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MAWBANNA AREA
E.L. 9/68
Progress Report
to
Industrial Rock Mines Pty. Ltd.

D. D. BEANSON
17/11

Mowbanna Area, Tasmania EL 9/68
per D. D. BEANSON

by
E. K. STURMYLES 66-69.

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MAWBANNA AREA, TASMANIA
EXPLORATION LICENCE 9/68

Progress Report

to

Industrial Rock Mines Pty. Ltd.

by

E.K. Sturmfels, D.Sc.
Consulting Geologist

With 1 Plan

Diamond Creek,
Victoria

MICROFILMED

6th June, 1969

*Lead Capital
this report
To Dept.
admission
Director's office*

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Summary

AMG REFERENCE POINTS ADDED

Clay deposits have been formed through decomposition of the Proterozoic bedrock during periods of intense weathering. They appear to be confined to low-lying parts where the original rock had a finer grain than elsewhere. In two areas measuring together about 5 sq.miles, where these conditions are likely to be met, further exploration by drilling to shallow depths is suggested. Glass sands in the valley of the Detention River are of remarkably high grade. Further exploration would best be done by drilling. Minor lead-zinc mineralisation and other indications point to the possibility of metalliferous prospects in parts of the Exploration Licence and a geochemical reconnaissance survey would be warranted. The quartzite ridges to the south-east and the basalt plateaux do not seem to offer any mineral prospects.

Introduction

Between 17th April and 28th April I carried out further investigations in the Mawbanna Area and searched for clay and other minerals as requested. As the area had apparently not been mapped previously, it was necessary to carry out geological mapping on a reconnaissance scale to provide a base for further work. However, I do not propose to discuss here the geology of the area in any detail, but shall confine myself to those features which have a direct bearing on mineral prospects.

Access

Over most of the area thick soil cover and dense scrub and timber confine observations to the banks of major creeks and occasional rock cliffs and to artificial exposures along roads, bulldozed tracks and railway lines. The best exposures were found along the new pipe line which carries iron ore from the Savage River deposit to the pelletizing plant on the coast. The top soil itself is generally rich in organic matter and occasional quartz pebbles or fragments are usually the only remnants of the rock at depth.

The area is not quite as well served by roads and tracks as the map would suggest: quite a few of the bulldozed tracks are overgrown and barred by fallen trees, and the fire breaks in the quartzite ridges to the south-east have grades of up to 25° or even more, which cannot possibly be negotiated by ordinary vehicles.

Much of the big timber which once covered the area has been felled, and the dense scrub and saplings, which have grown up between the rotting trunks are hard to penetrate even on foot. Timing my progress along a compass traverse through such scrub in the western part of the area I found that it took me over two hours for a distance of not more than 1¼ miles of gently undulating country.

General Geology

The bedrock throughout the area is formed by siltstones, quartzites and shales of the Rocky Cape Group of the Proterozoic.

Two formations (or subgroups) can be separated : a siltstone formation with minor shale and occasional sandstone beds, which covers about two thirds of the area, and a quartzite formation in the hilly south-eastern part. The relationship between these two formations is not known as yet, as all the contacts observed appeared to be faulted.

The Proterozoic rocks are strongly folded and faulted throughout. Dips vary from nearly horizontal to vertical, though a dip of about 40° or 45° to the north-west could be regarded as a reasonable average. Along shear zones the shales and siltstones have been altered to slates with minor development of chlorite and talc.

Sediments of Tertiary age are restricted to a few feet of very fine-grained sands with pockets of poorly rounded quartz pebbles, which were seen below basalt flows. The ochre-coloured sandy clays with quartz fragments, which overlies the white clay deposits, could also belong to this horizon.

The alluvial sediments along the Detention River, mainly very fine-grained quartz sands, are obviously derived from the quartzite ridges to the south. They could be as old as Pleistocene.

Small stocks of igneous rock can be seen to intrude the Proterozoic in two localities, and isolated boulders of similar material, which were found in several other places, suggest that such intrusions are fairly wide-spread. In composition they resemble alkali syenites, and they might well belong to the same cycle as the Cambrian intrusives near Ulverstone. The Tertiary basalts form plateaux slightly above the general level of the country ; they provide excellent soils which have largely been cleared for grazing purposes.

