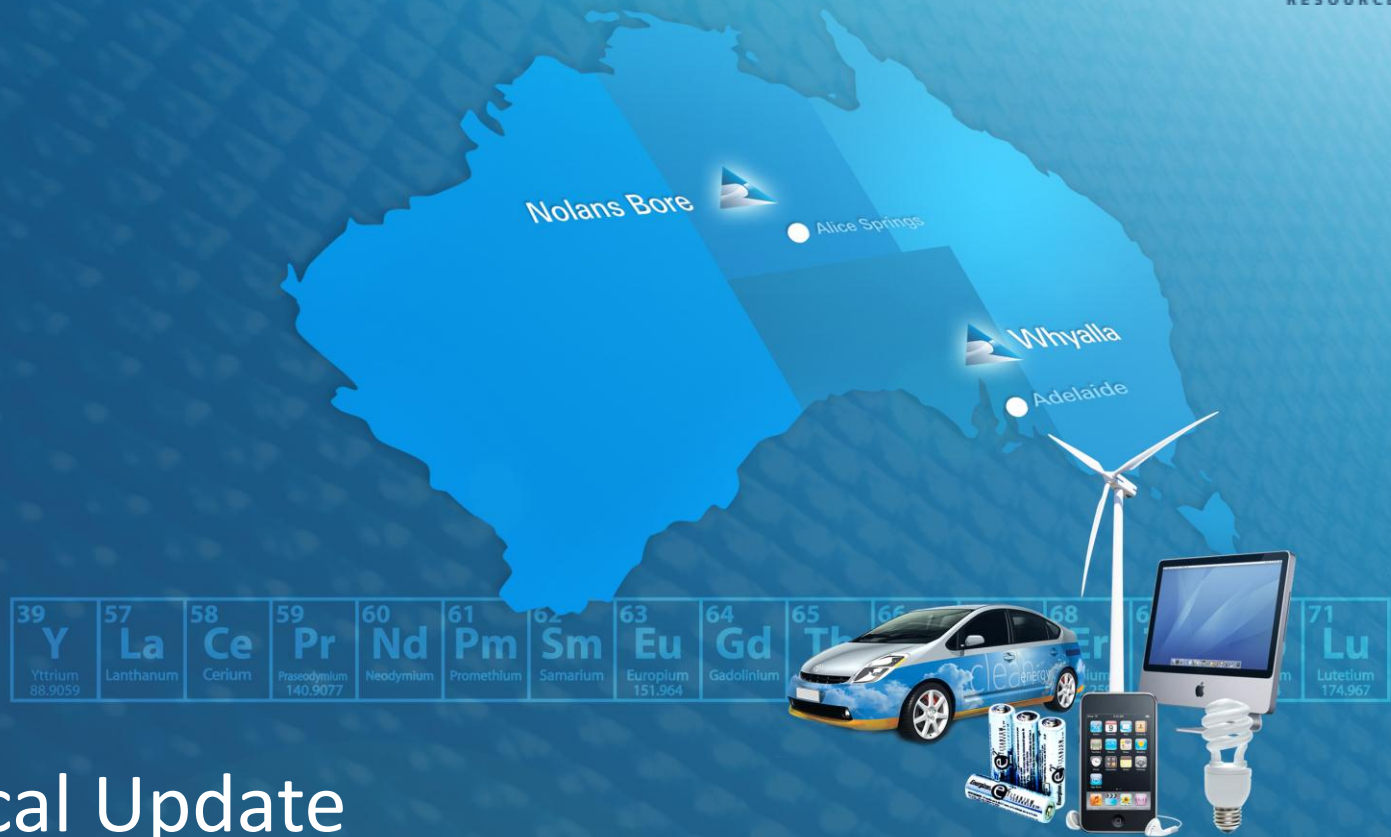


ARAFURA ADDING VALUE IN AUSTRALIA
TO PRODUCE RARE EARTHS
FOR USERS WORLDWIDE



Technical Update

Steve Ward – MD & CEO

Gavin Lockyer – CFO & Company Secretary

Richard Brescianini – GM Exploration & Development

Neil Graham – GM Operations & Technology

September 2011

Important Notice

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The information in this presentation that relates to exploration results, mineral resources or ore reserves is based on information compiled by Mr Richard Brescianini BSc(Hons). Mr Brescianini is a Member of the Australian Institute of Geoscientists and he has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking 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)”. Mr Brescianini consents to the inclusion in this presentation of the matters based on his information in the form and context in which it appears.

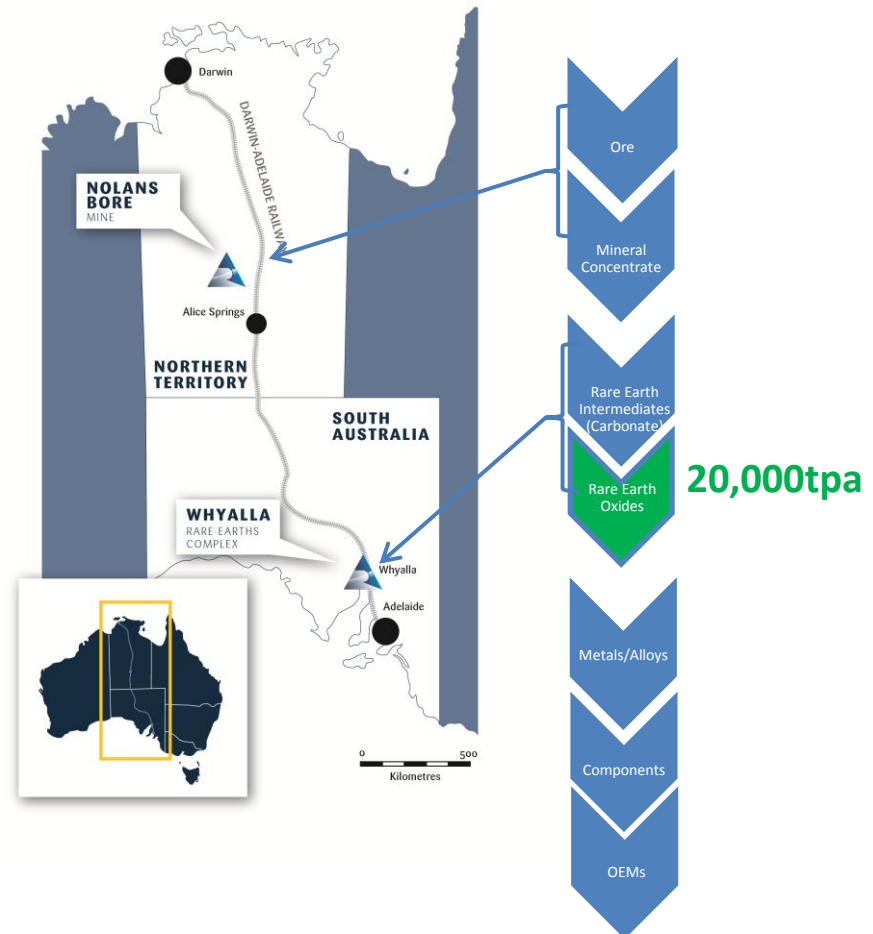
Mr Brescianini is a full-time employee of Arafura Resources.

