

Extension of Quartz Mining and Strategy for Resource Access and Biodiversity Conservation

Simcoa Operations Pty Ltd

**Section 46 Report and Recommendations
of the Environmental Protection Authority**

**Environmental Protection Authority
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Summary and recommendations

Section 46(1) of the *Environmental Protection Act 1986* requires the EPA to report to the Minister for the Environment and Heritage on whether or not the proposed changes to conditions and procedures should be allowed. In addition, the EPA may make recommendations as it sees fit.

This report provides the EPA's advice and recommendations to the Minister for the Environment and Heritage on the environmental factor, conditions and procedures relevant to the proposed variation to conditions.

Scope of report and proposed variation

This report and proposed variation apply to Simcoa's mining leases as defined under the *Silicon (Kemerton) Agreement Act 1987* (as amended).

Relevant environmental factor

It is the EPA's opinion that the following is the environmental factor relevant to the proposed variation, which requires detailed evaluation in the report:

- Conservation of Threatened Ecological Community and Declared Rare and Priority Flora.

Conclusion

The EPA has concluded that Simcoa has proposed an approach to its mining requirements which would provide both access to resources and improved conservation outcomes.

The EPA considers that conditions attaching to the environmental approval should be updated. It has therefore reported also on the updating of conditions.

Recommendations

The EPA submits the following recommendations:

1. That the Minister for the Environment and Heritage note that this report is pursuant to Section 46 of the *Environmental Protection Act 1986* and is about providing Simcoa with access to resources, both in the short and longer term, while at the same time achieving beneficial conservation outcomes for the community and the State;
2. That the Minister for the Environment and Heritage note that the EPA has concluded that, if implemented according to the EPA's recommended conditions and procedures (Appendix 7) and the proponent's environmental commitments, the environmental objectives, including CALM's conservation objectives, can be achieved;
3. That the Minister for the Environment and Heritage:
 - amends the conditions as set out in Appendix 7;
 - provides permission to take the Declared Rare Flora in accordance with the advice of CALM; and
 - advises the Minister for State Development that there is no objection to access to additional resources, both in the short and longer term, under the *Silicon (Kemerton) Agreement Act 1987* (as amended) provided that such access is consistent with the amended environmental conditions and procedures and the proponent's commitments.

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1. Introduction and background

Simcoa Operations Pty Ltd (the proponent) has two operations in Western Australia:

- a minesite at Moora (mineral lease ML70/191); and
- an industrial plant at Kemerton that produces silica from the chert mined at Moora.

The regional setting of the industrial plant and minesite are shown in Figures 1 and 2 in the proponent's document (Robinson 2001).

The industrial plant and minesite have been assessed and reported on by the EPA previously and the Statement was issued by the Minister for the Environment in May 1988 and amended in August 1992 to incorporate standard Conditions at the time.

The single condition relating to the minesite states:

“The proponent shall monitor the effect of mining activities on the population of Regelia megacephala on the minesite with a monitoring programme approved by the Environmental Protection Authority before mining commences and to manage the effects of mining activities on this species to the satisfaction of the Environmental Protection Authority.”

This condition does not actually restrict Simcoa from mining in areas containing *Regelia megacephala* on ML 70/191 but does require that Simcoa manage the effects of mining operations on the *Regelia megacephala* population.

Regelia megacephala (a Priority species in its own right and part of a Threatened Ecological Community) is closely associated with the Coomberdale Chert of the Moora region. Whilst chert is not rare, the chemical and physical characteristics of chert that is suitable for processing at Kemerton are critical and there are no other known chert resources in Western Australia with the required characteristics.

Simcoa would now like to mine a small area on ML70/191 known as the Western Ridge¹ (see plans 3 and 5 in Robinson 2001). The vegetation on this ridge is dominated by *Regelia megacephala*. Furthermore, recent vegetation surveys have identified other species of conservation significance (including one species of Declared Rare Flora) to be present. Rehabilitation trials thus far have shown that *Regelia* can be successfully regenerated but individual plants are unlikely to survive in the long term in the modified environment after mining, although the seed can be sustained. When the above environmental condition was framed there was no knowledge of the presence of the DRF species or the sustainability of *Regelia* regeneration.

Recognizing its responsibility to manage mining impacts on flora of conservation significance and that ultimately, when mining operations are concluded, the land would probably be returned to its previous use of grazing (also destructive to rare and priority flora), Simcoa is seeking to work in cooperation with the Department of Conservation and Land Management to identify areas that would be most valuable to transfer to conservation estate in return for securing access to additional areas on their mining leases. This arrangement would need to be formalised and included in Simcoa's Environmental Conditions. The opportunity could also be used to include other Conditions that have now become standard.

The Simcoa operations are also covered by the *Silicon (Kemerton) Agreement Act 1987*. The matters that are the subject of this report also require the approval of the Minister for State Development.

¹ There are two areas of interest for mining on ML 70/191 that contain uncleared native vegetation; the Eastern Ridge being the largest and the Western Ridge which is comparatively small (see plans 3 and 5 in Robinson 2001).

2. Proposed variation to conditions

The proposed variation to conditions is to underpin mining on the Western Ridge within Mining Lease ML70/191 (in the short term) and secure development of a strategy to guarantee mining and conservation in the long term. ML70/191 is the location of the existing Moora Quartz Mine, which is on private freehold farmland. The Western Ridge lies between the current open pit and the Midlands Road (Figure 2 in Robinson 2001).

The mined chert material is crushed and sieved on site and stockpiled during winter campaigns for subsequent rail transport to the Simcoa processing plant at Kemerton. This variation will not increase production or change existing operations. Its intent is to gain access to additional high-grade resources on the Western Ridge and elsewhere while also providing biodiversity conservation benefits for the community and the State.

The initial mining area, the Western Ridge pit area, will be progressively cleared of vegetation and mined in five stages over five to ten years.

3. Relevant environmental factor

Having considered Simcoa's documentation, independent expert opinion, appropriate references and advice from the Department of Mineral and Petroleum Resources (MPR; formerly the Department of Resources Development and Department of Minerals and Energy) and the Department of Conservation and Land Management (CALM), it is the EPA's opinion that its report only needs to address the following relevant environmental factor:

- Conservation of Threatened Ecological Community and Declared Rare and Priority Flora.

Description

The current mine, Western Ridge pit area and other prospective areas located in leases held by Simcoa lie in a group of vegetation types that is listed by CALM as a Threatened Ecological Community (Hamilton-Brown, 2000). Furthermore, a number of species of Declared Rare Flora (DRF) have been identified in these areas.

The scope of this variation is the Western Ridge and consideration of a package to achieve both long-term access to further resources and improved conservation outcomes for the benefit of the State. The Western Ridge is part of the Coomberdale (also known as Noondine) Threatened Ecological Community (TEC) listed by CALM. The area also contains the DRF species *Acacia aristulata*, the Priority 2 species *Cryptandra glabriflora* and the Priority 4 species *Regelia megacephala* (Trudgen, 2001). All of these species also occur in other areas on the Coomberdale chert. Some of these other areas are also within Simcoa's mining or exploration leases.

The Western Ridge pit would cover approximately 5 hectares and would require complete removal of vegetation. The pit is to have a maximum depth of 20 m (just above the water table), maximum length of 530 m and a maximum width of 130 m. The proposed mining waste dump has been located to prevent any additional impact on native vegetation (i.e. on previously cleared land).

Assessment

The area considered for assessment of this factor is the Coomberdale Chert.

CALM has indicated (*pers.comm.* cited in Trudgen, 2001) that it would regard the full extent of the Coomberdale Chert as being the unit of interest in terms of the occurrence of the Threatened Ecological Community for assessment purposes.

The EPA's environmental objective for this factor is conservation of the Coomberdale (Noondine) Threatened Ecological Community and Declared Rare and Priority Flora of the Coomberdale Chert.

Detailed information about the Coomberdale (Noondine) Threatened Ecological Community and about the Declared Rare and Priority Flora of the Coomberdale Chert is provided in Robinson (2001).

Proposed Resource Access and Conservation Package

Simcoa has proposed a Resource Access and Conservation Package as outlined below (from Robinson 2001).

Mine site rehabilitation plans have in the past been prepared and executed for the existing mining operation, but rehabilitation at the site represents a considerable challenge and it is almost certainly not possible to rehabilitate back to the original species and assemblages (Robinson 2001).

