Appendix XII

Hydrogeological Reports on Drill Sites

LEAMAN GEOPHYSICS

Registered office:

ABN: 34 479 871 658 3 MALUKA STREET, BELLERIVE, TAS. 7018

All correspondence to:

GPO Box 320, HOBART, TAS. 7001

Telephone: (03) 6244 1233

Fax: (03) 6244 6674

SUPPLEMENT TO EXPLORATION DRILLING PROGRAM DOCUMENT

SPECIFICATION AND RECOMMENDATIONS
MATTERS OF AQUIFER PROTECTION AND HOLE COMPLETION

LACHISH #1

Prepared for Great South Land Minerals Limited by D. E. Leaman for Leaman Geophysics. March 2007.

The following specifications are based on the well prognosis presented by Great South Land Minerals in September 2006, and are in accord with guidelines for hole abandonment and aquifer protection published for Western Australia (November, 2002) and Victoria (December, 2002). Where appropriate, these guidelines have been modified so as to be conservative in the unknown conditions applying at the site. These specifications represent expansion of items 3.6 and 9 in the current Exploration Drilling Program document as prepared by ECL Pty Ltd.

The well, to be spudded in Triassic rocks is expected to encounter dolerite between 200 and 690 m, further Triassic rocks to about 900 m and Permian rocks to final depth of 1500-1550 m.

Water conditions will be normal and unconfined at surface and probably moderately saline (perhaps 1000-1500 mg/L). Some water recovery is anticipated throughout the first 200 m of the hole.

The dolerite segment is expected to be dry but previous experience has shown that large, short term flows are possible if large fracture systems are encountered. Any water found in this situation is likely to be partly confined at least and of better quality than that of the over and underlying Triassic rocks.

It is not known what behaviour may be expected of Triassic or Permian rocks at the depths predicted (700-1500 m). Cement retention, joint closure or absence, is most likely and only some sandstones may act as modest aquifers. Confined conditions will apply in such circumstances but flows should be relatively small. No realistic estimate of water quality can be offered.

No significant flows or changes in aquifer conditions have ever been recorded at the base Permian unconformity irrespective of the underlying lithology (whether Cambrian volcanics, Precambrian dolomite, Mathinna Beds). This may not be the case in this well if the inferred siliclastics of the Eldon Group are indeed present.

There is potential for a sequence of confined aquifer conditions with variable water volumes and quality.

The well will be established with safeguards as described in item 3.3 in order to control any run off and seepage at surface.

Because of an expectation of some confined flows the precollar will include set surface casing. The depth will be at least 25 m.

In view of this expectation the well will be completed in the following manner.

a) Chip and mud logging will be undertaken in association with wire-line logging to identify lithology and unit thickness at those sites where water is either lost or gained during drilling.
b) Wireline logging observations will be used to estimate porosity and aquifer character – fracture type, grain size or other relevant features.
c) Water quality will be determined where possible and samples can be separated.
d) All significant aquifers, or groups of aquifers in which quality is comparable, will be sealed and separated with plugs.
e) Plugs will be placed from bottom up and set from 2 m below the relevant zone to at least 5 m above all confined water, and have a minimum length of 20 m irrespective of aquifer thickness. Bridging plugs will be used to set the main block.
Plugs may be composed of concrete, clay grout or cement as required to suit aquifer type of conditions. Low viscosity grouts will be used in fine-grained, low permeability units – as expected in Triassic and Permian rocks. Fresh water will be used for all grouts and clay mixes.
f) Cement grouts will be used for any significant aquifer. Bentonite grouts may be used in other cases.
g) If no confined water is encountered then surface casing will be removed (if possible) and replaced with a cement plug at least 2 m long with a mounded cap about .03 m above ground level. This form of capping will also be used where water is flowing from a shallow, unconfined aquifer.
h) The hole will be tagged on completion of capping.
i) The hole report will describe aquifers encountered. Details will include aquifer type, lithology, salinity, depth, yield if known, standing levels, nature of completion (plug locations and capping style).
j) Holes left for owner use by agreement will be plugged as required in order to select the desired aquifer and protect any other aquifer using the methods and specifications defined above.

