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QUARTERLY REPORT ON EXPLORATION LICENCE 43/70

NORTH-WESTERN TASMANIA

17/11/81

TABLE OF CONTENTS

1. INTRODUCTION

2. WORK CARRIED OUT AND RESULTS
 - 2.1 PROSPECTS
 - 2.2 EXPLORATION AND TESTING
 - 2.2.1 Silica
 - i Agreement Area for Kaiser Aluminum Australia
 - ii Nye or Cann Creek Prospect
 - 2.2.2 Preolenna Coalfield
 - 2.2.3 Keith River Formation or Keith River Sulphide Horizon
 - i BHP Examination
 - ii Visit by Asarco Company Representative
 - iii Proposed visit by Santos representative
 - 2.2.4 Arthur River Magnesite-Dolomite Deposit
 - i Santos Company
 - ii Mineral Chemical Division, CSIRO
 - iii CRA

- 3 FINANCIAL REPORT

QUARTERLY REPORT ON EXPLORATION LICENCE 43/70NORTH-WESTERN TASMANIA1. INTRODUCTION

The Licence area extends northerly from part of the Lyons River in the south, then across the Arthur River, and includes the township of Meunna and Milabeena and to within a short distance of the coastline of Bass Strait to the west of Jacobs Boat Harbour.

The quarterly period referred to is that between 16th July 1981 and 15th October 1981.

2. WORK CARRIED OUT AND RESULTS2.1 PROSPECTS

There are prospects of at least six minerals and rocks within the Licence area. Moreover there are a few prospects of the same mineral (e.g. magnesite or magnesite-dolomite and silica). The reasons why the different parts of the Licence area were taken up and exploration conducted are given below.

i Keith River Sulphide Horizon: (including the Keith River Iron Formation). The part of the Licence area containing the above was acquired from the discoverer, Mr. Farquhar. The outcrop of a formation containing pyrite, and at places in the outcrop, magnetite, hematite and limonite.

ii Arthur River Magnesite-dolomite
Victory or New Victory magnesite and copper
Preolenna Coalfield

The above three were known to exist in the Licence area.

iii Silica: (including the following prospects)

Cann Creek or Nye
Meunna Trig
Pokes Road
Maynes Creek
Dip Range

iv Magnesite and Magnesite-Dolomite

Lyons River
Pinner
Keith River
Cann Creek

All of the nine individual prospects of silica and magnesite and magnesite-dolomite were discovered by the prospecting and exploration of Mineral Holdings during its tenure of the area.

2.2 EXPLORATION AND TESTING

As stated above, the prospecting by Mineral Holdings led to the discovery of at least nine mineral prospects. Its sampling and assaying provided information on all the prospects listed above.

2.2.1 Silica

i Agreement Area for Kaiser Aluminum Australia:

The agreement between Mineral Holdings and Kaiser Australia made on 8th August 1980 continued into the current period of the Licence (16.4.81 to 15.10.81). The agreement covered the silica prospects in the northern part of the Licence area including Maynes Creek, Dip Range, Meunna Trig and Pokes Road. The arrangement was that in addition the Kaiser Company could investigate and test the silica prospects, e.g., Nye or Cann Creek silica in the remainder of the Licence area. The Kaiser Company engaged the Longworth & McKenzie Company to conduct all surveys, investigations and testing (including drilling).

A preliminary assessment was made and described in a report in February 1981. The Dip Range Quartzite was selected as the superior prospect and the first exploration area. The work was divided into three stages.

Stage 1 and 2 were completed by mid-April and a Report on Stage 2 - Geological Investigation was forwarded by Longworth & McKenzie on 30th April 1981.

All the above prospects were included in a general reconnaissance, sampling and testing. Summary of results were given for the Dip Range No. 1 North, Quartzite Peak and Mount Sunshine prospects in the Dip Range area.

Some of the conclusions were :

- 1) The rocks should not be termed 'quartzite' but 'erratically quartzite sandstones'.
- 2) Silicification not necessarily constant within bedding units or along strike or down dip.
- 3) Chemical composition of the sandstones is generally good except towards boundaries with other rocks.
- 4) In regard to the general high chemical quality there is limited evidence that indicates surface leaching has increased the near surface quartzite purity by reducing the Al_2O_3 and Fe_2O_3 content.

The Quartzite Peak, Dip Range No. 1 North and Sunshine Peak were considered the best prospects and it was proposed that cored holes (two at Quartzite Peak and one at Dip Range No. 1 North) should be drilled to determine the quality at depth.

