

F180A

CEMENT - CORAL DREDGING
MORETON BAY



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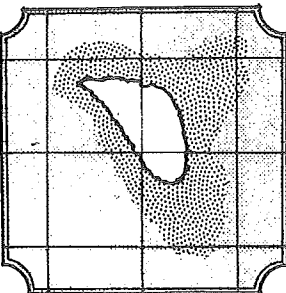
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**GREEN ISLAND CORAL LIMESTONE DREDGING
IMPACT ASSESSMENT STUDY**

NEWSLETTER

June 1993

Number 2

Welcome to the second issue of the Green Island Impact Assessment Study Newsletter. The newsletter is published to inform the community about the progress of the Impact Assessment Study. The study is being undertaken by consultants Connell Wagner, Fisheries Research Consultants, Bio-Track and Planning Workshop, to assess the environmental impacts of coral limestone dredging on the eastern side of Green Island.

COMMUNITY CONSULTATION

Over 700 copies of the Green Island Impact Assessment Study Newsletter No. 1 have been distributed and a large number of calls have been taken on the Study Information Line.

Issues raised through calls to the Study Information Line and in written submissions are being considered by the Study Team members and are being incorporated into the Study Report which is currently under preparation.

Contact has been made with community groups and organisations with an interest in the project and submissions to the Study have been requested. Elected community representatives at the Local and State level have also been briefed about the Study.

Written submissions are welcomed from any interested persons or groups and these will be received up until 18 June 1993.

Study Team members are available to answer any enquiries about the Study. Our contact numbers are:

Telephone: (07) 832 4059
Facsimile: (07) 832 4909

STUDY PROGRESS

By mid-May the Study had completed an examination of the existing environment of Green Island. The current focus is on defining the proposal and on environmental impact assessment.

Each of the Study Team members has been investigating relevant issues in their area of expertise.

Connell Wagner has examined the coastal processes that shape the Bay environment including winds, waves, currents and sediment movement.

Past dredging activities have been investigated to more fully understand dredging impacts including the reasons for the formation of "shingle beaches" on Mud Island.

Connell Wagner has also monitored sediment plumes associated with dredging on the southern side of Mud Island and the northern side of St Helena Island.

The information gathered has been used in the design of a modified dredging method which is being tested for financial feasibility. If it proves to be feasible, the modified dredging method will be the one adopted in the remainder of the study for the purposes of predicting impacts.

Fisheries Research Consultants has examined the coral communities of Green Island. Field assessment was undertaken to describe the distribution of coral outcrops, the extent of hard and soft coral and their current condition. This was achieved using divers trained in marine biology.

Consultation is underway with the Australian Institute of Marine Sciences to confirm the identified coral species.

Fisheries Research Consultants has also examined the intertidal reef flats and the sub-tidal reef slopes of Green Island and recorded other marine flora and fauna found there including seagrasses, algae communities and bottom-dwelling (benthic) organisms.

Bio-Track has recorded climatic conditions at Green Island and has taken samples to determine the quality of water around the island. Other aspects of the island's environment that have been examined include topography, bathymetry, geology and soils.

A flora and fauna survey of the island has been completed which examined the mangrove forest, terrestrial vegetation, reptiles and birds.

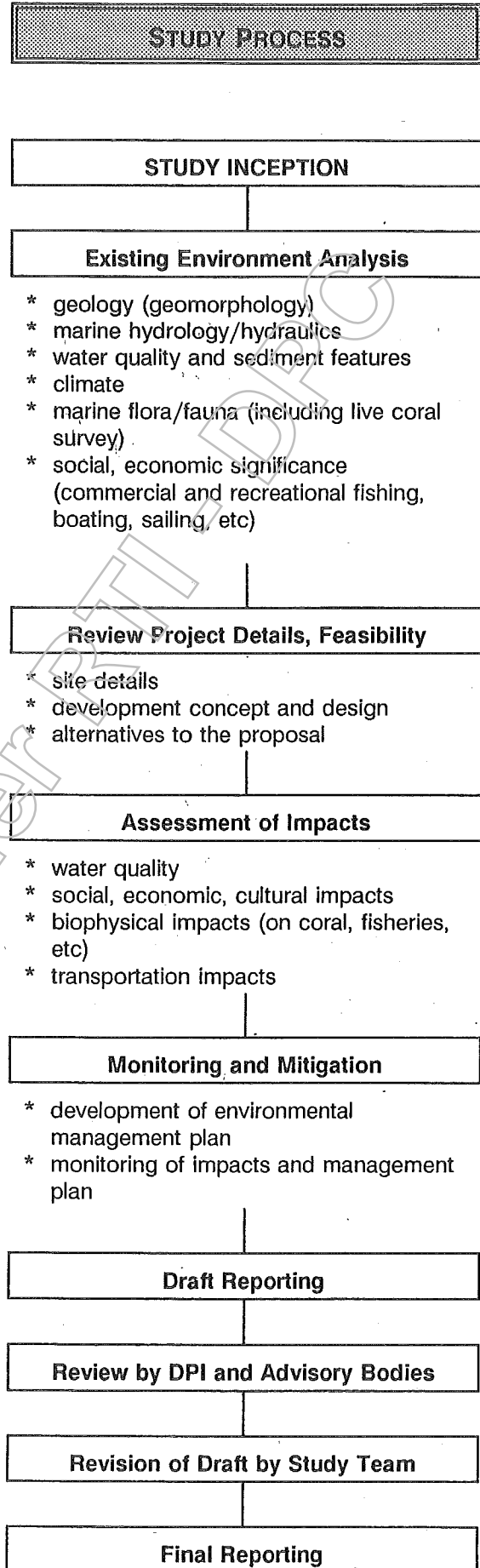
Planning Workshop has examined the need for the coral limestone resource and the availability of alternative limestone resources in South-East Queensland to replace coral sources. Project feasibility and the consequences of not proceeding are being reviewed in consultation with QCL.

Planning Workshop is also examining the value of the fishing resource of Moreton Bay and Green Island and the use made of the island by fishermen, boat users and other recreational groups.

The **University of Queensland Archaeological Services Unit** has examined the significance of the island to Aboriginal and Islander people which has included consultations with local communities.

Following completion of the existing environment analysis the project details will be finalised and the project feasibility reviewed. The Study Team will then proceed to assess the impacts of the project.

After the impact assessment phase, an Environmental Management Plan will be prepared to include recommendations for the mitigation of any adverse impacts and environmental monitoring over the life of the project.



WHAT ISSUES HAVE BEEN RAISED?

The main issues raised by phone-in and written responses have been:

- * the likely impacts of dredging at Green Island based on the effects of past dredging practices;
- * how the Study Team will be investigating ecological issues;
- * the likely presence of live coral in the dredge area and the difficulty distinguishing between live and dead coral when dredging;
- * the value of the area for fishing, boating and sailing;
- * water quality impacts of dredging; and
- * the need to consider alternative sources.

These issues are currently being addressed in the Study.

Consultations with fishing, boating, sailing and other recreational groups are continuing to enable the Study Team to fully understand how the area is used and to predict what the impacts are likely to be.

CORAL COMMUNITIES IN MORETON BAY

Research is continuing into the nature, condition and distribution of coral communities in Moreton Bay and on the eastern side of Green Island. Coral communities in the vicinity of Mud and St Helena Islands have also been investigated.

The reef structures formed in Moreton Bay including those at Mud, St Helena and Green Islands, are fringing reefs which differ from tropical offshore reefs in that they are composed of unconsolidated layers of coral rubble and sediment.

Over the last 8,000 years, the coral communities have declined in species richness and abundance from those that originally formed the reefs. The corals of massive form (brain corals) that dominate today are more robust and tolerant of increased levels of turbidity and sediment deposition.

Live coral can occur along the shoreline and islands of Moreton Bay where a suitable stable bed (substrate) exists. Many environmental factors govern the suitability of any one location for the variety of coral species present within the Bay. At each location, hard corals must also compete for space with macro-algae and soft corals.

It is worth noting that Peel Island is the premier site within the Bay for coral, having the greatest abundance, density and diversity of all the Bay's coral communities. Peel Island is a fully protected area.

Consultation with the Australian Institute of Marine Sciences is assisting in the Study Team's understanding of the coral communities of Moreton Bay.

WHY USE CORAL?

QCL started producing cement at Darra in 1917. Initially QCL used hard rock (ie. land based limestone) from Gore, west of Warwick. However, the declining reserves of this source coupled with the uneconomic nature of transporting limestone over 200km from Gore by road meant a viable alternative source needed to be found nearer to Brisbane.

In 1935, the Queensland Tariff Board noted the inefficiency in use of hard rock limestone at Darra stating that, at that time, the transport of limestone from Gore to Darra was more expensive than shipment of cement from Sydney to Brisbane.

In 1936 QCL began using Moreton Bay coral as a limestone source to service its south-east Queensland market. The current operation involves extraction of coral by a dredge and transporting the material some 70km up the Brisbane River to QCL's Darra plant. This long distance of transport is only viable because of the nature of transport by bulk barge.

At present time the nearest hard rock limestone resource appropriate to QCL's requirements is still in the Warwick area, some 170km away from Darra. This remains an excessive distance away from Darra by road. Therefore coral represents the most suitable resource for cement production by the Darra plant.

WHAT ABOUT FISHING, SAILING AND OTHER USES AROUND GREEN ISLAND?

As part of the public consultation phase of the Green Island Study a large number of commercial and recreational user groups have been contacted. Principal groups already contacted include:

- * Queensland Commercial Fishermen's Organisation
- * Queensland Sport and Recreational Fishing Council
- * Moreton Bay Trailer Boat Club
- * Royal Queensland Yacht Squadron
- * Apex Club - Wynnum-Manly Branch

- * Wynnum-Manly Yacht Club
- * Australian Littoral Society
- * Queensland Ornithological Society
- * Moreton Bay Protection Society
- * Trailer Sailer Club of Queensland
- * National Parks Association of Queensland.

All of these groups have been given information about the study and the opportunity to provide written or verbal feedback to the study.

Additionally, various aquarium fish collectors, bait collectors and smaller sailing, scuba diving and boating clubs have been contacted for their feedback to the study.