Clay Prospects

Near-white clays have been seen in a few places, always in low-lying areas. The outcrops in the main open cut prove that these clays were formed by the decomposition in situ of Proterozoic shales or very fine-grained siltstones. The white clays are normally overlain by a few feet of ochre-coloured sandy clays with quartz fragments. The conditions

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which led to the formation of these white clays are not fully understood, but they were obviously different from those which prevail today. They must have included high temperatures and much organic material which was able to reduce the trivalent iron and keep it in solution.

Two areas which are largely low-lying ground and where the Proterozoic bedrock seems to consist mainly of fine-grained sediments have been selected for further prospecting, a total of about 5 sq.miles.

Clay deposits cannot be expected to show on the surface and further exploration can only be done by drilling. In the first instance I would drill along traverses in a north-north-westerly direction, that is across the general direction of the strike. To begin with, distances between traverses might be of the order of about half a mile, and distances between bore sites might be kept at a few hundred feet. For some traverses existing roads or tracks can be used; elsewhere it will be necessary to cut through the scrub. The holes can be abandoned as soon as any rock, even if decomposed, is encountered below the soil and overburden. In most cases a depth of 4 or 5 ft will therefore be quite sufficient to prove the absence of white clays. However, where they are present it might be necessary to drill to 20 or 25 ft.

For the initial drilling a simple hand auger would probably be as good as ^{any} other tool. For deeper drilling, the Mindrill Minor equipped with clay coring bit and stationary inner tube core barrel would be suitable. An engine-driven auger or other drill mounted on a four-wheel-drive vehicle would certainly work faster along roads and tracks, but through timber and scrub it would require the cutting and clearing of tracks of sufficient width, a formidable and expensive task. As most of the drill sites will be away from existing roads and tracks I doubt if it would be worth-while to get a vehicle-mounted drill for the initial program.

Glass Sand Prospects

White glass sands of high grade have been found over quite a large area on both sides of the Detention River. In the pits near Helyer Railway Siding the sands are over 12 ft thick, and half a mile south of the railway bridge they measure

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at least 15 ft. Three samples taken from three different localities, two of them analysed by the Mines Department Laboratory in Launceston, and the third one by the Company's Laboratory, prove the consistently high grade (see table below). Reserves could be very large. However, whether the deposits could be exploited economically is not clear; transport charges might well be too high for likely consumers on the mainland; rail or road freights to Stanley (approx. 20 miles) or Burnie (approx. 35 miles) would have to be added to ship freights.

Sample No.	1	2	34
Locality	Railway cutting	Railway cutting	Sand pit, Helyer Rly. Siding
Analysed by	Mines Department, Launceston		Kodda Pty. Ltd.
SiO ₂	99.3 %	99.2 %	99.5 %
Al ₂ O ₃	0.13	0.13	0.06
Fe ₂ O ₃	0.03	0.05	0.03
Na ₂ O	.	.	0.02
K ₂ O	.	.	0.02
Ca	0.02	0.01	.
Mg	0.01	0.01	.
Mn	0.001	0.001	0.0005
Zn	.	.	0.001
Pb	.	.	<0.001
Sizing			
+ 8 mesh B.S.S.	.	.	trace
+ 16 " "	.	.	0.2 %
+ 30 " "	.	.	8.9
+ 60 " "	.	.	77.5
+ 100 " "	.	.	98.4

Further exploration, if required, would best be done by drilling. Initially I would drill a traverse along the high terrace on the western side of the Detention River. I have no experience in drilling sands, but I understand that for an unconsolidated sand deposit such as this a so-called "jet drill", which drives the casing down with a hammer and flushes up the sand by water pressure, would be suitable.

Metalliferous Prospects

The area is well outside the major metalliferous regions of Tasmania. However, some indications that the area might not be quite as barren as had been thought originally

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have come to light. They include minor igneous intrusions, shear zones with chlorite and talc, numerous quartz veins, gossaneous material with base metal contents above normal, and old workings which followed lead and silver showings on the western bank of the Black River, just outside the area of the Exploration Licence. Lead, zinc and gold contents of samples collected are shown in the table below.

