MINES BRANCH
GEOLOGICAL LIBRARY

FINAL REPORT
EXPLORATION LICENCE 1339
COOLIBAH N.T.
OPEN FILE

T. M. BARR
February 1978
CONTENTS

INTRODUCTION 1

OBJECTIVES 1

WATER SAMPLING 1
  Operations 1
  Sample Distribution 2
  Results 2
  Discussion 2

DRILLING PROGRAMME 2
  Operations 2
    Drilling 2
    Logging 2
    Supervision 3

GEOLOGY 3
  Stratigraphy 3
    Precambrian 3
    Quaternary 3
    Structure 3

ALTERATION AND MINERALIZATION 4

CONCLUSION AND RECOMMENDATIONS 4

* * * * * * *
TABLES

Table 1
Water Sample Data

ENCLOSURES

Enclosure 1
Water Analysis Data (1:83,000)

APPENDICES

Appendix 1
Water Sampling Data

Appendix 2
Water Sample Analysis

Appendix 3
Drill Hole Logs
INTRODUCTION
AAR Limited entered a joint venture with Otter Exploration N.L. of St Leonards
New South Wales in EL 1339 (Coolibah) on 27 June 1977. The exploration
licence was granted to Otter Exploration N.L. on the 2 November 1976 for a
period of twelve months.

OBJECTIVES
The Coolibah area consists of Quaternary plains adjacent to the Benmara
metamorphics and water sampling carried out by a previous holder of this
licence area obtained highly anomalous uranium values from these water
samples. Follow-up work was designed to test the aquifers in this area
for uranium values again and conduct a limited drilling programme. The
drilling programme was aimed at locating roll-front type uranium deposits
in channelling within the sedimentary section to the east of the Benmara
metamorphic block.

WATER SAMPLING

Operations
Four 500 ml samples were taken from each available water bore in this
area and the adjoining area held by Mines Administration Pty Limited,
EL 1427 (Bowgan Creek). The sample was taken either from the well head
of a producing bore or, in the cases of bores which were not equipped,
water samples were obtained using a wireline sampling device.

Two samples were treated with HNO$_3$ to acidify the sample to a pH of 2.
Two samples remained untreated.

Field measurements were made using an Orion Research Specific Ion Meter
(Model 407A) and Sensorex electrodes.

Measurements of pH and Eh were read direct, while H$_2$S determination was
made using two or three standard solutions. Dissolved oxygen was
determined following the measurement of air temperature, humidity and
applying an altitude correction. Resistivity was measured using a
capillary tube-type meter.
Sample Distribution
One acidified sample was consigned to ACS Laboratories, South Australia, for $U_3O_8$ determination. One acidified and one untreated sample were sent to CSIRO in Sydney. One untreated sample is stored in the Mines Administration Brisbane office.

Results
The water sampling data is presented on Table 1, in Appendix 1 and Enclosure 1. The analytical work carried out by ACS Laboratories is present as Appendix 2.

Discussion
The $U_3O_8$ values obtained from this work were anomalous at only two locations, Benmara 12 and Benmara 3. This was quite different from results obtained from the previous Licence holder where a number of sample points were anomalous and of an order of 300 times background. An explanation for this discrepancy is not known at this time.

DRILLING PROGRAMME
A limited drilling programme to test the potential of the sediments to the east of the Benmara metamorphics was mounted. This consisted of 13 holes for a total meterage of 868.7 m of open hole. The drill hole logs are presented as Appendix 3 and the location of these holes as Enclosure 1.

Operations
Drilling
The drilling programme was contracted to C and W Drilling Services of Goondiwindi, Queensland who used a truck-mounted Mayhew 1500 drilling rig. Ancillary equipment included a 1600 gallon water truck.

Logging
The logging programme was contracted to Geoscience and Associates (Australia) Pty Ltd of South Australia who ran a composite probe for Gamma Ray, Spontaneous Potential, and Single Point Resistivity logs. These curves were presented in analog format at a scale of 1 cm to 1 m and at a reduced scale in Appendix 3.
Calibration of the gamma ray probes used during the project was made using the two-pit method following logging of the Minad-Teton Australia test pits located at Yarramba, South Australia.

Supervision
On site supervision for the drilling programme was provided by T.M. Barr, a Mines Administration Pty Limited geologist. Mines Administration Pty Limited are operators for the AAR Limited and Otter Exploration N.L. joint venture.

GEOLGY
Stratigraphy
Precambrian
In three holes (C09, 10 and 13) Lower Proterozoic Murphy Metamorphics were intersected and sampled. These holes are located in the southwestern corner of the area and are thought to be associated with the possible extension of the Benmara Fault, a prominent structural feature in the outcrop area to the east of this area.

In the other holes in this area, the basement rocks sampled were the weathered products of a granitic rock type. Generally, they consisted of sand, light brown to grey, clayey, medium to very coarse grained, subangular to angular, with sub equal amounts of quartz and felspar. Varying amounts of limonitic and hematitic staining were evident.

The weathered horizon persisted almost to the surface with the addition of kaolinitic material.

Quaternary
A shallow section (0 - 10 m) of clays and clayey sands forming characteristic 'black soil' of the area was deposited on the weathered basement profile.

Structure
No channelling or other structural features were determined due to the nature of the section encountered.
ALTERATION AND MINERALIZATION
The weathered basement profile was strongly oxidized generally to a yellow limonitic sand.

CONCLUSION AND RECOMMENDATIONS
The lack of a suitable sedimentary environment of deposition means the area has poor prospects to host any sedimentary uranium mineralization, and it is recommended that the joint venture be terminated.
TABLE 1

