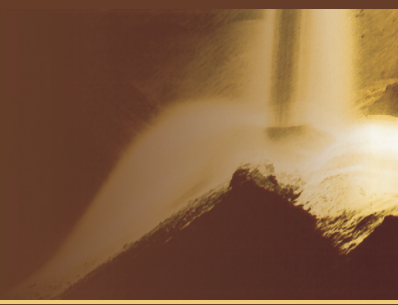


SECTION 6

DRAFT STATEMENT OF COMMITMENTS



Snapper Mineral Sands Project Environmental Assessment

DRAFT STATEMENT OF COMMITMENTS

Environmental Mitigation

Environmental mitigation measures to be implemented during the construction and operation of the Snapper Mine are described in the following sections of the EA:

- Land Resources – Section 4.2.3.
- Visual Character – Section 4.3.3.
- Hydrogeology – Section 4.4.3.
- Surface Water – Section 4.5.3.
- Aboriginal Cultural Heritage – Section 4.6.3.
- Non-Aboriginal Cultural Heritage – Section 4.7.3.
- Transport – Section 4.8.3.
- Flora – Section 4.9.3.
- Fauna – Section 4.10.3.
- Noise – Section 4.11.3.
- Air Quality – Section 4.12.3.
- Population, Employment and Community Infrastructure – Section 4.14.3.
- Hazard and Risk – Section 4.15.2.

Comprehensive Snapper Mine Offset Strategy

In addition to the environmental mitigation measures summarised in the sections listed above, a comprehensive offset strategy would be implemented for the Snapper Mine as described below.

Overview

An offset strategy will be implemented to result in the conservation of an equivalent area of vegetation to that potentially disturbed by the Snapper Mine (i.e. 1,630 ha) (or an alternative area to the satisfaction of the Director-General of the DoP).

Offset Landholding

BEMAX has acquired and is in the process of acquiring landholdings in the region, all or part of which could potentially be available for consideration as a suitable offset area.

If an offset landholding is to be established, BEMAX will prepare and submit a Snapper Mine Vegetation Offset Proposal to DoP within 12 months of Project Approval. In developing the Snapper Mine Vegetation Offset Proposal, consideration will be given to relevant components of *BioMetric* and the *Ginkgo Mineral Sands Project Southern Mallee Offset Strategy* (BEMAX, 2006g) (prepared in May 2006 to satisfy the relevant Ginkgo Mine Development Consent Conditions).

The Snapper Mine Vegetation Offset Proposal will:

- Provide the results of a desktop evaluation to describe the conservation values of the vegetation offset area (e.g. known or potential threatened species occurrences).
- Provide the results of a site evaluation which will include:
 - vegetation condition assessment;
 - an inventory of habitat resources and species recorded during the site evaluation;
 - vegetation mapping; and
 - habitat complexity assessment, including relevant components of *BioMetric*.
- Justify why the vegetation offset area is suitable, considering the condition of the vegetation and regional location.
- Describe how the Vegetation Offset Proposal will be implemented (e.g. re-zoning of land to nature conservation and establishment of fencing and signage).
- Describe how the performance of the vegetation offset will be monitored and managed over time (e.g. exclusion of stock, control of introduced species and other management and maintenance measures).
- Describe how conservation of the vegetation offset will be secured in the long-term (see below).

BioBanking Scheme

While the establishment and management of an offset landholding is currently being considered as a method of establishing a Snapper Mine vegetation offset, an alternative approach may also be available via the Biodiversity Banking (BioBanking) Scheme under the *Threatened Species Conservation Act, 1995*. BEMAX will consult with the DEC and DoP in regard to the application of BioBanking as a possible alternative offset arrangement, if the provisions under the BioBanking Scheme are available within 12 months of Snapper Mine Project Approval.

Long-Term Security and Management of the Vegetation Offset Area

Regardless of the offset approach adopted (i.e. an offset landholding, participation in BioBanking and/or an alternative arrangement to the satisfaction of the Director-General of DoP), the long-term security of the Snapper Mine vegetation offset measures will be implemented within three years of Project Approval or a time period to the satisfaction of the Director-General of the DoP.

If an offset landholding is to be established, this will be through rezoning and/or re-conditioning of relevant lease conditions to reflect conservation purposes. The offset area is likely to be located on a Western Lands Lease, therefore the zoning and/or re-conditioning will be undertaken in consultation with the DNR in their capacity as administrators of such leases. Should the tenure of the offset area be otherwise, the relevant land administrator will be consulted with respect to appropriate approvals and processes.

