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Metal Events
5th International Rare Earths Conference

18 November 2009

Disclaimer

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The information in this release that relates to exploration results and geological interpretation has been compiled by Mr Richard Brescianini BSc (Hons), and the information in this release that relates to metallurgical results and interpretation has been compiled by Mr Steve Mackowski BAppSc, both full-time employees of Arafura Resources. Mr Brescianini is a Member of the Australian Institute of Geoscientists and he has sufficient experience with the style of mineralisation being reported to qualify as a Competent Person as defined in the 2004 Edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code)” for reporting the exploration results. Mr Brescianini consents to the inclusion in this report of the contained technical information in the form and context in which it appears.

Mr Mackowski is a Fellow of the Australian Institute of Mining and Metallurgy and he has sufficient experience with the style of mineralisation being reported to qualify as a Competent Person as defined in the 2004 Edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code)” for reporting these metallurgical results. Mr Mackowski consents to the inclusion in this report of the contained technical information in the form and context in which it appears.

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Mission statement

Arafura's principal aim is to build a globally competitive rare earths production and marketing business.

We will do this by:

- developing the Nolans Rare Earths-Phosphate-Uranium Project
- pursuing long-term strategic growth opportunities in rare earths through exploration success and strategic partnerships.

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Corporate structure

As at 18 November 2009

Shares on issue

259.2 million

Market capitalisation (ASX:ARU closing price @ 27 October 2009)

@ A$0.84 = ~A$218 million

Cash (@ 30 September 2009)

A$19.1 million

Top shareholders

ANZ Nominees	36.6%
ECE[1]	24.9%
Board & management	3.6%
Citicorp Nominees	2.1%

1. East China Mineral Exploration & Development Bureau

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2009 – key milestones

In the past year, Arafura Resources has achieved a number of key milestones.

- Established strategic relationship with Chinese investor, ECE[1]
  [1]East China Mineral Exploration & Development Bureau
- Received A$22.94 million investment from ECE
- Produced commercial grade rare earth carbonate from pre-production plant
- Improved the quality and recovery of phosphoric acid
- Secured A$8 million investment agreement with ECE for development of Jervois Project
- Identified significant capital and operating cost reductions since Nolans pre-feasibility study
- Increased rare earths recovery to 86% (previously 80%)
- Enhanced Nolans Project value with 63% increase in identified resources (now 30.3 million tonnes)
- Significant increase in share price