WATER SAMPLE DATA
### Water Sample Data

<table>
<thead>
<tr>
<th>Sampling Point</th>
<th>Sample Number</th>
<th>pH</th>
<th>EH mv</th>
<th>Oxygen ppm</th>
<th>H₂S ppm</th>
<th>Resistivity ohm-m @ °C</th>
<th>U₃O₈ ppm</th>
<th>Sample Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benmara 8A</td>
<td>001</td>
<td>7.3</td>
<td>+190</td>
<td>5.3</td>
<td>0.4</td>
<td>4.9 @ 25</td>
<td>2</td>
<td>Windmill</td>
</tr>
<tr>
<td>Benmara 1 (original)</td>
<td>002</td>
<td>6.7</td>
<td>+95</td>
<td>6.2</td>
<td>0.11</td>
<td>41.2 @ 28</td>
<td>&lt;2</td>
<td>Windmill</td>
</tr>
<tr>
<td>Benmara 12</td>
<td>003</td>
<td>8.2</td>
<td>+110</td>
<td>6.8</td>
<td>0.24</td>
<td>1.27 @ 26.5</td>
<td>97</td>
<td>Mono</td>
</tr>
<tr>
<td>Benmara 15A</td>
<td>004</td>
<td>7.4</td>
<td>+195</td>
<td>5.0</td>
<td>0.04</td>
<td>14.2 @ 28</td>
<td>&lt;2</td>
<td>Windmill</td>
</tr>
<tr>
<td>Benmara 14</td>
<td>005</td>
<td>7.1</td>
<td>+235</td>
<td>5.2</td>
<td>1.2</td>
<td>14.2 @ 32</td>
<td>&lt;2</td>
<td>Windmill</td>
</tr>
<tr>
<td>Benmara 2B</td>
<td>006</td>
<td>6.98</td>
<td>+195</td>
<td>5.0</td>
<td>0.011</td>
<td>27.6 @ 30</td>
<td>&lt;2</td>
<td>Windmill</td>
</tr>
<tr>
<td>Benmara 3</td>
<td>007</td>
<td>7.0</td>
<td>+190</td>
<td>7.95</td>
<td>3.0</td>
<td>5.12 @ 24</td>
<td>12</td>
<td>Windmill</td>
</tr>
<tr>
<td>Cresswell 57</td>
<td>008</td>
<td>7.3</td>
<td>+105</td>
<td>8.8</td>
<td>1.8</td>
<td>20.0 @ 31.5</td>
<td>&lt;2</td>
<td>Windmill</td>
</tr>
<tr>
<td>Benmara 5C</td>
<td>009</td>
<td>7.2</td>
<td>+180</td>
<td>6.8</td>
<td>2.7</td>
<td>43.5 @ 28</td>
<td>&lt;2</td>
<td>Windmill</td>
</tr>
<tr>
<td>Benmara Homestead</td>
<td>010</td>
<td>7.2</td>
<td>+210</td>
<td>7.7</td>
<td>2.3</td>
<td>21.8 @ 26</td>
<td>&lt;2</td>
<td>Windmill</td>
</tr>
<tr>
<td>Cresswell 41</td>
<td>011</td>
<td>6.5</td>
<td>+85</td>
<td>7.05</td>
<td>4.7</td>
<td>22.8 @ 28</td>
<td>&lt;2</td>
<td>Windmill</td>
</tr>
<tr>
<td>Cresswell 13</td>
<td>012</td>
<td>6.6</td>
<td>+105</td>
<td>5.8</td>
<td>5.2</td>
<td>10.78 @ 29</td>
<td>&lt;2</td>
<td>Windmill</td>
</tr>
<tr>
<td>Cresswell 16</td>
<td>013</td>
<td>6.7</td>
<td>+105</td>
<td>6.0</td>
<td>6.8</td>
<td>14.0 @ 29</td>
<td>&lt;2</td>
<td>Windmill</td>
</tr>
<tr>
<td>Cresswell 44</td>
<td>014</td>
<td>5.1</td>
<td>+140</td>
<td>6.2</td>
<td>6.0</td>
<td>20.2 @ 30</td>
<td>&lt;2</td>
<td>Southern Cross</td>
</tr>
<tr>
<td>Benmara 1E</td>
<td>015</td>
<td>6.7</td>
<td>+110</td>
<td>6.2</td>
<td>14.0</td>
<td>32.9 @ 25.5</td>
<td>&lt;2</td>
<td>Mono</td>
</tr>
<tr>
<td>Brunette D5</td>
<td>016</td>
<td>7.0</td>
<td>+140</td>
<td>5.6</td>
<td>15.0</td>
<td>6.04 @ -</td>
<td>&lt;2</td>
<td>Windmill</td>
</tr>
<tr>
<td>Brunette K19</td>
<td>017</td>
<td>7.0</td>
<td>+115</td>
<td>5.0</td>
<td>7.4</td>
<td>6.0 @ -</td>
<td>&lt;2</td>
<td>Windmill</td>
</tr>
<tr>
<td>Brunette D9</td>
<td>018</td>
<td>7.1</td>
<td>+120</td>
<td>6.0</td>
<td>9.5</td>
<td>2.3 @ 30</td>
<td>&lt;2</td>
<td>Windmill</td>
</tr>
<tr>
<td>Benmara 7C</td>
<td>019</td>
<td>6.6</td>
<td>-70</td>
<td>3.0</td>
<td>29.0</td>
<td>0.84 @ 32</td>
<td>3</td>
<td>Wireline</td>
</tr>
<tr>
<td>Benmara 13A</td>
<td>020</td>
<td>6.4</td>
<td>+30</td>
<td>2.95</td>
<td>19.0</td>
<td>26.2 @ -</td>
<td>&lt;2</td>
<td>Wireline</td>
</tr>
<tr>
<td>Benmara 33</td>
<td>021</td>
<td>7.6</td>
<td>+160</td>
<td>4.25</td>
<td>28.0</td>
<td>23.2 @ -</td>
<td>&lt;2</td>
<td>Wireline</td>
</tr>
<tr>
<td>Benmara 44</td>
<td>022</td>
<td>6.7</td>
<td>+140</td>
<td>4.9</td>
<td>27.0</td>
<td>54.0 @ 29</td>
<td>&lt;2</td>
<td>Wireline</td>
</tr>
<tr>
<td>Benmara 7D</td>
<td>023</td>
<td>7.6</td>
<td>+140</td>
<td>3.85</td>
<td>18.5</td>
<td>1.85 @ 35</td>
<td>&lt;2</td>
<td>Wireline</td>
</tr>
<tr>
<td>Benmara 38</td>
<td>024</td>
<td>7.2</td>
<td>-45</td>
<td>4.5</td>
<td>36.0</td>
<td>8.9 @ -</td>
<td>&lt;2</td>
<td>Wireline</td>
</tr>
<tr>
<td>Sampling Point</td>
<td>Sample Number</td>
<td>pH</td>
<td>EH (mv)</td>
<td>Dissolved Oxygen (ppm)</td>
<td>H₂S (ppm)</td>
<td>Resistivity ohm-m @ 20°C</td>
<td>U₃O₈ (ppm)</td>
<td>Sample Type</td>
</tr>
<tr>
<td>----------------</td>
<td>---------------</td>
<td>----</td>
<td>---------</td>
<td>------------------------</td>
<td>-----------</td>
<td>----------------------------</td>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Benmara 9</td>
<td>025</td>
<td>6.9</td>
<td>+115</td>
<td>5.3</td>
<td>44.0</td>
<td>28.0 @ 30</td>
<td>&lt; 2</td>
<td>Wireline</td>
</tr>
<tr>
<td>Bermara 20</td>
<td>026</td>
<td>7.1</td>
<td>+160</td>
<td>4.8</td>
<td>34.0</td>
<td>34.0 @ 28</td>
<td>&lt; 2</td>
<td>Wireline</td>
</tr>
<tr>
<td>Cresswell 37</td>
<td>027</td>
<td>7.9</td>
<td>+130</td>
<td>6.2</td>
<td>57.0</td>
<td>9.6 @ 33</td>
<td>2</td>
<td>Mono</td>
</tr>
<tr>
<td>Cresswell 38</td>
<td>028</td>
<td>8.2</td>
<td>+120</td>
<td>4.2</td>
<td>33.0</td>
<td>38.8 @ 33</td>
<td>&lt; 2</td>
<td>Wireline</td>
</tr>
<tr>
<td>Cresswell Downs</td>
<td>029</td>
<td>8.3</td>
<td>+125</td>
<td>4.6</td>
<td>30.0</td>
<td>8.75 @ 34</td>
<td>&lt; 2</td>
<td>Wireline</td>
</tr>
<tr>
<td>Cresswell 54</td>
<td>030</td>
<td>8.1</td>
<td>+120</td>
<td>2.4</td>
<td>18.0</td>
<td>54.0 @ -</td>
<td>&lt; 2</td>
<td>Wireline</td>
</tr>
<tr>
<td>Cresswell Gardiners</td>
<td>031</td>
<td>7.3</td>
<td>+140</td>
<td>4.4</td>
<td>16.5</td>
<td>1.7 @ 30</td>
<td>&lt; 2</td>
<td>Wireline</td>
</tr>
<tr>
<td>Benmara 19</td>
<td>032</td>
<td>5.5</td>
<td>+140</td>
<td>4.8</td>
<td>50.0</td>
<td>85.2 @ -</td>
<td>&lt; 2</td>
<td>Wireline</td>
</tr>
<tr>
<td>Benmara 19A</td>
<td>033</td>
<td>5.7</td>
<td>+20</td>
<td>4.8</td>
<td>92.0</td>
<td>24.0 @ 27</td>
<td>&lt; 2</td>
<td>Wireline</td>
</tr>
<tr>
<td>Benmara 8A</td>
<td>034</td>
<td></td>
<td></td>
<td>Check Sample</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX No 1

WATER SAMPLING DATA

10-2020 1L FR 72/1382 80/HP
WATER SAMPLING DATA

BORE NO.: Bennara EA
PROPERTY: Bennara
AIR TEMP.: 19°C
HUMIDITY: 39%
WATER TEMP.: 28.5°C
pH: 7.3 @ 27°C
EM*: 190 mv

DISSOLVED OXYGEN

METER CALIBRATION

TEMP: 20°C factor 9.2
ALT.: 750 ft. factor 0.97
HUMIDITY: 39% factor 0.132

Temp. factor x alt. factor + humidity factor = 9.056

Direct Reading: 5.3 ppm

SAMPLE TREATMENT: 2 samples acidified to pH 2, 2 untreated

REMARKS: Some galvanized fittings at well head

SAMPLE NO.: G01
SAMPLE TYPE: Flowing windmill
RESISTIVITY: 4.90 ohm-m @ 25°C

H₂S
Standard Readings
0.01 ppm -360 mv
1.00 ppm -385 mv
100.00 ppm -492 mv

SAMPLE READING
-380 mv

Calculated H₂S: 0.4 ppm

*: ORP electrode reading

SAVER: JGC/GE
### WATER SAMPLING DATA

**BORE NO.:** Benmara No 1 (original)  
**PROPERTY:** Benmara  
**SAMPLE NO.:** 002  
**SAMPLE TYPE:** Windmill

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Temp.</td>
<td>30.0°C</td>
</tr>
<tr>
<td>Humidity</td>
<td>34.4%</td>
</tr>
<tr>
<td>Water Temp.</td>
<td>29.3°C</td>
</tr>
<tr>
<td>pH</td>
<td>6.7 @ 28°C</td>
</tr>
<tr>
<td>Redox</td>
<td>915 mv</td>
</tr>
</tbody>
</table>

