AustralianAbrasiveMinerals Pty Ltd

Harts Range Spinifex Bore Garnet Project
Annual Technical Group Report
For the period
15th May, 2014to 15th October, 2015
EL30318

TARGET COMMODITY: GARNET

Map Sheet:	Alice Springs, Alcoota, Huckitta	1:250,000
	Dneiper, Jinka	1:100,000

PROJECT OPERATOR: ***AustralianAbrasiveMinerals Pty Ltd***

Author: John Baxter

29th January, 2015

EXECUTIVE SUMMARY/ABSTRACT

EL30318 has been acquired by Australian Abrasive Minerals Pty Ltd as an extension to the Harts Range Spinifex Bore Garnet Project. The Harts Range Spinifex Bore Project tenements EL24360, EL24378 and EL28696 that are located along the valley of the Plenty River and with EL30318 cover approximately 512km^2 or 136 blocks. EL 30318 is not included in GR78/12 in the current year.

A study of the potential water resources in the Harts Range Spinifex Bore Garnet Project area has been undertaken. From previous work three sources need to be examined. Firstly the Ambalindum Sandstone which supplies water to Spinifex Bore and the current project borefield; secondly an aquifer that is likely to be from fractured rock and calcrete that has been identified by aircore drilling and at Benstead Bore; and thirdly a poorly yielding shallow aquifer in the Tertiary sedimentary basin which has been discounted as a potential aquifer.

Table 1 Australian Abrasive Minerals Tenements, September, 2014

Project	Prospects	Tenements	Rent 2013-2014	Commitment	Anniversary
Harts Range					
	Riddoch	EL28696	$ 1,154	$ 16,000	12th October
	Spinifex Bore	EL24360	$12,111	$ 101,500	14th September
	Irrerlirre	EL24378	$8,037	$ 71,500	14th September
	Eldorado Nth	EL30138	$1,102	$ 13,750	13th May

*Includes DMP Administration Fee

EL30318 consists of 25 blocks or approximately 97km^2. Commitment for 2014 was $13,750 and actual expenditure was $6,500. Variation in Covenant has been applied to cover the shortfall in expenditure which is summarised below.

	EL30318
Geological	$1,000
Geochemical Activities	
Geophysics	
Drilling	
Bulk Sampling	
Rehabilitation	
Pre-Feasibility	
Office Studies	$2,000
Overheads	$3,500
Total	**$6,500**

Location

The Harts Range Spinifex Bore Garnet Project, located within the Northern Territory, is approximately 134km northeast of Alice Springs (Figure 1). The project is accessed via travelling north along the Stuart Highway for 68km then east along the Plenty Highway for a further 143km. The first 84km along the Plenty Highway is sealed after which the remainder of the access is unsealed; with lose gravels and corrugations regularly encountered. A turn off onto a pastoral track heading north from Eldorado Bore leads into the tenement area.

The Plenty Highway passes through the tenement and provides excellent access. From the highway there are numerous tracks that are generally negotiable except after heavy rain. The tenement is mainly north of the Plenty Highway as shown in Figure 2.