In addition, if an offset landholding is established, a management plan will be prepared to facilitate the management of the relevant lands.

Environmental Management

BEMAX will prepare and implement the following environmental management plans for the Snapper Mine:

- Site Water Management Plan (SWMP);
- Landfill Environmental Management Plan (LEMP);
- Radiation Management Plan (RMP);
- Aboriginal Cultural Heritage Management Plan (ACHMP);
- Flora and Fauna Management Plan (FFMP);

- Mining Operations Plan (MOP);
- Emergency Response Plan (ERP);
- Noise Management Plan (NMP); and
- Air Quality Management Plan (AQMP).

BEMAX will revise and implement the following Ginkgo Mine and/or MSP environmental management plans and codes to include aspects of relevance to the Snapper Mine:

- Ginkgo Mine and MSP Transport of Hazardous Materials Plan (Ginkgo Mine and MSP THMP) (BEMAX, 2006c);
- Ginkgo Mine and MSP Traffic Code of Conduct (Ginkgo Mine and MSP TCC) (BEMAX, 2006b);
- Ginkgo Mine Borefield Impact Management Plan (Ginkgo Mine BIMP) (BEMAX, 2006a); and
- Ginkgo Mine Community Consultation Plan (Ginkgo Mine CCP) (BEMAX, 2004a).

The abovementioned environmental plans and codes are described below.

Site Water Management Plan (SWMP)

A SWMP will be developed for the construction and operation of the Snapper Mine in consultation with the relevant authorities. The SWMP will be prepared in accordance with the requirements for such plans outlined in *Managing Urban Stormwater: Soils and Construction* (NSW Department of Housing, 1998) or its latest version. The SWMP will describe:

- details of temporary and permanent sediment and erosion control systems to be used during both mine construction and operation;
- details of salinity management;
- measures that will be employed to minimise soil erosion and the discharge of sediment and other pollutants to lands and/or waters during construction activities;
- measures to be developed and implemented to mitigate the impacts of stormwater runoff from the site following the completion of construction activities;
- measures to construct banks, channels and similar works to divert stormwater away from disturbed and potentially contaminated land surfaces;

- a programme for reporting on the effectiveness of the sediment and erosion control systems; and
- details of the management of soil stockpiles, erosion protection, soil stripping techniques and scheduling.

Landfill Environmental Management Plan (LEMP)

A LEMP will be developed for the Snapper Mine for the operation of the Snapper Mine. The LEMP would be consistent with the *Code of Practice and Safety Guide for Radiation Protection and Radioactive Waste Management in Mining and Mineral Processing* (Mining and Minerals Processing Code) (ARPANSA, 2005) and would also generally meet the environmental goals listed in *Environmental Guidelines: Solid Waste Landfills* (EPA, 1996). It will be relevant to the management of backloaded MSP process waste.

The LEMP will include:

- a management programme for backloaded MSP process waste;
- design and operation details of waste disposal areas;
- a system to monitor the movement of backloaded MSP process waste; and
- disposal techniques and handling practices;

Radiation Management Plan (RMP)

A RMP will be developed for the operation of the Snapper Mine in accordance with the Mining and Minerals Processing Code (ARPANSA, 2005).

The RMP will incorporate a Radioactive Waste Management Plan and detail best practicable technology to minimise potential occupational and members-of-public doses.

The RMP will include the following:

- a description of operation and control measures;
- a description of waste generating processes and waste;
- demonstration of access to professional expertise;
- details of radiation monitoring;
- details of appropriate equipment, staff, facilities and operation procedures;

- a description of induction and training courses;
- reporting and periodic review procedures;
- emergency plans;
- baseline radiological information;
- description of the waste management system;
- radioactive waste monitoring; and
- a conceptual decommissioning plan.

Aboriginal Cultural Heritage Management Plan (ACHMP)

The ACHMP will include cultural heritage management strategies and be developed and implemented in consultation with the Aboriginal community.

