

**Proposed Rare Earths mining and beneficiation at
Mt Weld, Laverton and secondary processing at
Meenaar, near Northam — Extension of time limit
of approval via Section 46**

Ashton Rare Earths Pty Ltd

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

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Summary and recommendations

Ashton Rare Earths Pty Ltd wishes to extend the time limit of environmental approval for the Proposed Rare Earths Mining and Beneficiation at Mt Weld and Secondary Processing at Meenaar project for a further three years. The Mt Weld part of the project is located approximately 35km south-east of Laverton and the Meenaar part of the project is located approximately 18km east of Northam.

Section 46 of the *Environmental Protection Act 1986* requires the Environmental Protection Authority (EPA) to report to the Minister for the Environment on whether or not the proposed changes to conditions or procedures should be allowed. In addition, the EPA may make recommendations as it sees fit.

Relevant environmental factors

It is the EPA's opinion that the following are the environmental issues relevant to the proposal, which require detailed evaluation in the report:

- (a) extension to the time limit of approval; and
- (b) changes to other environmental conditions.

Conclusion

The EPA has considered the proposal by Ashton Rare Earths Pty Ltd to extend the time limit of environmental approval for the Proposed Rare Earths Mining and Beneficiation at Mt Weld and Secondary Processing at Meenaar project and has concluded that a three year extension should be allowed.

The EPA believes that the five year period since the Proposed Rare Earths Mining and Beneficiation at Mt Weld and Secondary Processing at Meenaar project was originally assessed has not given rise to any changes which would cause the EPA to reconsider its previous assessment of the project, and in particular, its previous recommendation as to the environmental acceptability of the project.

In addition to reporting on the extension of the time limit, the EPA considers that the conditions of the environmental approval should be updated, and accordingly has also reported on the additional changes required.

Recommendations

The EPA recommends that:

1. The Minister for the Environment notes that the EPA has concluded that:
 - the extension of the time limit of approval for another three years is acceptable; and
 - the conditions of environmental approval should also be updated;
2. That the Minister for the Environment imposes the conditions and procedures consistent with those set out in Appendix 3 of this report.

Conditions

The EPA recommends that the following conditions, which are set out in formal detail in Appendix 3, be imposed if the proposed time limit extension by Ashton Rare Earths Pty Ltd for the Proposed Rare Earths Mining and Beneficiation at Mt Weld and Secondary Processing at Meenaar project is approved:

1. the existing Ministerial Conditions applied to the project (Ministerial Statement 290 dated 9 November 1992), subject to modifications necessary to:
 - extend the time limit of environmental approval;
 - update the statement into the current format; and
 - ensure compatibility with current environmental protection regulations.
2. additional conditions which are now routinely applied to mining and industrial projects of this type and size, namely:
 - requirement for an Environmental Management System for the project;
 - requirement for an Environmental Management Programme for the project;
 - requirement for Management Plans for noise and greenhouse gas emissions; and.
 - requirement for environmental performance reviews every six years.
3. additional commitments relating to prediction of air quality impacts at the design and commissioning phases of the project, reduction of radiation protection targets to below current radiation dose limits for employees and the public, and ensuring that there will be no significant radionuclides disposed of in ponds.

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1. Introduction and background

Ashton Rare Earths Pty Ltd wishes to extend the time limit of environmental approval for the Proposed Rare Earths Mining and Beneficiation at Mt Weld and Secondary Processing at Meenaar project for a further three years. The Mt Weld part of the project is located approximately 35km south-east of Laverton and the Meenaar part of the project is located approximately 18km east of Northam. (Figure 1).

The Proposed Rare Earths Mining and Beneficiation at Mt Weld and Secondary Processing at Meenaar project was assessed by the Environmental Protection Authority in 1992 at the level of a Public Environmental Review (EPA 1992). The Minister for the Environment subsequently gave environmental approval for the project, subject to conditions, on 9 November 1992. Condition 6 of the Minister's statement of approval (Appendix 3) set a time limit for commencing the project within five years, after which any extension to the time limit would have to occur via a request to change the condition under Section 46 of the *Environmental Protection Act 1986*.

In accordance with Condition 6 Ashton Rare Earths Pty Ltd has requested that the time limit of approval be extended for a further three years via a Section 46 change to conditions. This request was made prior to the expiration date referred to in Condition 6 (9 November 1997).

Further details of the proposal are presented in Section 2 of this Report. Section 3 discusses environmental factors relevant to the proposal. Conditions and procedures to which the proposal should be subject if the Minister determines that it may be implemented are set out in Section 4. Section 5 presents the EPA's conclusion and Section 6 the EPA's recommendations.

Since the proposed change is relative to the time limit of environmental approval for the original proposal, no public comment was sought. References are listed in Appendix 1, environmental conditions currently applicable to the proposal are contained in Appendix 2, and recommended conditions and procedures and proponent's commitments are provided in Appendix 3.

2. The proposal

Approved proposal

RARE EARTHS MINING AND BENEFICIATION OPERATION AT MT WELD

The proposed Mt Weld mine site would be located within mining leases M38/58 and M38/59, some 35km south-east of Laverton. The beneficiation complex would include offices, a laboratory, a workshop, a reagent and consumables store, and a load-out facility for the final concentrate.

Following the removal of overburden to a depth of 20 to 30 metres, the rare earths deposit would be mined at a rate of 50,000 tonnes per annum (t/a) over a single 4 to 10 week campaign each year, using conventional open-cut mining methods. Pre-mine dewatering would require the pumping of 400ML of water over a 12–18 month period. Most of this water would be stored in a disused pit at the nearby Granny Smith Gold Mine.

The beneficiation plant would operate for 300 days per annum and would produce 10,000 t/a (12,000 t/a wet weight) of concentrated ore. The proposed beneficiation process is a modified phosphate flotation process involving feed preparation of the ore followed by desliming, flotation and filtration. Chemicals to be used in the process would be sodium sulphide (300t/a), depressants and collector reagents (245t/a), sodium silicate (40t/a) and sodium carbonate (10t/a). The low level radioactive, non-hazardous concentrate would be stored as a paste (85% solids), then transported to the secondary processing plant at Meenaar.

A slurry residues quantity of 28 500t/a would be produced at the desliming, filtration and flotation stages. The residues would be pumped to a residue pond where supernatant water would be reclaimed and recycled to the beneficiation plant. The residues would be discharged with a solids content of approximately 8%, at a rate of 70 m³/h. Washdown water would be collected and combined with the beneficiation residues.

SECONDARY PROCESSING OPERATION AT MEENAAR

The secondary processing plant would be located at Lot 7 on the east side of the proposed Meenaar Industrial Park, which is located about 18km east of Northam. The Meenaar Industrial Park was assessed and found to be acceptable by the EPA in 1992 (EPA Bulletin 645, 1992). Construction of plant facilities, access and evaporation ponds would be on cleared, ex-agricultural land.

The secondary processing plant would operate on a 24-hour basis for 365 days each year. The processing of concentrate at the Meenaar secondary processing plant would involve a range of chemical processes, including acid, caustic and organic solvent dissolution stages, and precipitation and calcination stages.

Downstream processing of the rare earths would involve three incremental stages:

- Stage I would produce cerium oxide plus light and medium rare earth concentrates;
- Stage II producing light rare earth compounds; and
- Stage III producing medium rare earth compounds.

A more detailed description of the two components of this proposal is contained in the EPA's previous assessment of the proposal (EPA 1992) and 1992 Public Environmental Review (Kinhill Engineers Pty Ltd, 1992).

Proposed change to environmental conditions

Ashton Rare Earths Pty Ltd wishes to extend the time limit of approval for this proposal another three years. The Ashton Rare Earths Pty Ltd Proposed Rare Earths Mining and Beneficiation at Mt Weld and Secondary Processing at Meenaar project had not yet started, and was put on hold in 1994, primarily as a result of a downturn in the rare earths market and some difficulties in meeting the rare earths recovery targets. Recently the world market for rare earth products, and in particular cerium products, has improved; and some process breakthroughs by the CSIRO have also occurred; to the extent that the project is now viable.

In accordance with Condition 6 of the existing statement of approval Ashton Rare Earths Pty Ltd has requested a three year extension to the environmental approval via Section 46 of the *Environmental protection Act 1986*. Section 46 allows for the amendment of conditions and procedures set under the statement of environmental approval for a proposal. Ashton Rare Earths Pty Ltd is to conduct a feasibility study scheduled for completion in late 1998. If the feasibility study proves successful, then Ashton Rare Earths Pty Ltd intend to implement the project.

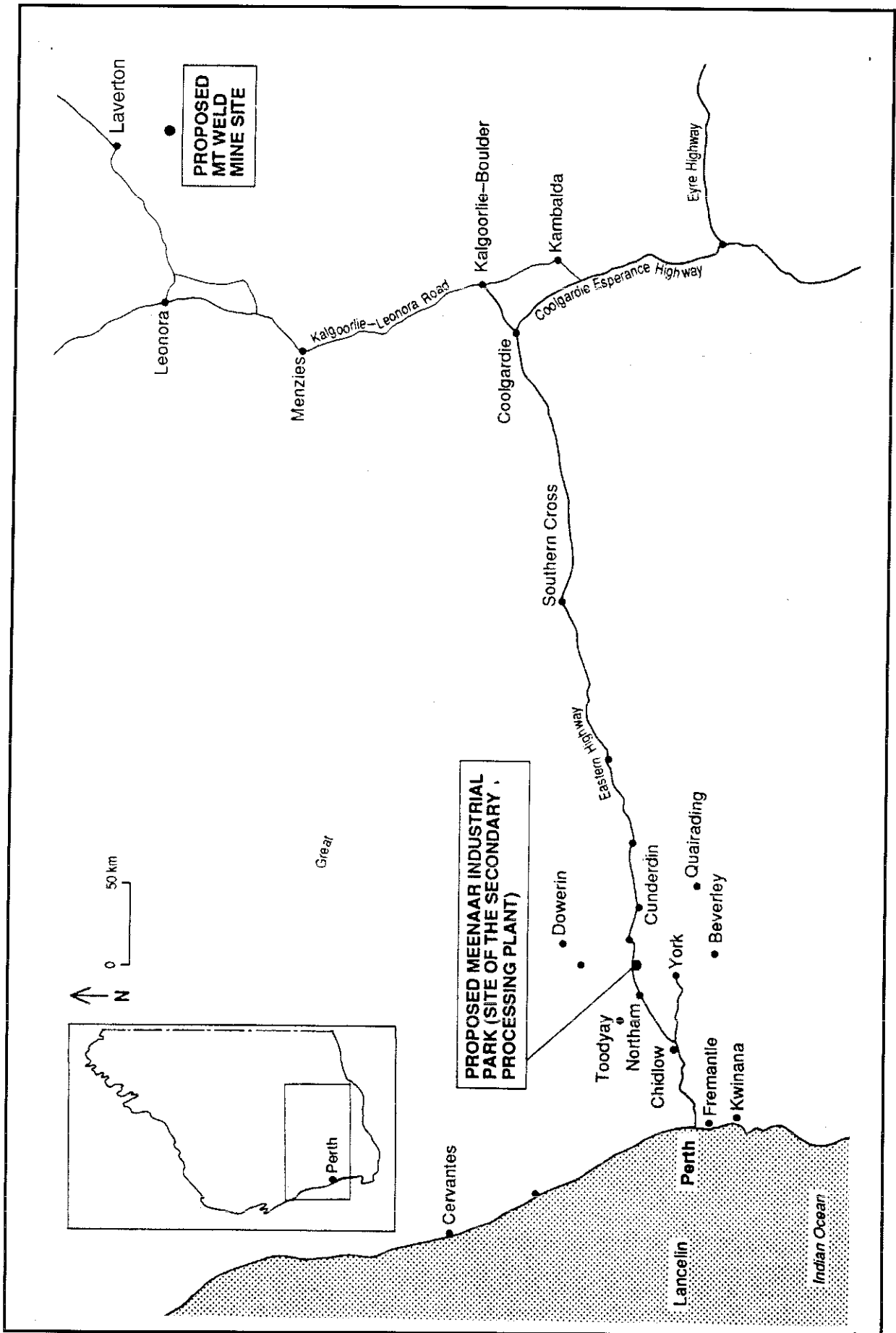


Figure 1. Location of the proposed Rare Earths mining and beneficiation at Mt Weld and secondary processing at Meenaar project.

