

## **Second Annual Report**

**on**

## **EL 12/2012 – Scottsdale**

**Reporting Period:** 12 December 2013 - 11 December 2014

**Project Operator:** ABx4 Pty Ltd

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**Date:** 8 December 2014

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## EXECUTIVE SUMMARY

Exploration Licence (EL) 12/2012 “Scottsdale” was applied for by ABx4 Pty Ltd (**ABx4**) in order to facilitate an exploration program to discover economically viable deposits of bauxite associated with Tertiary Volcanics, in an area with old peneplained surfaces preserved as plateaus. The goal of the program is to determine the quality and quantity of the bauxite in the area using an RC drill rig mounted on a light 12 tonne truck.

Work completed in the current reporting period include:

- Transport of drilling samples from the tenement to a centralised ABx4 storage shed in Launceston.
- Brief desktop assessment of the prospectivity of all Tasmanian tenements, including Scottsdale.

In the previous reporting period, ABx4 completed drill testing of the Scottsdale bauxite targets in EL12/2012. A total of 68 holes were drilled for 640m. The two key targets 'Plantation target' and 'Glennon's target' consisted of small zones of bauxite within the larger target area. The tonnage in the Scottsdale tenement has a total of less than 50,000 Tonnes of low-sub grade bauxite. These deposits are not economically viable on their own and were much less than expected.

The Scottsdale tenement is centred on the Scottsdale State forest and is approximately 4km north of Scottsdale. The tenement is only 60km by road to the port of Bell Bay, a large operating port north of Launceston. There is also a railway through Scottsdale which is currently decommissioned. The Scottsdale tenement is ideally located for both rail and road transport to the port.

## ABSTRACT

### Objective:

Exploration Licence (EL) 12/2012 "Scottsdale" was applied for by ABx4 Pty Ltd (ABx4) in order to facilitate an exploration program to discover economically viable deposits of bauxite associated with Tertiary Volcanics, in an area with old peneplained surfaces preserved as plateaus. The goal of the program is to determine the quality and quantity of the bauxite in the area using an RC drill rig mounted on a light 12 tonne truck.

### Methodology:

1. Detailed geological mapping, including geomorphological mapping, to define the areas with best potential for bauxite.
2. Systematic sampling of natural outcrops and exposures in road cuts of bauxite profile.
3. Chemical analyses of samples, including specialist analyses to determine total and available alumina, total and reactive Silica, loss on ignition and other analyses as required in bauxite search.
4. Drill testing of zones with best potential defined by work under 1, 2. and 3, by an RC drill rig mounted on a light 12 tonne truck to get samples representing the whole bauxite profile.
5. Systematic drill testing at close spacings to obtain data for resource estimation in the best target areas defined by programme under 4.

### Results:

Work completed in the current reporting period include:

- Transport of drilling samples from the tenement to a centralised ABx4 storage shed in Launceston.
- Brief desktop assessment of the prospectivity of all Tasmanian tenements, including Scottsdale.

In the previous reporting period, ABx4 completed drill testing of the Scottsdale bauxite targets in EL12/2012. A total of 68 holes were drilled for 640m. The two key targets 'Plantation target' and 'Glennon's target' consisted of small zones of bauxite within the larger target area. The tonnage in the Scottsdale tenement has a total of less than 50,000 Tonnes of low-sub grade bauxite. These deposits are not economically viable on their own and were much less than expected.

### Recommendations for future work:

Recommendation for future work include further:

- Detailed geological mapping, including geomorphological mapping and study of satellite images to define the areas with the best potential for bauxite.
- Systematic sampling of natural outcrops and exposures in road cuts of bauxite profile.
- Chemical analyses of samples, including specialist analyses to determine total and available alumina, total and reactive quartz, loss on ignition and sieving (+0.26mm) at 260 microns as required in the bauxite search.

- Drill testing of zones with best potential with an RC drill rig mounted on a light six wheel truck to get samples representing the whole bauxite profile.
- Systematic drilling at close spacings to obtain data for preliminary resource estimation in the best target areas defined by program.
- Sieve testing to find optimal sieve size for Tasmanian bauxites.
- Detailed analysis of assay results to determine assaying strategy for future drilling.

