

Mineral Sands Mining and Rubbish Tip Relocation, Reserve 31900 Yarloop

Cable Sands (WA) Pty Ltd

**Report and Recommendations
of the Environmental Protection Authority**

**Environmental Protection Authority
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1. Introduction

This report provides the advice and recommendations of the Environmental Protection Authority (EPA) to the Minister for the Environment on the environmental factors relevant to a proposal by Cable Sands (WA) Pty Ltd (Cable Sands) to mine mineral sands and relocate an existing rubbish tip in a portion of "C" Class Reserve 31900, which is vested in the Shire of Harvey for the purpose of sand extraction and rubbish disposal.

The EPA has previously considered earlier proposals for mining in Reserve 31900 (Cable Sands, 1996; 1998). In its Bulletin 838 the EPA concluded that the clearing of 6.1 ha of remnant vegetation in Reserve 31900 was environmentally unacceptable (EPA, 1996). However, in Bulletin 944 the EPA recommended that a second proposal, also to clear 6.1 ha of remnant vegetation in Reserve 31900, was acceptable provided that new environmental offsets were implemented, including the donation of another area of 9.1 ha of remnant vegetation to the conservation estate and the undertaking of other actions by the proponent to aid in conservation of remnant vegetation in the area, including fencing of Reserve 31900 and adjacent reserves, relocation of the existing rubbish tip and the rehabilitation of existing disturbed areas (EPA, 1999). In the EPA's judgement, the offsets reduced the significance of the impacts of the proposal.

The Minister for the Environment decided that the second proposal may not be implemented. Cable Sands subsequently formulated a third proposal (the current proposal - see Section 2 below) which reduced the area of remnant vegetation proposed to be cleared to 2.7 ha.

The current proposal was referred to the EPA on 10 January, 2000 and it was proposed that an EPA-initiated Environmental Protection Statement (EPS) level of assessment may be appropriate. The proponent was advised to notify the previous appellants about the new proposal.

Cable Sands prepared an environmental review document and the EPA has prepared this report and recommendations on the proposal. At its meeting of 11 May 2000 the EPA formally set the level of assessment at EPS and agreed to the release of the proponent's document and the EPA's report on the proposal. The level of assessment and the public availability of the proponent's environmental review document and the EPA's report were advertised in the *West Australian* newspaper on Saturday, 13 May, 2000.

Based on the information provided, the EPA considers that while the proposal will impact on an area of importance, it has the potential to provide an environmental gain as a result of the proponents commitments. This report provides the EPA's advice and recommendations in accordance with Section 44 (1) of the *Environmental Protection Act 1986*, including the proposed Environmental Conditions and Procedures.

The Cable Sands' environmental review document entitled "Mineral Sands Mining and Rubbish Tip Relocation at Yarloop" (Cable Sands, 2000a) accompanies this report and should be referred to for more detailed information.

The EPA considers that the proposal described can be managed in an acceptable manner subject to the commitments by the proponent being legally binding and the application of the EPA's recommended conditions.

Any person who disagrees with the EPA's decision on the level of assessment may lodge an appeal with the Minister for the Environment within 14 days of the date of the decision being placed in the public record, which was 22 May, 2000.

A separate right of appeal exists for any person who disagrees with the content of, or any recommendations in this report, also within 14 days of release of the report, which was also 22 May, 2000.

2. The proposal

Background

In 1998, Cable Sands submitted a revised (second) proposal which involved mining in Reserve 31900, purchasing nearby land owned by Bunnings to offset the 6.1 ha of remnant vegetation to be cleared, relocation and rehabilitation of the rubbish tip, fencing adjacent reserves and other actions designed to assist the conservation of these reserves. The EPA, in Bulletin 944, then advised that whilst there would be a loss of vegetation its environmental impact was judged by the EPA to be offset by the purchase of 9.1 ha of remnant vegetation and other offsets.

The EPA considered that, on balance, the proposal would result in a “net environmental benefit” and recommended that it could proceed.

Appeals, however, were lodged against the EPA’s recommendations. Two key points raised in the appeals related to:

- the legality of the Minister issuing a new statement which would contradict the content of the statement issued in April 1997 to the extent that clearing in Reserve 31900 could occur, and
- the issue of ‘net environmental benefit’ to the effect that the EPA had previously found the mining on Reserve 31900 to be environmentally unacceptable, and the inclusion of the compensatory arrangement of the land purchase had not altered the impact of mining on the vegetation of the Reserve

The Minister for the Environment allowed the appeals and decided that the second proposal for mining on Reserve 31900 could not be implemented.

Current Proposal

The current mining plan proposes that clearing of remnant vegetation in Reserve 31900 be reduced from 6.1 ha to an area of 2.7 ha (Figure 1). It also includes the mining of 2.8 ha under the existing rubbish tip, the proposed relocation and secure containment of the rubbish in an adjacent, existing disturbed area and the rehabilitation of the mined areas, the relocated rubbish and some surrounding existing disturbed areas. The current proposal also retains commitments to environmental offsets including the proponent buying 9.1 ha of remnant vegetation within Lot 826 (Figure 2) across the South West Highway for donation to the conservation estate and other actions to aid the management of Reserve 31900 and adjacent reserves for conservation. Table 1 itemises the components of the current proposal and compares it to the second proposal referred to above.

The proposal is described in detail in Section 2 of the proponent’s EPS document (Cable Sands, 2000a) which is available with this report. Figure 1 in this bulletin should be consulted for an outline of the Areas referred to in the dot points below. The key characteristics of the proposal are summarised in Schedule 1 of Appendix 2 of this report.

