

**Proposed use of existing SCM
solid residue disposal site at Dalyellup,
from March 1992 to March 1994**

SCM Chemicals Ltd

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

**Environmental Protection Authority
Perth, Western Australia
Bulletin 589
Assessment No. 625
October, 1991**

THE PURPOSE OF THIS REPORT

SCM Chemicals Ltd is proposing to continue its solid residue disposal operations occurring at Dalyellup, 8 km south of Bunbury, for a further 2 years beyond the March 1992 expiry of the Environmental Protection Authority's licence.

This report contains the Environmental Protection Authority's environmental assessment and recommendations to the Minister for the Environment on the environmental acceptability of the proposal.

Immediately following the release of the report there is a 14-day period when anyone may appeal to the Minister against the Environmental Protection Authority's recommendations.

After the appeal period, and determination of any appeals, the Minister consults with other relevant ministers and agencies, and then issues his decision as to whether the proposal may or may not proceed. The Minister also publishes the legally binding environmental conditions which apply in the case of an approval.

APPEALS

If you disagree with any of the assessment report recommendations, you may appeal in writing to the Minister for the Environment, outlining the environmental basis for your concerns, and enclosing the appeal fee of \$10.

It is important that you clearly indicate the part of the report with which you disagree, and the reasons for your concerns, so that the grounds of your appeal can be properly considered by the Minister for the Environment.

ADDRESS

Hon Minister for the Environment
18th Floor, Allendale Square
77 St George's Terrace
PERTH WA 6000

CLOSING DATE

Your appeal (with the \$10 fee) must reach the Minister's office no later than 5.00 p.m. on the date indicated below.

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1. The proposal

SCM Chemicals Ltd (the proponent) proposes to continue using its Dalyellup solid residue disposal site for a further two years beyond the expiry of its current Licence (March 1992). SCM referred this proposal to the Environmental Protection Authority in July 1991 and the Authority determined that the proponent should prepare a Consultative Environmental Review (CER).

The CER was released for a four week public review period beginning 16 September 1991 and ending 14 October 1991. During this period, four submissions were received. Three submissions were from Government agencies (Department of Planning and Urban Development, Water Authority of WA and Homeswest) and one was from the Conservation Council of WA.

None of the submissions raised issues that were not adequately addressed in the CER. All submissions considered that the proposal was environmentally acceptable (subject to some reservations such as the use of interdunal depressions for waste disposal and continued acceptable environmental performance), provided that the operation did not expand beyond the existing site boundaries.

The Consultative Environmental Review presents a summary of the numerous reports commissioned by SCM to monitor the environmental performance of the Dalyellup site. Copies of the Consultative Environmental Review were made available at the Environmental Protection Authority's library, Bunbury Library, Shire of Capel Library, Shire of Harvey Library, and Shire of Dardanup Library.

2. Introduction

SCM Chemicals Ltd operates a high technology chloride process plant within the Kemerton Industrial Park, 9km north of SCM's Australind plant (Figure 1). The Kemerton plant produces titanium dioxide pigment and has both liquid and solid waste streams associated with the processing operation. The liquid waste is treated on site and discharged to the ocean with the approval of the Environmental Protection Authority. The solid waste is disposed of in two interdunal depressions at Dalyellup, 8km south of Bunbury. The solid waste comprises unreacted materials such as ore, coke, metal hydroxides, gypsum, lime, and a small amount of titanium dioxide which is not extracted during the process.

3. Background

The Environmental Protection Authority previously assessed SCM's proposal to dispose of its waste in an exhausted basalt quarry in Gelorup. This proposal was found environmentally acceptable but in response to local concerns, SCM decided to search for an alternative site.

The alternative site proposed by SCM was at Dalyellup (Figure 2). In December 1988 the EPA approved this site for use (see Appendix 1), and SCM began disposal operations in March 1989.

EPA's approval was conditional, being limited to a three year period and satisfactory environmental performance. SCM was also required to commission an independent assessment of the available information relating to the disposal of its solid residue. The study was undertaken by Dr R. Radford from the Department of Chemical Engineering at Curtin University of Technology and is available in the EPA Library for review by interested parties. It investigated five disposal options including:

- roasting of the residue with recovery of chlorine and/or hydrochloric acid;
- use of the residue as a soil conditioner;
- disposal of the residue in an alumina refinery red-mud lake;

- disposal of the residue in depleted sand-mines in or near Capel; and
- disposal of the residue in interdunal depressions at Dalyellup.

Of these five options, the Environmental Protection Authority had envisaged that option one would be the most environmentally acceptable. However, the study showed that this option had potentially more problems associated with it than the current method of waste treatment and disposal.

Regular environmental monitoring data and reports have been developed by SCM since it commenced operations at the site. These reports have been provided to the EPA, Water Authority of WA, Radiological Council of WA and Shire of Capel.

