

Second Annual Report
for
EL18/2014 – Prossers Rd

Reporting Period: 2 December 2015 – 1 December 2016
Project Operator: ABx4 Pty Ltd
Address: Level 2, 131 Macquarie Street, Sydney, NSW, 2000
Authors: Tamara Coyte, Tom Battaglia
Compiler: Tom Battaglia
Date: 29 November 2016

PAGE INTENTIONALLY LEFT BLANK

CONTENTS

ABSTRACT	3
INTRODUCTION	5
REVIEW OF PREVIOUS WORK	7
EXPLORATION COMPLETED DURING THE REPORTING PERIOD	9
DISCUSSION OF RESULTS	13
CONCLUSIONS AND RECOMMENDATIONS	14
ENVIRONMENT	15
EXPENDITURE	16
REFERENCES	17

TABLES

Table 1. Historical resources calculated for St Leonards bauxite deposits.	7
Table 2. Exploration expenditure for EL18/2014 over the 2 nd annual reporting period.....	16

MAPS

Map 1. Location of EL 18/2014 "Prossers Rd"	6
Map 2. Bauxite thickness at St Leonards	10
Map 3. Overburden thickness at St Leonards	11
Map 4. Stripping ratios at St Leonards	12

ABSTRACT

Objective:

Exploration Licence No. 18/2014 “Prossers Rd” was applied for by ABx4 Pty Ltd (**ABx4**) in order to facilitate an exploration program to discover economically viable deposits of bauxite associated with Jurassic Dolerite and Tertiary Volcanics. The goal of the program is to determine the quality and quantity of 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 the 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:

A preliminary desktop study of the St Leonards bauxite deposit was useful in identifying what areas of the deposit may be economically feasible to mine, and which are not, based on stripping ratios.

Recommendations for future work:

ABx intends to continue with its recommended work program of:

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 the 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 the 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.

Specifically, more desktop work is required on the St Leonards deposits to assess the economic feasibility of a mining operation.

INTRODUCTION

Exploration Rationale

ABx4 Pty Ltd - the holder of Category 1 Exploration Licence EL 18/2014 - is the 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.

EL 18/2014 “Prossers Road” 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.

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’.

Tenement Information

EL 18/2014 “Prossers Rd” was granted on and from 2 December 2014 for a period of 5 years to ABx4 Pty Ltd, a wholly-owned subsidiary of Australian Bauxite Limited.

ABx applied to relinquish 21km² of the original 135km² of tenement area at the end of the first year of tenure. This relinquishment was granted.

The mineral category of EL 18/2014 is; ‘Mineral Category is 1 – Metallic Minerals and Atomic Substances’.