Regelia megacephala has been successfully regenerated in waste rock material but over a period of years has been out-competed by *Allocasuarina*, which also occurs on site. This is because *Regelia megacephala* is specifically adapted to growing in the very fine joints of the unmined chert rock and can send its roots for a long distance into very fine spaces. When grown on waste rock, other plants, which are not able to grow on the undisturbed rock, can grow more rapidly and grow over the *Regelia*. Expert opinion suggests, however, that the regeneration of *Regelia megacephala* is still valuable as it generates an ongoing source of seed and maximises maintenance of genetic diversity within *Regelia* populations (Robinson 2001)

Since it is not possible to replace the massive fractured rock, a more realistic approach to achieve long term conservation of chert-associated vegetation is for Simcoa to provide assistance through appropriate conservation initiatives which will protect areas from disturbance and lead to secure reservation of parts of the quartz material and its associated vegetation (Robinson 2001).

The EPA welcomes the proponent's statement of intentions in this regard as a strategy for ongoing management of the area in cooperation with CALM. The proponent's strategy is set out in Appendix 2 and summarised below (Robinson 2001).

- Simcoa is prepared to relinquish its interests in Cairn Hill if approvals to mine the Western Ridge and a commitment to guarantee long-term access to resource are provided;
- Simcoa will carry out additional reconnaissance exploration to identify other parts of the Coomberdale chert, both within and outside current lease areas, which may contain sufficiently high grade quartz in areas where the chert-associated vegetation is already absent or degraded;
- Simcoa is committed to cost sharing (maximum amount to be agreed) with the Department of Conservation and Land Management of regional flora surveys necessary to identify and map other parts of the Coomberdale Chert formation which may contain the same or other significant flora associated with the chert;
- Based on results of the geological and flora surveys, Simcoa is committed to development, in cooperation with the Department of Conservation and Land Management, of the best strategy to ensure access to the resource and conservation, in secure reserves, of the flora of the Coomberdale Chert;
- Simcoa is committed to carrying out rehabilitation trials with any DRF species removed by their mining operations. Rehabilitation trials with other priority species will also be established, in addition to the successful germination and establishment demonstrated with *Regelia megacephala* to date;
- Possible additional conservation offsets, such as the Cairn Hill North area and other significant areas of vegetation to form stepping stones or linkages with Cairn Hill and other ridges in the area;

- Funding (amount to be agreed) for fencing of significant areas of vegetation, whether part of reserves or other properties, and possible support for ongoing management costs (to cease at the time mining ceases).

A key aspect of the proponent's strategy is to relinquish its rights to Cairn Hill (see Figure 2 in Robinson 2001) to allow it to be transferred to an A-Class reserve for nature conservation. Simcoa offers this in return for access to the Western Ridge and Government commitment to long-term access to the chert resource through the establishment of a process whereby CALM and Simcoa work together to prepare a management plan for Simcoa's mining leases on the Coomberdale Chert. Simcoa would share costs with CALM for regional flora surveys on the Coomberdale Chert formation and provide some money for fencing of significant areas of vegetation for their protection from grazing by stock (Robinson 2001). The amount of financial assistance to be provided for these purposes has yet to be discussed and agreed.

The intention would be to identify other areas on the Simcoa leases or elsewhere on the Coomberdale chert that are suitable for mining and which have degraded or partially degraded vegetation. There may be cases where further offsets would be possible. In time, the Cairn Hill North area may also be able to be offered for reservation and provide a contiguous reserve with Cairn Hill. Other areas may be acquired that provide stepping-stones and linkages with Cairn Hill and other ridges in the area (Robinson 2001). None of the vegetation of the Coomberdale Chert in the Moora area is in secure reserves.

Cairn Hill is considered by CALM to be the "jewel in the crown" of the Coomberdale Chert area (A.Burbidge, *pers. comm.*). It contains all three DRF species known in the area (*Acacia aristulata*, *Daviesii dielsii* and *Synaphaea quartzitaca*) and is the only location where *Synaphaea quartzitaca* has been found. Cairn Hill also stands out from other areas for its species richness. This may reflect the exclusion of grazing from the area as well as the wide range of habitat. Cairn Hill is currently owned freehold by Westrail and most of the area is undisturbed native vegetation in very good to excellent condition, although there have been significant areas of disturbance for gravel extraction by the local Shire (Trudgen, 2001), most recently during the Moora floods when gravel was removed without permission to "take" being sought. Westrail is in the process of transferring the Cairn Hill land to CALM.

This conservation solution is dependent on Ministerial approval to 'take' DRF on the proposed Western Ridge mine extension. CALM has advised that the proponent's request for Ministerial 'approval to take' is being forwarded to the Minister, with a recommendation that it be approved as part of the overall package being proposed (see Appendix 3 and 4). The EPA endorses this proposed "approval to take".

The EPA would like to commend Westrail as the owner of Cairn Hill for agreeing with CALM to transfer it, at no cost, to the conservation estate in order to effect this solution. The relinquishment of the mining lease would need to take place in a timely manner and such that A Class Reserve status can be formalised with no opportunity for other tenements being pegged over the area in the interim. The EPA has proposed a new environmental condition and procedure to provide a mechanism for this purpose (see Appendix 7). The Department of Mineral and Petroleum Resources has confirmed that it has no objection to the proposal to gazette Cairn Hill as an A-Class Reserve for nature conservation (Appendix 5).

Summary

The vegetation on the Western Ridge and on the Coomberdale chert in general has high conservation value. None of it is currently in reserves and in the long term there is potential for further degradation from grazing even if mining were to cease.

The proposed action by Simcoa to mine the 5 hectare Western Ridge on ML 70/191 would not have a significant impact on the environment and in particular the DRF species *Acacia aristulata* and the Coomberdale TEC because:

- *Acacia aristulata* and the Coomberdale TEC are well represented in numerous areas outside the Western Ridge mining area as well as outside of ML 70/191.

- Simcoa would relinquish its Mining Lease over Cairn Hill in order to:
 1. ensure that *Acacia aristulata* and other Declared Rare and Priority Flora species are protected in secure conservation reserves; and
 2. obtain Government commitment to work co-operatively with Simcoa on a long-term strategy to meet the twin objectives of guaranteed mining access to the chert resources (for the Company) and conservation of representative examples of the Coomberdale TEC (for the State and community) in secure reserves.
- Simcoa would be providing a package of other conservation benefits including botanical surveys, developing a strategic approach to mining to protect flora, possible purchase of land with significant conservation values, and some fencing and management of protected areas as outlined above.

The EPA's recommended amendments to Environmental Conditions are given in Appendix 7.

The EPA has concluded that Simcoa has proposed an approach to its mining requirements which would provide both access to resources and improved conservation outcomes.

4. Recommendations

The EPA submits the following recommendations:

1. That the Minister for the Environment and Heritage note that this report is pursuant to Section 46 of the *Environmental Protection Act 1986* and is about providing Simcoa with access to resources, both in the short and longer term, while at the same time achieving beneficial conservation outcomes for the community and the State;
2. That the Minister for the Environment and Heritage note that the EPA has concluded that, if implemented according to the EPA's recommended conditions and procedures (Appendix 7) and the proponent's environmental commitments, the environmental objectives, including CALM's conservation objectives, can be achieved;
3. That the Minister for the Environment and Heritage:
 - amends the conditions as set out in Appendix 7;
 - provides permission to take the Declared Rare Flora in accordance with the advice of CALM; and
 - advises the Minister for State Development that there is no objection to access to additional resources, both in the short and longer term, under the *Silicon (Kemerton) Agreement Act 1987* (as amended) provided that such access is consistent with the amended environmental conditions and procedures and the proponent's commitments.

Appendix 1

References

- Griffin, E.A., 1991. Letter to T. Parker, Simcoa Operations Pty Ltd, 10 April 1991.
- Griffin, E.A., 1992. *Floristic survey of remnant vegetation in the Bindoon to Moora area, Western Australia*. Resource Management Technical Report 142, Department of Agriculture Western Australia.
- Hamilton-Brown, S., 2000. Heath dominated by one or more of *Regelia megacephala*, *Kinzea praestans* and *Allocasuarina campestris* on ridges and slopes of the chert hills of the Coomberdale Floristic Region. Interim Recovery Plan No. 65, Department of Conservation and Land Management, Western Australia.
- Robinson, S., 2001. *Variation to the Moora Quartz Mine on M70/191 (Western Ridge pit): Amendment to Conditions under s.46 of the Environmental Protection Act*. Consultant's report prepared for Simcoa Operations Pty Ltd.
- Trudgen, M.E., 1985. *A report on the vegetation and flora of the proposed Moora silica mine site*. Prepared for Cliffs International Inc.
- Trudgen, M.E., 2001. *A flora survey, floristic analysis and vegetation survey of the Coomberdale Chert TEC*. Prepared for Simcoa Operations Pty Ltd.

