

# Quarterly Activities Report and Appendix 5B

For the period  
ending  
31 March 2014

ASX: ARU



**AN EMERGING  
RARE EARTHS  
PRODUCER  
FOR USERS  
WORLDWIDE**

## HIGHLIGHTS

- ▲ **Nolans Project operating costs reduced to A\$15.67/kg REO – a reduction of A\$4.88/kg on the August 2012 OPEX estimate**
- ▲ **Capital costs reduced to A\$1,408 million – a reduction of A\$504 million on the August 2012 CAPEX estimate**
- ▲ **Rare Earth Separation Plant capital and operating cost estimates completed**
- ▲ **Flowsheet optimisation programs underway**
- ▲ **Water drilling program contract awarded and drill program commenced**
- ▲ **Review of administration and overheads expenditure**

## NOLANS PROJECT

### OPERATING COST REDUCTIONS ACHIEVED

During the period the Company announced (ASX:ARU 20/03/14 and 02/04/14) a revised Nolans Project operating expenditure (“OPEX”), now estimated to be A\$15.67/kg of rare earth oxide (“REO”) based on annual REO equivalent production of 20,000 tonnes. This represents a reduction of approximately 24%, or A\$98 million per annum, on the August 2012 Base Case capital cost estimates.

The key reductions in OPEX are attributable to a number of factors including;

- improved beneficiation resulting in greater efficiencies in rare earth extraction and separation;
- simplification of the supply chain and logistics through the relocation of the Rare Earth (RE) Intermediate Plant to the Nolans site in the Northern Territory, and the RE Separation Plant to an established offshore chemical precinct.

OPEX includes general and administration, maintenance materials and contractors, consumables and other support costs. The revised OPEX estimate compares favourably with published costs from current non-Chinese rare earth production.

### CAPITAL COST REDUCTIONS ACHIEVED

The capital expenditure (“CAPEX”) for the Nolans Project has been reduced to A\$1,408 million, inclusive of indirect and owner’s costs, and a 15% contingency. The CAPEX excludes A\$197 million of costs which the Company has deferred by adopting selective mining practices during the first ten years of operation.

**ARAFURA RESOURCES LIMITED**

arafura@arafuraresources.com.au www.arafuraresources.com.au ABN 22 080 933 455

PERTH: Level 5/16 St Georges Tce, Perth WA 6000 | PO Box 5773, St Georges Terrace, Perth WA 6831 T: +618 6210 7666 F: +618 9221 7966  
DARWIN: 18 Menmuir St, Winnellie NT 0820 | PO Box 37220, Winnellie NT 0821 T: +618 8947 5588 F: +618 8947 5599

CAPEX estimates have been compiled by the Company, and derived from estimates generated by a number of engineering organisations.

A comparison of the March 2014 and August 2012 CAPEX and OPEX estimates are shown in the Table 1 below. These estimates and the annual REO equivalent production of 20,000 tonnes are underpinned by Measured and Indicated Mineral Resources for Nolans Bore (ASX: ARU 08/06/12).

**Table 1: Nolans Project Capital and Operating Expenditure comparisons**

	<b>August 2012</b>	<b>March 2014</b>	<b>Savings</b>
	<b>A\$</b>	<b>A\$</b>	<b>A\$</b>
<b>OPEX</b>	\$20.55/kg REO	\$15.67/kg REO	\$4.88/kg REO
<b>CAPEX</b>	\$1,912 million	\$1,408 million	\$504 million

### **RARE EARTH SEPARATION PLANT CAPITAL & OPERATING COST ESTIMATES**

The latest CAPEX and OPEX estimates incorporate data from the RE Separation Plant Engineering Cost Study. The Study was completed by Lycopodium Minerals at an accuracy of  $\pm 25\%$  and was based on data from the rare earth separation testwork completed at ANSTO in 2012.

The Study was based on the RE Separation Plant being situated in the Gulf Coast region of the USA. The completion of this Study has provided the Company with a better insight of infrastructure requirements, reagent requirements and other key cost drivers. This information has been used to refine the RE Separation Plant site location study and as a basis to engage with stakeholders at shortlisted sites. CAPEX and OPEX estimates for shortlisted sites are benchmarked against the Gulf Coast USA costs in the Study.