Introduction to Arafura

Corporate Summary

- Australian Public Company – formed 1997
- Listed on ASX in 2003 (code ARU)
- Nolans Project for Rare Earths
- Own technology developed
- **Bankable Feasibility Study due H2 2012**
- **Project Financing sought by end 2012**
- **First production by end 2014 subject to BFS**

Business Model - Adding Value in Australia



As at 28 September 2011

Capital

368 million shares
16.5 million Board/Employee options

Market capitalisation

@ A\$0.61 = ~A\$224 million

Top shareholders

JP Morgan Nominees ¹	31.5%
ECE ²	17.51%
Board & Management	2.5%

Debt - zero

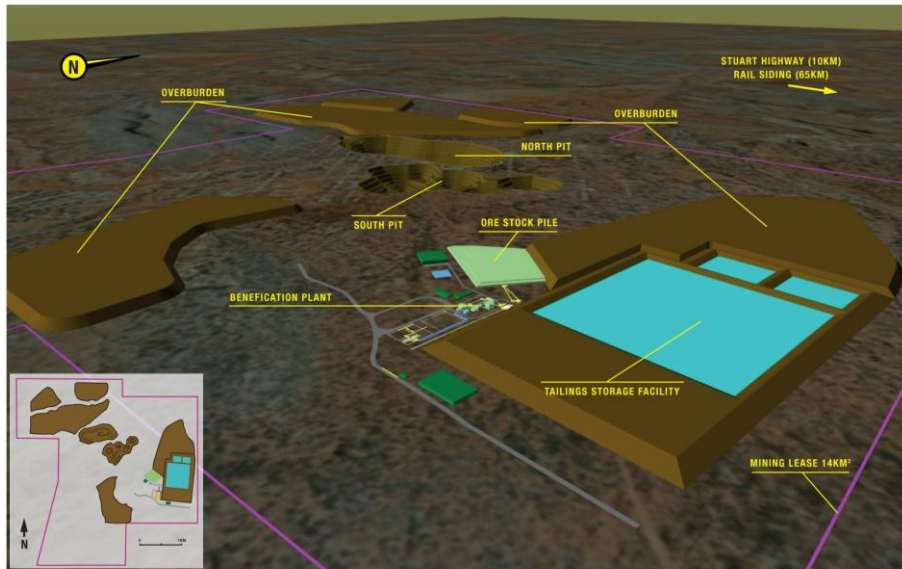
Cash A\$60 million (31 August 2011)

1. Substantial German-based shareholding amongst many shareholders
2. East China Mineral Exploration & Development Bureau

Nolans Project: world-scale



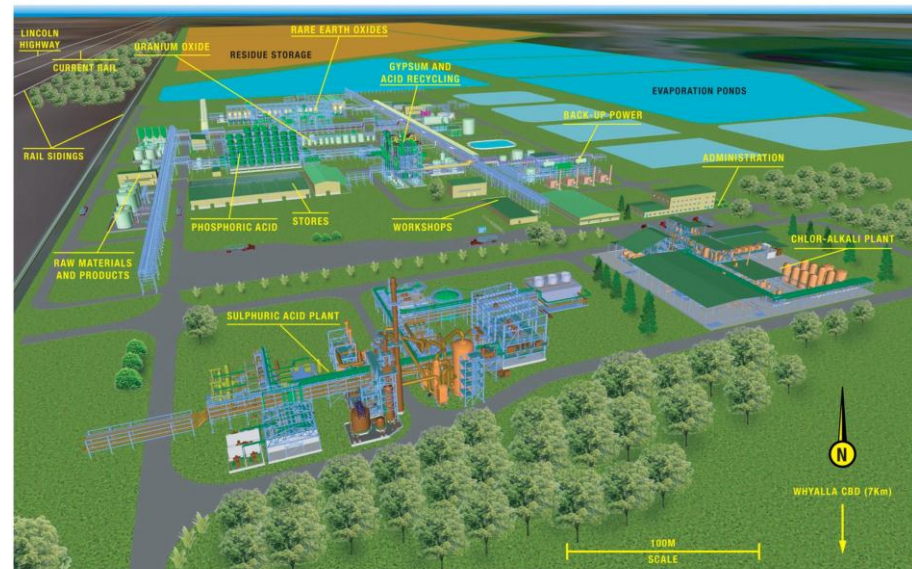
NOLANS BORE MINE LAYOUT ARTIST'S IMPRESSION



Version 1 - August 2010



ARAFURA RARE EARTHS COMPLEX ARTIST'S IMPRESSION



Version 1 - August 2010

The Nolans Bore Mine and its supporting infrastructure will act as a catalyst for business opportunities throughout Central Australia

The Whyalla Rare Earths Complex will be a very substantial chemical processing operation by Australian standards

- Geochemistry of each rare earth deposit is different requiring in-depth understanding;
- Unique separation technology must be developed for each deposit;
- Production is high technology and capital intensive

Arafura's approach to technical matters

Our approach has been to go the 'extra mile' for success.....

- Technology developed in Australia – independence from others;
- Utilized world class experts to assist;
- Intellectual property protected under patent where possible;
- Steady and targeted build up of in-house expertise with continuity;
- Progressive scale up from lab, semi pilot, pilot to demonstration – provides robust engineering design data, EH&S information etc.;
- Initial focus on defining, proving, EH&S and regulatory compliance, and sustainability; followed by optimization through de-risking, simplification, creating value and enhancing product quality;
- Comprehensive drilling, interpretation and metallurgical program for Nolans Bore resource – approximately 100 km of drilling to date

Continuous improvement approach to technology

WORK STREAM	PFS	OCT 10 UPDATE	DEVELOPED	TARGETING
Concentrate grade	4%	4%	5%	10%+
Pre-Leach	Complex	Complex	Simplified to be demonstrated	Simplified
Rare Earth sulphation	Complex	Complex	Simplified to be demonstrated	Simplified
Uranium	ADU/U ₃ O ₈	ADU/U ₃ O ₈	Simplified to be demonstrated	UO ₄
Phosphate	Phosphoric acid	Phosphoric acid	Simplified to be demonstrated	Simpler solid phosphate
Calcium chloride	CaCl ₂	CaCl ₂	CaSO ₄ / HCl	CaSO ₄ / HCl
Rare Earth Oxides	20,000tpa	20,000tpa	20,000tpa	20,000tpa



Nolans BFS and project financing timeline

Technology Programs currently underway

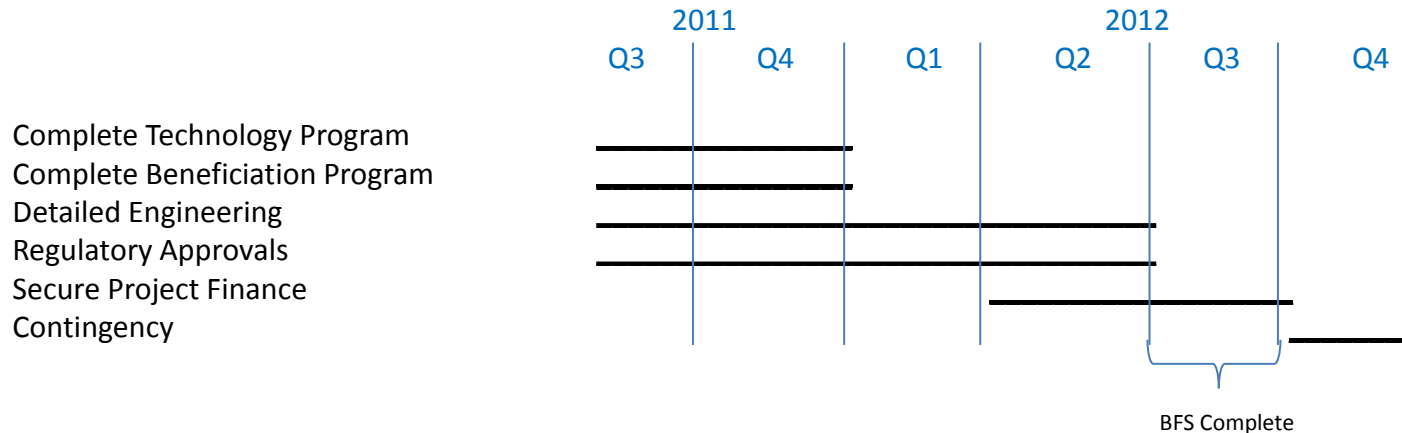
- Rare earth oxide purification and separation to customer specifications;
- Process simplification and optimization;
- Rare earths sulphation demonstration plant