If your group is not on the above list and you wish to obtain information on the study and/or make a submission, please contact the Study Information Line on (07) 832 4059.

The information already provided by local groups has proved invaluable in the data gathering phase of the study and those that have already contributed are thanked for their input.

CONSULTATION DETAILS

There are several ways you can have an input to the Study.

Register on the Contact List

Members of the public and interest groups are invited to return the coupon below to be placed on a mailing list to receive copies of newsletters or any other notices which may be distributed relating to the study.

Phone the Study Team

Members of the Study Team are available during business hours to discuss the proposal and record your attitudes and views. Please phone us on:

(07) 832 4059

Make a Written Submission

Public notices have recently been appearing in local newspapers and the Courier Mail calling for written submissions on the IAS. In your submission you may wish to address:

- * the need for the resource
- * alternative sources of limestone
- * dredging impacts
- * issues to be addressed in the IAS
- * your attitudes to the proposal.

Submissions should be sent/faxed to:

**Green Island Coral Limestone
Dredging IAS
c/- Planning Workshop
163 Wharf Street
Spring Hill QLD 4000**

Facsimile: (07) 832 4909

Contact with Community Groups

The Study Team is seeking input from community groups and organisations with an interest in the project including recreational groups, environmental groups, progress associations and scientific groups.

A separate contact list of these groups has been prepared and submissions are invited on the proposal and relevant issues.

If you would like your group to be involved please phone the Study Team on (07) 832 4059.

To: Green Island Coral Limestone Dredging Impact Assessment Study
 Post to: c/- Planning Workshop, 163 Wharf Street, Spring Hill, Qld, 4000.
 Fax to: (07) 832 4909

Yes, please place me on the "Contact List"

Mr/Mrs/Miss/Ms (First Name) _____ (Surname) _____

Organisation (if applicable) _____

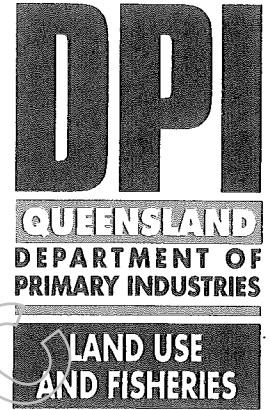
Address _____

Post Code _____ Telephone (optional) _____

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1 April 1993

BC: Mr Russell Davie
Senior Project Officer
Officer of Coordinator-General
Premier's Department
PO Box 185
BRISBANE ALBERT STREET Q 4002



Mr M McKenzie
Queensland Cement Limited
4 Station Road
DARRA Q 4076

For your information

B R Pollock
MANAGER
FISHERIES SERVICES

Dear Sir

RELEASE OF TERMS OF REFERENCE - IMPACT ASSESSMENT STUDY

The Terms of Reference for the Impact Assessment Study - Proposal to Dredge Coral at Green Island (copy attached) have now been prepared and accepted by Advisory Bodies.

Other agencies and individuals may have an interest in these Terms of Reference and already a small number of requests have been made for copies of this document.

I have no objections to the release of these Terms of Reference to people who request them. This matter was discussed at the recent meeting of Advisory Bodies and it was accepted that the Terms of Reference should be made available on request.

It is therefore appropriate for your Company, the Consultants for the Study, any of the Advisory Bodies or this Department to provide copies of these Terms of Reference should they be requested.

Yours faithfully

P J Neville
GENERAL MANAGER
FISHERIES DIVISION

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**PROPOSAL TO DREDGE CORAL LIMESTONE FROM THE EASTERN SIDE OF
GREEN ISLAND IN MORETON BAY**

by Queensland Cement Limited

Terms of Reference for an Impact Assessment Study

**Prepared by Queensland Department of Primary Industries, Fisheries Division,
July 1992**

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PRELIMINARIES

Background

Queensland Cement Limited have sought approval to dredge coral limestone from the eastern side of Green Island in Moreton Bay.

The primary approval necessary for the proposal is a Licence to take Coral, Coral Limestone etc. issued under Section 35 of the Fisheries Act. Administration of this legislation is the responsibility of the Department of Primary Industries.

It has been determined by the Department of Primary Industries that this proposal represents a major development and that a comprehensive Impact Assessment Study will be undertaken in relation to this proposal. Such a study would need to be completed before the issue of any approvals may be considered.

The Impact Assessment of this proposal will be dealt with under the provisions of Section 29 of the State Development and Public Works Organisation Act. The Queensland Government has decided that Queensland Cement Limited shall have until September 1993 to complete all procedures in relation to applications for this proposal. To meet this time constraint, the draft Impact Assessment Study report shall be prepared by 30 June, 1993 so that the final report can be prepared by 30 August, 1993 after review by the Advisory Bodies.

Study Objectives and Obligations

The Impact Assessment Study shall be undertaken in accordance with the procedure outlined in the publication "Impact Assessment in Queensland" and with these terms of reference.

Format and Style

The report should be written in clear, concise and analytical style that is easily understood by the general reader.

The Guidelines set out the matters and things to be assessed in the conduct of the Impact Assessment Study must be included in the report. The Impact Assessment Study should include references and a list of individuals and organisations consulted, with their contribution appropriately referenced.

Results of studies and detailed comments resulting from consultations, should be included as appendices, as should technical information. Relevant plans and illustrations should also be included.

The report should be produced on A4 size paper capable of being photocopied with maps/diagrams also A4 or A3.

Status of Information

After completion of the Impact Assessment Study, the report or a summary of the report shall be considered for public release by the Department of Primary Industries following advice from the Advisory Bodies and Queensland Cement Limited.

Should the Developer require any information to remain confidential, this should be clearly indicated and provided separately. The reasons for maintaining confidentiality should be given by the Developer. The Department of Primary Industries shall be responsible for maintaining confidentiality as appropriate taking into account both the commercial interests of the Developer and the public interest.

Additional Information

An Authority from which approval is required may request additional information.

The Developer shall provide 50 copies of the Impact Assessment Study report to :

The Director-General
Department of Primary Industries
GPO Box 46
Brisbane Qld 4001

ATTN: General Manager, Fisheries Division.

Consultant

The engagement of a consultant to carry out the Impact Assessment Study shall be determined by the Developer and Department of Primary Industries. The choice of the consultant shall be primarily based on the expertise of the personnel involved.

The Developer should include in the Impact Assessment Study report, the names and curricula vitae of all personnel involved and should, where possible, make use of expertise available in undertaking the study.

SUMMARY

The Impact Assessment Study Report is to include a concise summary (not more than five pages) of the matters discussed in the main body of the document, to allow the reader to obtain quickly a clear understanding of the proposal and its impacts. The summary should include:

- the title of the proposal,
- the name and address of the Developer,
- a statement of the objectives of the proposal,
- discussion of the background to and need for the proposal ,
- discussion of the alternatives considered to meet the given objectives and reasons for selecting the preferred option,
- description of the proposal,
- description of the existing environment (including social and economic aspects),
- a description of the principal environmental (including social and economic aspects) impacts (both adverse and beneficial),
- a summary of the results of public consultation, and
- a statement of the environmental protection measures and safeguards, standards and monitoring procedures proposed.

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MAIN REPORT

NOTE: Information should be illustrated, mapped or tabulated where appropriate and descriptive material should be concise.

1. INTRODUCTION

1.1 The Developer

- Title of Proposed Development
- The Developer and Corporate Structure

1.2 Objectives

- Broad statement of objectives of the proposal.

1.3 Scope of the Proposal

Description should include:

- background to the proposal including the need for the extractive industry, the economic and historic background of the Developers, alternatives to dredging of Green Island considered and the reasons for choosing the preferred option, history of previous similar operations including discussion of environmental management undertaken; and
- envisaged time for the establishment phase of the proposal, project life, and anticipated establishment costs.

2. SITE DETAILS

Site details should include:

- location, including proposed Moreton Bay zoning arrangements in the Draft Strategic Plan;
- detailed survey to identify Mean Low Water Spring, Mean High Water Spring Tide and Highest Astronomical Tide;
- current usage of the subject and immediately adjacent land and waters;
- present tenures;
- Commonwealth, State and Local Government legislation applying to the development, including the status of any applications for approval, and approvals required for the project; and
- the width and boundary of any erosion prone areas on the existing adjacent coastline.

3. PROPOSED DEVELOPMENT

3.1 Design and Establishment Details

All components of the proposal at Green Island should be described in detail including:

- detailed concept and staging plans, including maps;
- dredging requirements and specifications, including plans showing the mean low water mark and its relationship to other data, length and cross-section of proposed dredging works, dredging quantities, nature of spoil, containment/disposal of spoil and wastes, dredging methods, mooring points and methods, geological constraints, erosion protection arrangements, and wave penetration studies;
- hydrographic surveys of seabed soundings in the licence area (to standards, specifications and frequencies to be determined by the Regional Harbour Master, Brisbane);
- quantities of materials dredged, transport routes and methods;
- the areas and relative proportions of the coral and coral limestone around Green Island (subtidal and intertidal) and the corresponding percentage (as an area and a volume) of the eastern side of Green Island to be removed;
- the percentage of coral /coral limestone in Moreton Bay (as an area and a volume) which has been removed previously by QCL operations and will be removed by the current proposal (a graphic representation is required);
- the final bottom topography to the east of Green Island after extraction of coral limestone is completed (a graphic representation is required);
- storage areas and facilities if required, and the nature of the items to be stored and/or uses;
- the workforce;
- prospects or proposals for future expansion;
- general operation of the dredging facilities including activities, services, hours and duration of daily and weekly operations and proposed management;
- details of any structures to be placed in the dredged area.

3.2 Facilities and On-Site Equipment

All facilities should be described including:

- navigational safety maintenance requirements;
- proposed navigation aids in the vicinity;
- lighting associated with dredging operations (intensity, hours of operation etc);

3.3 Coastal Management

Investigate and provide details on the effect of the proposal on:

- coastal management or coastal processes, particularly in regard to wave climate, water levels, currents and sediment/coral rubble movement (both longshore and onshore/offshore), including the possible impacts of the Greenhouse Effect on sea level rise and climate change;
- stability of the shoreline under normal and storm conditions.