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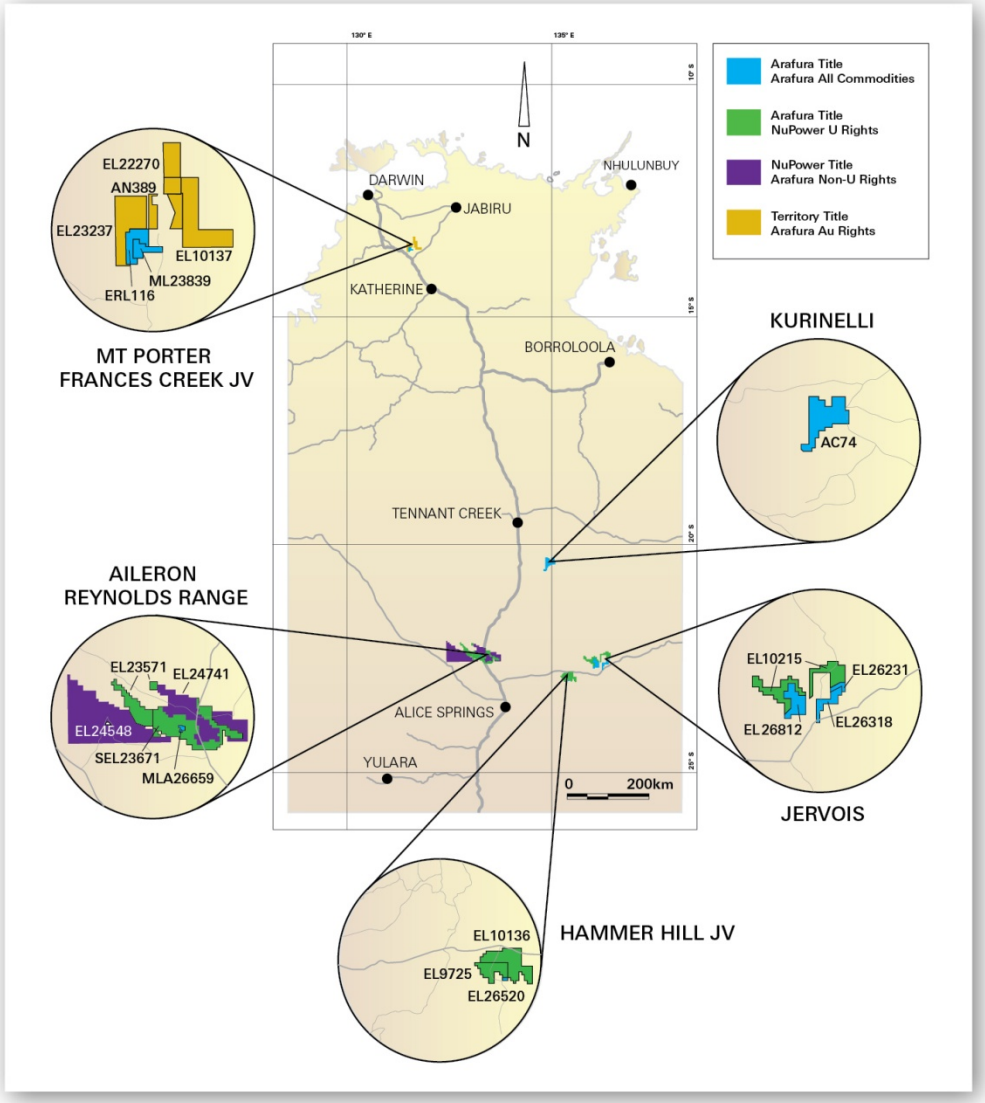
Portfolio



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Rare Earths & Phosphate

Rare earth applications

ENERGY PRODUCTION	ENERGY REDUCTION	ENERGY EFFICIENCY	LIFESTYLE
			
Petroleum Refining — La	UV Filters in Glass — Ce	New Generation Vehicles — Nd Sm	Colour Screen LCDs/PDPs — Eu Tb Y
High-Powered Electric Motors — Nd Dy Tb	Reducing Fuel Consumption — Nd	Rechargeable Batteries — La	Components to Hardware — Nd
New Generation Vehicles — La	Lighter Vehicles - Improved performance — Dy	Energy-Efficient Lighting — Pr Eu	Medical Services — Nd Gd
			Medical Services — Ce

La (Lanthanum) **Nd** (Neodymium) **Dy** (Dysprosium) **Tb** (Terbium)
Ce (Cerium) **Sm** (Samarium) **Pr** (Praseodymium) **Eu** (Europium)
Y (Yttrium) **Gd** (Gadolinium)

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Nolans rare earths mix

The following table shows the mix of rare earths at Nolans, placing its current value at US$10 per kilogram.

	RARE EARTH	REO Price 2009[3] (US$/kg)	NOLANS CONTENT
LIGHT REO	Lanthanum	$7.10	20.0%
	Cerium	$4.55	48.2%
	Praseodymium	$14.25	5.9%
	Neodymium	**$14.25**	**21.5%**
HEAVY REO	Samarium	$4.50	2.4%
	Europium	**$430.00**	**0.41%**
	Gadolinium	$6.75	1.0%
	Terbium	$350.00	0.08%
	Dysprosium	$90.00	0.34%
	Other	Unvalued	0.17%