4. Environmental performance of existing operation

The Environmental Protection Authority has carefully monitored the environmental performance of the Dalyellup site since December 1988 when EPA issued a Licence under the provisions of Part V of the Environmental Protection Act.

The Licence addresses the issues identified in the EPA's advice to SCM (Appendix 1) which approved the use of the Dalyellup site for a three year period up to March 1992. Importantly, SCM was required to:

1. demonstrate the adequate environmental performance of the disposal operation ;
2. provide a report on alternative waste treatment and disposal methods; and
3. rehabilitate the land to the satisfaction of the EPA and Shire of Capel.

In relation to the first requirement above, SCM has commissioned reports that show:

- a calcium chloride salinity plume has developed under the site;
- no significant increase in heavy metals loadings to the groundwater has occurred; and
- the levels of radiation are within acceptable environmental standards.

The Authority has been kept informed on the progress of these reports and the issues they address, and as noted above has received the full reports on a regular basis as have a number of other Government agencies. To date, the acceptable environmental performance of the disposal operation has progressed without incident.

The second requirement was complied with through SCM's submission of the independent report prepared by Dr Radford and discussed in section 3 above.

In relation to the Authority's third requirement, SCM is unsure of the ultimate end land use of the site which prevents them from completing a detailed rehabilitation programme at this stage. Nonetheless, they have progressed investigations at the site and propose to implement a staged management rehabilitation programme.

The Environmental Protection Authority expects that the site will be rehabilitated for recreational use and considers that this is appropriate. This end land use would be one of the few acceptable land uses for that site, given its proximity to the Water Authority of WA waste water treatment plant number two (some 500m to the north, see Figure 2). There is a need to ensure an adequate buffer is maintained around this treatment plant to prevent land use conflicts from occurring (eg. urban development would be an inappropriate land use within close proximity to the treatment plant due to odour issues).

5. Environmental Protection Authority's assessment

The three year period identified in the Authority's original approval for the site was chosen to allow SCM sufficient time to investigate alternative waste disposal options, including alternative sites and waste treatment technologies.

SCM proposes to continue disposal at Dalyellup for a further two years because they have so far been unsuccessful in locating an alternative site or developing an alternative waste treatment process. This is not a reflection on SCM's commitment to the job. The reality is that waste disposal issues are a major concern for industry in the south-west and they are not easily resolved.

The Authority's December 1988 letter of approval (Appendix 1) identified that the use of the Dalyellup site "has been assessed to be environmentally unacceptable beyond 3 years...". However, based on the Authority's assessment of the information supplied by SCM since that date, the Authority considers that the proponent has demonstrated the environmental acceptability of its waste disposal operation within its existing site boundaries.

In view of the previous satisfactory environmental performance of the Dalyellup site, the Authority considers that the continued use of the site is environmentally acceptable subject to the following:

- continued acceptable environmental performance and compliance with all EPA licence conditions;
- no land use conflicts developing around the site (ie. final rehabilitation of the site must ensure it is compatible with existing and future proposed land uses); and
- no extension of the existing boundary.

In addition, the Environmental Protection Authority recognises that:

- other reasonable options do not exist at this time;
- SCM is committed to pursuing alternative methods of waste disposal; and
- the Department of State Development, the Industrial Lands Development Authority, the Kemerton Advisory Board and the Industrial Land Co-ordinating Committee are in the process of preparing a report to address strategic waste issues for industries in the Kemerton Industrial Park.

Further, if the capacity of the site will allow waste to be deposited at the site beyond March 1994, (which may be the case if alternative treatment methods reduce the volume of waste disposed) subject to the constraints above, ie. no extension of the site boundary, the Environmental Protection Authority considers that it is likely to be environmentally acceptable. However, the Authority would make that determination based on the performance of the operation at the site up to March 1994.

Recommendation

The Environmental Protection Authority recommends that SCM Chemicals Ltd solid residue disposal operation at Dalyellup is environmentally acceptable and that it could continue up to the end of March 1994 subject to the commitments made in the proponent's CER and the continued acceptable environmental performance of the operation at the site to the satisfaction of the Authority.

