

**Sixth Annual Report**  
**on**  
**EL 9/2010 – Deloraine**

**Reporting Period:** 14 September 2015 – 13 September 2016  
**Project Operator:** ABx4 Pty Ltd  
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**Date:** 30 August 2016

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# 1 ABSTRACT

## Objective

Exploration Licence EL9/2010 “Deloraine” 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 and Jurassic Dolerite, 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 Mitsubishi 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 quartz, 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 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

Preliminary data analysis of the 2015 drilling campaign showed that there was insufficient data for the DL-130 South and Rosevale targets to complete an effective resource analysis. For DL-130 South deposit there was insufficient assay data of the bauxite intersects to show a continuous bauxite ore body. The lack of assays gave the deposit a false sporadic appearance.

Detailed analysis of drill holes showed that potential significant bauxite intersect weren't assayed to conserve funds. To obtain more detailed information, re-logging of drill holes DL332-DL388 was commenced. A new logging system had been initiated to assist in more detailed geological logging. ABx will supply MRT with updated lithology logs for DL332-DL388 once finalised (likely in the next reporting period).

Several desktop reviews have taken place in the last 12 months in order to assess and prioritise the bauxite targets across all ABx4 tenements.

**Recommendations for future work**

The following exploration activities are planned for EL 9/2010:

- 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 silica, loss on ignition and sieving.
- 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 sampling and drilling at waypoints with best bauxite potential.
- Detailed analysis of assay results to determine assaying strategy for future drilling.
- Pit testing of the DL-130 target to test mineability of the deposit.
- Sieve testing to find optimal sieve size for Tasmanian bauxites.
- Testing new sample processing techniques to improve silica reduction.
- Re-logging of 2015 drill holes to improve data collection and detail
- New Assays for DL-130 South on current drilling to assay all bauxite samples which intersect the bauxite layer.

## 2 INTRODUCTION

### Exploration Rationale

ABx4 Pty Ltd the holder of Category 1 Exploration Licences EL 9/2010 wholly owned subsidiary of Australian Bauxite Ltd. Australian Bauxite Limited (ABx) (ASX: ABX) 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.

EL 9/2010 “Deloraine” was applied for in order to facilitate an exploration program to discover economically viable deposits of bauxite associated with Tertiary Volcanics and Jurassic Dolerite 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

In EL9/2010, the majority of bauxite targets are hosted in Tertiary Volcanics, however, some bauxite derived from Jurassic Dolerite is also present.

The historic work done by H.B. Owen (‘Bauxite in Australia’, 1954) demonstrated that Bauxite in Tasmania are thought to form either as ‘grouped remnants of former continuous sheet’ or ‘formed in lenticular or pod shaped bodies in localised depressions’. This generally occurs in areas with high water flow and low erosion where the old surface has been preserved.

### Tenement Information

EL 9/2010 “Deloraine” was granted on and from 14 September 2010 for a period of 5 years to ABx4.

This is the Sixth Annual Report for the reporting period 14 September 2015 - 13 September 2016 incorporating the results of work completed during the sixth year of tenure. This report will also accompany an application by ABx4 to extend the term of the exploration licence for a further 12 months.