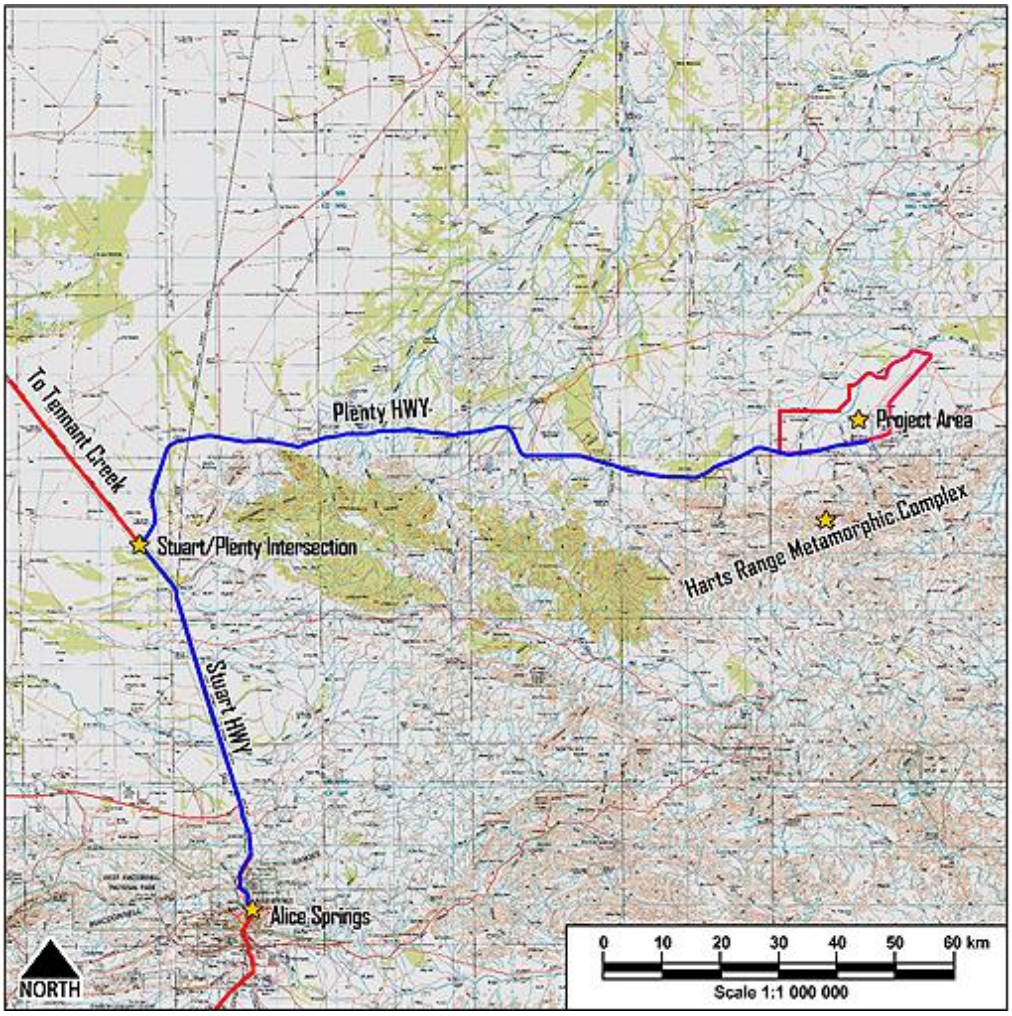

Figure 1 Location Plan for Harts Range Spinifex Bore Project 2013

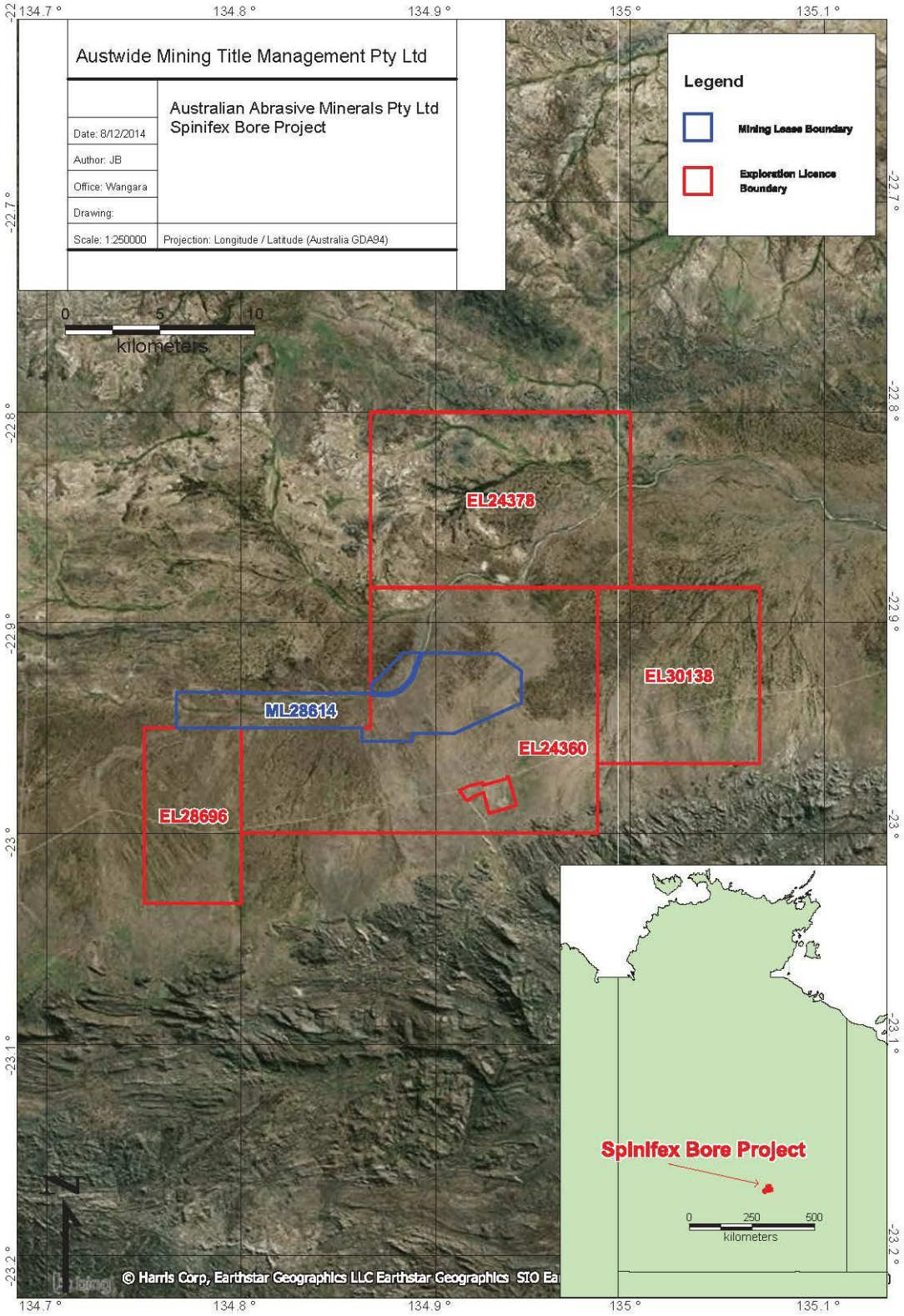

Figure 2 Locations of Australian Abrasive Minerals Pty Ltd Tenements, 2014 showing relationship of EL30318 to the remainder of the Project

Previous Work and Acquisition

Alcoa Australia undertook a broad scale drilling exploration program in 1980 in search for uranium (Chuck, 1980). This work provided a framework for the stratigraphy of the district that has been useful to the current project.

Australian Abrasive Minerals Activities

It is essential for the Harts Range Spinifex Bore Garnet Project that there is a supply of water for the life of the project. In 2013-2014 a detailed review of all data relating to stratigraphy in the district was completed with a proposal for further drilling. In 2013-2014 four bores were drilled to test the potential of the calcrete and shallow aquifers.

GEOLOGICAL SETTING –EXPLORATION RATIONALE

Physiography

The Harts Range Spinifex Bore Garnet Project covers the floodplain of the Plenty River predominantly over the Kanandra Land System. It includes alluvial plains of Stones, Eblana, Ulgama, Watson and Brett Creeks.

The Kanandra System is characterized by sparsely timbered, red sandy plains on the north side of the Harts Range. The system can contain low dunes that particularly occur at the gradation to the Simpson land system which is characterized by large dunes.

