MARCH 2008

ARAFURA
RESOURCES LIMITED

NOTICE OF INTENT

FOR NOLANS PROJECT – MINE

GHD

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1. Executive Summary

Arafura Resources Limited is developing the Nolans Project, comprised of a rare earths and phosphate mine and offsite processing facilities. The production of high quality rare earth and phosphoric acid products requires the extraction and therefore production of a very small amount of uranium product. This project includes a greenfield minesite and associated crushing, screening and washing plant. The mine will be relatively small and the infrastructure relatively simple. Information on the process plant, transport of ore to the plant and residue transport back to the mine will be the subject of a separate Notice of Intent.

Rare Earth Elements (REE) are critical and strategic components in many high-technology developments such as electronics, energy efficiency and greenhouse gas reduction. REE at Nolans include Lanthanum, Cerium, Praseodymium, Neodymium, Samarium, Europium, Gadolinium, Terbium, Dysprosium and minor amounts of other elements. As a key component in re-chargeable batteries and magnets in electric motors, rare earths will play a fundamental role in hybrid motor vehicles. These cars are fuel efficient and major contributors to reducing greenhouse gas emissions. REE are key products in mobile phones, personal organizers, laptop computers, and in plasma, LCD and CRT display screens.

Nolans Bore is located 135 km north of Alice Springs in the Northern Territory and hosts a resource of 18.6 million tonnes at 3.1% rare earths, 14% phosphate and 0.02% (or 213 grams per tonne) of uranium oxide. The Nolans mineralisation contains two minerals. Apatite is a phosphate rich mineral and contains one third of the rare earths. Cheralite is a rare earth rich mineral that contains the remaining two thirds of the rare earths. The current mineral resource area is located within Mining Licence Application (MLA) number 26659.

The Nolans prospect is situated on a flat plain area. The Nolans Bore cattle yards cover the eastern portion of the deposit and the area has been subject to heavy grazing pressure. The mine site is located in an isolated area with very low rainfall. The project is located within the Burt Plain bioregion (see Figure 19) characterised by plains of acacia shrubland, tussock grassland and hummock grassland, acacia and eucalypt woodlands, with mountain ranges in the east, north and west of the bioregion (Neave *et al.* 2005).

Nolans Mine is proposed to be a conventional opencut operation of drill and blast, excavator mining and truck haulage of ore to a Run of Mine (ROM) pad. It could be owner or contractor operated. Mining is planned to recover approximately up to 1,000,000 tonnes per annum of ore. Stockpiled ore will be crushed, washed and upgraded onsite. Washed “concentrated ore” will be transported to the process plant by road and rail for processing and recovery of the rare earth oxide and phosphate products. The beneficiated ore is expected to have an activity of approximately 400 Becquerel’s per gram (Bq/g) (S. Mackowski *pers comm.* 2007). The process plant residue conatins thorium and would be transported back to the Nolans Mine for storage and ongoing management. ^{232}Th Is the most common thorium isotope and radioactive material encountered at Nolans Bore. Thorium and its daughter products account for approximately 72% of the total radioactivity of the Nolans ore. The majority of the remaining radioactivity is due to the ^{238}U chain. It is estimated that 2,000 tonnes of thorium will be contained in residues produced at the process plant each year. Residue from the plant will contain about 10-15% thorium and will be returned to the mine site for secure contained storage.

The expected activity of this residue following processing is 4,000 Bq/g. This equates to radiation levels similar to thorium residues from monazite processing from heavy mineral sands operations.

The mine is estimated to have an operational life over 20 years. Orebody definition drilling may extend this period. Construction is proposed to commence in 2010, with ongoing construction and commissioning in 2011. Full production is expected during 2013. A detailed construction schedule can be provided once the feasibility study is complete.

Background archaeological, flora and fauna, hydrology and hydrogeology, and radiation studies have been completed for the project. Additional studies are being planned to improve understanding and develop management options before mining commences. Mine site planning will include a range of relevant studies as described above, plus geochemical and geotechnical surveys, and reports on land use. Arafura will work with key stakeholders to determine rehabilitation and landuse objectives before mining commences.