Table 1: Comparison of 1998 PER proposal and Current proposal

Characteristic	1998 PER Proposal (as modified through assessment process)	Current Proposal
1. Mining		
Orebody (tonnes heavy mineral concentrate)	178,000 (8.9ha)	114,000 (5.5ha)
Life of Project (years)	1.4	0.9
Area of native vegetation cleared	6.1 ha Forresterfield Complex (Type 3b and 20b Floristic Communities)	2.7ha Forresterfield Complex (Type 3b and 20b Floristic Communities)
Typical Mining Rate (tonnes heavy mineral concentrate per annum)	126,000	126,000
Water supply	Borefield, Waterous Formation Creek and South West Irrigation Cooperative	Borefield, Waterous Formation Creek and South West Irrigation Cooperative
2. Environmental offsets		
Land swap	Donation of Bunnings land (including improved management). This land contains 9.1ha of Forresterfield Complex vegetation (Type 20b Floristic Community).	Commitment remains
Rubbish tip	Decommissioned including stabilisation with native species	Commitment remains
Degraded areas in Res. 31900	Rehabilitated to good quality native vegetation	Stabilised and native species established. Reduction in area to be cleared reduces the amount of topsoil and vegetative material available for improving degraded areas.
Res. 31900 boundaries	Fenced to prevent unauthorised access and illegal dumping	Commitment remains
Res. 31900 boundaries	Fauna corridor retained along northern boundary	Commitment remains
Windblown litter	Not addressed	Vegetated areas of Res. 31900 will have rubbish removed
Adjoining reserves (23307 and 31901)	Fenced to restrict unauthorised access	Commitment remains
Reserve 31901 rubbish	Not addressed	Reserve 31901 will have litter & car bodies removed from southern area
Location 816 (Cable Sands land east of Res. 31900)	Overstorey retained, fenced and understorey regrowth encouraged to act as buffer for Res. 31900	Commitment remains
Core conservation area	Not addressed	Core conservation area (Area 5 from Fig 1) designated for long term management of conservation values by CALM if vesting is transferred from Shire of Harvey
Area of clearing	6.1 ha (or 31.0% of Reserve 31900)	2.7 ha (or 13.7% of Reserve 31900)
Native vegetation retained	6.8 ha (53% of native veg. 35% of reserve)	10.4 ha (80% of native veg, 53 % of reserve)