The ACHMP will include:

- a description of consultation to be undertaken with relevant Aboriginal community members;
- a description of training (relevant to Aboriginal cultural heritage) for on-site personnel;
- a programme for investigation of lithic technologies and reduction strategies adopted at Aboriginal cultural heritage sites within the Snapper Mine disturbance area;
- details relevant to the recording, collection, curation, storage and replacement of representative samples of scientifically and culturally significant items;
- details of actions to be undertaken in the event human skeletal remains are encountered;
- a programme for dating hearths from SN02 using radiocarbon and/or luminescence techniques; and
- details of the protection measures (i.e. the erection of temporary barriers) around sites SN05, SN20 and SN22.

Flora and Fauna Management Plan (FFMP)

Flora and fauna impact avoidance and mitigation measures will be detailed in a FFMP which will be prepared for the construction and operation of the Snapper Mine. The FFMP will include measures which will be undertaken during construction and operation, including a Vegetation Clearance Protocol (VCP), Threatened Species Management Protocol (TSMP), grazing management measures, control of introduced flora species, control of introduced animal species, Painted Burrowing Frog monitoring, vehicular traffic management, vegetation monitoring and bushfire management.

A VCP will be implemented to minimise the removal/modification of flora and fauna species and their habitats. Key components of the VCP will include the delineation of areas to be cleared of remnant vegetation, a pre-clearance survey, identification of relevant fauna management strategies and specific procedures for vegetation clearance.

A TSMP will be prepared and implemented to facilitate the management and minimisation of potential impacts on threatened flora and fauna species. Key components of the TSMP will include site observations/surveys, threatened species management strategies and reporting. The TSMP will be implemented by suitably qualified person(s).

Emergency Response Plan (ERP)

An ERP will be prepared for the construction and operation of the Snapper Mine to detail responsibilities in the event of emergencies in and around the Snapper Mine area. Snapper Mine fire response will be co-ordinated with the local bushfire brigade.

Noise Management Plan (NMP)

A NMP will be prepared for the construction and operation of the Snapper Mine to describe noise control measures to be implemented to reduce noise emissions from the Snapper Mine. The NMP will also provide noise mitigation control strategies that can be applied in the event that relevant noise criteria are exceeded or tonal noise becomes an issue for the operation.

The NMP will describe the following:

- applicable noise criteria;
- potential sources of noise emissions;
- emission mitigation and management measures;

- the noise monitoring programme;
- emission management protocols;
- stakeholder consultation; and
- reporting requirements.

Notwithstanding the predicted compliance with applicable noise criteria, the NMP will detail specific actions for responding to exceedances of criteria and complaints should they occur. The results of the noise monitoring programme will be used to optimise noise controls, validate the noise modelling predictions and will be reported to relevant authorities via the Annual Environmental Management Report (AEMR).

Air Quality Management Plan (AQMP)

An AQMP will be prepared for the construction and operation of the Snapper Mine to describe air quality mitigation measures to be employed to reduce emissions of atmospheric dust from the Snapper Mine.

The AQMP will describe the following:

- applicable air quality criteria;
- potential sources of air quality emissions;
- emission control and management measures;
- the air quality monitoring programme;
- emission management protocols;
- stakeholder consultation; and
- reporting requirements.

Notwithstanding the predicted compliance with applicable air quality criteria, the AQMP will detail specific actions for responding to exceedances of criteria and complaints should they occur. The results of the air quality monitoring will be used to optimise air quality controls, validate the air quality modelling predictions and will be reported to relevant authorities via the AEMR.

Transport of Hazardous Materials Plan (Ginkgo Mine and MSP THMP) and Traffic Code of Conduct (Ginkgo Mine and MSP TCC)

The Ginkgo Mine and MSP TCC and Ginkgo Mine and MSP THMP will be revised to include haulage activities relevant to the Snapper Mine.

The Ginkgo Mine and MSP TCC and Ginkgo Mine and MSP THMP will address the requirements of the *Code of Practice for the Safe Transport of Radioactive Materials, 2001* (ARPANSA, 2001) including:

- storage requirements;
- labelling, placarding and documentation requirements;
- radiation monitoring;
- driver instruction requirements;
- emergency response procedure; and
- waste material tracking system requirements.