A range of transport options are undergoing feasibility assessment in relation to access to the mine from Aileron and for transportation of ore to rail or the plant (see Section 5.14). Additional clearances from the AAPA and CLC, as well as more detailed archaeological surveys may be required once the preferred access and transport routes, and the rail siding location have been identified. A Heritage Management Plan will be written for any area containing sites that could potentially be impacted by the mine and transport operations.

There is no permanent surface water feature in the area. A Natural Resources Environment and the Arts (NRETA) on-line bore map indicates that there are five stock and domestic bores within a 15km radius of Nolans Bore. Water quality reports from the online bore indicate that untreated groundwater is unsuitable for human consumption because of elevated levels of Iron (Fe), Fluoride (F), Sodium (Na), Chloride (Cl) and Uranium (U). An onsite reverse osmosis plant (RO) will be required to produce potable water. Mine water requirements include ore washing, dust suppression, laundering, showers and a washdown bay. Estimates of the amounts required cannot be provided until the feasibility assessments have been completed. Arafura Resources is considering options to accommodate potable water production for consumption at the Aileron Roadhouse and the Alyuen community (a small Aboriginal community nearby).

The ephemeral Kerosene Camp Creek runs through the proposed mine site and directly across the proposed pit area (Figure 20). Diversion of this ephemeral creek will be required, but not until about year 3 of the mining operation. This creek is fed by a number of tributaries and is described in Section 9.5 (hydrology). No aquatic fauna have been recorded from the project area. The intermediate pit shell can be altered to allow continued operations behind bund walls east of the existing Kerosene Camp Creek, allowing the creek diversion options to be assessed further. A detailed surface terrain survey is required to select a route that avoids excessive excavation in rock and to determine if the works can be staged at a later date. Studies in relation to the creek diversion are underway and will be submitted with future approvals.

An Environmental Protection and Biodiversity Conservation Act (EPBC Act) Protected Matters Report was generated for the mine site from the website search tool, and a search of the NRETA flora and fauna database was undertaken. Information from the NRETA database indicates records of 30 fauna species, 4 of which are listed as extinct under the *Territory Parks and Wildlife Conservation Act*. These species are summarised in Table 9. No floral species of conservation significance under EPBC status was identified.

Low *et al* (2007) undertook a preliminary flora and fauna survey in the proposed Nolans Mine area. The report is attached in Appendix H. Very few mammals and reptiles were observed or captured during the two surveys. The survey did not identify any fauna species of environmental or conservation significance in the area, which is not unusual given the present use of the area to pastoral activities. The plant communities in the project area are patchly distributed. They include short grasses and forbs with no overstorey in the mine pit area (see Figure 1), and open woodland dominated by bloodwoods (*Corymbia opaca*) and mulga (*Acacia aneura*) with a sparse understorey in the area peripheral to the proposed pit and surrounding area (Low *et al*. 2007). The survey did not identify any floral species of environmental or conservation significance in the area. Although the report states that there will be habitat loss from clearing for construction, impacts will be local, with no expected community impacts on a regional scale. The rocky foothills and riparian areas (having both important ecosystem functions and high plant diversity) are recommended as high priority areas for conservation (Low *et al.* 2007). These areas will be considered for preservation during the mine planning phase of the project.

An Environmental Management Plan (EMP) will be developed for the project using the Victorian Safety Case process framework. This will cover design, construction and operational phases of the project. Section 10 outlines some of the potential issues to be incorporated into an EMP. The EMP will also detail the monitoring regime tol be implemented once all studies are complete. All sections are subject to the requirements of the Radiation Management Plan (Section 11).

Arafura Resources' community consultation strategy is based on ensuring open and transparent sharing of information and community acceptance of its operations (i.e. a 'social licence to operate')(see Section 13). Arafura has developed a stakeholder matrix and begun consultation with key stakeholders such as Australian and Northern Territory Government departments, land councils, Alice Springs Town Council and traditional owners. Arafura will collaborate with Indigenous communities to identify and protect areas of cultural significance. It will consult with traditional owners and land councils about the company's current and planned activities. This ensures Arafura respects the connections of Aboriginal people with their land and any sites of significance.

This NOI covers all aspects of the proposed mine development (mine, residue storage, the transportation of ore to the railhead, and the washing plant facility).