[3] 3rd Quarter September 2009 - Metals Pages

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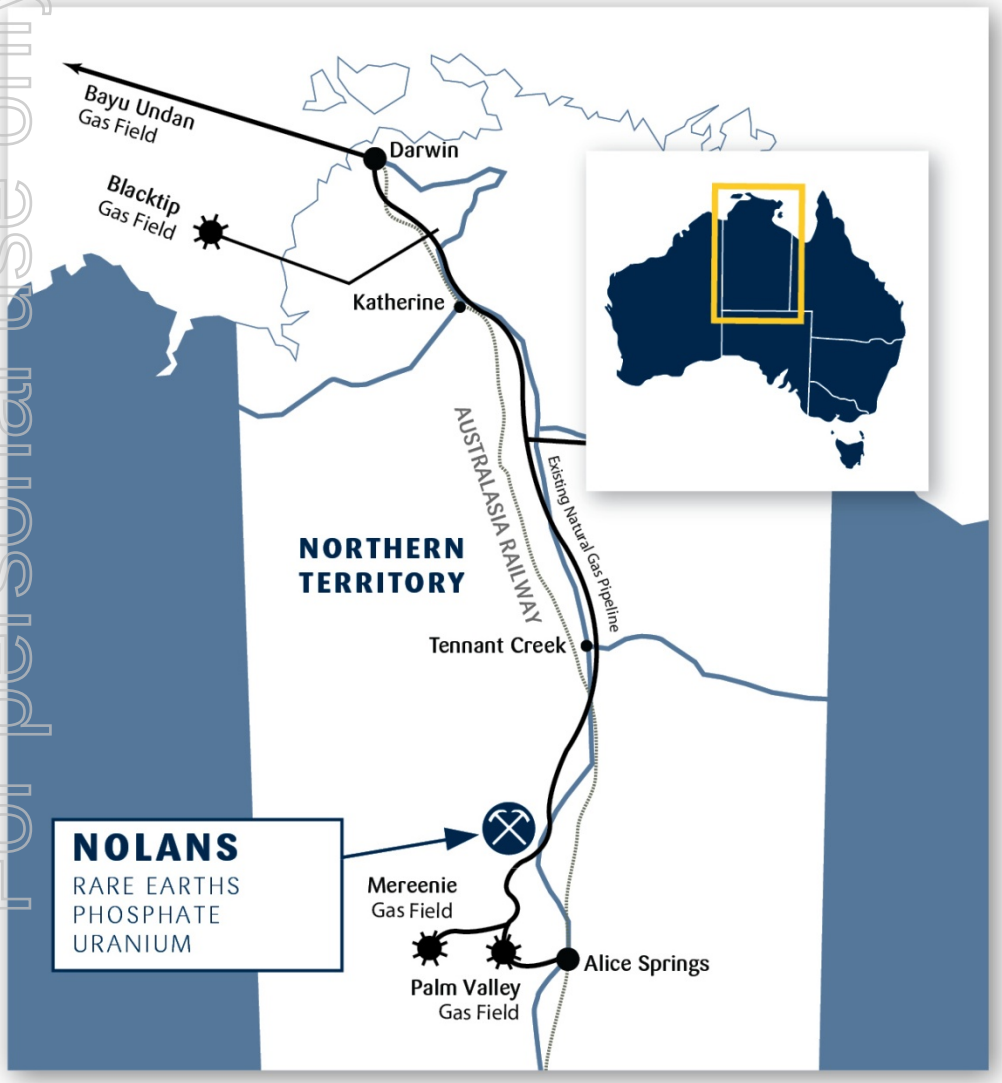
Nolans Project

Location



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A globally significant resource

Total resources for Nolans Project

RESOURCES	TONNES[1] (million)	RARE EARTHS REO %	PHOSPHATE P_2O_5 %	URANIUM U_3O_8 lb/t
Measured	5.1	3.2	13.5	0.57
Indicated	12.3	2.8	13.4	0.43
Inferred	12.8	2.6	12.2	0.40
TOTAL	30.3	2.8	12.9	0.44
CONTAINED METAL		**848,000 t**	**3.9 Mt**	**13.3 Mlb**

1. Using 1% REE cut-off grade

- **Ample scope to grow resource base if needed**
- **Estimated mine life 20+ years**