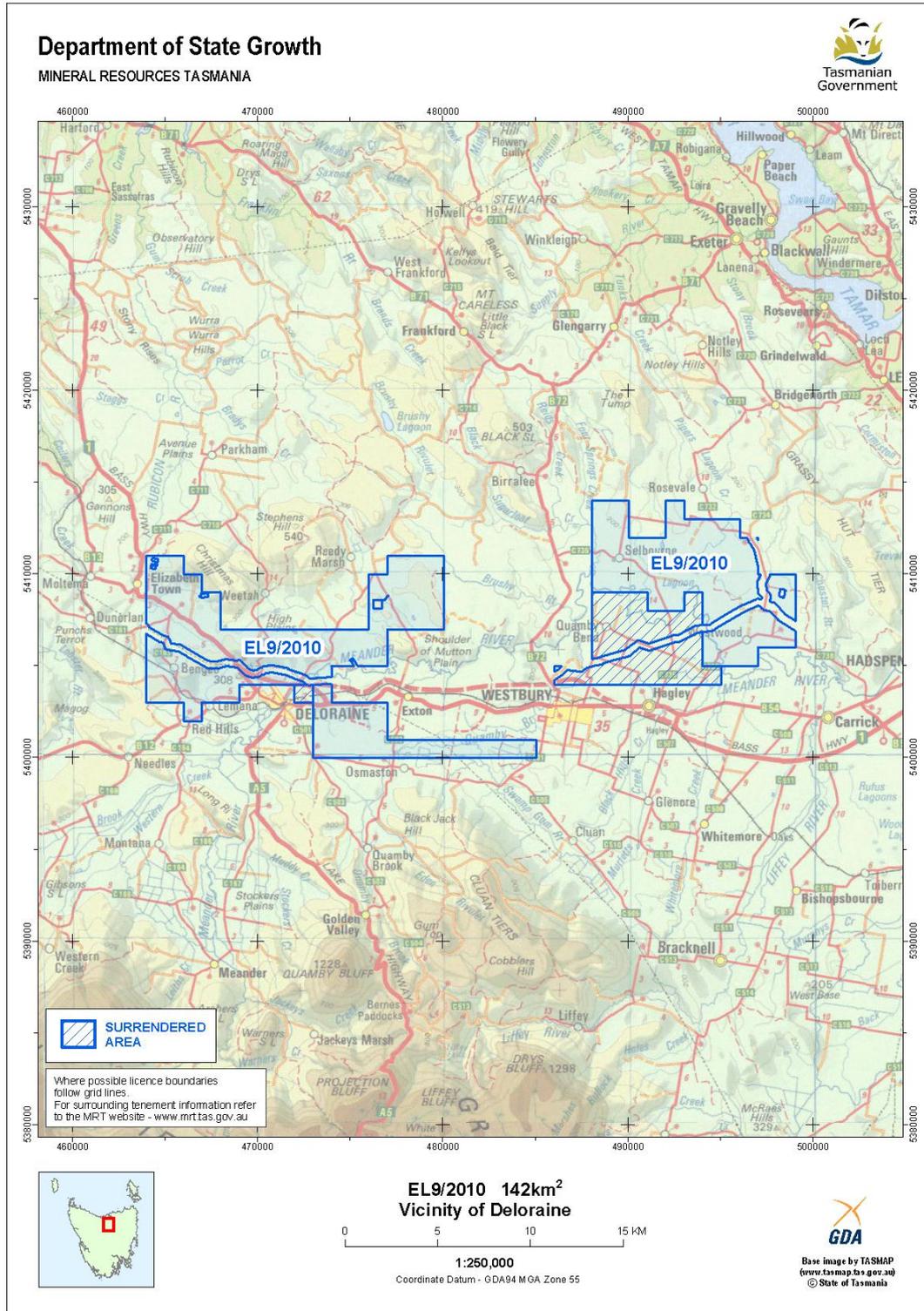
Total current area of the licence is 142 km<sup>2</sup>. The Mineral Category of EL 9/2010 is 1 – Metallic Minerals and Atomic Substances.

### Location

EL 9/2010 is located around the town of Deloraine (Map 1) where there is a rail line which connects all the ports of Tasmania. Ports and rail way lines in Tasmania are generally under capacity and the Deloraine Tenement is only 42km from Devonport. EL 9/2010 is close to the city of Launceston and could offer a wide range of services and skilled work force.

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

EL 9/2010 “Deloraine” is 100% owned by ABx4 which is a wholly-owned subsidiary of Australian Bauxite Limited.



Map 1. Location of EL 9/2010 "Deloraine". Datum GDA94 (MGA94 Zone 55).

### **3 REVIEW OF PREVIOUS WORK**

#### **Prior to Current Reporting Period**

In the years prior to the current annual reporting period a total of 388 reverse circulation (RC) holes were drilled for a total of 2,921 metres. A total of 2,025 drill hole samples have underwent specialist chemical analysis at ALS Laboratories, Brisbane. 1,432 of these tests involved wet sieving of the drill sample at +0.26mm prior to analysis, with the remaining samples being tested unsieved.

Another 1,062 assays on drilling samples were conducted in-house using a hand-held Niton XRF device.

The majority of holes drilled - and samples assayed - originate from ABx4's "DL-130" (formerly "Blackwood") deposit, including its southern extension "DL-130 South". The greater DL-130 area has a JORC-compliant inferred resource base of 5.7 million tonnes of bauxite. The DL-130 bauxite is derived from both volcanics and Dolerite.

Additional Drilling was completed in the western part of the Historical Rosevale Target, where minor volcanogenic and doleritic bauxite's were intersected. EL9/2010 is contiguous with EL37/2010 which hosts the majority of the Rosevale bauxite Target.