Appendix 2

**Proponent's mining and conservation package for mining in the
short term (Western Ridge) and long-term**

(Extract from Robinson 2001)

5. ACHIEVING A BALANCE BETWEEN ACCESSING THE RESOURCE AND CONSERVATION IN THE SHORT AND LONG TERMS

With the proposed off-set arrangements being put forward by Simcoa, over 30% of the original area of the above species and communities would remain and furthermore a significant portion, (that most desired for conservation purposes) would become protected in secure reservation where under current land tenure and use none is secure.

5.1 A Strategy for the Short Term: Mining of the West Ridge

Mining of the West Ridge deposit would potentially affect an area of 5 ha of direct disturbance for the quarry, with an additional area for the waste dump.

To gain access to the West Ridge for mining would require permission to “take” the DRF, specifically the *Acacia aristulata*. CALM (pers. comm.) has indicated that removal of some 80 plants would be required.

Simcoa is committed to carrying out rehabilitation trials with any DRF plants removed by their mining operations. Rehabilitation trials with other Priority species will also be established, in addition to the successful germination and establishment demonstrated with the *Regelia megacephala*, to date. Although the *Regelia* is later out-competed by *Allocasuarina* when rehabilitation is carried out on fractured waste rock, the successful germination and re-establishment of the *Regelia* has still proved to be very valuable as a seed source and for maintaining genetic diversity.

Simcoa is prepared to relinquish its interests in Cairn Hill (ML70/1055) if approval to mine the Western Ridge is forthcoming as a matter of urgency, as well as a commitment which guarantees Simcoa ongoing, long-term access to resource, subject to other components of the off-set package. Additional off-sets for the longer term are addressed in Section 5.2.

The off-set proposals are contingent upon approval to mine being obtained within the timeframes required by Simcoa and will lapse if approval is not provided. If these circumstances were to eventuate, it would be Simcoa’s intention to retain ML70/1055 and other lease areas.

5.2 A Strategy for the Long Term

To secure silica material of the required grade over the long term, Simcoa will need to have access to other sites within the Coomberdale (Noondine) Chert formation. The most prospective areas within existing Simcoa leases are the Cairn Hill area, Eastern Ridge and the ridge north of Kiaka Road.

Simcoa is prepared to relinquish its interests in Cairn Hill if approvals to mine the Western Ridge and a commitment to guarantee long-term access to resource are provided.

In addition to relinquishing its interests in the lease over Cairn Hill, Simcoa would do the following to secure long-term resources:

1. Simcoa will carry out further reconnaissance exploration to try and identify other parts of the Coomberdale Chert formation both within and outside current lease areas which may contain sufficiently high grade quartz in areas where the chert-associated vegetation is already absent or degraded.
2. Simcoa will commit to sharing the costs with CALM, of regional flora surveys necessary to identify and map other parts of the Coomberdale Chert formation which may contain the same, or other significant flora associated with the chert. An agreement on an appropriate maximum amount to carry out required reconnaissance surveys will have to be reached.
3. Using the results of (1) and (2) above, work closely with the Department of Conservation and Land Management to identify the best strategy that will ensure both access to resource, and the conservation, in secure reserves, of the flora of the Coomberdale Chert formation.
4. Simcoa is committed to carrying out rehabilitation trials with any DRF plants removed by their mining operations. Rehabilitation trials with other Priority species will also be established, in addition to the successful germination and establishment demonstrated with the *Regelia megacephala*, to date.
5. Over time, Simcoa will work with CALM and others, to try and secure additional off-sets, in particular the Cairn Hill North area, to enable this area to be managed as a single contiguous reserve with Cairn Hill.
6. Over time, Simcoa will work with CALM and others, to try and secure additional off-sets, for example significant areas of vegetation that would form stepping stones and linkages with Cairn Hill and other ridges in the area.
7. Simcoa is also willing to provide some money for fencing significant areas of vegetation, whether part of reserves or on other properties, and may be able to

assist with some ongoing management costs. The latter would cease at the time that mining ceased.

Appendix 3

CALM's response to the proposed mining and conservation package

Western Australian Threatened Species and Communities Unit



[Click here and type your title]

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The Chairman
Environmental Protection Authority
PO Box K822
Perth WA 6842

Attention Mr Tim Gentle

Dear Bernard

PROPOSED s46 AMENDMENT TO CONDITIONS ON SIMCOA'S MOORA QUARTZ MINE (WEST RIDGE PIT)

As noted during discussions at the meeting held in Moora on 30/7/2001, the Department of Conservation and Land Management acknowledges the positive and cooperative approach adopted by Simcoa. The Department will be pleased to cooperate in developing and implementing strategies designed to ensure ongoing access to resource for Simcoa, while at the same time achieving desired nature conservation goals, in the long-term. Several specific commitments by the proponent, as listed in the document "Variation to Moora Quartz Mine on M70/191 (West Ridge Pit)" dated May 2001, are discussed below.

Commitment 1. "Simcoa is prepared to relinquish its interests in Cairn Hill if approvals to mine the Western Ridge and a commitment to guarantee long-term access to resource are provided."

This Department strongly supports this commitment, but notes the following caveats.

- The Department cannot guarantee that approval to mine the West Ridge will be given, or that approval to take the declared rare species occurring in the proposed mining area will be granted. However, the proponent's request for Ministerial 'approval to take' is being forwarded to the Minister, with a recommendation that it be approved as part of the overall package being proposed. I will forward you a copy of this Department's advice to the Minister when it is sent.
- Similarly, the Department cannot guarantee long-term access to resource for Simcoa, but commits itself to cooperating with Simcoa in developing and implementing strategies designed to ensure ongoing access to resource, while at the same time achieving desired nature conservation goals, in the long-term. The details of the Department's commitment are outlined against the appropriate other Simcoa commitments below.
- Finally, relinquishment of ML 70/1055 over Cairn Hill should occur at the same time as Class A reservation of the uncleared portion of Melbourne Location 909, Lot M574 is achieved. The timing of relinquishment also needs to be coordinated with the establishment of a Mining Act Section 19 reserve. The Department seeks non-Class A reservation of the cleared portion of Melbourne Location 909, Lot M574 to allow future land swaps in order to improve the conservation status of the threatened ecological community and threatened flora occurring on the Noondine/Coomberdale Chert.

I attach correspondence between Westrail and this Department agreeing to the transfer of the Cairn Hill Area to this Department for no consideration. Westrail should be congratulated for this generous donation.

Commitment 4 " Simcoa will carry out further reconnaissance exploration to try and identify other parts of the Coomberdale Chert formation both within and outside current lease areas which may contain sufficiently high grade quartz in areas where the chert-associated vegetation is already absent or degraded."

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August 6, 2001

This commitment is central to the achievement of long term security of resource for Simcoa while also providing better protection for biological diversity and is strongly supported.

Commitment 5. "Simcoa will commit to sharing the costs with CALM, of regional flora surveys necessary to identify and map other parts of the Coomberdale Chert formation which may contain the same, or other significant flora associated with the chert. An agreement on an appropriate maximum amount to carry out required reconnaissance surveys will have to be reached."

This Department supports this commitment, and agrees to a cost sharing arrangement as suggested. I believe that agreement on the design, probable cost and funding of such survey can be reached quickly.

Commitment 6. "using the results of 4 and 5 above, work closely with the Department of Conservation and Land Management to identify the best strategy that will ensure both access to resource, and the conservation, in secure reserves, of the flora of the Coomberdale Chert formation."

This Department commits itself to the liaison and cooperation required to make this commitment work.