**DISSOLVED OXYGEN**

**METER CALIBRATION**

- Temp. 30°C factor 7.6
- Alt. 750 ft. factor 0.97
- Humidity 34.4% factor 0.225

Temp. factor x alt. factor + humidity factor = 7.59

**SAMPLE READING**

- Direct Reading 6.2 ppm
- -445 mv

**SAMPLE TREATMENT:** 2 samples acidified to pH 2, 2 untreated

**REMARKS:** Sampled from polythene pipe 10 m from well head

**SAMPLER:** J4L/426

* ORP electrode reading
# Water Sampling Data

<table>
<thead>
<tr>
<th>BORE NO.</th>
<th>Benmara No 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROPERTY</td>
<td>Benmara</td>
</tr>
<tr>
<td>AIR TEMP.</td>
<td>29.0°C</td>
</tr>
<tr>
<td>HUMIDITY</td>
<td>31.5%</td>
</tr>
<tr>
<td>WATER TEMP.</td>
<td>26.8°C</td>
</tr>
<tr>
<td>pH</td>
<td>8.2... @ 26.8°C</td>
</tr>
<tr>
<td>Eh*</td>
<td>+110... mv</td>
</tr>
</tbody>
</table>

## Dissolved Oxygen

**Meter Calibration**

- Temp. 29.0°C factor 7.8
- Alt. 750 ft. factor 0.97
- Humidity 31.5% factor 0.23

Temp. factor x alt. factor + humidity factor =

Direct Reading: 6.8 ppm

## Sample Treatment:

2 samples acidified to pH 2, 2 untreated

## Remarks:

Sampled at turkey's nest outlet, 100 m from wellhead

## Sampler:

JGC/GRE

---

* CRP electrode reading

---

**Sample No:** 003

**Sample Type:** Mono Pump

**Resistivity:** 1.27 ohm-m @26.8°C

**H₂S**

Standard Readings

- 0.01 ppm ...-432...... mv
- 1.00 ppm ...-580...... mv
- 100.00 ppm ................. mv

**Sample Reading**

-480... mv

Calculated H₂S: 0.24... ppm
**WATER SAMPLING DATA**

**BORE NO.:** Bennara No.15A

**PROPERTY:** Bennara

**AIR TEMP.:** 28° C

**HUMIDITY:** 33 %

**WATER TEMP.:** 28° C

**pH:** 7.4 @ 25° C

**EH:** +1.95 mv

**Dissolved Oxygen**

**Meter Calibration**

**Temp.** 28° C factor 7.9

**Alt.** 750 ft. factor 0.97

**Humidity** 33 % factor 0.23

Temp. factor x alt. factor + humidity factor = 7.89

**Direct Reading:** 5.0 ppm

**Sample Treatment:** 2 samples acidified to pH 2, 2 samples untreated

**Remarks:** Sampled at galvanized standard 50 m from bore

**Sample No.:** 004

**Sample Type:** Windmill

**Resistivity:** 14.2 ohm-m @ 25° C

**H₂S**

Standard Readings

- 0.01 ppm .......... -105 .......... mv
- 1.00 ppm .......... -440 .......... mv
- 100.00 ppm .................. mv

**Sample Reading**

-415 mv

**Calculated H₂S:** 0.04 ppm

**Sampler:** JBC/9/96

* ORP electrode reading
**WATER SAMPLING DATA**

**BORE NO.** bathroom No 14

**PROPERTY:** bathroom

**AIR TEMP.** 32.0°C

**HUMIDITY** 34.0%

**WATER TEMP.** 32.0°C

**pH** 7.1 @ 25.0°C

**EH** +7.255... mv

**Dissolved Oxygen**

**METER CALIBRATION**

<table>
<thead>
<tr>
<th>TEMP</th>
<th>°C factor</th>
<th>7.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALT.</td>
<td>750 ft. factor</td>
<td>0.97</td>
</tr>
<tr>
<td>HUMIDITY</td>
<td>34% factor</td>
<td>0.23</td>
</tr>
</tbody>
</table>

Temp. factor x alt. factor + humidity factor = 7.4

**Direct Reading** 5.2 ppm

**SAMPLE TREATMENT:** 2 samples acidified, 12 samples untreated

**REMARKS:** Sampled at borehead, some galvanised pipe

**SAMPLE NO:** 005

**SAMPLE TYPE:** Windmill

**RESISTIVITY:** 14.2 ohm-m @ 32.0°C

**H₂S**

<table>
<thead>
<tr>
<th>Standard Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.01 ppm</td>
</tr>
<tr>
<td>1.00 ppm</td>
</tr>
<tr>
<td>100.00 ppm</td>
</tr>
</tbody>
</table>

**SAMPLE READING**

-4.05 mv

**Calculated H₂S** 1.2 ppm

**SAMPLER:** JFC/GE5

*ORP electrode reading*
WATER SAMPLING DATA

BORE NO.: Beinnara 28
PROPERTY: Beinnara
AIR TEMP.: 29.0°C
HUMIDITY: 40.0%
WATER TEMP.: 30.0°C
pH: 6.98 @ 30.0°C
ERR*: 4195.0 mv

DISSOLVED OXYGEN

METER CALIBRATION
TEMP.: 29.0°C factor: 7.5
ALT.: 150.0 ft. factor: 0.97
HUMIDITY: 40.0% factor: 0.20

Temp. factor x alt. factor + humidity factor = 7.475

Direct Reading: 5.0 ppm

SAMPLE TREATMENT:
2 samples acidified to pH 2,
2 untreated

REMARKS:
Sampled at casing head from polythene pipe

SAMPLE NO.: 006
SAMPLE TYPE: Windmill

RESISTIVITY: 27.6 ohm-m @ 30.0°C

H2S
Standard Readings
0.01 ppm .... 380.0 mv
1.00 ppm ............. mv
100.00 ppm ............. mv

SAMPLE READING
-385.0 mv

Calculated H2S: 0.01 ppm

* ORP electrode reading
WATER SAMPLING DATA

BORE NO.: Bennara No. 3
PROPERTY: Bennara
AIR TEMP.: 23.0°C
HUMIDITY: 40% 
WATER TEMP.: 24°C
pH: 7.0 @ 24°C
EH2: +190 mv

DISSOLVED OXYGEN

METER CALIBRATION

TEMP. 23.0°C factor 8.5
ALT. 750... ft. factor 0.97
HUMIDITY % factor 0.68
Temp. factor x alt. factor + humidity factor = 8.4

Direct Reading 7.95 ppm

SAMPLE TREATMENT: 2 samples acidified to pH 2
2 sample untreated

REMARKS: Sampled at tank from 10m of polythene pipe

SAMPLE NO: 007
SAMPLE TYPE: Windmill

RESISTIVITY 5.12 ohm-m @ 24°C

H2S
Standard Readings
0.01 ppm -340 mv
1.00 ppm -370 mv
100.00 ppm -510 mv

SAMPLE READING

-105 mv

Calculated H2S 3 ppm

SAPLIER: JCE/GRE

* ORI electrode reading
WATER SAMPLING DATA

BORE NO: Cresswell No57

PROPERTY: Cresswell Downs

AIR TEMP: 31.5 °C

HUMIDITY: 34.0 %

WATER TEMP: 31 °C

pH: 7.3 @ 31 °C

EH*: 1105 mv

DISSOLVED OXYGEN

METER CALIBRATION

TEMP: 31.5 °C factor 7.5

ALT: 75D ft. factor 0.97

HUMIDITY: 34.0 % factor 0.23

Temp. factor x alt. factor + humidity factor = 7.5

Direct Reading 8.8 ppm

SAMPLE TREATMENT:

2 samples acidified to pH 2
2 samples untreated

REMARKS: Readings doubtful because of poor samples.