### **FLOWSHEET OPTIMISATION PROGRAMS**

The Company continues to progress the optimisation program in China with the objective of achieving further CAPEX and OPEX savings to those identified in Table 1.

The beneficiation optimisation scope of work consists of three stages. The Institute of Multipurpose Utilisation of Mineral Resources (IMUMR) and the Chengdu Analytical and Testing Centre for Minerals and Rocks (Chengdu Testing Centre) are working concurrently on stage 1 of the scope of work. The draft reports for the Stage 1 testwork from both IMUMR and Chengdu Testing Centre have recently been received, on completion of a detailed review of these reports the Company intends to award the Stage 2 and 3 components of the beneficiation work to one of the institutes.

During the review and acceptance of the final reports from Stage 1 of the beneficiation program the Company will continue to engage with a number of organisations to review opportunities for the rare earth extraction (hydrometallurgy) optimisation program. The rare earth extraction optimisation program will use feedstock generated from the Stage 1 work.



## EXPLORATION

### **AILERON – REYNOLDS (Rare Earths; Water; Extractive Minerals)**

The Company has undertaken significant work to identify suitable groundwater resources located near Nolans Bore to supply the Mine & Concentrator, and the RE Intermediate Plant, with a water supply for the life of the operation. In late 2012 the Company identified a previously unexplored aquifer system south-west of Nolans Bore in what is known as the Northern Burt Basin. To assist in defining the extent and sustainability of this system the Company, with the assistance of the Northern Territory Government, acquired and re-interpreted a number of open file airborne geophysical data sets in the region to support a second round of targeted drilling. During the quarter a water drilling contract was awarded and drilling commenced in April. Initial results are very encouraging (Figure 1) and the Company will provide further updates of progress and results from this program in the coming weeks.



**Figure 1: Drilling of the first hole in the 2014 water drilling program for the Nolans Project**

### **YALYIRIMBI (Iron)**

Ferrowest Limited (“Ferrowest”; ASX: FWL) is progressing work in relation to the Yalyirimbi Iron Project to earn up to a 60% interest in Arafura’s iron ore rights on EL 24548 through an incorporated joint venture. Arafura’s iron rights are held through its wholly owned subsidiary Arafura Iron Pty Ltd (“AIPL”).

Ferrowest recently announced (ASX: FWL 27/11/13) an estimate of Indicated and Inferred Mineral Resources of 13.3Mt @ 27.1% (hematite) Fe for Yalyirimbi. Ferrowest has recently



presented Arafura with the final Mineral Resources report. It is anticipated that arrangements will be made to transfer the 51% interest in AIPL to Ferrowest in the next month.

### **JERVOIS (Base and Precious Metals; Iron-Vanadium)**

Rox Resources Limited (“Rox”; ASX: RXL) is progressing work on EL 29701 to earn up to a 70% interest in the base and precious metals mineral rights (Cu-Pb-Zn-Ag-Au-Bi-PGE).

Rox is currently completing a work program and mine management plan for further field reconnaissance with a view to drilling on the tenement in the second quarter of 2014. The work program has been based on data collected by Rox from an airborne electromagnetic (VTEM) survey over the tenement late last year. Rox recently announced (ASX: RXL 14/03/14) ten anomalies have been identified as prospective conductive mineralised targets from the VTEM survey.

**PLEASE ALSO REFER TO APPENDIX A FOR A SUMMARY OF ALL MINING TENEMENTS AND AREAS OF INTEREST AS AT 31 MARCH 2014.**



## **CORPORATE**

### **STRATEGY AND OUTLOOK**

Arafura’s primary focus is to develop its 100%-owned Nolans Project.

The Company has recently completed a review of the Nolans Project flowsheet and the OPEX and CAPEX estimates. The Company has consistently and successfully worked to achieve material reductions in the Nolans Project OPEX and CAPEX estimates over the past 18 months to enhance its viability and competitiveness. The Company has in place a viable and preferred process flowsheet and is now seeking to build on and further improve the Project economics through the optimisation program. The Company has engaged with a number of Chinese rare earth experts for the review and optimisation of its flowsheet.

Global demand outlook for many rare earth products remains strong. Key drivers for growth are the renewable energy, automotive and electronic sectors. Supply will be constrained for most rare earth products due to Chinese industry consolidation and export restrictions, and long development times for non-Chinese rare earth projects. The advanced development status of the Nolans Project means it is well placed to capitalise on this forecast supply shortfall.

