

# Quarterly Activities Report and Appendix 5B

For the period  
ending  
31 December  
2011



## Highlights

- Exploration drilling delivers new rare earths discovery adjacent to Nolans Bore;
- Resource development drilling as part of the major drilling program confirms deep extensions to rare earths mineralisation at Nolans Bore;
- Demonstration Program advanced with the primary objective to confirm Arafura's Rare Earth production flow sheet at a larger scale to reduce Nolans Project scale up risk, optimise equipment selection and verify design data. 'Ore' from Nolans successfully beneficiated into a mineral concentrate and then processed through a facility with pre-leach and rare earth recovery circuits. Construction of sulphation and downstream processing demonstration facilities almost completed;
- Successful Testing was carried out on the HCl regeneration circuit of the proposed integrated pilot plant. Gypsum samples produced were sent to potential customers for evaluation;
- Production of Rare Earth Oxide (REO) samples for customer evaluation was progressed. Product quality is being aligned with target customer requirements;
- Good progress has been made with Nolans Project engineering studies;
- Marketing program has been ramped up with interaction with identified target Rare Earth Oxides product customers to establish the specific customer requirements and progress discussions for future sales contracts ;
- Appointment of corporate Advisor – Macquarie Capital (Australia) Limited to assist with procurement of financing for the completion of the Nolans Project Bankable Feasibility Study (BFS);
- Mr Ian Laurance AM stood down as non-executive Chairman but will remain a non-executive director. Current non-executive director Mr Chris Tonkin appointed as interim Chairman. Mr Ian Kowalick AM will take over as non-executive Chairman in January 2012.

## CORPORATE

Mr Ian Laurance AM stood down from the position of non-executive Chairman and will remain as a non-executive director. Current non-executive director Mr Chris Tonkin was appointed non-executive Chairman in an interim capacity. Mr Ian Kowalick AM will become non-executive Chairman during January 2012. The Board acknowledges Mr Laurance's contribution to Arafura in his time as non-executive Chairman.

During December, important discussions were held between the Chairman of East China Mineral Exploration and Development Bureau (ECE), Mr Shao Yi and Mr Ian Kowalick AM non-executive director (and Chairman designate) to better understand ECE's investment strategy in Arafura going forward. ECE indicated full support of the Board Refresh Strategy, support and encouragement for other strategic shareholders to become partners in investing in Arafura and ECE indicating that it will provide further support (subject to regulatory approvals), with other investors as Arafura raises capital to complete the Nolans Project bankable feasibility study (BFS).

The Company launched a non-renounceable rights issue for the purposes of raising capital to fund on-going work for the Nolans Project. Due to significant global volatility in global financial markets in November and a significant fall in the Arafura share price below the rights offer share price, the Arafura Board cancelled the Non-Renounceable Rights Issue despite solid support from existing Arafura shareholders.

Following on from the cancelled rights issue, in December Arafura engaged a key strategic corporate advisor, Macquarie Capital (Australia) Limited to assist in procuring funding to complete the Nolans Project BFS. Various alternative funding structures are being examined and reviewed. A global investor update presentation was released.

Discussions have been held and are in progress with target customers in Japan, Korea, Europe and the USA. An LOI has already been signed with ThyssenKrupp from Germany. A clearer understanding of specific customer product requirements and quality needs have been gained from this marketing program. Further development work has then been undertaken to generate Rare Earth Oxide products which are aligned with specific target customer requirements. This enables value creation from the Nolans Bore resource to be optimized.

In Early January 2012, Arafura produced Rare Earth Oxides samples for customer evaluation at ANSTO in Sydney on a pilot scale basis.

There is significant interest in the Rare Earth Oxide products Arafura has produced to date and expects to produce in the future. The Company is seeking to procure a portion for the Nolans Project Financing with the assistance of target customers.

## NOLANS PROJECT

### ***Nolans Bore Mine and Resource***

During the quarter, Arafura announced significant rare earth assays from 67 of 410 holes drilled into Nolans Bore during the 2011 campaign (13 October and 21 November).