The cored drilling was conducted and seismic surveys were made. The work and results were described in the Report on Preliminary Drilling Programme of June 1981.

After the initial resource assessment, it was considered likely that an exploration programme would be successful. The programme was to be a three stage programme comprising :

First Stage - a formulation one;

Second Stage - preliminary investigation firstly to gain an overall appreciation of the resources and secondly to identify a target area for proving in the third stage;

Third Stage - detailed drilling and sampling of the prospect to prove the resources.

After the geological investigation of Stage 2, the conclusion was that Dip Range No. 1, Quartzite Peak and to a lesser extent North Sunshine were considered worthy for further exploration. However, further testing at depth by drilling was deemed necessary to determine the characteristics of the prospects at depth.

In Stage 3, seismic surveys were made and four diamond drill holes put down. The holes were at the following places :

No. 1 - Dip Range No. 1 North prospect;

No. 2 - On top of Quartzite Hill;

No. 3 - Was to penetrate the Shakespeare Quartzite bed;

No. 4 - Was to intersect the next apparent quartzite bed above the Shakespeare Quartzite bed.

The actual positions are shown on Figure 2 of the Report and a copy of that figure is attached.

The Discussion and Conclusion of the Stage 3 report stated, that no further exploration effort be made. A copy of the Discussion and Conclusion (pages 25 and 26) and of the Recommendations (page 27) are attached.

ii Nye or Cann Creek Prospect

Kaiser Aluminum Australia made some preliminary examination of the Nye or Cann Creek prospect, but did only a small amount of testing. At the end of the 16th July 1981 to 15th October 1981 period, Mineral Holdings Australia was notified by the Kaiser Company that they would visit the prospect and make a further examination about mid-November 1981.

2.2.2 Preolenna Coalfield

Petro Quest became interested in the field and made an offer to Mineral Holdings and submitted their general programme for oil, shale and coal in the latter part of 1979. An agreement was finalised by Mineral Holdings Australia and sent to Petro Chemicals in May 1980. During the period September to December two areas were marked on maps to define the areas for Petro Quest. In January 1981 Mineral Holdings received a copy of the Scout Drilling Exploration Programme on E.L. 43/70. It was

mainly about the conditions of drilling by General Geological Services as arranged with that Company and Tasman Shale and Coal Company (who is the explorer and manager for field operations). The programme provided for three holes along the Jessie River Valley and two holes in the Meunna area. The fine holes were to be drilled through the coal measures to a depth of 60 metres.

Drilling was attempted early in February but General Geological Services reported that they were having trouble drilling through the basalt. On 14th April 1981, General Geological Services forwarded a copy of their report on exploration activities and costs relating to the area on E.L. 43/70.

The holes drilled were as follows.

FIELD	DRILL HOLES	DEPTH metres	COMMENTS
Coal Mine road (north-west side of Jessie R. Valley)	P.O. 1	27.0	No coal intersections
	P.O. 2	43.6	No coal intersections
	P.O. 3	abandoned at shallow	Conditions impossible for access and the operations.
	P.O. 4	53.3	
On Preolenna - Meunna road	P.O. 5	19.78 abandoned	Caving in hole and casing not possible

Subsequently (29.4.81) copies of Figures 1 and 2 were sent. Figure 1 shows the position of the drill holes and Figure 2 shows areas of coal measures and of oil shale units.

Copies of the report on exploration and figures 1 and 2 are attached. Copies had been forwarded to you previously. ?

2.2.3 Keith River Iron Formation or Keith River Sulphide Horizon

i. BHP Examination

During the period of the Licence for 16th October 1980 to 15th April 1981, an examination of the prospect and the CRA cores of Holes 1 and 2, were made by a BHP representative. His report became available during the 16th April 1981 to 15th October 1981 period of the Licence. BHP made use of previous reports on the field, and their main oration consisted of the sampling of stream sediments and rock chips. The report states that the results of stream sediments geochemistry for tin, tungsten and molybdenum were disappointing, but that the rock chip sampling were slightly more encouraging. The conclusions were as follows.

"Although the results of the geochemical reconnaissance of E.L. 43/70 are not greatly encouraging they warrant more work being carried out in the area".

ii Visit by Asarco Company Representative

On the 26th July 1981, Mr. H.C. Williamson (Asarco) was accompanied by Mr. K. Pinner and they inspected the Keith River and Victory gossans. We await a copy of their report but we have been advised they are not interested in the prospect.

ii. Proposed visit by Santos Representative

Arrangements were made for Mr. Langsford, a Consulting Geologist to visit the Formation. He visited the area but no results of his examination have yet been sent to Mineral Holdings Australia.