The outlook for growth in demand for magnet feed material is particularly high. Neodymium is a critical rare earth for high performance advanced magnets in hybrid electric motors and wind turbines and is a high value product. The Nolans Project is comparatively enriched in neodymium and will derive a substantial proportion of its revenue from rare earth products whose target markets have substantial growth prospects.

The Company's immediate objectives are to enhance the viability of the Nolans Project through the Chinese optimisation program, to leverage the extensive process development work it has completed on the Nolans Project over many years, and to align its sales and offtake arrangements with organisations that are industry leaders in high growth sectors.

### **REVIEW OF ADMINISTRATION AND OVERHEADS**

As at the end of March the Company had cash reserves of A\$22.79 million. The Company is in a comparatively strong position to fund the continued development of the Nolans Project but is also cognisant of the constraints on accessing additional capital in the current environment. The Company continually looks to minimise, on a sustainable basis, the level of expenditure incurred on administration and overheads in order to ensure the maximum level of funding is directed to the development of the Nolans Project.

Since July 2013 the Company has instituted a process of continual assessment of its overhead costs aimed at maximising the allocation of resources to the Nolans Project. The Company has recently completed a review and restructure of its administrative and project positions. In the current financial year the Company has achieved annualised savings in excess of \$800,000 through restructuring. While the Company does not anticipate the need to complete any further restructuring it will continue to review the structure and operational need for each position as the Nolans Project progresses. The Company does however expect to identify further overhead cost savings over the next quarter as it finalises its budget for the 2015 financial year.

### **MANAGEMENT CHANGES**

The Nolans Project development has for some time been predominately focussed on the optimisation programs in China. The emphasis on this development pathway highlighted some overlap in roles and responsibilities of certain positions and identified significantly reduced operational need for certain positions. John Ganser has recently ceased employment with the Company from the position of General Manager – Projects. The Company thanks Mr Ganser for his service, his contribution to the Nolans Project, and the guidance he provided to the technical team in its efforts to advance the Nolans Project through feasibility.

Mr Ganser's Project responsibilities will now be managed by Neil Graham. Mr Graham has been with the Company since September 2010 in the capacity of General Manager – Operations and Technology. The Company looks forward to Mr Graham's continued involvement in the Nolans Project through his expanded role for the next phase of project development.



## Appendix 5B

### Mining exploration entity quarterly report

Introduced 1/7/96. Origin: Appendix 8. Amended 1/7/97, 1/7/98, 30/9/01, 01/06/10.

Name of entity

ARAFURA RESOURCES LIMITED

ABN

22 080 933 455

Quarter ended ("current quarter")

31 March 2014

#### Consolidated statement of cash flows

		Current Quarter \$A'000	Year to date (9 months) \$A'000
<b>Cash flows related to operating activities</b>			
1.1	Receipts from product sales and related debtors	-	-
1.2	Payments for (a) exploration & evaluation	(2,074)	(6,345)
	(b) development	-	-
	(c) production	-	-
	(d) administration	(1,116)	(3,364)
1.3	Dividends received	-	-
1.4	Interest and other items of a similar nature received	59	462
1.5	Interest and other costs of finance paid	(2)	(10)
1.6	Income taxes paid	-	-
1.7	Other (provide details if material)*	-	-
<b>Net Operating Cash Flows</b>		<b>(3,133)</b>	<b>(9,257)</b>
<b>Cash flows related to investing activities</b>			
1.8	Payment for purchases of: (a) prospects	-	(121)
	(b) equity investments	-	-
	(c) other fixed assets	(11)	(32)
1.9	Proceeds from sale of: (a) prospects	-	-
	(b) equity investments	-	-
	(c) other fixed assets	-	-
1.10	Loans to other entities	-	-
1.11	Loans repaid by other entities	-	-
1.12	Other (provide details if material)	-	-
<b>Net investing cash flows</b>		<b>(11)</b>	<b>(153)</b>
1.13	Total operating and investing cash flows (carried forward)	<b>(3,144)</b>	<b>(9,410)</b>

+ See chapter 19 for defined terms.