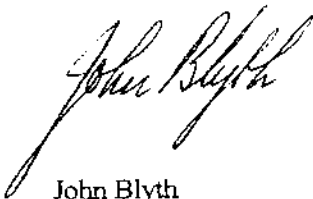
Commitment 7. "Simcoa is committed to carrying out rehabilitation trials with any DRF plants removed by their mining operations. Rehabilitation trials with other Priority species will also be established, in addition to the successful germination and establishment demonstrated with the *Regelia megacephala*, to date."

Although it is likely that, following the completion of mining, the site will revert to farmland that will be grazed by domestic stock, these trials will be of value in terms of learning more about, and providing seed nurseries for, some rare species. This Department supports the commitment, especially in relation to *Acacia aristulata*.

Commitments 8 and 9 refer to Simcoa working with this Department to try to secure additional areas of the Noondine Chert formation, such as Cairn Hill North, for inclusion in the conservation system. The Department is strongly supportive of these commitments and will be pleased to continue negotiations over these matters in the light of results gained under commitments 4, 5 and 6.

Please contact me if you have any further queries.

Yours sincerely



John Blyth
WA Threatened Species and Communities Unit
For Keiran McNamara
Acting Executive Director

6/8/2001

Appendix 4

CALM's response to application to take declared rare flora

Your Ref:
Our Ref: 1998F002098
Enquires: Mr Mike O'Donoghue
Phone: (08) 9334 0422
Fax: (08) 9334 0278
Email: michaelo@calm.wa.gov.au



MINISTER FOR THE ENVIRONMENT AND HERITAGE

APPLICATION FOR A PERMIT TO TAKE DECLARED RARE FLORA (DRF)

The *Wildlife Conservation Act 1950* provides for flora to be declared rare, and that such flora may not be taken without the written consent of the Minister for the Environment.

The power to grant consent has, been delegated to the Department's Executive Director and Director of Nature Conservation where the conservation impact of taking is minimal, e.g. where the taking is for research and survey, often involving taking parts of plants, or where only a small proportion of a population is to be destroyed. More contentious situations, such as the permanent destruction of plants that will affect the viability of a rare flora population, are referred to you for approval.

Simcoa Operations Pty Ltd have sought approval to take up to 72 *Acacia aristulata* ms, a species of DRF which is currently listed as Endangered under IUCN criteria, to enable them to extend their quartz mine near Moora.

Simcoa propose to offset the loss of these plants by a variety of mechanisms designed to significantly improve the conservation of the species, and the Endangered "heath community on chert hills of the Coomberdale floristic region", with which it is associated.

The Company is prepared to relinquish its recently acquired mining lease over the nearby Cairn Hill area, which the Department is seeking to acquire as a nature reserve.

The Cairn Hill area is freehold land currently owned by Westrail, which has agreed to cede the land to the Department for no consideration, to enable this important conservation area to become a nature reserve. The relinquishment of the mining lease by Simcoa is conditional upon them being given approval to extend the mining within their existing lease, for approval to take *A. aristulata* ms, and for a commitment from the Department to co-operate with them in attaining long-term access to the high grade chert resource.

I am of the view that the overall proposal from Simcoa will result in considerable benefits for biodiversity conservation in the Moora area, while providing greater certainty to long-term access for Simcoa.

As noted in the application to take, the Environmental Protection Authority is currently assessing a proposal from Simcoa to amend the conditions, under Section 46 of the Environmental Protection Act, relating to the company's Moora quartz mine on Mining Lease 70/191.

A copy of the document proposing the variation is attached. Sections 5 and 6 (pages 29 to 33) in this document, outline the overall strategy and commitments made by the company to ensure ongoing access to resource for the company, while at the same time achieving nature conservation goals, in the long-term.

For your information, the Simcoa proposal seeks to take approximately 10% of the known plants of *A. aristulata* ms. Although this appears to be a significant proportion of the population, there will be approximately twice the number of plants left on the tenement area, and hence the local population/genotype should be retained. The conservation offsets in relation to this species include improved security of tenure over other populations, and its use in revegetation at the site. These offsets are described in the proponent's commitments outlined in the proposal for variation under Section 46 of the Environmental Protection Act, and are presented below, with the Department's response.

Commitment 1

"Simcoa is prepared to relinquish its interests in Cairn Hill if approvals to mine the Western Ridge and a commitment to guarantee long-term access to resource are provided."

The Department's response to the EPA in relation to Simcoa's proposal to amend conditions under Section 46 of the Environmental Protection Act was strongly in favour of this commitment, but suggested the following caveats:

- The Department cannot guarantee that approval to mine the West Ridge will be given, or that approval to take the DRF occurring in the proposed mining area will be granted. However, the proponent's request for 'approval to take' is being forwarded to the Minister, with a recommendation that it be approved as part of the overall package being proposed;
- Similarly, the Department cannot guarantee long-term access to resource for Simcoa, but commits itself to co-operating with Simcoa in developing and implementing strategies designed to ensure ongoing access to resource, while at the same time achieving desired nature conservation goals, in the long-term. The details of the Department's commitment are outlined against the appropriate other Simcoa commitments below; and
- Finally, relinquishment of ML 70/1055 over Cairn Hill should not occur until the A Class reservation of the uncleared portion is achieved. The timing of relinquishment needs to be co-ordinated with the establishment of a Mining Act Section 19 reserve.

(Commitments 2 and 3 are not relevant to this application to take).

Commitment 4

"Simcoa will carry out further reconnaissance exploration to try and identify other parts of the Coomberdale Chert formation both within and outside current lease areas which may contain sufficiently high grade quartz in areas where the chert-associated vegetation is already absent or degraded."

This commitment is central to the achievement of long-term security of resource for Simcoa, while providing better protection for biological diversity. The commitment is strongly supported.

Commitment 5

"Simcoa will commit to sharing the costs with the Department, of regional flora surveys necessary to identify and map other parts of the Coomberdale Chert formation which may contain the same, or other significant flora associated with the chert. An agreement on an appropriate maximum amount to carry out required reconnaissance surveys will have to be reached."

The Department supports this commitment, and agrees to a cost sharing arrangement as suggested. I believe that an agreement on the design, probable cost and funding of such survey can be reached quickly.

Commitment 6

"Using the results of 4 and 5 above, work closely with the Department of Conservation and Land Management to identify the best strategy that will ensure both access to resource, and the conservation, in secure reserves, of the flora of the Coomberdale Chert formation."

The Department commits itself to the liaison and co-operation required to make this commitment work.

Commitment 7

"Simcoa is committed to carrying out rehabilitation trials with any DRF plants removed by their mining operations. Rehabilitation trials with other Priority species will also be established, in addition to the successful germination and establishment demonstrated with the *Regelia megacephala*, to date."

Although it is possible that, following the completion of mining, the site will revert to farmland that will be grazed by domestic stock, these trials will be of value in terms of learning more about, and providing seed nurseries for, some rare species. The Department supports the commitment, especially in relation to *A. aristulata* ms.

Commitments 8 and 9

Refers to Simcoa working with this Department to try to secure additional areas of the Coomberdale Chert formation, such as Cairn Hill North, for inclusion in the conservation estate. The Department is strongly supportive of these commitments and will be pleased to continue negotiations over these matters in the light of results gained under commitments 4, 5 and 6.

A. aristulata ms, the Endangered Coomberdale Chert community, plus two other DRF species and seven priority flora species are all restricted to the Coomberdale Chert formation. Of the total area of 650 ha. of this community known, only about 40 ha. are on a conservation reserve, which is a different sub-type to that in the Moora area, and is not known to support the rare and priority species known at Moora.

The geological material that support this very distinctive and restricted assemblage of plants also contains what is currently the State's best supply of high quality quartz needed by Simcoa for its silicon production plant at Kemerton. Currently, most of the known occurrences of the Endangered community in the Moora area have mining tenements owned by Simcoa.

Thus, there is the potential for considerable conflict between Simcoa's needs and those of biodiversity conservation. The proposal by Simcoa is a progressive and responsible attempt to solve this problem by concentrating on quartz resources where the native vegetation is highly degraded, and by relinquishing their leases over areas where the vegetation is in good condition. The first step in this direction would come with the relinquishment of the Cairn Hill lease (ML 70/1055) if the proposed extension to mining at their existing lease (ML 70/191) is approved.

Officers of the Department have spent considerably time and effort negotiating these arrangements with Simcoa, and have been impressed with the company's commitment to conserve the biodiversity of the Coomberdale Hills.