2.2.4 Arthur River Magnesite-Dolomite Deposit

i Santos Company. Arrangements have been made by Santos for Mr. Langsford, to visit the deposit.

ii Mineral Chemistry Division of CSIRO. Dr. Frost of CSIRO is making an investigation of Magnesite and MHA has :

- i) given him copies of reports;
- ii) given him specimens;
- iii) arranged that he visit the deposit;
- iv) arranged that he inspect the cores from drill holes on the deposit.

iii CRA. Since the termination of the last period of the Licence, Mineral Holdings Australia and CRA have had discussions regarding the deposit and an agreement is to be completed.

3. FINANCIAL REPORT

As attached.



P.P. N.M. THOMAS
MINERAL HOLDINGS AUSTRALIA PTY. LTD.

APPENDIX

7.0 DISCUSSION AND CONCLUSIONS

The quartzite of the Detention Sub-group and the Jacob Quartzite within the Agreement Area (based on the results of this multi staged programme) are interbedded with schists and other deleterious siliceous fine grained sediments. Surface outcrops of these sediments are generally obscured by sandy slope wash from the quartzite units. This surface cover, in conjunction with the quartzite outcrops, gives the quartzite the false appearance of being present in massive units.

The results of tactile appraisal and chemical analysis of the near surface quartzite sandstones indicate the near subsurface profile (to a depth in excess of 15 metres in some areas) to be a weathered derivative of deeper quartzite units.

Based on the Stage 2 mapping and costeaning work this variable surface weathering is a widespread feature of the quartzites of the Detention Sub-group and the Jacob Quartzite. As described in the Stage 2 report the rock within this weathered zone varies in character with depth and along strike from a white very poorly cemented sandstone to a white glassy silicified quartzite.

While generally the quality of the silica in the upper zone is good, it is conservatively estimated (based on the Stage 2 costeaning and the diamond drill hole results) that at least 50% of this surface zone would be physically unsuitable for the production of ferro silicon (based on the T.E.M.Co standards ref. Stage 2 report).

Below this leached zone the quartzite proper appears as a light brown to grey glassy, extremely strong, largely thinly bedded unit. The bedding planes and to a lesser extent the rock matrix contain variable quantities of micaceous material. The frequency of the occurrence of the fine micaceous bedding planes within the

- 26 -

quartzite appears to increase with depth. The chemical analyses are consistent with this observation. The impurities in the quartzite tend to grade from the lighter coloured micas (muscovite) and kaolinite to the darker biotite micas with depth as the quartzite grades into schists.

Chemically, figures 4, 5 and 6 show that only a small percentage of quartzite won from this lower zone would be good quality (< 1% Al_2O_3) material.

Finally, in addition to the poor chemical quality of the quartzite beds drilled by DDH No. 1, 3 and 4 the general thin width of the units detracted from the deposit. Large quantities of overburden (both in terms of rock between the quartzite beds and spoil from the weathered zone) would have to be moved and stockpiled to recover the required tonnage of quartzite.

In summary, the Detention Sub-group quartzites have been shown by drilling in the Dip Range area to be unsuitable, and based upon the Stage 2 reconnaissance survey there exists no reason to believe that conditions elsewhere within the Agreement Area would be different. The surface outcrop of Jacob Quartzite at Maynes Creek was tested by B.H.P. and failed on physical specifications (Stage 2 report) and the reconnaissance mapping showed the central portion of the Maynes Creek deposit to be interbedded with weathered phyllitic schist beds.

Based on the foregoing it is not considered that the quartzite units within the Agreement Area contain a sufficient mineable tonnage of quartzite of the chemical and physical quality required.