SAMPLE NO: 008

SAMPLE TYPE: Monopump

RESISTIVITY: 20.0 ohm-m @ 25 °C

H₂S

Standard Readings

0.01 ppm - 355 mv
1.00 ppm - 390 mv
100.00 ppm - 985 mv

SAMPLE READING

-410 mv

Calculated H₂S 1.8 ppm

* ORP electrode reading
**WATER SAMPLING DATA**

**BORE NO.:** Benmara No. 5C  
**PROPERTY:** Benmara  
**AIR TEMP.:** 27 °C  
**HUMIDITY:** 38%  
**WATER TEMP.:** 28 °C  
**pH:** 7.2 @ 28 °C  
**EH:** +1800 mv  

**DISSOLVED OXYGEN**

**METER CALIBRATION**

<table>
<thead>
<tr>
<th>TEMP.</th>
<th>factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>27 °C</td>
<td>0.91</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ALT.</th>
<th>factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>750 ft.</td>
<td>0.97</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HUMIDITY</th>
<th>factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>38%</td>
<td>0.8336</td>
</tr>
</tbody>
</table>

Temp. factor x alt. factor + humidity factor = 8.04

Direct Reading: 6.8 ppm

**SAMPLE TREATMENT:**  
2 Samples acidified to pH 2,  
2 Samples untreated

**REMARKS:** Sampled at well head from galvanized stand pipe

**SAMPLE NO.:** 009  
**SAMPLE TYPE:** Undrilled

**RESISTIVITY:** 43.5 ohm-m @ 28 °C

**H₂S**

<table>
<thead>
<tr>
<th>Standard Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.01 ppm</td>
</tr>
<tr>
<td>1.00 ppm</td>
</tr>
<tr>
<td>100.00 ppm</td>
</tr>
</tbody>
</table>

**SAMPLE READING**

<table>
<thead>
<tr>
<th>Calculated H₂S</th>
<th>2.7 ppm</th>
</tr>
</thead>
</table>

* ORP electrode reading
WATER SAMPLING DATA

BORE NO.: Bennara Hamadeh
PROPERTY: Bennara
AIR TEMP.: 2.5° C
HUMIDITY: 35 %
WATER TEMP.: 26° C
pH: 7.2 @ 26° C
EH*: +120 mv

DISSOLVED OXYGEN

METER CALIBRATION
Temp. 2.5° C factor 8.4
Alt. 750 ft. factor 0.97
Humidity 35 % factor 0.122
Temp. factor x alt. factor + humidity factor = 8.32

Direct Reading 7.7 ppm

SAMPLE TREATMENT:
2 samples acidified to pH 2
2 samples untreated

REMARKS: Sampled at well head

SAMPLE NO.: O10
SAMPLE TYPE: Windmill

RESISTIVITY: 21.8 ohm-m @ 26° C

H2S
Standard Readings
0.01 ppm -320 mv
1.00 ppm -360 mv
100.00 ppm -530 mv

SAMPLE READING
-390 mv

Calculated H2S: 2.3 ppm

SAMPLER: JGC/GRE

* ORP electrode reading
WATER SAMPLING DATA

BORE NO. Cresswell No. 41
PROPERTY: Cresswell Springs
AIR TEMP.: 28.0°C
HUMIDITY: 38.0%
WATER TEMP.: 28.0°C
pH: 6.5 @ 28.0°C
EH: 1,850 mv

RESISTIVITY: 22.8 ohm-m @ 28.0°C
H₂S
Standard Readings
0.01 ppm .............. - mv
1.00 ppm ........ -340 mv
100.00 ppm ........ -530 mv
SAMPLE READING
-405 mv
Calculated H₂S: 41.7 ppm

SAMPLE TREATMENT:
2 samples acidified to pH 2
2 samples untreated

REMARKS:
Sampled at turkeys nest, 1/2m from well head, from galvanized pipe

SAMPLER: OCC/CRE

* ORP electrode reading
WATER SAMPLING DATA

BORE NO.: Cresswell No. 13
PROPERTY: Cresswell Downs
AIR TEMP.: 30°C
HUMIDITY: 37%
WATER TEMP.: 29°C
pH: 6.6
EH*: 1105 mv

Dissolved Oxygen

Meter Calibration

Temp.: 30°C factor: 7.6
Alt.: 750 ft. factor: 0.97
Humidity: 37% factor: 0.2164
Temp. factor x alt. factor + humidity factor = 7588

Direct Reading: 5.8 ppm

Sample Treatment:
2 samples acidified to pH 2,
2 samples untreated

Remarks: Sampled 10 m from bore from galvanized pipe, sample cloudy

Sampler: JEC/GCE

*: ORP electrode reading

Sample No.: 012
Sample Type: Southern Cross Down Hole

Resistivity: 10.98 ohm-m @ 29°C
H2S

Standard Readings
0.01 ppm .................. mv
1.00 ppm -320 ............ mv
100.00 ppm -540 .......... mv

Sample Reading
-400 ........ mv

Calculated H2S: 5.2 ppm
WATER SAMPLING DATA

BORE NO.: Crosswell No 16
PROPERTY: Crosswell Downs
AIR TEMP: 30.0°C
HUMIDITY: 37.0%
WATER TEMP: 29.0°C
pH: 6.7 @ 29.0°C
EH²: +105 mv

DISSOLVED OXYGEN

METER CALIBRATION
TEMP: 30.0°C factor 7.6
ALT: 780 ft. factor 0.97
HUMIDITY 37.0% factor 0.2164

Temp. factor x alt. factor + humidity factor = 7.888

Direct Reading: 6.0 ppm

SAMPLE TREATMENT:
2 samples acidified to pH 2,
2 samples untreated

REMARKS:

SAMPLE NO: 013
SAMPLE TYPE: Monopump
RESISTIVITY: 14.0 ohm-m @ 29.0°C
H₂S
Standard Readings
0.01 ppm ................. mv
1.00 ppm .......... 330 mv
100.00 ppm .......... 545 mv

SAMPLE READING
-420 mv

Calculated H₂S: 6.8 ppm

* ORP electrode reading

SAMPLER: JOC/CRE
WATER SAMPLING DATA

BORE NO. Cremorne No. 44
PROPERTY Cremorne Downs
AIR TEMP. 31.0°C
HUMIDITY 36.0%
WATER TEMP. 30.0°C
pH 6.1 @ 30.0°C
Eh* +140 mv

DISSOLVED OXYGEN

METER CALIBRATION
TEMP. 31.0°C factor 7.5
ALT. 730.0 ft. factor 0.97
HUMIDITY 36.0% factor 0.2152
Temp. factor x alt. factor + humidity factor = 7.48

Direct Reading 6.2 ppm

SAMPLE TREATMENT:
2 samples acidified to pH 2
2 samples untreated

REMARKS: Sampled at turkey's nest inlet
          from galvanized pipe, 60 m
          from well head

SAMPLER: JRC/GE

* ORP electrode reading
WATER SAMPLING DATA

BORE NO. Bemara No. 15
PROPERTY: Bemara
AIR TEMP: 25°C
HUMIDITY: 43%
WATER TEMP: 25.5°C
pH: 6.7 @ 25.5°C
EH*: +110... mv

DISSOLVED OXYGEN

METER CALIBRATION
TEMP: 25.0°C factor 0.4
ALT: 750 ft. factor 0.97
HUMIDITY: 43% factor 0.1496
Temp. factor x alt. factor + humidity factor = 0.29

Direct Reading: 5.2 ppm

SAMPLE TREATMENT: 2 Samples acidified to pH 2,
5 samples untreated

REMARKS: Sampled at well head

SAMPLE NO: 015
SAMPLE TYPE: Windmill
RESISTIVITY: 32.9 ohm-m @ 25.5°C
H₂S
Standard Readings
0.01 ppm ................. mv
1.00 ppm -290 ............. mv
100.00 ppm -540 ........... mv

SAMPLE READING

-4835 mv

Calculated H₂S .......... ppm

14

* ORP electrode reading

SAMPLER: JGC / C.R.E.
WATER SAMPLING DATA

BORON NO. Brunette No. 05
PROPERTY: Brunette Downs
AIR TEMP: 28°C
HUMIDITY: 38%
WATER TEMP: 70°C
pH: 7.0 @ 25°C
EM: +110 mv

DISSOLVED OXYGEN METER CALIBRATION
TEMP: 28°C factor 7.9
ALT: 750 ft. factor 0.97
HUMIDITY: 38% factor 0.1926

Temp. factor x alt. factor + humidity factor = 7.85

Direct Reading: 5.6 ppm

SAMPLE TREATMENT: 2 samples acidified to pH2, 2 samples untreated

REMARKS: Sampled at turkeys nest, 35 m from bore with galvanized pipe

SAMPER: JGC/GRE

RESISTIVITY: 6.04 ohm-m @ 25°C
H2S
Standard Readings
0.01 ppm ............... mv
1.00 ppm -265 ............... mv
100.00 ppm -140 ............... mv

SAMPLE READING: -380 mv

Calculated H2S: 15 ppm

* OBP electrode reading
WATER SAMPLING DATA

BORE NO. Brunette k-18
PROPERTY: Brunette
AIR TEMP: 31.3°C
HUMIDITY: 35%
WATER TEMP: -0.0°C
pH: 7.0 @ 20°C
Eh: +115 mv

DISSOLVED OXYGEN

METER CALIBRATION
TEMP: 31.3°C factor 7.5
ALT. 790 ft. factor 0.97
HUMIDITY: 35% factor 0.228
Temp. factor x alt. factor + humidity factor = 7.828