Tenure, including joint venture details and title transfers

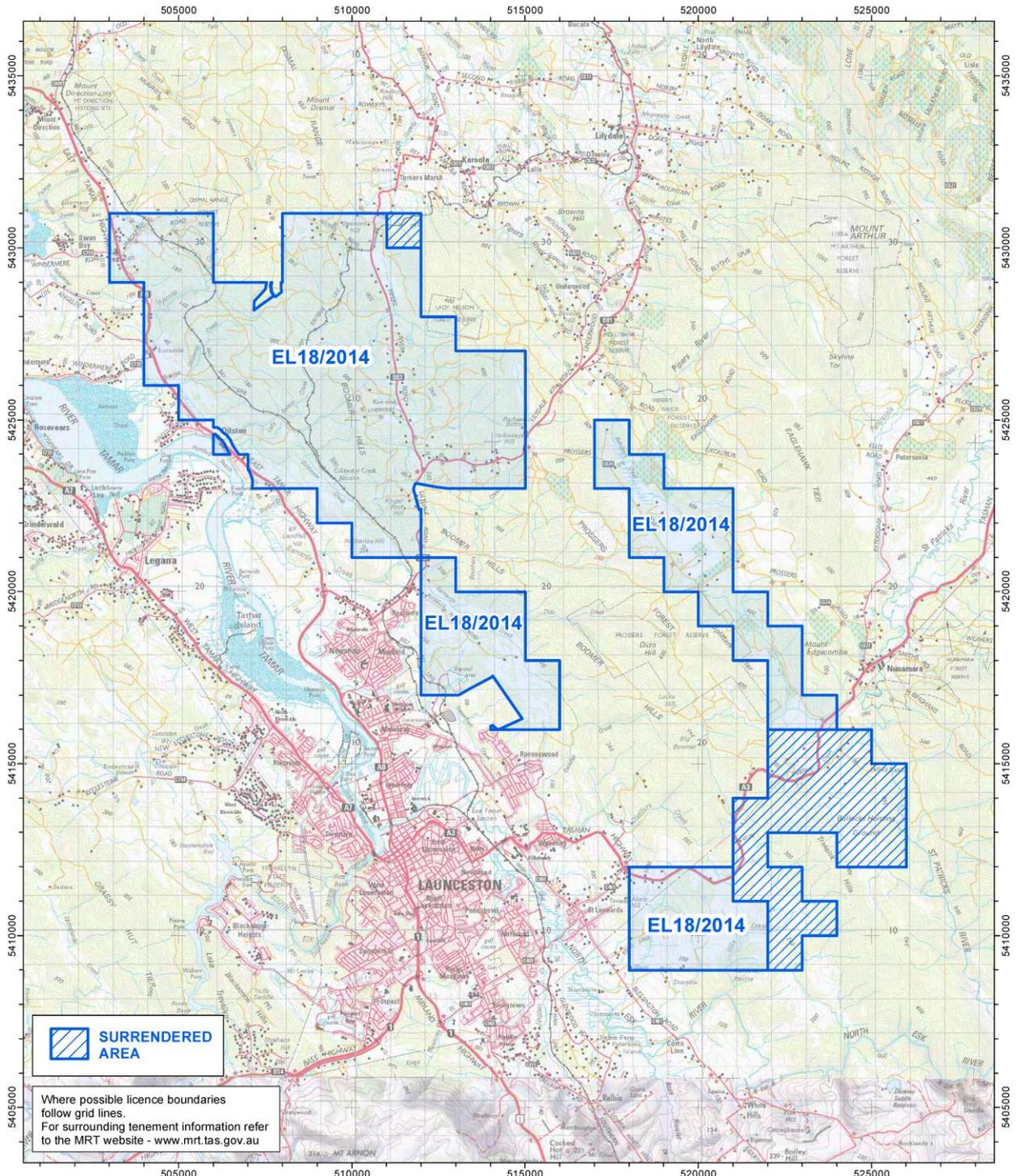
EL 18/2014 “Prossers Rd” is 100% owned by ABx4 which is a wholly-owned subsidiary of Australian Bauxite Limited.

Location

The Prossers Rd tenement extends from directly east of Launceston in the St Leonards area along the eastern hills and extending north around Dilston and Turner’s Marsh.

Prossers Rd is ideally located close to Bell Bay Port – only 24km by road from the northernmost part of the tenement – as well as the city of Launceston which offers a skilled work force and a wide variety of services.

Department of State Growth
MINERAL RESOURCES TASMANIA



**EL18/2014 (4 Parts) 114km²
Vicinity of Pipers River Road
(5km E of Dilston)**



1:150,000

Coordinate Datum - GDA94 MGA Zone 55



Base image by TASMARP
(www.tasmap.tas.gov.au)
© State of Tasmania

Map 1. Location of EL 18/2014 "Prossers Rd". Datum GDA94 MGA94 Zone 55.

REVIEW OF PREVIOUS WORK

Literature Review

St Leonards

Initial work was completed by the Australian Bureau of Mineral Resources in conjunction with the Tasmanian Mines Department on the bauxite deposits in the St Leonards area in the mid-to-late 1940s. This work is reported in the BMR Bulletin No. 24 “*Bauxite in Australia*” by H.B. Owen (1954).