A great amount of field reconnaissance, geological mapping and surface sampling (for chemical analysis) has been undertaken and has allowed geologists to prioritise targets for drilling and/or other works. Numerous botanical surveys have been undertaken during the term of the exploration licence.

## 4 EXPLORATION COMPLETED DURING THE REPORTING PERIOD

### Prospect Based Exploration Activities

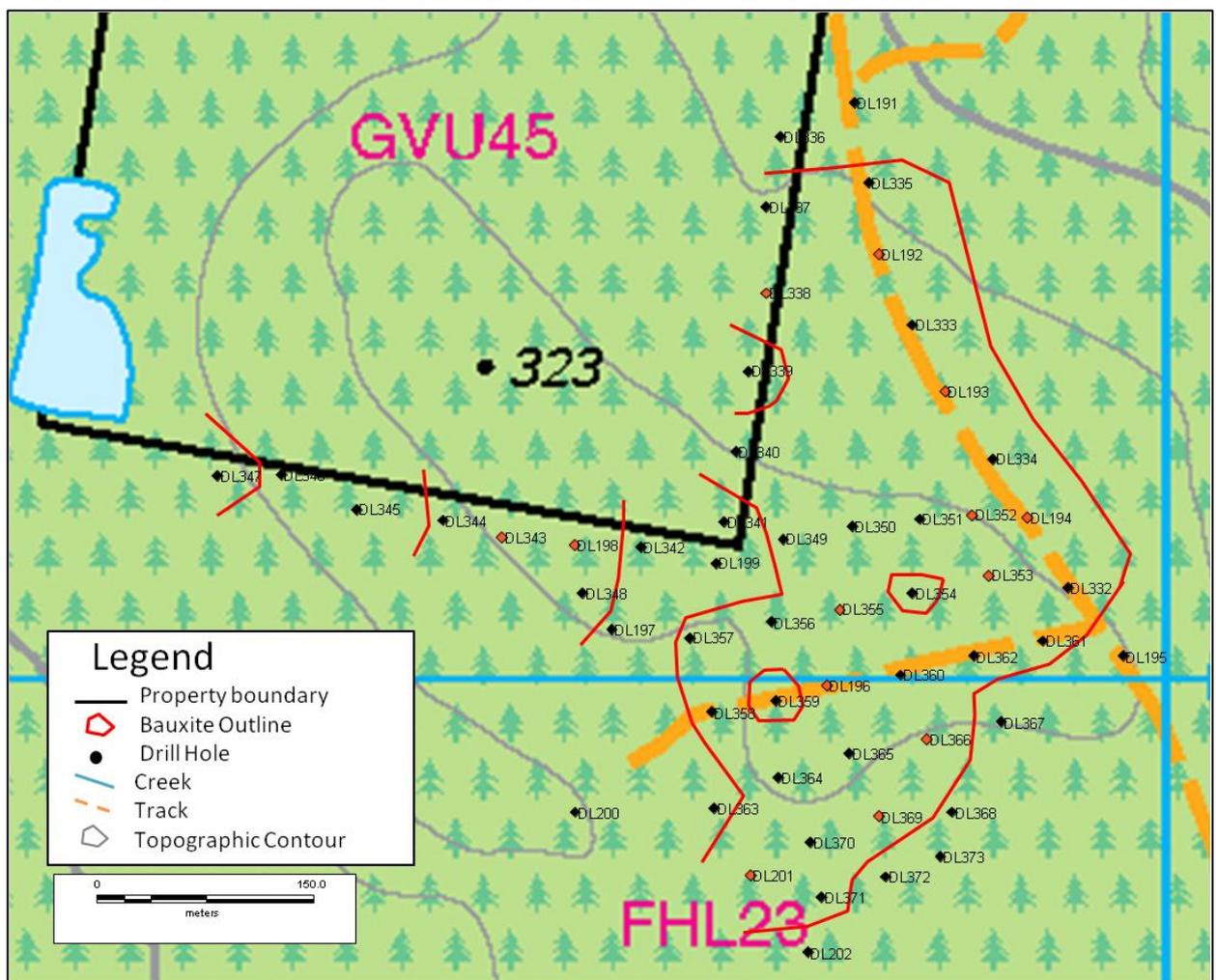
#### DL-130 south

Resource analysis showed insufficient assaying of bauxite intersects from drilling which gave the deposit a false sporadic appearance. A resource cannot be appropriately assessed on this location until assaying of the full bauxite layer is complete.