Beneficiation Enhancement Program currently underway

- Refined magnetics;
- Refined floatation;
- Refined heavy media

Environmental & Regulatory

- All work well advanced at both sites

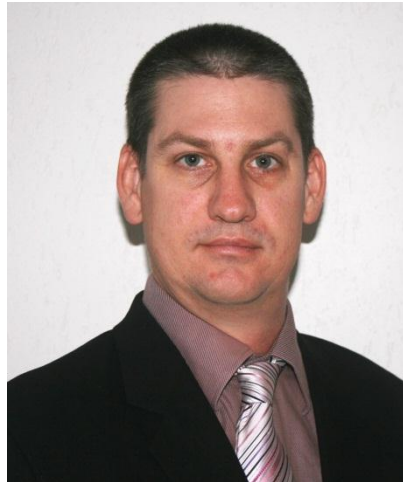


Nolans Bore Resource

Nolans Bore: Arafura's core expert team



Richard Brescianini
GM Exploration & Development
Joined ARU in 2007
Ex-NT Geological Survey & BHP



Kelvin Hussey
Principal Geologist
Joined ARU in 2006
Ex-NT Geological Survey



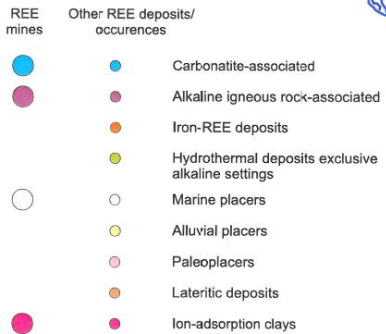
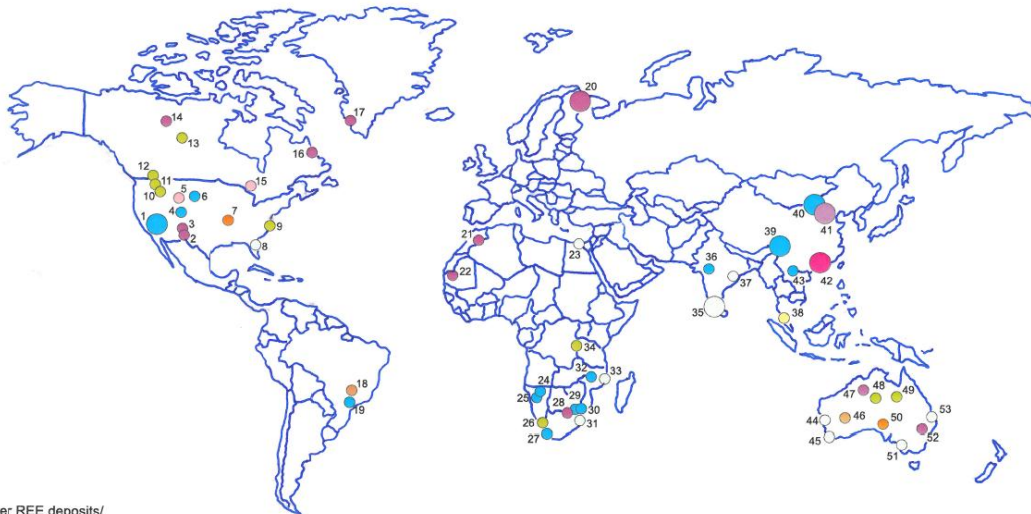
Rolf Hallenstein
Senior Geologist
Joined ARU in 2007
Ex-RioTinto



John Goulevitch
Geological Consultant – Exploremin
Identified Nolans Bore as an REE target in 1999
Consulting to ARU since 1996

Arafura's core team was augmented
by 9 contract geologists during 2011

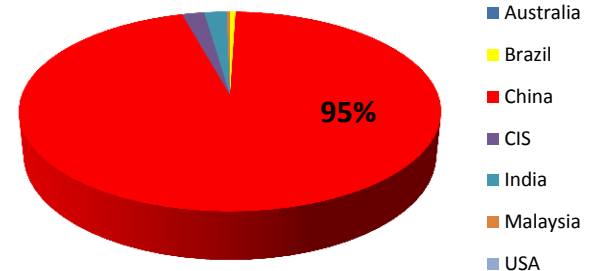
Global distribution of rare earth deposits



Primary deposits
Secondary deposits

- | | | |
|--------------------------------|---|------------------------------|
| 1 Mountain Pass, USA | 19 Barro do Itapirapua, Brazil | 37 Orissa, India |
| 2 Pajarito Mountain, USA | 20 Lovozero and Khibina complexes, Russia | 38 Perak, Malaysia |
| 3 Gallinas Mountains, USA | 21 Tamazeght complex, Morocco | 39 Maoniuping/Dalucao, China |
| 4 Iron Hill, USA | 22 Bou Naga, Mauritania | 40 Bayan Obo, China |
| 5 Bald Mountain, USA | 23 Nile Delta and Rosetta, Egypt | 41 Weishan, China |
| 6 Bear Lodge, USA | 24 Etanero, Namibia | 42 Xunwu/Longnan, China |
| 7 Pea Ridge, USA | 25 Okorusu, Namibia | 43 Dong Pao, Vietnam |
| 8 Green Cove Springs, USA | 26 Steenkampskraal, South Africa | 44 Eneabba, Australia |
| 9 Carolina placers, USA | 27 Zandkopsdrift, South Africa | 45 Jangardup, Australia |
| 10 Lemhi Pass, USA | 28 Plinesberg Complex, South Africa | 46 Mount Weld, Australia |
| 11 Snowbird, USA | 29 Naboomspruit, South Africa | 47 Brockman, Australia |
| 12 Rock Canyon Creek, Canada | 30 Palabora, South Africa | 48 Nolans Bore, Australia |
| 13 Hoidas Lake, Canada | 31 Richards Bay, South Africa | 49 Mary Kathleen, Australia |
| 14 Thor Lake, Canada | 32 Kangankunde, Malawi | 50 Olympic Dam, Australia |
| 15 Elliot Lake, Canada | 33 Congolone, Mozambique | 51 WIM 150, Australia |
| 16 Strange Lake, Canada | 34 Karonge, Burundi | 52 Dubbo Zirconia, Australia |
| 17 Ilmausaq complex, Greenland | 35 Chavara, India | 53 Fraser Island, Australia |
| 18 Araxa, Brazil | 36 Amba Dongar, India | |