## INTRODUCTION

### Exploration Rationale

ABX4 Pty Ltd the holder of Category 1 Exploration Licences EL12/2012 wholly owned subsidiary of Australian Bauxite Ltd. Australian Bauxite Limited (ABx) (ASX: ABZ) is an exploration company that holds the core of the Tasmanian Bauxite Province with all tenements selected on 3 principles:

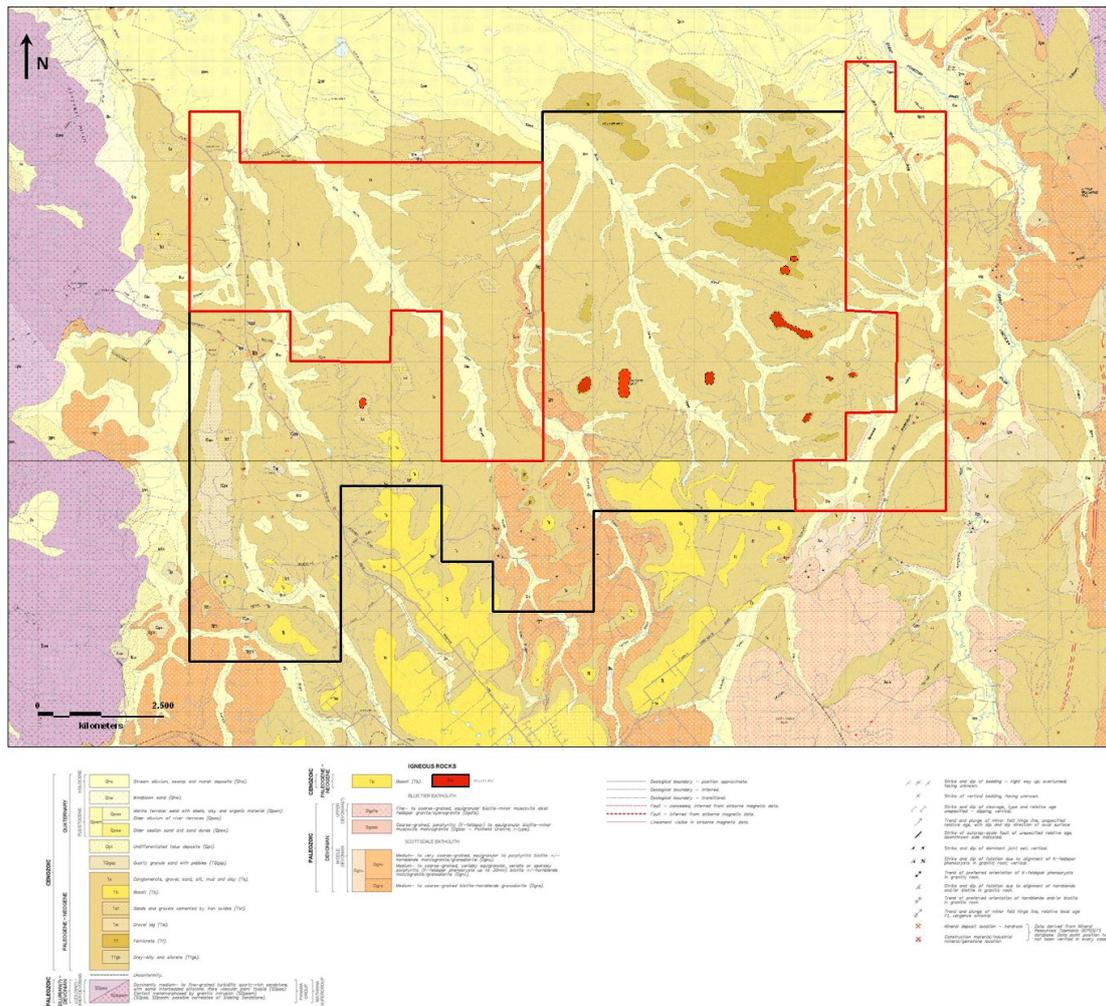
- Quality – good quality bauxite with potential for significant resource tonnages;
- Proximity – easy access to infrastructure connected to export ports; and
- Accessibility – free of socio-environmental or native title land constraints.

Land within the tenement consists of freehold agricultural land with some forests and plantations. Bauxite targets are located mostly on Crown land.

