97-4008

258001

KAOLIN PROSPECT RL8723 MINERAL HOLDINGS AUST.PTY.LTD.

INTRODUCTION: .During April 1996,eight pits were excavated on "Rushy Lagoon" in Northeastern Tasmania to prospect for kaolin which had been reported in previous exploration.

See folio 38

The location is west of the landing strip on Mayfield Flat Road which joins Portland Road 7km. north of Gladstone.

HISTORY OF EXPLORATION: A borehole drilled in 1979 as part of an alluvial tin exploration programme and designated Preussag RDH 6 (TCR 79-1408, see also Geological Summary Report TCR83-1966 and Survey of Reserves & Economics of Great Northern Plain in Northeastern Tasmania TCR 87-2692,EL19/77 both by Hellyer Mining & Exploration P/L) had initially been logged as bottoming in weathered igneous rock and later reported as kaolin and diatomite (see correspondence).

Three auger holes were drilled in the area by CRA in 1985 in Joint Venture with Mineral Holdings Aust P/L,EL17/82) to resolve this conflicting evidence.Two of these holes were drilled either side of RDH6 about 100m from it.They did not support the original finding.The results were inconclusive however,due to sample contamination which is inevitable in auger drilling.

1996 EXCAVATOR PITS: The excavator programme aimed to setttle the mattter but found instead ,a different sedimentary succession from either Preussag or CRA..In summary the excavator pits passed through beds of windblown sand,sand and sandy clay,then a 2m band of peaty clay, followed by tin bearing quartz gravel of 1 to 4.5m+ thickness and finally a bed of sedimentary kaolin.The kaolin was only intersected in Pit No.8 but is probably present throughout the area under investigation but at a greater depth than could be reached by excavator. Wherever possible the pits were deepened by benching.Pits 1 -4 were dug on a timbered ridge at an elevation of a few metres above the surrounding plain.

The kaolin was submitted to Tonganah clay mine for Brightness determination

97-4008

and reported as 54.5 G.E.(Required minimum:80),it was also stated that the plant-now closed-was designed for a raw feed of weathered granite and could not process sedimentary kaolin.

CONCLUSION: The kaolin,which was the target resource of this programme is probably widespread but is overlain by 7m. of overburden in the one pit where it was intersected.Under the wooded ridge,the overburden is more likely to be 15-20m. It would not be economic to extract it unless it was a high value commodity and also that the overburden clays were saleable.

The plastic and peaty clays may have application in the ceramic industry but there is none in the State.

The gravels contain alluvial tin but only in low concentration although they may be worth sluicing if they were removed in the course of extracting the underlying kaolin.

Samples of the plastic and peaty clays,the gravels and the kaolin have all been retained and may,at some future date warrant reassessment,presently however there is no market for them and their remoteness (100km.NE of Launceston) make them non-viable. .