In view of the above, I recommend that you approve the application from Simcoa Operations Pty Ltd for permission to take *A. aristulata* ms.

If you agree, please sign and return the attached permit to the Department.



Keiran McNamara
ACTING EXECUTIVE DIRECTOR

22 August 2001



WILDLIFE CONSERVATION ACT 1950 AS AMENDED - SECTION 23F

PERMIT TO TAKE DECLARED RARE FLORA

The undermentioned person may take declared rare flora for the purpose described, subject to the terms and conditions of this permit. Please note: DRF in this permit = Declared Rare Flora.

1. PERMIT NO: 52/2001
2. PERMIT HOLDER: General Manager Operations
ADDRESS: Simcoa Operations Pty Ltd
PO Box 1389
BUNBURY WA 6231
3. DESCRIPTION OF PLANT
 - 3.1 SCIENTIFIC NAME: *Acacia aristulata* ms
 - 3.2 PARTS TO BE TAKEN: Whole plants, seed (plant borne and soil stored)
 - 3.3 QUANTITY: No more than seventy two whole plants, and an indeterminate number of seeds
4. METHOD OF TAKING: Machine operation
5. PURPOSE OF TAKING: Extension of Mining Lease 70/191 and species regeneration trials
6. AREA TO WHICH PERMIT RELATES: Mining Lease 70/191 (north of Moora)
7. PERIOD FOR WHICH PERMIT IS VALID: From date of the signature below, until the completion of works.
8. CONDITIONS:
 - 8.1 This approval is subject to compliance with Simcoa Operations Pty Ltd commitments contained in the report prepared by Strategic Environmental Solutions in May 2001 entitled "Variation to Moora Quartz Mine on M70/191 (West Ridge pit) - Amendment to Conditions under S. 46 of the Environmental Protection Act".
 - 8.2 *Phytophthora* dieback hygiene measures are to be undertaken when entering DRF habitat.
 - 8.3 Copies of any report or publication on the DRF covered by this permit shall be provided to the Executive Director, Department of Conservation and Land Management.
 - 8.4 The taking of DRF shall be limited to material detailed in 3.3 above. If a larger quantity of material is required a further application shall be made to the Executive Director Department of Conservation and Land Management.
 - 8.5 DRF voucher specimens to be lodged at the WA Herbarium if necessary.
 - 8.6 Annual reports detailing the quantity of DRF taken shall be provided to the Executive Director, Department of Conservation and Land Management, via the Administrative Officer Wildlife Branch.
 - 8.7 No original DRF material "taken" during the activities shall be used for commercial purposes other than for minesite revegetation.
 - 8.8 The location of DRF populations shall be treated as confidential and under no circumstances disclosed to other persons without the written permission of the Executive Director, Department of Conservation and Land Management.
 - 8.9 This permit also covers the activities of other persons involved in mine site development under the supervision of the permit holder.
 - 8.10 The Executive Director Department of Conservation and Land Management reserves the right to remove material from DRF from the site prior to the commencement of the work.
 - 8.11 The permit holder shall produce this permit whenever requested to do so by a Wildlife Officer, or by any person appointed by the body or authority which has the care or control of the land from where the DRF is taken, together with any other approval letters that may be in force during the period of this permit.
 - 8.12 In addition to this Permit, the Permittee may require Commonwealth approval under the Environmental Protection and Biodiversity Conservation Act 1999, for the actions covered by this Permit. It is the responsibility of the Permittee to determine whether such approval is required, and if so, to obtain such approval before undertaking the actions covered by this Permit.

.....
MINISTER FOR THE ENVIRONMENT

DATE:...../...../2001

Appendix 5

**Letter from the Department of Mineral and Petroleum Resources regarding
proposed A-Class Nature Reserve**

28/08/01
28. AUG. 2001

09:29
9:32

61 8 92223510
DIRECTOR GENERAL, DME 08 92223510

NO. 750 P. 2/2



Your Ref
Our Ref. 207-01
Enquired to Mr Dawson
Telephone 9222 3235
Facsimile 9222 3510

Mineral House
100 Plain Street
East Perth
Western Australia 6004

Telephone (08) 9222 3333
Facsimile (08) 9222 3430
www.dme.wa.gov.au

ABN: 69 410 335 356

Mr Kim Taylor, Director
Environmental Impact Assessment
Department of Environmental Protection
Westralia Square
141 St George's Terrace
PERTH WA 6000

Attention: Mr Tim Gentle

SIMCOA QUARTZ MINE: PROPOSED A- CLASS NATURE RESERVE

I refer to your letter dated 27 August 2001 regarding the relinquishment of Mining Lease 70/1055 (known as the "Cairn Hill area") by Simcoa Operations Pty Ltd in favour of the establishment of an A-Class Nature Reserve.

The Department of Mineral and Petroleum Resources has no objection to the Cairn Hill area being added to the State's conservation estate, as an A-Class Nature Reserve, as part of the agreed package for Simcoa to undertake mining of the West Pit quartz deposit within Mining Lease 70/191.

for 
Jim Limerick
DIRECTOR GENERAL

Department of Mineral and Petroleum Resources

28 August 2001

Appendix 6

**Statements of Environmental Approval (May 1988,
August 1992).**

Ass # 165

Bull # 328

State # 027



MINISTER FOR ENVIRONMENT

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

PROPOSED SILICON PROJECT
KEMERTON AND MINE AT MOORA

BARRACK MINES LIMITED

This proposal may be implemented subject to the following conditions:

1. The proponent shall adhere to the proposal as assessed by the Environmental Protection Authority and shall fulfil the commitments made in the revised list of commitments dated 4 May 1988 (copy of commitments attached).
2. Any proposal to upgrade significantly or re-route road access to the Kemerton plant site shall be to the satisfaction of the Local Authority and the Environmental Protection Authority.
3. The proponent shall not cause or allow the direct venting of furnace off-gases to the atmosphere. All furnace off-gases shall be passed through the baghouse.
4. The proponent shall ensure that ground level concentrations of silica fume in the surrounding 'special residential' and 'special rural' areas do not exceed an annual average of 0.07 mg/m^3 and a 24-hour average of 0.10 mg/m^3 at any time.
5. The proponent shall ensure that the introduced noise from the project does not cause the noise in the surrounding 'special residential' or 'special rural' areas to exceed 50dB(A) from 0700 to 1900 hours, 45dB(A) from 1900 to 2200 hours, and 40dB(A) from 2200 to 0700 hours. These levels should not be viewed as normal operating levels for the plant. They are the legal upper limits above which action will be taken by the Environmental Protection Authority. These levels should be reviewed after 12 month's normal

Published on 13-5-88

8. The proponent shall install and operate the charcoal retorts, the retort off-gas incinerator and the wood waste incinerator so as to ensure that no offensive vapours or odours are detectable in 'special residential' or 'special rural' areas adjacent to the project site to the satisfaction of the Environmental Protection Authority.
9. The proponent shall ensure that at least four regular meetings are convened in the first year including the local authority for the purpose of promoting communication. The frequency of meetings after the first year shall be as mutually agreed between the proponent and the Local Authority. These meetings shall commence before commissioning.
10. The proponent shall obtain a Works Approval (prior to construction) and a Licence (prior to commissioning) for the proposed facility under the provisions of Part V of the Environmental Protection Act 1986.
11. During construction of the plant, the proponent shall:
 - . stabilise disturbed soil and take other appropriate measures to ensure that dust levels at the plant boundary do not exceed a 15 minute average of 1 mg/m^3 ; and
 - . take appropriate short term measures to control run-off and oil spills to the satisfaction of the Environmental Protection Authority.
12. The proponent shall monitor the effect of mining activities on the population of *Regelia megacephala* on the minesite with a monitoring programme approved by the Environmental Protection Authority before mining commences and to manage the effects of mining activities on this species to the satisfaction of the Environmental Protection Authority.
13. Should the -proponent wish to alter its operations to use reductants other than jarrah charcoal and jarrah woodchips in a proportion greater than 15% of the total reductant charge, it shall, prior to such alterations present detailed management plans to the satisfaction of the Environmental Protection Authority, outlining the likely changes in emissions and proposed control procedures.
14. The proponent shall prepare and implement a detailed plan for the supply of water for the project at Kemerton and at the Moora minesite to the satisfaction of the Environmental Protection Authority, the Water Authority of WA and the Department of Conservation and Land Management before the commissioning of the plant. An objective of the water supply plan and the assessment of its impact shall be the protection of wetlands in the Kemerton locality.