Sample No.	27	28	32
Material	Quartz veins with pyrite	Gossaneous material	Dump
Locality	2 miles SW Mawbanna Rly. Siding		Adit, West Bank of Black River
Pb (*)	<100 ppm	<100 ppm	1,200 ppm
Zn	< 50	230	800
Au (+)	< 0.1 dwt	.	< 0.1 dwt

(*) Anal. Rodda Pty. Ltd.
 (+) Anal. Spectrometer Services Pty. Ltd.

Admittedly this would not be a very exciting record for any area of 40 sq.miles with normal outcrops, but here where exposures are so few and far between I think that they represent sufficient inducement for further investigations at least on a limited scale.

Obviously the extensive soil cover limits surface prospecting severely and calls for geochemical methods. I recommend a regional geochemical survey in a 3 mile-wide south-west trending zone of approximately 14 sq.miles (shown on the accompanying plan) in three stages :

- (1) Orientation survey near a locality with known even if minor mineralisation.
- (2) Sampling of drainage sediments along major creeks.
- (3) Soil sampling in parts without sufficiently deep drainage channels.

In all samples Cu, Pb and Zn should be analysed by atomic adsorption. I expect that pH values will generally be low (contrary to the semi-arid conditions around Port Augusta) and that base metal sulphides will have been dissolved and carried in ionic form. If so, samples could generally be reduced to the minus 80 mesh fraction.

The orientation survey will tell what kind of anomaly we might expect in the vicinity of mineralisation under the geological and climatic conditions prevailing in the area. Depending on its results it might become necessary to alter the details of the proposed campaign.

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Sampling along water courses is the normal procedure for reconnaissance investigations. Initial sampling points could be about 800 ft or 1,000 ft apart.

Where the country is flat and where the smaller water courses have not cut into the underlying decomposed rock and do not carry any sediment, soil sampling will provide more reliable information. For reconnaissance soil sampling I envisage about two traverses across the main strike direction per mile, with individual sampling points perhaps 300 ft apart. The orientation survey will show whether the top soil can be used or whether it will be necessary to take the samples from the "B" horizon, the underlying clayey material, a foot or two down. Where necessary pits could be dug by hand or a small hand auger could be used.

Other Minerals

Mr. A Pearson has drawn my attention to a quartz deposit $1\frac{1}{4}$ miles north of Mawbanna Railway Siding, which is being used as a gravel pit. The largest quartz vein in this deposit is at least 6 ft wide, and could be wider, but I doubt if the width would be sufficient for larger-scale extraction by open-cut methods. Similar quartz veins, though mostly smaller, occur in many places. A dense network of quartz veins, about 2 miles south-west of Mawbanna Railway Siding, represents the largest concentration of quartz I have seen, but much of this quartz is studded with pyrite.

In the last-mentioned locality some talc has also been found. However, the rocks in the area are not those normally associated with talc and I would not expect any deposits of commercial size.

Exploration Program

Deposits of clay and glass sand are undoubtedly present, and there are also indications of other minerals. However, exploration is still in the initial stage, we are not in a position as yet to plan a long-term exploration and drilling program, and we will have to modify our plans and ideas as we go along.

I recommend therefore that the initial drilling, at least the drilling for clay, be done by the Company's own personnel and not by an outside drilling contractor or a government agency. I also recommend that drilling, geochemical

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sampling and other prospecting activities be supervised on the spot by a geologist or similarly qualified person. I expect that four men would be required for not less than 3 weeks to carry out the initial program : two drillers, one prospector and one geologist or engineer.

If the Exploration Licence should come up for renewal I would quite like to see it enlarged, eastwards to include the glass sands between the Detention River and Helyer Railway Siding, and south-westwards to cover the lead-silver occurrence on the west bank of the Black River and the surrounding area.

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RODDA PTY. LTD.

Tas
Mines

LABORATORY REPORT NO. K163

Rpt Copy

SAMPLE SAND (NO 3)

RECEIVED 15/4/69

MR A PEARSON - MINERAL SUPPLIES TAS.

FOR MR W. N. RODDA.