ATTACHMENTS: Figure 1.Locality Map.Scale 1:100,000

Figure 2.Borehole,Augerhole 1:5000

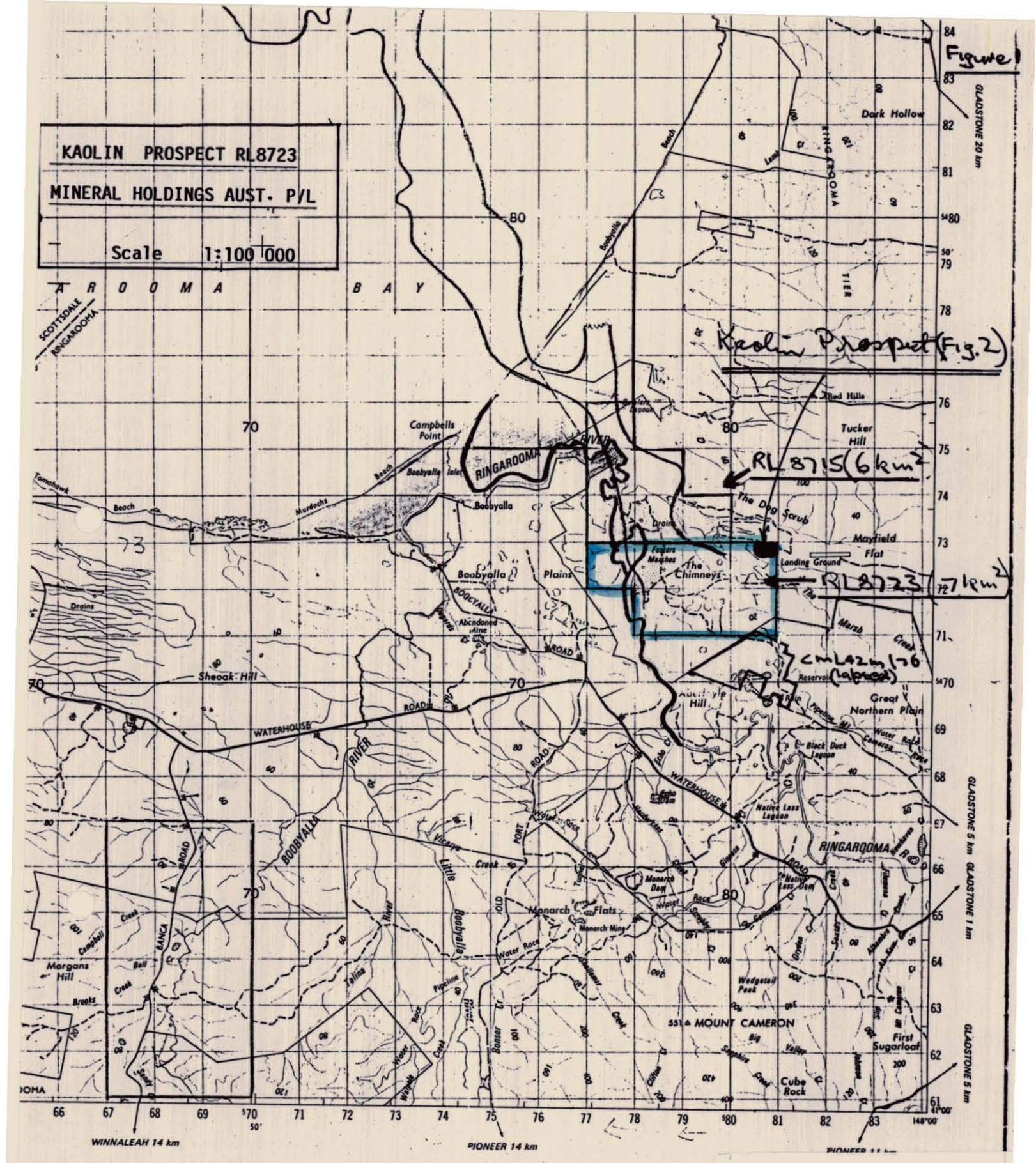
& Excavator Pit Location Map.

