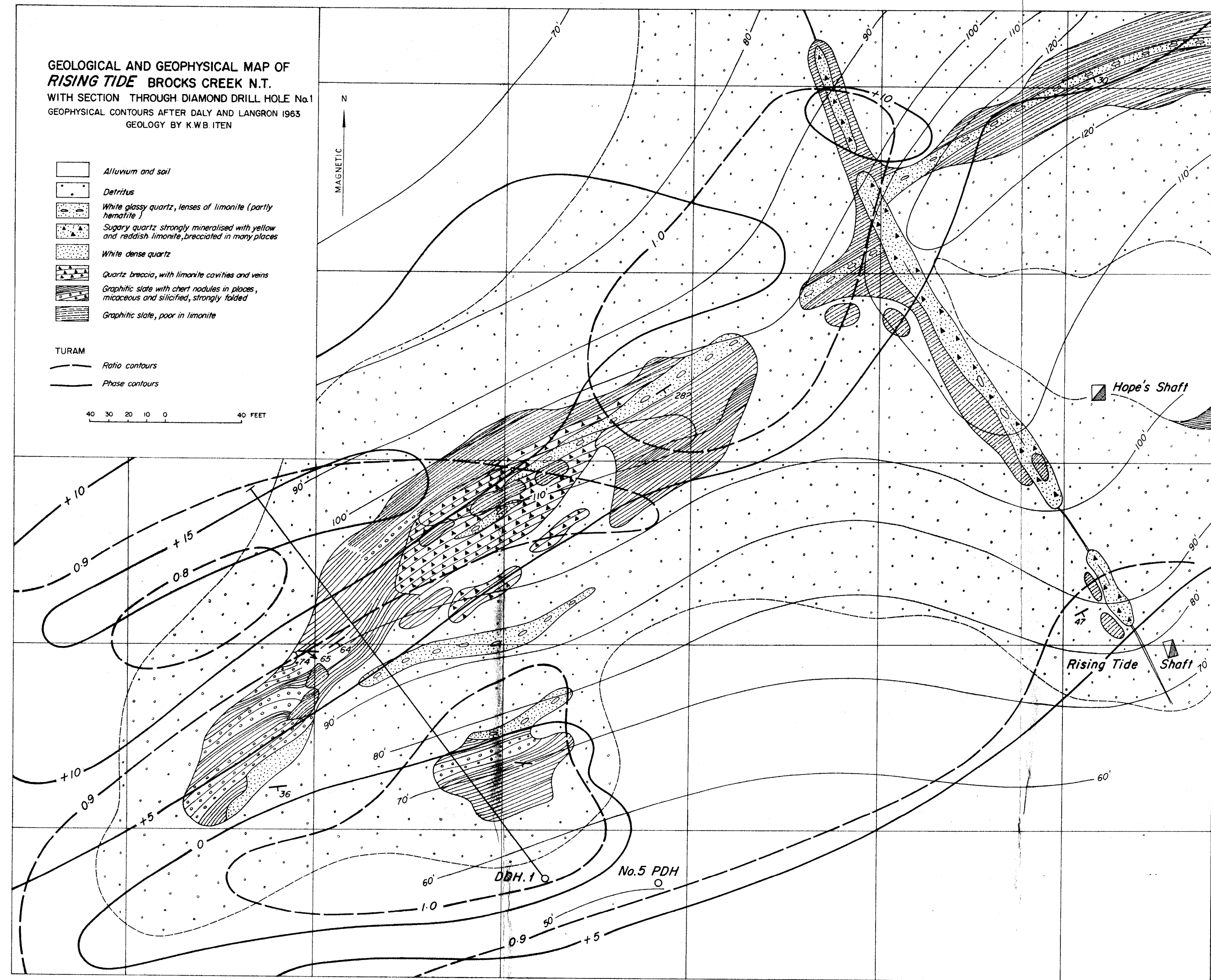
0 100 200 FEET

N
Magnetic
North



0 100 200 FEET

ELEANOR MINE
SECTIONS: DIAMOND DRILL HOLES
N^{os} 4 & 5



DIAMOND DRILLING RESULTS, RISING TIDE AREA, BROCKS CREEK, N.T.

by

A. Taube

SUMMARY

A diamond drill hole 300 feet in depth was drilled on the Rising Tide property, Brocks Creek to test an electromagnetic geophysical anomaly. The work was undertaken as part of the 1963 Special Mineral Survey Programme. No minerals of economic value were found in the core.