4. ALTERNATIVES

Provide a description of feasible and prudent alternatives for achieving the objectives of the proposal. This should include an accurate delineation of the resource requirements of the proposal in terms of both the Green Island coral reserves and alternative sources of limestone. The description should discuss alternative limestone resources and alternative sources of cement for the Queensland Building Industry (in SE Queensland, Queensland, interstate and internationally).

The alternatives should be discussed in sufficient detail to make clear the reasons for preferring certain options. Perceived consequences of each alternative with regard to impacts on transport routes, cost, employment and environmental impacts should also be summarised.

5. PROJECT FEASIBILITY AND ARRANGEMENTS

Indicate the prospects for financial success of the proposal. The judgmental criterion to be adopted is that there must be an adequate demand for the proposed facilities at a price which will cover all operating and fixed expenses, service debt and provide a satisfactory return on equity investment.

Such an analysis is required to ensure against project failure and abandonment, and unwise use of the State's important coastal resources.

An assessment should be made of the consequences of the Developer not obtaining approval to dredge Green Island as well as a description of the Developer's plans after the resource is fully utilised.

The study should include the following:

- information on the ownership, capital structure and history of the Developer's company or any relevant associates should be provided;
- identify present and future demand as well as the present and likely future supply of competitive facilities in the region;
- the special advantages and disadvantages of the site compared with others in the region should be identified.

6. EXISTING ENVIRONMENT

Describe the existing environment both within the preferred site and in the surrounding area, covering the following aspects to the extent necessary to serve as a baseline against which the impacts of the proposal can be assessed. Trends should be discussed where appropriate.

6.1 Physical Environment

Geology and Geomorphology

Provide a description of the geology and geomorphology of the island and surrounding areas with particular emphasis on the following:

- the geology of the island in terms of dominant rock types and the regional context;
- the elevation, topography and landforms of the island including slope and terrain components;
- a general description of the geomorphology of Moreton Bay and associated Islands which should include a cross sectional representation of Moreton Bay;
- the nature, periods, timing and rates of coral growth in Moreton Bay and for Green Island in particular, with respect to climatic and eustatic sea level variations;
- details of the underlying geology formation, position and significance of Green Island and its associated coral formations in the context of Moreton Bay;
- details of the dimensions and nature of the Green Island supra, inter and subtidal zones;
- a series of profiles of the island and foreshores, showing cross-sections of the geology and sedimentology prior to extraction, including proportions and distribution of different supra, inter and subtidal zones;
- the composition, extent and area of the terrestrial island; and
- a summary of interesting geomorphological features and any associated biological importance.

Marine Hydrology and Water and Sediment Hydraulics

Provide an accurate definition of the existing patterns of tidal and seasonal current velocity and directions (reference should be made to existing studies). Appropriate diagrams and models detailing incident wave direction, prevailing winds, currents, substrate profiles detailing supra, inter and subtidal zones should be supplied with reference to:

- bathymetry;
- current velocity and directions at different tidal states;
- tidal ranges with particular reference to tidal inundation (frequency, range);
- steady state conditions (prevailing winds) major weather events (floods/cyclones/storms);

Water Quality

Provide an assessment of existing water quality in the waters likely to be affected by the proposal. Water quality should be assessed in terms of physical and biological characteristics. Seasonal variations should be described.

Recommended parameters are:

- current velocity and direction at different tidal states;
- tide heights;
- bathymetry;
- salinity;
- nutrient status (organic/inorganic);
- pH;
- Dissolved Oxygen
- turbidity; and
- biological characteristics eg., BOD.

Reference should be made to water quality variations and the duration of such variations, in particular:

- diurnal, tidal and seasonal variations; major weather events (floods/cyclones/storms); steady state conditions (prevailing winds); coincidence of the above factors.

The frequency and extent of any freshwater impacts from flooding (eg. Brisbane River, Lota Creek) if any.

Climate

Provide a description of the climate of Green Island, in particular the amount, intensity and annual distribution of:

- rainfall intensity and volume;
- wind velocity, duration, and prevailing direction;
- incidence and intensity of storms (including cyclones);
- temperature;
- evaporation characteristics; and
- humidity.

6.2 Marine Flora, Fauna and Ecological Relationships

Describe the flora and fauna present or likely to be present in the area, including:

- major species and abundance of marine flora and communities present in and immediately adjacent to the site, including seagrasses, mangroves and macroalgae;
- species diversity and abundance of marine animals, including birds, reptiles, fish, and benthic organisms;
- extent and importance of intertidal and marine communities (including transient fish species and invertebrates);
- the existing extent, distribution, morphology (plate-like, branching, massive, encrusting or soft) and composition of coral species (living) surrounding Green Island. A distribution map should be provided;
- evidence from available literature of any changes in species diversity and abundance in the last 30 years of both marine flora and fauna;
- any rare or endangered species, their habitat requirements and sensitivity to changes;
- important ecological relationships/processes, with consideration in the context of surrounding waters;
- indicate how well represented these terrestrial and marine plant and animal communities are in Moreton Bay today and how well represented they were in the past;
- use of the area by migratory species;
- movement corridors and barriers to movement; and
- existing commercial, recreational, educational and aesthetic uses of the biota.

These descriptions should be graphically supported by maps, aerial photographs, photographs and diagrams.

6.3 Existing Social and Economic significance

Provide an outline of the social and economic activities occurring in Moreton Bay which are likely to be affected as a result of the proposal. This must include identification of existing users of Green Island and its environs including:

- the number and distribution of commercial fishing operations using the Island and environs;
- the nature, composition and value of the commercial fish catch;
- the nature, composition and value of the recreational fish catch;
- the number of people and nature of other industries directly or indirectly dependent on Green Island;
- the potential for the above factors to increase;
- the number of employees of QCL directly dependent on existing production, those directly dependent on the approval of the proposal and those dependent on secondary employment;
- areas of cultural significance to European and Aboriginal & Islander people, which are identified through both anthropological and archaeological studies in

conjunction with the relevant communities.

Provide a summary of the above points to detail the existing and potential economic benefits provided by Green Island and its environs and compare and contrast these with the benefits of allowing the proposal to proceed.

7. IMPACTS

This section should clearly identify the principal impacts expected to result from the development. The reliability and validity of predictions should be discussed.

Direct and indirect, temporary and irreversible, adverse and beneficial effects should be described and, where possible, quantified.

Actions proposed to mitigate or accommodate these impacts should be explained.

Types of impacts which should be considered are listed below.

7.1 Biophysical Environment

Details should include:

- impacts due to changes to coastal processes or coastal management on the coastline as a result of the proposal, particularly impacts on foreshore and near-shore sand and coral rubble movements;
- extent of loss of important animal/plant communities and implications of this;
- any other impacts on flora and fauna and the marine ecosystem;
- effect of changes in the balance of mangrove plants and the need for adequate buffer areas between the proposal and any existing mangroves;
- impacts of dredging and operations including dispersion of resuspended solids, disposal of dredged materials and impacts on the marine environment of the area, including benthic species and any living corals and macroalgae in the area. In this respect it would be necessary to model plumes associated with the dredging and to identify related impacts.
- impacts of permanent changes to coastal and seabed morphology and coastal processes;
- impacts on the marine fauna, including changes in community structure, species presence/abundance as a result of the development;
- impacts on safe navigation with particular regard to existing and proposed navigation channels and any potential navigation hazards that may be created by the dredging operations;
- impacts of expected siltation/erosion, and the nature of siltation material; and
- diagrams of the cross sectional view of the mineral area at the conclusion of mining, and analysis of the effects of mining on the future geomorphology and ecology of Green Island.
- assess impacts of past and current dredging operations on Mud Island and St Helena Islands, particularly in relation to loss of fishery values and damage to the mangrove community with a view to either eliminating these impacts at

Green Island or significantly reducing them.

7.2 Water Quality

Details should include:

- a detailed assessment of the likely effects on water quality of dredging, and
- impacts of spillage of fuel and other hazardous substances and the potential for water quality deterioration due to discharge of bilge water and other wastes.

7.3 Social, Cultural and Economic Impacts

This section will discuss the social, cultural and economic impacts of the proposal. Matters to be included are:

- effects on any areas of cultural significance for both European and Aboriginal and Islander people, which are identified through both anthropological and archaeological studies in conjunction with the relevant communities;
- effects of the proposed development on commercial and recreational fishers of the area. This should include an economic analysis of the value of the commercial and recreational fishing based on or resulting from habitats around Green Island including sand and mud flats, corals, coral rubble and marine plants. Evidence from available literature of any changes to recreational and commercial fishing in Moreton Bay which have occurred as a result of coral dredging in other parts of the Bay particularly around Mud and St. Helena Islands should be provided;
- effects on the current use of the site areas by members of the public including public access to the foreshores of Green Island and on any established moorings in the vicinity of the proposed dredging works;
- visual and aesthetic impacts;
- effects of the proposal in relation to the Moreton Bay Strategic Plan and proposed Moreton Bay Marine Park;

Summarise critical costs and benefits of the proposal and present a balanced overview of its net impact.

7.4 Transportation

The Impact Assessment Study should examine the impacts of transporting the dredged material from Green Island to Darra or other location, including the arrangement for the discharge at Seventeen Mile Rocks.

8. ENVIRONMENTAL MANAGEMENT AND MONITORING

Detail environmental safeguards and describe proposed management arrangements to cover establishment and operational phases. This should incorporate a summary of measures proposed in Section 7. The section should also describe all monitoring programs:

- to ensure safeguards and management plans are being effectively applied;
- to identify any unpredicted impacts requiring remedial measures; and
- to measure any differences between predicted and actual impacts.

References should be made to relevant legislation and standards.

8.1 Draft Environmental Management Plan

This plan should include safeguards:

- to minimise noise, turbidity, erosion, water pollution, sediments, etc;
- to rehabilitate any areas disturbed as a result of the proposal including total removal of infrastructure and equipment e.g. piles, cables, anchors etc.;
- to provide for appropriate management of waste and accidental spillage;
- to ensure employees and construction managers understand their environmental protection obligations, eg. codes of environmental conduct; and
- to ensure maintenance of navigation aids;
- to ensure continued navigable access through relevant sections of the licence areas for members of the public and other users of Moreton Bay.

and detail

- pollution control measures (such as screens to reduce turbidity) and waste management; and oil spill contingency plans; and
- emergency/accident management (equipment failure, fire, explosion, cyclones), contingency plans including communication and staff responsibilities.