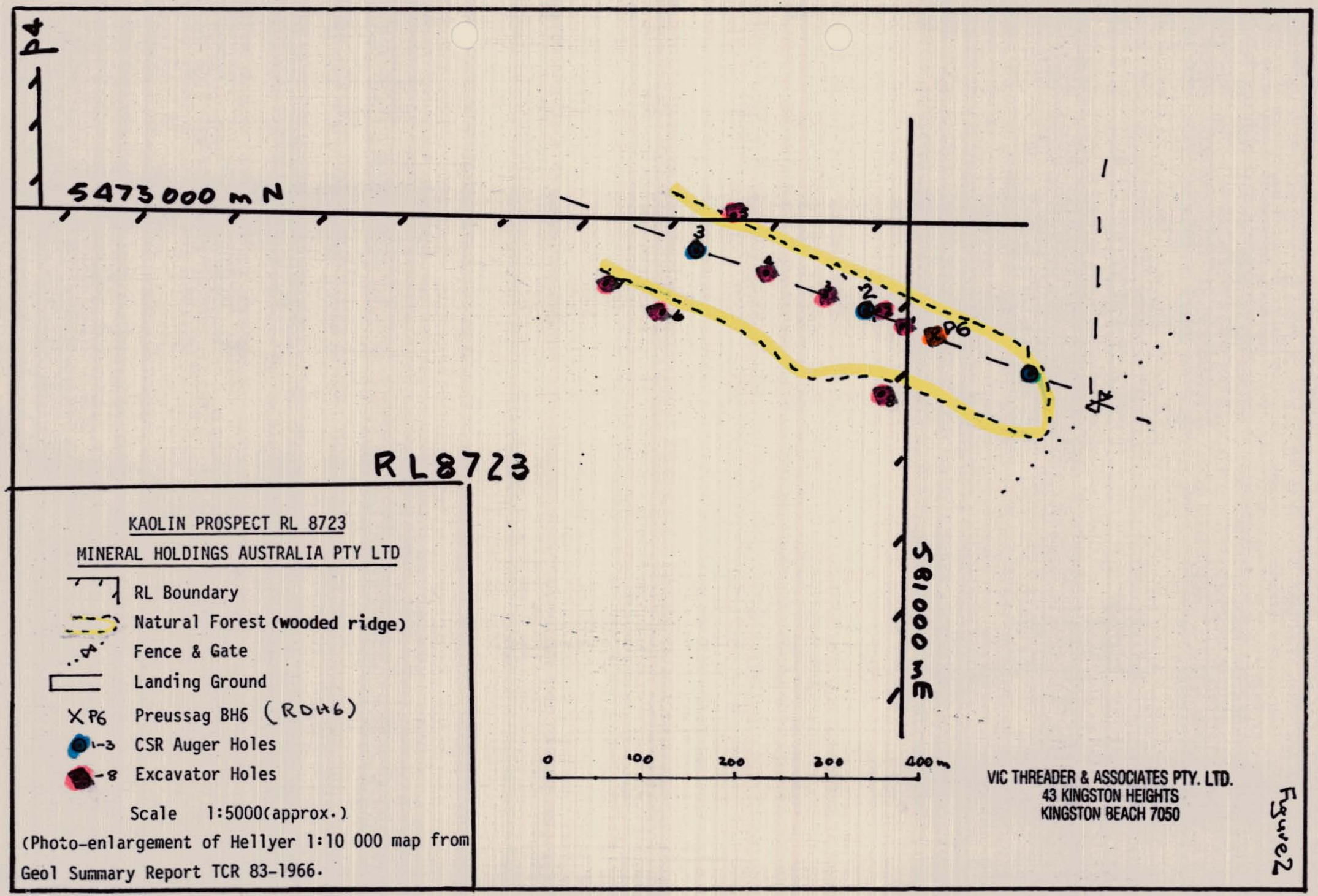
BH & Pit Logs.

Correspondence: 1) P.B.Nye.1980

2)Dept.Mines.1980

3)Aust.Paper (Brightness Test) 1996.


KAOLIN PROSPECT RL8723
MINERAL HOLDINGS AUST. P/L
Scale 1:100 000
Figure
Kaolin Prospect (Fig. 2)
RL 8715 (6 km²)
RL 8723 (7 km²)
CML 42 m 176 (approx)
AROOMA BAY
SCOTTSDALE
RINGAROOMA
Dark Hollow
Campbells Point
Tucker Hill
Red Hills
Boobyalla
Boobyalla Plains
The Dog Scrub
Mayfield Flat
Landing Ground
The Chimneys
Sheoak Hill
Great Northern Plain
Black Duck Lagoon
Native Lass Lagoon
Monarch Flats
Monarch Dam
Native Lass Dam
Morgans Hill
Wedgetail Peak
MOUNT CAMERON
First Sugarloaf
Cube Rock
WATERHOUSE ROAD
BOOBYALLA ROAD
RINGAROOMA ROAD
Little Boobyalla River
Boobyalla River
WINNALEAH 14 km
PIONEER 14 km
GLADSTONE 20 km
GLADSTONE 5 km
GLADSTONE 1 km
8 10 12 Kilometres
5 cm
LAND TENURE INDEX INFORMATION has been compiled by the Lands Department with assistance from the Forestry Commission. Land tenure is current to June 1981 Due to limitations of scale, some small areas of land tenure within built-up areas or of less than two hectares are not depicted. Colours are designed to indicate the prime managing authority. The indication of a particular land status does not imply right of entry or use. Boundaries of Crown land extend to low water mark. For full particulars, users are requested to consult the Registrar-General's Department or the Lands Department.
Hydro Electric Commission
Commonwealth administered
Proclaimed Town or Municipality boundary
Boundary location uncertain or indefinite
Conservation Area boundary; Protected Area boundary
VIC. THREADER & ASSOCIATES PTY. LTD.
43 KINGSTON HEIGHTS
KINGSTON BEACH 7050
26.3.96
BASS STRAIT
GOOSE ID 8417
LADY BARRON 8517
NINTH ID 8316
CAPE PORTLAND 8416
SWAN ID 8518
25800