Global REO Production 2009



Global REO Reserves 2009

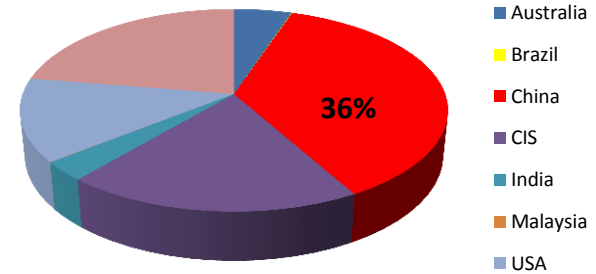


Figure 1 from *Rare Earth Elements*. British Geological Survey Commodity Profile, June 2010

Nolans Bore: background

Vein deposit that may represent a distal hydrothermal expression of concealed carbonatitic or alkaline magmatism

Apatite and calcsilicate minerals dominate the deposit

Apatite>>allanite>monazite and other REE-rich inclusions

Apatite contains REE, and REE-rich inclusions

Greater endowment in Nd, Sm and Eu relative to most other LREE-enriched deposits

Evidence for a substantial north-south zone of strong REE mineralisation in the central part of the deposit

Widespread mineralisation has been encountered at depth across the deposit

Nolans Bore exploration summary 1999-2011



1999 COMPREHENSIVE SURFACE ROCK CHIP SAMPLING SAMPLES AVERAGE ABOUT 7% REE

YEAR	COSTEANS		RC		CORE			RAB		WIDE DIAMETER		TOTAL m	IDENTIFIED MINERAL RESOURCES
	n	m	n	m	n	tails	m	n	m	n	m		
2000	6	890										890	
2001			12	856								856	3.82 Mt @ 4.0% REO for 152,800 t REO
2004			20	1525	5		518					2043	5.81 Mt @ 3.9% REO for 226,600 t REO
2005			58	7532	1	11	1040					8572	18.6 Mt @ 3.1% REO for 576,600 t REO
2006			51	4363	23	3	2255					5491	
2007			211	19949									
2008	3	333					7		792	420	4179		
2010										48	1656	1656	
2011			227	29904	57	126	22665					52569	Scheduled for release late 2011
TOTAL	9	1223	579	64129	93	140	27270	420	4179	48	1656	98457	

Nolans Bore mineralisation and resource



Massive apatite

This example contains about 6.5% REO

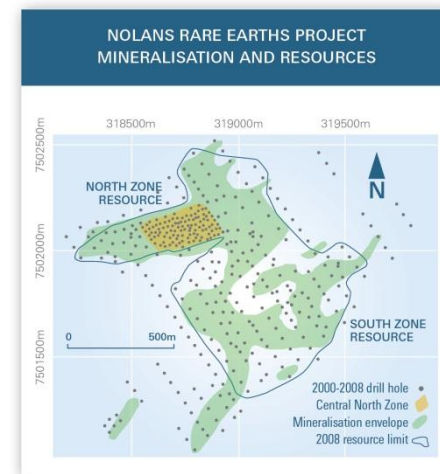


Massive apatite, allanitic apatite, calcisilicate alteration

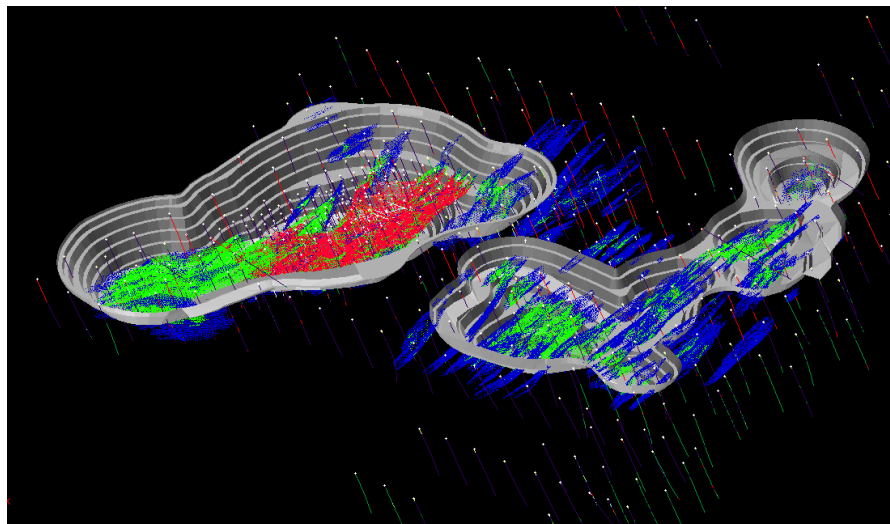
This example contains about 3.3% REO

	Statement of Identified Mineral Resources ¹		
	Million Tonnes	%REO	Tonnes REO
Measured	5.1	3.2	163,200
Indicated	12.3	2.8	344,400
Inferred	12.8	2.6	332,800
TOTAL	30.3	2.8	848,400

1 Exploremin November 2008; 1% REE cut-off

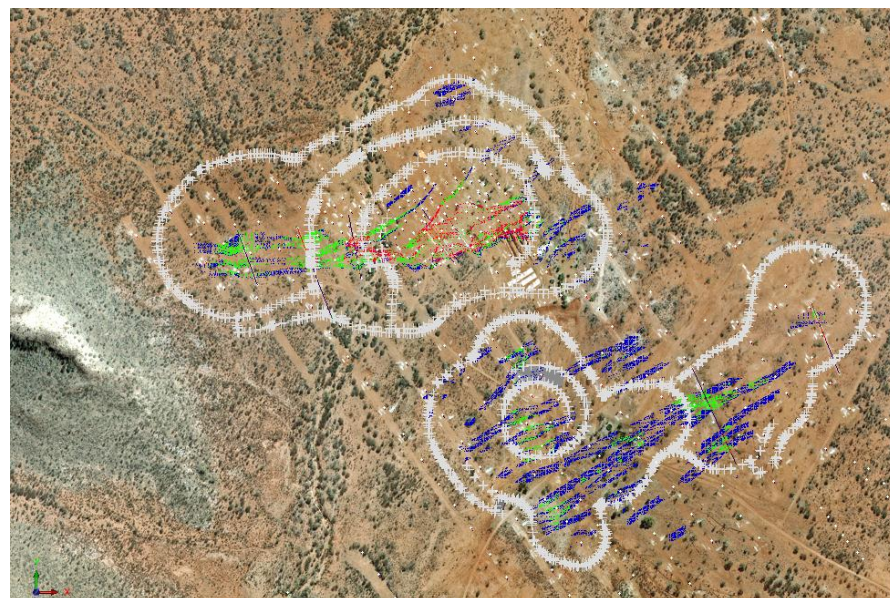


Nolans Bore preliminary “Reserves Case” pit designs



Red – Measured Resources
 Green – Indicated Resources
 Blue – Inferred Resources

- “Reserves Case” pit designs contain:
- 17.4 Mt of Measured + Indicated Resources
 - 5.8 Mt of Inferred Resources