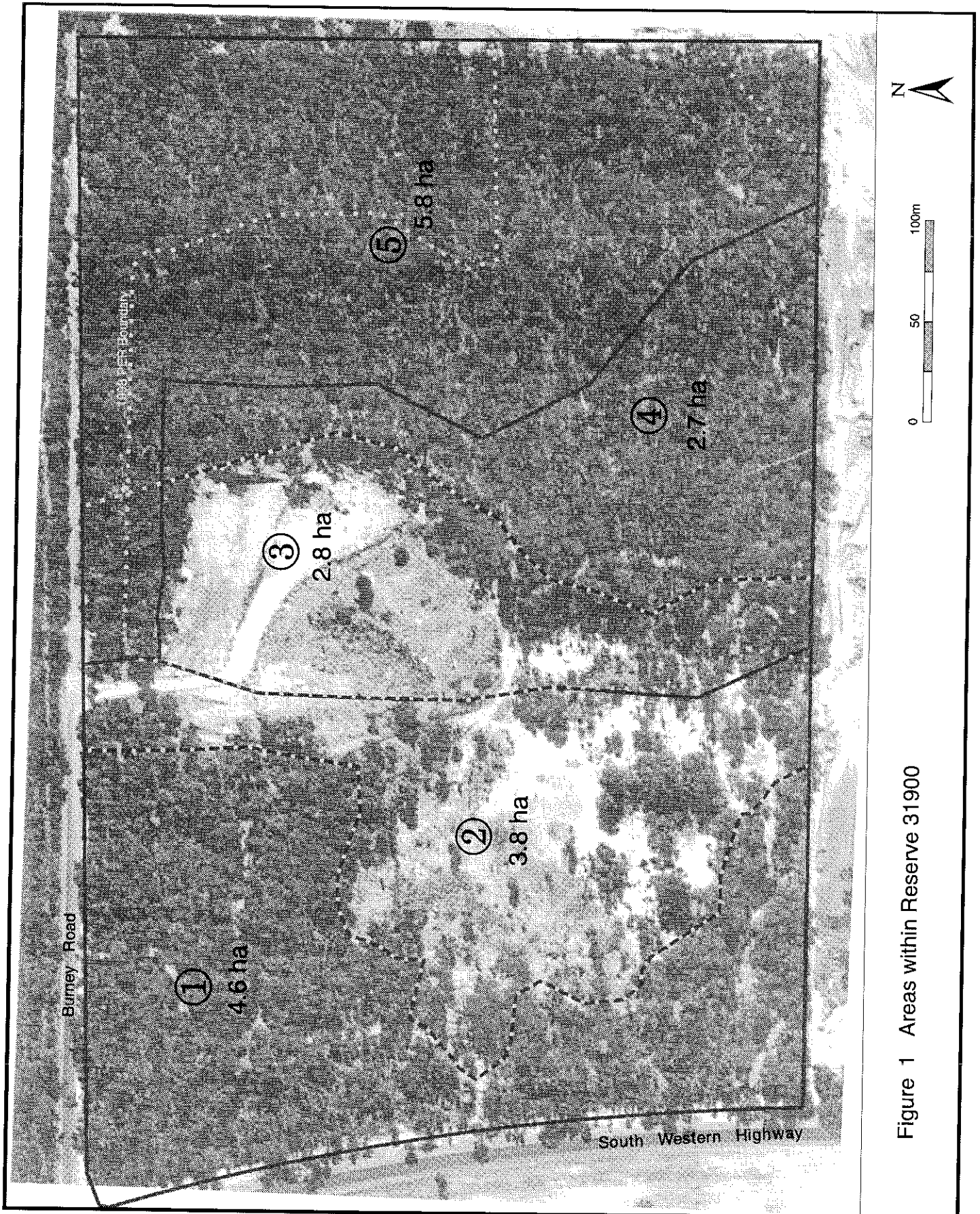


Figure 1 Areas within Reserve 31900

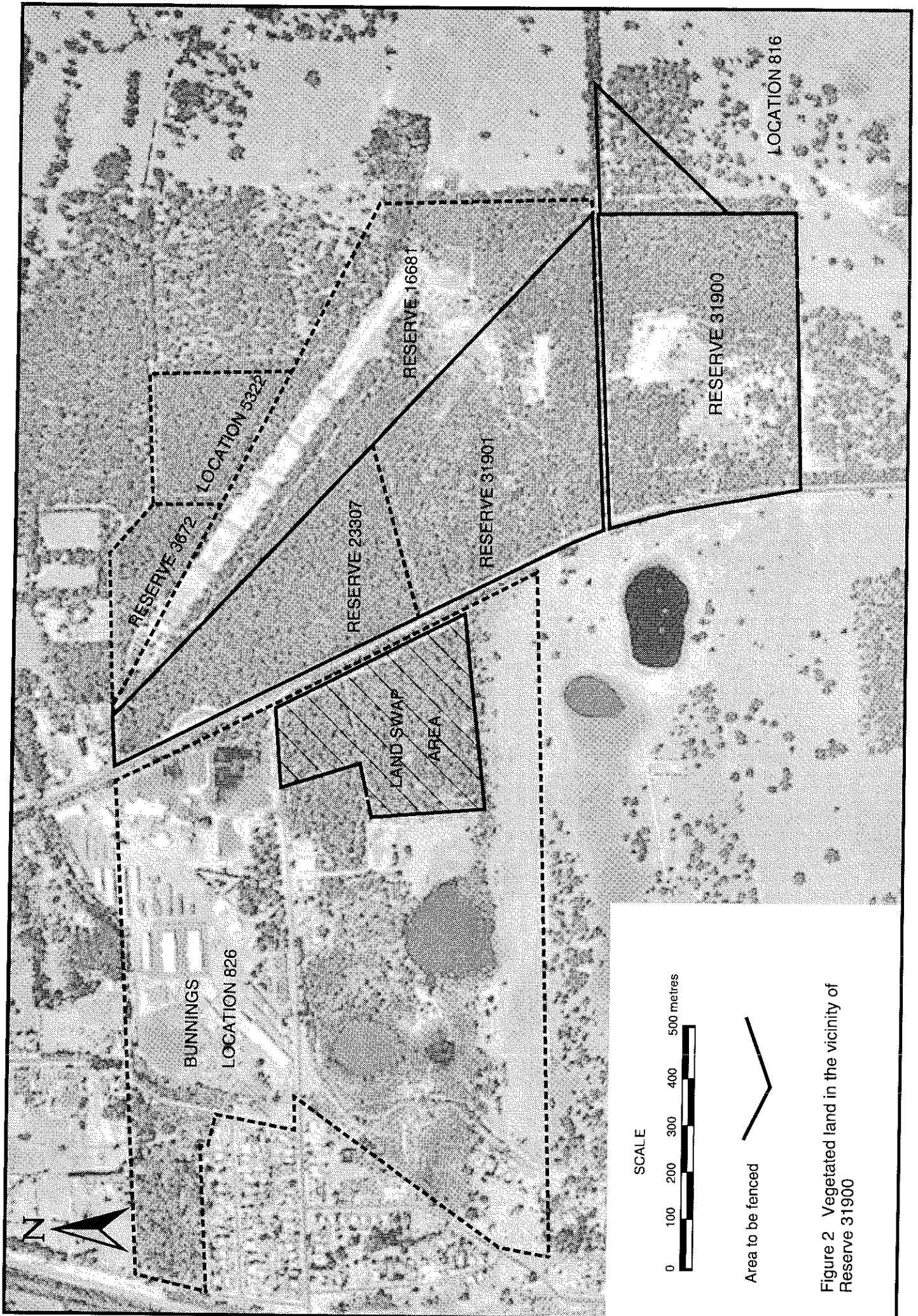


Figure 2 Vegetated land in the vicinity of Reserve 31900

The key components (refer to Figure 1) of the current proposal are:

- relocation of rubbish tip from Area 3 to Area 2;
- rehabilitation of rubbish tip and surrounding disturbed areas in Area 2 with native species;
- mining within the former rubbish tip Area 3 (2.8 ha);
- clearing and mining of 2.7ha of remnant vegetation in Area 4;
- rehabilitation of mined areas to native vegetation (Areas 3 and 4);
- purchase and donation to the conservation estate of 9.1 ha of remnant vegetation; and
- fencing of reserves and other actions to improve the conservation of reserves in the area.

Is the Current Proposal a New Proposal?

The Crown Solicitor's Office has provided advice specifically dealing with the issue of whether or not the current proposal at Yarloop is a new proposal. The Crown Solicitor's Office advised that;

"If the EPA were of the opinion that the reduction in the area to be mined within reserve 31900 meant that the likely environmental effect of the current proposition is significantly different from the likely effect of the earlier proposal, then the current proposition would constitute a new proposal for the purposes of the EP Act and could be assessed under Part IV.the critical factor will be the EPA's assessment of the significance from an environmental perspective of the reduction in the area to be mined."

The EPA has considered the issue of the degree of the likely environmental effect of the current proposal in relation to the previous and earlier proposals and makes two points.

First, the reduction in area of remnant vegetation to be cleared, by more than half from 6.1 ha in the earlier proposals to 2.7 ha in the current proposal, clearly constitutes a significantly different and reduced level of likely environmental effect and therefore takes the view that the current proposal is a new proposal.

Second, the EPA is of the view that judgements as to environmental acceptability cannot be confined to the specific area controlled by the proponent. Context is important. It is the responsibility of the EPA to make a judgement about environmental significance and that judgement will take account of the wider context. The wider context in the case of this proposal includes the proposition for addition of other remnant vegetation to the conservation estate and other actions by the proponent to assist with conservation in the surrounding area.

3. Consultation

The proponent advises that, during the preparation of the current environmental review document, consultation was undertaken with government agencies, neighbours and other key stakeholders. The proponent also advised that all appellants against Bulletin 944 on the second proposal were advised that a new proposal was being prepared. These appellants, along with members of the EPA, DEP, Water and Rivers Commission (WRC) and the Shire of Harvey were invited to a site inspection organised by the proponent on 7 March, 2000. The Chairman of the EPA, the local member of parliament, representatives of the Wildflower Society, the Denmark Environment Centre, the D'Entrecasteaux Coalition, councillors and local residents attended this inspection, as well as council, WRC and DEP staff.

Issues raised at the site inspection included the adequacy of fauna surveys, dust, contaminants in the tip, groundwater supplies, the potential for mining only the existing disturbed area of the tip and surrounds, the adequacy of rehabilitation, the amount of bush to be cleared and the validity of conservation offsets. Other issues raised during the assessment included whether or

not the current proposal constitutes a new proposal, the need to protect both floristic community types and change of purpose of the Reserve.