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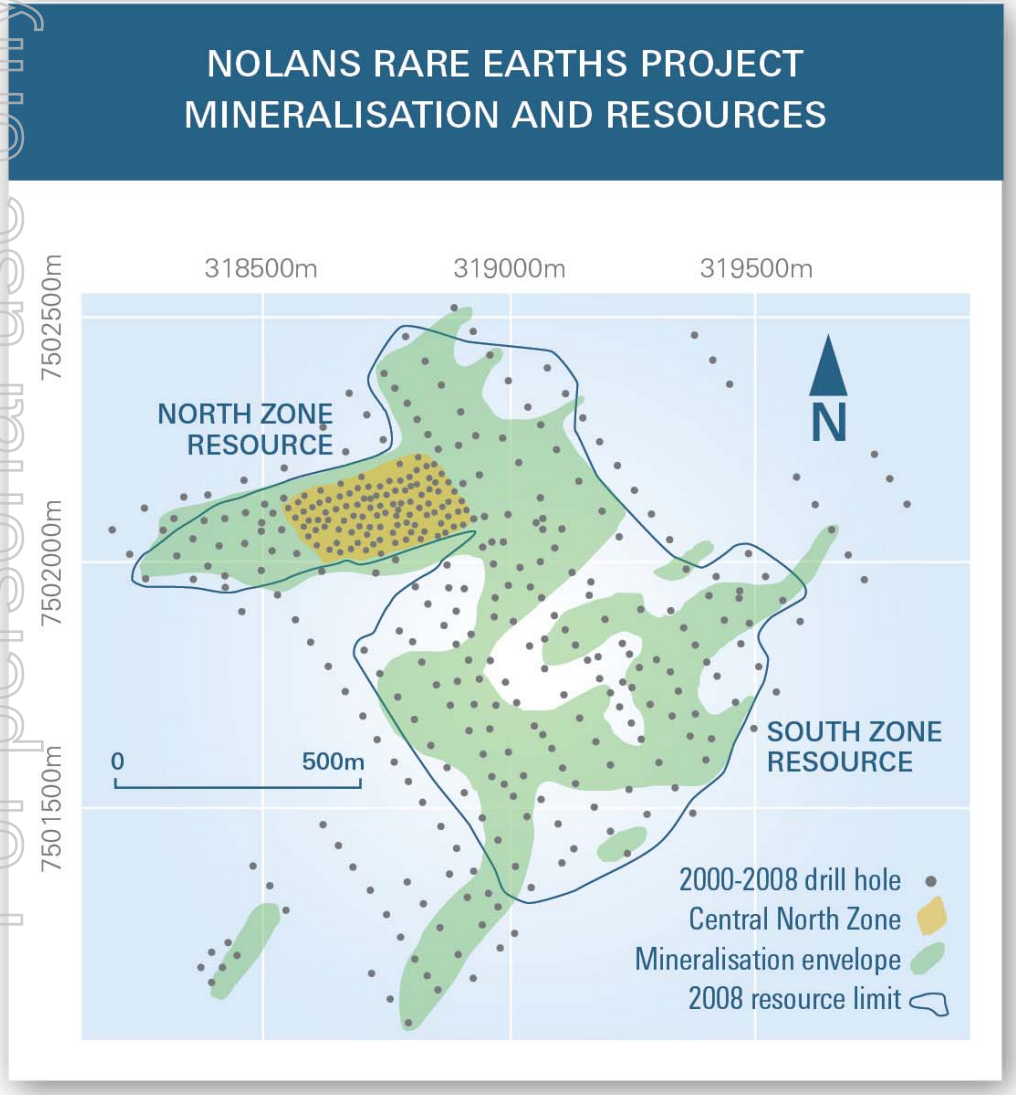
Mineralisation



- **Mineralisation present over 150 hectares**
- **Exposed at surface**
- **Open at depth**

NBDH-18 massive apatite mineralisation
18m @6.2% REO, 29.9% P_2O_5, 1.2 lb/t U_3O_8