Owen describes a total of seven separate bauxite bodies developed upon Dolerite in the St. Leonards area, though noting that only Deposit No. 1 and No. 3 contain “appreciable quantities of economic bauxite”. The total tonnages at St. Leonards was noted by H.B. Owen as being relatively small but having the advantage of being in close proximity to Launceston and only 38 miles from the Bell Bay alumina plant.

Owen describes the general geology of the deposits as follows:

“No. 1 Deposit crops out as a narrow bench following the contours along the western slopes of a valley trending south. The bauxite outcrop is continuous for 2,900 ft [~883m] on the valley side and also appears in small exposures at the head of the valley. The several small discontinuous outcrops which constitute Nos. 3 and 4 Deposits lie on the opposite side of the valley at a similar general elevation. It is probable that these bodies mark the outer edges of a once continuous sheet of laterite which lay on a surface dipping gently to the south-west.”

Proved resources were calculated by Owen for Deposit No. 1 and No. 3 though these estimates **are not** considered “JORC-compliant”. The “Summary of Reserves” has been reproduced in the table below.

Table 1. Historical (non-JORC compliant) resources calculated for St Leonards bauxite deposits.

Deposit No.	Tonnes	SiO2 %	Al2O3 %	Fe2O3 %	TiO2 %	Available Al2O3 %
No. 1	112,300	5.6	41.7	25.7	2.2	37.7
No. 3	30,200	7.1	40.9	25.8	2.2	36.5
Total	142,500	5.9	41.5	25.7	2.2	37.4

Dilston

A reference to a small bauxite deposit north of Dilston (referred to as “Thorp”) was also made in Owen’s *Bauxite in Australia*. The single paragraph written on the deposit is as follows:

“Doleritic bauxite of granular texture outcrops on a farm named Thorp at about 1.5 miles north-west of Dilston Post Office and 0.5 mile east of the Georgetown road. The bauxite, which is believed to be thin, wedges out against dolerite to the north, east and south, but may continue to the west where a small exposure is visible in highly improved land adjacent to the farmstead. The deposit is not sufficiently large to warrant interference with the farm.”

Work in Year 1 of tenure

In the first year of tenure, ABx4 investigated and did work in the St Leonards and Dilston areas in which bauxite deposits had been referenced in historical literature. In addition to comprehensive field traversing and surface sampling in both areas, ABx4 conducted a drilling program on the St Leonards historic bauxite deposit. A total of 68 Reverse Circulation (RC) holes were drilled for 715m. 31 of these 68 holes intersected bauxite of good quality. The collection of results suggested that the bauxite layer at St Leonards is a continuous sheet which could cover an area of somewhere between 4-12 km².

The bauxite samples taken from the Dilston area showed it is low-grade ferruginous bauxite/laterite. From previous experience good and/or high grade bauxite can occur underneath a ferruginous upper bauxite or “ferricrete” layer. Therefore it is possible that drilling the deposit may recover some higher quality bauxite that is currently not exposed at surface.