D. Leaman

Dr. D. E. Leaman 2/3/07

LEAMAN GEOPHYSICS

ABN: 34 479 871 658

Registered office:
3 MALUKA STREET, BELLERIVE, TAS. 7018
All correspondence to:
GPO Box 320, HOBART, TAS. 7001
Telephone: (03) 6244 1233
Fax: (03) 6244 6674

SUPPLEMENT TO EXPLORATION DRILLING PROGRAM DOCUMENT

SPECIFICATION AND RECOMMENDATIONS
MATTERS OF AQUIFER PROTECTION AND HOLE COMPLETION

HEBRON #1

Prepared for Great South Land Minerals Limited by D. E. Leaman for Leaman Geophysics. March 2007.

The following specifications are based on the well prognosis presented by Great South Land Minerals in October 2006, and are in accord with guidelines for hole abandonment and aquifer protection published for Western Australia (November, 2002) and Victoria (December, 2002). Where appropriate, these guidelines have been modified so as to be conservative in the unknown conditions applying at the site. These specifications represent expansion of items 3.6 and 9 in the current Exploration Drilling Program document as prepared by ECL Pty Ltd.

The well, to be spudded in Triassic rocks, is expected to encounter Upper Permian rocks between 200 and 420 m, dolerite to 1000 m, and Lower Permian rocks to near final depth at 1600 m. Siliclastics, probably Mathinna Beds, are expected to final depth of 1650 m.

Water conditions will be normal and unconfined at surface and probably moderately saline (perhaps 1000-1500 mg/L). Some water recovery is anticipated throughout the first 200 m of the hole.
The Permian segment of the hole may be tight with very low yields. The dolerite segment is expected to be dry but previous experience has shown that large, short term flows are possible if large fracture systems are encountered. Any water found in this situation (and from the Permian rocks) is likely to be partly confined at least and of better quality than that of the exposed Triassic rocks.
It is not known what behaviour may be expected of the deeper Permian rocks at the depths predicted (1000-1600 m). Cement retention, joint closure or absence, is most likely and only some sandstones or limestones may act as modest aquifers. Confined conditions will apply in such circumstances but flows may be relatively small. No realistic estimate of water quality can be offered at this stage.
No significant flows or changes in aquifer conditions have ever been recorded at the base Permian unconformity irrespective of the underlying lithology (whether Cambrian volcanics, Precambrian dolomite, Mathinna Beds).

If the inferred basal siliclastics are members of the Mathinna Beds then previous experience should apply and no flows will be encountered.
The only exceptional aspects of the inferred prognosis are related to the Permian limestones at about 1200 m. These might form a distinct aquifer but such units elsewhere are not noted for cavern or karst character, nor is their hydrology different from other Permian units.

There is potential for a sequence of confined aquifer conditions with variable water volumes and quality.

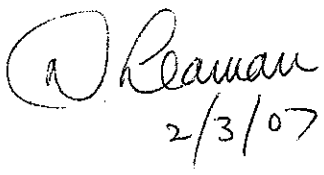
The well will be established with safeguards as described in item 3.3 in order to control any run off and seepage at surface.

Because of an expectation of some confined flows the precollar will include set surface casing. The depth will be at least 25 m.

In view of this expectation the well will be completed in the following manner.

a) Chip and mud logging will be undertaken in association with wire-line logging to identify lithology and unit thickness at those sites where water is either lost or gained during drilling.
b) Wireline logging observations will be used to estimate porosity and aquifer character – fracture type, grain size or other relevant features.
c) Water quality will be determined where possible and samples can be separated.
d) All significant aquifers, or groups of aquifers in which quality is comparable, will be sealed and separated with plugs.
e) Plugs will be placed from bottom up and set from 2 m below the relevant zone to at least 5 m above all confined water, and have a minimum length of 20 m irrespective of aquifer thickness. Bridging plugs will be used to set the main block.
Plugs may be composed of concrete, clay grout or cement as required to suit aquifer type of conditions. Low viscosity grouts will be used in fine-grained, low permeability units – as expected in Triassic and Permian rocks. Fresh water will be used for all grouts and clay mixes.
f) Cement grouts will be used for any significant aquifer. Bentonite grouts may be used in other cases.
g) If no confined water is encountered then surface casing will be removed (if possible) and replaced with a cement plug at least 2 m long with a mounded cap about .03 m above ground level. This form of capping will also be used where water is flowing from a shallow, unconfined aquifer.
h) The hole will be tagged on completion of capping.
i) The hole report will describe aquifers encountered. Details will include aquifer type, lithology, salinity, depth, yield if known, standing levels, nature of completion (plug locations and capping style).
j) Holes left for owner use by agreement will be plugged as required in order to select the desired aquifer and protect any other aquifer using the methods and specifications defined above.