Analysis of the very substantial data set generated by the 2011 program is now well advanced, leading to an updated estimate of Identified Mineral (JORC) Resources for Nolans Bore by the end of February 2012.

Of the 95 kilometres drilled into Nolans Bore (in 755 holes) over a 12 year period, 52 kilometres was completed during 2011. The average hole depth into the resource is about 135 metres. Almost 300 of the 755 holes have been drilled to a depth exceeding 150 metres. The deepest hole drilled is to a total depth of 492 metres (reaching 426 metres vertically below surface). The results of this hole (NBRD292) was reported on 13 October 2011, and contains the deepest mineralization encountered at Nolans Bore to date: a 60 metre-thick, steeply dipping lode grading 1.9% REO, intersected about 250 metres vertically below surface, and still open at depth. Mineralization remains open at depth across large parts of the deposit.

### ***Bankable Feasibility Study (BFS)***

Activity continued with significant progress being made on all the BFS work streams.

### **Engineering**

The engineering program continued with technology test programs to generate the process data required for engineering and estimating.

- The beneficiation test program has delivered a better understanding of how the differing mineralogy of the resource reacts to various beneficiation techniques.
- Flow sheet, mass balance and process design criteria development for beneficiation and downstream chemical processing has progressed considerably based on the latest technology program results.
- Plant layouts for the Whyalla Rare Earths Complex have been developed and will be the basis for updating capital costs for the infrastructure requirements for the plant.
- Capital and operating costs are being updated with the latest process and engineering information to be used for tracking and control of project costs.
- Bench scale test programs and planning for the construction of an Integrated Pilot Plant (IPP) for the Rare Earths Complex is continuing, with design and construction of the IPP expected to commence in Q1 2012.



## Technology

The Demonstration Plant program continued across three phases over the Quarter

- Material obtained from the “Big Bertha” drilling program in 2010 was successfully upgraded via a beneficiation circuit to produce a mineral concentrate t ALS Ammtec (Ammtec) in Perth, WA.
- The mineral concentrate was processed through Pre-leaching and rare earth recovery circuits at a new demonstration facility also ALS Ammtec. This demonstration plant successfully treated mineral concentrate to form an intermediate solid rare earth product ready for transport to ANSTO. The plant at Ammtec will be decommissioned during January 2012.
- Construction of the Sulphation and rare earths recovery demonstration plant at ANSTO Minerals, Lucas Heights, and N.S.W. was 90% complete at the end of the quarter. Commissioning scheduled to commence in January 2012. Present schedule is for completion is April 2012.

Successful testing was carried out on the HCl regeneration circuit of the proposed integrated pilot plant. Gypsum samples produced were sent to potential customers for evaluation;

Production of Rare Earth Oxide (REO) samples for customer evaluation was progressed. Product quality is being aligned with target customer requirements;

## Transport and Logistics

The Transport and Logistics invitation to tender was sent out to market in November 2011. Responses are due in January 2012 for evaluation.

Options within the strategic supply map are being explored and scrutinised with a view to maximising the local content opportunities, stimulate symbiotic developments and generate enhanced local stakeholder benefit. These activities will continue strongly during H1 2012.

## Environmental and Community

Additional lease area applications were lodged for Nolans Bore and the EIS study area increased to accommodate the increased mine site footprint. Engagement and communication with the Central Land Council and other local stakeholder groups continued with respect project updates, and feedback on aspects of significant local interest.

Ongoing baseline definition studies such as background radiation and dust sampling continue in Whyalla and preparation for Social Impact Assessment formal stakeholder engagement and additional seasonal land and marine studies are well advanced.

Stakeholder engagement activities were held in Whyalla during the SA Mining Conference in early December with an open office information session, and a display in the city shopping centre manned by senior Arafura personnel, in addition to a presentation to the local business community represented by Whyalla First.