EXPLORATION COMPLETED DURING THE REPORTING PERIOD

Prospect-based Exploration Activities

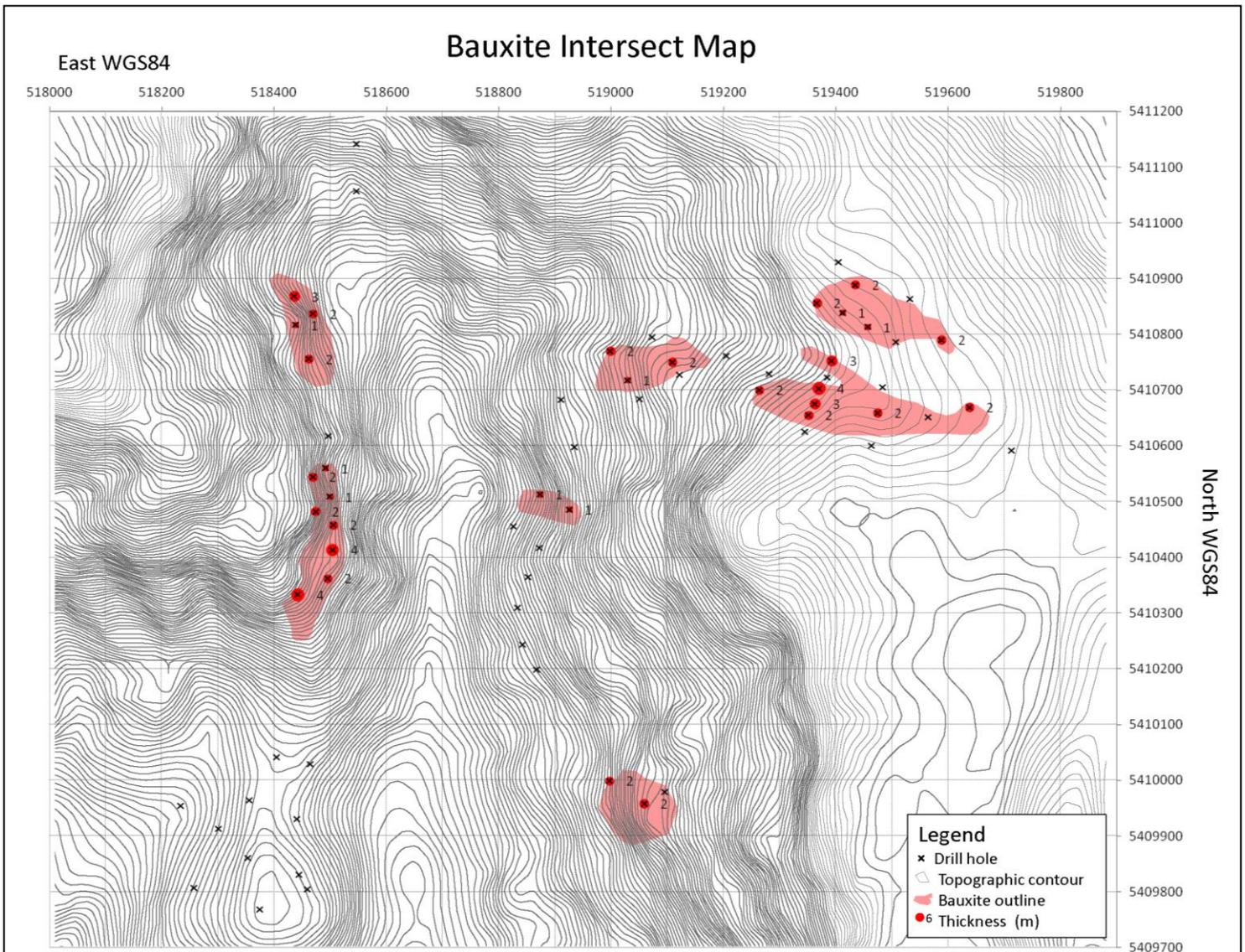
Desktop Study of St Leonards Drillhole results

Bauxite thickness, overburden, interburden and stripping ratio values were extracted from St Leonards drilling data collected in the first year of tenure. Drillholes were sampled at 1m intervals so values of the first three of these fields are represented in integers. Bauxite was simply defined as anything equal or above a cutoff value of 25% Available Al_2O_3 for samples wet sieved at 0.26mm (leach conditions: 1g leached in 10ml of 90gpl NaOH at 143 degrees C for 30 mins; this is gibbsitic bauxite). On this metric, 31 of 68 holes contained bauxite.

Overburden materials were mostly grey and brown clay units, though some other materials such as ferricrete (i.e. Fe-rich laterite) and quartz pebbles were intersected in some holes. Overburden was encountered in most holes, except for 6 which intersected bauxite in the top metre.