4. Relevant environmental factors

In the EPA's opinion the following are the outstanding environmental factors relevant to the proposal:

- a) Conservation - reservation for conservation of Floristic Community Types 3b and 20b; and
- b) Rehabilitation - restoration of soil profile and return of native vegetation to disturbed areas.

Other factors identified as relevant in EPA Bulletin 944, dealing with the second proposal, have had additional work done on them and the EPA is satisfied that they can be adequately managed as follows;

- Groundwater - a "Groundwater Management Plan and Operating Strategy for Yarloop Mine Water Supply including the Brockman Rd Borefield" (Cable Sands, 2000b) has been developed by the proponent in consultation with the WRC. WRC has oversight of groundwater management and this factor can be managed through their processes. Cable Sands has made a commitment to implement the Groundwater Management Plan, including monitoring and reporting to WRC groundwater levels adjacent to the reserve to provide a mechanism for reviewing impacts of mining.
- Aboriginal culture and heritage - the proponent commissioned archaeological and ethnographic surveys of Reserve 31900 by qualified professionals in consultation with the local Aboriginal community. No archaeological material was discovered and Aboriginal consultants participated in a work program clearance survey in August 1999. Cable Sands has made a commitment to stop work and consult DME and AAD in any area where Aboriginal sites are discovered, as required by law.
- Noise - the current proposal is 500m further from residents than current operations by Cable Sands at Yarloop. Cable Sands has now prepared a Noise Management Plan in consultation with the DEP (Cable Sands, 1999) and has made a commitment to implement the noise management plan.
- Rubbish tip and existing sand extraction area - Cable Sands is preparing a management plan for the decommissioning of the Yarloop rubbish tip in consultation with DEP, Shire of Harvey and WRC. Cable Sands has made commitments to prepare and implement the rubbish tip decommissioning plan.

5. Conclusions

Section 44 of the *Environmental Protection Act 1986* requires the EPA to report to the Minister for the Environment on the environmental factors relevant to the proposal and on the conditions and procedures to which the proposal should be subject, if implemented. In addition, the EPA may make recommendations as it sees fit.

The EPA concludes that the factor of conservation of floristic community types 3b and 20b can be managed to meet the EPA's objective of maintaining the abundance, diversity, distribution and productivity of these communities in the Yarloop area. The proponent has reduced the area of remnant vegetation in Reserve 31900 to be cleared from 6.1 ha to 2.7 ha and has committed to purchase 9.1 ha of nearby remnant vegetation including community 20b which is the more threatened of the two communities, and to fence adjacent Reserves 31901 and 23307 to assist with maintenance of their conservation values. Given the reduction in area to be cleared and the supporting environmental offsets, the EPA considers that the proposal is environmentally acceptable.

The EPA concludes that the factor of rehabilitation involving restoration of the soil profile and return of native vegetation to disturbed areas can be managed to meet the EPA's objective for rehabilitation of the area consistent with the biodiversity and floristic values of Reserve 31900.

The proponent has committed to prepare and implement a Programme for Mining and Rehabilitation for Reserve 31900 in consultation with the Department of Conservation and Land Management (CALM) and DEP. Cable Sands plans to complete mining within a year and has made a commitment to re-instate the final landform, consistent with the surrounding terrain, within 12 months of the completion of mining of the orebody. Completion of mining in a short period and rapid restoration of the landform will enable groundwater levels to re-establish quickly to avoid drawdown affecting remnant vegetation.

The EPA is particularly keen that rehabilitation of the mined area is successful in re-instating existing vegetation assemblages based on a suite of native species which is consistent with the diversity and floristics of the surrounding remnant vegetation and which can be managed for conservation consistently with the surroundings in the long term. To this end the EPA will require that the rehabilitation plan be prepared to its satisfaction and that it expects the plan and its subsequent implementation to be subjected to independent, expert advice, also to the satisfaction of the EPA.

Furthermore, the EPA has recommended that the proposal should be subject to the preparation and implementation of an Environmental Management System.

6. Recommendations

The EPA considers that the proponent has demonstrated, in the environmental review document, that the proposal can be managed in an environmentally acceptable manner and provides the following recommendations to the Minister for the Environment:

1. That the Minister notes that the proposal being assessed is for mineral sands mining and rubbish tip relocation at Reserve 31900, Yarloop
2. That the Minister considers the report on the relevant environmental factors as set out in Sections 4 and 5.
3. That the Minister notes that the EPA has concluded that it is unlikely that the EPA's objectives would be compromised, provided there is satisfactory implementation by the proponent of the recommended conditions and proponent commitments as set out in Appendix 2, including the provision for implementation of an environmental management system.
4. That the Minister imposes the conditions and procedures recommended in Appendix 2 of this report.

Appendix 1

References

- Cable Sands (WA) Pty Ltd, 1996. Yarloop Titanium Minerals Mine, Consultative Environmental Review. Cable Sands (WA) Pty Ltd. Bunbury.
- Cable Sands (WA) Pty Ltd, 1998. Mining of Yarloop Reserve 31900, Public Environmental Review. Cable Sands (WA) Pty Ltd. Bunbury.
- Cable Sands (WA) Pty Ltd, 1999. Yarloop Mine Noise Management Plan. Unpublished Report.
- Cable Sands (WA) Pty Ltd, 2000a. Mineral Sands Mining and Rubbish Tip Relocation at Yarloop. Environmental Review, Cable Sands (WA) Pty Ltd, Bunbury.
- Cable Sands (WA) Pty Ltd, 2000b. Groundwater Plan and Operating Strategy for Yarloop Mine Water Supply including Brockman Rd Borefield. Unpublished Report.
- Environmental Protection Authority, 1996. Mining of Titanium Minerals, 2km South of Yarloop (Cable Sands (WA) Pty Ltd). Report and Recommendations of the Environmental Protection Authority, Bulletin 838, December 1996, Perth.
- Environmental Protection Authority, 1999. Titanium Minerals Mining and Rehabilitation, Reserve 31900 Yarloop (Cable Sands (WA) Pty Ltd). Report and Recommendations of the Environmental Protection Authority, Bulletin 944, July 1999, Perth.