Borefield Impact Management Plan (Ginkgo Mine BIMP)

The Ginkgo Mine BIMP (BEMAX, 2006a) will be revised to incorporate the Snapper Mine. The revised BIMP will provide:

- a method for using groundwater monitoring data to identify variance to modelled groundwater impacts and thereby trigger investigations or remedial action;
- bore monitoring trigger levels for relevant landholder bores (e.g. Chalky Well);
- investigation methodology to examine any exceedance of relevant triggers; and
- suitable remedial measures (e.g. lowering of the pump set or providing an alternative water supply) that will be undertaken in the event of a significant adverse affect on a landholder bore attributable to the potential cumulative effects of the Snapper and Ginkgo Mines.

Community Consultation Plan (Ginkgo Mine CCP)

The Ginkgo Mine CCP (BEMAX, 2004a) will be revised to include the Snapper Mine. The CCP will provide for on-going consultation with local residents.

Reporting

Mining Operations Plan (MOP)

A MOP will be prepared for operation of the Snapper Mine in accordance with the Mining, Rehabilitation and Environmental Management Process (MREMP) guidelines (DPI-MR, 2006) and in consultation with various regulatory and advisory agencies.

The MOP will provide information in regard to mining, processing and rehabilitation operations, relevant lease and development conditions, licences and other approvals. The MOP will also describe:

- area(s) to be disturbed;
- mining and rehabilitation method(s) to be used and their sequence;
- existing surface infrastructure;
- progressive rehabilitation schedules;
- areas of particular environmental sensitivity;
- land and water management systems; and
- resource recovery.

The MOP will be revised periodically as well as prior to any significant alteration to mining and rehabilitation operations including cessation of mining.

Annual Environmental Management Report (AEMR)

An AEMR will be prepared for operation of the Snapper Mine in accordance with the MREMP guidelines (DPI-MR, 2006) and in consultation with various regulatory and advisory agencies. The AEMR will address the status of approvals, leases, licences and environmental risk management and control strategies.

For the preceding 12 month period, the AEMR will provide a summary of community relations and liaison, mine development and rehabilitation in relation to the MOP. Snapper Mine environmental performance in relation to the collective conditions of approvals, leases and licences for the previous 12 month period will also be reported.

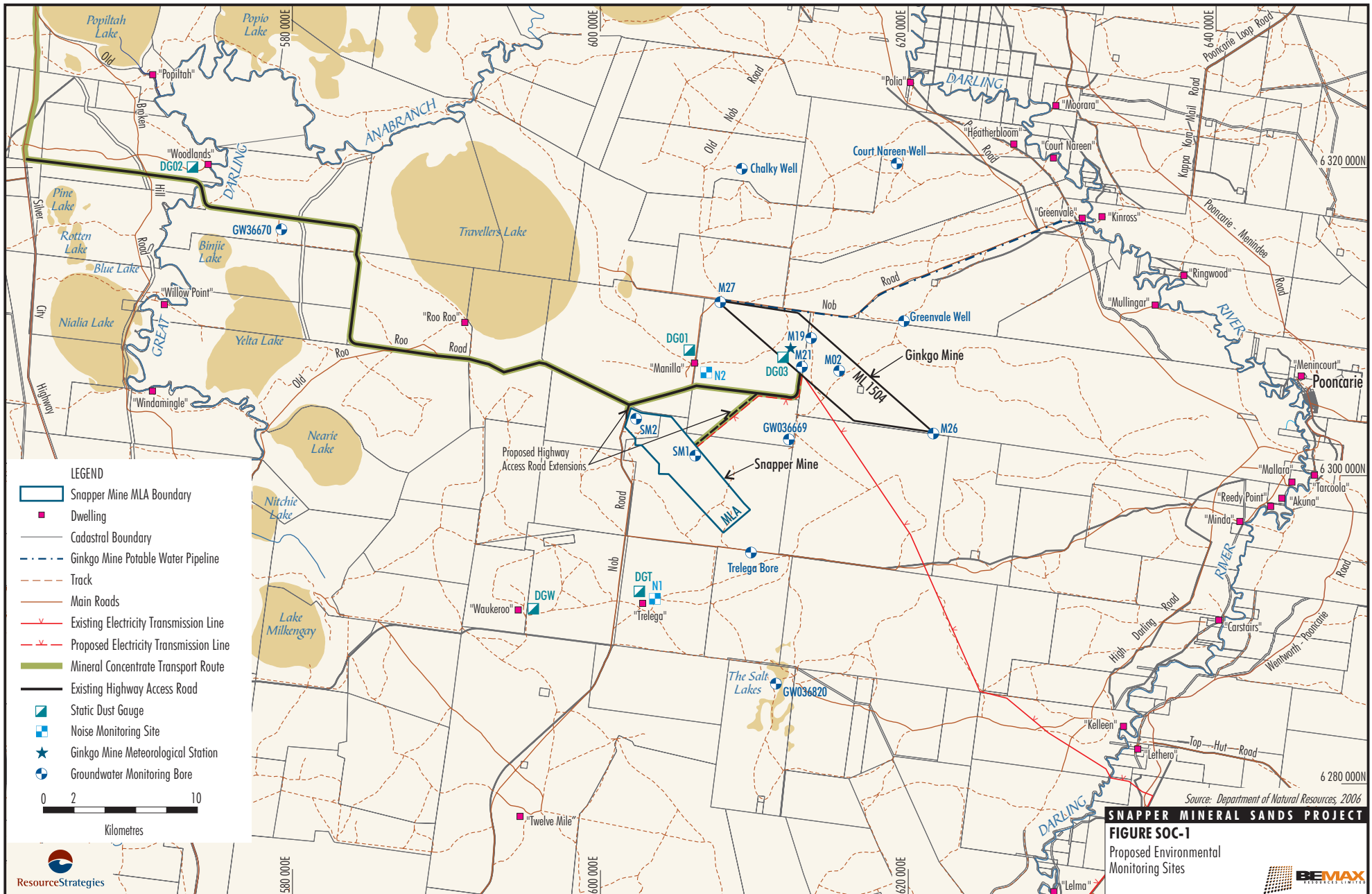
The AEMR will also include a review and any proposed improvements in relation to environmental monitoring and management systems and environmental performance and will specify environmental and rehabilitation targets to be achieved during the ensuing 12 month period.