Dr. D. E. Leaman



LEAMAN GEOPHYSICS

ABN: 34 479 871 658

Registered office:
3 MALUKA STREET, BELLERIVE, TAS. 7018
All correspondence to:
GPO Box 320, HOBART, TAS. 7001
Telephone: (03) 6244 1233
Fax: (03) 6244 6674

SUPPLEMENT TO EXPLORATION DRILLING PROGRAM DOCUMENT

SPECIFICATION AND RECOMMENDATIONS
MATTERS OF AQUIFER PROTECTION AND HOLE COMPLETION

EGLON #1

Prepared for Great South Land Minerals Limited by D. E. Leaman for Leaman Geophysics. March 2007.

The following specifications are based on the well prognosis presented by Great South Land Minerals in October 2006, and are in accord with guidelines for hole abandonment and aquifer protection published for Western Australia (November, 2002) and Victoria (December, 2002). Where appropriate, these guidelines have been modified so as to be conservative in the unknown conditions applying at the site. These specifications represent expansion of items 3.6 and 9 in the current Exploration Drilling Program document as prepared by ECL Pty Ltd.

The well, to be spudded in Tertiary sediments is expected to terminate in weathered dolerite or Parmeener Supergroup at 550-600 m.

Water conditions will be normal and unconfined at surface and probably moderately saline (perhaps 1000-1500 mg/L). Some water recovery is anticipated throughout the first 50 m of the hole. The sequence of Tertiary materials, involving sands and clays, will mean that a series of possibly confined aquifers will be encountered. Water quality from these aquifers has been reported as about 500 mg/L and modest transmissivities (20 m^2/d). No bore in the region has reported flowing water.
Other experience in the Bracknell region suggests a thick clay capping horizon at relatively shallow depth and a basement of dolerite.
Few significant flows or changes in aquifer conditions have ever been recorded at the base Tertiary unconformity irrespective of the underlying lithology (whether Permian or Triassic rocks, or Jurassic dolerite). The presence of a weathered surface or gravel bed may lead to a local aquifer. These conditions are likely at Eglon #1.

There is potential for a sequence of confined aquifer conditions with variable water volumes and quality.

The well will be established with safeguards as described in item 3.3 in order to control any run off and seepage at surface.

Because of an expectation of some modest confined flows the precollar will include set surface casing. The depth will be at least 10 m.

In view of this expectation the well will be completed in the following manner.

a) Chip and mud logging will be undertaken in association with wire-line logging to identify lithology and unit thickness at those sites where water is either lost or gained during drilling.
b) Wireline logging observations will be used to estimate porosity and aquifer character – fracture type, grain size or other relevant features.
c) Water quality will be determined where possible and samples can be separated.
d) All significant aquifers, or groups of aquifers in which quality is comparable, will be sealed and separated with plugs.
e) Plugs will be placed from bottom up and set from 2 m below the relevant zone to at least 5 m above all confined water, and have a minimum length of 20 m irrespective of aquifer thickness. Bridging plugs will be used to set the main block.
Plugs may be composed of concrete, clay grout or cement as required to suit aquifer type of conditions. Low viscosity grouts will be used in fine-grained, low permeability units and high viscosity grouts for coarse-grained, higher permeability units: both may be expected in the Tertiary sequence or at the unconformity. Fresh water will be used for all grouts and clay mixes.
f) Cement grouts will be used for any significant aquifer. Bentonite grouts may be used in other cases.
g) If no confined water is encountered then surface casing will be removed (if possible) and replaced with a cement plug at least 2 m long with a mounded cap about .03 m above ground level. This form of capping will also be used where water is flowing from a shallow, unconfined aquifer.
h) The hole will be tagged on completion of capping.
i) The hole report will describe aquifers encountered. Details will include aquifer type, lithology, salinity, depth, yield if known, standing levels, nature of completion (plug locations and capping style).
j) Holes left for owner use by agreement will be plugged as required in order to select the desired aquifer and protect any other aquifer using the methods and specifications defined above.