*Pre-leach Circuit- ALS Ammtec*



*Pre-leach Circuit – ALS Ammtec*



*Sulphation and Downstream Facilities - ANSTO*



*Sulphation section of Demonstration Plant – ANSTO*



*Rare Earths Oxide samples for customer evaluation from 2011-2012 pilot-scale program*



*Solvent extraction circuit for REO production ANSTO*

## EXPLORATION & DEVELOPMENT

### ***Aileron-Reynolds Project (Rare Earths)***

Shallow RC drilling of buried geophysical target zones yielded encouraging rare earth mineralization in a number of adjacent drill holes. The best assay results were reported to the ASX on 10 October.

A tenement consolidation process has been completed on the Company’s land position in the Aileron district. Title to the Nolans Bore deposit is now secured under EL 28473, replacing SEL 23671.

A low-level airborne geophysical (magnetic and radiometric) survey was flown under contract by Aeroquest International over EL 27337 in early-December. Results from this survey will help focus ground-based exploration for rare earths, including geochemical prospecting and drilling, during the upcoming field season.

### ***Hammer Hill (Rare Earths, Base Metals)***

A second, smaller airborne geophysical survey was flown over EL 9725, part of the Hammer Hill Project. The survey was centred on the Holsteins rare earth prospect.

### ***Yalyirimbi (Iron)***

Ngalia Resources ("Ngalia") continued iron exploration on EL 24548. A program of 47 RC holes (approximately 2,000 metres), targeting two zones of shallow haematite mineralization, was completed. Ngalia reports that 90% of all holes drilled down-dip extensions to mineralization. Assay results are expected during the Next quarter.

### ***Mt Porter Gold Project***

Due to the present volatility in global equity markets, Global Mineral Resources Limited ("Global") as announced to the ASX on 18 November 2011 has withdrawn its IPO document from the ASX.

As such the executed agreement for the sale of Arafura's Mt Porter gold assets between Global and Arafura has now lapsed.



## Appendix 5B

### Mining exploration entity quarterly report

Introduced 1/7/96. Origin: Appendix 8. Amended 1/7/97, 1/7/98, 30/9/2001, 01/06/10.

Name of entity

ARAFURA RESOURCES LIMITED

ABN

22 080 933 455

Quarter ended ("current quarter")

31 December 2011

#### Consolidated statement of cash flows

|   |  | Current quarter<br>\$A'000 | Year to date (6 months)<br>\$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                  | (11,143)                   | (21,053)                           |
|   | (b) development  | (7,423)                    | (12,820)                           |
|   | (c) production   | -                          | -                                  |
|   | (d) administration   | (1,904)                    | (3,321)                            |
| 1.3   | Dividends received   | -                          | -                                  |
| 1.4   | Interest and other items of a similar nature received      | 693                        | 2,378                              |
| 1.5   | Interest and other costs of finance paid                   | (1)                        | (2)                                |
| 1.6   | Income taxes paid  | -                          | -                                  |
| 1.7   | Other (provide details if material)                        | -                          | -                                  |
|   |  | (19,778)                   | (34,818)                           |
| <b>Net Operating Cash Flows</b>                   |  |                            |                                    |
| <b>Cash flows related to investing activities</b> |  |                            |                                    |
| 1.8   | Payment for purchases of: (a) prospects                    | -                          | -                                  |
|   | (b) equity investments                                     | -                          | -                                  |
|   | (c) other fixed assets                                     | (10)                       | (62)                               |
| 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)                        | -                          | -                                  |
|   |  | (10)                       | (62)                               |
| <b>Net investing cash flows</b>                   |  |                            |                                    |
| 1.13  | Total operating and investing cash flows (carried forward) | (19,788)                   | (34,880)                           |



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RARE EARTHS  
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FOR USERS  
WORLDWIDE