EL 12/2012 “Scottsdale” was applied for in order to facilitate an exploration program to discover economically viable deposits of bauxite associated with Tertiary Volcanics in an area with old peneplained surfaces preserved as plateaus. The goal of the program was to determine the quality and quantity of the bauxite in the area using an RC drill rig mounted on a light 12 tonne truck.

### Geological Setting

The historic work done by H.B. Owen (‘Bauxite in Australia’, 1954) demonstrated that bauxite in Tasmania can be found in both Jurassic Dolerite and Tertiary Basaltic Volcanics. According to Owen, these bauxite deposits - regardless of host rock type - are thought to form either as ‘grouped remnants of former continuous sheet’ or ‘formed in lenticular or pod shaped bodies in localised depressions’.



Map 1. EL12/2012 geological map with tenement outline and area that has previously been relinquished. Base map: McClenaghan, M.P., Vicary, M.J. 2010. Digital Geological Atlas 1:25000 Scale Series, Sheet 5445. Pearly Brook. Mineral resources Tasmania.

**Tenement Information**

EL 12/2012 “Scottsdale” was granted on and from 12 December 2011 for a period of 5 years to ABx4.

This is the Annual Report for the reporting period 12 December 2013 - 11 December 2014 incorporating the results of work completed over the first year of tenure.

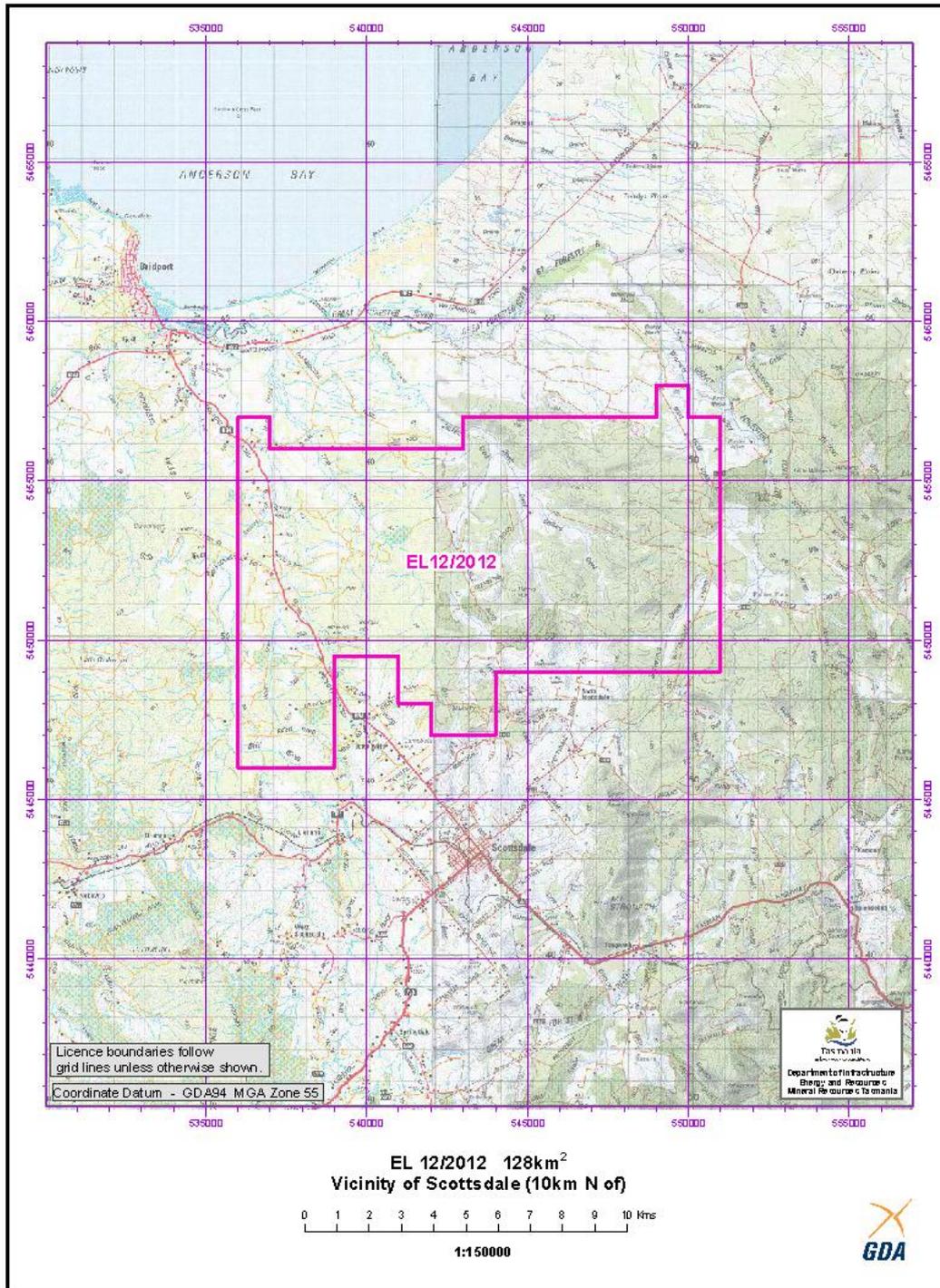
Total area of the original licence is 128sq km. ABx4 recently relinquished 46sq km to bring the total remaining area to 82sq km.