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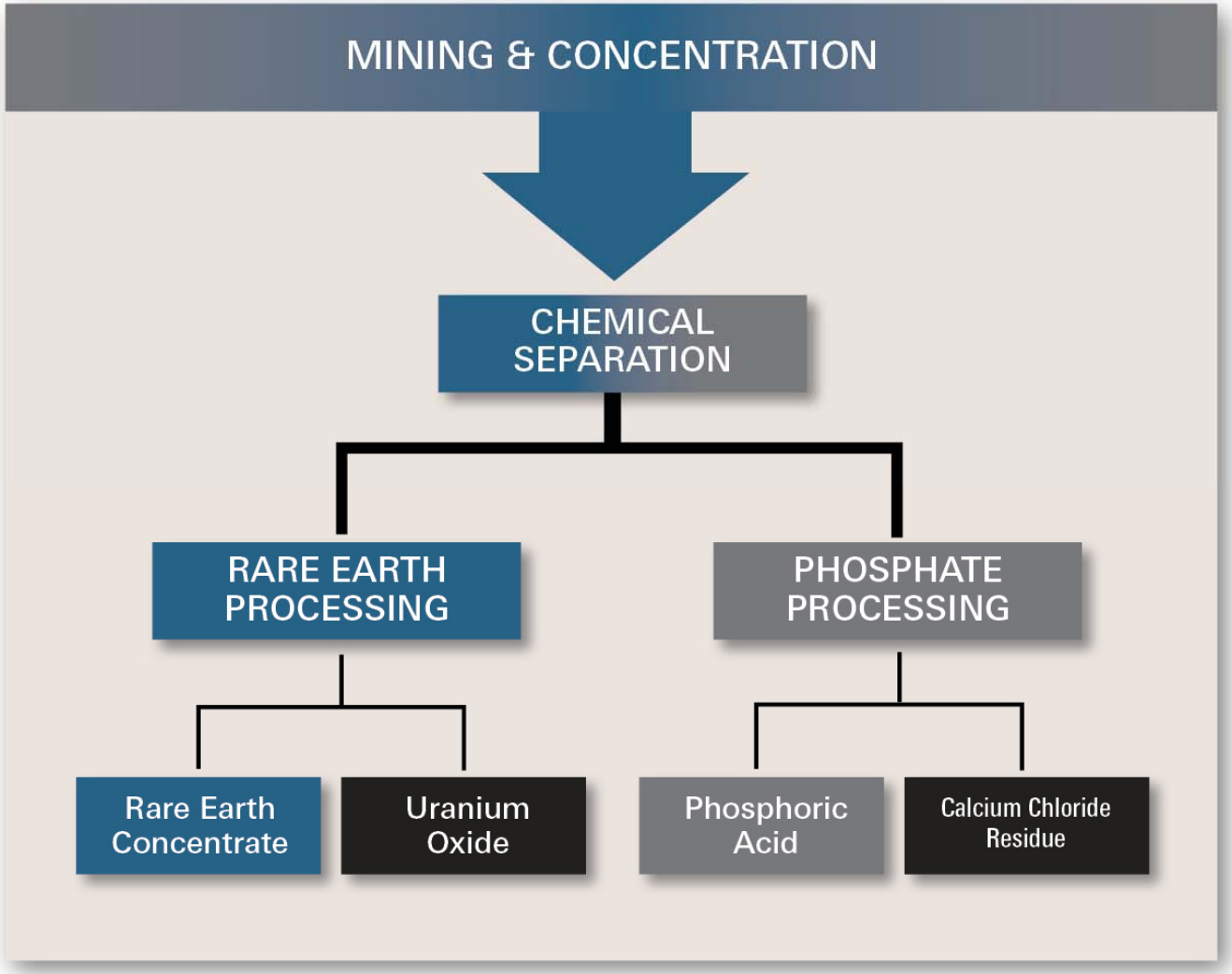
Mineralisation (cont)