3. Environmental factors

3.1 Relevant environmental factors

Section 46 of the *Environmental Protection Act 1986* requires the EPA to report to the Minister for the Environment on whether or not the proposed changes to conditions or procedures should be allowed. In addition, the EPA may make recommendations as it sees fit.

The relevant environmental factors identified in the EPA's previous (1992) assessment of the proposal were:

- protection of the surface and groundwater resource at Mt Weld;
- solid and liquid waste management at Mt Weld and Meenaar;
- protection of residents and property at Meenaar from noise, dust and gaseous emissions from the secondary processing plant;
- risks and hazards at Meenaar, including radiation and seismicity; and
- transport of beneficiated concentrates, plant residues and dangerous goods.

The EPA's assessment of these factors has not changed as a result of the proponent's current proposal to extend the time limit of environmental approval. The EPA's assessment of the proposal has therefore not given rise to any changes which would cause the EPA to reconsider its previous assessment of the project, and in particular, its previous recommendation as to the environmental acceptability of the project.

It is the EPA's opinion that its inquiry into the proposed time limit extension should address the following issues:

- (a) whether the requested extension to the time limit should be approved; and
- (b) what other changes to the existing environmental conditions might be required should an extension be granted.

These issues are discussed in Sections 3.2 to 3.3 of this report.

3.2 Extension of the time limit of approval

Description

Approval for this project was initially limited to five years recognising that over time the predicted environmental impacts and their considered significance may change. Over five years knowledge of the receiving environment may increase as a result of further studies, and the anticipated impacts on this environment may change as a result of increased understanding of interaction between the environment and the proposal. In addition, environmental regulations, standards, guidelines, and accepted practices, may also change.

Ashton Rare Earths Pty Ltd has advised that there have been no changes in its understanding of the receiving environment or revisions to the predicted impacts from those originally presented by the proponent and assessed by the EPA in 1992.

Relevant government agencies, including the Radiation Health Branch of the Health Department of Western Australia, and Department of Minerals and Energy, were contacted by the Department of Environmental Protection, and advice received on this proposal indicate no concern about the proposed time limit extension.

Assessment

Environmental standards have changed over the last five years. Changes which are applicable to this proposal include changes to the State's noise regulations, *Environmental Protection (Noise) Regulations 1997*, and the adoption by the EPA of a number of standard environmental conditions which are now routinely applied to mining and industrial projects. None of these changes significantly affect the proposal as described in the 1992 Public Environmental Review document, but would only result in changes to limits which must be met, and some additional reporting requirements. These can be accommodated through recommended changes to the environmental conditions which are described in Section 3.3.

Having particular regard to:

- (a) the fact that the predicted environmental impacts of the proposal have not changed; and
- (b) changes in environmental standards that can be addressed through amendments to the conditions and procedures of environmental approval,

it is the EPA's opinion that the requested extension of the time limit of environmental approval should be allowed.

3.3 Changes to other environmental conditions

Description

Assessment of this proposal under Section 46 of the *Environmental Protection Act 1986* allows the EPA the opportunity to amend other environmental conditions in addition to the time limit condition (Condition 6, Appendix 2). The environmental conditions currently applicable to the Proposed Rare Earths Mining and Beneficiation at Mt Weld and Secondary Processing at Meenaar project are contained in Appendix 2.

Assessment

The EPA has taken the opportunity to review the environmental conditions set on this proposal with a view to:

- (a) updating the statement into the current format;
- (b) ensuring compatibility with current environmental protection regulations;
- (c) applying additional conditions which are now routinely applied to mining/industrial projects of this type and size, namely:
 - requirement for an Environmental Management System for the project;
 - requirement for an Environmental Management Programme for the project;
 - requirement for Management Plans for noise and greenhouse gas emissions; and
 - requirement for environmental performance reviews every six years.

The EPA's proposed changes to the existing environmental conditions are set out in greater detail in Table 1 below. Table 1 should be examined in conjunction with the original environmental conditions in Appendix 2 and the recommended draft conditions in Appendix 3.

It should be noted that changes have been made to the proponent's environmental management commitments. These changes have been made by Ashton Rare Earths Pty Ltd with the purpose of:

- revising the wording of a number of the commitments so that they are more relevant and specific;
- removing commitments, that are covered by standard conditions;

- removing commitments, that are covered under Part V of the *Environmental Protection Act 1986*;
- removing commitments that are not environmental commitments; and
- placing commitments that are not environmentally auditable under the heading “Environmental Management Procedures, Objectives and Strategies” in the proponent commitments.

Ashton Rare Earths Pty Ltd has made additional commitments to the effect that:

- (Attachment 3, commitment 12) At the design and commissioning phases of the project, through dispersion modelling, it will be demonstrated that atmospheric emissions at the Meenaar site boundary nearest residences, is in compliance with current acceptable standards (the National Environment Protection Council, national environmental protection measures for air quality).
- (Attachment 3, commitment 16) There will be no significant radionuclide disposed in the ponds, all effluents to the ponds will be analysed to determine if there are any traces of radionuclides and to ensure these levels are below the levels acceptable to the DEP on advice of the DME, Radiological Council, and Water and Rivers Commission.

Ashton Rare Earths Pty Ltd has also combined 2 commitments (Attachment 2, Commitments 14 and 15) to the effect that under their commitment to the ALARA principle, radiation protection design targets to be adopted for:

- all employees would be less than 2mSv/a;
- for members of the public would reduce the statutory 1 mSv/a to 0.05mSv/a;
- all employees and the public in handling and transport procedures, 1mSv/a dose limit for employees, and 0.01mSv/a dose limit for members of the public;

as required by Schedule B - Exemption criteria of the *NHMRC, June 1995, Recommendations for limiting exposure to ionizing radiation (1995) (Guidance note [NOHSC: 3022(1995)] and National standard for limiting occupational exposure to ionizing radiation [NOHSC:1013(1995)], Radiation Health Series no. 39.*

The proponent’s additional commitments are set out in greater detail in Table 1 below. Table 1 should be examined in conjunction with the original environmental commitments in Appendix 2 and the recommended draft commitments in Appendix 3.

4. Conditions

Section 46 of the *Environmental Protection Act 1986* requires the EPA to report to the Minister for the Environment on whether or not the proposed changes to conditions or procedures should be allowed. In addition, the EPA may make recommendations as it sees fit.

In developing recommended conditions for each project, the EPA's preferred course of action is to have the proponent provide an array of commitments to ameliorate the impacts of the proposal on the environment. The commitments are considered by the EPA as part of its assessment of the proposal, and following discussion with the proponent the EPA may seek additional commitments.

The EPA recognises that not all of the commitments are written in a form which makes them readily enforceable, but they do provide a clear statement of the action to be taken as part of the proponent's responsibility for and commitment to continuous improvement in environmental performance. The commitments, modified if necessary to ensure enforceability, then form part of the conditions to which the proposal should be subject if it is to be implemented.

Table 1. Proposed changes to environmental conditions.

Original Condition or Commitment Number	Requirements (summarised)	Evaluation	New Condition or Commitment Number	New Condition or Commitment Text
Environmental Conditions				
1	Fulfil commitments	Wording changed to recast condition into contemporary format.	2	<p>2 Proponent Commitments</p> <p>2-1 The proponent shall implement the consolidated environmental management commitments documented in schedule 1 of this statement, provided that the commitments are not inconsistent with the conditions or procedures contained in this statement.</p> <p>In the event of any inconsistency, the conditions and procedures shall prevail to the extent of the inconsistency.</p> <p>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.</p>
2	Implement the proposal as described.	No change	1	

Original Condition or Commitment Number	Requirements (summarised)	Evaluation	New Condition or Commitment Number	New Condition or Commitment Text
3	Prepare Environmental Management Programme	Working changed to recast condition into contemporary format.	4	<p>4 Environmental Management Programme</p> <p>4-1 Prior to ground-disturbing activities at Mt Weld, the proponent shall prepare an Environmental Management Programme to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection, the Department of Minerals and Energy, the Radiological Council, and the Water and Rivers Commission.</p> <p>The Programme shall consist of the following environmental management plans for the Mt Weld site:</p> <ol style="list-style-type: none"> 1. surface and groundwater management plan, including conservation of groundwater (prior to ground-disturbing activities) [see Condition 5]; 2. native flora and fauna conservation plan (prior to ground-disturbing activities); 3. wastewater and residue disposal management plan (prior to ground-disturbing activities); 4. decommissioning management plan, including rehabilitation of disturbed sites, overburden dumps and residue ponds [see Condition 8]; 5. plan for transportation of process materials, such as ore concentrate, residues and dangerous goods (prior to ground-disturbing activities); 6. radiation management plan (prior to ground-disturbing activities); 7. greenhouse gas emissions management plan (prior to ground-disturbing activities) [see Condition 6]; and 8. noise management plan (prior to ground-disturbing activities) [see Condition 7]. <p>4-2 The proponent shall implement the environmental management plans required by condition 4-1 for the Mt Weld site.</p> <p>4-3 Prior to commencement of construction at Meenaar, the proponent shall prepare an Environmental Management Programme to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection, the Department of Minerals and Energy, the Radiological Council, and the Water and Rivers Commission.</p> <p>The Programme shall consist of the following environmental management plans for the Meenaar site:</p> <ol style="list-style-type: none"> 1. surface and groundwater management plan, including groundwater protection (prior to construction) [see Condition 5]; 2. wastewater and residue disposal management plan (prior to construction); 3. emergency management plan for major seismic events (prior to construction); 4. visual impacts and landscaping plan (prior to construction); 5. plan for transportation of process materials, such as ore concentrate, residues and dangerous goods (prior to commissioning); 6. radiation management plan (prior to commissioning); 7. greenhouse gas emissions management plan (prior to construction) [see Condition 6]; and 8. noise management plan (prior to construction) [see Condition 7]. <p>4-4 The proponent shall implement the Environmental Management Plans required by condition 4-3 for the Meenaar site.</p>

Original Condition or Commitment Number	Requirements (summarised)	Evaluation	New Condition or Commitment Number	New Condition or Commitment Text
4	Prepare a decommissioning plan at least six months prior to decommissioning of each project and subsequently implement the plans.	Wording changed to recast condition into contemporary format.	8	<p>8 Decommissioning</p> <p>8-1 At least six months prior to decommissioning, the proponent shall prepare a Decommissioning Management Plan to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection.</p> <p>This Plan shall address:</p> <ol style="list-style-type: none"> 1 removal or, if appropriate, disposal on-site of plant and infrastructure; 2 rehabilitation of all disturbed areas to agreed final land use(s); and 3 identification of contaminated areas, including provision of evidence of notification to relevant statutory authorities. <p>8-2 The proponent shall implement the Decommissioning Management Plan required by condition 8-1.</p> <p>8-3 The proponent shall make the Decommissioning Management Plan required by condition 8-1 publicly available, to the requirements of the Environmental Protection Authority.</p>
5	No change of proponent without approval by the Minister for the Environment	Wording changed to recast condition into contemporary format.	11	<p>11 Proponent</p> <p>11-1 The proponent for the time being nominated by the Minister for the Environment under section 38(6) or (7) of the Environmental Protection Act 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.</p> <p>11-2 Any request for the exercise of that power of the Minister referred to in condition 12-1 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.</p> <p>11-3 The proponent shall notify the Minister for the Environment of any change of proponent contact name and address within 30 days of such change.</p>