Direct Reading: 5.0 ppm

SAMPLE TREATMENT:
2 samples acidified to pH 2,
2 samples untreated

REMARKS:
Sampled at turkey's nest, 30 m from well head

SAMPLE NO: 017
SAMPLE TYPE: Mone pump
RESISTIVITY: 6.6 ohm-m @ 20°C
H2S

Standard Readings
0.01 ppm .................. mv
1.00 ppm .................. mv
100.00 ppm ................ mv

SAMPLE READING

-3.65 mv

Calculated H2S: 7.4 ppm

* ORP electrode reading
**WATER SAMPLING DATA**

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>Brunette Downs</th>
<th>SAMPLE NO: 018</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIR TEMP</td>
<td>31 °C</td>
<td>SAMPLE TYPE: Undrill</td>
</tr>
<tr>
<td>HUMIDITY</td>
<td>34 %</td>
<td>RESISTIVITY: 2.3 ohm-m @ 30 °C</td>
</tr>
<tr>
<td>WATER TEMP</td>
<td>30 °C</td>
<td>H₂S Standard Readings</td>
</tr>
<tr>
<td>pH</td>
<td>7.1 @ 30 °C</td>
<td>0.01 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.00 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100.00 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SAMPLE READING</td>
</tr>
</tbody>
</table>

**DISSOLVED OXYGEN**

<table>
<thead>
<tr>
<th>METER CALIBRATION</th>
<th>TEMP 31 °C factor 7.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALT. 780 ft. factor 0.97</td>
<td></td>
</tr>
<tr>
<td>HUMIDITY 34 % factor 0.2312</td>
<td></td>
</tr>
</tbody>
</table>

Temp. factor x alt. factor + humidity factor = 7.5

Direct Reading: 6.0 ppm

**SAMPLE TREATMENT:**

2 samples acidified to pH 2
2 samples untreated

**REMARKS:**

Sampled at turkey's nest, 30 m from bore by galvanized pipe

**SAMPLER:** JGC/GRE

* ORP electrode reading
WATER SAMPLING DATA

BORE NO.  Benmara 7c
PROPERTY:  Benmara
AIR TEMP:  32.0°C
HUMIDITY:  37.0%
WATER TEMP:  32.0°C
pH:  6.6 @ 32.0°C
EH*:  -70.0 mv

SAMPLE NO:  019
SAMPLE TYPE:  Wireline

RESISTIVITY  0.84 ohm-m @ 32.0°C

H₂S
Standard Readings
0.01 ppm ............... mv
1.00 ppm .............. mv
100.00 ppm ........... mv

SAMPLE READING

-425 mv

DISSOLVED OXYGEN

METER CALIBRATION

TEMP .32 ....C factor 7.4......
ALT. 780 ft. factor 0.97.....
HUMIDITY 35.0% factor 0.2316

Temp. factor x alt. factor + humidity factor = 7.4096

Direct Reading 30 ppm

Temp.  factor of Sample: 1

SAMPLE TREATMENT:  2 samples acidified to pH 2,
2 samples untreated

REMARKS:  Bore not producing, sampled down
hole with wire line device,
results doubtful

SAMPLER:  JGC / GRE

* ORP electrode reading
WATER SAMPLING DATA

BORE NO. Banmara No. 13A
SAMPLE NO. 020
PROPERTY: Banmara
SAMPLE TYPE: Water

AIR TEMP: 31.0°C
RESISTIVITY 26.2 ohm-m @ 20°C

HUMIDITY 3.7%

WATER TEMP. 20°C
H2S

pH 6.4 @ 20°C
Standard Readings

EH* 130 mv

DISSOLVED OXYGEN

METER CALIBRATION

TEMP 31.0°C factor 7.5

ALT. 750 ft. factor 0.97

HUMIDITY 3.7% factor 0.2216

Temp. factor x alt. factor + humidity factor = 7.1866

Calculated H2S 19 ppm

Sample Reading -420 mv

Direct Reading 2.95 ppm

SAMPLE TREATMENT:

2 samples acidified to pH 2,
2 samples unheated

REMARKS: Bore not producing, sampled down hole with downhole device, results doubtful

Sampler: JGC/GRE

a ORP electrode reading
WATER SAMPLING DATA

BORE NO.: Bannara No. 33
PROPERTY: Bannara
AIR TEMP.: 23.0°C
HUMIDITY: 55.0%
WATER TEMP.: 7.2°C
pH: 7.6
Eh#: +150 mv

Dissolved Oxygen

METER CALIBRATION
TEMP: 23.0 °C factor 8.7
ALT. 750 ft. factor 0.97
HUMIDITY 55.0% factor 0.118
Temp. factor x alt. factor + humidity factor = 8.55

Direct Reading 4.25 ppm

SAMPLE TREATMENT: 2 samples acidified to pH 2, 2 samples untreated

REMARKS: Bore not producing, sampled with wireline device, results doubtful

SAMPLE NO.: 021
SAMPLE TYPE: Wireline

RESISTIVITY 23.2 ohm-m @ 20°C

H2S
Standard Readings
0.01 ppm ................ mv
1.00 ppm ............... mv
100.00 ppm .......... mv

SAMPLE READING
........ mv
Calculated H2S ........ ppm

* ORP electrode reading
WATER SAMPLING DATA

BORE NO. Benmara No. 44
PROPERTY: Benmara
AIR TEMP: 29.0°C
HUMIDITY: 47.0%
WATER TEMP: 29.0°C
pH: 6.7 @ 29.0°C

DISSOLVED OXYGEN

METER CALIBRATION
TEMP: 29.0°C factor 7.8
ALT: 750 ft. factor 0.97
HUMIDITY: 47.0% factor 0.109

Temp. factor x alt. factor + humidity factor = 7.835

Direct Reading: 4.9 ppm

SAMPLE TREATMENT:
2 samples acidified to pH 2,
2 samples untreated.

REMARKS:
Bore not producing, sampled with wireline device, results doubtful

SAMPLER: J.R. C. / G.R.E.

* G.R.E. electrode reading

SAMPLE NO: 022
SAMPLE TYPE: Wireline
RESISTIVITY: 540 ohm-m @ 29.0°C

H₂S Standard Readings
0.01 ppm ................. mv
1.00 ppm ........... mv
100.00 ppm ........... mv

SAMPLE READING 380 mv

Calculated H₂S: 2.7 ppm
WATER SAMPLING DATA

BORE NO.  Benmara No. 7D
PROPERTY:  Benmara
AIR TEMP.  34° C
HUMIDITY  38%
WATER TEMP.  35° C
pH  7.6 @ 35° C
EH*  +1400 mv

DISSOLVED OXYGEN

METER CALIBRATION

TEMP. 34° C factor .72
ALT. .750 ft. factor .97
HUMIDITY 38% factor .24

Temp. factor x alt. factor + humidity factor = 7.232

Direct Reading 3.85 ppm

SAMPLE TREATMENT:
2 samples acidified to pH 2,
2 samples untreated

REMARKS:

Bore not producing, sampled with wireline device, results doubtful

SAMPLE NO:  023
SAMPLE TYPE:  Wireline
RESISTIVITY  1.85 ohm-m @ 35° C
H₂S
Standard Readings

<table>
<thead>
<tr>
<th>Concentration (ppm)</th>
<th>Reading (mv)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.01 ppm</td>
<td>-4.0</td>
</tr>
<tr>
<td>1.00 ppm</td>
<td>-49.0</td>
</tr>
<tr>
<td>100.00 ppm</td>
<td>-4910</td>
</tr>
</tbody>
</table>

SAMPLE READING

-380 mv

Calculated H₂S 18.5 ppm

* ORP electrode reading
WATER SAMPLING DATA

BORE NO. Bemera No 38
PROPERTY: Bemera
AIR TEMP: 32 °C
HUMIDITY: 37 %
WATER TEMP: ....... °C
pH: 7.2 @ ....... °C
EH*: ....... mv

DISSOLVED OXYGEN

METER CALIBRATION
TEMP: 32 °C factor: 7.4...
ALT. 750 ft. factor: 0.97...
HUMIDITY: 37 % factor: 0.236
Temp. factor x alt. factor + humidity factor = 7.409

Direct Reading: 4.5 ppm

SAMPLE NO: 024
SAMPLE TYPE: WELWIE
RESISTIVITY: 8.9 ohm-m @ .... °C

H₂S
Standard Readings
0.01 ppm: .............. mv
1.00 ppm: -190 mv
100.00 ppm: -460 mv