The project is at the prefeasibility stage. Scoping works for mine design, transportation options, radiation management, process plant locations and waste disposal options are well progressed and relevant data is incorporated within. Various options are presented in this document. These will be defined prior to any further environmental approvals submissions.

2. Introduction

Arafura Resources Limited is developing the Nolans Project comprising a rare earths and phosphate mine, and offsite processing facilities. Production of high quality rare earth and phosphoric acid products requires the extraction and therefore production of a very small amount of uranium product. This project includes a greenfield minesite and associated washing plant at the mine site. The mine will be relatively small and infrastructure would be relatively simple. Campaign mining or continuous mining and onsite washing prior to offsite treatment are options being assessed.

Nolans Bore is located 135 km north of Alice Springs in the Northern Territory and hosts a resource of 18.6 million tonnes at 3.1% rare earths, 14% phosphate and 0.02% of uranium oxide. The current mineral resource area is located within Mining Licence Application (MLA) number 26659. The site is located approximately 10 km to the west of the Stuart Highway, and between Napperby Road to the south and Mount Denison Road to the north (Environmental Earth Sciences 2007). The Nolans prospect is situated on a flat plain area that straddles Kerosene Camp Creek to the west, north and northeast of Nolans Bore. The Nolans Bore cattle yards cover the eastern portion of the deposit. The area has been subject to heavy grazing pressure. Kerosene Camp Creek runs through the mine site and directly across the proposed pit area. It flows in a northeasterly direction to the Woodforde River, approximately 11km to the north (Environmental Earth Sciences 2007). This ephemeral creek is fed by a number of tributaries covering a catchment area of approximately 20km^2.

Figure 1. shows the mine site location at Nolans Bore.

Figure 1. Mine Site Location

Mining is planned to recover up to 1,000,000 tonnes per annum of ore. The proposed mining process is an open pit design, to an approximate depth of 75 m reduced level (RL) with a strip ratio of 1:1. The ore is likely to be transported by road and rail to a coastal processing facility for recovery of the rare earth oxide and phosphate products. Some residues would be transported back to the Nolans Mine for storage and rehabilitation. Processing, transportation of the ore to the process plant, and transport of waste from the process plant are presented in a separate Notice of Intent (NOI).

This NOI covers all aspects of the proposed mine development (mine, residue storage, the transportation of ore to the railhead, and the washing plant facility).

As at February 2008, the project is at the prefeasibility stage. Scoping works for mine design, transportation options, radiation management, processing plant locations and waste disposal options are well progressed and relevant data are incorporated within. Various options are presented in this document. These will be refined prior to any further environmental approvals submissions, as will resolution of various options for location of the process plant. The Public Environment Review (PER)/Environmental Impacts Statement (EIS) to be submitted to the Northern Territory Government will focus on a preferred option, but will present a summary of the options considered.

3. Project Information

3.1 This Document

The outline of this document is illustrated in Figure 2.

Figure 2. Document Structure

3.2 Objectives of this Document

The objectives of this document are:

- To notify the intent of the project;
- To provide an initial environmental assessment of the area;
- To describe potential issues raised by the development; and
- To apprise the Northern Territory Government, including the Department of Natural Resources, Environment and the Arts (NRETA), the Department of Primary Industry, Fisheries and Mines (DPIFM) and other relevant departments of the proposed scope of work to enable definition of the requirements for approval.

3.3 Proponent Details

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GHD Pty LTD

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DARWIN NT 0801

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3.4 Environment, Quality, Health and Safety Policy

Arafura is committed to operating in a responsible manner, which minimises their impact on the environment. Arafura Resources, as an organisation and as individuals, commit to do the following:

- Care for the environment and its heritage value;
- Comply with legislative requirements for the environment;

- Work closely with the community and governing bodies to ensure that the best approach is always taken to environmental care;
- Encourage our employees to value the heritage in the environment in which we work;
- Reduce waste, recycle and recognise the by-product of our consumables;
- Maintain an open consultation process with regulators, the community and shareholders;
- Minimise workplace exposure to hazards, ecosystem disturbance or degradation;
- Re-establish disturbed areas as sustainable ecosystems and community assets; and
- Facilitate the education of employees and contractors in relation to their roles and responsibilities to environmental management.