INTRODUCTION

Brocks Creek siding is on the Darwin-Birdum Railway, 117 miles by rail from Darwin. It is approximately seven miles to the north-east of the Stuart Highway and is connected with the Highway by means of a good all-weather road. The Rising Tide property is approximately one mile north-east of Brocks Creek siding and is accessible by an old army track.

Diamond drilling was carried out under contract by Associated Diamond Drillers for the Bureau of Mineral Resources. Drilling started on the 19th June and was completed on the 18th July, 1963.

PREVIOUS WORK

Before 1915, two shafts had been sunk with government assistance on the large gossan outcrops of the Rising Tide property. The first was sunk to 120 feet and then cross cut to intersect the lode, and the second sunk to 83 ft. with a northerly inclination. The only mineralization identified in these operations was pyrite.

J.A. Smith put down a percussion drill hole (P.D. 5) to a depth of 115 feet near the Rising Tide gossan; the cuttings contained up to 15 percent sulphides, almost all pyrite, near the bottom of the hole (King and Thompson 1949). Assays for lead, zinc, copper, silver and gold yielded negative to very low results. (See Appendix 1).

Geological investigation of the Brocks Creek area was carried out by the Aerial, Geological and Geophysical Survey of North Australia during 1939. Additional geological and geochemical work was carried out in 1950 by staff of the Bureau of Mineral Resources. The results of all this work, which included detailed work on the Rising Tide anomaly, are described by Sullivan and Iten (1952).

The mineral prospects of the Brocks Creek area have been discussed by King and Thomson (1949) and Campbell (1956).

A detailed electromagnetic (Turam) survey over the Rising Tide area by Daly and Langron (1963) revealed the presence of several good conductors. The present diamond drill hole was planned to test the nature of one of these conductors.

GEOLOGY

The geology of the Rising Tide gossan has been described by Sullivan and Iten (1952). Plate 5 is based on their work.

The gossan is located on sediments of the Lower Proterozoic Golden Dyke Formation, which surround the Burnside Granite. The granite occupies the core of a domal structure (Malone, 1962).

A cross-fault, striking at about 330 degrees, displaces the sediments for about 20 ft. This fault is marked by massive, brecciated, sugary quartz.

Mineralization consists mainly of ochreous hematite or limonite in cavities near the surface. Sullivan and Iten (1952) believe the cavities to be boxworks of oxidised iron sulphides, but Campbell (1956) considers they represent weathering out of limonite accumulated by lateritic concentration along bedding planes.

DRILLING RESULTS

The geophysical contours on Plate 5 are taken from Daly and Langron (1963). The drill hole was designed to intersect the geophysical anomaly.

The upper 30 feet of core consists of massive and brecciated quartz alternating with bands of contorted ochreous hematite and limonite-replaced shale and siltstone. Rare traces of pyrite were recognised in the topmost quartz band.

From 30 to 118 feet the core consists of slate, slaty siltstone and partly kaolinised fissile sandstone. Most of this section is weathered, and core recovery was not good. Some iron staining was noted throughout, but no mineralization was identified.

The remainder of the core (118 feet to 300 feet) consists of amphibolite with rare minor slate bands. The amphibolite varies greatly in its quartz, chlorite and biotite content. Minor amounts of pyrite mineralization occur throughout this section, both disseminated in the amphibolite and along fracture planes. One half inch band of galena and pyrite was noted at 180 ft.

Appendix 2 is a log of the drill hole. None of the core was assayed.

CONCLUSION

The low grade of mineralization present does not warrant further investigation in the Rising Tide area.

The geophysical anomaly seems to be caused by the presence of pyrite in the amphibolite but may also be due to the irregular distribution of iron oxides in the amphibolite.

REFERENCES

- CAMPBELL, F.A., 1956 - Report on Gossan Formation of Brock's Creek, N.T. Australian Mining & Smelting Co. (unpublished report)
- DALY, J., and LANGRON, W.J., 1959 - Darwin/Katherine Region Geophysical Reconnaissance Survey, N.T. Bur. Min. Resour. Aust. Rec., 1963/28 (unpubl.)
- KING, H.F., and THOMSON, B.P., 1949 - Report on Brock's Creek, N.T. Zinc Corp. Memo. 134 (unpubl.)
- MALONE, E.J., 1962 - Pine Creek 1:250,000 Geological Sheet. Bur. Min. Resour. Aust. explan. Notes SD 52-8.
- SULLIVAN, C.J., and ITEN, K.W.B., 1952 - The Geology and Mineral Resources of the Brocks Creek District. Bur. Min. Resour. Aust. Bull., 12.