DESCRIPTION	SEMI ROUNDED GRAINS - TRACE OF	
	TOURMALINE PRESENT	
COLOUR.	SUPERIOR TO - 50 WHITE SAND	
SIZING.	%	LOW %
+ 16 # B.S.S.	100	100
- 16 # + 30 # B.S.S.	0.4	0.4
- 30 # + 52 # B.S.S.	2.6	3.0
- 52 # + 60 # B.S.S.	1.7	4.7
- 60 # + 100 # B.S.S.	73.5	78.3
- 100 # + 200 # B.S.S.	21.3	44.6
- 200 # B.S.S.	0.4	
LOSS ON IGNITION	0.10	
SILICA SiO ₂	99.6	
ALUMINA Al ₂ O ₃	0.11	
TITANIA TiO ₂	0.18	
FERRIC OXIDE Fe ₂ O ₃	0.04	
LIME CaO	0.002	
MAGNESIA MgO	0.001	
MANGHANESE Mn	0.0007	

DATE 3/5/69

E. Westwood
CHIEF CHEMIST.

RODDA PTY. LTD.

LABORATORY REPORT NO. K190

SAMPLE SAND.

RECEIVED

FROM D.R.E.K. STURMEELS - MAWBANNA AREA T.A.S.

SAMPLE 34

SIZING	Com %		
+ 8 # B.S.S.	T.C.		
+ 16 # B.S.S.	0.2		
+ 30 # B.S.S.	8.9		
+ 52 # B.S.S.	65.4		
+ 60 # B.S.S.	77.5		
+ 100 # B.S.S.	98.4		
COLOR.	SUPERIOR TO - 30 WHITE SAND.		
LOSS ON IGNITION	0.07		
SILICA SiO_2	99.5		
ALUMINA Al_2O_3	0.06		
FERRIC OXIDE Fe_2O_3	0.03		
SODIA Na_2O	0.02		
POTASH K_2O	0.02		
MANGANESE Mn	0.0005		
ZINC Zn	0.001		
LEAD Pb	<0.001		

HIGH QUALITY MATERIAL

DATE 20/5/69

W. Westwood
CHIEF CHEMIST.

011

077013

FIELD

MAWBRINA, TAS

19-4-70

Memo MR. W. RODDADrilling - Exp. Licence 9/68 TasmaniaDrilling.

Further to my report to you dated 10/4/70 I commenced to Drill Holes as suggested. I have found conclusively, that clay core recovery with the Morrill Hand Drill is both unsatisfactory + misleading. I found that correct + uniform pressure on string was not possible with this hand fed plant together with adjustment of water flush being impossible whilst drilling. Without constant pressure on string the core freezes in the barrel shoe with the result being, no penetration + consequent washing out of any core in the split of barrel.

I had a like discussion with a driller id Stanley + his experience was similar, with constant feed of the bit + regulated water flush he has no trouble at all.

I have ceased attempting to drill + have concentrated on prospecting.

Prospecting

I have marked the clay areas on the attached map A + B.

B AREA This area, in the main, is fairly accessible + shows exceptional promise. I have finished in this area having walked the traverses shown in red lines on the map. Along which, drill holes should be put down at intervals.

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Memo Mr. W. Redon

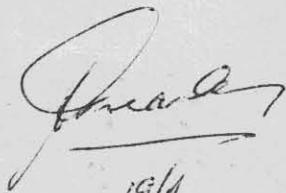
19-4-70

Exp. Licence 9/68.