The plan should incorporate measures to:

- maximise protection of the more significant areas;
- protect existing flora and fauna and provide habitats suitable for recolonization of impacted areas by endemic fauna and flora after the completion of the extractive process; and
- ensure the recreational and aesthetic values of the area are maintained to the greatest possible extent during the establishment, operation and post extraction phases of the project.

8.2 Monitoring

Details should include:

- programs/procedures to monitor establishment and operational phases;
- monitoring of coastal changes, which may necessitate aerial photography and foreshore surveys;
- procedures for reporting on monitoring programs; and
- responsibility and funding for the monitoring program.

9. APPROVALS

The study should identify all agencies from which approvals under legislation are required and the nature of such approvals. This should cover the development, operational and post-operational phases.

10. PUBLIC CONSULTATION

Consultation shall be carried out with the major interest groups in Appendix B.

Written comments (suitably referenced, eg., author, date, organisation) provided by each organisation consulted or an agreed-to summary of the consultation with each body must be incorporated in the study report.

In addition, the Developer shall undertake general public consultation. This shall be done by lodging a Public Notice in the *Courier Mail* which indicates that individuals or groups may lodge comments on the proposal as part of Impact Assessment Study procedure. The Developer shall prepare a brief statement on the proposal which can be sent to individuals or groups wishing to comment. A summary of the results of public consultations, including a breakdown of reasons for and against the proposal, shall be included in the final Impact Assessment Study report.

11. REFERENCES

Cite any sources of information used in preparing the document. If these sources are not publicly available, this should be stated.

Released Under the Official Information Act

APPENDIX A. ADVISORY BODIES

Queensland Department of Premier, Economic and Trade Development

Queensland Department of Environment and Heritage (Divisions of Environment and Conservation)

Queensland Department of Transport (Marine and Ports Division)

Queensland Department of Housing and Local Government (Planning Services)

Port of Brisbane Authority

Department of Family Services and Aboriginal and Islander Affairs

Queensland Museum

Queensland Fish Management Authority

Brisbane City Council

Queensland Department of Business, Industry and Regional Development

APPENDIX B. ORGANISATIONS TO BE CONSULTED

Queensland Commercial Fishermen's Organisation

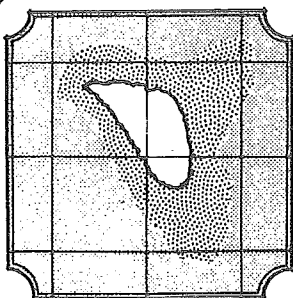
Queensland Sport and Recreational Fishing Council

Australian Littoral Society

Moreton Bay Trailer Boat Club

Queensland Yacht Squadron

Queensland Ornithological Society



GREEN ISLAND CORAL LIMESTONE DREDGING IMPACT ASSESSMENT STUDY

NEWSLETTER

April 1993

RD 7/5/93
Number 1

Welcome to the first issue of the Green Island Impact Assessment Study Newsletter. The newsletter is published to inform the community about the progress of the Impact Assessment Study. The study is being undertaken by consultants Connell Wagner, Fisheries Research Consultants, Bio-Track and Planning Workshop, to assess the environmental impacts of coral limestone dredging on the eastern side of Green Island.

WHY THE STUDY?

Queensland Cement Limited (QCL) has commissioned an Impact Assessment Study (IAS) to be carried out for a proposal to dredge coral limestone from the eastern side of Green Island in Moreton Bay. The IAS has been requested by the State Government prior to a decision being made on the inclusion of the eastern side of Green Island into an existing coral extraction licence.

The IAS is to be carried out by independent consultants, and will include a community consultation programme which will allow interested individuals and organisations to put forward their views on the proposal.

The company has been dredging coral limestone in Moreton Bay since 1936. The extracted material is dead coral deposited over many years which now forms an extensive limestone resource within the Bay.

The proposal to extend dredging to Green Island is part of a long-term economic plan for QCL's cement manufacturing plant at Darra in western Brisbane. The proposal is considered necessary by QCL to extend the life of the Darra plant beyond 10 years. The Darra plant employs 100 people directly and many others indirectly.

COMMUNITY CONSULTATION

A community consultation programme is being undertaken by consultants Planning Workshop. The programme aims to inform the community about the IAS and to seek comments on aspects of the proposal.

Written submissions are now sought from interested persons and groups and a contact list is being established to maintain community contact during the preparation of the IAS. Further newsletters will be sent to people and groups on the contact list.

Study team members are available to answer enquiries from the public. The study team contact numbers are:

Telephone: (07) 832 4059

Facsimile: (07) 832 4909

Written submissions can either be faxed to the above number or sent to:

**Green Island Coral Limestone
Dredging IAS
c/- Planning Workshop
163 Wharf Street
Spring Hill QLD 4000**

INTRODUCING THE IAS CONSULTANTS

The Impact Assessment Study team is led by the principal consultants Connell Wagner, Consulting Engineers. Sub-consultants to Connell Wagner are:

- * Fisheries Research Consultants - Marine Biologists
- * Bio-Track - Ecological Consultants
- * Planning Workshop - Planning Consultants.

The IAS study team was selected by QCL in consultation with the Department of Primary Industries from a field of five consultancy teams. The main criteria for selection was the technical expertise of the personnel involved.

CONNELL WAGNER is one of Australia's largest multi-disciplinary engineering firms. The firm was established over 50 years ago and has developed particular expertise in coastal hydraulics, dredge planning, dredge monitoring and environmental assessment.

In recent years Connell Wagner have undertaken studies in the ports of Sydney (Port Botany), Cairns and Weipa into the environmental effects of dredging including the development of state-of-the-art techniques for environmental monitoring.

As principal consultant, Connell Wagner will take overall responsibility for the preparation of the IAS and for specialist input on dredge operations, coastal hydraulics and environmental management.

FISHERIES RESEARCH CONSULTANTS was established in 1984 to provide services in applied scientific and technical research in the aquatic environment including marine biology, fisheries and aquaculture.

Led by Dr John Thorogood, the firm will be responsible for studies of marine fauna and flora including corals, seagrass, fish, and inter-tidal communities (including mangroves).

BIO-TRACK is a specialist environmental consulting firm with particular expertise in environmental modelling, water quality, soils and vegetation assessment.

Bio-Track will be responsible for studies of geology, landform, geomorphology, bathymetry, climate, terrestrial biology and water quality.

PLANNING WORKSHOP is a consultancy of professional urban and regional planners, economists and social planners, environmental planners and statutory planners.

Planning Workshop will be responsible for the socio-economic assessment of the proposal and will conduct the community consultation programme.

Under the management and direction of Connell Wagner the study team will undertake the necessary investigations to assess the impacts of the proposal and report to the Department of Primary Industries on the IAS findings.

ABOUT THE PROJECT

In 1991, QCL voluntarily relinquished rights to dredge large areas around Wellington Point, Raby Bay and Cleveland Point and their licences were amalgamated to cover areas around Mud Island and the eastern side of St. Helena Island.

At this time QCL also requested the eastern side of Green Island be included in the licence areas. The Government granted the licences for Mud Island and St Helena Island but requested an IAS be conducted into Green Island before they would consider including this area in the licence.

The coral limestone in Moreton Bay is believed to be the only economic source of calcium carbonate available in South-East Queensland. Calcium carbonate is the basic raw material used in the manufacture of cement at the Darra works. This resource has been used in the building and construction industry within Queensland for more than fifty years.

One of the first major projects to rely on cement manufactured by coral limestone was the southern pier of the original Hornibrook Highway linking Redcliffe to Brighton. Today cement produced from coral limestone at Darra supplies some 30 - 40% of Brisbane's cement market including the majority of bagged cement.

QCL's current Moreton Bay operations are administered through a licence to take coral limestone under Section 35 of the Fisheries Act. Administration of this legislation is the responsibility of the Department of Primary Industries. The existing operations have been incorporated in the Moreton Bay Strategic Plan.

TERMS OF REFERENCE

Terms of Reference for the IAS have been prepared by the Department of Primary Industries after consultation with ten government Advisory Bodies including the Department of Environment and Heritage and Brisbane City Council.

STUDY PROCESS

The study will be undertaken in three main stages being:

- * review of project details and feasibility;
- * an analysis of the existing environment; and
- * an assessment of impacts of the project on the existing environment.

The study is an assessment of both the beneficial and detrimental environmental effects of the proposal. The study team will carry out the assessment guided by the findings of the specialist technical investigations.

The IAS will be prepared in accordance with Terms of Reference issued by the Department of Primary Industries. It is anticipated that the study will take 5 - 6 months to complete.

The Terms of Reference set out the matters to be assessed in the conduct of the study and which are to be included in the IAS report. The Terms of Reference serve as both a specification for the study and a detailed table of contents for the IAS report.