8.0 RECOMMENDATIONS

Based on the results from the Stage 3 drilling and subsequent sample analyses no further exploration effort is recommended on the Agreement Area for silica of the specific physical and chemical quality nominated by Kaiser Aluminum

DIAMOND DRILL HOLE AND SEISMIC TRAVERSE LOCATIONS

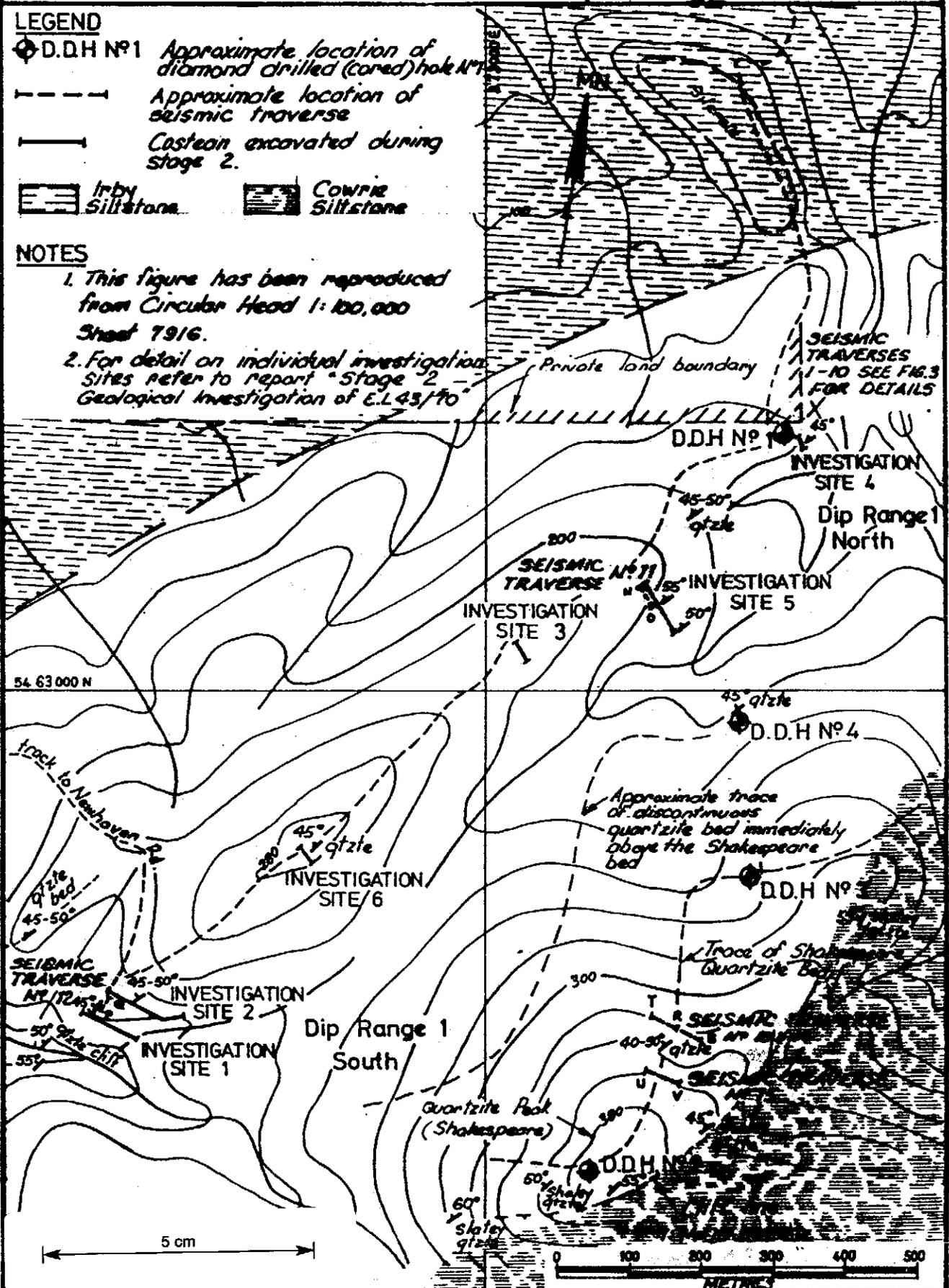
FIGURE NO 2

LEGEND

- ◆ D.D.H No 1 *Approximate location of diamond drilled (cored) hole*
- - - - *Approximate location of seismic traverse*
- — — *Castiron excavated during stage 2.*
-  *Inby Siltstone*
-  *COWPE Siltstone*

NOTES

1. This figure has been reproduced from Circular Head 1:100,000 Sheet 7916.
2. For detail on individual investigation sites refer to report "Stage 2 Geological Investigation of E.L.43/70"



Consulting Geotechnical Engineers
 3 Eden Street, Crows Nest 2065 Telephone: 929 0122
LONGWORTH & MCKENZIE PTY. LIMITED



Job No
PXT 250