1.13	Total operating and investing cash flows (brought forward)	(3,144)	(9,410)
<b>Cash flows related to financing activities</b>			
1.14	Proceeds from issues of shares, options, etc.	-	-
1.15	Proceeds from sale of forfeited shares	-	-
1.16	Proceeds from borrowings	-	-
1.17	Repayment of borrowings	-	-
1.18	Dividends paid	-	-
1.19	Other – Capital Raising Expenses	-	-
<b>Net financing cash flows</b>		-	-

<b>Net increase (decrease) in cash held</b>		<b>(3,144)</b>	<b>(9,410)</b>
1.20	Cash at beginning of quarter/year to date	25,944	32,183
1.21	Exchange rate adjustments to item 1.20	(14)	13
1.22	<b>Cash at end of quarter</b>	<b>22,786</b>	<b>22,786</b>

**Payments to directors of the entity and associates of the directors**

**Payments to related entities of the entity and associates of the related entities**

		Current Quarter \$A'000
1.23	Aggregate amount of payments to the parties included in item 1.2	(104)
1.24	Aggregate amount of loans to the parties included in item 1.10	Nil

1.25 Explanation necessary for an understanding of the transactions

Consulting services and Salaries, fees and superannuation of Directors to the Company

**Non-cash financing and investing activities**

2.1 Details of financing and investing transactions which have had a material effect on consolidated assets and liabilities but did not involve cash flows

Nil

2.2 Details of outlays made by other entities to establish or increase their share in projects in which the reporting entity has an interest

Nil

+ See chapter 19 for defined terms.



### Financing facilities available

Add notes as necessary for an understanding of the position

	Amount available \$A'000	Amount used \$A'000
3.1 Loan facilities	Nil	Nil
3.2 Credit standby arrangements	Nil	Nil

### Estimated cash outflows for next quarter

	\$A'000
4.1 Exploration and evaluation	2,880
4.2 Development	-
4.3 Production	-
4.4 Administration	1,180
<b>Total</b>	<b>4,060</b>

### Reconciliation of cash

Reconciliation of cash at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts is as follows.

	Current Quarter \$A'000	Previous Quarter \$A'000
5.1 Cash on hand and at bank	1,461	2,519
5.2 Deposits at call	21,325	23,425
5.3 Bank overdraft	-	-
5.4 Other (provide details)	-	-
<b>Total: cash at end of quarter (item 1.22)</b>	<b>22,786</b>	<b>25,944</b>

### Changes in interests in mining tenements

	Tenement reference	Nature of interest (note (2))	Interest at beginning of quarter	Interest at end of quarter
6.1		Interests in mining tenements relinquished, reduced or lapsed		
		Interests in mining tenements acquired or increased		

+ See chapter 19 for defined terms.





### Issued and quoted securities at end of current quarter

Description includes rate of interest and any redemption or conversion rights together with prices and dates.

	Total number	Number quoted	Issue price per security (see note 3)	Amount paid up per security (see note 3)
7.1 <b>Preference securities</b> <i>(description)</i>				
7.2 Changes during quarter (a) Increases through issues (b) Decreases through returns of capital, buy-backs, redemptions				
7.3 <b>+Ordinary securities</b>	441,270,644	441,270,644		
7.4 Changes during quarter (a) Increases through issues (b) Decreases through returns of capital, buy-backs				
7.5 <b>+Convertible debt securities</b> <i>(description)</i>				
7.6 Changes during quarter (a) Increases through issues (b) Decreases through securities matured, converted				
7.7 <b>Options</b>			<i>Exercise price</i>	<i>Expiry date</i>
ARUAU	1,400,000	-	\$0.96	16-07-14
ARUAM	600,000	-	\$0.81	31-12-14
ARUAW	1,750,000	-	\$0.70	24-11-14
	1,878,000	-	\$0.23	31-12-15
	7,600,000	-	\$0.14	18-07-16
7.8 Issued during quarter	-	-	-	-
7.9 Exercised during quarter	-	-	-	-
7.10 Expired during quarter	-	-	-	-

+ See chapter 19 for defined terms.

7.11	<b>Debentures</b> <i>(totals only)</i>		
7.12	<b>Unsecured notes</b> <i>(totals only)</i>		

**Compliance statement**

1 This statement has been prepared under accounting policies which comply with accounting standards as defined in the Corporations Act or other standards acceptable to ASX (see note 4).