Original Condition or Commitment Number	Requirements (summarised)	Evaluation	New Condition or Commitment Number	New Condition or Commitment Text
6	Project to be commenced within 5 years or the approval shall lapse and be void.	Refer to Section 3.2. Requested time limit extension considered acceptable by the EPA. If approved, project to be commenced within three years of the Section 46 statement.	13	<p>12 Commencement</p> <p>12-1 The proponent shall provide evidence to the Minister for the Environment within three years of the date of this statement that the proposal has been substantially commenced.</p> <p>12-2 Where the proposal has not been substantially commenced within three 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.</p> <p>12-3 The proponent shall make application to the Minister for the Environment for any extension of approval for the substantial commencement of the proposal beyond three years from the date of this statement.</p> <p>12-4 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 three years for the substantial commencement of the proposal.</p>

Original Condition or Commitment Number	Requirements (summarised)	Evaluation	New Condition or Commitment Number	New Condition or Commitment Text
6	Preparation of a surface and groundwater monitoring plan.	Revised condition. A standard condition applied to developments which will produce significant impacts on water quality.	5	<p>5 Surface and Ground Water Management Plan</p> <p>5-1 Prior to construction of the secondary processing operation plant at Meenaar, the construction of the beneficiation operation plant, and the disturbance of soil at the mine at Mt Weld; the proponent shall develop a pre-operational monitoring plan (stage 1) for surface and ground water including quality assurance procedures, to the requirements of the Environmental Protection Authority on advice of the Radiological Council, the Department of Minerals and Energy, the Water and Rivers Commission and the Department of Environmental Protection.</p> <p>5-2 The proponent shall implement the pre-operational surface and ground water management plan required by Condition 5-1.</p> <p>5-3 Prior to commissioning of the secondary processing operation plant at Meenaar, and the beneficiation operation plant at Mt Weld; the proponent shall develop an operational monitoring plan (stage 2) for surface and ground water including quality assurance procedures, to the requirements of the Environmental Protection Authority on advice of the Radiological Council, the Department of Minerals and Energy, the Water and Rivers Commission and the Department of Environmental Protection.</p> <p>5-4 The proponent shall implement the operational surface and ground water management plan required by Condition 5-3.</p>
7	Compliance auditing.	Wording changed to recast condition into contemporary format.	13	<p>13 Compliance Auditing</p> <p>13-1 The proponent shall submit periodic Performance and Compliance Reports, in accordance with an audit program prepared in consultation between the proponent and the Department of Environmental Protection.</p> <p>13-2 Unless otherwise specified, the Department of Environmental Protection is responsible for assessing compliance with the conditions contained in this statement and for issuing formal clearance of conditions.</p> <p>13-3 Where compliance with any condition is in dispute, the matter will be determined by the Minister for the Environment.</p>

Original Condition or Commitment Number	Requirements (summarised)	Evaluation	New Condition or Commitment Number	New Condition or Commitment Text
New Condition	Environmental Management System	New condition - reflects current expectation that all major developments should have an Environmental Management System.	3	<p>3 Environmental Management System</p> <p>3-1 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 at Mt Weld or construction of the secondary processing plant at Meenaar, the proponent shall prepare Environmental Management System documentation with components such as those adopted in Australian Standards AS/NZ ISO 14000 series, to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection.</p> <p>3-2 The proponent shall implement the Environmental Management System referred to in condition 3-1.</p>

Original Condition or Commitment Number	Requirements (summarised)	Evaluation	New Condition or Commitment Number	New Condition or Commitment Text
New Condition	Preparation of a Greenhouse Gas Emissions plan	New condition. A standard condition applied to new developments producing greenhouse gases.	6	<p>6 Greenhouse Gas Emissions</p> <p>6-1 Prior to commissioning, the proponent shall prepare a Greenhouse Gas Emissions Management Plan to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection.</p> <p>This Plan shall include:</p> <ol style="list-style-type: none"> 1 calculation of the "greenhouse gas" emissions (using methodology developed for Australia); 2 measures to limit "greenhouse gas" emissions; and 3 estimation of the "greenhouse gas" efficiency of the project (per unit of product and/or other agreed performance indicators) and comparison with the efficiencies of other comparable projects producing a similar product. <p>6-2 The proponent shall implement the Greenhouse Gas Emissions Management Plan required by condition 6-1.</p> <p>Note: The proponent should consider entry (whether on a project-specific basis, company-wide arrangement or within an industrial grouping, as appropriate) into the Commonwealth Government's "Greenhouse Challenge" voluntary co-operative agreement program.</p> <p>Components of the agreement program include:</p> <ol style="list-style-type: none"> 1 an inventory of emissions; 2 opportunities for abating "greenhouse gas" emissions in the organisation; 3 a "greenhouse gas" mitigation action plan; 4 regular monitoring and reporting of performance; and 5 independent performance verification.

Original Condition or Commitment Number	Requirements (summarised)	Evaluation	New Condition or Commitment Number	New Condition or Commitment Text
New Condition	Preparation of a Noise Management Plan.	New condition. A standard condition applied to developments which will produce significant noise impacts	7	<p>7 Noise Management Plan</p> <p>7-1 Prior to construction of the secondary processing operation plant at Meenaar, the construction of the beneficiation operation plant, and the dewatering of the mine at Mt Weld, the proponent shall prepare a Noise Management Plan to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.</p> <p>This Plan shall address:</p> <ol style="list-style-type: none"> 1 the location, dimensions and form of noise barriers to be constructed for the project; 2 the sound power levels for equipment to be used for the project and details of acoustical treatment to be applied; 3 special procedures necessary to restrict activities under weather conditions which increase noise propagation toward the residential area; and 4 routine operating procedures to be adopted for particular operations to control noise emanating from the project. <p>7-2 The proponent shall implement the Noise Management Plan required by condition 7-1.</p>

Original Condition or Commitment Number	Requirements (summarised)	Evaluation	New Condition or Commitment Number	New Condition or Commitment Text
New Condition	Performance Review	New condition - reflects current expectation that all major developments should review long-term environmental performance and implement continuous improvement.	9	<p>9 Performance Review</p> <p>The proponent should review the environmental performance of the proposal to ensure that the environmental management meets the environmental objectives and allows for continuous improvement.</p> <p>9-1 Each six years following the commencement of construction, the proponent shall prepare and submit a performance review to evaluate the environmental performance, which shall include, but not be limited to:</p> <ol style="list-style-type: none"> 1 environmental issues reported on in Environmental Protection Authority Bulletin 646; 2 proponent's consolidated environmental management commitments documented in schedule 2 of this statement and those arising from the fulfilment of conditions and procedures in this statement; 3 Environmental Management System environmental management targets; 4 Environmental Management Plans; and 5 environmental performance indicators, <p>to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection.</p> <p>Note: The Environmental Protection Authority may recommend changes and where significant, recommend actions, to the Minister for the Environment following consideration of the performance review.</p>
New Commitment	Dispersion modelling	Reflects current expectation that all developments having gaseous emissions should have air quality impacts predicted.	12	<p>Commitment 12 At the design and commissioning phases of the project, through dispersion modelling the proponent is to demonstrate that atmospheric emissions of carbon monoxide, nitrogen dioxide, photochemical oxidant, sulphur dioxide, lead and particulate, at the site boundary nearest residences, is in compliance with the current acceptable standard [National Environment Protection Council (NEPC), national environmental protection measure (NEPM)] for air quality. Best practice emission control equipment and clean production plant design will be used where appropriate, to comply with these concentrations.</p>

New Commitment	Radionuclide traces	Reflects current expectation that there will be no significant radionuclides in ponds.	16	Commitment 16 To ensure that there will be no significant radionuclides disposed in the ponds, all effluents to the ponds will be analysed to determine if there are any significant traces of radionuclides and to ensure these levels are below the levels acceptable to the DEP on advice of the DME, Radiological Council, and Water and Rivers Commission.
New Commitment	Radiation protection design targets	Reflects current expectation that this development should achieve radiation levels below current standards	22	Commitment 22 Under Ashton's commitment to the ALARA principle, radiation protection design targets to be adopted for: <ul style="list-style-type: none"> • all employees would be less than 2mSv/a; • for members of the public would reduce the statutory 1 mSv/a to 0.05mSv/a; • all employees and the public in handling and transport procedures, 1mSv/a dose limit for employees, and 0.01mSv/a dose limit for members of the public; as required by Schedule B - Exemption criteria of the <i>NHMRC, June 1995, Recommendations for limiting exposure to ionising radiation (1995) (Guidance note [NOHSC: 3022(1995)] and National standard for limiting occupational exposure to ionising radiation [NOHSC:1013(1995)], Radiation Health Series no. 39.</i>

The EPA may, of course, also recommend conditions additional to that relating to the proponent's commitments.

The EPA recommends that the following conditions, which are set out in formal detail in Appendix 3, be imposed if the proposed time limit extension for the Ashton Rare Earths Pty Ltd Proposed Rare Earths Mining and Beneficiation at Mt Weld and Secondary Processing at Meenaar project is approved:

1. The existing Ministerial Conditions applied to the project (Ministerial Statement 290, dated 9 November 1992), subject to modifications necessary to:
 - extend the time limit of environmental approval;
 - update the statement into the current format; and
 - ensure compatibility with current environmental protection regulations.
2. Additional conditions which are now routinely applied to mining and industrial projects, namely:
 - requirement for an Environmental Management System for the project;
 - requirement for an Environmental Management Programme for the project;
 - requirement for Management Plans for noise and greenhouse gas emissions; and
 - requirement for environmental performance reviews every six years.
3. additional commitments relating to prediction of air quality impacts at the design and commissioning phases of the project, reduction of radiation protection targets to below current radiation dose limits for employees and the public, and ensuring that there will be no significant radionuclides disposed of in ponds.

5. Conclusions

The EPA has considered the proposal by the Ashton Rare Earths Pty Ltd to extend the time limit of environmental approval for the Proposed Rare Earths Mining and Beneficiation at Mt Weld and Secondary Processing at Meenaar project and has concluded that a three year extension should be allowed.

The EPA believes that the five year period since the Proposed Rare Earths Mining and Beneficiation at Mt Weld and Secondary Processing at Meenaar project was originally assessed has not given rise to any changes which would cause the EPA to reconsider its previous assessment of the project, and in particular, its previous recommendation as to the environmental acceptability of the project.

In addition to the request on the extension of the time limit, the EPA considers that the conditions of the environmental approval should be updated, and accordingly has also reported on the additional changes required.

6. Recommendations

Section 46 of the Environmental Protection Act 1986 requires the EPA to report to the Minister for the Environment on whether or not the proposed changes to conditions or procedures should be allowed. In addition, the EPA may make recommendations as it sees fit.

The EPA submits the following recommendations to the Minister for the Environment:

1. That the Minister notes that this report is pursuant to Section 46 of the *Environmental Protection Act 1986* and thus is limited to consideration of proposed changes to the original proposal.

2. That the Minister notes that the proposed change is an extension of time for implementation.
3. That the Minister notes that the EPA has concluded that:
 - the extension of the time limit of approval for another three years is acceptable; and
 - the Ministerial Conditions of environmental approval should also be updated to reflect current practice.
4. That the Minister imposes the conditions and procedures set out in Appendix 3 of this report.