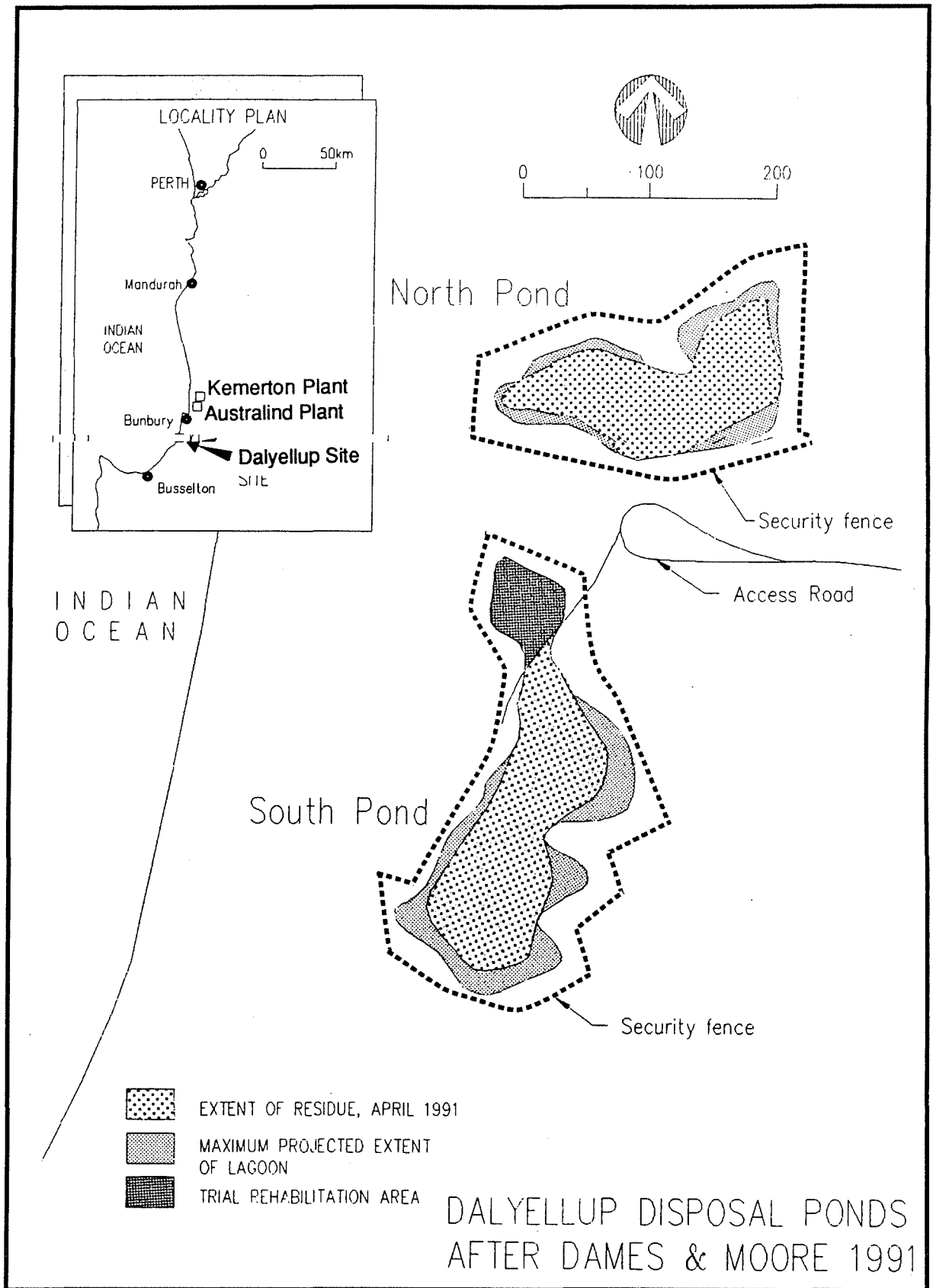


Figure 1. Regional location of SCM operations (Kemerton, Australind and Dalzell, courtesy of SCM's Consultative Environmental Review), and the Dalzell disposal ponds.