SAMPLE READING: -400 mv

Calculated H₂S: 36 ppm

SAMPLE TREATMENT:

2 samples acidified to pH 2,
2 samples untreated

REMARKS:
Bore not producing, sampled with wireline device, results doubtful

SAMPER: JCG/92E

* ORP electrode reading
WATER SAMPLING DATA

BORE NO. Banamara No. 9
PROPERTY: Banamara
AIR TEMP: 30 ....... °C
HUMIDITY: 37 ....... %
WATER TEMP: 30 ....... °C
pH: 6.9 ....... @ ...... °C
EH*: +115 ....... mv

DISSOLVED OXYGEN

METER CALIBRATION
TEMP: 30 ....... °C factor 7.6
ALT: 750 ....... ft. factor 0.97
HUMIDITY: 37 ....... % factor 0.2116

Temp. factor x alt. factor + humidity factor = 7.583
Direct Reading: 5.3 ....... ppm

SAMPLE TREATMENT: 2 samples acidified to pH 2
2 samples untreated

REMARKS: Bore not producing, sampled with wireline device, results doubtful

SAMPLE NO: 025
SAMPLE TYPE: Wireline

RESISTIVITY: 28.0 ohm-m @ 30 °C

H2S
Standard Readings
0.01 ppm ............... mv
1.00 ppm ............... -205 mv
100.00 ppm ............. -1300 mv

SAMPLE READING ............... -390 mv

Calculated H2S: 4.4 ....... ppm

* ORr electrode reading

JAC/GRE
WATER SAMPLING DATA

BORE NO.: Benmore No. 20
PROPERTY: Benmore
AIR TEMP.: 29.0°C
HUMIDITY: 43.0%
WATER TEMP.: 28.0°C
pH: 7.1 @ 28.0°C
EH*: 160 mv

DISSOLVED OXYGEN
METER CALIBRATION
TEMP 29.0°C factor 7.8
ALT. 750 ft. factor 0.97
HUMIDITY 43.0% factor 0.18/24
Temp. factor x alt. factor + humidity factor = 7.748

Direct Reading 4.8 ppm

SAMPLE TREATMENT: 2 samples acidified to pH 2, 2 samples untreated

REMARKS: Bore not producing, sampled with wiring device, results doubtful

SAMPLE NO: 026
SAMPLE TYPE: Wireline
RESISTIVITY 34.6 ohm-m @ 28.0°C
H₂S
Standard Readings
0.01 ppm .............. mv
1.00 ppm -155 mv
100.00 ppm -480 mv

SAMPLE READING
-380 mv

Calculated H₂S 34.2 ppm

* ORP electrode reading
WATER SAMPLING DATA

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BORE NO.</td>
<td>Crescentwell No.37</td>
</tr>
<tr>
<td>PROPERTY</td>
<td>Crescentwell Down</td>
</tr>
<tr>
<td>AIR TEMP.</td>
<td>23.3 °C</td>
</tr>
<tr>
<td>HUMIDITY</td>
<td>39 %</td>
</tr>
<tr>
<td>WATER TEMP.</td>
<td>33.3 °C</td>
</tr>
<tr>
<td>pH</td>
<td>7.9 @ 33 °C</td>
</tr>
<tr>
<td>EH*</td>
<td>+130 mv</td>
</tr>
</tbody>
</table>

DISSOLVED OXYGEN

<table>
<thead>
<tr>
<th>METER CALIBRATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEMP. 23.3 °C factor 7.8</td>
</tr>
<tr>
<td>ALT. 780 ft. factor 0.97</td>
</tr>
<tr>
<td>HUMIDITY 39 % factor 0.2362</td>
</tr>
</tbody>
</table>

Temp. factor x alt. factor + humidity factor = 7.316

DIRECT READING: 6.2 ppm

SAMPLE TREATMENT:
2 samples acidified to pH 2, 2 samples untreated.

REMARKS: Sampled at well head from galvanized pipe, well appears to be filled up, sample decanted to remove some of the solids.

SAMPLE NO: 027
SAMPLE TYPE: Mono

RESISTIVITY 9.6 ohm-m @ 38 °C

H₂S
Standard Readings
0.01 ppm ................. mv
1.00 ppm ............... mv
100.00 ppm ............. mv

SAMPLE READING -400 mv

Calculated H₂S 57 ppm
WATER SAMPLING DATA

BORE NO. Crenshaw No. 32
PROPERTY: Crenshaw
AIR TEMP: 33.0°C
HUMIDITY: 39.0%
WATER TEMP: 33.0°C
pH: 8.2 @ 33°C
EH²: +120 mv

SAMPLE NO: 428
SAMPLE TYPE: Pipeline
RESISTIVITY: 38.8 ohm-m @ 33.0°C

H₂S
Standard Readings
0.01 ppm ............... mv
1.00 ppm ...........-200 mv
100.00 ppm ...........-450 mv

SAMPLE READING
............ mv

Calculated H₂S: 38.0 ppm

DISSOLVED OXYGEN

METER CALIBRATION
TEMP 33.0°C factor: 7.3
ALT. 750 ft. factor: 0.97
HUMIDITY 39.0% factor: 0.2352

Temp. factor x alt. factor + humidity factor = 7.316

Direct Reading: 4.2 ppm

SAMPLE TREATMENT:
2 samples acidified to pH 2,
2 samples

REMARKS:
Bore not producing, sampled with pipeline device, results doubtful

SAMPER: JFC/GRE

* ORP electrode reading
WATER SAMPLING DATA

BORE NO.: Crescent Dua
PROPERTY: Crescent Dunes
AIR TEMP: 33.00°C
HUMIDITY: 37.00 %
WATER TEMP: 34.00°C
pH: 8.3 @ 34.0°C
EH*: +125.00 mv

DISSOLVED OXYGEN

METER CALIBRATION
TEMP: 33.00°C factor 7.3
ALT: 750 ft. factor 0.97
HUMIDITY: 37.00 % factor 0.2416

Temp. factor x alt. factor + humidity factor = 7.32

Direct Reading: 4.60 ppm

SAMPLE TREATMENT:
2 samples acidified to pH 2,
2 samples untreated

REMARKS:
Bore not producing, sampled with wireline device. Results doubted.

SAMPLE NO: 029
SAMPLE TYPE: Wireline
RESISTIVITY 8.75 ohm-m @34.0°C
H2S

Standard Readings
0.01 ppm ............... mv
1.00 ppm .............. mv
100.00 ppm ............ mv

SAMPLE READING

-385 mv

Calculated H2S: 30 ppm

* ORP electrode reading
WATER SAMPLING DATA

BORE NO. Croswell 54
PROPERTY: Croswell Downe
AIR TEMP: 32.0°C
HUMIDITY: 38.0%
WATER TEMP: 10.0°C
pH 8.1 @ 10.0°C
EH+ 120 mv

DISSOLVED OXYGEN

METER CALIBRATION
TEMP 32.0°C factor 7.4
ALT. 750 ft. factor 0.97
HUMIDITY 38.0% factor 0.2284
Temp. factor x alt. factor + humidity factor = 7.406

Direct Reading 2.4 ppm

SAMPLE TREATMENT: 2 samples analyzed to pH 2,
2 samples untreated

REMARKS: Bore not producing, sampled with wireline device, results doubtful

SAMPLE NO: 030
SAMPLE TYPE: W. Downe
RESISTIVITY 54.0 ohm-m @ -5.0°C

H2S
Standard Readings
0.01 ppm ............... mv
1.00 ppm ............. -255 mv
100.00 ppm ............ -500 mv
SAMPLE READING ............ -410 mv

Calculated H2S 180 ppm

* ORP electrode reading

SAMPLER: Jack Gae
WATER SAMPLING DATA

BORE NO: Gardiners Waterhole
PROPERTY: Crosswell Downs

SAMPLE NO: 031
SAMPLE TYPE: Groundwater

RESISTIVITY 1.7 ohm-m @ 30°C

H₂S
Standard Readings
0.01 ppm ........................ mv
1.00 ppm ........................ mv
100.00 ppm ........................ mv

SAMPLE READING

Dissolved Oxygen

METER CALIBRATION

Temp 32°C factor 7.4
Alt. 790 ft. factor 0.97
Humidity 39% factor 0.2252

Temp. factor x alt. factor + humidity factor = 7.4

Direct Reading 4.4 ppm

SAMPLE TREATMENT:
2 samples acidified to pH 2,
2 samples untreated

REMARKS:
Bore not producing, sampled
with ground water device, results
doubtful

SAMPLER: JGK/CRE

* ORP electrode reading
WATER SAMPLING DATA

BORE NO. Benmarra No19
PROPERTY: Benmarra
AIR TEMP: 26 °C
HUMIDITY 40 %
WATER TEMP: 20 °C
pH 5.5 @ 20 °C
EH # 4140 mv

Dissolved Oxygen

METER CALIBRATION

TEMP 20 °C factor 8.2
ALT. 750 ft. factor 0.97
HUMIDITY 40 % factor 0.972
Temp. factor x alt. factor + humidity factor = 8.126

Direct Reading 418 ppm

SAMPLE TREATMENT:
2 samples acidified to pH 2,
2 samples untreated

REMARKS:
Bore not producing, sampled with wireline device, results doubtful

SAMPLE NO: 032
SAMPLE TYPE: W.N.L.W.