BARRACK SILICON PROJECT

ENVIRONMENTAL COMMITMENTS

MAY 1988

BARRACK SILICON PROJECT COMMITMENTS

3.1 KEMERTON SITE GENERAL

- 3.1.1 The proponent is committed to being a good corporate citizen and to complying with reasonable and justifiable EPA requirements, but in particular to the two main environmental issues of the project, dust emission and noise control.
- 3.1.2 A site specific landscaping plan capable of tolerating the local environment adjacent to a chloride plant and opposite the future Aluminium Smelter, will be developed in consultation with CALM.
- 3.1.3 The proponent expects to draw water from the "Yarragadee" aquifer and is committed to monitor/test bore water as required by WAWA. Adoption of a closed circuit water cooling circuits in the silicon process greatly help to conserve water usage. The proponent will optimize usage of plant water to its fullest practical extent.
- 3.1.4 In the event that runoff water is required to be treated, application will be made with EPA prior to discharge into nearby water courses. As appropriate the local authority and WAWA will be consulted should existing drains be used.
- 3.1.5 The wood stockpile and the plant site in general has a ground level graded to drainage falls into surface drains which in turn are routed to a stormwater sedimentation pond designed to cater for a one in five year return period storm.
- 3.1.6 The proponent is committed to the installation and maintenance of a first-aid vehicle, a fire tender, appropriate trained personnel and developing safety and contingency planning both during construction and operation of the project. Application annually will be made to the Minister for Emergency Services through the Bush Fires Board of Western Australia to operate fire risk areas of the plant during the high risk summer months of November through to March.
- 3.1.7 The proponent will develop a comprehensive air emission and atmospheric monitoring programme in consultation with the EPA, to establish the environmental impacts from the project's operation.

3.2 QUARTZITE SUPPLY

- 3.2.1 Quarrying operations will be managed to ensure minimum practicable noise disturbance to the surrounding environment and to that end quarrying operations will generally be restricted to the hours of 0600 to 1700 Monday to Friday, during annual mining campaigns not expected to exceed three to five months each year.
- 3.2.2 The contract quarry operators will be required to implement appropriate blasting techniques to achieve a maximum 115 dB peak linear limit. This may include the use of sequential timers or alternative approved methods of blast initiation.
- 3.2.3 Blasting activities will not proceed during periods when wind conditions would result in the transport of significant dust from such blasting operations towards the nearby vicinity of neighbouring farms.
- 3.2.4 With the exception of the first year of operations when the delayed timetable for the Project may necessitate a summer/autumn mining campaign, quarrying operations will be scheduled for the period mid August through mid-December when post winter moist soil conditions should assist in dust suppression and dust control around the mine site.
- 3.2.5 The proponent is committed to mine site rehabilitation in accordance with the requirements of the Department of Mines. This plan will include rehabilitation where practicable using local native vegetation. In addition the proponent will seek advice from CALM on the management of *Regelia megacephala* populations, including the practicality of establishing trial experimental plots to determine criteria for successful regrowth. Where there is a risk of direct impact of mining or service equipment on populations of *Regelia megacephala* these populations will be fenced off.
- 3.2.6 Haul roads will be selectively routed by the proponent to provide minimum disturbance to the environment. Dust suppression by water spray on haul roads and at the crushing plant will be implemented should significant dust occur. Tree-planting for screening purposes will be undertaken, in consultation with the farmer/landowner, where necessary and practicable.
- 3.2.7 Mining operations will leave some areas of inferior grade ore thereby preserving to some degree the visual amenity of the quartzite hills to the north of Moora.

3.3 WOOD SUPPLY

Wood supply to the Silicon Plant at Kemerton is a responsibility of the W.A. Department of Conservation and Land Management through its contract with the proponents to fall, extract, load, transport and deliver log timber onto the Kemerton site. The proponent will rely on CALM to meet its contractual obligations in relation to the following commitments.

- 3.3.1 Wood will be transported on 20m long articulated 70 tonne log haulage trucks. Proposed routes for the period 1989 - 1992 and for the period 1993 - 1998 are shown in the attached figure. These routes are presently used by log haulage trucks.

Major transport corridors for the first 5 years will be developed in consultation with MRD and CALM subject to EPA approval.

- 3.3.2 Log haulage vehicles, immediately after entrance to the site, will be specifically diverted away from day to day traffic primarily for safety reasons. Timber will only be received at the plant site during daylight hours Monday to Friday, with possible extensions to Saturday if agreed between CALM and the proponents.

- 3.3.3 The proponent intends to purchase wood to produce charcoal from the Department of Conservation and Land Management (CALM) under the Government approved Department's General Working Plan No. 87. CALM has developed and is committed as is the proponent to the quarantine and hygiene procedures designed to minimize and reduce the risk of spreading jarrah dieback.

- 3.3.4 The proponent recognizes that the maintenance of flora and fauna within the State Forest is highly desirable. Currently there is no information on the use of tree hollows by fauna in the Jarrah forest so the proponent will fund and supervise with CALM a post graduate research project to evaluate these predictions and the effects of silvicultural practices specifically for the project. Information from this project will be made available to EPA within 3 years of the start of plant production.

3.4 CHARCOAL PRODUCTION

3.4.1 The design of the overall docking mill complex is under review. The concept selected will incorporate systems designed to reduce noise levels in the vicinity of the complex, consistent with the proponents overall undertakings for control of noise as contained with the PER.

3.4.2 An incinerator will be incorporated by the proponent in the retort complex to combust volatile material in the rinse gas and pyroligneous vapour.

3.4.3 Retort loading arrangement consists of:

- 1) Upper retort door (swing gate design).
- 2) Lower retort door (slide gate design).

The system is designed to minimise gas release during charging of the retort.

3.4.4 The retort upper compartment will be operated slightly below atmospheric pressure as a further safeguard against accidental release of retort vapours.

3.4.5 Charcoal dust generated at the belt discharge chute into the furnace bins will be contained by a suppression system or dust collector and re-cycled back to the bin.

3.4.6 Transfer points on belt conveyors transporting charcoal will be fitted with dust suppression systems. The charcoal screen will be fitted with a dust collector, collected dust will be combined with charcoal fines from the screening operation.

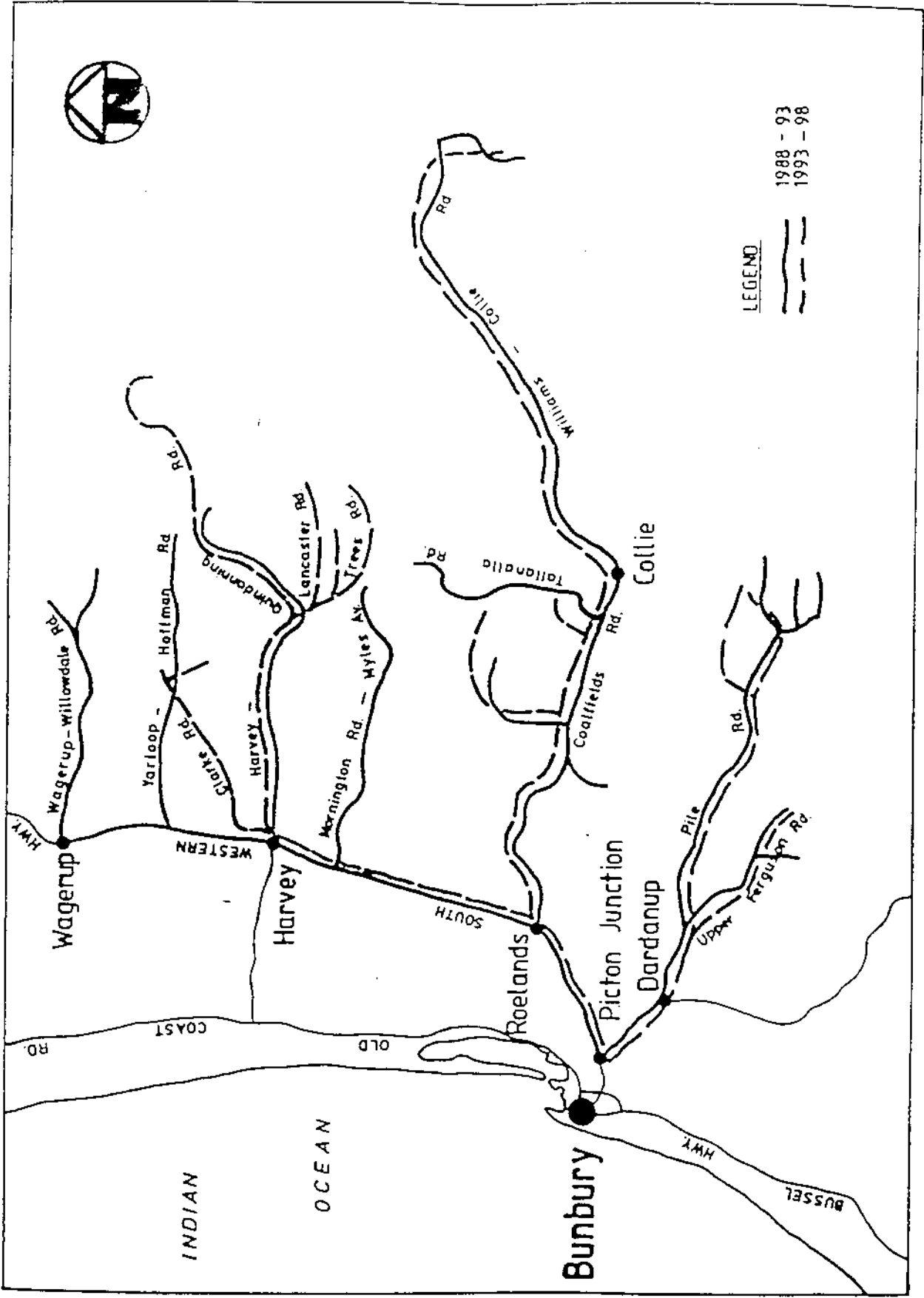
3.4.7 The design of the waste wood handling system is under review; should an incinerator be utilised for burning wastes it will be of the "smokeless" refractory silo type.