KAOLIN PROSPECT RL 8723

MINERAL HOLDINGS AUSTRALIA PTY LTD

- RL Boundary
- Natural Forest (wooded ridge)
- Fence & Gate
- Landing Ground
- X P6 Preussag BH6 (RDH6)
- 1-3 CSR Auger Holes
- 1-8 Excavator Holes

Scale 1:5000(approx.)

(Photo-enlargement of Hellyer 1:10 000 map from Geol Summary Report TCR 83-1966.

VIC THREADER & ASSOCIATES PTY. LTD.
43 KINGSTON HEIGHTS
KINGSTON BEACH 7050

Figure 2

258004

KAOLIN PROSPECT RL8723 MINERAL HOLDINGS AUST. P/L

BOREHOLE NUMBER	DEPTH FROM (m)	DEPTH TO (m)	THICKNESS (m)	LOG
PREUSSAG RDH 6	0	2.56	2.56	SAND
	2.56	5.5	2.94	CLAY, GRAVEL & SAND
	5.5	7.98	2.48	COMPLETELY ARGILLISED NON-QUARTZOSE ROCK.PROBABLY DEEPLY WEATHERED TERTIARY VOLCANICS
CRA 1	0	1.1	1.1	FINE SAND
	1.1	14.1	13	CLAYEY SAND
	14.1	16.3	2.2	CLAY
	16.3	17.5	2.2	SAND
	17.5	18.7	1.2	CLAY (POSSIBLY WEATHERED DOLERITE.
	18.7	19.1	0.4	LOST SAMPLE.
CRA 2	0	2.5	2.5	FINE SAND
	2.5	17.7	15.2	CLAYEY SAND
	17.7	18.7	1	CLAY
	18.7	19.1	0.4	LOST SAMPLE
CRA 3	0	2.5	2.5	FINE SAND
	2.5	10.1	7.6	CLAYEY SAND
	10.1	10.5	0.4	DARK BROWN CLAY
	10.5	12	1.5	CLAYEY SAND
	12	14	2	CLAY
	14	14.2	0.2	CLAYEY SAND
	14.2	14.7	0.5	CLAY
	14.7	19.1	4.4	GRITTY SAND

MHA PIT 1	0	2	2	FINE SAND(OFF WHITE TO 700MM.
	0.7	2	2	THEN IRON STAINED
	2	4.5	2.5	LIGHT BROWN SANDY CLAY .WET AT 3M. NO STANDING WATER.
	4.5	7	2.5	DARK GREY PLASTIC CLAY HOLE CAVED ABOVE4.5M.
MHA PIT 2				SAME LOG AS MHA PIT 1 HOLE CAVED ABOVE 5M.
MHA PIT 3	0	1	1	SAND
	1	2	1	YELLOW HARDPAN
	2	6	4	BROWN CLAYEY SAND
		8	2	DARK BROWN (PEATY) SANDY CLAY.
MHA PIT 4	0	2	2	SAND
	23	4	2	SANDY CLAY
	4	5.5	1.5	DARK BROWN (PEATY)SANDY CLAY
	5.5	9	3.5	QUARTZ GRAVEL
MHA PIT 5	0	0.3	0.3	SAND
	0.3	7	6.7	SANDY CLAY
	7	9	2	DARK BROWN (PEATY)SANDY CLAY CONTAINING PLANT FRAGMENTS. WATER SEEPING INTO PIT AT 3M. HOLE CAVING ABOVE 3M.
MHA PIT 6	0	2.5	2.5	1M.OFF WHITE SAND & 1.5M. IRON STAINED SAND
	2.5	4	1.5	GREY SAND.WATER SEEPAGE AT 2.5M
	4	5.5	1.5	DARK GREY VERY PLASTIC CLAY
	5.5	10	4.5	QUARTZ GRAVEL,HOLE CAVING BADLY ABOVE 4M.
MHA PIT 7	0	1.5	1.5	SAND
	1.5	3	1.5	SANDY CLAY
	3	5.5	2.5	DARK BROWN (PEATY) SANDY CLAY
	5.5	7	1.5	QUARTZ GRAVEL,WATER ENTERING IN GRAVEL.FINAL LEVEL:5.5M.
MHA PIT 8	0		1	300MM.OFF WHITE SAND,700MM. IRON STAINED SAND.
	1	4	3	GREY SAND
	4	6	2	DARK BROWN (PEATY) SANDY CLAY
	6	7	1	QUARTZ GRAVEL
	7	9	2	LIGHT GREY CLAY CONTAINING PLANT FRAGMENTS