3.4.1 Health and Safety

"As an employer, Arafura will:

- Provide leadership and education on work place hazards so that employees can work safely.
- Provide work place risk assessment systems to identify and manage hazards.
- Our employees and contractors will:
  - Commit to all procedures and laws in safety, health and environment made by either regulators or the Company.
  - Use personal protective equipment where needed and maintain these items in good order.
  - Actively participate in the identification and elimination or control of hazards.
  - Report all incidents, injuries and hazards.

Arafura is an equal opportunity employer. All employees can expect to be treated fairly and with respect and be given the opportunity to succeed. Arafura believes that a diverse workforce will lead to enhanced performance and employs people on the basis of merit and job skill criteria.

Harassment in any form is not acceptable in Arafura's work environment. We will always support the human rights of our employees and communities in which we operate."
(http://www.arafrauresources.com)

All employees will undetake cross-cultural training as part of their induction process, as well as training courses for radiation management and general occupational health and safety, as appropriate.

3.4.2 Social Responsibility

"Arafura is committed to collaborating with all indigenous communities to identify and protect these areas. We will actively consult with traditional landowners and relevant land councils about our operational intentions and ensure that we maintain the integrity and respect of our cultural heritage.

To achieve this, we will:

- Respect the rights of traditional land-owners.
- Establish and maintain positive, effective and meaningful communication.
- Consult with the people whose country may be impacted by Arafura's activities.

- Engage with relevant indigenous groups on sustainable community projects.
- Carry out surveys at proposed exploration and operational areas to assess cultural heritage and develop strategies to avoid impact on significant indigenous sites and cultural places.
- Develop and implement indigenous awareness programmes for staff that are appropriate for local situations."

http://www.arafrauresources.com

3.4.3 Working with Communities

"Arafura's relationship with the community is an important component to our business strategy. Our reputation as a valuable corporate citizen and community conscious organisation has been achieved by working closely with neighbours and supporting the local community.

We will commit to work with neighbours, employees, indigenous groups and other stakeholders to add value to the communities in the Company's operational areas.

We establish partnerships on the following priorities:

- Open and meaningful communication.
- Participation in community activities.
- Support for community initiatives.
- Effective response to community concerns.
- Respect for indigenous culture and aspirations."

http://www.arafrauresources.com

3.5 Rehabilitation

Arafura believes that land rehabilitation is an integral part of the exploration and mining process and actively rehabilitates where required. Mine site planning will include a range of relevant environmental surveys including flora and fauna surveys, geochemical and geotechnical surveys, surface and ground water studies and reports on land use. Arafura will work with key stakeholders to determine rehabilitation and landuse objectives before mining commences. As part of the rehabilitation process, a detailed closure plan including success criteria will be prepared in consultation with stakeholders. Rehabilitation will be monitored after mining is completed to demonstrate closure criteria are met.

4. Proposed Development

4.1 Introduction to the Project

There are three main components to this Project. These are:

1. Development of a new mining operation and onsite beneficiation plant;
2. Transportation of ore to the railhead;
3. Processing residues transfer and storage at the mine site.

4.1.1 Historical Background

The Nolans deposit was identified by PNC (Power Nuclear Corporation) of Japan as a radiometric anomaly from a Northern Territory Government Geological survey in 1995. Initial assays indicated that the uranium was of a low a grade and uneconomic at that time. It was viewed as not warranting further assessment. Arafura applied for and was granted the tenement in 1999 following relinquishment of the area by PNC.

The Nolans mineralisation contains two main minerals. Apatite is a phosphate rich mineral which also contains one third of the rare earths. Cheralite is a rare earth rich mineral that contains the remaining two thirds of the rare earths. The remaining minerals in the Nolans ore comprise mainly clays and silica quartz. Arafura Resources has completed extensive exploration programs designed to define a resource that will support a mine life of over 20 years (Arafura Resources. 2007).