RESISTIVITY 85.2 ohm- m @ 20 °C

H2S
Standard Readings

0.01 ppm ................. mv
1.00 ppm ................. mv
100.00 ppm ................. mv

SAMPLE READING

-370 mv

Calculated H2S 50 ppm

* ORP electrode reading
WATER SAMPLING DATA

Bore No.: Renner No 19A
Property: Renner
Air Temp.: 27...°C
Humidity: 37...
Water Temp.: 27...°C
pH: 5.7...@27...°C
Eh*: ±20...mv

Dissolved Oxygen

Meter Calibration
Temp.: 27...°C factor: 8.1...
Alt.: 750...ft. factor: 0.97...
Humidity: 37...% factor: 0.1816
Temp. factor x alt. factor + humidity factor = 8.088

Sample No.: 033
Sample Type: W. H2S

Resistivity: 24.0...ohm-m @27...

H2S
Standard Readings

<table>
<thead>
<tr>
<th>Reading</th>
<th>mv</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.01 ppm</td>
<td>-</td>
</tr>
<tr>
<td>1.00 ppm</td>
<td>-190</td>
</tr>
<tr>
<td>1.00 ppm</td>
<td>-530</td>
</tr>
</tbody>
</table>

Sample Reading

-525...mv

Calculated H2S: 92...ppm

Sample Treatment:
2 samples acidified to pH 2,
2 samples untreated

Remarks:
Bore not producing, sampled with wire line device, results doubtful

Sampler: JGP / CRE

* ORP electrode reading
WATER SAMPLING DATA

BORE NO. Barnara SA
PROPERTY: Barnara
AIR TEMP: .......... °C
HUMIDITY .......... %
WATER TEMP. .......... °C
pH ........ @ .......... °C
EH* ........ ......... mv

DISSOLVED OXYGEN

METER CALIBRATION
TEMP .......... °C factor ...........
ALT. .......... ft. factor ...........
HUMIDITY .......... % factor ........
Temp. factor x alt. factor + humidity factor =

Direct Reading ............. ppm

SAMPLE TREATMENT:
2 samples acidified &
PH 2, 2 samples untreated.

REMARKS:
Check sample, same sampling
point as sample 031

SAMPLE NO: 034
SAMPLE TYPE:
RESISTIVITY ....... ohm-m @ ........
H₂S
Standard Readings
0.01 ppm ................. mv
1.00 ppm ................. mv
100.00 ppm ................. mv
SAMPLE READING
................. mv

Calculated H₂S .............. ppm

* ORP electrode reading
### ANALYTICAL RESULTS

**Samples from:** Mines Administration Pty. Ltd.

**Area:**

**Samples of:** Waters.

**Preparation:**

**Batch No.:** A 2079

**Sheet No.:** 1

**Date:** 31.8.77

SAMPLES WILL BE DISPOSED OF AFTER TWO MONTHS UNLESS WE ARE OTHERWISE ADVISED

<table>
<thead>
<tr>
<th>Sample Description</th>
<th>$U_3O_8$ ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nos. 1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>9.7</td>
</tr>
<tr>
<td>4</td>
<td>2.2</td>
</tr>
<tr>
<td>5</td>
<td>2.2</td>
</tr>
<tr>
<td>6</td>
<td>3.2</td>
</tr>
<tr>
<td>7</td>
<td>3.2</td>
</tr>
<tr>
<td>8</td>
<td>3.2</td>
</tr>
<tr>
<td>9</td>
<td>3.2</td>
</tr>
<tr>
<td>10</td>
<td>3.2</td>
</tr>
<tr>
<td>1</td>
<td>2.2</td>
</tr>
<tr>
<td>2</td>
<td>2.2</td>
</tr>
<tr>
<td>3</td>
<td>2.2</td>
</tr>
<tr>
<td>4</td>
<td>2.2</td>
</tr>
<tr>
<td>5</td>
<td>2.2</td>
</tr>
<tr>
<td>6</td>
<td>2.2</td>
</tr>
<tr>
<td>7</td>
<td>2.2</td>
</tr>
<tr>
<td>8</td>
<td>2.2</td>
</tr>
<tr>
<td>9</td>
<td>2.2</td>
</tr>
<tr>
<td>10</td>
<td>2.2</td>
</tr>
<tr>
<td>Nos. 34</td>
<td>2.2</td>
</tr>
</tbody>
</table>

### ANALYTICAL METHODS:

$U_3O_8$ by Fluorimetry following ten times concentration of water.

### DISTRIBUTION:

Mines Administration Pty. Ltd.

PRIVYANSI, Q.L.D.

---

Signed

This Laboratory is registered by the National Association of Testing Authorities, Australia. The test(s) reported herein have been performed in accordance with its terms of registration. This document shall not be reproduced except in full.
APPENDIX No 3

DRILL HOLE LOGS

CO1 to CO13
Analytical or radioactivity log:

- 0-3 Sand, clays, mud, gray, red, gray, medium, very soft, 230, 62.6, etc.
- 0-33.6 Sand, clays, mud, white, sand, gray, red, etc.

Lithology log:

- 0-3 Sand, clays, mud, gray, red, gray, medium, very soft, 230, 62.6, etc.
- 0-33.6 Sand, clays, mud, white, sand, gray, red, etc.

Depth:

- 0-3 Sand, clays, mud, gray, red, gray, medium, very soft, 230, 62.6, etc.
- 0-33.6 Sand, clays, mud, white, sand, gray, red, etc.

- 33.6-50 Sand, light brown, gray, red, etc.
- 50-59.0 Sand, light brown, gray, red, etc.
- 59.0-68.0 Sand, light brown, gray, red, etc.
- 68.0-68.6 Carbons, red, brown, etc.
LITHOLOGY LOG

0-1.6 laterite, red brown, yellowish
1.3-13.5 sandy, reddish brown, coarse, very angular, kaolinite, hematite

13.5-23.4 sand, light buff brown, red, coarse grained,

24.4-57.6 sand, khaki brown, very coarse grained, many coarse grained, angular, quartz, and feldspar, abundant quartz, and angular, and well rounded, hematite shown

57.6-62.6 sand at 50 m, clay fraction

62.6-68.1 sand, reddish brown, very coarse grained
fluctuates well rounded, many quartz
2) abundant feldspar and mica, hematite

SAND THROUGHOUT
68.1-11.30 sand and silt sampled,

From drill rate and log expansion.
LITHOLOGY LOG

0-9 haematite, mudstone and calcite, sub equal amounts of kaolinite

9-15.5 sandstone, calcite, fine grained, hard, cemented with kaolinite, well sorted, rounded, no porosity.

15.5-17.8 sandstone, reddish while, mudvainy, gravelly, sub angular to sub rounded, quartzose, kaolinite stained, kaolinite.

17.8-20.0 sandstone, reddish while, coarse, very gravelly, sub angular to sub rounded, quartzose, kaolinite stained, minor kaolinite, less than normal, whiteish clay.

20.0-25.0 sandstone, a granule (5mm) to very coarse gravel, sub rounded, quartzose with minor detrital matrix.

25.0-35.0 sandstone, brown, nearly angular, poorly sorted, quartzose, kaolinite, halite, calcite.