Appendix 2

Recommended Environmental Conditions and Proponent's Commitments

RECOMMENDED ENVIRONMENTAL CONDITIONS

STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED (PURSUANT TO THE PROVISIONS OF THE ENVIRONMENTAL PROTECTION ACT 1986)

MINERAL SANDS MINING AND RUBBISH TIP RELOCATION, RESERVE 31900, YARLOOP, SHIRE OF HARVEY

Proposal: The mining of mineral sands and rubbish tip relocation within Reserve 31900 (mining area 5.5 hectares; 2.7 hectares of native vegetation to be cleared - total Reserve area 19.7 hectares). The proposal also includes a land swap of approximately 9.1 hectares of nearby land, fencing of Reserves 31901 and A23307, and rehabilitation of disturbed areas within Reserve 31900.

The project area is located within the Shire of Harvey, approximately 2 kilometres south-east of the township of Yarloop. Reserve 31900 is vested in the Shire of Harvey for sand extraction and rubbish disposal, as documented in schedule 1 of this statement.

Proponent: Cable Sands (WA) Pty Ltd

Proponent Address: Koombana Drive, North Shore, Bunbury WA 6230

Assessment Number: 1326

Report of the Environmental Protection Authority: Bulletin 977

The proposal to which the above report of the Environmental Protection Authority relates may be implemented subject to the following conditions and procedures:

Procedures

1 Implementation

- 1-1 Subject to these conditions and procedures, the proponent shall implement the proposal as documented in schedule 1 of this statement.
- 1-2 Where the proponent seeks to change any aspect of the proposal as documented in schedule 1 of this statement in any way that the Minister for the Environment determines, on advice of the Environmental Protection Authority, is substantial, the proponent shall refer the matter to the Environmental Protection Authority.
- 1-3 Where the proponent seeks to change any aspect of the proposal as documented in schedule 1 of this statement in any way that the Minister for the Environment determines, on advice of the Environmental Protection Authority, is not substantial, those changes may be effected.

2 Proponent Commitments

- 2-1 The proponent shall implement the consolidated environmental management commitments documented in schedule 2 of this statement.
- 2-2 The proponent shall implement subsequent environmental management commitments which the proponent makes as part of the fulfilment of conditions and procedures in this statement.

3 Proponent

- 3-1 The proponent for the time being nominated by the Minister for the Environment under section 38(6) or (7) of the Environmental Protection Act 1986 is responsible for the implementation of the proposal until such time as the Minister for the Environment has exercised the Minister's power under section 38(7) of the Act to revoke the nomination of that proponent and nominate another person in respect of the proposal.
- 3-2 Any request for the exercise of that power of the Minister referred to in condition 3-1 shall be accompanied by a copy of this statement endorsed with an undertaking by the proposed replacement proponent to carry out the proposal in accordance with the conditions and procedures set out in the statement.
- 3-3 The proponent shall notify the Department of Environmental Protection of any change of proponent contact name and address within 30 days of such change.

4 Commencement

- 4-1 The proponent shall provide evidence to the Minister for the Environment within five years of the date of this statement that the proposal has been substantially commenced.
- 4-2 Where the proposal has not been substantially commenced within five years of the date of this statement, the approval to implement the proposal as granted in this statement shall lapse and be void. The Minister for the Environment will determine any question as to whether the proposal has been substantially commenced.
- 4-3 The proponent shall make application to the Minister for the Environment for any extension of approval for the substantial commencement of the proposal beyond five years from the date of this statement at least six months prior to the expiration of the five year period referred to in conditions 4-1 and 4-2.
- 4-4 Where the proponent demonstrates to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority that the environmental parameters of the proposal have not changed significantly, then the Minister may grant an extension not exceeding five years for the substantial commencement of the proposal.

5 Compliance Auditing

- 5-1 The proponent shall submit periodic Compliance Reports, in accordance with an audit programme prepared in consultation between the proponent and the Department of Environmental Protection.
- 5-2 Unless otherwise specified, the Chief Executive Officer of the Department of Environmental Protection is responsible for assessing compliance with the conditions, procedures and commitments contained in this statement and for issuing formal, written advice that the requirements have been met.

- 5.3 Where compliance with any condition, procedure or commitment is in dispute, the matter will be determined by the Minister for the Environment.

Conditions

6 Environmental Management System

- 6-1 In order to manage the environmental impacts of the project, and to fulfil the requirements of the conditions and procedures in this statement, prior to ground-disturbing activities, the proponent shall demonstrate to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection that there is in place an Environmental Management System which includes the following elements:
1. An environmental policy and corporate commitment to it;
 2. Mechanisms and processes to ensure:
 - (1) planning to meet environmental requirements;
 - (2) implementation and operation of actions to meet environmental requirements;
 - (3) measurement and evaluation of environmental performance; and
 3. Review and improvement of environmental outcomes.
- 6-2 The proponent shall implement the environmental management system referred to in condition 6-1.

7 Rehabilitation

- 7-1 To ensure that rehabilitation is optimised, consistent with the long term objective to incorporate Reserve 31900 into the Conservation Estate, the proponent shall develop a Mining and Rehabilitation Plan. This plan shall be developed to the requirements of the Environmental Protection Authority (including any requirement of the Environmental Protection Authority for independent expert advice) and on advice of the Department of Environmental Protection, the Department of Conservation and Land Management, the Water and Rivers Commission and the Department of Minerals and Energy.

This Plan shall address:

1. baseline vegetation survey;
2. optimal clearing techniques;
3. mining strategy that integrates the mining and rehabilitation schedules, including promptly reestablishing the soil profile and groundwater hydrology;
4. weed management;
5. dieback management including the use of dieback-resistant stock;
6. propagation strategy, including seed collection, maximising the direct return of topsoil, direct seeding, planting of seedlings, smoke treatment and translocation;
7. development of specific rehabilitation performance criteria;
8. a monitoring programme to determine rehabilitation success;
9. contingency plans in the event that rehabilitation is not likely to meet, or does not meet performance criteria; and
10. allocation of resources (equipment, appropriately trained and experienced personnel and independent expert advice).

Components 1 to 6 of this Plan shall be prepared prior to ground-disturbing activities. The remaining components shall be prepared within 12 months following commencement of ground-disturbing activities.

7-2 The proponent shall implement the Mining and Rehabilitation Plan required by condition 7-1 to achieve the rehabilitation performance criteria referred to in condition 7-1 to the satisfaction of the Environmental Protection Authority.

7-3 The proponent shall make the Mining and Rehabilitation Plan required by condition 7-1 publicly available, to the requirements of the Environmental Protection Authority.