	Statement of Identified Mineral Resources		
	Million Tonnes	%REO	Tonnes REO
Measured	5.1	3.2	163,200
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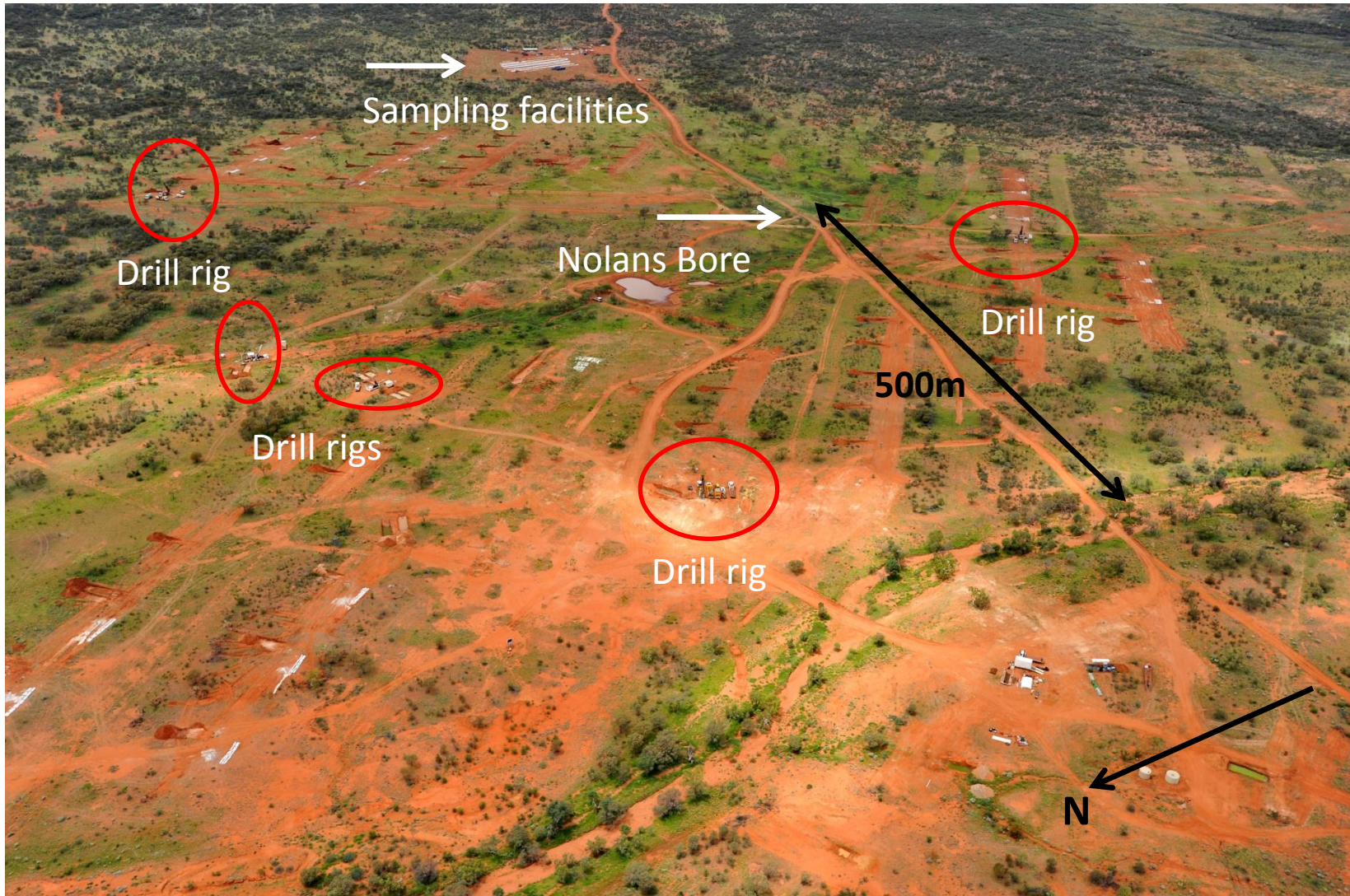
Nolans Bore 2011 expansion drilling program

	Pre-2011	2011 Planned	2011 Actual
RC drilling	34,225 m	29,000 m	29,905 m
Diamond (core) drilling	4,605 m (all in Central North Zone)	16,500 m	22,665 m
TOTAL	38,830 m	45,500 m	52,570 m

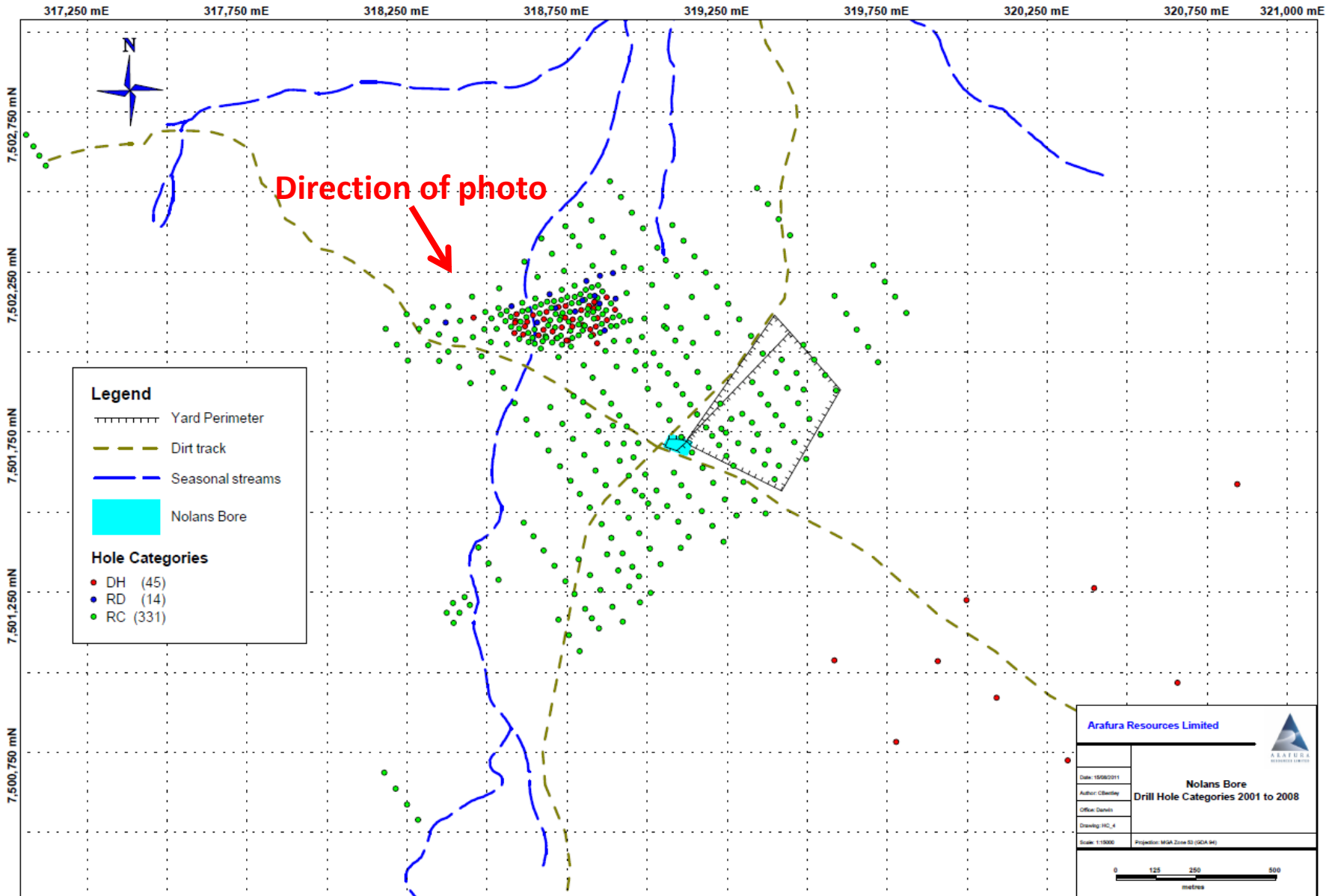
2011 drilling program objectives:

1. Convert ~50% of Inferred Resources to Indicated Resources (these Inferred Resources are inside the preliminary “Reserves Case” pits);
2. Increase overall resource base beyond current 30 Mt (target >40 Mt);
3. Provide sufficient geotechnical data for mine design & metallurgical data for pursuit of higher grade concentrate option;
4. Produce a new Statement of Identified Mineral Resources as the basis for the Nolans BFS

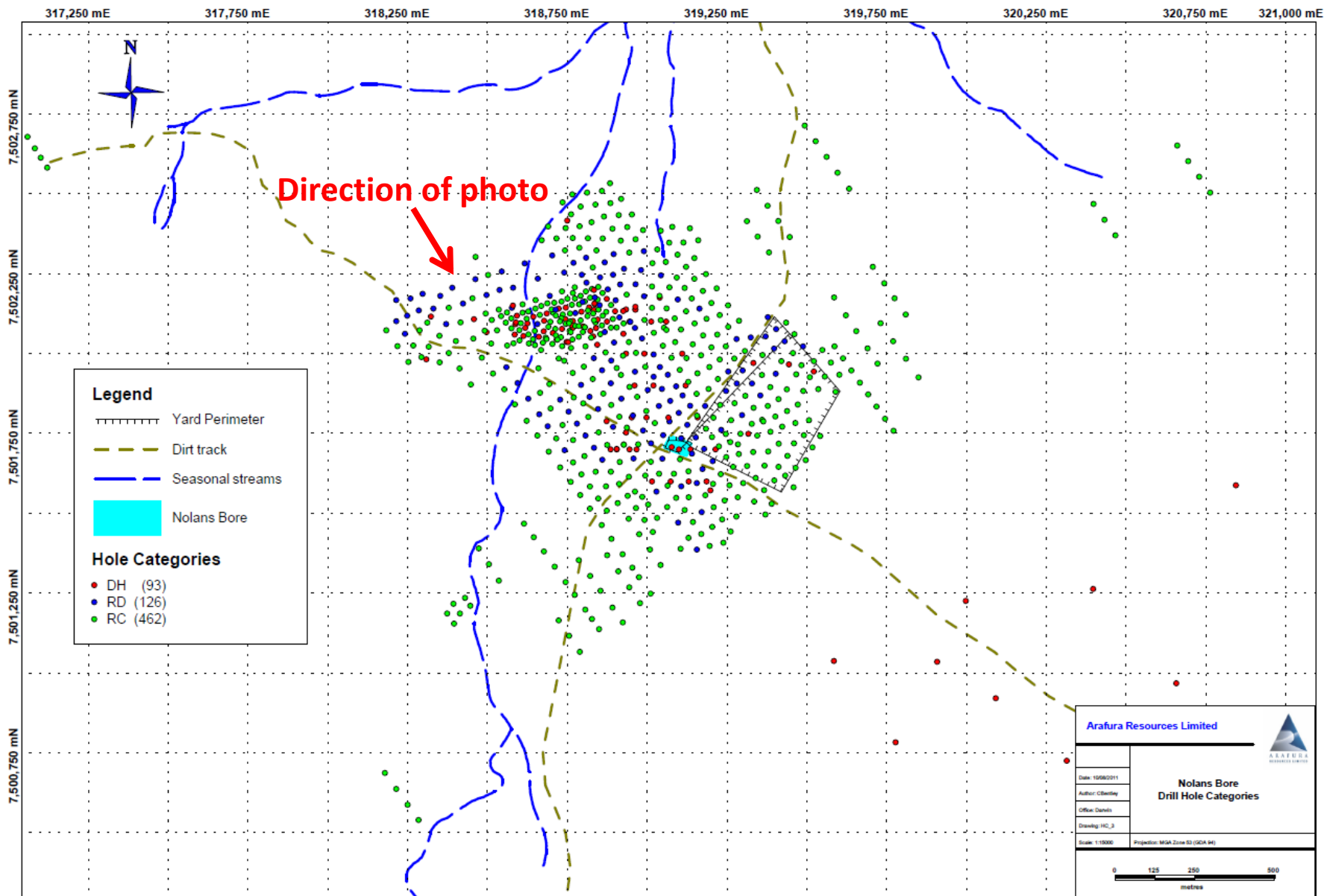
Nolans Bore 2011 expansion drilling program



Nolans Bore drilling 2001-2010



Nolans Bore all drilling (including 2011 program)



2011

- Drilling complete (February 2011-September 2011);
- Major data acquisition (qualitative & quantitative) exercise ongoing:
 - Geological & structural logging;
 - Geophysical logging; and
 - Geochemical analysis (including QA/QC);
- Data acquisition finalised early November 2011;
- Resource interpretation and modeling November 2011;
- Geostatistics & Resource Estimation in December 2011 (AMC)

2012

- Resource optimization January-February 2012 will help target further work

Resource to Products

Core team capability

Our strength is in the depth of skills and experience.....



Neil Graham
GM Operations
& Technology



Gavin Beer



Jim Kyle



John Ganser
GM Projects



Andrew Napier



Sunil Jayasekera



Barry Tindall



Raul Raiter

Our approach has been to use well-known world wide experts.....

Operational, Technology and Regulatory:

- Australian Nuclear Science and Technology Organisation (ANSTO)
- Bureau Veritas - AMDEL
- ALS - Ammtec
- Bateman Litwin
- Commonwealth Scientific and Industrial Research Organisation (CSIRO)
- SGS
- GHD
- AECOM

Mining & Engineering:

- Lycopodium
- Parsons Brinckerhoff
- Battery Limits
- AMEC Minproc

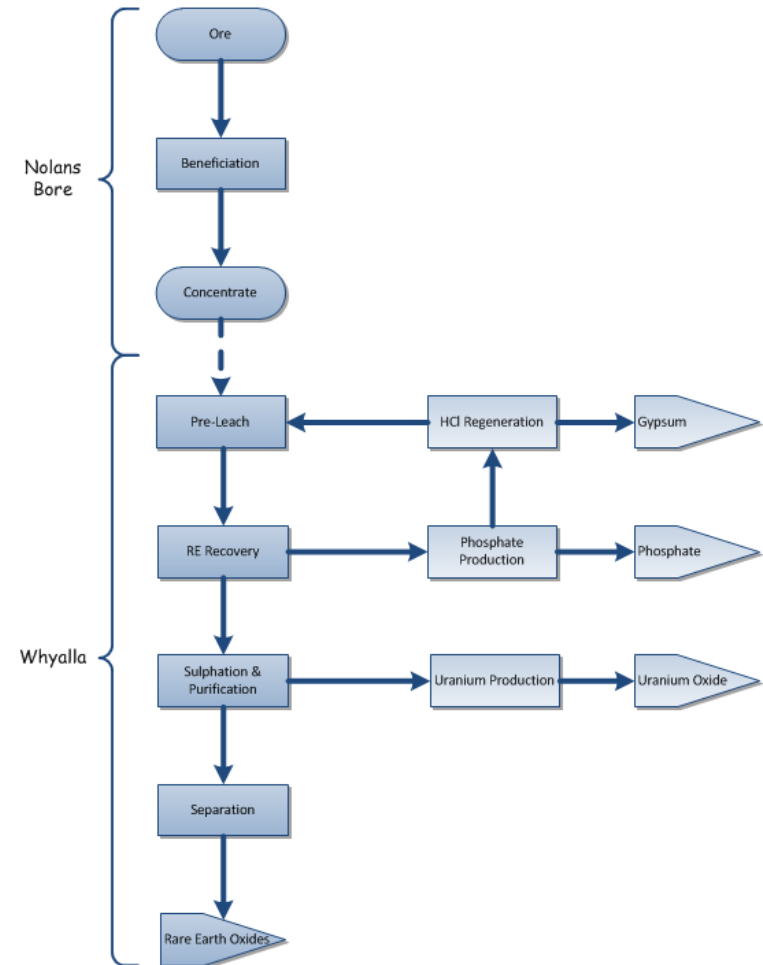
- 2001-2007 Preliminary investigation & definition
- 2007 Prefeasibility study
- 2008-2010 Development & proving of flow sheet
- 2011 Optimization of flow sheet – ON TRACK
 - Beneficiation enhancement – higher grade concentrate;
 - Rare Earth separation simplification;
 - Rare Earth Oxide production to higher quality specifications;
 - HCl regeneration & gypsum co-product;
 - Phosphate co-product simplification – solid phosphate;
 - Uranium oxide co-product simplification – UO_4 product

Building a sustainable business for the future

Arafura is 'going the extra mile' to 'get it right' first time and ensure success

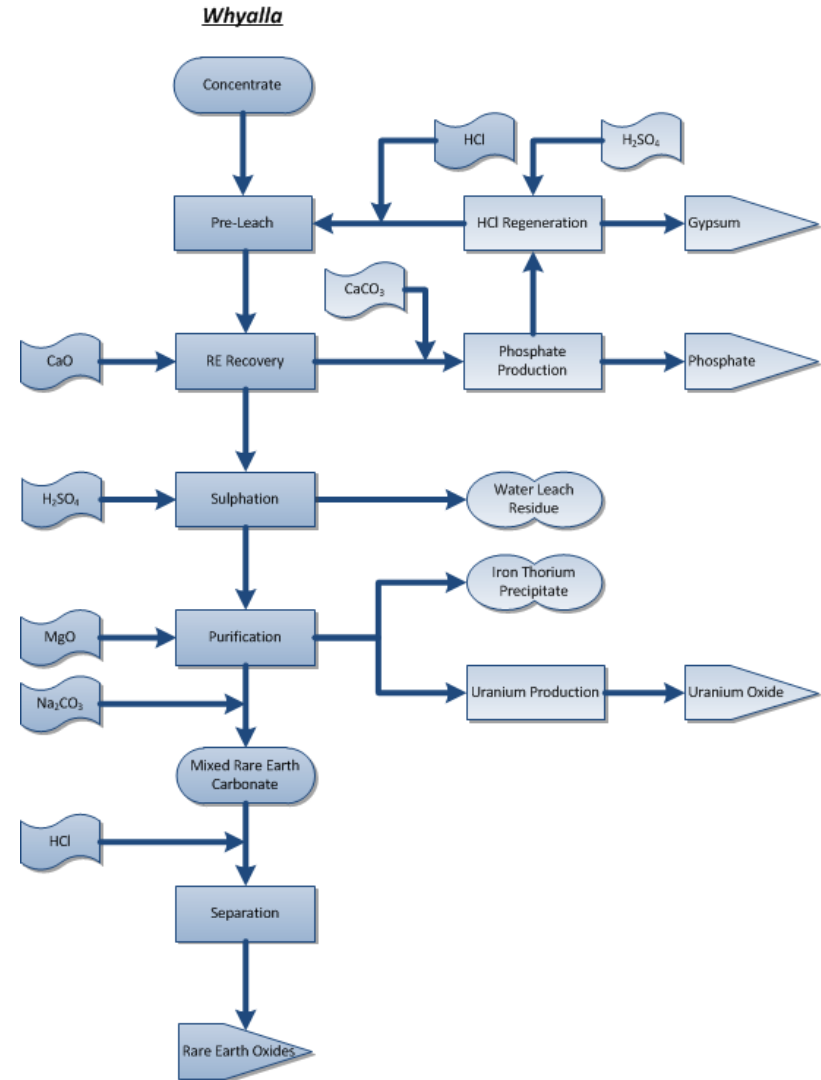
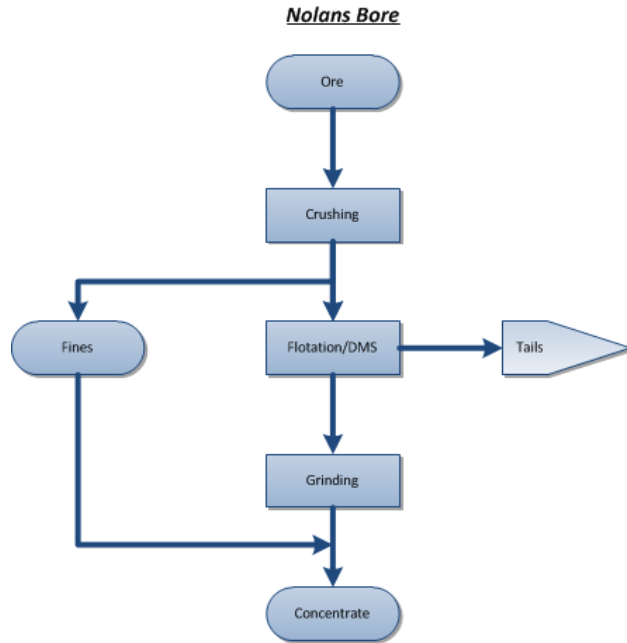
- Australian developed & proven flow sheet – not reliant on others;
- Additional flow sheet demonstration programs at scale are underway to de-risk start up & achieve nameplate capacity quickly;
- Demonstration programs will also provide potential customers and financiers opportunities to observe and assess our operations for their due diligence;
- Environmental Guidelines of the highest standards have been issued as anticipated. No surprises, most studies completed or well advanced.

Nolans Project Flow Diagram



Process detail

The result of years of detailed investigation, and continuous improvement.....