- Apatite-hosted rare earths mineralisation at Nolans is distributed over an area of approximately 150 hectares. The deposit outcrops in several localities, and is therefore conducive to open pit mining. Mineralisation occurs predominantly in a series of sub-parallel tabular zones of massive fluorapatite, or as a stockwork of fluorapatite ± allanite ± carbonate veins and associated calc-silicate alteration. The apatite zones dip steeply to the NW, are up to about 75 metres thick, and extend laterally and at depth over 10's to several 100's of metres. No attempt has been made to close the mineralization off at depth.
- Consistently higher grades and greatest widths of mineralisation are observed in the North Zone of the deposit. However drilling during 2008 intersected a new zone of high-grade mineralisation in the Central Zone of the deposit, under several metres of alluvium.
- **The best results from this new Central Zone include:**
- **20 m @ 6.3% REO, 28.5% P_2O_5 and 1.1 lb/t U_3O_8;**
- **54 m @ 5.0% REO, 25.4% P_2O_5 and 0.7 lb/t U_3O_8; and**
- **72 m @ 4.0% REO, 20.8% P_2O_5 and 0.6 lb/t U_3O_8.**
- The photo on the right of the previous slide shows a typical example of massive apatite mineralization from the North Zone Resource.

Flow sheet



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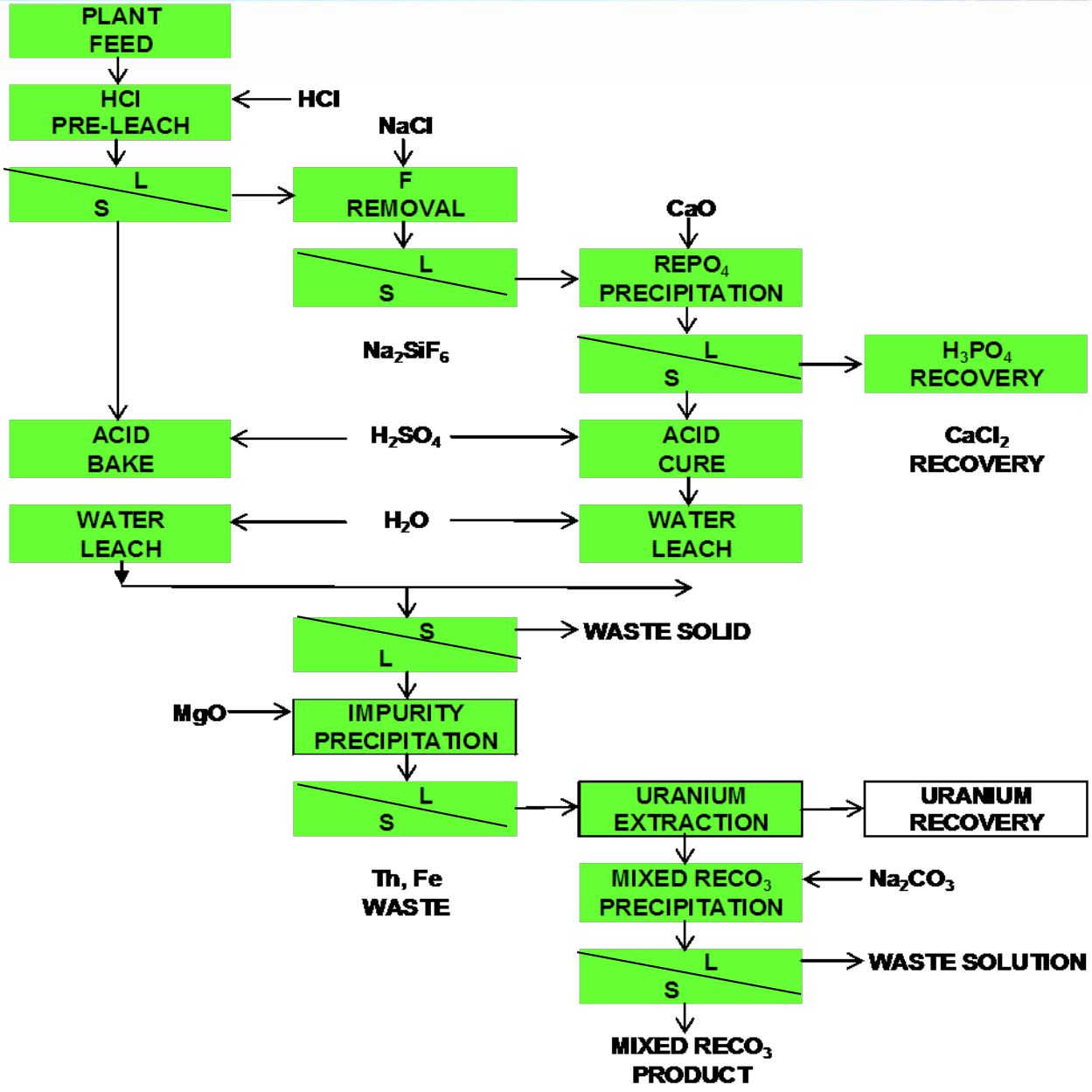
Flow sheet (detailed)