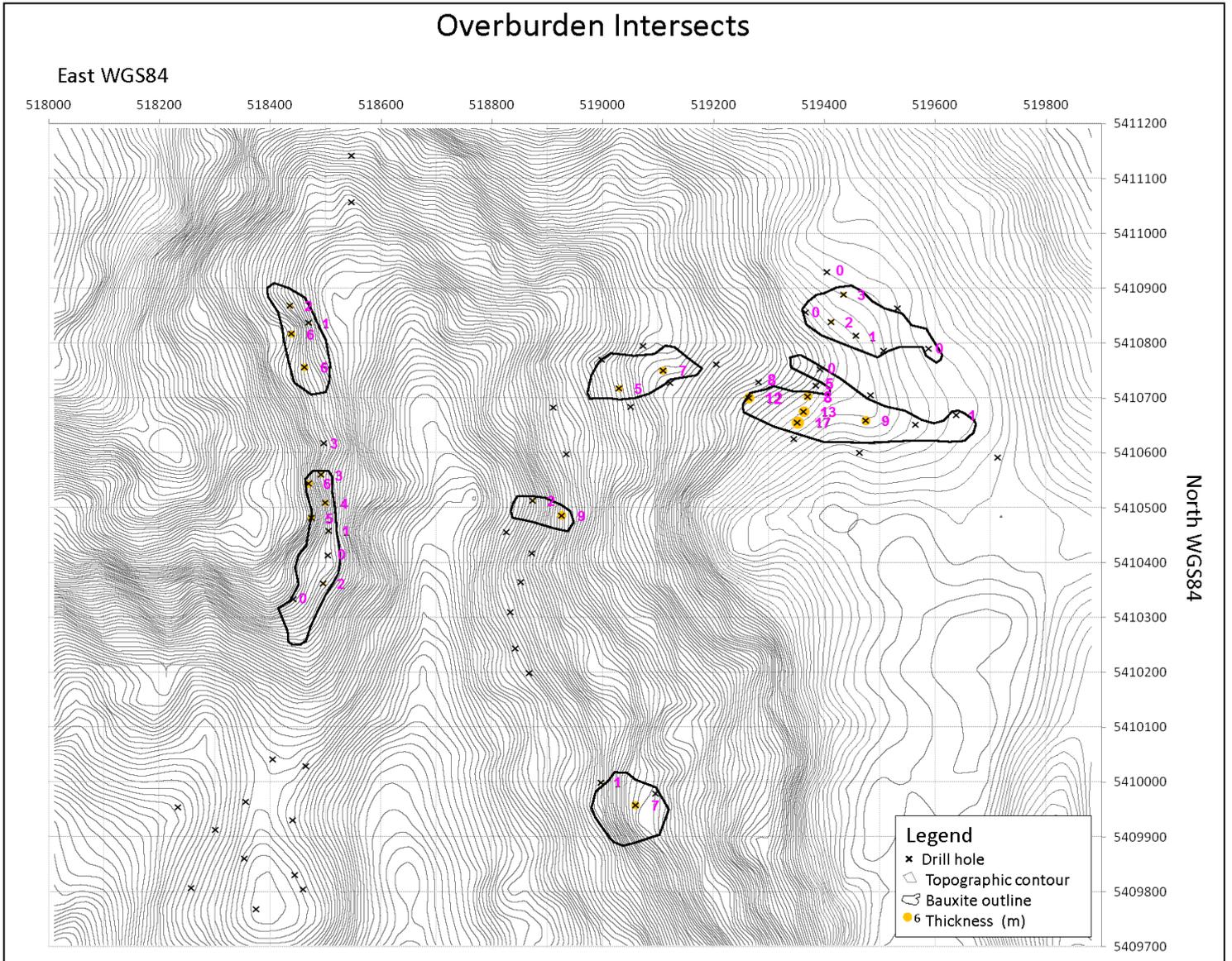
Interburden was only encountered in two holes - PR028 and PR054 - at 1m and 2m, respectively. However, this material was not “waste” but submarginal bauxite only just below the cut-off value; this material would probably be mined along with the higher-grade ore layers ore anyway.

The stripping ratio, as basically defined, is the thickness of overburden that would need to be removed per unit thickness of the ore layer (e.g. 3:1 would be 3m of overburden removed to mine 1m of bauxite ore). The interburden metres in PR028 and PR054 were not included for sake of simplicity. Nor were other complicating factors, such as ease of digging respective units, machine costs, etc, considered. This is just a simple preliminary tool to see how the influence of overburden varies throughout different areas of the deposit.