REPORT ON INVESTIGATIONS ON E.L. 19/77

(Supplementary to Report of 8/9/1980)

258007

Appx 1

Introduction

This Supplementary Report will deal with investigations made and information obtained since the earlier report was prepared. It will not repeat information contained in the earlier report except in so far as the information is used in bringing up to date the description of a prospect and/or giving a complete account of that investigation.

White Material from Preussag Hole 6

After the drilling under the joint venture agreement was completed, the Preussag Company supplied the Tasmanian Department of Mines and Mineral Holdings each with a small suite of specimens, from the 23 holes (or some of them) drilled. The specimen from Hole 6 was labelled "Bottom of Hole". Correspondence between the Department of Mines and Mineral Holdings, and the forwarding of part of the Department's specimen to M.H.A. proved that both organisations received the same type of material at least as far as Hole 6 is concerned.

M.H.A. sent a piece of the white material to the Division of Mineral Chemistry of C.S.I.R.O. for examination and that Division after and X-Ray diffraction reported that the material consisted of kaolinite with up to 20% of fine-grained quartz. (N.B. Quartz proved to be Diatomite)

The Department of Mines made an X.R.D. examination of part of their material, and confirmed the above C.S.I.R.O determination and stated the presence of quartz indicated that the material was of sedimentary origin. The above statement was made because the Chief Geologist of the Department had determined the material as being "rotten jurassic dolerite completely weathered to pale mottled clay". The writer had made the same statement as the Chief Geologist. This view was based on the driller's log of the hole which stated that the bedrock was "Bedrock, dolerite, greenish" and on his experience that similar material formed the bedrock to Tertiary deep leads in adjacent areas on the Great Northern Plain. The above statement had been made before the M.H.A. specimen was submitted to the writer who then realised that the material was different from that described in the driller's log and present on other parts of the field. However, the writer still considered at that time that the white material could possibly be completely altered dolerite.

C.S.I.R.O made other investigations of the white material and they reported orally on 8/9/1980 that the material contained diatoms. C.S.I.R.O. was asked to make further tests but have not until recently done so, because some of the staff concerned are overseas.

A piece was sent to the Resource Use Institute organisation in Scotland and a copy of the report giving results of the tests is attached. No diatoms were found in their piece. Institute thought that the material had some [illegible] ground material and that could be smectite, but recommended an X.R.D. examinat[illegible] The report states that :-

(1) most of the sample consists of particles smaller than 5 microns that look like kaolinite (well crystallised)

(2) it contains angular fragments of colourless or slightly stained in the range of 5 to 25 microns

(3) there was some sort of background which may be smectite

Other actions taken included :-

(1) A discussion by the writer with Mr. Krummel of the Preussag Company about the bedrock in Hole 6 and the white material.

(2) Discussions with the company who did the drilling.

As regards the discussion with Mr. Krummel, he stated he had no information about the white material and the bedrock reported in the driller's log but from the petrological examinations he regarded the bedrock reported as being an altered rock like dolerite.

Line	Hole	Overburden feet	Bentonitic Clay feet	Colour of Clay
2	6	0-2	2-14	light grey
2	7	0-2	2-14	very dark blue-black
2	8	0-6	6-14	yellowish brown
2	9	0-6	6-12	mixed greyish & light black
2	10	0-6	6-14	yellow and brown
	11	0-4	4-14	blue-black

The back-hoe used as apparently able to dig a shaft to the maximum depth of 14 feet. Each hole was still in clay at the bottom and was therefore not bottomed. The total thickness and the bedrock are therefore not known.