The vegetation of the Kanandra system within the project area is dominated by scattered Ironwood trees (Acacia estrophiolata), tall shrubs of Witchetty Bush (Acacia kempeana), Cassia (Senna artemisioides subsp. filifolia), low shrubs such as Saltbushes (Rhagodia species) and grasses (Aristida species and Eragrostis species).

Geology and Mineralisation

Garnet bearing sands in paleochannels have been identified along the Plenty River floodplain from Aturga Creek (west of the Project) to Entire Creek (east of the tenement).

The stratigraphy of the region is now well known based on drilling and pitting, that has been conducted on the Harts Range Spinifex Bore Garnet Project over the past 10 years and the early work completed by Alcoa. It is summarized in Table 2.

Previous drilling for water on EL24360 has identified that to the south of the project the sand is underlain by Tertiary sediments of the Waite Formation and Ambalindum Sandstone. It is in the Ambalindum Sandstone that the aquifer that will eventually supply the treatment plant for the Harts Range Spinifex Bore Garnet Project.

However the potential of improving our understanding of the local stratigraphy and to test the potential of the calcrete layer some drilling was conducted in 2013.

Table 2 Stratigraphy of Harts Range Spinifex Bore Project Area

Range		Lithology	Cement
From	To		
10cm	15m	Red fine-grained silty sand - windblown – dunes to east	Unconsolidated
1.5m	5m	Brown-Orange fine to medium grained sand-floodplain	Partly consolidated with iron coating on grains
0	8m	Calcretised grey-white sand and pebbles-paleochannel	Usually free flowing, but may be partly cemented by calcrete
1m	7m	White-grey sand and cobbles - paleochannel	Often hard well-cemented
1m	2m	Calcrete	Well-cemented
40m	120m	Tertiary clay with sandstone lenses	Lithified

Exploration Index Map

No drilling was conducted on the tenement in 2013

Geological Studies

In July, 2014 AAM engaged John Barnett and John Baxter to undertake a full review of all previous work on stratigraphy and water potential in the district.

The history can be summarised as follows::

- Alcoa undertook a wide scale drilling programme in 1980 in the district on a uranium search and identified sandstone, possibly Ambalindum Sandstone, in several holes and developed a Tertiary stratigraphy for the district (Chuck, 1980)

- Peter Jolly from the Water Division in Darwin reviewed the Alcoa drilling in the area and provided a general base line for the basin geology, but this was not followed through
- Ian Mathews brought his experience with the water source at Atitjere to bear and developed a program of work based on Spinifex Bore with the result a borefield yielding 14 l/sec was identified, note this excludes production from Spinifex Bore. It seems from our work that Spinifex Bore is not drilled through the aquifer and may not be in the centre of the basin.
- Rockwater provided a report on the bores including interpreting the pump results and was concerned about the recharge to the Ambalindum Sandstone aquifer.
    - Rockwater modelled the depth of sand interval, suggesting a basin centred northwest of Spinifex bore
    - They made an analysis of the salinity pattern and created a model for the basin. Their analysis suggests that in all but one bore (OLY8) the drawdowns are satisfactory for five years or more of pumping at a supply of 14 L/s.
    - He predicted the basin would continue to provide water for 5 years without depleting the agricultural use of Spinifex Bore
    - He considered the aquifer was confined with slow leakage from the overlying clay beds
    - The model used simulated groundwater recharge only at the southern edge of the basin
    - Rockwater also identified an upper shallow aquifer that was not modelled and is probably not a useful water source for the project

This resulted in a staged exploration and development programme being developed that includes in Phase 3 drilling holes in the vicinity of RD029 that is known to encounter the Ambalindum Sandstone. This program will be completed in the future.

Remote Sensing and Geophysics

No remote sensing or geophysics was done during 2013-2014.

Surface Geochemistry

No soil or grab samples were taken during 2013-2014.

Drilling

No drilling was undertaken during 2013-2014.

Geotechnical Studies

No geotechnical studies were completed in 2013-2014

Resource estimation

No resource estimation was made during 2013-2014.

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