- Processes optimized for Nolans Bore resource;
- Combination of standard metallurgical separation techniques and inorganic chemical processing unit operations at atmospheric pressure and ambient or slightly elevated temperature with common raw materials;
- IP relates to flow sheet 'order of combination' and operating conditions

Beneficiation development

- Opportunities to improve beneficiation performance using proven mineral processing technologies:
 - Improved ore body mineralogical information;
 - Re grind of concentrate and tails to improve rare earth mineral liberation;
 - High Intensity magnetic separation of DMS and flotation tails;
 - Optimisation of phosphate flotation;
 - Silicate flotation and high intensity magnetic separation to recover allanitic material;
 - Improvements to dense media separation (DMS)
- World class expertise employed

Organisation	Scope	Status
Amdel (Perth)	Mineralogical analysis Flotation optimisation Wet and dry magnetic separation Gravity separation	Samples prepared, assay complete. QEMSCAM mineralogical characterisation in progress. Test programs ready to commence.
Amdel (Adelaide)	Dense media separation process improvements	In progress
Ammtec (Perth)	Magnetic susceptibility characterisation Flotation optimisation in demo plant	In progress Will be incorporated in future demo plant trials
Nagrom (Perth)	Slimes upgrade using magnetic separation and high gravity separation	Magnetic separation tests complete awaiting analysis (mid Oct 2011)
Kwan Wong – Flotation Expert (Adelaide)	Optimisation of flotation systems based on 40+ years of experience (20 years with Rare Earths)	In progress

Technology development

The flow sheet has been proven as shown and is now undergoing demonstration and optimization to de-risk further, focus on rare earths, customize products for target customers, provide detailed design data, confirm EIS data and capture more of intrinsic value



Gypsum from HCl Regeneration Plant 2011
ALS-Ammtec Perth



Water Leach Piloting 2009
ANSTO Sydney



Mixed REO Carbonate production – 2009
ANSTO Sydney

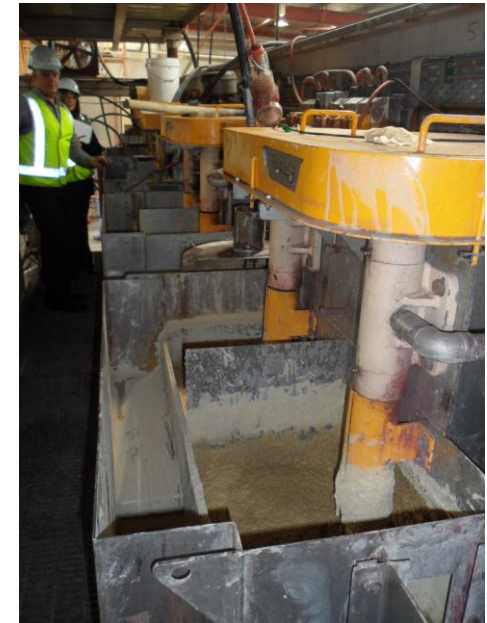


Sulphation Baking 2009
ANSAC Bunbury

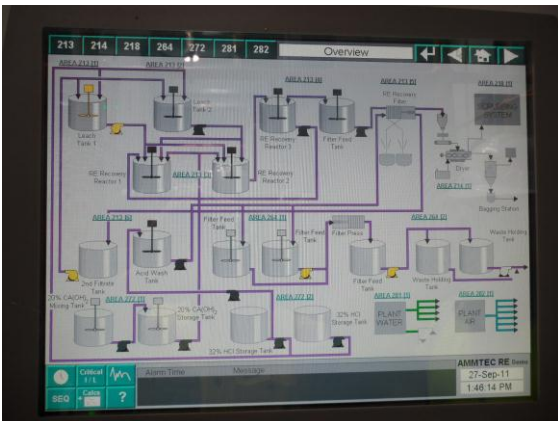
**All Australian
developed technology**

Demonstration plant

Process validation, de-risking; verification of design, mass balance & EHS data, and performance guarantees



**Ore to Rare Earth Intermediate
ALS-Ammtec and ANSTO leading to continuous
piloting of Rare Earth Oxide production**



Rare Earth Oxide separation

- Defined product portfolio
- Program in progress
 - Building on 2010 success;
 - Higher quality specifications aligned to target customers;
 - Technology defined for 3 products to date, more in progress
- Fabrication of larger scale facility
 - Product testing;
 - Customer evaluation samples

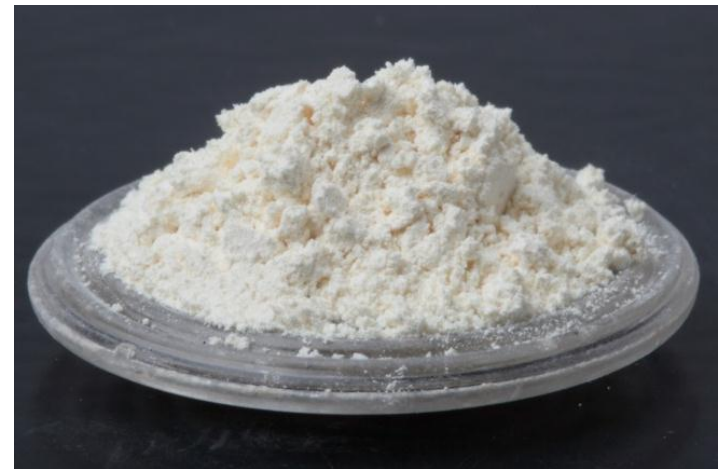
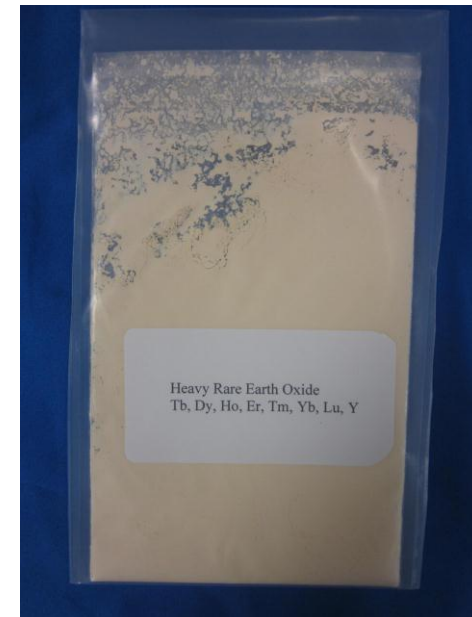


Illustration of typical Rare Earth Oxide product

The Rare Earth products

39 Y Yttrium 88.9059	57 La Lanthanum 138.9055	58 Ce Cerium 140.116	59 Pr Praseodymium 140.9077	60 Nd Neodymium 144.24	61 Pm Promethium (145)	62 Sm Samarium 150.36	63 Eu Europium 151.964	64 Gd Gadolinium 157.25	65 Tb Terbium 158.9253	66 Dy Dysprosium 162.5	67 Ho Holmium 164.9303	68 Er Erbium 167.259	69 Tm Thulium 168.9342	70 Yb Ytterbium 173.04	71 Lu Lutetium 174.967
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- The 'Lanthanide' series in the chemical periodic table + Yttrium;
- Specialty chemicals;
- Critical component of end product with low total cost contribution;
- No substitutes available and minor recycling opportunities;
- 'Leap frogging technology' for products highly unlikely



HREO sample produced From Nolans Bore ore in 2010

- Arafura has successfully developed its own technology in Australia to exploit the world scale Nolans Bore resource;
- The technology involves combinations of standard metallurgical techniques and common chemical unit operations;
- The unique IP is in how these are combined and operated. The actual operating conditions are relatively modest by chemical industry standards;
- Arafura has assembled an impressive team of experts in-house who are complemented by world class consultants;
- The proven technology is now in an optimization phase;
- Arafura is 'going the extra mile' in the current phase to maximize front end loading for long term benefits;
- Considerable time, money and effort is required to successfully develop a rare earths project – Arafura will have spent about 12 years and A\$250 million to complete the Nolans Project Bankable Feasibility Study (BFS);
- Arafura is on track to complete the BFS and secure project finance by the end of 2012 as per published program