The two lines are parallel and in a north-westerly direction and are 15 chains apart. No. 11 hole is to the south of the two lines. A study of the geological map of the Blue Tier Batholith and a detailed geological map prepared by the Rio Tinto Company and supplied by the Department of Mines, showed that both lines of holes were partly in Tertiary alluvial deposits and partly in Quaternary. "Other coastal deposits".

There are many isolated outcrops of the Tertiary alluvial deposits along the Ringarooma River valley near the Dry Gut workings, and the writer assigns them to the Aberfoyle deep lead and possibly to the Scoloch System of leads.

A search of the logs of the Preussag drilling and also of the Wanex drilling will be made to determine if the bentonite clay extends into the areas covered by those drilling compaigns. In the area covered by the Wanex drilling on the MacGregor Lead, bentonite was found but it was in the completely weathered or altered dolerite that was the bedrock under the sediments.

The results of the examination of the specimen from the Preussag hole 24 sent to C.S.I.R.O. were described in the first part of this section.

Specimens and samples were sent to companies likely to be interested in the bentonite. Romud reported that the bentonite from No. 5 back-hoe shaft contained 45% montmorillonite.

Samples were sent to Steetley, B.H.P., Cliff International and Union Corporation. Cudgen R.Z. Ltd., tested the sample for Union Corporation and reported it to be low grade acidic bentonite, and did not want to negotiate. Steetley stated that the tests made on samples to a maximum depth of 3 metres indicated an inferior grade of bentonite, but that tests of material at greather depth were necessary to give a true picture of the extent and any improvement in grade. Baroid Petroleum Services stated that analyses showed that only a small percentage was bentonite and that the majority was a halloysite derivative and quartz, and that it was not suitable for use in drilling mud.

The Minerals and Chemical Division of Engelhard of U.S.A. stated it contained only 39% bentonite and 33% free silica, and that the bentonite mineral was beidellite, a montmorillonite having a high (2.17%) magnesium content. C.S.I.R.O. stated they were interested in the bentonite and would like to examine it in the field, but a visit has not yet been made.

The exploration and testing to date have proved that at least a small extent of bentonite exists and that in the unbottomed back-hoe holes, the thickness is at least 12 feet and that in Preussag hole 24, the thickness is 17 feet. The tests to determine the grade and possible uses have not proved that the bentonite clay is high grade. Some further investigation is however desirable, and should include the following, items and they should be carried out generally in the order given :-

1. an inquiry as to where the better grade bentonite came from and the nature and composition of the bentonite at those places

2. endeavour to determine from the logs of the Wanex and Preussag drilling if the clay extends into the area concerning those drilling campaigns.

3. a drilling campaign to bedrock in the area including, and around, hole 24 and the back-hoe holes.

..../4

4. an assessment of the extent, thickness and grade of the bentonitic clay.

5. if satisfactory results are obtained, to conduct such further testing that may be desirable.

258009

Continuation of Scoloch, MacGregor and Aberfoyle Deep Leads

The Preussag holes 1 and 7 are on the line of extension of the MacGregor lead. Moreover an outcrop of Tertiary alluvial deposits shown on the Rio Tinto geological map is close to hole 7. The MacGregor lead could extend towards Preussag hole 23 and the adjacent outcrop of Tertiary alluvial deposits in which the old Delta tin workings are situated. Near the Delta workings or to the west or south-west of them, the MacGregor lead could junction with the Aberfoyle lead. The Preussag holes 12,23 and 24 do not give any information that would indicate such a course for the MacGregor lead.

The Delta workings are the only place where Tertiary alluvial workings are close to a Preussag drill hole. Hole 23 is reported as having a bedrock of dolerite. Hole 24 is about midway between the next two outcrops of Tertiary alluvial deposits to the south and south-south-east of the Delta workings. It reported as having a bedrock of dolerite conglomerate. It would therefore indicate that the dolerite conglomerate is older than the Tertiary alluvial deposits and, in some places, forms the bedrock to those alluvial deposits.

The course of the Scoloch lead has not been definitely determined beyond Preussag holes 3 and 4. The Pre-Quaternary Basin and the Marine Channel shown on Preussag Map(A4-276, April 1979) and Preussag's statement that the deepest part to bedrock is at hole 20, suggested that any continuation of the Scoloch lead from hole 4 could be along the above route, and therefore have a west-north-westerly trend. The question remains as to the place where at least part of the lead was eroded by the Ringarooma present River and lake Quaternary alluvial deposits laid down in place above the lead .