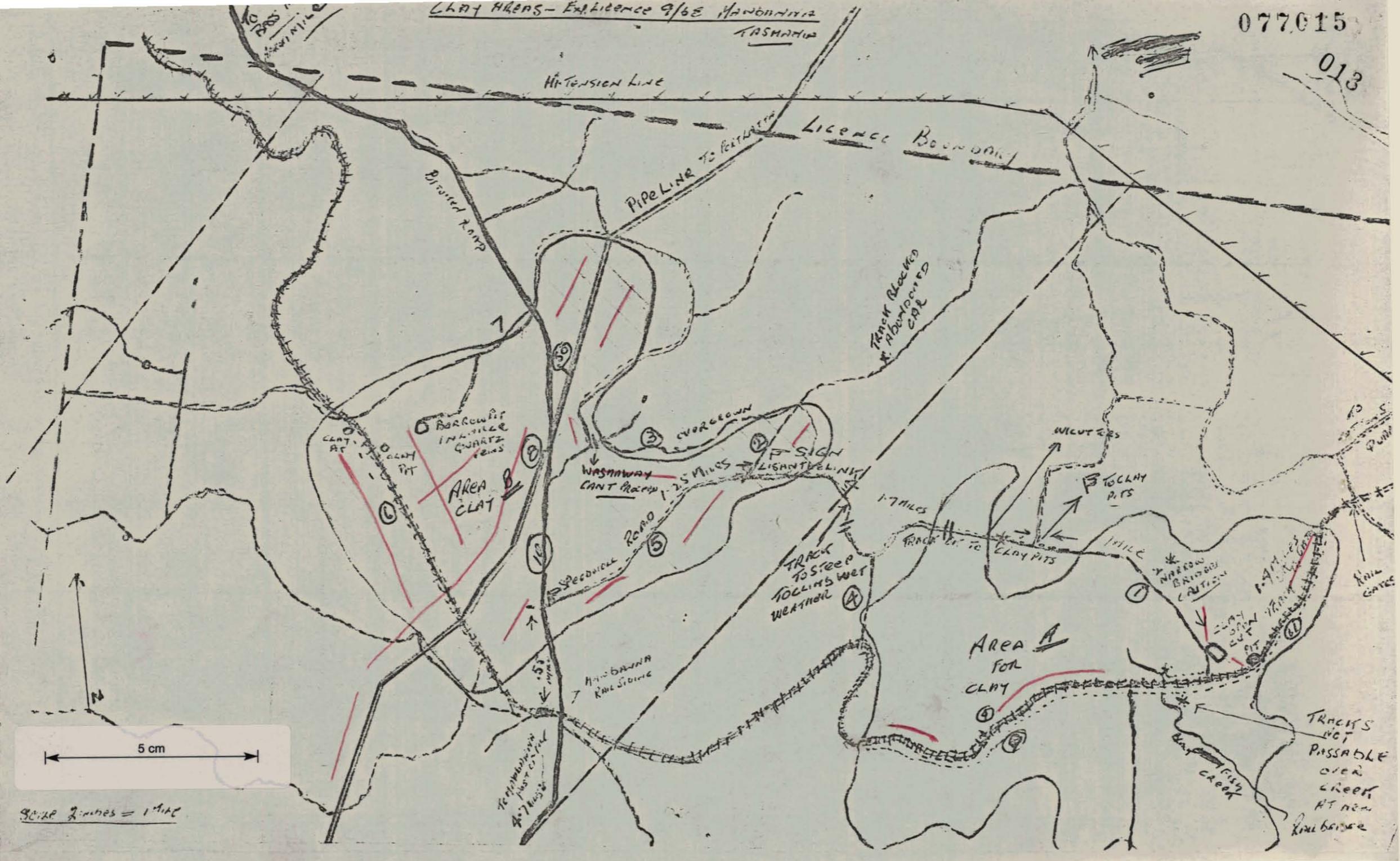
A. AREA. THIS AREA IS THICKLY WOODED + PRESENTS PROBLEMS OF ACCESS. I HAVE BEEN THROUGH THIS AREA IN A NUMBER OF TRAVERSES NORTH FROM THE RAIL LINE. TERRAIN IS DIFFICULT TO DISTINGUISH. THE SURFACE COVERED HEAVILY WITH FOREST DEBRIS + LOW AREAS HEAVY FERN GROWTH. LIGHT IS POOR, IN PLACES IS LIMITED TO ABOUT 6 HOURS DAILY. PROGRESS IS PAINFULLY SLOW + DIFFICULT. I HAD THE PROBLEM OF LIGHT FAILING BEFORE I REASONABLY EXPECTED + HAVING TO SPEND THE NIGHT OUT IN THIS AREA. MY COMMENTS ON THIS EXPERIENCE ARE UNPRINTABLE. THE TRACKS IN THIS AREA ALONG THE RAIL LINE ARE FAIR, BUT ARE BROKEN BY CREEKS AT INTERVALS + PROGRESS BY VEHICLE IS NOT POSSIBLE. A DOZEN WOULD, VERY SPEEDILY, RECTIFY THIS. FROM MY OBSERVATIONS, DRILLING JUST OFF THE TRACKS ALONG BOTH SIDES OF THE RAIL + NORTH + SOUTH APPROX. OF THE PRESENT OPEN CUT WOULD GIVE A VERY GOOD PICTURE OF THE PROSPECTS HERE

LABOR.