3.4.8 The comprehensive fire suppression system for the charcoal process will consist of a water tank and pumping station which will feed a ring main and hydrant system around the charcoal retorts and docking mill area as well as the remainder of the plant. A sprinkler system will be installed for fire protection in the docking mill.

Personnel will be trained in fire-fighting procedures, equipment locations clearly marked and a fully operational fire tender will be maintained on site. Portable fire extinguishers and serviced hose reels will be located within the buildings as required.

3.5 SILICON PRODUCTION

- 3.5.1 The quartzite hopper, transfer point and conveyor system will be fitted with water mist sprays for dust suppression.
- 3.5.2 Each charcoal bin will be fitted with an emergency dumping gate, fitted to the lower section of bin, for use in case of spontaneous combustion of the charcoal.
- 3.5.3 The proponent will be exerting its best efforts to minimise and if practicable, eliminate the use of petcoke in its furnaces consistent with its commitment for safe and economical operations. The operation will be both environmentally and quality conscious.
- 3.5.4 The exhaust gas from each furnace and the entrained amorphous silica fume will be collected by the furnace and tapping area hoods and ducted through pre-collector/spark arrester units and a baghouse.
- 3.5.5 The fume will be discharged from the filter bags into sealed collection hoppers from where it will be pneumatically conveyed to storage silos. The fume will be discharged into sealed road vehicles or pelletised.
- 3.5.6 The proponent will introduce a programme for regularly sampling the fume and submitting the samples to X-ray diffraction analysis to detect any contamination by crystalline silica. (Public Health Implications Study p15).
- 3.5.7 The building housing the electric furnaces will be steel-clad. Appropriate ventilation and housekeeping measures will be adopted to ensure control and containment of dust within this building.
- 3.5.8 Waste water system is being reviewed. A disposal strategy for this waste water will be developed in consultation with the EPA after chemical analyses have been made.
- 3.5.9 The oxygen storage facility of approximately 6000 litres will be isolated from the heat of the furnace, and fire hydrants will be installed in the general area.
- 3.5.10 The baghouse system will have reserve capacity to deal with abnormal dust burdens.
- 3.5.11 A monitoring programme will be established around the plant. That programme will be designed after consultation with the EPA.



WOOD TRANSPORT CORRIDORS

FIGURE 6.2

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

PROPOSAL: SILICON PROJECT, KEMERTON (165/737)

CURRENT PROPONENT: SIMCOA OPERATIONS PTY LTD

CONDITIONS SET ON: 13 MAY 1988

Condition 1 has been amended to read as follows:

- 1A In implementing the proposal, including the proposed amendment reported on in Environmental Protection Authority Bulletin 631, the proponent shall fulfil the commitments (which are not inconsistent with the conditions or procedures contained in this statement) made on 4 May 1988 (copy attached).
- 1B Subject to the conditions in this amended statement, 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.

The original condition 3 is deleted and a new condition 3 is inserted as follows:

- 3A The proponent shall pass all furnace off-gases through an approved dust collection facility except as otherwise permitted by the Environmental Protection Authority during planned maintenance or emergencies.
- 3B Within three months of the date of this statement, the proponent shall prepare and subsequently implement a contingency plan as an additional part of the environmental monitoring and management plan required by condition 19, with the specific objective of minimising the periods of direct venting, to meet the requirements of the Environmental Protection Authority.

Published on

10 AUG 1992

BARRACK SILICON PROJECT

ENVIRONMENTAL COMMITMENTS

MAY 1988

HARRACK SILICON PROJECT COMMITMENTS

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- 3.1.2 A site specific landscaping plan capable of tolerating the local environment adjacent to a chloride plant and opposite the future Aluminium Smelter, will be developed in consultation with CALM.
- 3.1.3 The proponent expects to draw water from the "Yarragadee" aquifer and is committed to monitor/test bore water as required by WAWA. Adoption of a closed circuit water cooling circuits in the silicon process greatly help to conserve water usage. The proponent will optimize usage of plant water to its fullest practical extent.
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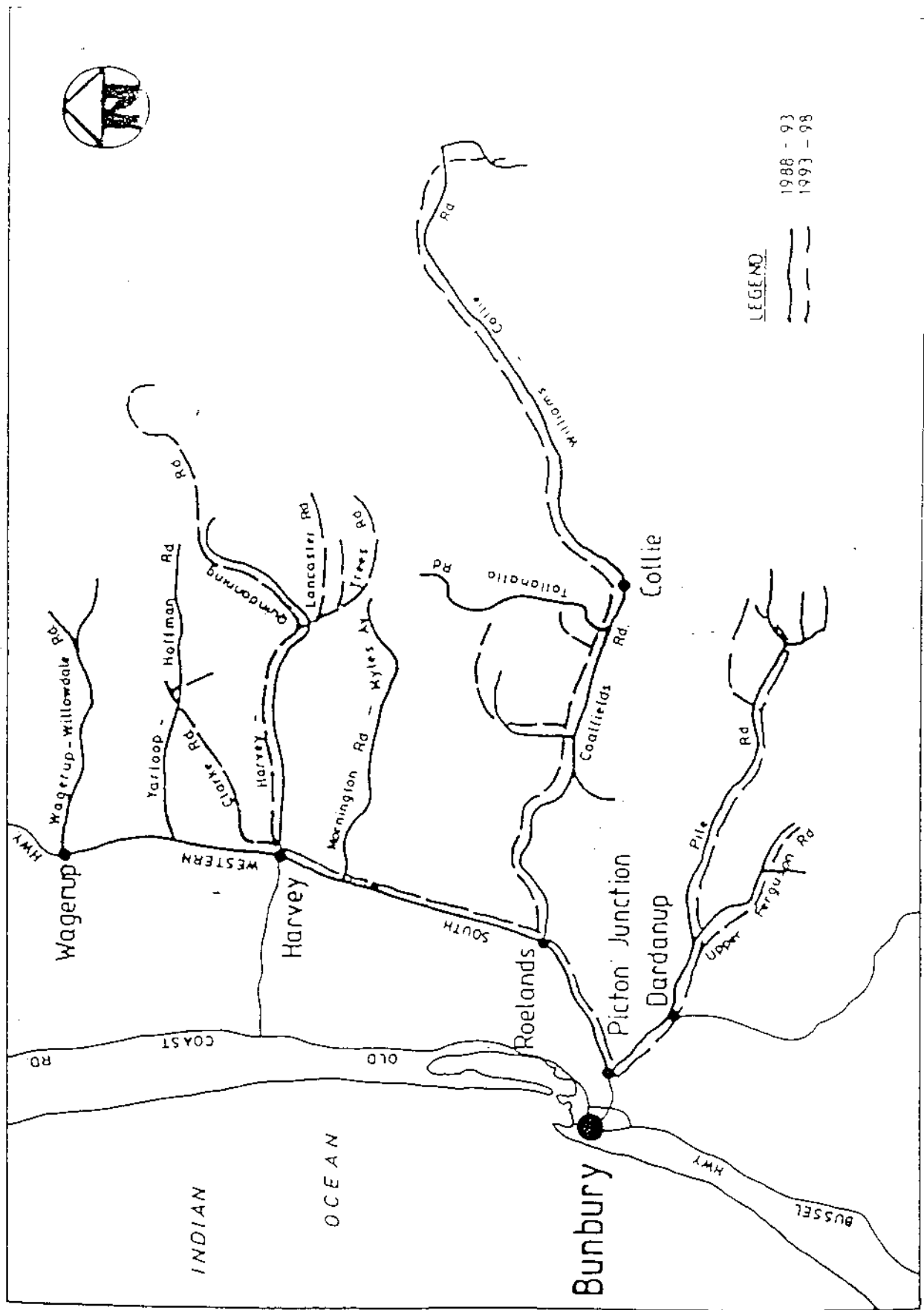
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Personnel will be trained in fire-fighting procedures, equipment locations clearly marked and a fully operational fire tender will be maintained on site. Portable fire extinguishers and serviced hose reels will be located within the buildings as required.