APPENDIX 1

Assay Results on P.D. No. 5

Brocks Creek, N.T.

J.A. Smith's Percussion Drill Hole No. 5

Description	Sample No.	Pb%	Ag oz.	Zn%	Cu qual.	Au dwt.	S%
Red	5701	-	Nil.	-	Nil.	0.8	-
Red	5702	-	"	-	"	Tr.	-
Reddish brown	5703	-	"	-	Tr.	"	-
Light red	5704	-	"	-	Nil.	"	-
Light red	5705	-	"	-	"	"	-
Brownish red	5706	-	Tr.	-	"	"	-
Brownish red	5707	-	"	-	"	"	-
Light red	5708	-	"	-	"	"	-
Light red	5709	-	0.1	-	"	"	-
Light red	5710	-	Tr.	-	"	"	-
Light red	5711	-	"	-	"	"	-
Brownish red	5712	-	Nil.	-	"	"	-
No sample							
Brown	5714	-	"	-	"	"	0.3
.... Limit of oxidation 85 ft.							
Grey	5715	Tr.	Nil.	0.1	Tr.	Tr.	0.3
Grey	5716	"	"	0.2	Nil.	"	2.2
Grey	5717	"	"	0.3	"	"	3.8
Grey	5718	"	Tr.	0.2	"	"	8.1
Brownish grey	5719	"	"	0.3	"	"	7.0
Grey	5720	"	Nil.	0.3	"	Nil.	6.7
.... End of hole 115 feet							

Summary - Oxidised zone: Trace Ag, Nil Cu, Tr. Au.

Sulphide zone: Tr. Pb, Tr. Ag, Nil Cu, Tr. Au, up to 8% S indicating up to 15% pyrite and other sulphides.

(Note - depths not available: samples are probably in 5 ft. intervals beginning at 15 - 20 ft.)

APPENDIX 2.

BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

GEOLOGICAL LOG OF DRILL HOLE

PROJECT RISEING TIDE, BROCK'S CREEK, N.T. REMARKS GEOPHYSICAL E.M. ANOMALYHOLE No. ONE CO-ORDINATES

R.L. GROUND

LOCATION ANGLE FROM HORIZONTAL 36°-39° DIRECTION 521°-522°

DESCRIPTION OF CORE


 GRAPHIC LOG
DEPTH
SIZE OF
CORE

LOG

CORE
RECOVERY
%

SAMPLES

REMARKS

ASSAYS

Ochreous hematite, brown, vuggy, replacing contorted shales/siltstones.

100

Ochreous hematite, as above, with gray claystone.

100

Quartz, white, massive, vuggy, traces pyritic. Some vug and fracture fillings of ochreous hematite and gray clay material, some quartz crystals. Two 1" bands of brown slate.

95

Ochreous hematite, brown, vuggy, replacing gray and black carbonaceous siltstones. 19-21' Black, sooty, carbonaceous. Some quartz.

100

Disseminated quartz bands in contorted gray-brown hematitic vuggy shales as above.

96

Siltstone and shale, red-brown, soft, kaolinitic, with minor quartz. Well-bedded, dip varies but beds not highly contorted.

51

Sandstone, gray-brown and purplish, fine-grained, soft, clayey, part kaolinitic. Small bands micaceous, hematitic, carbonaceous shales.

95

Siltstone, white and light brown, argillaceous, some micaceous, Claystone, white, and some thin bands of carbonaceous shale.

55

Siltstone, brown & purple, argillaceous.

77

Siltstone, sandstone, claystone, gradational. Brown to gray, schistose. Ferruginous, kaolinitic in part, minor quartz.

55

Kaolinite, white, slightly silty.

100

Siltstone & shale, red-brown, vuggy, hematitic.

10

Sandstone, dark gray, medium-grained quartz and fluorite(?), Biotitic, variable, white clay matrix.

30

1 3/8" - 1 1/4" DIAMETER DM

EXPLANATION

CASING IN HOLE DURING DRILLING

REFERENCES

HEAD OFFICE

LOGGED BY A.T., J.S.DRAWN BY B.V.

CHECKED BY

SHEET 1 OF 2

DRAWING NO.

RECEIVED BY DIAMOND DRILLAGEDATE 19 JUNE 1963BY 18 JULY 1963

BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

GEOLOGICAL LOG OF DRILL HOLE

PROJECT. RISEING TIDE, BROCK'S CREEK, N.T. REMARKS.....
HOLE No. ONE CO-ORDINATES..... R.L. GROUND.....
LOCATION..... ANGLE FROM HORIZONTAL..... DIRECTION.....