Environmental Monitoring Programme

An environmental monitoring programme will be developed for the Snapper Mine. Table SOC-1 provides an overview of the programme and Figure SOC-1 shows the location of various monitoring sites. Monitoring results as well as monitoring site locations, parameters and frequencies will be reviewed through the AEMR, in consultation with relevant authorities.

Table SOC-1
Overview of the Environmental Monitoring Programme

Monitoring Focus	Section	Monitoring Sites
Meteorology - Temperature; - Relative humidity; - Net solar radiation; - Rainfall; - Wind speed; - Wind direction; and - Sigma theta (the rate of change of wind direction).	4.1.2	Ginkgo Mine meteorological station.
Radiation Background (ambient).	4.2.3 and 5.6	Snapper Mine MLA area.
Backloaded MSP process waste.		Backloaded MSP process waste stockpile.
Personnel.		Mineral concentrate transport fleet and HMC treatment facility personnel.
Mineral concentrate.		Mineral concentrate stockpiles.
Lateral Saline Water Movement - Presence of seepage; - Presence of salt deposition; and - Any adverse effects on vegetation.	4.2.3, 4.4.3 and 4.9.3	At locations surrounding the backfilled mine path, initial slurried overburden emplacement, initial water dam and initial sand residue dam.
Groundwater Groundwater level, TDS, EC.	4.4.3	GW36669, GW36670, GW36820, Trelega Bore, Chalky Well, Greenvale Well and Court Nareen Well.
Groundwater level, TDS, EC, chloride, sulphate, bi-carbonate, K, Na, Ca, Mg, Fe, Pb, Mn, P.		SM1, SM2, M02, M19, M21, M26 and M27.
Erosion and Sediment Control - Stability; and - Effectiveness.	4.5.3	Sediment control structures.
Vegetation Offset - Effectiveness of stock exclusion; and - Effectiveness of introduced species control measures.	4.9.3	Vegetation offset area.
Painted Burrowing Frog Presence of individuals.	4.10.3	Selection of monitoring locations will primarily be based on rainfall distribution and intensity.
Weeds and Pests - Presence of species; and - Effectiveness of control measures.	4.9.3	Snapper Mine MLA area and surrounds.
Noise Attended and unattended noise monitoring.	4.11.3	N1 and N2.
Air Quality Dust deposition.	4.12.3	DG01, DG02, DG03, DGW and DGT.
Rehabilitation Parameters developed in consultation with DPI-MR.	5.6	Rehabilitated landforms and trial areas.



SNAPPER MINERAL SANDS PROJECT

FIGURE SOC-1

Proposed Environmental Monitoring Sites