I HAVE BEEN UNABLE TO HIRE ANY ASSISTANCE.



19/4



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RODDA PTY. LTD. LABORATORY REPORT

Dated: 21st May, 1970

HOLE 1	L.O.I. 400°C %	L.O.I. 1000°C %	SiO ₂ %	Fe ₂ O ₃ %	Al ₂ O ₃ %
0' - 1'6"	2.3	2.34	96.5	0.04	0.07
1'6" - 3'	0.27	0.46	94.2	0.11	0.10
3' - 4'6"	0.32	0.49	94.2	0.21	0.24
4'6" - 5'6"	1.1	1.5	96.4	0.44	0.87
5'6" - 6'6"	1.6	3.4	95.2	0.24	0.97
6'6" - 7'	2.5	3.3	94.9	0.66	0.97
7' - 10'	2.4	2.6	95.6	0.90	0.64
<u>HOLE 2</u>					
0' - 2'	1.9	1.9	97.8	0.11	0.06
2' - 2'6"	0.39	0.40	97.5	0.18	-
2'6" - 3'	0.42	0.63	98.5	0.33	0.04
3' - 4'6"	0.76	0.86	96.8	0.36	-
4'6" - 5'6"	1.3	1.5	97.9	0.11	0.45
5'6" - 6'	1.6	1.9	97.5	0.14	0.70
<u>HOLE 3</u>					
0' - 2'	0.56	0.43	98.9	0.16	0.20
2' - 3'	0.65	0.59	97.7	0.45	0.15
3' - 4'	1.2	0.96	98.3	0.43	0.60
4' - 5'	0.33	0.20	99.1	0.07	0.20
5' - 6'	0.27	0.22	98.8	0.21	0.25
<u>HOLE 4</u>					
0' - 1'	0.01	0.17	98.7	0.05	0.16
1' - 2'	0.18	0.22	99.3	0.10	0.27
2' - 3'6"	0.11	0.16	97.9	0.06	0.22
3'6" - 4'	0.58	0.65	98.9	0.15	0.27
4' - 5'	0.76	0.90	98.1	0.35	0.31
4' - 6'	2.1	2.2	96.0	0.09	0.81
5' - 6'	1.6	1.7	97.4	0.22	0.10
6' - 7'(A)	1.3	1.5	97.8	0.22	0.10
6' - 7'(B)	2.1	2.6	96.6	0.12	0.15
<u>HOLE 5</u>					
0 - 6"	14.1	14.5	84.5	0.15	0.32
6" - 1'	10.2	10.4	88.6	0.29	0.25
1' - 2'	0.40	0.41	99.2	0.05	0.01
2' - 3'	0.34	0.45	99.3	0.05	0.13
3' - 4'	0.31	0.35	99.2	0.04	0.11

contd 2/..