8 Yarloop Rubbish Tip Decommissioning Plan

8-1 Prior to ground-disturbing activities, the proponent shall prepare a Rubbish Tip Decommissioning Plan to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection, the Department of Conservation and Land Management and the Water and Rivers Commission. The Plan shall be prepared in consultation with the Shire of Harvey.

This Plan shall address:

1. regulatory requirements;
2. respective responsibilities of the proponent and the Shire of Harvey;
3. tip closure;
4. relocation of all of the rubbish;
5. leachate control including adequate impermeable containment and capping;
6. odour management;
7. site rehabilitation;
8. groundwater monitoring; and
9. contingency plans for disposal of any materials requiring disposal to landfill Classes III or IV (Department of Environmental Protection, 1996)¹ discovered in the tip.

8-2 The proponent shall implement the Rubbish Tip Decommissioning Plan required by condition 8-1.

8-3 The proponent shall make the Rubbish Tip Decommissioning Plan required by condition 8-1 publicly available, to the requirements of the Environmental Protection Authority.

9 Decommissioning Plan

9-1 At least six months prior to decommissioning, the proponent shall prepare a Decommissioning Plan to ensure that the Reserve is suitable for inclusion in the surrounding Yarloop Reserves System (see Schedule 1), to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection, the Department of Conservation and Land Management and the Department of Minerals and Energy.

This Plan shall address:

1. removal or, if appropriate, retention of plant and infrastructure;
2. identification of contaminated areas, including provision of evidence of notification to relevant statutory authorities.

¹ Department of Environmental Protection, 1996. Landfill Waste Classification and Waste Definitions. DEP, Perth.

- 9-2 The proponent shall implement the Decommissioning Plan required by condition 9-1 until such time as the Minister for the Environment determines that decommissioning and / or rehabilitation is / are complete.
- 9.3 The proponent shall make the Decommissioning Plan required by condition 9-1 publicly available, to the requirements of the Environmental Protection Authority.

Schedule 1

The Proposal

The mining of mineral sands (mining area 5.5 hectares; 2.7 hectares of native vegetation to be cleared) and relocation and rehabilitation of existing rubbish tip within Reserve 31900 (total Reserve area 19.7 hectares). The project area is located within the Shire of Harvey, approximately 2 kilometres south east of the township of Yarloop. Reserve 31900 is vested in the Shire of Harvey for sand extraction and rubbish disposal. The Reserve forms part of the Yarloop Reserves System (see Figure 1). The proposal includes rehabilitation of Reserve 31900 and fencing of Reserves A23307 and 31901 and proposed purchase and donation of another piece of land for addition to the Conservation Estate (Figure 1).

Key Characteristics Table

Element	Description
Life of project (mine production)	10-11 months approximately of mining (this does not include rehabilitation).
Size of ore body	114,000 tonnes of heavy mineral concentrate approximately.
Area of disturbance (including access)	5.5 hectares approximately (2.7 hectares of remnant vegetation and 2.8 hectares of disturbed rubbish tip and sand excavation areas). The 2.7 hectares of remnant vegetation to be cleared consists of Floristic Community Types 3b and 20b (Jarrah-Marri and Banksia/Jarrah woodlands).
Major components - waste dump, infrastructure (water supply, roads, etc)	Use existing facilities and infrastructure (water and power) outside Reserve 31900. No additional infrastructure will be required.
Water supply - source maximum annual requirement	Existing bores located on Brockman Road approx 4 kilometres west of the mine site, Waterous Formation Creek and South West Irrigation system. Approximately 803 Megalitres per annum.
Rehabilitation methods	Mined areas backfilled and regraded. Remaining timber used for habitat logs. Baseline vegetation survey. Weed and dieback management. A propagation strategy including, seed collection, direct return of topsoil to be maximised, direct seeding, smoke treatment and translocation. Development of specific rehabilitation performance criteria, a monitoring programme and contingency plans. Allocation of adequate resources (equipment, appropriately trained and experienced personnel and independent expert advice).
Heavy mineral concentrate transport - truck movements	Utilising existing roads, no additional trucking anticipated over and above that associated with existing operation.

Rubbish Tip - relocation of existing rubbish to sand excavation area	The existing rubbish tip is located in Area 3 (Figure 1). All of the rubbish will be excavated and reburied in Area 2 (the existing sand excavation area) and capped. It will form part of the rehabilitation programme for the entire Reserve.
Land Purchase - proposed vesting in the NPNCA and management by CALM	Inclusion of 9.1 hectares (portion of Location 826) in the Conservation Estate (Figure 2). The proponent contends that the remnant native vegetation is in excellent condition, and contains Floristic Community Type 20b (slender banksia and/or Jarrah woodlands).
Installation of fences	Reserves 31900, 31901, A23307 and land purchase area to be fenced to restrict access to these areas (Figure 2).
End landuse for Reserve 31900 (intended)	Reserve 31900 will be vested in the NPNCA for conservation purposes and managed by CALM.

CALM = Department of Conservation and Land Management
NPNCA = National Parks and Nature Conservation Authority

Figures

Figure 1. Areas within Reserve 31900.

Figure 2. Vegetated land in the vicinity of Reserve 31900 (including Reserves 31901, A23307 and 16681 and, Bunnings Location 826 - land purchase area)