The Mineral Category of EL 12/2012 is 1 – Metallic Minerals and Atomic Substances.

**Location**

The Scottsdale tenement is centred on the Scottsdale State forest and is approximately 4km north of Scottsdale. The tenement is only 60km by road to the port of Bell Bay, a large operating port north of Launceston. There is also a railway through Scottsdale which is currently decommissioned. The Scottsdale tenement is ideally located for both rail and road transport to the port.

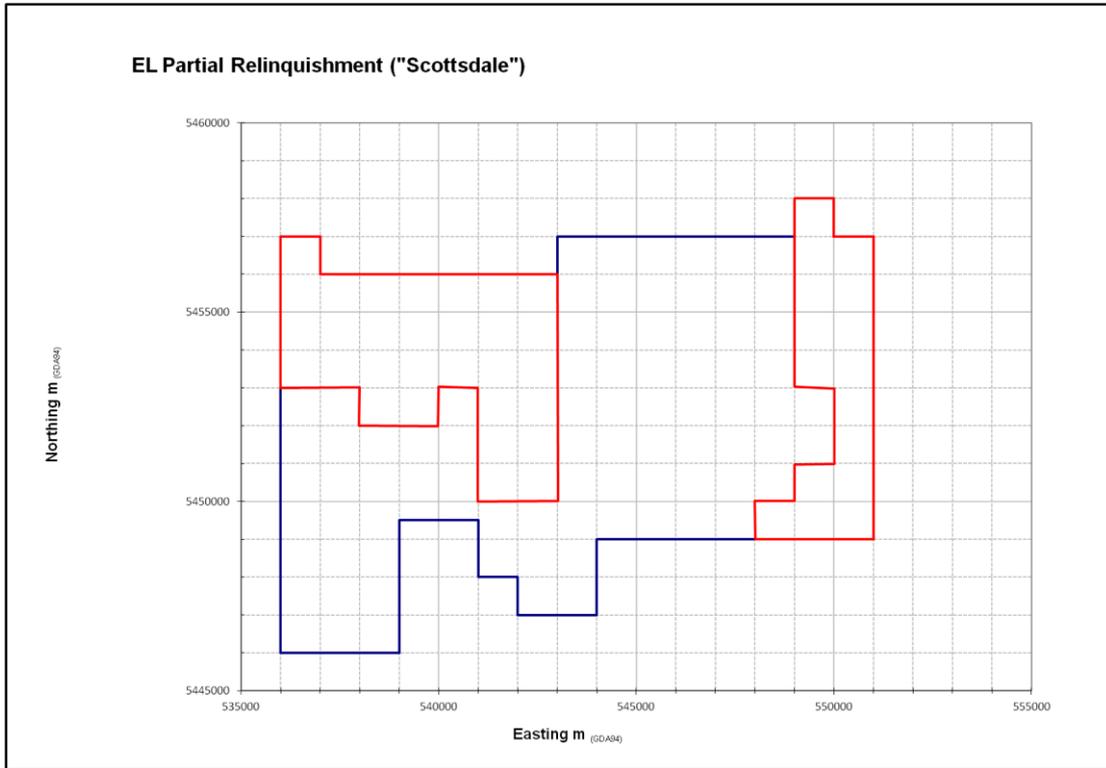
The majority of the land usage is Plantation, State forest and agricultural land. Gaining access to farming properties has been very successful; with all landowners contacted by ABx4 allowing exploration on their land.