Appendix 1

References

Environmental Protection Authority (1992). *Proposed rare earths mining and beneficiation at Mt Weld, Laverton and secondary processing at Meenaar, near Northam . Report and recommendations of the Environmental Protection Authority, Bulletin 646.* Perth, WA.

Environmental Protection Authority (1992). *Proposal to establish an industrial park at Meenaar, 18km east of Northam. Report and recommendations of the Environmental Protection Authority, Bulletin 645.* Perth, WA.

Environmental Protection Authority (1997). *Environmental Protection (Noise) Regulations 1997.*

Greenhouse Challenge Office-Department of Primary Industry and Energy, 1995. *Greenhouse Challenge Programme 1995.*

Kinhill Engineers Pty Ltd (1992). *Mt Weld Rare Earths Project, Public Environmental Review; Ashton Rare Earths Ltd, May 1992.*

National Environment Protection Council (1997). *Draft National Environmental Protection Measure and Impact Statement for Ambient Air Quality.*

NHMRC (June 1995). *Recommendations for limiting exposure to ionizing radiation (1995) (Guidance note [NOHSC: 3022(1995)] and National standard for limiting occupational exposure to ionizing radiation [NOHSC:1013(1995)], Radiation Health Series no. 39.*

Standards Australia, Standards New Zealand (1996). *Australian /New Zealand standard AS/NZS ISO 14001:1996 environmental management systems - specification with guidance for use.*

Appendix 2

Statement of conditions of approval (9 November 1992)



WESTERN AUSTRALIA

MINISTER FOR THE ENVIRONMENT

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

RARE EARTHS MINING & BENEFICIATION AT MT WELD, LAVERTON AND
SECONDARY PROCESSING AT MEENAAR, NEAR NORTHAM (611)

ASHTON RARE EARTHS LTD

This proposal may be implemented subject to the following conditions:

1 Proponent Commitments

The proponent has made a number of environmental management commitments in order to protect the environment.

- 1-1 In implementing the proposal, the proponent shall fulfil the commitments (which are not inconsistent with the conditions or procedures contained in this statement) made in the Public Environmental Review and in response to issues raised following public submissions. These commitments are published in Environmental Protection Authority Bulletin 646, Appendices 1 and 2. (A copy of the consolidated commitments is attached.)

2 Implementation

Changes to the proposal which are not substantial may be carried out with the approval of the Minister for the Environment.

- 2-1 Subject to these conditions, the manner of detailed implementation of the proposal shall conform in substance with that set out in any designs, specifications, plans or other technical material submitted by the proponent to the Environmental Protection Authority with the proposal. Where, in the course of that detailed implementation, the proponent seeks to change those designs, specifications, plans or other technical material in any way that the Minister for the Environment determines on the advice of the Environmental Protection Authority, is not substantial, those changes may be effected.

3 Environmental Management Programme

A comprehensive environmental management programme is to be prepared and implemented to ensure that significant impacts on the environment resulting from the project are detected, reported on and managed promptly and correctly.

- 3-1 The proponent shall prepare an Environmental Management Programme for the management, monitoring, auditing and reporting of environmental impacts associated with the various elements and at appropriate times listed below, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority. This programme shall include, but not necessarily be limited to, the following elements:

Mine site and beneficiation operation, Mt Weld :

- 1 conservation of groundwater;
- 2 conservation of native flora and fauna;
- 3 residue disposal and wastewater management;
- 4 rehabilitation and decommissioning of disturbed sites, overburden dumps and residue ponds;

Published on

9 NOV 1992

Secondary processing operation, Meenaar:

- 5 ground and surface water protection;
- 6 residue disposal and wastewater management;
- 7 emergency management for major seismic events;
- 8 visual impacts and landscaping;

All aspects of the project:

- 9 radiation management; and
- 10 transport of ore concentrate, residues and dangerous goods.

Note 1:

The various elements above are to be prepared in consultation with and reviewed (at appropriate intervals) with advice from the following agencies:

Department of Minerals and Energy - 1 to 4, 7, 9 and 10.

Water Authority of Western Australia - 1, 3, 5 and 6.

Health Department of Western Australia - 3 and 6.

Radiological Council - 9.

Shire of Northam - 6, 7 and 8.

Note 2:

The various elements above are to be prepared according to the following timetable:

1 - prior to the start of dewatering at Mt Weld.

2, 3 and 4 - prior to further clearing at Mt Weld.

5, 6 and 8 - prior to construction of the secondary processing plant at Meenaar.

7, 9 and 10 - prior to commissioning of the secondary processing plant at Meenaar.

3-2 The proponent shall implement the Environmental Management Programme required by condition 3-1 to the requirements of the Environmental Protection Authority on advice of the appropriate agencies.

3-3 In the event that monitoring shows unacceptable environmental impacts, the proponent shall prepare and subsequently implement plans to mitigate these impacts to the requirements of the Environmental Protection Authority.

4 Decommissioning

The satisfactory decommissioning of the project, removal of the plant and installations and rehabilitation of the sites and their environs is the responsibility of the proponent.

4-1 At least six months prior to decommissioning of each site, the proponent shall prepare a decommissioning and rehabilitation plan for each site.

4-2 The proponent shall implement the plans required by condition 4-1.

5 Proponent

These conditions legally apply to the nominated proponent.

5-1 No transfer of ownership, control or management of the project which would give rise to a need for the replacement of the proponent shall take place until the Minister for the Environment has advised the proponent that approval has been given for the nomination of a replacement proponent. Any request for the exercise of that power of the Minister shall be accompanied by a copy of this statement endorsed with an undertaking by the proposed replacement proponent to carry out the project in accordance with the conditions and procedures set out in the statement.

6 Time Limit on Approval

The environmental approval for the proposal is limited.

- 6-1 If the proponent has not substantially commenced the project within five years of the date of this statement, then the approval to implement the proposal as granted in this statement shall lapse and be void. The Minister for the Environment shall determine any question as to whether the project has been substantially commenced. Any application to extend the period of five years referred to in this condition shall be made before the expiration of that period, to the Minister for the Environment by way of a request for a change in the condition under Section 46 of the Environmental Protection Act. (On expiration of the five year period, further consideration of the proposal can only occur following a new referral to the Environmental Protection Authority.)

7 Compliance Auditing

In order to ensure that environmental conditions and commitments are met, an audit system is required.

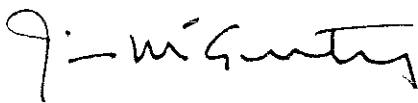
- 7-1 The proponent shall prepare periodic "Progress and Compliance Reports", to help verify the environmental performance of this project, in consultation with the Environmental Protection Authority.

Procedure

The Environmental Protection Authority is responsible for verifying compliance with the conditions contained in this statement, with the exception of conditions stating that the proponent shall meet the requirements of either the Minister for the Environment or any other government agency.

If the Environmental Protection Authority, other government agency or proponent is in dispute concerning compliance with the conditions contained in this statement, that dispute will be determined by the Minister for the Environment.

Note: The proponent will be required to apply for Works Approvals and Licences for this project under the provisions of Part V of the Environmental Protection Act.



Jim McGinty, MLA
MINISTER FOR THE ENVIRONMENT

9 NOV 1992

PROPONENT'S CONSOLIDATED COMMITMENTS

RARE EARTHS MINING & BENEFICIATION AT MT WELD, LAVERTON & SECONDARY PROCESSING AT MEENAAR, NEAR NORTHAM (611)

ASHTON RARE EARTHS LTD

The proponent has made the following environmental commitments:

1 GENERAL

1.1 PROJECT AMENDMENT

Commitment 1 Details of any plan to significantly alter the processing or operation of the project from that proposed in this PER would be referred to the EPA for environmental assessment.

1.2 LEGISLATIVE COMPLIANCE

Commitment 2 The construction and operation of the project would be undertaken in accordance with the requirements of relevant Commonwealth, State and local authority legislation, regulations and codes of practice.

1.3 MANAGEMENT PROGRAMME

Commitment 3 Prior to commissioning of facilities at Mt Weld and Meenaar, Ashton would prepare and submit an Environmental Management Programme that would address, where appropriate, the monitoring and management of the following:

- atmospheric emissions (Commitments 10, 20, 29)
- noise emissions (Commitments 11, 35, 36)
- water management at Mt Weld (Commitments 21, 23)
- chemical handling and storage (Commitment 25, 27)
- solid and liquid residues (Commitments 22, 30, 31, 33, 34)
- transport (Commitments 38, 40)
- workforce management (Commitment 16)
- rehabilitation and decommissioning (Commitments 17, 18, 19, 37)
- social impacts (Commitment 28).

The Environmental Management Programme would be developed in consultation with, and to the satisfaction of, the EPA.

Commitment 4 Prior to commissioning facilities at Mt Weld and Meenaar, Ashton would prepare and submit a Radiation Management Plan that would address the management and monitoring of occupational and environmental radiation issues associated with:

- mining and milling
- transport
- residue disposal

to the satisfaction of the Department of Minerals and Energy and the Health Department, with advice from the EPA.

1.4 ANNUAL REPORTING

- Commitment 5 Annual reports that described the actions undertaken to comply with these environmental management and monitoring commitments would be prepared by Ashton and submitted to the appropriate authority.

2 CONSTRUCTION

2.1 GENERAL

- Commitment 6 Ashton would not commence construction of the secondary processing plant until the design and status of the Meenaar Industrial Park buffer zone had been resolved to the satisfaction of the Minister for the Environment.
- Commitment 7 All construction materials and practices would comply with relevant Australian standards and codes of practice.
- Commitment 8 Solid refuse and material wastes would be removed from construction sites and disposed of in accordance with the requirements of the Shire of Laverton (for the Mt Weld site) and the Shire of Northam (for the Meenaar site).
WMD.

2.2 REHABILITATION

- Commitment 9 Where practicable, vegetation and topsoil cleared during Mt Weld site preparations would be used to rehabilitate disturbed areas.

2.3 POLLUTION CONTROL

Air

- Commitment 10 Dust suppression measures, including application of water from tankers, would be implemented at Mt Weld and Meenaar to minimize dust generation during site preparation and construction activities.

Noise

- Commitment 11 Construction activities at Mt Weld and Meenaar would be carried out in accordance with statutory requirements relating to noise, and would incorporate appropriate management techniques to ensure that occupational and ambient noise levels were within acceptable limits set by the EPA and the Department of Occupational Health, Safety and Welfare.

3 RADIATION

3.1 GENERAL

- Commitment 12 The ALARA principle (which requires that exposures to radiation be kept as low as reasonably achievable, taking into account social and economic factors) would be adopted for all components of the project.

3.2 LEGISLATIVE COMPLIANCE

- Commitment 13 The Commonwealth requirements for radiation control outlined in the Code of Practice on Radiation Protection in the Mining and Milling of Radioactive Ores 1987 and the Code of Practice on the Management of Radioactive Wastes from the Mining and Milling of Radioactive Ores 1982 would be

met. Similarly, the Western Australian requirements for radiation control outlined in the Radiation Safety (General) Regulations 1983 would be met.

3.3 RADIATION PROTECTION DESIGN TARGETS

- Commitment 14 Under Ashton's commitment to the ALARA principle, radiation protection design targets to be adopted for all employees would be less than 2 mSv/a and would not require designation of employees as radiation workers, which would allow a 20 mSv/a dose limit under the International Commission on Radiological Protection draft recommendations (1990).
- Commitment 15 Under Ashton's commitment to the ALARA principle, radiation protection design targets to be adopted for members of the public would reduce the statutory 1 mSv/a required by the Commonwealth of Australia's Code of Practice on Radiation Protection in the Mining and Milling of Radioactive Ores 1987 to 0.05 mSv/a.