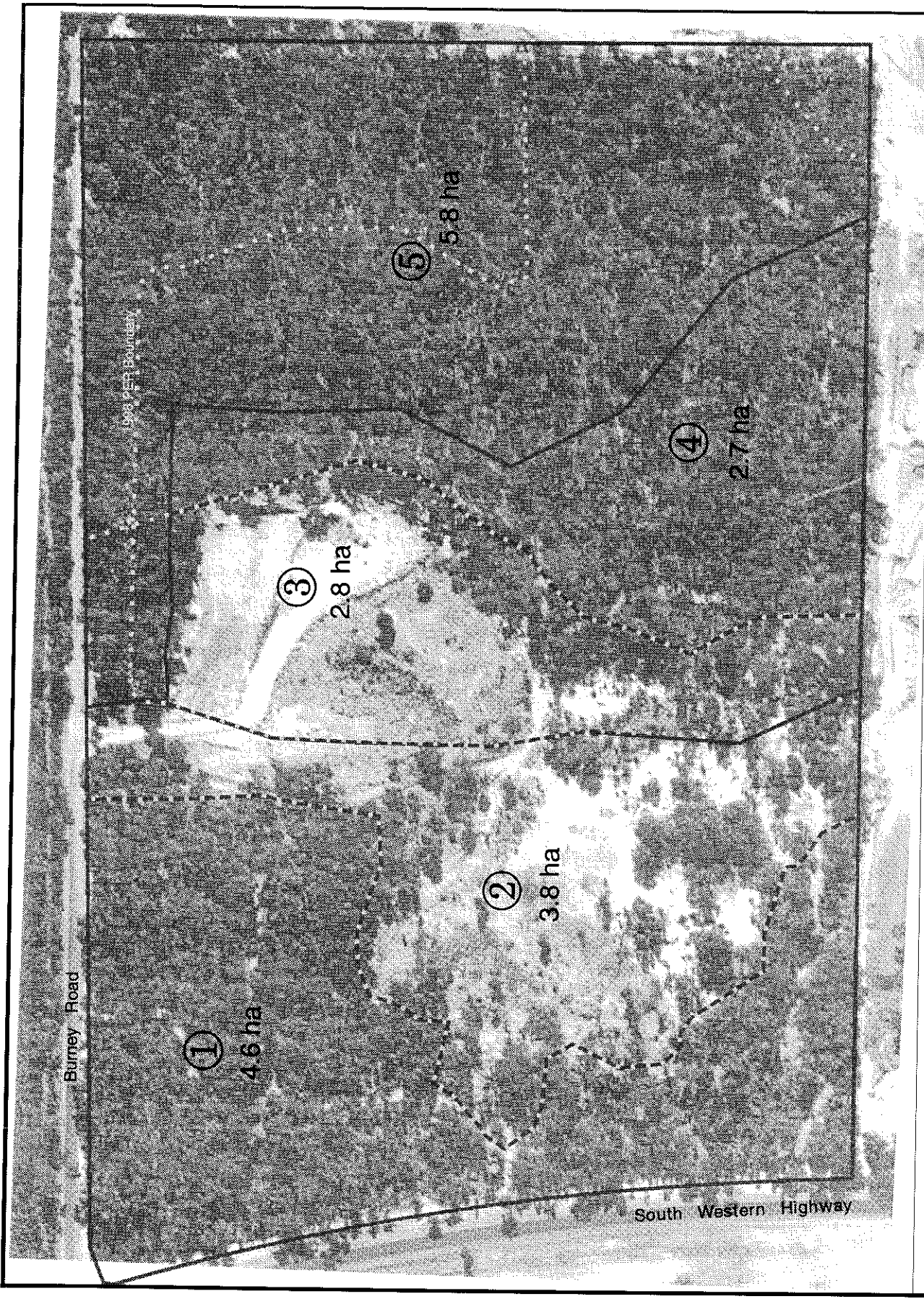


Figure 1 Areas within Reserve 31900

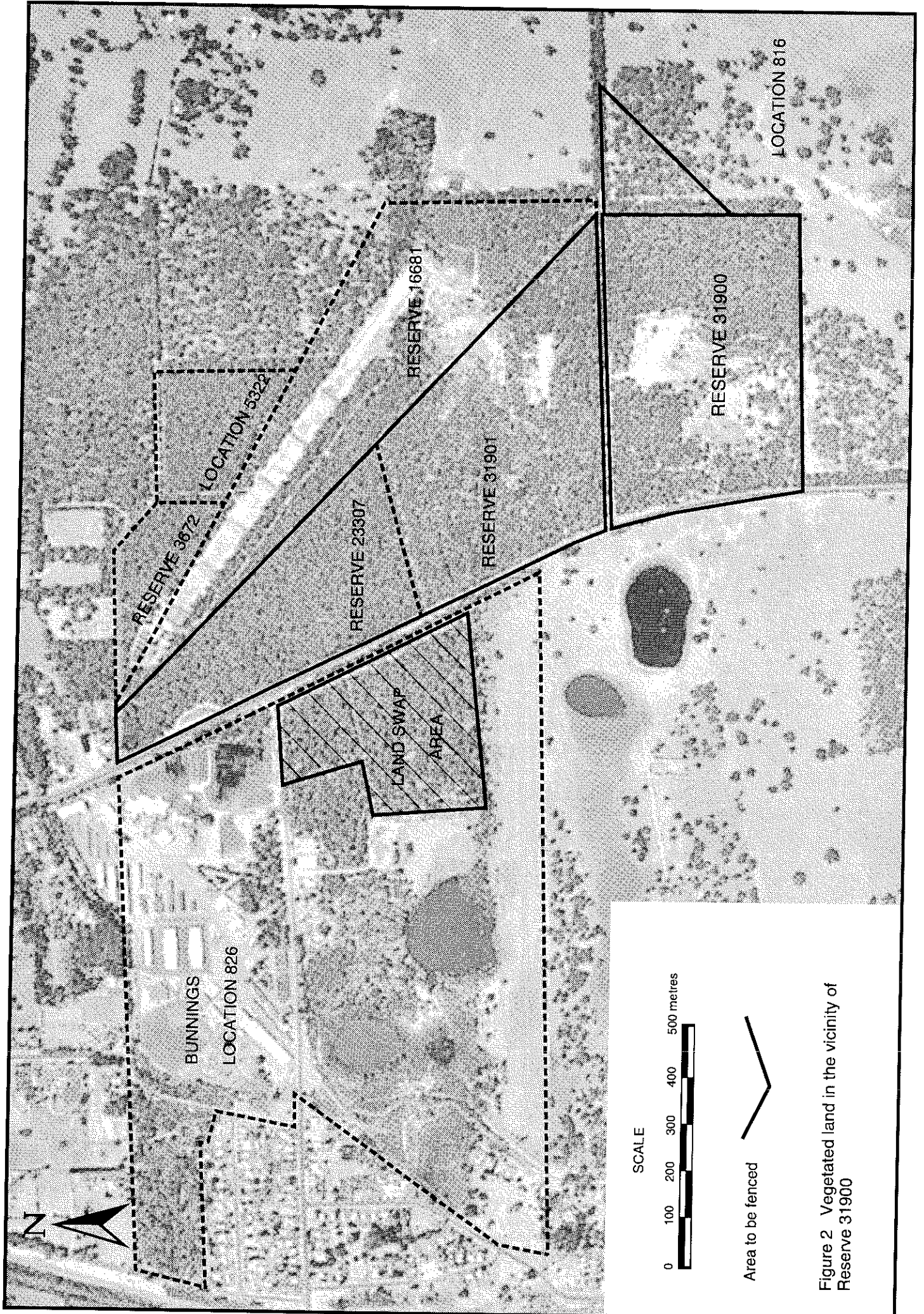


Figure 2 Vegetated land in the vicinity of Reserve 31900

**Proponent's Consolidated Environmental Management
Commitments**

MINERAL SAND MINING AND RUBBISH TIP
RELOCATION,
RESERVE 31900, YARLOOP, SHIRE OF HARVEY
(Assessment Number 1326)