Detailed analysis of drill holes showed potential significant bauxite intersects weren't assayed to conserve funds.

To obtain more detailed information, re-logging of drill holes DL332-DL388 was commenced. A new logging system had been established to assist in more detailed geological logging.

All drillholes within the bauxite outline defined in Map 2 will need to be assayed if not already done so. Assays everything logged as La (Ferruginous laterite) or Bx (Bauxite)



Map 2. Bauxite Outline defined by re-logging. Red drill holes indicate current bauxite resources according to available assay results. Datum GDA94.

## Rosevale

Preliminary assessment of early 2015 drilling showed a very small volcanogenic bauxite body in an onion paddock. This bauxite had fairly limited potential and occurs bordering good farming land. The Volcanogenic bauxite is unusual because the rest of the Rosevale deposit is distinctly Doleritic in origin. The deposit is a typical lenticular body occurring near the top of a volcanic ridge line. The bauxite is derived from older tertiary volcanics with younger volcanics appearing to bury the south-western edge of the deposit.

The priority bauxite target for this drilling program was briefly drilled (4 holes). The deposit occurs at the base of the hill, at a significantly lower elevation to the volcanogenic bauxite. The outcrop occurs as a thin strip of bauxite only 5m wide occurring between hard dolerite and young sediments which appear to be some kind of ancient swamp deposit. Drilling in this location was planned to identify the dip of the deposit to determine if there was significant bauxite below thin tertiary cover. The bauxite appears to be very steep in the immediate vicinity of the bauxite outcrop but may level out or approach the surface elsewhere in the valley. An analysis of historical coal drill holes in the area suggested that the thickness of sediments in the tertiary basin quickly increases to the south.

The geological drill logging did not differentiate between bauxite and the surrounding material. A quick review of chip trays showed

DL388- The bauxite horizon at 5m depth.

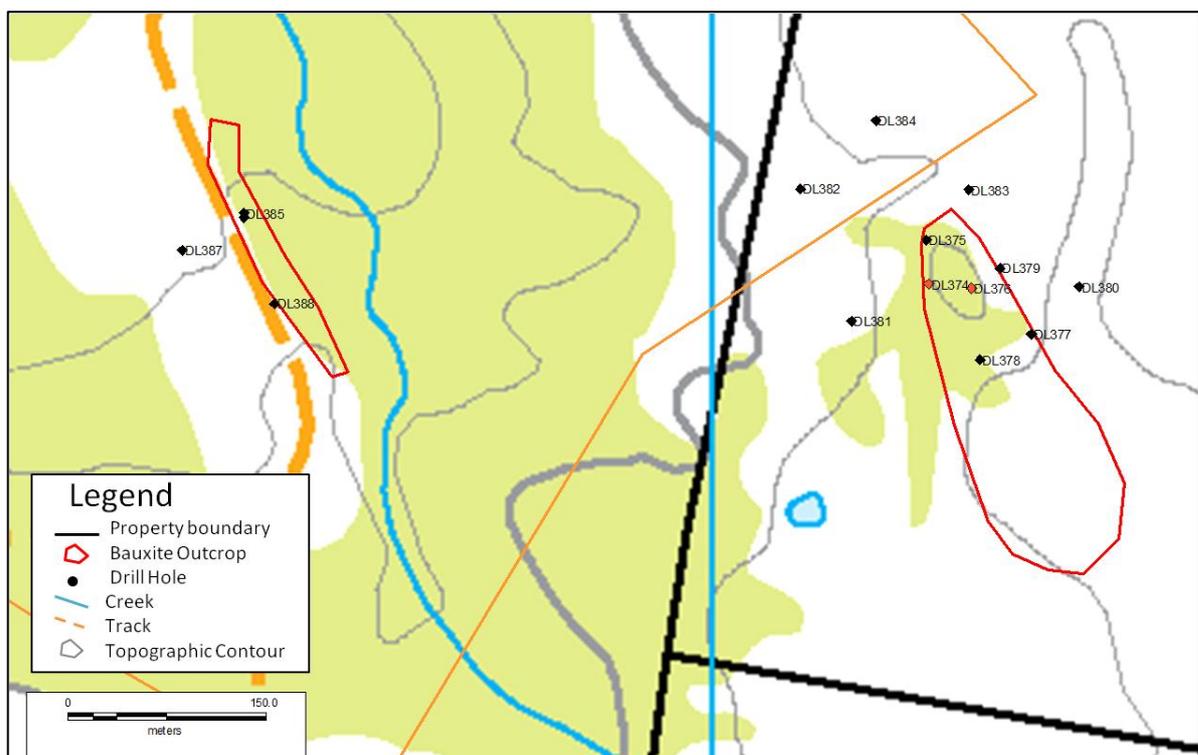
DL387- Did not hit bauxite layer, total depth of 7m in tertiary sediments including lignite and claystone.