4 MT WELD OPERATIONS

4.1 CONSERVATION

- Commitment 16 An education programme for all employees would be implemented to outline the purpose of imposing restrictions on domestic pets, firearms and recreational use of motor vehicles.

4.2 REHABILITATION AND DECOMMISSIONING

- Commitment 17 Ashton would participate in an appropriate programme to control feral animals (goats and rabbits), in consultation with the Agricultural Protection Board and pastoral owners, prior to the commencement of rehabilitation measures.
- Commitment 18 Rehabilitation at Mt Weld would be progressively undertaken in accordance with EPA and Department of Minerals and Energy's guidelines. Rehabilitation activities would be reported annually to the Department of Mines.
- Commitment 19 A plan outlining the decommissioning of the Mt Weld facilities would be prepared by Ashton before commencement of operational mining and commissioning of the beneficiation plant. The decommissioning plan would be prepared in consultation with the EPA and the Department of Mines. The decommissioning strategy would follow the guidelines of the Commonwealth of Australia's Code of Practice on the Management of Radioactive Wastes from the Mining and Milling of Radioactive Ores 1982.

4.3 POLLUTION CONTROL

Air

- Commitment 20 Dust control measures would be implemented to comply with Department of Minerals and Energy's regulations.

Water

- Commitment 21 A water management plan, including water conservation, would be prepared by Ashton to detail appropriate measures to manage the groundwater resources in the carbonatite pipe area. The plan would be prepared prior to

the commencement of mining operations, in consultation with the EPA and the Water Authority.

Commitment 22 A management plan for the disposal of residues from the Meenaar secondary processing plant at Mt Weld would be prepared by Ashton prior to commissioning of the project. The plan would be prepared in consultation with the EPA and the Department of Minerals and Energy.

Commitment 23 A groundwater monitoring programme would be prepared in consultation with the Water Authority.

5 MEENAAR OPERATIONS

5.1 GENERAL

Commitment 24 Ashton would co-operate with other occupants of the Meenaar Industrial Park in the development of a comprehensive safety and environmental protection programme for the park.

5.2 SAFETY

Commitment 25 The storage and handling of hazardous materials would be undertaken in accordance with relevant statutes and codes, and Ashton would institute an ongoing worker safety training programme.

Commitment 26 An emergency management plan would be developed by Ashton prior to commissioning, in consultation with the Department of Minerals and Energy. The plan would include measures to be taken in the event of seismic activity.

Commitment 27 The LPG storage vessel would be designed and operated in accordance with *LP Gas: Storage and Handling* (AS 1596—1989), and would incorporate safety measures such as a fixed water spray (deluge) system as described in that standard.

5.3 SOCIAL

Commitment 28 Social impact monitoring would be undertaken to address local issues.

5.4 POLLUTION CONTROL

Air

Commitment 29 A programme would be established upon commissioning to monitor the following parameters:

- concentration and mass emission rate of sulphur dioxide
- concentration of oxides of nitrogen
- volume flow rate
- temperature
- boiler fuel feed rate over the duration of the test.

Water

Commitment 30 A total containment policy would be adopted for wastewater and surface runoff from the plant area.

- Commitment 31 Studies would be undertaken by Ashton during the design phase of Stages II and III to identify an economic means of removing the nitrate from the wastewater before it entered the evaporation ponds.
- Commitment 32 Plans and associated documentation for the design of the Meenaar facility and evaporation ponds to withstand predicted seismic events would be prepared by Ashton prior to construction, in consultation with the EPA and the Water Authority.
- Commitment 33 A groundwater monitoring programme would be implemented. The results of this monitoring would be issued annually to the Water Authority and the EPA.

Solids

- Commitment 34 Ashton would continue to investigate the feasibility of selling the calcium phosphate material produced from regeneration of caustic soda or otherwise making it available to others (for possible use as fertilizer feedstock).

Noise

- Commitment 35 All potential noise-generating equipment would incorporate effective sound-proofing measures such that, during the operation of the plant at full capacity, noise at the nearest residence would not exceed those limits set by the EPA.
- Commitment 36 A noise monitoring programme would be implemented.

5.5 DECOMMISSIONING

- Commitment 37 A plan outlining the decommissioning of the secondary processing plant would be prepared by Ashton before commissioning the plant, in consultation with the EPA. This decommissioning strategy would follow the guidelines of the Commonwealth of Australia's Code of Practice on the Management of Radioactive Wastes from the Mining and Milling of Radioactive Ores 1982.

6 TRANSPORT OPERATIONS

6.1 LEGISLATIVE COMPLIANCE

- Commitment 38 Transport and handling procedures would comply with the requirements of the Commonwealth of Australia's Code of Practice for the Transport of Dangerous Goods by Road and Rail 1987 and the Commonwealth of Australia's Code of Practice for the Safe Transport of Radioactive Substances 1990, together with the Western Australian Dangerous Goods Regulations 1992 and the Radiation Safety (Transport of Radioactive Substances) Regulations 1991.

6.2 EMERGENCY PROCEDURES

- Commitment 39 Emergency procedure guides and emergency contacts would be documented and available in vehicle cabs, and all drivers would be instructed in the actions, as specified under the Western Australian Hazardous Materials Emergency Management Scheme, to be taken in the event of an accident.

6.3 MONITORING

Commitment 40 A programme of occupational health and safety monitoring of transport drivers would be developed by Ashton prior to commissioning, in consultation with the Health Department.

6.4 REVIEW OF TRANSPORT OPTIONS

Commitment 41 Ashton would undertake a further comparative review of the practicability of the transport options (road-rail versus road only) for the Mt Weld project prior to the commencement of construction of transport-related facilities at Mt Weld and Meenaar. The results would be made available to the EPA.

Appendix 3

List of recommended Ministerial Conditions and proponent's consolidated commitments

**STATEMENT TO AMEND CONDITIONS APPLYING TO A PROPOSAL
(PURSUANT TO THE PROVISIONS OF SECTION 46 OF THE
ENVIRONMENTAL PROTECTION ACT 1986)**

Title: RARE EARTHS MINING & BENEFICIATION AT MT WELD, LAVERTON
AND SECONDARY PROCESSING AT MEENAAR, NEAR NORTHAM

Proposal: Mining and beneficiation of a rare earths deposit at Mt Weld, and processing the beneficiated material to produce various rare earth oxides, concentrates and compounds at Meenaar.

The Mt Weld mine site will be located within mining leases M38/58 and M38/59, some 35 kilo-metres south-east of Laverton. The secondary processing plant will be located at Lot 7 on the east side of the proposed Meenaar Industrial Park, which is located about 18 kilo-metres east of Northam, as documented in schedule 1 of this statement.

Proponent: Ashton Rare Earths Pty Ltd

Proponent Address: 441 Saint Kilda Road, Melbourne Victoria 3004

Assessment Number: 1194

Previous Assessment Number(s): 611

Previous Statement Number(s): Statement No. 290 published on 9 November 1992

Report of the Environmental Protection Authority: Bulletin 884

Previous Report(s) of the Environmental Protection Authority: Bulletin 646

The implementation of the proposal to which the above reports of the Environmental Protection Authority relate is now subject to the following conditions and procedures which replace all previous conditions and 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.

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 Environmental Management System

- 3-1 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 at Mt Weld or construction of the secondary processing plant at Meenaar, the proponent shall prepare Environmental Management System documentation with components such as those adopted in Australian Standards AS/NZ ISO 14000 series, to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection.
- 3-2 The proponent shall implement the Environmental Management System referred to in condition 3-1.

4 Environmental Management Programme

- 4-1 Prior to ground-disturbing activities at Mt Weld, the proponent shall prepare an Environmental Management Programme to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection, the Department of Minerals and Energy, the Radiological Council, and the Water and Rivers Commission.

The Programme shall consist of the following environmental management plans for the Mt Weld site:

1. surface and groundwater management plan, including conservation of groundwater (prior to ground-disturbing activities) [see Condition 5];
 2. native flora and fauna conservation plan (prior to ground-disturbing activities);
 3. wastewater and residue disposal management plan (prior to ground-disturbing activities);
 4. decommissioning management plan, including rehabilitation of disturbed sites, overburden dumps and residue ponds [see Condition 8];
 5. plan for transportation of process materials, such as ore concentrate, residues and dangerous goods (prior to ground-disturbing activities);
 6. radiation management plan (prior to ground-disturbing activities);
 7. greenhouse gas emissions management plan (prior to ground-disturbing activities) [see Condition 6]; and
 8. noise management plan (prior to ground-disturbing activities) [see Condition 7].
- 4-2 The proponent shall implement the environmental management plans required by condition 4-1 for the Mt Weld site.
- 4-3 Prior to commencement of construction at Meenaar, the proponent shall prepare an Environmental Management Programme to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection, the Department of Minerals and Energy, the Radiological Council, and the Water and Rivers Commission.

The Programme shall consist of the following environmental management plans for the for the Secondary processing operation at Meenaar:

1. surface and groundwater management plan, including groundwater protection (prior to construction) [see Condition 5];
2. wastewater and residue disposal management plan (prior to construction);
3. emergency management plan for major seismic events (prior to construction);
4. visual impacts and landscaping plan (prior to construction);

5. plan for transportation of process materials, such as ore concentrate, residues and dangerous goods (prior to commissioning);
 6. radiation management plan (prior to commissioning);
 7. greenhouse gas emissions management plan (prior to construction) [see Condition 6]; and
 8. noise management plan (prior to construction) [see Condition 7] .
- 4-4 The proponent shall implement the Environmental Management Plans required by condition 4-3 for the Meenaar site.

5 Surface and Ground Water Management Plan

- 5-1 Prior to construction of the secondary processing operation plant at Meenaar, the construction of the beneficiation operation plant, and the disturbance of soil at the mine at Mt Weld; the proponent shall develop a pre-operational monitoring plan (stage 1) for surface and ground water including quality assurance procedures, to the requirements of the Environmental Protection Authority on advice of the Radiological Council, the Department of Minerals and Energy, the Water and Rivers Commission and the Department of Environmental Protection.
- 5-2 The proponent shall implement the pre-operational surface and ground water management plan required by Condition 5-1.
- 5-3 Prior to commissioning of the secondary processing operation plant at Meenaar, and the beneficiation operation plant at Mt Weld; the proponent shall develop an operational monitoring plan (stage 2) for surface and ground water including quality assurance procedures, to the requirements of the Environmental Protection Authority on advice of the Radiological Council, the Department of Minerals and Energy, the Water and Rivers Commission and the Department of Environmental Protection.
- 5-4 The proponent shall implement the operational surface and ground water management plan required by Condition 5-3.

6 Greenhouse Gas Emissions Management Plan

- 6-1 Prior to commencement of construction of the secondary processing operation plant at Meenaar, and the beneficiation operation plant at Mt Weld; the proponent shall prepare a Greenhouse Gas Emissions Management Plan to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection.

This Plan shall include:

- 1 calculation of the "greenhouse gas" emissions (using methodology developed for Australia);
 - 2 measures to limit "greenhouse gas" emissions; and
 - 3 estimation of the "greenhouse gas" efficiency of the project (per unit of product and/or other agreed performance indicators) and comparison with the efficiencies of other comparable projects producing a similar product.
- 6-2 The proponent shall implement the Greenhouse Gas Emissions Management Plan required by condition 6-1.

Note: The proponent should consider entry (whether on a project-specific basis, company-wide arrangement or within an industrial grouping, as appropriate) into the Commonwealth Government's "Greenhouse Challenge" voluntary co-operative agreement program.