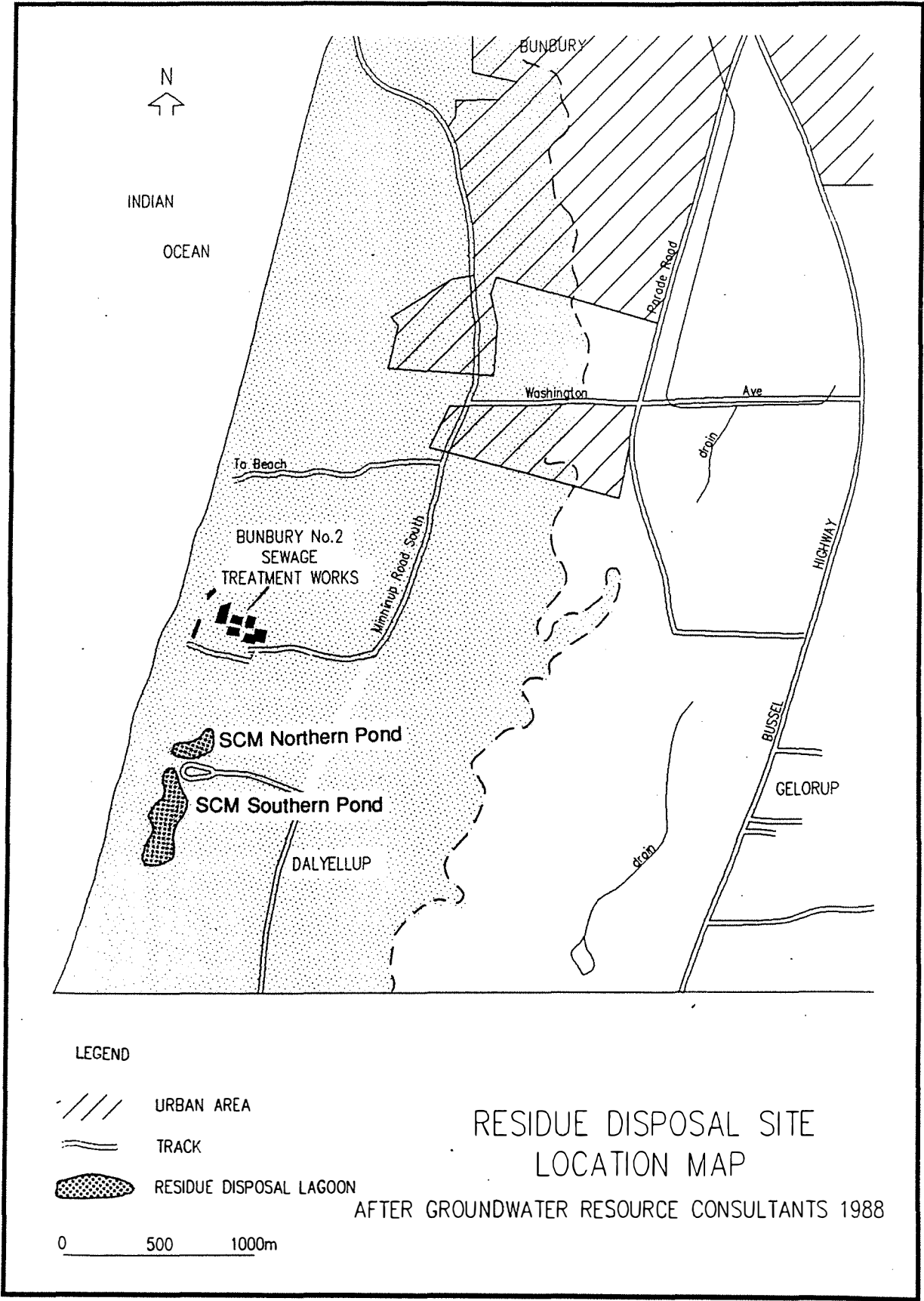


Figure 2. Dalyellup location map (Courtesy of SCM's Consultative Environmental Review)

Appendix 1

Environmental Protection Authority's advice regarding waste disposal at Dalyellup



ENVIRONMENTAL PROTECTION AUTHORITY

1 MOUNT STREET PERTH WESTERN AUSTRALIA 6000

Telephone (09) 222 7000

General Manager
SCM Chemicals Limited
PO Box 245
BUNBURY WA 6230

Yours
Respectfully

Yours
Respectfully

Enquiries

Attention: Mr John Leach

Dear Mr Leach

PROPOSAL FOR DISPOSAL OF SOLID WASTES

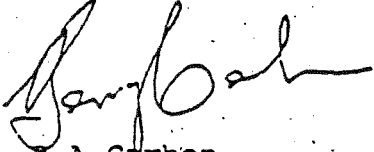
The Environmental Protection Authority has considered the proposal from your Company submitted in response to Ministerial Condition number 11 of 24 August 1987, for disposal of solid wastes from the pigment plant at Kemerton, and has reached the following conclusions.

Your proposal to dispose of the slurry material in the coastal dunes at Dalyellup south of Bunbury has been assessed as environmentally unacceptable beyond 3 years and only acceptable for short term disposal under the following circumstances:

1. Use of the site will be subject to a Works Approval and Licence under Part V of the Environmental Protection Act. This Licence will be issued for a period of two years. Continuation of the licence will be for a maximum of one further year dependent on:
 - a) adequate environmental management performance of the disposal operation; and
 - b) submission to the Authority, no later than 18 months from the start of the disposal operation, of a report detailing the progress made towards alternative waste treatment and disposal methods, and indicating the method to be developed to allow completion of the Dalyellup operation within the additional year.
2. Conditions will be attached to the Licence formalising your Company's commitments to environmental management. In particular, the requirements for groundwater monitoring will be specified in detail.

3. The site shall remain under the control of the Company for such period after the cessation of waste disposal, as is required for rehabilitation of the site to be completed to the satisfaction of the Authority.
4. The final land use of the site, and hence the type of rehabilitation, must be to the satisfaction of the Authority and the Shire of Capel.

Yours sincerely



B A Carbon
CHAIRMAN

19 December 1988

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