35.0-60.0m sandstone, mudstone, coarser, angular, poorly sorted, quartzose, sub angular to subrounded, abundant mica.
<table>
<thead>
<tr>
<th>DEPTH</th>
<th>LITHOLOGY LOG</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>2</td>
<td>12.6 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>4</td>
<td>93.3 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>5</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>6</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>7</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>8</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>9</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>10</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>11</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>12</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>13</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>14</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>15</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>16</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>17</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>18</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>19</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>20</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>21</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>22</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>23</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>24</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>25</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>26</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>27</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>28</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>29</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>30</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>31</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>32</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>33</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>34</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>35</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>36</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>37</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>38</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>39</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>40</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>41</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>42</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>43</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>44</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>45</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>46</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>47</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>48</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>49</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>50</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>51</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>52</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>53</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>54</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>55</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>56</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>57</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>58</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>59</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>60</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>61</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>62</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>63</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>64</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>65</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>66</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>67</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>68</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>69</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>70</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>71</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>72</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>73</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>74</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>75</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>76</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>77</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>78</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>79</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>80</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>81</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>82</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>83</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>84</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>85</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>86</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>87</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>88</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>89</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>90</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>91</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>92</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>93</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>94</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>95</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>96</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>97</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>98</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>99</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>100</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>101</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>102</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>103</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>104</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>105</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>106</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>107</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>108</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>109</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>110</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>111</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>112</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>113</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>114</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>115</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>116</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>117</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>118</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>119</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
<tr>
<td>120</td>
<td>122.2 cm thick, orange, coarse sand.</td>
</tr>
</tbody>
</table>
0-3 Clay, dark grey, laminated w/ part
3-6 Clay, off white, kaolinite
6-29.2 Sandstone, Stk. v. fine grained, rounded, well sorted, hard, many quartz, minor inorganic, kaolinite

29.2-29.6 Sandstone, Stk. granular brown, sub-angular to sub-rounded, and small green chlorite mineral

29.6-91 Sandstone, red brown, 2mm, granules, most rounded, sub-rounded, sub-angular to angular, sub-rounded quartz, minor spher phylite and quartz, with minor to abundant mica, kaolinite, and

---

---
<table>
<thead>
<tr>
<th>Depth</th>
<th>Lithology Log</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15</td>
<td>Sandy, clayey, and gray, fine grained, poor, slightly sticky.</td>
</tr>
<tr>
<td>15-35</td>
<td>Clay, light brown, slightly sticky.</td>
</tr>
<tr>
<td>35-50</td>
<td>Sand, white, fine grained, marly, calcareous, quartzose, kaolinitic.</td>
</tr>
<tr>
<td>50-65</td>
<td>Sand, fine, angular, very sandy, gravel, marly, quartzose, kaolinitic.</td>
</tr>
<tr>
<td>65-70</td>
<td>Sand, red brown, gravel.</td>
</tr>
<tr>
<td>70-90</td>
<td>Gravel, angular, poorly sorted, with minor quartz, shale.</td>
</tr>
<tr>
<td>90-100</td>
<td>Shale, calcareous, limestone, dolomite.</td>
</tr>
</tbody>
</table>
**MINAD TETON – AUSTRALIA**

**PROJECT**  
**HOLE SIZE** 4.5

**ELEVATION**
**LOCATION:** Cooligan  
**LOGGED BY** TRS

**HOLE NO. C0-7**
**DATE** 27.10.77

<table>
<thead>
<tr>
<th>DEPTH</th>
<th>STRIP LOG</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>ANALYSIS OR RADIOACTIVITY</th>
<th>LITHOLOGY LOG</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 1.5 Clay, silty clay, mud, hard</td>
<td>0 - 1.5 Clay, silty clay, mud, hard</td>
</tr>
<tr>
<td>1.5 - 2.5 Silt, flaky to change from, fine grain, layered, some dirt</td>
<td>1.5 - 2.5 Silt, flaky to change from, fine grain, layered, some dirt</td>
</tr>
<tr>
<td>2 - 3 Sandstone, white, fine grained, sub-rounded, well sorted, hard, firm</td>
<td>2 - 3 Sandstone, white, fine grained, sub-rounded, well sorted, hard, firm</td>
</tr>
<tr>
<td>3 - 15 Sandstone, white, fine grained, sub-rounded, well sorted, hard, firm</td>
<td>3 - 15 Sandstone, white, fine grained, sub-rounded, well sorted, hard, firm</td>
</tr>
<tr>
<td>15 - 50 Sandstone, red brown, coarse, granules 2 - 5mm, sub-rounded, angular, sub-rounded to sharp, quartz, iron ore, hematite, iron oxide, clay, mineral</td>
<td>15 - 50 Sandstone, red brown, coarse, granules 2 - 5mm, sub-rounded, angular, sub-rounded to sharp, quartz, iron ore, hematite, iron oxide, clay, mineral</td>
</tr>
<tr>
<td>50 - 100 Sandstone, red brown, coarse, granules 2 - 5mm, sub-rounded, angular, sub-rounded to sharp, quartz, iron ore, hematite, iron oxide, clay, mineral</td>
<td>50 - 100 Sandstone, red brown, coarse, granules 2 - 5mm, sub-rounded, angular, sub-rounded to sharp, quartz, iron ore, hematite, iron oxide, clay, mineral</td>
</tr>
</tbody>
</table>

**T.D.** 67.5m **R.D.** 66.7
0-1.5 Clay, dark-medium gray, slightly sandy
1.5-14.5 Clay, off-white, kaolinite
4.0-9.0 Halite, red-brown - light brown, hard
9.0-22.0 Sandstone, white, fine grained, subrounded, well sorted, cemented in first 3m, unconsolidated below
22.0-25.0 Sandstone, white to orange brown, granular 4mm, sub-rounded, well sorted, laminated, porosity
25.0-53.0 Sandstone, red-brown, yellow-brown, granular 4mm, sub-rounded, poorly sorted and equal sized, 3 layers and quartz, limonite, tourmaline, ilmenite.
LITHOLOGY LOG

0-5 Clay, black, friable
3-6 Clay, orange brown, friable
6-105 Salt, orange brown, very general, well mixed with quartzite, lenses, thin lenses
105-80.0 Clay, light grey, with red mottling to reddish white
80-210 Clay, off white to orange, thin lenses
210-435 Clay, brick red, friable

435-970 Sand, partly weathered, red, brown, and orange with dark green tinge
0-1.5: Clay, black, friable
1.5-6.0: Clay, slate, wet black, mottled, vleed.
6.0-13.5: Clay, slate, fissures with hmontite and hematite.
13.5-18.0: Sub. red brown, interbedded. Vleed.
18.0-33.0: Dark green, fine-grained, interbedded, wet, sorted.
33.0-43.0: Orange, green, black, sl. weathered.
43.0-58.0: Ferr. vleed, dark green, blckish.
<table>
<thead>
<tr>
<th>Analysis or Radioactivity</th>
<th>Depth</th>
<th>Lithology Log</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-2</td>
<td>0-2 Sand, red brown, interbedded</td>
</tr>
<tr>
<td></td>
<td>3-9</td>
<td>3-9 Sand, white, stranded, v.fine</td>
</tr>
<tr>
<td></td>
<td>10-60</td>
<td>10-60 Sand, reddish white, v.fine</td>
</tr>
</tbody>
</table>

60-820 Sandstone, gray brown, granular, 6mm grains, angular, subangular and some quartz, and feldspar, minor schistose, and minor leucoxite stained throughout. (clayey-marlaceous limestone)
<table>
<thead>
<tr>
<th>Depth</th>
<th>Lithology Log</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4.5</td>
<td>Clay, dark gray, cl. sand,</td>
</tr>
<tr>
<td>4.5-15</td>
<td>Keolmelite, white, hard, chalky,</td>
</tr>
<tr>
<td></td>
<td>marl, cl. sandy, fine grained</td>
</tr>
<tr>
<td>15-29.4</td>
<td>Clay, dull, firm, talc feel,</td>
</tr>
<tr>
<td></td>
<td>platy, very soft</td>
</tr>
<tr>
<td>29.4-51.6</td>
<td>Clay, light gray, firm,</td>
</tr>
<tr>
<td></td>
<td>clayey, limonitic</td>
</tr>
<tr>
<td>51.6-105</td>
<td>Gravel, orange, cl. round,</td>
</tr>
<tr>
<td></td>
<td>angular, poorly sorted, cl. cobble size, basaltic,</td>
</tr>
</tbody>
</table>
MINAD TETON – AUSTRALIA

PROJECT  COOLIBAH  HOELE SIZE L314  AIR  WATER  HOLE NO. CO-13

ELEVATION  LOCATION:  CERNEM  STATION  LOGGED BY  TMB  DATE  3-10-77

T.D.  43.5  RD.  42.9

ANALYSIS OR RADIOACTIVITY  DEPTH  STRIP LOG  LITHOLOGY LOG

0-15 Clay, dark gray, sandy, fine grained 7.5-11.5 Sandstone, light orange, fine grained, angular, some weathering, quartzite, radicular, limonitic

6.7-14.2 Sandstone, white, fine-fine grained, well sorted, cemented with calcite, white, hard, turning chips at various limestones stained in part, radicular throughout

19.2-30.2 Clay, hard, light green, platy, weathered and banding in part

30.2-42.9 Phosphate – black fresh basement, bit broken to some chips