The Terms of Reference are:

Introductory information:

- * Details of the Developer
- * Objectives of the proposal
- * Scope of the proposal

Site Details

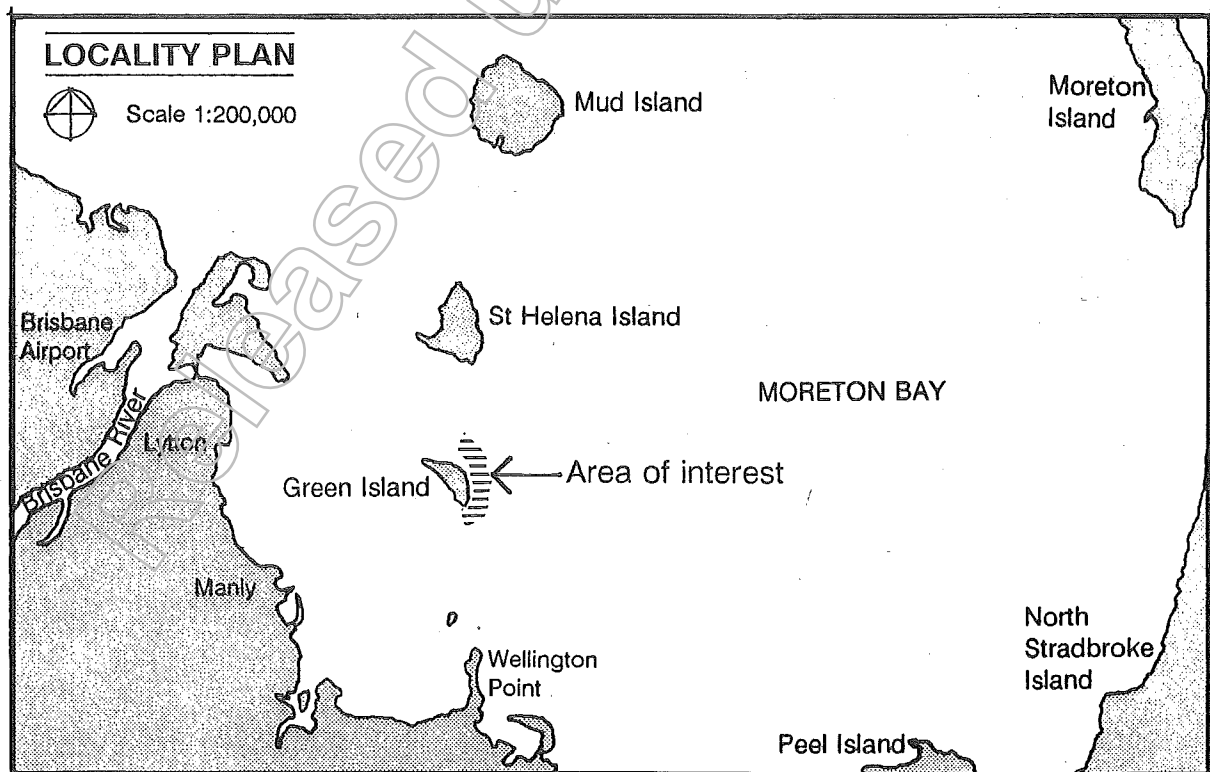
Details of the Proposed Development:

- * Design and establishment details
- * Facilities and on-site equipment
- * Coastal management

Alternatives for achieving project objectives

Project feasibility

continued /4



Existing Environment:

- * Geology and geomorphology
- * Marine hydrology and water and sediment hydraulics
- * Water quality
- * Climate
- * Marine flora, fauna and ecology
- * Social and economic significance

Impact Assessment:

- * Biophysical environment
- * Water quality
- * Social, cultural and economic impacts
- * Transportation impacts

Environmental management and monitoring:

- * Draft environmental management plan
- * Monitoring

Approvals required

Public consultation details

The study is to be documented in an IAS report containing a summary, references, plans and illustrations.

CONSULTATION DETAILS

There are several ways you can have an input to the study.

Register on the Contact List

Members of the public and interest groups are invited to return the coupon below to be placed on a mailing list to receive copies of newsletters or any other notices which may be distributed relating to the study.

Phone the Study Team

Members of the Study Team are available during business hours to discuss the proposal and record your attitudes and views. Please phone us on:

(07) 832 4059

Make a Written Submission

Public notices have recently been appearing in local newspapers and the Courier Mail calling for written submissions on the IAS. In your submission you may wish to address:

- * the need for the resource
- * alternative sources of limestone
- * dredging impacts
- * issues to be addressed in the IAS
- * your attitudes to the proposal.

Submissions should be sent/faxed to:

**Green Island Coral Limestone
Dredging IAS
c/- Planning Workshop
163 Wharf Street
Spring Hill QLD 4000**

Facsimile: (07) 832 4909

Contact with Community Groups

The Study Team is seeking input from community groups and organisations with an interest in the project including recreational groups, environmental groups, progress associations and scientific groups.

A separate contact list is being prepared of these groups and submissions are invited on the proposal and relevant issues.

If you would like your group to be involved please phone the Study Team on (07) 832 4059.

To: Green Island Coral Limestone Dredging Impact Assessment Study
 Post to: c/- Planning Workshop, 163 Wharf Street, Spring Hill, Qld, 4000.
 Fax to: (07) 832 4909

Yes, please place me on the "Contact List"

Mr/Mrs/Miss/Ms (First Name) _____ (Surname) _____

Organisation (if applicable) _____

Address _____

Post Code _____ Telephone (optional) _____

Printed on recycled paper

Our Reference: 92/FBR 03X.002 (JPG:LJW)
Your Reference:
Contact: Dr John Glaister [Ph. (07) 239 3422]

| DEPARTMENT OF THE PREMIER | |
|---|-----------------------------|
| RECEIVED 21 SEP 1992 A.M. P.M. | FILE No. F180 |
| PROCESSED BY | ACTION OFFICER J. HILTON |



16 September 1992

Director-General
Department of Premier
Economic and Trade Development
PO Box 185
NORTH QUAY Q 4002

Dear Sir,

**GUIDELINES - IMPACT STUDY ASSESSMENT STUDY, GREEN ISLAND
MORETON BAY**

Please find enclosed the Guidelines for an Impact Assessment Study for the proposed coral dredging by Queensland Cement Limited at Green Island, Moreton Bay.

These Guidelines have been developed following consultation with all Advisory Bodies.

I wish to thank you for your contributions and comments in the preparation of these Guidelines. I will keep you informed of the progress of the Impact Assessment Study and seek your further input in due course.

Yours faithfully,

(P.J. Neville)
GENERAL MANAGER
FISHERIES DIVISION

Noted
Incorporates suggested
changes from DPETD.
Draft IAS expected
July '93.
CME 7/10

**PROPOSAL TO DREDGE CORAL LIMESTONE FROM THE EASTERN SIDE OF
GREEN ISLAND IN MORETON BAY**

by Queensland Cement Limited

Guidelines for an Impact Assessment Study

**Prepared by Queensland Department of Primary Industries, Fisheries Division,
July 1992**

amended.

Released under RTI - DPC

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PRELIMINARIES

Background

Queensland Cement Limited have sought approval to dredge coral limestone from the eastern side of Green Island in Moreton Bay.

The primary approval necessary for the proposal is a Licence to take Coral, Coral Limestone etc. issued under Section 35 of the Fisheries Act. Administration of this legislation is the responsibility of the Department of Primary Industries.

It has been determined by the Department of Primary Industries that this proposal represents a major development and that a comprehensive Impact Assessment Study will be undertaken in relation to this proposal. Such a study would need to be completed before the issue of any approvals may be considered.

The Impact Assessment of this proposal will be dealt with under the provisions of Section 29 of the State Development and Public Works Organisation Act. The Queensland Government has decided that Queensland Cement Limited shall have until September 1993 to complete all procedures in relation to applications for this proposal. To meet this time constraint, the draft Impact Assessment Study report shall be prepared by 30 June, 1993 so that the final report can be prepared by 30 August, 1993 after review by the Advisory Bodies.

Study Objectives and Obligations

The Impact Assessment Study shall be undertaken in accordance with the procedure outlined in the publication "Impact Assessment in Queensland" and with these terms of reference.

Format and Style

The report should be written in clear, concise and analytical style that is easily understood by the general reader.

The Guidelines^{which} set out the matters and things to be assessed in the conduct of the Impact Assessment Study must be included in the report. The Impact Assessment Study should include references and a list of individuals and organisations consulted, with their contribution appropriately referenced.

Results of studies and detailed comments resulting from consultations, should be included as appendices, as should technical information. Relevant plans and illustrations should also be included.

The report should be produced on A4 size paper capable of being photocopied with maps/diagrams also A4 or A3.

Status of Information

After completion of the Impact Assessment Study, the report or a summary of the report shall be considered for public release by the Department of Primary Industries following advice from the Advisory Bodies and Queensland Cement Limited.

Should the Developer require any information to remain confidential, this should be clearly indicated and provided separately. The reasons for maintaining confidentiality should be given by the Developer. The Department of Primary Industries shall be responsible for maintaining confidentiality as appropriate taking into account both the commercial interests of the Developer and the public interest.

Additional Information

An Authority from which approval is required may request additional information.

The Developer shall provide 50 copies of the Impact Assessment Study report to :

The Director-General
Department of Primary Industries
GPO Box 46
Brisbane Qld 4001

ATTN: General Manager, Fisheries Division.

Consultant

The engagement of a consultant to carry out the Impact Assessment Study shall be determined by the Developer and Department of Primary Industries. The choice of the consultant shall be primarily based on the expertise of the personnel involved.

The Developer should include in the Impact Assessment Study report, the names and curricula vitae of all personnel involved and should, where possible, make use of expertise available in undertaking the study.

SUMMARY

The Impact Assessment Study Report is to include a concise summary (not more than five pages) of the matters discussed in the main body of the document, to allow the reader to obtain quickly a clear understanding of the proposal and its impacts. The summary should include:

- the title of the proposal,
- the name and address of the Developer,
- a statement of the objectives of the proposal,
- discussion of the background to and need for the proposal ,
- discussion of the alternatives considered to meet the given objectives and reasons for selecting the preferred option,
- description of the proposal,
- description of the existing environment (including social and economic aspects),
- a description of the principal environmental (including social and economic aspects) impacts (both adverse and beneficial),
- a summary of the results of public consultation, and
- a statement of the environmental protection measures and safeguards, standards and monitoring procedures proposed.

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MAIN REPORT

NOTE: Information should be illustrated, mapped or tabulated where appropriate and descriptive material should be concise.

1. INTRODUCTION

1.1 The Developer

- Title of Proposed Development
- The Developer and Corporate Structure

1.2 Objectives

- Broad statement of objectives of the proposal.

1.3 Scope of the Proposal

Description should include:

- background to the proposal including the need for the extractive industry, the economic and historic background of the Developers, alternatives to dredging of Green Island considered and the reasons for choosing the preferred option, history of previous similar operations including discussion of environmental management undertaken; and
- envisaged time for the establishment phase of the proposal, project life, and anticipated establishment costs.

2. SITE DETAILS

Site details should include:

- location, including proposed Moreton Bay zoning arrangements in the Draft Strategic Plan;
- detailed survey to identify Mean Low Water Spring, Mean High Water Spring Tide and Highest Astronomical Tide;
- current usage of the subject and immediately adjacent land and waters;
- present tenures;
- Commonwealth, State and Local Government legislation applying to the development, including the status of any applications for approval, and approvals required for the project; and
- the width and boundary of any erosion prone areas on the existing adjacent coastline.