Components of the agreement program include:

- 1 an inventory of emissions;
- 2 opportunities for abating “greenhouse gas” emissions in the organisation;
- 3 a “greenhouse gas” mitigation action plan;
- 4 regular monitoring and reporting of performance; and
- 5 independent performance verification.

7 Noise Management Plan

7-1 Prior to construction of the secondary processing operation plant at Meenaar; the construction of the beneficiation operation plant, and the dewatering of the mine at Mt Weld; the proponent shall prepare a Noise Management Plan to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection.

This Plan shall address:

- 1 the location, dimensions and form of noise barriers to be constructed for the project;
- 2 the sound power levels for equipment to be used for the project and details of acoustical treatment to be applied;
- 3 special procedures necessary to restrict activities under weather conditions which increase noise propagation toward the residential area at Meenaar; and
- 4 routine operating procedures to be adopted for particular operations to control noise emanating from the project.

7-2 The proponent shall implement the Noise Management Plan required by condition 7-1.

8 Decommissioning Management Plan

8-1 At least six months prior to decommissioning of the secondary processing operation plant at Meenaar, and the beneficiation operation plant at Mt Weld, the proponent shall prepare a Decommissioning Management Plan to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection.

This Plan shall address:

- 1 removal or, if appropriate, disposal on-site of plant and infrastructure;
- 2 rehabilitation of all disturbed areas to agreed final land use(s); and
- 3 identification of contaminated areas, including provision of evidence of notification to relevant statutory authorities.

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

9 Performance Review

9-1 Each six years following the commencement of construction of the secondary processing operation plant at Meenaar, and the beneficiation operation plant at Mt Weld; the

proponent shall submit a Performance Review to evaluate the environmental performance relevant to:

- 1 environmental objectives reported on in Environmental Protection Authority Bulletin 646 and 88 ;
- 2 proponent's consolidated environmental management commitments documented in schedule 2 of this statement and those arising from the fulfilment of conditions and procedures in this statement;
- 3 Environmental Management System environmental management targets;
- 4 Environmental Management Programmes and Plans; and
- 5 environmental performance indicators;

to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection.

Note: The Environmental Protection Authority may recommend changes and actions to the Minister for the Environment following consideration of the Performance Review.

10 Changes to Implementation

- 10-1 Where, in the course of implementing the proposal, 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.

11 Proponent

- 11-1 The proponent for the time being nominated by the Minister for the Environment under section 38(6) or (7) of the Environmental Protection Act 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.
- 11-2 Any request for the exercise of that power of the Minister referred to in condition 12-1 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.
- 11-3 The proponent shall notify the Minister for the Environment of any change of proponent contact name and address within 30 days of such change.

12 Commencement

- 12-1 The proponent shall provide evidence to the Minister for the Environment within three years of the date of this statement that the proposal has been substantially commenced.
- 12-2 Where the proposal has not been substantially commenced within three years of the date of this statement, the approval to implement the proposal as granted in statement no. 290 shall lapse and be void. The Minister for the Environment will determine any question as to whether the proposal has been substantially commenced.
- 12-3 The proponent shall make application to the Minister for the Environment for any extension of approval for the substantial commencement of the proposal beyond three years from the date of this statement.

12-4 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 three years for the substantial commencement of the proposal.

13 Compliance Auditing

13-1 The proponent shall submit periodic Performance and Compliance Reports, in accordance with an audit program prepared in consultation between the proponent and the Department of Environmental Protection.

13-2 Unless otherwise specified, the Department of Environmental Protection is responsible for assessing compliance with the conditions contained in this statement and for issuing formal clearance of conditions.

13-3 Where compliance with any condition is in dispute, the matter will be determined by the Minister for the Environment.

Note

1 The proponent is required to apply for a Works Approval and Licence for this project under the provisions of Part V of the Environmental Protection Act.

Schedule 1

The Proposal

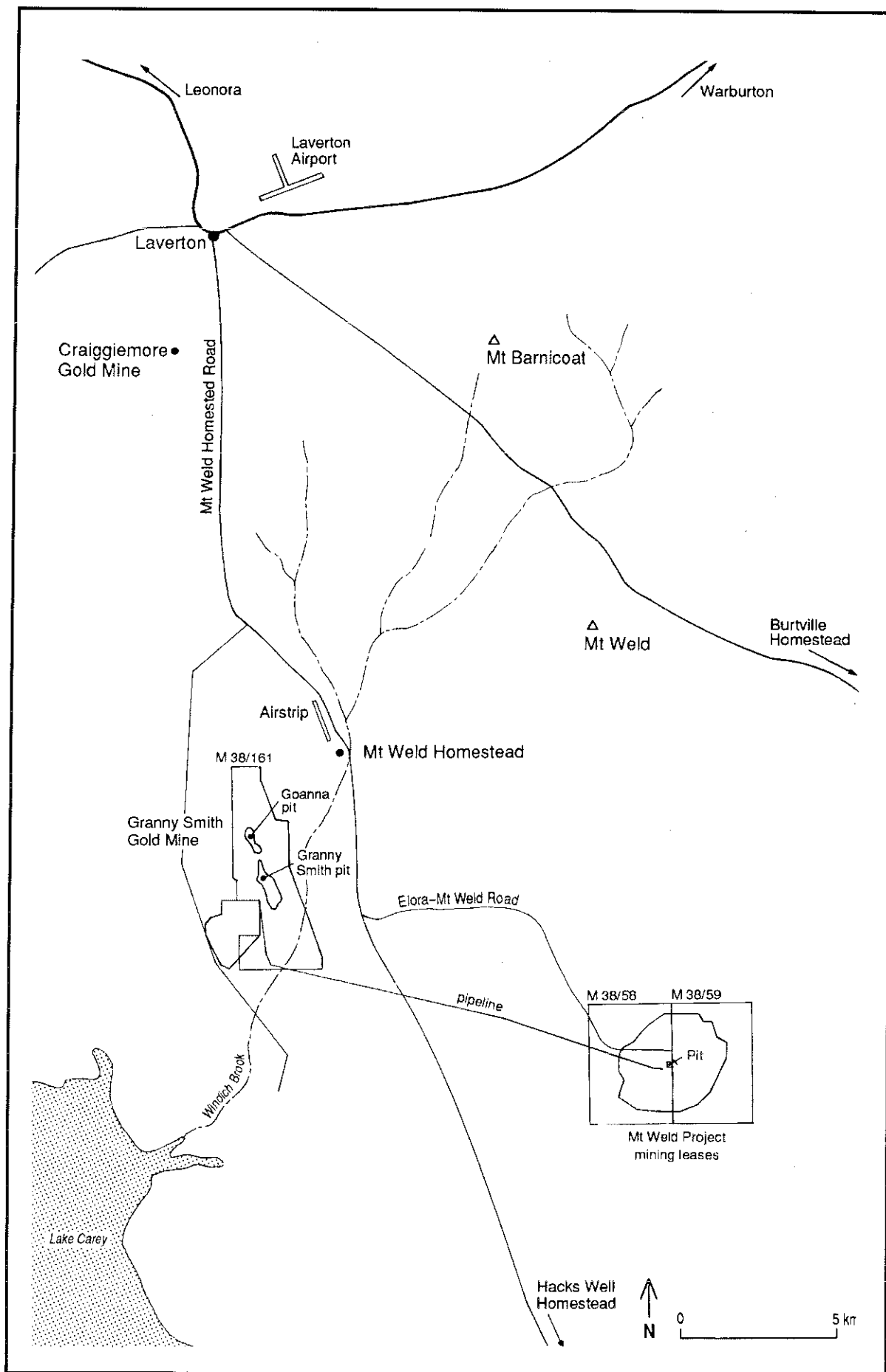
Ashton Rare Earths Pty Ltd (Ashton) proposes to mine and beneficiate a rare earths deposit at Mt Weld, and to process the beneficiated material to produce various rare earth oxides, concentrates and compounds at Meenaar. The proposed Mt Weld mine site would be located within mining leases M38/58 and M38/59, some 35 km south-east of Laverton. The secondary processing plant would be located at Lot 7 on the east side of the proposed Meenaar Industrial Park, which is located about 18km east of Northam.

Key characteristics table

Element	Description
Life of project	> 15 years
Size of ore body	1 200 000 tonnes
Area of disturbance (including access)	mine (Mt Weld) < 250 hectares secondary plant (Meenaar) < 100 hectares
List of major components <ul style="list-style-type: none"> • pit • residue disposal • overburden stockpiles • infrastructure (water supply, roads, etc) 	refer plans, specifications, charts section immediately below for details.
Mt Weld beneficiation process <ul style="list-style-type: none"> • input maximum • output maximum 	<ul style="list-style-type: none"> • 50 000 to 60 000 tonnes per annum of ore containing 5000 tonnes per annum of water) • 10 000 tonnes per annum of ore concentrate (12 000 tonnes per annum wet weight
Meenaar secondary processing plant <ul style="list-style-type: none"> • input maximum • output maximum 	<ul style="list-style-type: none"> • 10 000 tonnes per annum of ore concentrate (12 000 tonnes per annum wet weight • 5 000 tonnes per annum of rare earth products
Solid waste materials <ul style="list-style-type: none"> • maximum residue returned to Mt Weld for disposal 	<ul style="list-style-type: none"> • 20 000 tonnes per annum of rare earth and phosphorus residues

<p>Water supply</p> <ul style="list-style-type: none"> • Mt Weld beneficiation process <ul style="list-style-type: none"> ⇒ source ⇒ maximum annual requirement • Meenaar secondary processing plant <ul style="list-style-type: none"> ⇒ source ⇒ maximum annual requirement 	<ul style="list-style-type: none"> • dewatering • 400 megalitres over 12 - 18 months • Goldfields and Agricultural Supply Scheme • 388 megalitres per annum
<p>Transport</p> <ul style="list-style-type: none"> • Dangerous goods and feedstock materials (classified) • Chemicals (unclassified) • Rare earth products (maximum) • wet ore concentrate • residue 	<ul style="list-style-type: none"> • 1 000 trips per annum from Kwinana to Meenaar and • 15 trips per annum from Kwinana to Mt Weld • 500 trips per annum from Kwinana to Meenaar • 250 trips per annum from Meenaar to Fremantle • 600 trips per annum from Mt Weld to Meenaar • 750 trips per annum from Meenaar to Mt Weld
<p>Energy Meenaar secondary processing plant</p>	<ul style="list-style-type: none"> • 400 mega-Joule per annum of energy from liquefied petroleum gas (8 000 tonnes per annum) • 1 mega-Watt of electricity (8 000 000 kilo-Watt hour per annum)
<p>Carbon dioxide</p> <ul style="list-style-type: none"> • output maximum 	<ul style="list-style-type: none"> • 13 940 tonnes per annum
<p>Development stages</p>	<p>3 over a 5 to 10 year period</p>

Plans, Specifications, Charts



Regional setting of the Mt Weld area (Source: Ashton's PER).