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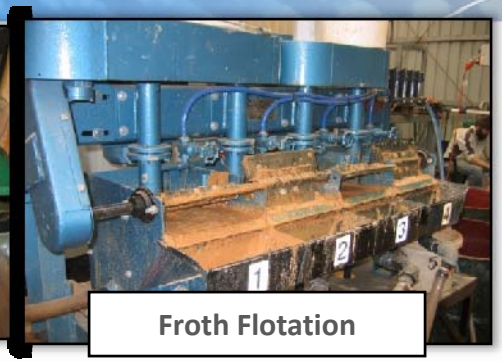
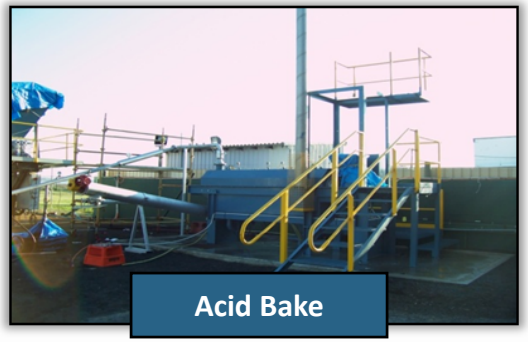
Pilot plant

Heavy Media Separation



Froth Flotation

Rare Earth Processing



Acid Bake

Phosphoric Acid SX

Rare Earth Carbonate

Uranium

Phosphoric Acid & $CaCl_2$

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Recoveries have improved

Updated recovery rates are:

	BFS RECOVERY	PREVIOUS RESULTS
Heavy media separation	90%	90%
Rare Earths to carbonate	86%	80%
Phosphoric Acid (technical grade)	85%	80%
Uranium U_3O_8	80%*	80%

* BFS recovery for uranium awaits validation and while it may improve it will not have a major impact on project economics compared to the impact of rare earths and phosphoric acid recovery

Consequently the average recovery from mine resources to saleable product for Nolans is:

Rare Earths to carbonate	77.5%
Phosphoric Acid to technical grade	76.5%
Uranium U_3O_8	72%

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CAPEX & OPEX considerations

BFS has lowered operating costs

- Hydrochloric acid consumption down 30%
- Sulphuric acid consumption down 20%
- Replaced 50% of caustic with lime, reducing costs

Capital savings identified

- Plant can be modularised, shipped and then assembled in Australia
- 4 million labour hours associated with overseas modular plant
- Capital costs will be refined in 2010

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Valuation

Project valuation (estimated costs)	US$ million
Capital Cost	$420m
Sales Revenue	
Rare Earths separated products @ US$10,000 per tonne	$200m
Phosphoric Acid @ US$750 per tonne	$60m
Calcium Chloride @ US$100 per tonne	$40m
Uranium @ US$50 per pound	$15m
Total Revenue	**$315m**
Annual Operating Costs	**$150m**
EBITDA	**$165m**
Net Present Value @10% after tax and capital payback	**$1.1 billion**
Capital Payback	**6 years**
Production output per annum of: 20,000 tonnes of REO (@ 86% recovery) 80,000 tonnes of P_2O_5 (@ 85% recovery) 330,000 pounds of U_3O_8 (@ 80% recovery) 400,000 tonnes of $CaCl_2$ (as residue)	