3. PROPOSED DEVELOPMENT

3.1 Design and Establishment Details

All components of the proposal at Green Island should be described in detail including:

- detailed concept and staging plans, including maps;
- dredging requirements and specifications, including plans showing the mean low water mark and its relationship to other data, length and cross-section of proposed dredging works, dredging quantities, nature of spoil, containment/disposal of spoil and wastes, dredging methods, mooring points and methods, geological constraints, erosion protection arrangements, and wave penetration studies;
- hydrographic surveys of seabed soundings in the licence area (to standards, specifications and frequencies to be determined by the Regional Harbour Master, Brisbane);
- quantities of materials dredged, transport routes and methods;
- the areas and relative proportions of the coral and coral limestone around Green Island (subtidal and intertidal) and the corresponding percentage (as an area and a volume) of the eastern side of Green Island to be removed;
- the percentage of coral /coral limestone in Moreton Bay (as an area and a volume) which has been removed previously by QCL operations and will be removed by the current proposal (a graphic representation is required);
- the final bottom topography to the east of Green Island after extraction of coral limestone is completed (a graphic representation is required);
- storage areas and facilities if required, and the nature of the items to be stored and/or uses;
- the workforce;
- prospects or proposals for future expansion;
- general operation of the dredging facilities including activities, services, hours and duration of daily and weekly operations and proposed management;
- details of any structures to be placed in the dredged area.

3.2 Facilities and On-Site Equipment

All facilities should be described including:

- navigational safety maintenance requirements;
- proposed navigation aids in the vicinity;
- lighting associated with dredging operations (intensity, hours of operation etc);

3.3 Coastal Management

Investigate and provide details on the effect of the proposal on:

- coastal management or coastal processes, particularly in regard to wave climate, water levels, currents and sediment/coral rubble movement (both longshore and onshore/offshore), including the possible impacts of the Greenhouse Effect on sea level rise and climate change;
- stability of the shoreline under normal and storm conditions.

4. ALTERNATIVES

Provide a description of feasible and prudent alternatives for achieving the objectives of the proposal. This should include an accurate delineation of the resource requirements of the proposal in terms of both the Green Island coral reserves and alternative sources of limestone. The description should discuss alternative limestone resources and alternative sources of cement for the Queensland Building Industry (in SE Queensland, Queensland, interstate and internationally).

The alternatives should be discussed in sufficient detail to make clear the reasons for preferring certain options. Perceived consequences of each alternative with regard to impacts on transport routes, cost, employment and environmental impacts should also be summarised.

5. PROJECT FEASIBILITY AND ARRANGEMENTS

Indicate the prospects for financial success of the proposal. The judgmental criterion to be adopted is that there must be an adequate demand for the proposed facilities at a price which will cover all operating and fixed expenses, service debt and provide a satisfactory return on equity investment.

Such an analysis is required to ensure against project failure and abandonment, and unwise use of the State's important coastal resources.

An assessment should be made of the consequences of the Developer not obtaining approval to dredge Green Island as well as a description of the Developer's plans after the resource is fully utilised.

The study should include the following:

- information on the ownership, capital structure and history of the Developer's company or any relevant associates should be provided;
- identify present and future demand as well as the present and likely future supply of competitive facilities in the region;
- the special advantages and disadvantages of the site compared with others in the region should be identified.

6. EXISTING ENVIRONMENT

Describe the existing environment both within the preferred site and in the surrounding area, covering the following aspects to the extent necessary to serve as a baseline against which the impacts of the proposal can be assessed. Trends should be discussed where appropriate.

6.1 Physical Environment

Geology and Geomorphology

Provide a description of the geology and geomorphology of the island and surrounding areas with particular emphasis on the following:

- the geology of the island in terms of dominant rock types and the regional context;
- the elevation, topography and landforms of the island including slope and terrain components;
- a general description of the geomorphology of Moreton Bay and associated Islands which should include a cross sectional representation of Moreton Bay;
- the nature, periods, timing and rates of coral growth in Moreton Bay and for Green Island in particular, with respect to climatic and eustatic sea level variations;
- details of the underlying geology formation, position and significance of Green Island and its associated coral formations in the context of Moreton Bay;
- details of the dimensions and nature of the Green Island supra, inter and subtidal zones;
- a series of profiles of the island and foreshores, showing cross-sections of the geology and sedimentology prior to extraction, including proportions and distribution of different supra, inter and subtidal zones;
- the composition, extent and area of the terrestrial island; and
- a summary of interesting geomorphological features and any associated biological importance.

Marine Hydrology and Water and Sediment Hydraulics

Provide an accurate definition of the existing patterns of tidal and seasonal current velocity and directions (reference should be made to existing studies). Appropriate diagrams and models detailing incident wave direction, prevailing winds, currents, substrate profiles detailing supra, inter and subtidal zones should be supplied with reference to:

- bathymetry;
- current velocity and directions at different tidal states;
- tidal ranges with particular reference to tidal inundation (frequency, range);
- steady state conditions (prevailing winds) major weather events (floods/cyclones/storms);

Water Quality

Provide an assessment of existing water quality in the waters likely to be affected by the proposal. Water quality should be assessed in terms of physical and biological characteristics. Seasonal variations should be described.

Recommended parameters are:

- current velocity and direction at different tidal states;
- tide heights;
- bathymetry;
- salinity;
- nutrient status (organic/inorganic);
- pH;
- Dissolved Oxygen
- turbidity; and
- biological characteristics eg., BOD.

Reference should be made to water quality variations and the duration of such variations, in particular:

- diurnal, tidal and seasonal variations; major weather events (floods/cyclones/storms); steady state conditions (prevailing winds); coincidence of the above factors.

The frequency and extent of any freshwater impacts from flooding (eg. Brisbane River, Lota Creek) if any.

Climate

Provide a description of the climate of Green Island, in particular the amount, intensity and annual distribution of:

- rainfall intensity and volume;
- wind velocity, duration, and prevailing direction;
- incidence and intensity of storms (including cyclones);
- temperature;
- evaporation characteristics; and
- humidity.

6.2 Marine Flora, Fauna and Ecological Relationships

Describe the flora and fauna present or likely to be present in the area, including:

- major species and abundance of marine flora and communities present in and immediately adjacent to the site, including seagrasses, mangroves and macroalgae;
- species diversity and abundance of marine animals, including birds, reptiles, fish, and benthic organisms;
- extent and importance of intertidal and marine communities (including transient fish species and invertebrates);
- the existing extent, distribution, morphology (plate-like, branching, massive, encrusting or soft) and composition of coral species (living) surrounding Green Island. A distribution map should be provided;
- evidence from available literature of any changes in species diversity and abundance in the last 30 years of both marine flora and fauna;
- any rare or endangered species, their habitat requirements and sensitivity to changes;
- important ecological relationships/processes, with consideration in the context of surrounding waters;
- indicate how well represented these terrestrial and marine plant and animal communities are in Moreton Bay today and how well represented they were in the past;
- use of the area by migratory species;
- movement corridors and barriers to movement; and
- existing commercial, recreational, educational and aesthetic uses of the biota.

These descriptions should be graphically supported by maps, aerial photographs, photographs and diagrams.

6.3 Existing Social and Economic significance

Provide an outline of the social and economic activities occurring in Moreton Bay which are likely to be affected as a result of the proposal. This must include identification of existing users of Green Island and its environs including:

- the number and distribution of commercial fishing operations using the Island and environs;
- the nature, composition and value of the commercial fish catch;
- the nature, composition and value of the recreational fish catch;
- the number of people and nature of other industries directly or indirectly dependent on Green Island;
- the potential for the above factors to increase;
- the number of employees of QCL directly dependent on existing production, those directly dependent on the approval of the proposal and those dependent on secondary employment;
- areas of cultural significance to European and Aboriginal & Islander people, which are identified through both anthropological and archaeological studies in

conjunction with the relevant communities.

Provide a summary of the above points to detail the existing and potential economic benefits provided by Green Island and its environs and compare and contrast these with the benefits of allowing the proposal to proceed.

7. IMPACTS

This section should clearly identify the principal impacts expected to result from the development. The reliability and validity of predictions should be discussed.

Direct and indirect, temporary and irreversible, adverse and beneficial effects should be described and, where possible, quantified.

Actions proposed to mitigate or accommodate these impacts should be explained.

Types of impacts which should be considered are listed below.

7.1 Biophysical Environment

Details should include:

- impacts due to changes to coastal processes or coastal management on the coastline as a result of the proposal, particularly impacts on foreshore and near-shore sand and coral rubble movements;
- extent of loss of important animal/plant communities and implications of this;
- any other impacts on flora and fauna and the marine ecosystem;
- effect of changes in the balance of mangrove plants and the need for adequate buffer areas between the proposal and any existing mangroves;
- impacts of dredging and operations including dispersion of resuspended solids, disposal of dredged materials and impacts on the marine environment of the area, including benthic species and any living corals and macroalgae in the area. In this respect it would be necessary to model plumes associated with the dredging and to identify related impacts.
- impacts of permanent changes to coastal and seabed morphology and coastal processes;
- impacts on the marine fauna, including changes in community structure, species presence/abundance as a result of the development;
- impacts on safe navigation with particular regard to existing and proposed navigation channels and any potential navigation hazards that may be created by the dredging operations;
- impacts of expected siltation/erosion, and the nature of siltation material; and
- diagrams of the cross sectional view of the mineral area at the conclusion of mining, and analysis of the effects of mining on the future geomorphology and ecology of Green Island.
- assess impacts of past and current dredging operations on Mud Island and St Helena Islands, particularly in relation to loss of fishery values and damage to the mangrove community with a view to either eliminating these impacts at

Green Island or significantly reducing them.

7.2 Water Quality

Details should include:

- a detailed assessment of the likely effects on water quality of dredging; and
- impacts of spillage of fuel and other hazardous substances and the potential for water quality deterioration due to discharge of bilge water and other wastes.