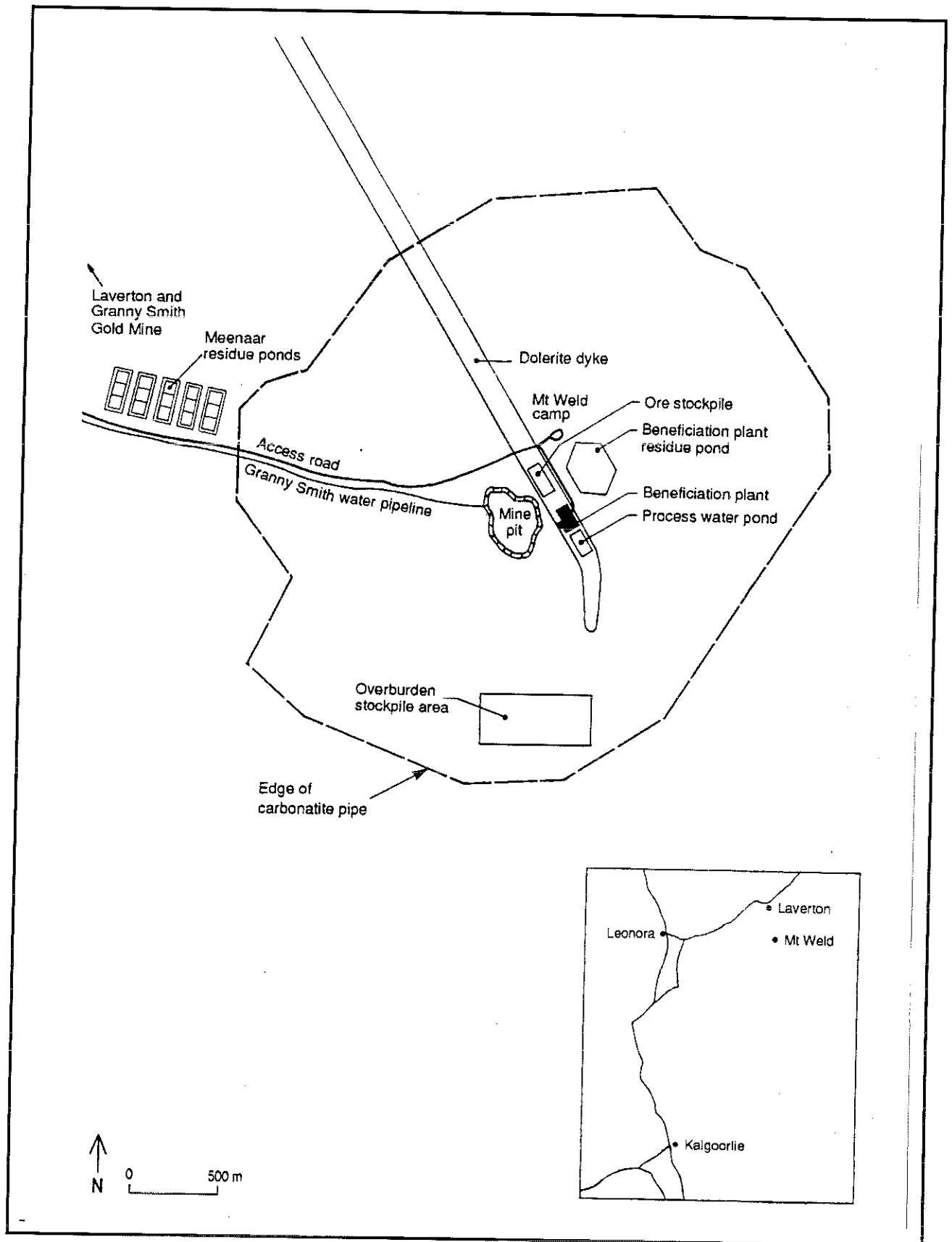


Figure 1. Location and conceptual layout of proposed facilities at Mt Weld (Source: Ashton's PER).

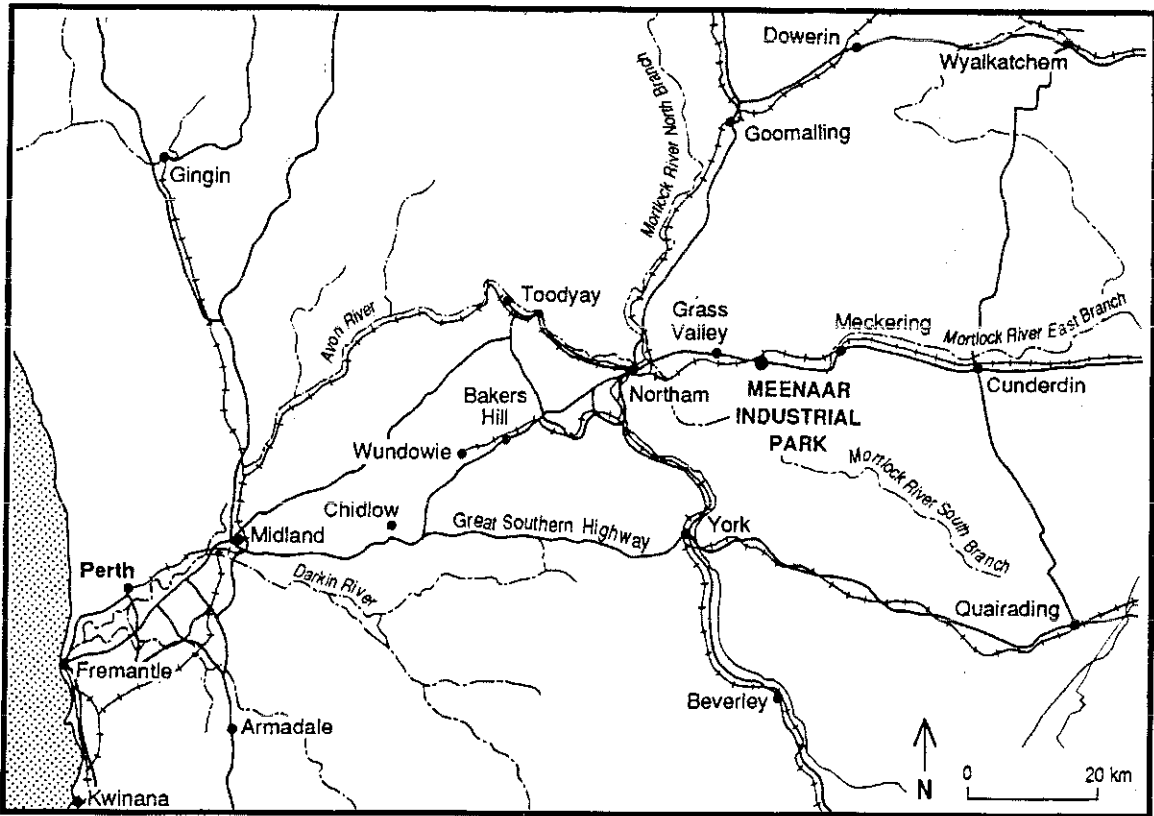


Figure 2a. Regional setting of proposed Meenaar Industrial Park (Source: Ashton's PER).

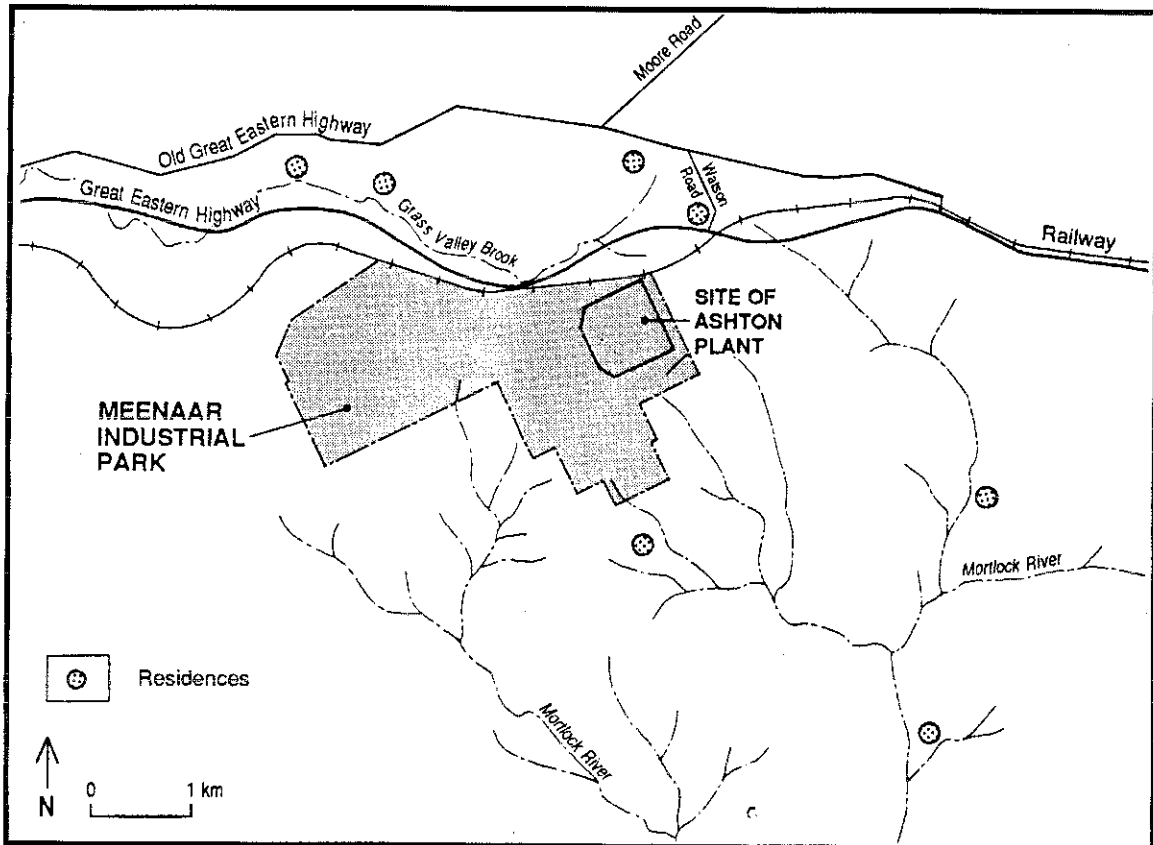


Figure 2b. Proximity of proposed secondary processing plant site to residences at Meenaar (Source: Ashton's PER).