2 This statement does give a true and fair view of the matters disclosed.



Sign here:

Date: 30 April 2014

Print name: Peter Sherrington  
(Company Secretary)

**Notes**

1 The quarterly report provides a basis for informing the market how the entity’s activities have been financed for the past quarter and the effect on its cash position. An entity wanting to disclose additional information is encouraged to do so, in a note or notes attached to this report.

2 The “Nature of interest” (items 6.1 and 6.2) includes options in respect of interests in mining tenements acquired, exercised or lapsed during the reporting period. If the entity is involved in a joint venture agreement and there are conditions precedent which will change its percentage interest in a mining tenement, it should disclose the change of percentage interest and conditions precedent in the list required for items 6.1 and 6.2.

3 **Issued and quoted securities** the issue price and amount paid up is not required in items 7.1 and 7.3 for fully paid securities.

4 The definitions in, and provisions of, *AASB 1022: Accounting for Extractive Industries* and *AASB 1026: Statement of Cash Flows* apply to this report.

5 **Accounting Standards** ASX will accept, for example, the use of International Accounting Standards for foreign entities. If the standards used do not address a topic, the Australian standard on that topic (if any) must be complied with.

== == == == ==

+ See chapter 19 for defined terms.



## Appendix A – Mining Tenements Held As At 31 March 2014

Tenement reference	Project	Holder	Nature of interest (note (2))	Interest at beginning of quarter	Interest at end of quarter	Notes
ML 26659	Nolans, NT	Arafura Rare Earths Pty Ltd	Mineral Lease	100%	100%	Application Lodged
EL 28498 EL 28473 EL 29509 EL 27337 EL 24741 EL 29503 EL 30160	Aileron–Reynolds, NT	Arafura Resources Ltd	Exploration Licence	100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% Nil 100%	Surrendered Application Lodged
EL 24548	Aileron–Reynolds, NT	Arafura Resources Ltd  Arafura Iron Pty Ltd	Exploration Licence  Non-iron rights  Iron rights	100%  100%  100%	100%  100%  100%	Ferrowest Ltd (FWL) has a right to acquire up to 60% of Arafura Iron Pty Ltd.  51% earned on delivery of the Indicated Resource. Arafura expects to agree the Resource report and transfer this interest to FWL in May.
EL 29701	Jervois, NT	Arafura Resources Ltd	Exploration Licence	100%	100%	Rox Resources Ltd has a right to acquire up to 70% of the base and precious metals rights

+ See chapter 19 for defined terms.





Tenement reference	Project	Holder	Nature of interest (note (2))	Interest at beginning of quarter	Interest at end of quarter	Notes
EL 10137 ML 24727 ML 27228 ML 25087 ML 25088 ML 25529 ML 27225 ML 27226 ML 27230	Frances Creek, NT	Territory Resources Ltd	Gold Rights Gold Rights Gold Rights Gold Rights Gold Rights Gold Rights Gold Rights Gold Rights	100% 100% 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%	Ark Mines Ltd has a right to acquire up to 70% of the gold rights  Applications Lodged for ML 27226 & ML 27230
ML 27227 ML 27229 ML 29930 MA 389		Frances Creek Pty Ltd	Gold Rights Gold Rights Gold Rights Gold Rights	100% 100% 100% 100%	100% 100% 100% 100%	Ark Mines Ltd has a right to acquire up to 70% of the gold rights  Application Lodged for ML 29930
ELR 116  ML 23839 EL 23237	Mt Porter, NT	Arafura Resources Ltd	Exploration Licence in Retention	100%	100%	Ark Mines Ltd has a right to acquire up to 70% of all mineral rights on the tenements, with an immediate right to mine ML 23839 subject to regulatory approvals
			Mineral Lease Exploration Licence	100% 100%	100% 100%	
MA 74 MCC 950 MCC 951 MCC 952 MCC 953	Kurinelli, NT	Arafura Resources Ltd	Mineral Authority	100%	100%	
			Mineral Claim Mineral Claim Mineral Claim Mineral Claim	100% 100% 100% 100%	100% 100% 100% 100%	
EL 25754	Pamela, NT	Arafura Resources Ltd	Exploration Licence	100%	100%	Application Lodged

+ See chapter 19 for defined terms.