7.3 Social, Cultural and Economic Impacts

This section will discuss the social, cultural and economic impacts of the proposal. Matters to be included are:

- effects on any areas of cultural significance for both European and Aboriginal and Islander people, which are identified through both anthropological and archaeological studies in conjunction with the relevant communities;
- effects of the proposed development on commercial and recreational fishers of the area. This should include an economic analysis of the value of the commercial and recreational fishing based on or resulting from habitats around Green Island including sand and mud flats, corals, coral rubble and marine plants. Evidence from available literature of any changes to recreational and commercial fishing in Moreton Bay which have occurred as a result of coral dredging in other parts of the Bay particularly around Mud and St. Helena Islands should be provided;
- effects on the current use of the site areas by members of the public including public access to the foreshores of Green Island and on any established moorings in the vicinity of the proposed dredging works;
- visual and aesthetic impacts;
- effects of the proposal in relation to the Moreton Bay Strategic Plan and proposed Moreton Bay Marine Park;

Summarise critical costs and benefits of the proposal and present a balanced overview of its net impact.

7.4 Transportation

The Impact Assessment Study should examine the impacts of transporting the dredged material from Green Island to Darra or other location, including the arrangement for the discharge at Seventeen Mile Rocks.

8. ENVIRONMENTAL MANAGEMENT AND MONITORING

Detail environmental safeguards and describe proposed management arrangements to cover establishment and operational phases. This should incorporate a summary of measures proposed in Section 7. The section should also describe all monitoring programs:

- to ensure safeguards and management plans are being effectively applied;
- to identify any unpredicted impacts requiring remedial measures; and
- to measure any differences between predicted and actual impacts.

References should be made to relevant legislation and standards.

8.1 Draft Environmental Management Plan

This plan should include safeguards:

- to minimise noise, turbidity, erosion, water pollution, sediments, etc;
- to rehabilitate any areas disturbed as a result of the proposal including total removal of infrastructure and equipment e.g. piles, cables, anchors etc.;
- to provide for appropriate management of waste and accidental spillage;
- to ensure employees and construction managers understand their environmental protection obligations, eg. codes of environmental conduct; and
- to ensure maintenance of navigation aids;
- to ensure continued navigable access through relevant sections of the licence areas for members of the public and other users of Moreton Bay.

and detail

- pollution control measures (such as screens to reduce turbidity) and waste management; and oil spill contingency plans; and
- emergency/accident management (equipment failure, fire, explosion, cyclones), contingency plans including communication and staff responsibilities.

The plan should incorporate measures to:

- maximise protection of the more significant areas;
- protect existing flora and fauna and provide habitats suitable for recolonization of impacted areas by endemic fauna and flora after the completion of the extractive process; and
- ensure the recreational and aesthetic values of the area are maintained to the greatest possible extent during the establishment, operation and post extraction phases of the project.

8.2 Monitoring

Details should include:

- programs/procedures to monitor establishment and operational phases;
- monitoring of coastal changes, which may necessitate aerial photography and foreshore surveys;
- procedures for reporting on monitoring programs; and
- responsibility and funding for the monitoring program.

9. APPROVALS

The study should identify all agencies from which approvals under legislation are required and the nature of such approvals. This should cover the development, operational and post-operational phases.

10. PUBLIC CONSULTATION

Consultation shall be carried out with the major interest groups in Appendix B.

Written comments (suitably referenced, eg., author, date, organisation) provided by each organisation consulted or an agreed-to summary of the consultation with each body must be incorporated in the study report.

In addition, the Developer shall undertake general public consultation. This shall be done by lodging a Public Notice in the *Courier Mail* which indicates that individuals or groups may lodge comments on the proposal as part of Impact Assessment Study procedure. The Developer shall prepare a brief statement on the proposal which can be sent to individuals or groups wishing to comment. A summary of the results of public consultations, including a breakdown of reasons for and against the proposal, shall be included in the final Impact Assessment Study report.

11. REFERENCES

Cite any sources of information used in preparing the document. If these sources are not publicly available, this should be stated.

Released Under the OIA / DPC

APPENDIX A. ADVISORY BODIES

Queensland Department of Premier, Economic and Trade Development

Queensland Department of Environment and Heritage (Divisions of Environment and Conservation)

Queensland Department of Transport (Marine and Ports Division)

Queensland Department of Housing and Local Government (Planning Services)

Port of Brisbane Authority

Department of Family Services and Aboriginal and Islander Affairs

Queensland Museum

Queensland Fish Management Authority

Brisbane City Council

Queensland Department of Business, Industry and Regional Development

APPENDIX B. ORGANISATIONS TO BE CONSULTED

Queensland Commercial Fishermen's Organisation

Queensland Sport and Recreational Fishing Council

Australian Littoral Society

Moreton Bay Trailer Boat Club

Queensland Yacht Squadron

Queensland Ornithological Society

Please Quote
Reference: F180/CC:DJK

28 AUG 1992

Mr. J.G. Miller,
Director-General,
Department of Primary Industries,
80 Ann Street,
BRISBANE. Q 4000

Attention: Dr. Barry Pollock

Dear Sir,

**DRAFT GUIDELINES - IMPACT ASSESSMENT STUDY,
GREEN ISLAND, MORETON BAY**

I refer to your letter of 14th August, 1992, and the enclosed draft guidelines for the above project.

The content of the Guidelines is considered appropriate and they are acceptable in general to this Department. It is suggested, however, that the following comments be considered in finalising the guidelines.

Page 1 Background

The intent of the second sentence of the fourth paragraph is unclear. Is the IAS to be completed by September, 1993 or are there additional requirements to be completed by this date? If it is the intention that the IAS be completed by this time, it is suggested that you negotiate a timetable with the company for submission and review of the study reports, and advise the advisory bodies accordingly.

Page 1 Format and Style

In the second paragraph, two points need clarification:

Does the phrase "Terms of Reference" refer to the Guidelines? (Up to this point only Guidelines has been used.)

Does "It" (starting the second sentence) refer to the IAS? First reading indicates that it refers to the "Terms of Reference".

Page 3 Summary

To be consistent with later requirements (Sections 6.3 and 7.3) the following amendments to the dot points are suggested:

- a description of existing environment (including social and economic aspects),
- a description of the principal environmental (including social and economic) impacts (both adverse and beneficial),

Page 6 Section 5

In the third paragraph there is a typographical error - Deve(r)loper.

Page 7 Section 6.1

In the 4th dot point there is a typographical error - va(n)ations.

Page 7 Section 6.1 Marine Hydrology & Water & Sediment Hydraulics

In the general text there is an unnecessary fullstop after zones.

Page 8 Note:

Is this note necessary as it is understood that predevelopment water is available for testing?

Pages 7 & 8

There appears to be some repetition of information required in the Climate and Marine Hydrology and Water & Sediment Hydraulics Sections.

Pages 9 & 11 Sections 6.3 and 7.3

There is a requirement in Section 7.3 (P.11) to discuss social, cultural and economic impacts on - "*any areas of cultural significance for both European and Aboriginal and Islander people...*" yet there is no requirement under Section 6.3 (P.9) to identify existing areas of cultural significance to European and Aboriginal and Islander people.

This could be made consistent by adding the following dot point to Section 6.3 -

- *areas of cultural significance to European and Aboriginal & Islander people, which are identified through both anthropological and archaeological studies in conjunction with the relevant communities.*

If you have any enquiries regarding these comments, please contact Cecily Coleman (2246079).

Yours faithfully,



Neil W. Lawson,
Executive Director - Economic Development.

28/8
Cme 28/8.

Released under RTI-DPO

Our Reference: 92/FBR 03X.002 (BP:LW)
Your Reference:
Contact: Dr Barry Pollock [Ph. (07) 239 3418]



14 August 1992



Director-General
Department of Premier
Economic and Trade Development
PO Box 185
NORTH QUAY Q 4002

| | |
|----------------------------------|------------------------|
| DEPARTMENT OF THE PREMIER | |
| RECEIVED | FILE No. |
| 1/1 | (A.M.) P.M. F180 |
| PROCESSED BY | ACTION OFFICER |
| | J. Finston |

Dear Sir,


DRAFT GUIDELINES - IMPACT STUDY ASSESSMENT STUDY, GREEN ISLAND MORETON BAY

Please find attached the draft Guidelines for the Impact Assessment Study for the proposed coral dredging by Queensland Cement Limited at Green Island, Moreton Island.

These draft Guidelines have been assembled following input from the Advisor Bodies listed in Appendix A.

I wish to thank all the Advisory Bodies for their contributions to the Guidelines. If you wish to suggest any changes or additions to the Guidelines please advise before Friday 28 August. It is intended to send the Guidelines to Queensland Cement Limited at the end of August 1992 so that they can proceed with the Impact Assessment Study. The contact officer is Dr Barry Pollock (239 3418).

Yours faithfully,



(P.J. Neville)
GENERAL MANAGER
FISHERIES DIVISION

FAX NUMBER

229 8146

DRAFT

**PROPOSAL TO DREDGE CORAL LIMESTONE FROM THE EASTERN SIDE OF
GREEN ISLAND IN MORETON BAY**

by Queensland Cement Limited

Guidelines for an Impact Assessment Study

**Prepared by Queensland Department of Primary Industries, Fisheries Division,
July 1992**

DRAFT

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PRELIMINARIES

Background

Queensland Cement Limited have sought approval to dredge coral limestone from the eastern side of Green Island in Moreton Bay.

The primary approval necessary for the proposal is a Licence to take Coral, Coral Limestone etc. issued under Section 35 of the Fisheries Act. Administration of this legislation is the responsibility of the Department of Primary Industries.

It has been determined by the Department of Primary Industries that this proposal represents a major development and that a comprehensive Impact Assessment Study will be undertaken in relation to this proposal. Such a study would need to be completed before the issue of any approvals may be considered.

The Impact Assessment of this proposal will be dealt with under the provisions of Section 29 of the State Development and Public Works Organisation Act. The Queensland Government has decided that Queensland Cement Limited shall have until September 1993 to complete all procedures in relation to applications for this proposal.

This places a commitment on the Advisory Bodies and Govt. to meet this deadline also

Study Objectives and Obligations

The IAS shall be undertaken in accordance with the procedure outlined in the publication "Impact Assessment in Queensland" and with these terms of reference.