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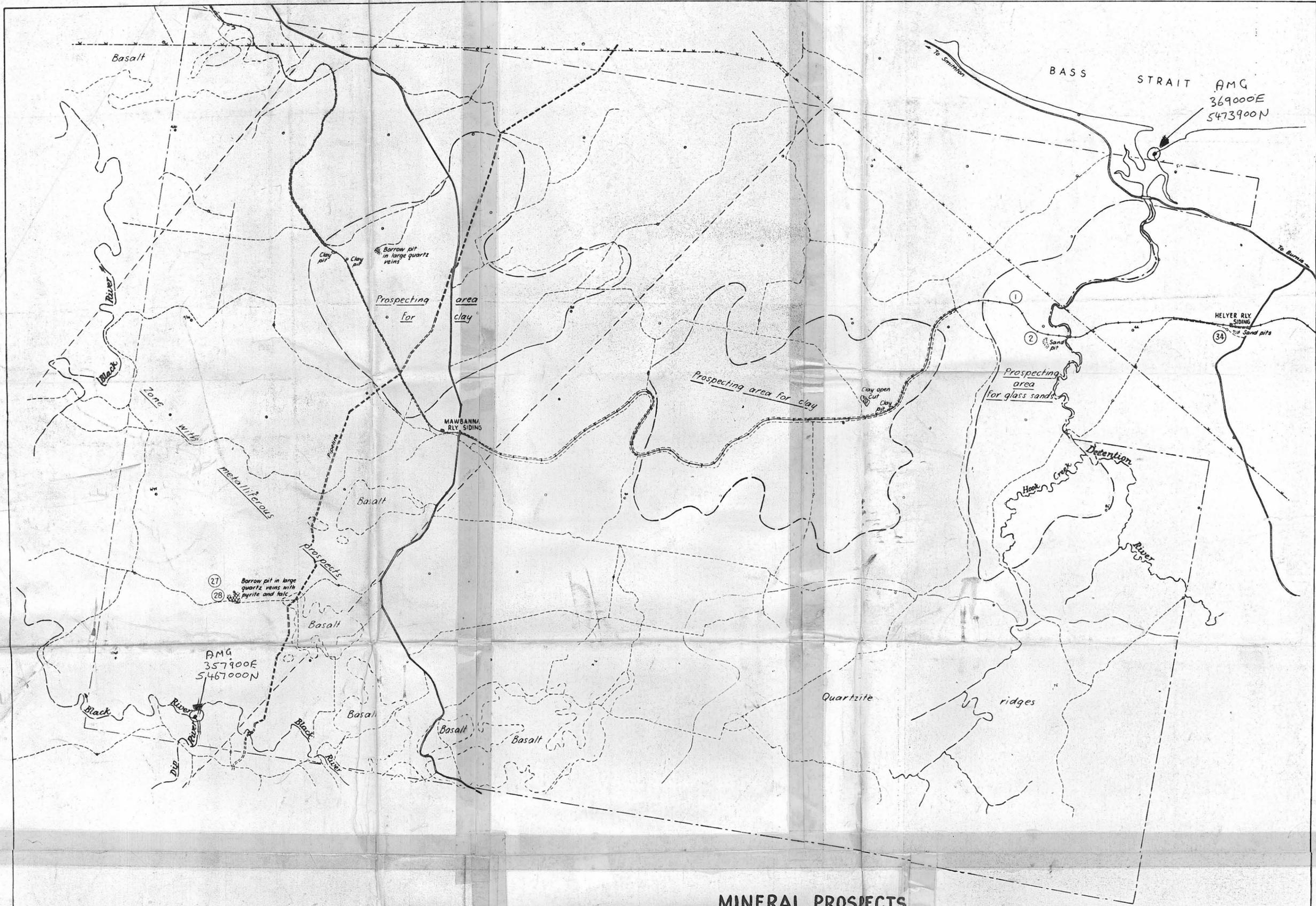
HOLE 6	L.O.I. 400°C %	L.O.I. 1000°C %	SiO ₂ %	Fe ₂ O ₃ %	Al ₂ O ₃ %
0 - 1'	1.6	2.8	96.7	0.01	0.07
1' - 2'	0.60	0.93	98.8	0.11	0.20
2' - 3'	0.49	0.58	99.0	0.01	0.22
3' - 4'	0.55	0.56	98.8	0.15	0.26
4' - 5'	0.32	0.41	98.9	0.13	0.25
5' - 6'	3.3	4.9	91.1	0.48	2.8
6' - 7'	2.7	6.1	90.4	0.21	2.6
7' - 8'	4.2	4.7	93.2	0.14	1.2
8' - 10'	1.2	1.8	97.2	0.09	0.83
<u>HOLE 7</u>					
0 - 1'	-	-	-	0.05	0.05
1' - 2'	0.25	0.70	-	0.06	0.06
2' - 3'	0.07	0.36	-	0.06	0.08
3' - 4'	0.33	0.34	99.0	0.10	0.25
4' - 4'6"	0.12	0.33	-	0.06	0.35
4'6" - 5'	6.3	8.6	-	0.26	3.3
5' - 6'	5.0	6.0	88.0	0.20	3.1
6' - 7'6"	4.1	4.3	93.2	0.07	1.0
7'6" - 8'	0.87	1.9	-	0.75	2.1
8' - 9'	1.0	2.2	-	0.49	4.1
9' - 10'	0.51	1.1	97.0	0.16	1.3
11' - 12'	1.7	2.4	94.1	0.27	2.8
12' - 13'	0.93	2.2	92.9	0.37	4.0
12' - 13'	3.9	4.7	-	0.28	2.7
13' - 14'	0.68	2.1	-	0.43	4.5
14' - 15'	1.4	2.6	-	0.47	5.2
15' - 16'	0.58	1.9	-	0.44	4.0
16' - 17'	0.29	1.0	-	0.20	2.1
17' - 18' (A)	0.88	2.6	-	0.51	5.3
17' - 18' (B)	0.86	1.2	-	0.52	5.5
18' - 19'	1.4	2.3	92.0	0.37	4.1
19' - 20'	0.34	1.3	-	0.27	2.7
20' - 21'					
<u>HOLE 8</u>					
0 - 1'	1.6	1.9	97.8	0.08	0.62
1' - 2'	0.55	0.73	98.9	0.05	0.10
2' - 3'	0.30	0.35	98.7	0.06	0.19
3' - 4'	0.22	0.36	99.1	0.06	0.28
4' - 4'6"	0.16	0.30	99.3	0.06	0.24
4'6" - 5'	0.17	0.33	98.7	0.10	0.55
5' - 5'6"	3.1	8.4	86.1	0.08	1.9
5'6" - 6'	4.6	6.6	91.6	0.07	1.3
6' - 6'9"	4.5	4.9	92.9	0.13	0.07