Advances in recovery technology, specifically the identification of the neutralization and separation technology that Norsk Hydro (a Scandinavian fertilizer group) used to process apatite ore from Norway's Kola Peninsula (for the production of phosphate and nitrate based fertilizers) led Arafura to explore the potential for dual rare earth and phosphoric acid production

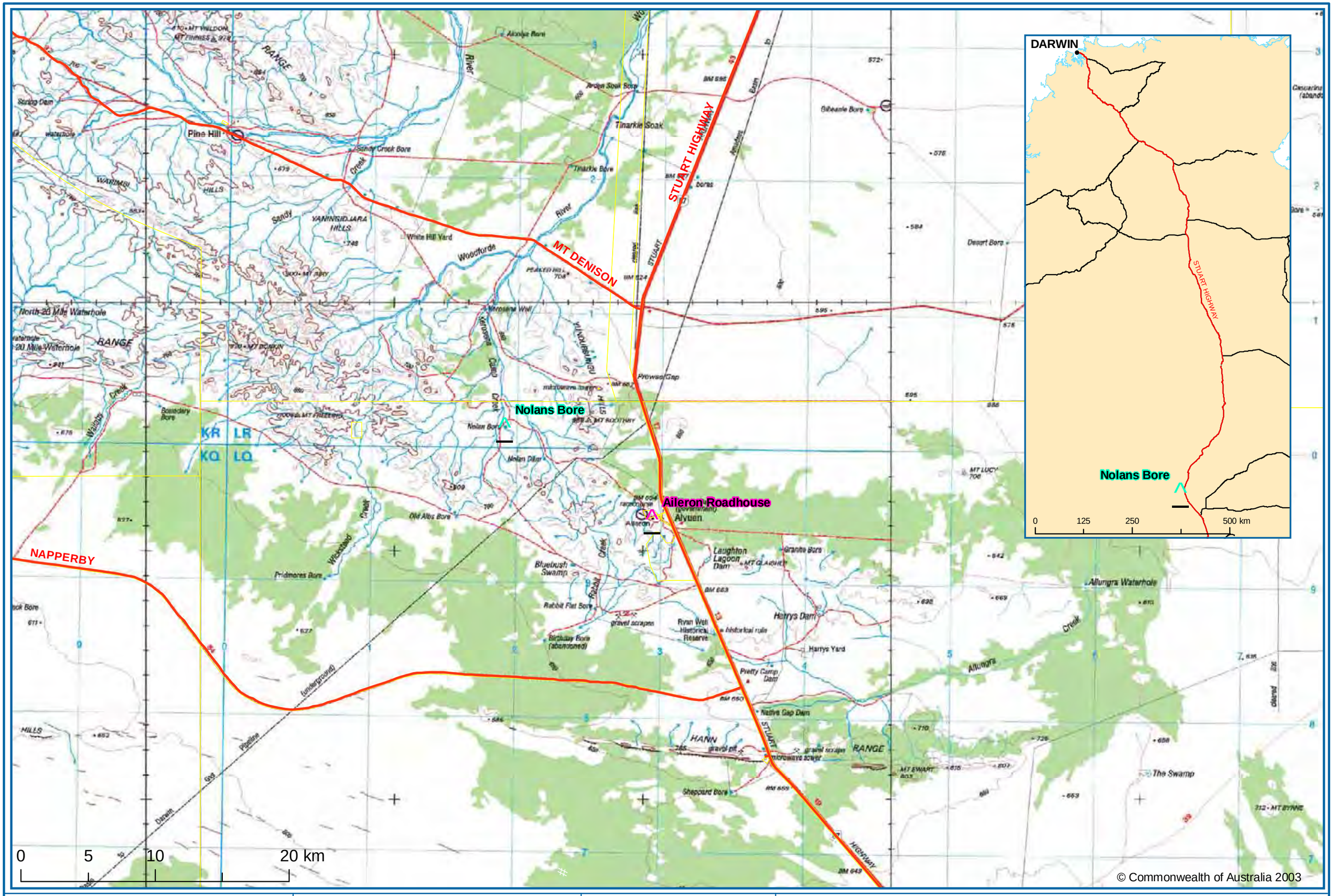
To date background archaeological, flora and fauna, hydrology and hydrogeology, and radiation studies have been completed for the project. Additional studies are being planned to improve understanding and management options before mining commences.