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|   |  |          |          |
|---|--|----------|----------|
| 1.13  | Total operating and investing cash flows (brought forward) | (19,788) | (34,880) |
| <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>       |  | (19,788) | (34,880) |
| 1.20  | Cash at beginning of quarter/year to date                  | 55,065   | 70,224   |
| 1.21  | Exchange rate adjustments to item 1.20                     | 28       | (39)     |
| 1.22  | <b>Cash at end of quarter</b>                              | 35,305   | 35,305   |

**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<br>\$A'000 |
|------|--|----------------------------|
| 1.23 | Aggregate amount of payments to the parties included in item 1.2 | (498)                      |
| 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

Directors fees, salaries & superannuation

**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



### Financing facilities available

Add notes as necessary for an understanding of the position

|                                 | Amount available<br>\$A'000 | Amount used<br>\$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 | 7,719         |
| 4.2 Development                | 11,181        |
| 4.3 Production                 | -             |
| 4.4 Administration             | 2,086         |
| <b>Total</b>                   | <b>20,986</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<br>\$A'000 | Previous quarter<br>\$A'000 |
|--|----------------------------|-----------------------------|
| 5.1 Cash on hand and at bank                     | 15,114                     | 13,065                      |
| 5.2 Deposits at call                             | 20,191                     | 42,000                      |
| 5.3 Bank overdraft                               | -                          | -                           |
| 5.4 Other (provide details)                      | -                          | -                           |
| <b>Total: cash at end of quarter (item 1.22)</b> | <b>35,305</b>              | <b>55,065</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 |                               |                                  |                            |
| 6.2 | Interests in mining tenements acquired or increased           | EL 28473<br>Lease             | Nil                              | 99 blocks                  |



### 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><br><i>(description)</i>   |                      |               |                                       |  |
| 7.2 Changes during quarter<br>(a) Increases through issues<br>(b) Decreases through returns of capital, buy-backs, redemptions |                      |               |                                       |  |
| 7.3 <b>+Ordinary securities</b>  | 367,980,342          | 367,980,342   |                                       |  |
| 7.4 Changes during quarter<br>(a) Increases through issues<br>(b) Decreases through returns of capital, buy-backs              |                      |               |                                       |  |
| 7.5 <b>+Convertible debt securities</b><br><i>(description)</i>  |                      |               |                                       |  |
| 7.6 Changes during quarter<br>(a) Increases through issues<br>(b) Decreases through securities matured, converted              |                      |               |                                       |  |
| 7.7 <b>Options</b>   |                      |               | <i>Exercise price</i>                 | <i>Expiry date</i>                       |
| ARUAI  | 2,965,000            | -             | \$0.85                                | 31-12-13                                 |
| ARUAO  | 7,630,000            | -             | \$1.19                                | 31-12-12                                 |
| ARUAK  | 850,000              | -             | \$0.75                                | 20-07-13                                 |
| ARUAQ  | 750,000              | -             | \$0.98                                | 31-08-13                                 |
| ARUAY  | 750,000              | -             | \$1.08                                | 14-09-13                                 |
| ARUAD  | 1,100,000            | -             | \$1.54                                | 26-11-13                                 |
| ARUAU  | 1,400,000            | -             | \$0.96                                | 16-07-14                                 |
| ARUAM  | 900,000              | -             | \$0.81                                | 31-12-14                                 |
| ARUAW  | 7,150,000            | -             | \$0.70                                | 24-11-14                                 |
| 7.8 Issued during quarter  | 900,000<br>7,150,000 | -<br>-        | \$0.81<br>\$0.70                      | 31-12-14<br>24-11-14                     |
| 7.9 Exercised during quarter   |                      |               |                                       |  |



|      |  |  |  |  |  |
|------|--|--|--|--|--|
| 7.10 | Expired during quarter                         |  |  |  |  |
| 7.11 | <b>Debentures</b><br><i>(totals only)</i>      |  |  |  |  |
| 7.12 | <b>Unsecured notes</b><br><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: 31/01/12  
 (Director/Company secretary)

Print name: Gavin Lockyer  
 .....

**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.

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