CABLE SANDS (WA) PTY LTD

Summary of Proponent's Environmental Management Commitments

Where relevant, these commitments include those made for the existing operations.

Commitment (Who/What)	Objective (Why)	Action (How/where)	Timing (When)	Whose Advice	Measurement Compliance Criteria
1	Incorporate environmental aspects of Reserve 31900 into the Yarloop Environmental Management and Monitoring Plan (EMMP)	To ensure environmental management is in accordance with EPA objectives and continually improves	Incorporate into existing EMMP	Prior to construction and throughout mine life	DEP and DME Submission of modified EMMP
2	Report environmental performance on an annual basis.	To inform Government on environmental performance of the proposal	Preparation of Annual Environmental report	Operation and decommissioning	DEP Receipt of annual report
3	Locate infrastructure for mining and primary processing on cleared land outside Res 31900.	To minimise impact on vegetation in Reserve 31900.	Incorporate in Mine Planning	Prior to and during mining	DEP Infrastructure not present on reserve
4	Acquire the 9.1ha part of Location 826 indicated in Figure 3 for incorporation in the conservation estate.	To increase security of Forrestfield Complex	By acquiring part of Location 826	During mining within Reserve 31900	DEP Letter from proponent
5	Fence areas of Reserves 23307 and 31901 to restrict access to these areas.	To reduce threatening processes in these reserves	Adjoining reserves	During mining	CALM Advice with annual reports
6	Retain and fence the area of overstorey on the Loc 816 immediately east of the reserve and facilitate growth of native understorey species.	To provide a buffer to conservation values of Reserves 31900 and 31901	Within fenced area of Loc 816	During mining	DEP Advice with annual reports
7	Maintain vegetation clearing to a practical minimum.	To minimise impact on vegetation in Reserve 31900.	Within the reserve	During mining	CALM Rehabilitation Plan meets CALM requirements
8	Preserve as much seed and plant material as practical for rehabilitation	To facilitate rehabilitation success	Within the reserve	Prior to mining	CALM Rehabilitation Plan meets CALM requirements
9	Rehabilitate unmined degraded areas in Reserve 31900 west of the mining areas.	To consolidate values of Reserve 31900	Incorporate with Rehabilitation Plan	During mining	CALM Rehabilitation Plan meets CALM requirements
10	Retain a strip of native vegetation along the northern boundary of Reserve 31900.	To provide a buffer and fauna corridor between Res 31900 and 31901	Incorporate in Mine Planning	Prior to mining	CALM Rehabilitation Plan meets CALM requirements
11	Implement the noise management plan	To ensure appropriate management of noise issues	For all Yarloop Mining including Reserve 31900	Prior to Mining	DEP Advice with annual reports
12	Wet haulage roads with a water cart as required	To minimise dust emissions	Within and in the vicinity of the reserve	Throughout mine life	DEP Advice with annual reports
13	Stockpiles will be vegetated as far as practicable to prevent dust emissions.	To minimise dust emissions	Within and in the vicinity of the reserve	Throughout mine life	DEP Advice with annual reports
14	Keep disturbed areas to a minimum.	To minimise dust emissions	Within and in the vicinity of the reserve	Throughout mine life	DEP Advice with annual reports
15	Develop a groundwater management plan	To ensure appropriate management of water issues including abstraction	Around minesite and borefield area	Prior to Mining	WRC, DEP WRC approval of Plan

Commitment (Who/What)	Objective (Why)	Action (How/where)	Timing (When)	Whose Advice	Measurement Compliance Criteria
16 Implement a groundwater management plan	To ensure appropriate management of water issues including abstraction	Around minesite and borefield area	Throughout mine life	WRC, DEP	Advice with annual reports
17 Enhance or maintain vegetation screens	To minimise impacts on visual amenity	Around mining area	Throughout mine life	DEP	Advice with annual report
18 Cease production in any area where Aboriginal sites are discovered and consult with DME and Dept of Aboriginal Affairs.	To comply with the Aboriginal Heritage Act 1972	Within the mining area	Throughout mine life	AAD	Letter from AAD
19 Prepare a Management Plan for Decommissioning of the Yarloop Rubbish Tip	To ensure appropriate management of rubbish tip	Within mining area	Prior to Mining	Shire of Harvey, DEP	Letter form Shire and from DEP
20 Implement the Management Plan for Decommissioning of the Yarloop Rubbish Tip	To ensure appropriate management of rubbish tip	Within mining area	Throughout mine life	Shire of Harvey, DEP	Advice with annual report
21 Prepare a programme for mining and rehabilitation of Reserve 31900 in consultation with CALM and DEP. The programme will include the requirement to re-instate the final landform, consistent with the surrounding terrain, within 12 months of completion of mining of the orebody	To ensure appropriate rehabilitation of mined areas and degraded areas	Throughout Reserve 31900	Prior to Mining	CALM, DEP	Letter from CALM
22 Implement the mining and rehabilitation programme	To ensure appropriate rehabilitation of mined areas and degraded areas	Throughout Reserve 31900	Throughout mine life	CALM, DEP	Advice with annual report

Note: Figure numbers in this table refer to figures in the Proponent's environmental review document of May, 2000.

AAD = Aboriginal Affairs Department

CALM = Department of Conservation and Land Management

DEP = Department of Environmental Protection

DME = Department of Minerals and Energy

EPA = Environmental Protection Authority

WRC = Water and Rivers Commission