4.1.2 Project Outputs

The diverse nuclear, chemical, metallurgical, catalytic, electrical, magnetic, and optical properties of the Rare Earth Elements (REE) have led to an ever-increasing variety of applications and demands. REE are critical and strategic components in many high-technology developments. The REE at Nolans include Lanthanum, Cerium, Praseodymium, Neodymium, Samarium, Europium, Gadolinium, Terbium, Dysprosium (and minor amounts of other REEs).

Rare earth metals are essential components of products associated with the electronics and technology industries, energy efficiency and greenhouse gas reduction. As a key component in re-chargeable batteries and magnets in electric motors, rare earths will play a fundamental role in hybrid motor vehicles. These cars are fuel efficient and major contributors to reducing greenhouse gas emissions.

REE are key products in mobile phones, personal organizers, laptop computers, and in plasma, LCD and CRT display screens. The other major product is phosphoric acid, with uranium as a minor product (a by-product that must be removed from the REE).



Workspace: Figure 3 Locality Map.mxd		Location: G:43\21188\Projects\Figures_NOI	
A3	Map Datum : Geodetic Datum of Australia 1994	Scale: 1 : 250,000	

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Nolans Bore NOI

Figure 3 Locality Map

Project No:	43/21188	Date:	21/07/2007

4.2 Mining Operations

Nolans Mine is proposed to be a conventional opencut operation of drill and blast, truck and loader mining and truck haulage of ore to a Run of Mine (ROM) pad within the mine site. It could be owner or contractor operated. A mining contractor would campaign mine the ore and leave the mine site on the completion of an annual production target. A diagram of the basic process is presented in Figure 16.

Stockpiled ore will be crushed, screened and washed onsite. The ore is expected to have an activity of approximately 400 Becquerel's per gram (Bq/g) (S. Mackowski *pers comm.* 2007).

It is intended to transport the beneficiated ore by road and/or rail to a processing facility site in sealed containers or kibbles. The containers will be built in accordance with International Atomic Energy Agency (IAEA) and Australian Nuclear Science and Technology Organisation (ANSTO) Standards, Guidelines and requirements.

4.3 Process Plant Residues Storage Facility

Process plant residues returning to the mine for storage and ongoing management will be containerised, then loaded and transported. The storage facility may be an internally bunded secure facility, or a secure, lined dam repository where it can be easily recovered for future reprocessing or sale. Assessment of options is underway.

4.4 Traffic Requirements

A range of transport options are undergoing feasibility assessment for access to the mine from Aileron, and for the transportation of ore to rail or by road to the processing facility. There are three route options for mine access. Two of these are Route 1 north and then along the gas pipeline corridor and Stuart Highway, and Route 2 Aileron direct to mine (see Figure 8). A third option is being considered, which goes north from the minesite along the existing property boundary fence.

There are three options for transport of beneficiated ore from the mine to the rail-head. These are Route 1 Cross-country, Route 2 Plenty Highway and Route 3 Stuart Highway. These option locations are shown in Figure 8 and are fully discussed in Section 5.14.

Transport of process plant residues to the mine site from railhead/highway will be along the route used to transposrt ore to the rail-head and process plant.

4.5 Services

4.5.1 Water

There is no permanent surface water feature in the area. A Natural Resources Environment and the Arts (NRETA) on-line bore map indicate that there are five stock and domestic bores within a 15km radius of Nolans Bore. All bores are completed in the granite/gneiss facies and have salinity from 1,065mg/L to 2,570mg/L and yield from 0.5 to 3.0 L/sec. Racic's Bore completed onsite indicates that groundwater salinity is around 3,990mg/L. This is slightly higher than the regional bores. Water quality reports from the online bore reports indicate that untreated groundwater is unsuitable for human consumption because of elevated levels of Iron (Fe), Fluoride (F), Sodium (Na), Chloride (Cl) and Uranium (U).

An onsite reverse osmosis plant (RO) will be required to produce potable water.

Mine water requirements include ore washing, dust suppression, laundering, showers and a washdown bay. Estimates of the amounts required cannot be provided until the pre-feasibility assessments have been completed. Arafura Resources are considering options for the mine to supply potable water to the residents at Aileron Roadhouse and Alyuen (a small Aboriginal community nearby).

4.6 Operational Life

The mine is estimated to have an operational life over 20 years. Orebody definition drilling may extend this period.