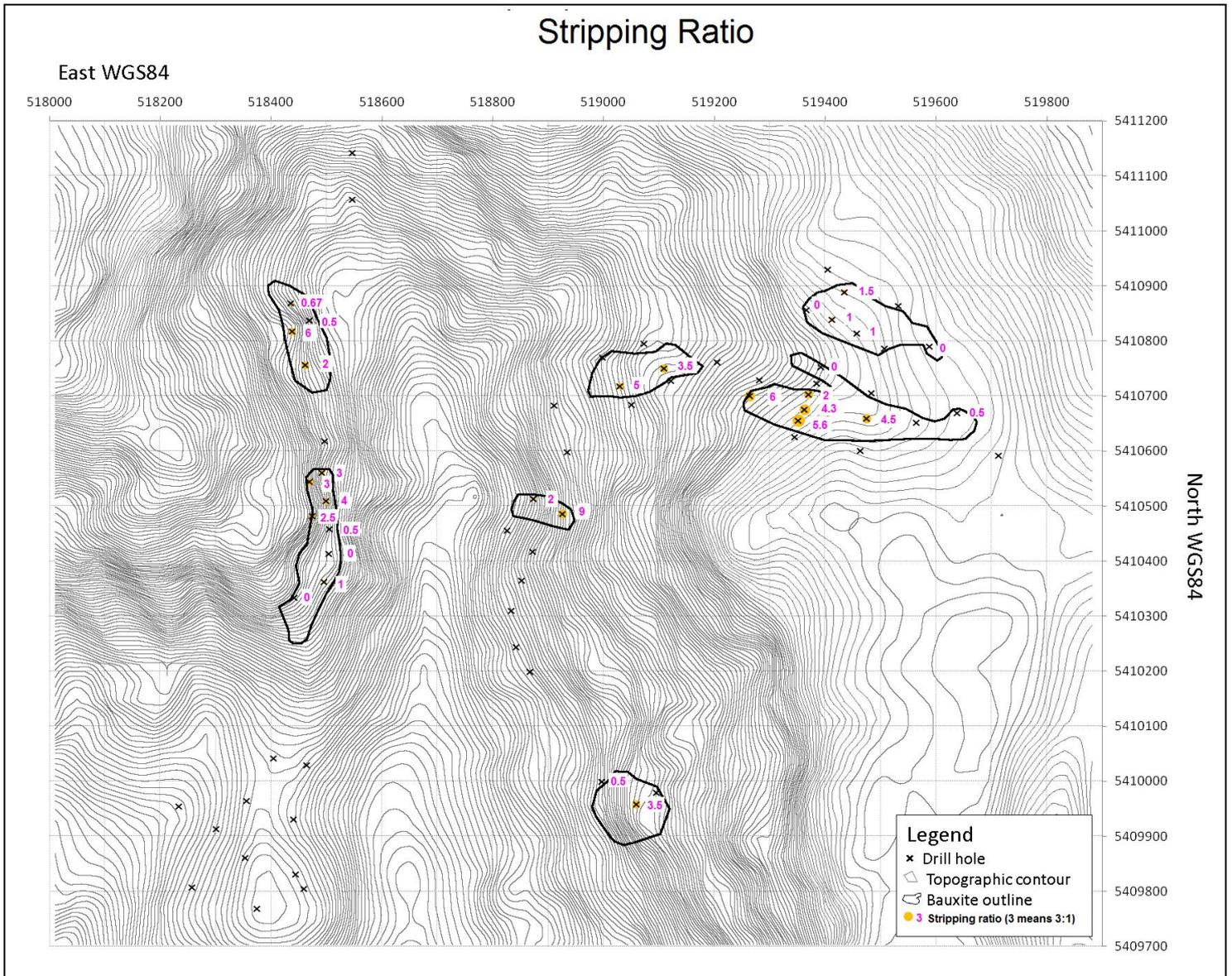


Map 2. Thickness of gibbsitic bauxite throughout the deposit. Interpreted areas of good-grade bauxite are shaded red. A cut-off value of 25% Avl Al₂O₃ is used for wet sieved samples.