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HOLE 8 (cont'd)	L.O.I. 400°C %	L.O.I. 1000°C %	SiO ₂ %	Fe ₂ O ₃ %	Al ₂ O ₃ %
6'9" - 7'6"	2.0	3.0	93.9	0.38	2.3
7'6" - 8'6"	0.79	1.9	95.6	0.17	1.8
8'6" - 9'6"	0.71	2.0	95.5	0.14	2.0
9'6" - 10'6"	1.5	2.2	95.1	0.56	2.2
10'6" - 12'	1.1	2.8	89.8	0.51	5.2
12' - 13'6"	0.80	2.2	93.2	0.41	4.1
13'6" - 14'	0.43	1.0	96.2	0.18	1.7
14' - 20'	0.87	1.9	94.6	0.67	2.8
HOLE 9					
2' - 3'	0.27	0.5	94.3	0.06	0.04
6' - 7'	0.05	0.2	98.6	0.06	0.20
9' - 10'	1.9	2.3	95.7	0.16	1.1
10' - 11'	0.84	1.1	97.2	0.08	0.45
11' - 12'	0.35	9.1	84.5	0.31	2.5
13' - 13'6"	3.3	6.7	89.6	0.29	2.4
HOLE 10					
16" - 2'	0.74	0.83	98.9	0.04	0.13
2' - 2'6"	0.60	0.67	99.1	0.05	0.13
2'6" - 3'	0.60	0.60	99.1	0.04	0.15
3' - 4'	0.35	0.57	97.8	0.04	0.13
4' - 5'	0.31	0.58	98.2	0.12	-
5' - 5'6"	1.7	2.1	94.7	0.17	1.1

G. S. Westwood

G. S. WESTWOOD
CHEMIST

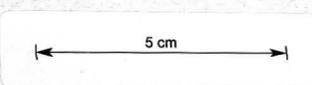


**MINERAL PROSPECTS
EXPLORATION LICENCE 9/68
MAWBANNA, TASMANIA**

SCALE: 2 INCHES = 1 MILE

- | | |
|---------------------------------------|--|
| — Main road | --- Boundary of Exploration Licence |
| ==== Pipe line and track | ▭ Areas to be drilled for clays or glass sands |
| - - - Minor road, track or fire break | ▨ Zone with metalliferous prospects |
| —+— Railway | ② Sample No |
| - - - High-tension transmission line | |

AMG REFERENCE POINTS ADDED



69-0562

077019 017