	DESCRIPTION OF CORE	R.L.	DEPTH	LOG	CORE RE COVERY %	SAMPLES	REMARKS	ASSAYS
		CASING	SIZE OF CORE					
180	Sandstone, dark grey, medium grained, quartz & fluorite (?) white clay matrix. Biotitic, variable, fragmentary, weathered.				25			
110	Banded variable fine sandstone, siltstone, slate, light to dark grey, cleavable, biotitic, some thin white clayey and quartzose bands. One 1/8" band of epidote-green clay at 107'.				96			
	Claystone & slate, Plastic, micaceous, some thin bands of white clay siltstone.				100			
120	Amphibolite, fine-grained, dark green, banded, biotitic.				92		Probable base of weathering	
	Siltstone & slate, banded, light to dark grey, micaceous, hard. Some fine white & grey clay & silt bands.				100			
130	Amphibolite, dark grey-green, banded, fine-grained. Varies in quartz and biotite content. Traces pyrite.				100			
	Silty schist				100			
140	Amphibolite, variable, dark grey-green, hard, medium-grained, patches of coarse- grained, some chloritic, varying in quartz and biotite content, some w/ clay matrix. Poorly banded to massive, Traces pyrite. Minor bands of schist and clay.				100			
150								
160	Amphibolite, dark green, coarse-grained, some patches of very coarse. Variable, varying in quartz content. Some chloritic, some becoming very micaceous. Traces of pyrite throughout, some clay, calcite noted along fractures.							
170					100			
180	1/2" Band of sulphides, (Galena & pyrite) in 6" band of fine-grained siliceous amphibolite.							
190	Amphibolite, coarse-grained, as above.							

EXPLANATION

CASING IN HOLE DURING DRILLING

REFERENCES

HEAD OFFICE

LOGGED BY J.S., A.T.DRAWN BY A.T.

CHECKED BY


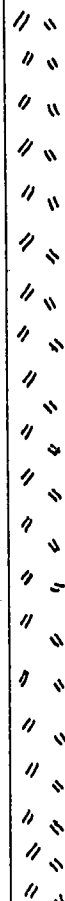

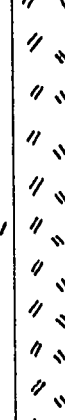

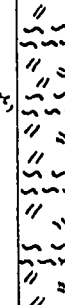
SHEET 2 OF 3

DRAWING NO.

BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

GEOLOGICAL LOG OF DRILL HOLE

PROJECT *RISEING TIDE, BROCK'S CREEK, N.T.* REMARKS.....
HOLE No. *ONE* CO-ORDINATES..... R.L. GROUND.....
LOCATION..... ANGLE FROM HORIZONTAL..... DIRECTION.....

DESCRIPTION OF CORE	R.L.	DEPTH	LOG	CORE RECOVERY %	SAMPLES	REMARKS	ASSAYS
	CASING	SIZE OF CORE					
<i>Limestone, white, coarse-grained, massive. Minor indistinct chlorite and chloritic amphibolite.</i>				100			
<i>Amphibolite, dark green, generally medium-grained, some very quartzose, some very micaceous (biotitic). Traces pyrite throughout, some along joint planes. Some joint and fracture fillings of calcite. Rare thin seams of quartz and very coarse-grained amphiboles.</i>		<i>1 3/16" - 1 1/4" DIAMETER BM</i>		100			
<i>Amphibolite & biotite schist, poorly banded, minor quartz & calcite veins.</i>				100			
<i>Amphibolite, dark green, hard, medium-grained, biotitic and quartzose in varying amounts. Traces pyrite. Fracture fillings of quartz and calcite. Occasional minor gradational bands of chlorite schist. One minor vuggy, crystalline quartz vein at 262'g associated with chlorite schist. Some shearing and contorting of bedding at 276'-278'.</i>		<i>BX</i>		100			
<i>Amphibolite, as above but coarse grained and more biotitic.</i>				100			
<i>Chlorite biotite schist and amphibolite, mottled green-black, poorly banded to massive, minor quartz and calcareous fracture fillings.</i>				95			
<i>END OF HOLE</i>							

DRILL NO.....	EXPLANATION	HEAD OFFICE	
TYPE.....		LOGGED BY <i>A.T. J.S.</i>	
DRAWER.....	REFERENCES	DRAWN BY <i>A.T.</i>	
COMMENCED.....		CHECKED BY.....	
COMPLETED.....		SHEET <i>3</i> OF <i>5</i>	
		DRAWING NO.....	