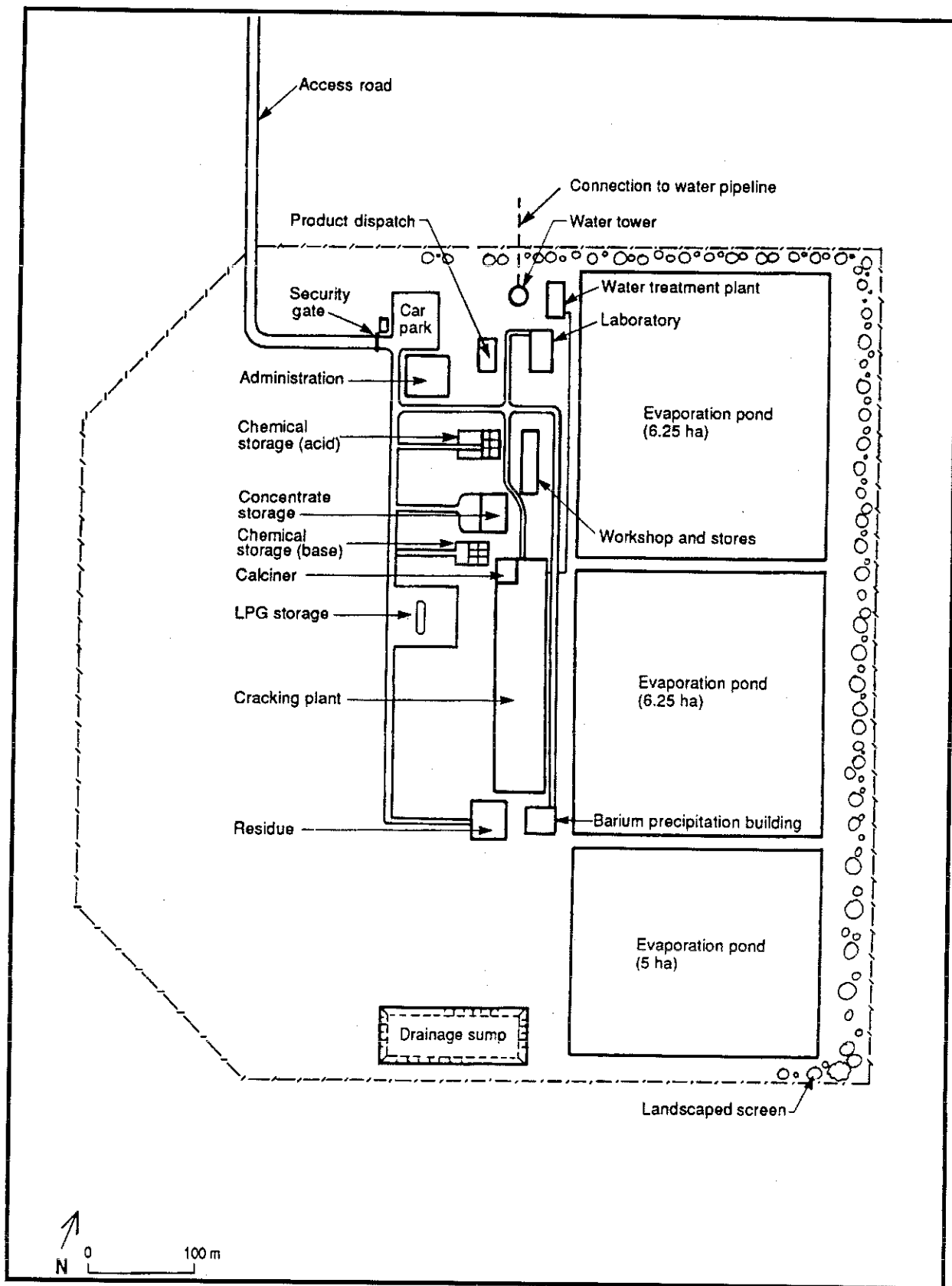


Figure 3. Conceptual layout of proposed secondary processing facilities at Meenaar (Source: Ashton's PER).

Proponent's Consolidated Environmental Management Commitments

13 March 1998

**RARE EARTHS MINING & BENEFICIATION AT MT WELD,
LAVERTON & SECONDARY PROCESSING AT MEENAAR, NEAR
NORTHAM**

ASHTON RARE EARTHS PTY LTD

The proponent has made the following environmental commitments:

1 GENERAL

MANAGEMENT PROGRAMME

Commitment 1 Prior to commissioning facilities at Mt Weld and Meenaar, Ashton would prepare and submit a Radiation Management Plan that would address the management and monitoring of occupational and environmental radiation issues associated with:

- mining and milling
- transport
- residue disposal

to the requirements of the Department of Environmental Protection (DEP) on advice from the Department of Minerals and Energy (DME), Health Department of WA and the Radiological Council.

ANNUAL REPORTING

Commitment 2 Annual reports that described the actions undertaken to comply with these environmental management and monitoring commitments would be prepared by Ashton and submitted to the DEP.

CONSTRUCTION GENERAL

Commitment 3 Solid refuse and material wastes would be removed from construction sites and disposed of in accordance with the requirements of the DEP, in liaison with the Shire of Laverton (for the Mt Weld site) and Shire of Northam (for the Meenaar site).

2 MT WELD OPERATIONS

CONSERVATION OF FLORA AND FAUNA

- Commitment 4 To conserve flora and fauna, an education programme for all employees would be implemented to outline the purpose of imposing restrictions to limit access to domestic pets, firearms and recreational use of motor vehicles to the premises.

REHABILITATION AND DECOMMISSIONING

- Commitment 5 To protect rehabilitated area's flora and fauna, Ashton would participate in an appropriate programme to control feral animals (goats and rabbits), in consultation with Agriculture WA and pastoral owners, prior to the commencement of rehabilitation measures.
- Commitment 6 Rehabilitation at Mt Weld would be progressively undertaken, generally in accordance with DME's guidelines. Rehabilitation activities would be reported annually to DME.
- Commitment 7 A plan outlining the decommissioning of the Mt Weld facilities would be prepared by Ashton in consultation with DME. The decommissioning strategy would follow the guidelines of the Commonwealth of Australia's Code of Practice on *Radioactive Waste Management (Mining and Milling) Code (1982)*.

POLLUTION CONTROL

Water

- Commitment 8 A surface and groundwater management plan, including water conservation, would be prepared by Ashton at Mt Weld to detail appropriate measures to manage the groundwater resources in the carbonatite pipe area. The plan would be prepared prior to the commencement of mining operations, in consultation with, and to the requirements of the DEP, on advice from the Water and Rivers Commission.
- Commitment 9 A management plan for the disposal of residues from the Meenaar secondary processing plant at Mt Weld would be prepared by Ashton prior to commissioning of the project. The plan would be prepared in consultation with, and to the requirements of the DEP, on advice from DME.
- Commitment 10 A groundwater monitoring programme would be prepared in consultation with, and to the requirements of the DEP on advice from the Water and Rivers Commission.
- Commitment 11 All wastewater is to be confined to the Mt Weld premises.

3 MEENAAR OPERATIONS

POLLUTION CONTROL

Air

Commitment 12 At the design and commissioning phases of the project, through dispersion modelling the proponent is to demonstrate that atmospheric emissions of carbon monoxide, nitrogen dioxide, photochemical oxidant, sulphur dioxide, lead and particulate, at the site boundary nearest residences, is in compliance with the current acceptable standard [National Environment Protection Council (NEPC), national environmental protection measure (NEPM)] for air quality, the current goals of which are shown in the table below. Best practice emission control equipment and clean production plant design will be used where appropriate, to comply with these concentrations.

Pollutant	Maximum Concentration	Averaging Time	Allowed Exceedances
Carbon dioxide	9.0ppm	8h	1 day a year
Nitrogen dioxide	0.125ppm 0.03ppm	1h 1year	1 day a year none
Photochemical oxidants (as ozone)	0.1ppm 0.08ppm	1h 4h	1 day a year 1 day a year
Sulphur dioxide	0.2ppm 0.08ppm 0.02ppm	1h 24h 1 year	1 day a year 1 day a year none
Lead (as TSP)	0.5µg/m ³	3 months (1 year)	none
Particles (as PM ₁₀)	50.0µg/m ³	24h	1 day per year 5 (days a year)

Note: Concentrations are expressed in terms of mean arithmetic concentrations

Water

Commitment 13 All wastewater, and surface water from within the plant area, is to be confined to the Meenaar premises.

Commitment 14 Plans and associated documentation for the design of the Meenaar facility and evaporation ponds to withstand predicted seismic events would be prepared by Ashton prior to construction, in consultation with, and to the requirements of the DEP and the Water and Rivers Commission.

Commitment 15 A groundwater monitoring programme would be implemented. The results of this monitoring would be issued annually to the Water and Rivers Commission and the DEP.

Commitment 16 To ensure that there will be no significant radionuclides disposed in the ponds, all effluents to the ponds will be analysed to determine if there are any significant traces of radionuclides and to ensure these levels are below the levels acceptable to the DEP on advice of the DME, Radiological Council, and Water and Rivers Commission.

Decommissioning

Commitment 17 The decommissioning strategy for the secondary processing plant at Meenaar is to follow the guidelines of the Commonwealth of Australia's *Radioactive Waste Management (Mining and Milling) Code (1982)*.

4 TRANSPORT OPTIONS

REVIEW OF TRANSPORT OPTIONS

Commitment 18 Ashton would undertake a further comparative review of the practicability of the transport options (road-rail versus road only) for the Mt Weld project prior to the commencement of construction of transport-related facilities at Mt Weld and Meenaar. The results would be made available to the DEP.

5 ENVIRONMENTAL MANAGEMENT PROCEDURES, OBJECTIVES AND STRATEGIES

GENERAL CONSTRUCTION

Commitment 19 All construction materials and practices would comply with relevant Australian standards and codes of practice.

RADIATION GENERAL

Commitment 20 The ALARA principle (which requires that exposures to radiation be kept as low as reasonably achievable, taking into account social and economic factors) would be adopted for all components of the project. Under Ashton's commitment to the ALARA principle, radiation protection design targets to be adopted for all people, such as employees and members of the public; together with other species; would comply with *NHMRC, June 1995, Recommendations for limiting exposure to ionising radiation (1995) (Guidance note [NOHSC: 3022(1995)] and National standard for limiting occupational exposure to ionising radiation [NOHSC:1013(1995)]*, Radiation Health Series no. 39.

LEGISLATIVE COMPLIANCE

Commitment 21 The Commonwealth requirements for radiation control outlined in the *Radiation Protection (Mining and Milling) Code 1987*, the Code of Practice on the *Radioactive Waste Management (Mining and Milling) Code (1982)*, and the *Code for Disposal (NHMRC, 1992)* would be met. Similarly, the Western Australian requirements for radiation control outlined in the *Radiation Safety (General) Regulations 1983* would be met.

RADIATION PROTECTION DESIGN TARGETS

Commitment 22 Under Ashton's commitment to the ALARA principle, radiation protection design targets to be adopted for:

- all employees would be less than 2mSv/a;
- for members of the public would reduce the statutory 1 mSv/a to 0.05mSv/a;

as required by Schedule B - Exemption criteria of the *NHMRC, June 1995, Recommendations for limiting exposure to ionising radiation (1995)* (Guidance note [NOHSC: 3022(1995)] and *National standard for limiting occupational exposure to ionising radiation [NOHSC:1013(1995)]*, Radiation Health Series no. 39.

MEENAAR OPERATIONS GENERAL

- Commitment 23 Ashton would co-operate with other occupants of the Meenaar Industrial Park in the development of a comprehensive safety and environmental protection programme for the park.

MEENAAR OPERATIONS SAFETY

- Commitment 24 The storage and handling of hazardous materials would be undertaken in accordance with relevant statutes and codes, and Ashton would institute an ongoing worker safety training programme.
- Commitment 25 An emergency management plan would be developed by Ashton prior to commissioning, in consultation with DME. The plan would include measures to be taken in the event of seismic activity.
- Commitment 26 The LPG storage vessel would be designed and operated in accordance with *LP Gas: Storage and Handling* (AS 1596—1989), and would incorporate safety measures such as a fixed water spray (deluge) system as described in that standard.
- Commitment 27 Studies would be undertaken by Ashton during the design phase of Stages II and III to identify an economic means of removing the nitrate from the wastewater before it entered the evaporation ponds.

MEENAAR OPERATION SOLIDS

- Commitment 28 Ashton would continue to investigate the feasibility of selling the calcium phosphate material produced from regeneration of caustic soda or otherwise making it available to others (for possible use as fertiliser feedstock).

LEGISLATIVE COMPLIANCE

- Commitment 29 Transport and handling procedures would comply with the requirements of the Commonwealth of Australia's *Code of Practice for the Transport of Dangerous Goods by Road and Rail 1987* and the Commonwealth of Australia's *Code of Practice for the Safe Transport of Radioactive Substances 1990*, together with the *Western Australian Dangerous Goods Regulations 1992* and the *Radiation Safety (Transport of Radioactive Substances) Regulations 1991*.

EMERGENCY PROCEDURES

- Commitment 30 Emergency procedure guides and emergency contacts would be documented and available in vehicle cabs, and all drivers would be instructed in the actions, as specified under the *Western Australian Hazardous Materials Emergency Management Scheme*, to be taken in the event of an accident.

MONITORING

Commitment 31 A programme of occupational health and safety monitoring of transport drivers would be developed by Ashton prior to commissioning, in consultation with the Health Department of WA.