DL386- Bauxite was intersected at surface.

DL385- Bauxite was intersected at surface.

This data shows that between drillhole DL386 and DL387 the dip of the bauxite horizon is greater than 7 degrees.

Map 3. Location map of Drill holes into the Rosevale Target, (right) Volcanogenic Bauxite target, (left) Thin outcrop of Doleritic Bauxite. Datum GDA94.



\*Note that hole DL386 is immediately below DL385 and the label has been cut off.

## 1. DISCUSSION OF RESULTS

The desktop review of drilling in early 2015 shows the DL-130 South target looks very prospective from the results of re-logging chip trays. The resource outline based from assays contained no more than 3 resource holes grouped in one location. This did not make sense when compared to geological mapping of the area and previous drilling. The bauxite is derived from dolerite which means it is slightly harder to identify because it can either occur at surface or a depth just above the dolerite contact. Both styles are identified in this location.

The Rosevale target has insufficient drilling thus far but preliminary indication shows that the dip of the ore body is possibly too great for economic extraction. Considering the location of this outcrop, along a thinning tip of the tertiary basin there is great potential for the bauxite to form near surface. This is assuming that the bauxite forms in a sheet like deposit similar to St Leonards.

## 5 CONCLUSIONS AND RECOMMENDATIONS

The desktop review of drilling in early 2015 shows that firstly logging and assaying were not effective and did not assay all bauxite intersects. The DL-130 South target looks very prospective from the results of re-logging chip trays and detail assaying of these intersects is highly recommended for the future.

The Rosevale target has insufficient drilling thus far but preliminary indication show that the dip of the ore body is possibly too great. This is worth greater investigation to determine if there are any areas where the dip of the basement is less, allowing bauxite to form with less overburden.

### Recommendations for future work

The following exploration activities are planned for EL 9/2010:

- 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.
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## **6 ENVIRONMENT**

### **Surface Disturbing Operations:**

No surface disturbing operations were undertaken in the sixth year of tenure

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

No surveys were undertaken within EL9/2010 within the current reporting period.

## 7 EXPENDITURE

Table 1. Exploration expenditure for EL9/2010 over the 6<sup>th</sup> annual reporting period.

EL 9/2010 Deloraine - Expenditure over 6th Year of Tenure	
1. Geoscientific costs	
Geology	\$7,386
Geochemistry	
Geophysics	
Remote sensing	
2. Drilling and Gridding Costs	
Gridding	
Drilling	
Holes/metres	
3. Land Access Costs	
4. Rehabilitation Costs	
5. Feasibility Study Costs	
6. Other Costs	
7. Administration Costs (< 10%)	
8. Total Costs	
	\$7,386

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

## 8 REFERENCES

Miss S.E. Close, Feb 1970, Scintillometer Search for Bauxite, Northwest Tasmania, *CRA Exploration Pty Limited*

Miss S.E. Close, June 1971, Final Report on Bauxite Search, Devonport E.L. 36/70 Tasmania, *CRA Exploration Pty Limited*

H. B. Owen (1954). *Bauxite in Australia*, Bureau of Mineral Resources Bulletin no. 24

T.Coyte, J.Rebek, August 2011, First Annual Report on EL 9/2010 Deloraine, *ABx4 Pty Ltd*

T.Coyte, J.Rebek, September 2012, Second Annual Report on EL 9/2010 Deloraine, *ABx4 Pty Ltd*

T.Coyte, J.Rebek, August 2013, Third Annual Report on EL 9/2010 Deloraine, *ABx4 Pty Ltd*

T.Coyte, J.Rebek, October 2014, Fourth Annual Report on EL 9/2010 Deloraine, *ABx4 Pty Ltd*

T. Coyte, T. Grieve, T.Battaglia September 2015, Fifth Annual Report on EL 9/2010 Deloraine, *ABx4 Pty Ltd*

H. B. Owen. *Bauxite in Tasmanian*, Bureau of Mineral Resources

H. B. Owen (1946). *Report on Bauxite, near Rosevale Country Devon Tasmania*, Bureau of Mineral Resources