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- 3.5.1 The quartzite hopper, transfer point and conveyor system will be fitted with water mist sprays for dust suppression.
- 3.5.2 Each charcoal bin will be fitted with an emergency dumping gate, fitted to the lower section of bin, for use in case of spontaneous combustion of the charcoal.
- 3.5.3 The proponent will be exerting its best efforts to minimise and if practicable, eliminate the use of petcoke in its furnaces consistent with its commitment for safe and economical operations. The operation will be both environmentally and quality conscious.
- 3.5.4 The exhaust gas from each furnace and the entrained amorphous silica fume will be collected by the furnace and tapping area hoods and ducted through pre-collector/spark arrester units and a baghouse.
- 3.5.5 The fume will be discharged from the filter bags into sealed collection hoppers from where it will be pneumatically conveyed to storage silos. The fume will be discharged into sealed road vehicles or pelletised.
- 3.5.6 The proponent will introduce a programme for regularly sampling the fume and submitting the samples to X-ray diffraction analysis to detect any contamination by crystalline silica. (Public Health Implications Study p15).
- 3.5.7 The building housing the electric furnaces will be steel-clad. Appropriate ventilation and housekeeping measures will be adopted to ensure control and containment of dust within this building.
- 3.5.8 Waste water system is being reviewed. A disposal strategy for this waste water will be developed in consultation with the EPA after chemical analyses have been made.
- 3.5.9 The oxygen storage facility of approximately 6000 litres will be isolated from the heat of the furnace, and fire hydrants will be installed in the general area.
- 3.5.10 The baghouse system will have reserve capacity to deal with abnormal dust burdens.
- 3.5.11 A monitoring programme will be established around the plant. That programme will be designed after consultation with the EPA.



WOOD TRANSPORT CORRIDORS

FIGURE 6.9

Appendix 7

Recommended Environmental Statement to Amend Conditions

RECOMMENDED ENVIRONMENTAL CONDITIONS

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

SILICON PROJECT, KEMERTON AND MINE AT MOORA

Proponent: Simcoa Operations Pty Ltd

Proponent Address: PO Box 1389, BUNBURY WA 6231

Assessment Number: 1383

Previous Assessment Numbers: 165 and 737

Previous Statement Numbers: Statement No. 027 published on 13 May 1988
Statement No. 279 published on 10 August 1992

Report of the Environmental Protection Authority: Bulletin 1027

Previous Reports of the Environmental Protection Authority: Bulletins 328 and 631.

The implementation of the proposal to which the above reports of the Environmental Protection Authority relate is subject to the conditions and procedures contained in Ministerial Statements Nos. 027 (13 May 1988) and 279 (10 August 1992), as amended by the following:

Conditions 1A and 1B (Commitments and Implementation) of Statement No. 279 are deleted and the following conditions are inserted:

Commitments and Implementation

- 1-1 In implementing the proposal, including the proposed amendment reported on in Environmental Protection Authority Bulletin 631, the proponent shall fulfil the commitments of statement no. 027 (13 May 1988).
- 1-2 The proponent shall implement subsequent commitments which the proponent makes as part of the fulfilment of the conditions in this and previous statements.

- 1-3 Where the proponent seeks to change any aspect of the proposal in any way that the Minister for the Environment and Heritage determines, on advice of the Environmental Protection Authority, is substantial, the proponent shall refer the matter to the Environmental Protection Authority.
- 1-4 Where the proponent seeks to change any aspect of the proposal in any way that the Minister for the Environment and Heritage determines, on advice of the Environmental Protection Authority, is not substantial, the proponent may implement those changes upon receipt of written advice.

Condition 12 (Monitoring of Regelia megacephala) of Statement No. 027 is deleted and the following condition is inserted:

- 12-1 Within one year following the formal authority issued to the decision-making authorities under Section 45(7) of the *Environmental Protection Act 1986*, the proponent shall prepare a monitoring and management programme to manage the effect of mining activities on the Coomberdale Chert Threatened Ecological Community, and on populations of *Regelia megacephala* and other priority and declared rare flora species, to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority and the Department of Conservation and Land Management.
- 12-2 The proponent shall implement the monitoring and management programme required by Condition 12.1 to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority and the Department of Conservation and Land Management.

New conditions No. 20 (Mining and Conservation Strategy), No. 21 (Surrender of mining lease) and No. 22 (Rehabilitation) are inserted immediately following condition No. 19 of Statement No. 027:

- 20 Prior to expansion of mining into the Eastern Ridge area, the proponent shall prepare, and then subsequently implement, a Mining and Conservation Strategy, in co-operation with the Department of Conservation and Land Management, and to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority. The objective of this strategy is to ensure that conservation of biodiversity values is achieved whilst maintaining long-term access to the chert resource.

The Mining and Conservation Strategy shall address the following matters:

- a) Additional reconnaissance exploration to identify other parts of the Coomberdale chert formation, both within and outside current lease areas, which may contain sufficiently high grade quartz in areas where the chert-associated vegetation is already absent or degraded;
- b) Provision of support (subject to negotiation) to the Department of Conservation and Land Management for regional flora surveys to identify and map other parts of the Coomberdale Chert formation which may contain the same or other significant flora associated with the chert;

- c) Based on the outcomes of (a) and (b), and in cooperation with the Department of Conservation and Land Management, development of the best strategy to ensure both access to the resource and conservation, in secure reserves, of the flora of the Coomberdale Chert formation;
 - d) Additional conservation offsets, if required, such as the Cairn Hill North area and other significant areas of vegetation to form “stepping stones” or “linkages” with Cairn Hill and other ridges in the area;
 - e) Provision for fencing of significant areas of vegetation, whether part of reserves or other properties; and, during the operational life of the mine, provision of resources for conservation management.
21. The proponent shall surrender Mining Lease no. M70/1055 covering Cairn Hill at such time as requested by the Minister for the Environment and Heritage on advice of the Environmental Protection Authority and the Department of Conservation and Land Management. The Mining lease shall be surrendered in accordance with Procedure 3 below.
22. Within one year following the formal authority issued to the decision-making authorities under Section 45(7) of the *Environmental Protection Act 1986*, the proponent shall prepare a Rehabilitation Plan and commence rehabilitation trials, using local native flora species, including priority and declared rare flora species, to the requirements of the Minister for the Environment and Heritage on advice of the Environmental Protection Authority and the Department of Conservation and Land Management.

Procedure (to follow existing procedures)

3. Surrender of Mining Lease number M70/1055 covering Cairn Hill. (See condition 21).

The proponent will effect surrender of Mining Lease M70/1055 immediately following gazettal of the A-Class Reserve at Cairn Hill. The Department of Mineral and Petroleum Resources has confirmed that it has no objection to the establishment of the A-Class Reserve.