D E Leaman

Dr. D. E. Leaman 2/3/07

LEAMAN GEOPHYSICS

ABN: 34 479 871 658

Registered office:
3 MALUKA STREET, BELLERIVE, TAS. 7018
All correspondence to:
GPO Box 320, HOBART, TAS. 7001
Telephone: (03) 6244 1233
Fax: (03) 6244 6674

SUPPLEMENT TO EXPLORATION DRILLING PROGRAM DOCUMENT

SPECIFICATION AND RECOMMENDATIONS
MATTERS OF AQUIFER PROTECTION AND HOLE COMPLETION

GEZER #1

Prepared for Great South Land Minerals Limited by D. E. Leaman for Leaman Geophysics. March 2007.

The following specifications are based on the well prognosis presented by Great South Land Minerals in October 2006, and are in accord with guidelines for hole abandonment and aquifer protection published for Western Australia (November, 2002) and Victoria (December, 2002). Where appropriate, these guidelines have been modified so as to be conservative in the unknown conditions applying at the site. These specifications represent expansion of items 3.6 and 9 in the current Exploration Drilling Program document as prepared by ECL Pty Ltd.

The well, to be spudded in Permian rocks is expected to encounter a thin dolerite intrusion from 100 to 200 m, and further Permian rocks to about 500 m. Siluro-Devonian rocks are predicted from 500-1100 m and Ordovician rocks to total depth of 1965 m. Reefal facies of dolomite and dolomitic limestone are inferred below 1400 m.

Water conditions will be normal and unconfined at surface and probably quite fresh (perhaps <500 mg/L). Some water recovery is anticipated throughout the first 100 m of the hole.
The dolerite segment is expected to be dry but if the intrusion is thin as predicted then some small flows might be observed. These are not likely to be confined.
Rocks below 200 m are unlikely to offer significant aquifer conditions but the Eldon Group is an unknown and might present some limited confined flows. Most will be fracture flows and large fracture systems may be encountered.
It is not known what behaviour may be expected of Ordovician rocks but general experience at shallower depths suggest limited flows unless karst character has been developed. It is unclear whether the history of the sequence has permitted this. No realistic estimate of water quality can be offered but the water may be quite fresh.
No significant flows or changes in aquifer conditions have ever been recorded at the base Permian unconformity irrespective of the underlying lithology (whether Cambrian volcanics, Precambrian dolomite, Mathinna Beds).

The inferred presence of Eldon Group presents an unknown unconformity relationship.

There is potential for a sequence of confined aquifer conditions with variable water volumes and quality.

The well will be established with safeguards as described in item 3.3 in order to control any run off and seepage at surface.

Because of an expectation of some confined flows the precollar will include set surface casing. The depth will be at least 25 m.

In view of this expectation the well will be completed in the following manner.

a) Chip and mud logging will be undertaken in association with wire-line logging to identify lithology and unit thickness at those sites where water is either lost or gained during drilling.
b) Wireline logging observations will be used to estimate porosity and aquifer character – fracture type, grain size or other relevant features.
c) Water quality will be determined where possible and samples can be separated.
d) All significant aquifers, or groups of aquifers in which quality is comparable, will be sealed and separated with plugs.
e) Plugs will be placed from bottom up and set from 2 m below the relevant zone to at least 5 m above all confined water, and have a minimum length of 20 m irrespective of aquifer thickness. Bridging plugs will be used to set the main block.
Plugs may be composed of concrete, clay grout or cement as required to suit aquifer type of conditions. Low viscosity grouts will be used in fine-grained, low permeability units – as expected in all rocks. Fresh water will be used for all grouts and clay mixes. A high viscosity grout will be used for any cavernous character.
f) Cement grouts will be used for any significant aquifer. Bentonite grouts may be used in other cases.
g) If no confined water is encountered then surface casing will be removed (if possible) and replaced with a cement plug at least 2 m long with a mounded cap about .03 m above ground level. This form of capping will also be used where water is flowing from a shallow, unconfined aquifer.
h) The hole will be tagged on completion of capping.
i) The hole report will describe aquifers encountered. Details will include aquifer type, lithology, salinity, depth, yield if known, standing levels, nature of completion (plug locations and capping style).
j) Holes left for owner use by agreement will be plugged as required in order to select the desired aquifer and protect any other aquifer using the methods and specifications defined above.

D Leaman

Dr. D. E. Leaman 2/3/07.