Map 2. Original licence map of EL 12/2012 (see previous map for location of relinquished areas).

**Tenure, including joint venture details and title transfers**

EL 12/2012 “Scottsdale” is 100% owned by ABx4 which is a fully owned subsidiary of Australian Bauxite Limited.



Map 3. Retained (blue) and relinquished areas (red) of EL 12/2012.

## **REVIEW OF PREVIOUS WORK**

### **Prior to Current Tenement**

No Historical references for bauxite have been identified for the Scottsdale Tenement.

## **EXPLORATION COMPLETED DURING THE REPORTING PERIOD**

### **Literature Review**

No reports on bauxite have been identified in the Scottsdale Tenement.

Geological Maps composed by Mineral Resources Tasmania:

- McClenaghan, M.P., Vicary, M.J. 2010. Digital Geological Atlas 1:25000 Scale Series, Sheet 5445. Pearly Brook. Mineral resources Tasmania.

### **Regional Exploration Activities**

As stated in the executive summary above, the work completed in the current reporting period were limited to:

- Transport of drilling samples from the tenement to a centralised ABx4 storage shed in Launceston.
- Brief desktop assessment of the prospectivity of all Tasmanian tenements, including Scottsdale.

In the previous reporting period, ABx4 completed drill testing of the Scottsdale bauxite targets in EL12/2012. A total of 68 holes were drilled for 640m. The two key targets 'Plantation target' and 'Glennon's target' consisted of small zones of bauxite within the larger target area. The tonnage in the Scottsdale tenement has a total of less than 50,000 Tonnes of low-sub grade bauxite. These deposits are not economically viable on their own and were much less than expected.

## **DISCUSSION OF RESULTS**

### **Geology and Structure**

The bauxite mineralization in the Scottsdale Tenement is hosted in Tertiary volcanics on the old tertiary surface. The mineralisation occurs as sheets of bauxitised volcaniclastics, which drape the paleo topography. The bauxite appears to have formed in the Lower Tertiary period when volcanism commenced and extreme wet-tropical climatic conditions prevailed. The bauxite occurs on the old surface, where processes in the Tertiary period removed the silica from the rock, leaving mainly Aluminium and Iron-rich minerals behind.

The bauxite at Scottsdale occurs as highly elevated hills capped with bauxite mineralisation. The volcanic host has overlain soft tertiary quartz gravels which are heavily eroded and often undercut the bauxite causing it to slump down the hill sides in some locations. The two key targets 'Plantation target' and 'Glennon's target' consisted of small zones of bauxite within the larger target area. Debris was scattered over the plateau via erosion of small hills of bauxite which may have been more extensive in the tertiary period.

The bauxite layer was frequently in direct contact with the underlying quartz gravels with no mottled zone present in most cases. This indicates the original volcanic host layer was predominantly very thin. The presence and thickness of the mottled zone (mottled red clays) increases toward, and on the plantation plateau target indicating this area was probably closer to the volcanic vent or that multiple vents were present in this area.

### **Bauxite types and Mineralogy**

The bauxite at Scottsdale is predominantly composed of red volcanogenic hematitic vuggy bauxite, which often contains pink gibbsite concretions infrequent mag-hemite pisolites. Gibbsite forms as either, clear white crystals up to 1mm or as amorphous pink gibbsite – the pink colour being fine grained particles of hematite. The other minerals are hematite-rich masses, minor clay kaolinite clay and titania minerals including anatase and trace ilmenite. This bauxite has retained strong volcanic textures such as volcanic breccias and relic crystal distribution and structures.

It is a gibbsite-rich bauxite mostly in an amorphous phase which is often vuggy with iron depletion around the rims of the vughs and enrichment of iron in zones between vughs. The Iron is mostly in the form of hematite, and rare goethite banding. The bauxite near the base of the layer has an increase amount of clay and quartz but is more gibbsitic. The bauxite has very strong relic volcanic texture and tiny pervasive vughs.