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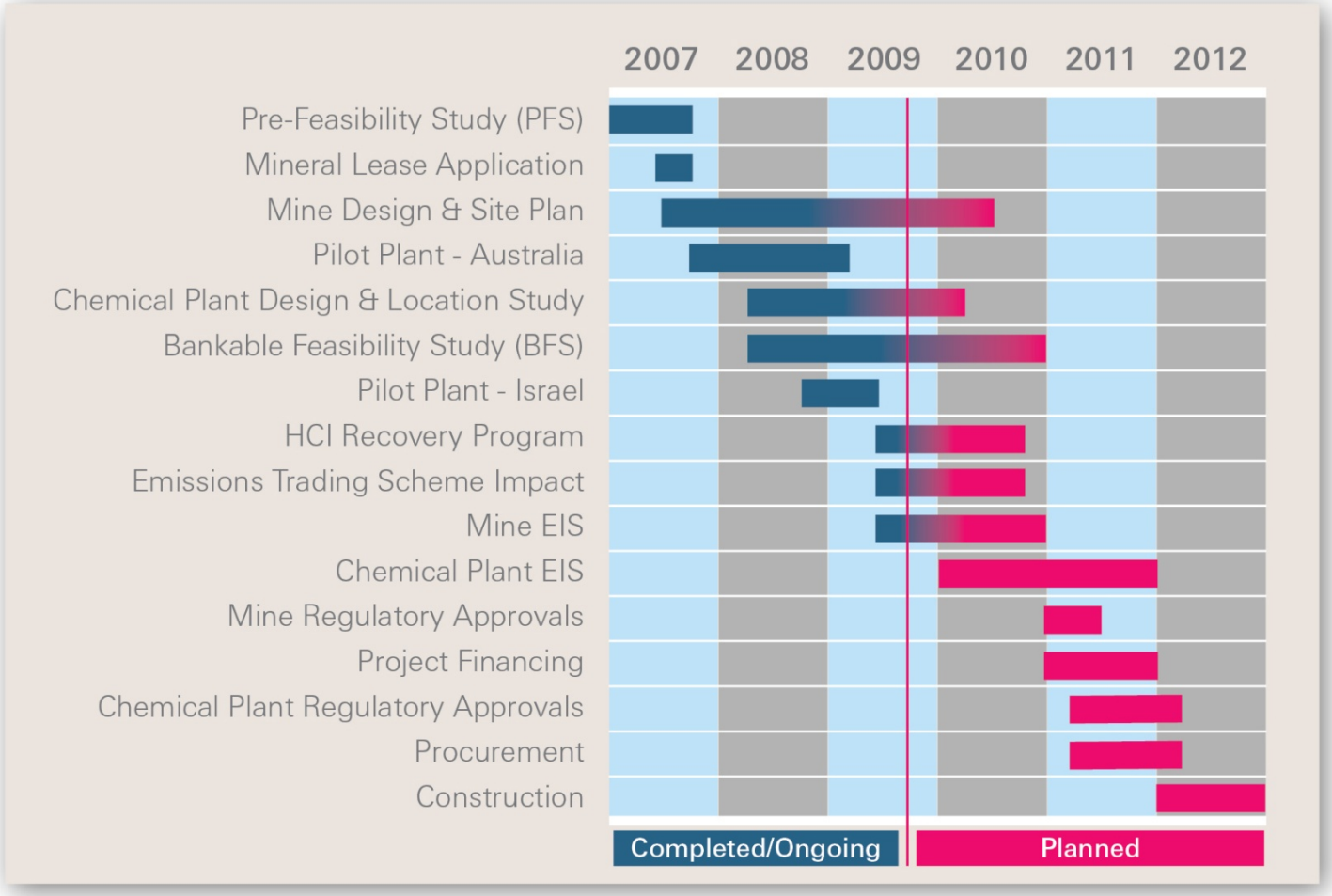
Development timeline – looking forward

Project development timeline



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Moving forward – the next steps

Processing Facility

- Actively seeking strategic partners for financing, construction and the operations of processing facility
- Criteria for strategic partners
  - Reputable organisations in their respective industries
  - Technology leaders and willing to embrace emerging technologies
  - Alignment of strategic objectives with Arafura
- Participation in the form of equity or debt before....
- Access to offtake for rare earth products and associated by-products.

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Thank You