Overburden Intersects



Map 3. Metres of overburden in all holes containing bauxite. Note the change in values relative to the elevation.



Map 4. Simple stripping ratio. Metres of overburden requiring removal per metre of bauxite ore.

DISCUSSION OF RESULTS

The thickness of bauxite is relatively uniform throughout the St Leonards deposit and averages 2.1 metres (range 1-4m, median 2m). The use of a 25% Avl Al_2O_3 cut-off value (for samples wet sieved at 0.26mm) may be somewhat arbitrary and is based on previous assessment studies set up for targeting met-grade bauxite. It could be higher or lower and incorporate different/additional metrics depending on different end uses. For example, the recent identification of the cement and fertiliser industries as suitable customers of Tasmanian bauxite means that target grades may not need to be as high as the previously-targeted metallurgical grades (for example, in Total and Available Al_2O_3 content). Therefore, the appropriate cutoff value needs to be reassessed based on specific market needs.

Overburden values and stripping ratios vary greatly throughout the deposit. As already established, bauxite holes drilled further up hills encounter greater thicknesses of overburden before intersecting the bauxite layer. How significant the overburden becomes an issue as the bauxite cuts into the hill is a function of the gradient of the topography and the dipping angle/direction of the bauxite layer. For example, the relatively large topographical gradient of the Deposit 1 area in addition to the gentle downward dipping of the bauxite layer into the hill mean that large stripping ratios are encountered not too far away from the outcrop.

Using a maximum stripping ratio of 3:1 (as used in previous ABx resource studies), it becomes clear that many parts of the identified deposit area (within the thick black lines on previous Maps) may be uneconomical to mine using traditional strip mining methods.

The most prospective parts of the deposit appear to be the northern portion and northern tip of the southern portion of Deposit 4 which occur on relatively low-relief topography and have low stripping ratios.

More detailed analysis of the geology, mineability and economic feasibility of the deposit area is clearly required.

CONCLUSIONS AND RECOMMENDATIONS

The preliminary desktop study of the St Leonards bauxite deposit was useful in identifying what areas of the deposit may be economically feasible to mine, and which are not, based on stripping ratios alone. Stripping ratios will be an important aspect of future resource estimates and desktop studies on this deposit, which are recommended.

It is still recommended that a short 2-3 day drilling program be completed on the Dilston target.

ENVIRONMENT

Surface Disturbing Operations:

No surface-disturbing activities took place during the current year of tenure.

Surveys (archaeological, botanical):

No surveys took place during the current year of tenure.

Rehabilitation:

No rehabilitation activities took place or were required during the current reporting period.

EXPENDITURE

Table 2. Exploration expenditure for EL18/2014 over the 2nd annual reporting period.

EL 18/2014 Prossers Rd - Expenditure over 2nd Year of Tenure	
1. Geoscientific costs	
Geology	\$22,088
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%)	\$159
8. Total Costs	
	\$22,247

Note 1: Office Administration was met by parent company – Australian Bauxite Limited.

Note 2: Some expenses from the 1st annual reporting period may have carried over into the 2nd annual reporting period. Furthermore, some desktop work done in the current reporting period may have been inadvertently reported in last year's report due to delayed submission.

REFERENCES

- Bardenhagen, F. (1981). *Bauxite in Laterite in the Launceston Area*, Bardenhagen Enterprises.
- Battaglia, T. and Coyte, T. (2016), *First Annual Report on EL18/2014 Prossers Rd*, MRT Submission, ABx4 Pty Ltd.
- Forsyth, S.M. and Calver, C.R. (compilers) (2005). Digital Geological Atlas 1:25 000 Scale Series. Sheet 5041. Launceston. Mineral Resources Tasmania.
- Owen, H.B. (1954). *Bauxite in Australia*, Bureau of Mineral Resources, Geology & Geophysics, Bulletin 24, Geology and Geophysics.