The Scottsdale bauxite contains an increase amount of quartz grains but is usually less than 5%. Quartz due to the direct contact with the underlying quartz gravels. Quartz is an inert mineral in the processing of bauxite at low temperature, and the only deleterious trait is it dilutes the ore slightly.

### **Grade, Sieve Yields and Tonnage**

The tonnage in the Scottsdale tenement has a total of less than 50,000 Tonnes of low-sub grade bauxite. This is not economically viable and was much less than expected. For the deposit to become economically viable more tonnage need to be discovered and the grade needs to be increased slightly. The lack of tonnage is due to only small amounts of bauxite being discovered in the two key areas of bauxite potential.

Sieving of the Bauxite at Scottsdale is expected to improve the grade to a moderate classification or even high grade in some locations. It is strongly recommended to submit and additional two holes for sieved analysis for Glennon's Targets B & C. It is expected that; reactive silica will decrease by approximately half and will increase Available Alumina by a third. This will result in a proportionally low recovery.

## CONCLUSIONS AND RECOMMENDATIONS

Exploration in the previous reporting period was “moderately unsuccessful” in identifying economically viable bauxite resources within EL 12/2012. Drilling has identified multiple bauxite ore bodies but grade and tonnage was much lower than expected. The deposits are located in areas generally considered poor quality land of moderate conservation value.

Exploration in 2015 will be focused on regional exploration potential bauxite targets in the far north and south of the tenement. Some work will be completed on processing to improve grade of the current deposit.

Recommendation for future work include further:

- Detailed geological mapping, including geomorphological mapping and study of satellite images to define the areas with the best potential for bauxite.
- Systematic sampling of natural outcrops and exposures in road cuts of bauxite profile.
- Chemical analyses of samples, including specialist analyses to determine total and available alumina, total and reactive quartz, loss on ignition and sieving (+0.26mm) at 260 microns as required in the bauxite search.
- Drill testing of zones with best potential with an RC drill rig mounted on a light six wheel truck to get samples representing the whole bauxite profile.
- Systematic drilling at close spacings to obtain data for preliminary resource estimation in the best target areas defined by program.
- Sieve testing to find optimal sieve size for Tasmanian bauxites.
- Detailed analysis of assay results to determine assaying strategy for future drilling.

## **ENVIRONMENT**

### **Surface Disturbing Operations:**

No surface sampling, drilling, or any other surface-disturbing activities took place during the current reporting period.

### **Surveys (archaeological, botanical):**

No archaeological or botanical surveys took place during the current reporting period.

### **Rehabilitation:**

As no surface disturbances occurred, rehabilitation was not required during the current reporting period.

## EXPENDITURE

Table 1. Exploration Activity and Expenditure Table for reporting period 12 December 2013 –11 December 2014.

Exploration Category	Description of Activity	Quantity	Expenditure
<b>Office Administration</b>	Office Administration		\$200
<b>Authority Management</b>	Tenement Management		\$231
<b>Office Activities</b>	Data Processing & Interpretation		
<b>Field Activities</b>	<b>Geological Mapping</b>	Days or Ha	
	Sampling	Number of samples	
	Equipment Hire	Vehicle Hire 3 days	
	Accommodation/Field Camp	Days	
	Travel		
	Land Holder Liaison		
	Field Supplies		
	Other	Freight Charges	
	Other	Mineralogical	
	<b>Geophysics</b>		
	Airborne		
	Type	Line kms	
	Ground		
	Type	Line kms	
	<b>Drilling (program cost)</b>		
	RAB/AC	Holes/total metres	
	RC	Holes/total metres	
	Diamond	Holes/total metres	
	Other	Engineering	
<b>Laboratory</b>	ME-XRF 13B, Reactive Silica & Available Alumina		
<b>Salaries / Wages</b>	Employees and Contractors	Geologists	\$2,153
		Field Assistants	\$1,435
		<b>Grand Total</b>	<b>\$4,019</b>

Note: Office Administration was met by parent company – Australian Bauxite Limited.

## REFERENCES

H.B. Owen, 1954, *Bauxite in Australia*, Bulletin 24

McClenaghan, M.P., Vicary, M.J. 2010. *Digital Geological Atlas 1:25000 Scale Series, Sheet 5445. Pearly Brook*. Mineral Resources Tasmania.