In application of 8/10/1980, it was stated that the outlet from Preussag's Pre-Quaternary Basin might be to the north-east of holes 8, 13 and 14. An examination of drilling campaigns showed that there were no drill holes in that area. However dolerite crops out close to holes 8, 13 and 14 and there would be very little space for a basin (or a deep lead) in that direction.

The only other possible route for the Scoloch lead from hole 3 and 4 would be in a south-westerly direction between Preussag's lines and passing possibly near holes 12 and 23 and the old Delta tin workings. In about that position, it would have joined the MacGregor and Aberfoyle leads. A extension to the west would connect it with the thick alluvial deposits to the north of the old Dugarde tin workings. Actually it would, before reaching the Dugarde workings connect with a gutter in shown on a north-south line of holes drilled by the Utah company. The Utah gutter and two other gutters between Preussag's lines 2 and 3 are shown on a map by the writer of 20/3/1978 and revised 28/3/1978.

MELBOURNE

2nd December, 1980

P.B. NYE

NOTE:- ALL CORRESPONDENCE TO BE ADDRESSED TO THE DIRECTOR OF MINES

TASMANIA

258010

Appx 2.

DEPARTMENT OF MINES

PHONE: 30 8033

G.P.O. BOX 124
HOBART
TASMANIA

10 SEP 1980

A.11/9/80

Mr N.M. Thomas.
Mineral Holdings Australia Pty Ltd,
2nd Floor,
100 Collins Street,
MELBOURNE
Victoria 3000

Dear Sir,

Preussag Drill Core : R.D.H.6.

In response to your telephone conversation of 8.9.80 please refer to our letter of 26th June, 1980 which states:

a) the suite of rock samples submitted by Preussag on completion of their drilling in the Great Northern Plains is incomplete.

b) the Department of Mines holds one sample only from R.D.H.6. which consists of "bottom-of-hole" bedrock material.

Further, as stated in our letter 1.8.80, the "bottom-of-hole" material from R.D.H.6. consists mainly of kaolin with fine-grained quartz, a sample of which was dispatched under separate cover.

Borehole R.D.H.6. finds mention in the Preussag report in "Appendix 2 : Petrological Descriptions" where the inferred "basement" material is described as:

"R.D.H.6.: completely argillised non-quartzose rock, with relict textures indicative of an effusive, i.e. a glassy lava or possible basalt. Probably deeply weathered Tertiary volcanic."

Borehole R.D.H.6. is again mentioned in the Preussag report in "Appendix 4 : Drill Logs."

EL 17/82

258011

Section 1	Depth 2.61m (8.4ft)	Brown silty sand.
Section 2	Depth 5.51m (18.1ft)	Greenish clay : some gravels and sand.
Section 3	Depth 8.00m (26.2ft)	Bedrock : dolerite, [illegible]

Please find enclosed four photo copy sheets from the Preussag report, with appropriate invoice.

Yours faithfully,

(H. Burchie)
ACTING DIRECTOR OF [illegible]

258012 Appx 3

Fax from :

02/05/96 15:34 Pg: 1

FROM : TONGANAH CLAY MINE PHONE NO. : 003523219 May. 02 1996 03:32PM P1

Australian Paper

PO Box 204
Scottsdale Tasmania
Tasman Highway
Tonganah Tasmania
Australia 7260
Telephone (003) 52 2266 (003) 52 3123
Facsimile (003) 52 3219

2 May 1996

Mr. Vic Threader
43 Kingston Heights
KINGSTON BEACH. TAS. 7050

Dear Vic,

Re: TESTING OF CLAY SAMPLE

The results from a brightness test carried out on the sample of sedimentary clay that you left at Tonganah supported my "experienced guess" in your presence when you left the clay here.

BRIGHTNESS: 54.5 G.E.

No particle size test was done due to the very low brightness reading. If you require this to be done, then due to a shortage of staff, it will have to be done on overtime - with the cost charged to you.

Yours sincerely,

Wayne G. Riley
MANAGER