Format and Style

The report should be written in clear, concise and analytical style that is easily understood by the general reader.

are the Guidelines the ToP R
The Terms of Reference which set out the matters and things to be assessed in the conduct of the Impact Assessment Study must be included in the report. *The MS* It should include references and a list of individuals and organisations consulted, with their contribution appropriately referenced.

Results of studies and detailed comments resulting from consultations, should be included as appendices, as should technical information. Relevant plans and illustrations should also be included.

The report should be produced on A4 size paper capable of being photocopied with maps/diagrams also A4 or A3.

Status of Information

After completion of the Impact Assessment Study, the report or a summary of the report shall be considered for public release by the Department of Primary Industries following advice from the Advisory Bodies and Queensland Cement Limited.

Should the Developer require any information to remain confidential, this should be clearly indicated and provided separately. The reasons for maintaining confidentiality should be given by the Developer. The Department of Primary Industries shall be responsible for maintaining confidentiality as appropriate taking into account both the commercial interests of the Developer and the public interest.

Additional Information

An Authority from which approval is required may request additional information.

The Developer shall provide 50 copies of the IAS report to :

The Director-General
Department of Primary Industries
GPO Box 46
Brisbane Qld 4001

ATTN: Mr P J Neville, General Manager, Fisheries Division.

Consultant

The engagement of a consultant to carry out the IAS shall be determined by the Developer and Department of Primary Industries. The choice of the consultant shall be primarily based on the expertise of the personnel involved.

The Developer should include in the IAS report, the names and curricula vitae of all personnel involved and should, where possible, make use of expertise available within Queensland in undertaking the study.

SUMMARY

The Impact Assessment Study Report is to include a concise summary (not more than five pages) of the matters discussed in the main body of the document, to allow the reader to obtain quickly a clear understanding of the proposal and its impacts. The summary should include:

- the title of the proposal,
- the name and address of the Developer,
- a statement of the objectives of the proposal,
- discussion of the background to and need for the proposal ,
- discussion of the alternatives considered to meet the given objectives and reasons for selecting the preferred option,
- description of the proposal,
- description of the existing environment, *(incl. social & economic)*
- a description of the principal environmental impacts (both adverse and beneficial),
- a summary of the results of public consultation, and
- a statement of the environmental protection measures and safeguards, standards and monitoring procedures proposed.

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MAIN REPORT

NOTE: Information should be illustrated, mapped or tabulated where appropriate and descriptive material should be concise.

1. INTRODUCTION

1.1 The Developer

- Title of Proposed Development
- The Developer and Corporate Structure

1.2 Objectives

- Broad statement of objectives of the proposal.

1.3 Scope of the Proposal

Description should include:

- background to the proposal including the need for the extractive industry, the economic and historic background of the Developers, alternatives to dredging of Green Island considered and the reasons for choosing the preferred option, history of previous similar operations including discussion of environmental management undertaken; and
- envisaged time for the establishment phase of the proposal, project life, and anticipated establishment costs.

2. SITE DETAILS

Site details should include:

- location, including proposed Moreton Bay zoning arrangements in the Draft Strategic Plan;
- detailed survey to identify Mean Low Water Spring, Mean High Water Spring Tide and Highest Astronomical Tide;
- current usage of the subject and immediately adjacent land and waters;
- present tenures;
- Commonwealth, State and Local Government legislation applying to the development, including the status of any applications for approval, and approvals required for the project; and
- the width and boundary of any erosion prone areas on the existing adjacent coastline.

3. PROPOSED DEVELOPMENT

3.1 Design and Establishment Details

All components of the proposal at Green Island should be described in detail including:

- detailed concept and staging plans, including maps;
- dredging requirements and specifications, including plans showing the mean low water mark and its relationship to other data, length and cross-section of proposed dredging works, dredging quantities, nature of spoil, containment/disposal of spoil and wastes, dredging methods, mooring points and methods, geological constraints, erosion protection arrangements, and wave penetration studies;
- hydrographic surveys of seabed soundings in the licence area (to standards, specifications and frequencies to be determined by the Regional Harbour Master, Brisbane);
- quantities of materials dredged, transport routes and methods;
- the areas and relative proportions of the coral and coral limestone around Green Island (subtidal and intertidal) and the corresponding percentage (as an area and a volume) of the eastern side of Green Island to be removed;
- the percentage of coral /coral limestone in Moreton Bay (as an area and a volume) which has been removed previously by QCL operations and will be removed by the current proposal (a graphic representation is required);
- the final bottom topography to the east of Green Island after extraction of coral limestone is completed (a graphic representation is required);
- storage areas and facilities if required, and the nature of the items to be stored and/or uses;
- the workforce;
- prospects or proposals for future expansion;
- general operation of the dredging facilities including activities, services, hours and duration of daily and weekly operations and proposed management.

3.2 Facilities and On-Site Equipment

All facilities should be described including:

- navigational safety maintenance requirements;
- proposed navigation aids in the vicinity;
- lighting associated with dredging operations (intensity, hours of operation etc);

3.3 Coastal Management

Investigate and provide details on the following:

- currents, wave action and sand/coral rubble transport;
- the foreshore and intertidal/subtidal zone cross section and plan shape at representative periods during the life of the proposal and after its completion, an assessment of its stability under normal and storm conditions.

4. ALTERNATIVES

Provide a description of feasible and prudent alternatives for achieving the objectives of the proposal. This should include an accurate delineation of the resource requirements of the proposal in terms of both the Green Island coral reserves and alternative sources of limestone. The description should discuss alternative limestone resources and alternative sources of cement for the Queensland Building Industry (in SE Queensland, Queensland, interstate and internationally).

The alternatives should be discussed in sufficient detail to make clear the reasons for preferring certain options. Perceived consequences of each alternative with regard to impacts on transport routes, cost, employment and environmental impacts should also be summarised.

5. PROJECT FEASIBILITY AND ARRANGEMENTS

Indicate the prospects for financial success of the proposal. The judgmental criterion to be adopted is that there must be an adequate demand for the proposed facilities at a price which will cover all operating and fixed expenses, service debt and provide a satisfactory return on equity investment.

Such an analysis is required to ensure against project failure and abandonment, and unwise use of the State's important coastal resources.

An assessment should be made of the consequences of the Developer not obtaining approval to dredge Green Island as well as a description of the Developer's plans after the resource is fully utilised.

The study should include the following:

- information on the ownership, capital structure and history of the Developer's company or any relevant associates should be provided;
- identify present and future demand as well as the present and likely future supply of competitive facilities in the region;
- the special advantages and disadvantages of the site compared with others in the region should be identified.

6. EXISTING ENVIRONMENT

Describe the existing environment both within the preferred site and in the surrounding area, covering the following aspects to the extent necessary to serve as a baseline against which the impacts of the proposal can be assessed. Trends should be discussed where appropriate.

6.1 Physical Environment

Geology and Geomorphology

Provide a description of the geology and geomorphology of the island and surrounding areas with particular emphasis on the following:

- the geology of the island in terms of dominant rock types and the regional context;
- the elevation, topography and landforms of the island including slope and terrain components;
- a general description of the geomorphology of Moreton Bay and associated Islands which should include a cross sectional representation of Moreton Bay;
- the nature, periods, timing and rates of coral growth in Moreton Bay and for Green Island in particular, with respect to climatic and eustatic sea level variations;
- details of the underlying geology formation, position and significance of Green Island and its associated coral formations in the context of Moreton Bay;
- details of the dimensions and nature of the Green Island supra, inter and subtidal zones;
- a series of profiles of the island and foreshores, showing cross-sections of the geology and sedimentology prior to extraction, including proportions and distribution of different supra, inter and subtidal zones;
- the composition, extent and area of the terrestrial island; and
- a summary of interesting geomorphological features and any associated biological importance.

Marine Hydrology and Water and Sediment Hydraulics

Provide an accurate definition of the existing patterns of tidal and seasonal current velocity and directions. (reference should be made to existing studies). Appropriate diagrams and models detailing incident wave direction, prevailing winds, currents, substrate profiles detailing supra, inter and subtidal zones should be supplied with reference to:

- bathymetry;
- current velocity and directions at different tidal states;
- tidal ranges with particular reference to tidal inundation (frequency, range);
- steady state conditions (prevailing winds) major weather events (floods/cyclones/storms);

Water Quality

Provide an assessment of existing water quality in the waters likely to be affected by the proposal. Water quality should be assessed in terms of physical and biological characteristics. Seasonal variations should be described.

Recommended parameters are:

- current velocity and direction at different tidal states;
- tide heights;
- bathymetry;
- salinity;
- nutrient status (organic/inorganic);
- pH;
- Dissolved Oxygen
- turbidity; and
- biological characteristics eg., BOD.

Reference should be made to water quality variations and the duration of such variations, in particular:

- diurnal, tidal and seasonal variations; major weather events (floods/cyclones/storms); steady state conditions (prevailing winds); coincidence of the above factors.

The frequency and extent of any freshwater impacts from flooding (eg. Brisbane River, Lota Creek) if any.

Note: if water sources are not available for testing an estimation of the expected predevelopment water quality for a similar island catchment will suffice (this information is important as it will form the baseline for future monitoring).

} ?

Climate

Provide a description of the climate of Green Island, in particular the amount, intensity and annual distribution of:

- rainfall intensity and volume;
- wind velocity, duration, and prevailing direction;
- incidence and intensity of storms (including cyclones);
- temperature;
- evaporation characteristics; and
- humidity.

partly provided in Marine Hydrology section?

6.2 Marine Flora, Fauna and Ecological Relationships

Describe the flora and fauna present or likely to be present in the area, including:

- major species and abundance of marine flora and communities present in and immediately adjacent to the site, including seagrasses, mangroves and macroalgae;
- species diversity and abundance of marine animals, including birds, reptiles, fish, and benthic organisms;
- extent and importance of intertidal and marine communities (including transient fish species and invertebrates);
- the existing extent, distribution, morphology (plate-like, branching, massive, encrusting or soft) and composition of coral species (living) surrounding Green Island. A distribution map should be provided;
- evidence from available literature of any changes in species diversity and abundance in the last 30 years of both marine flora and fauna;
- any rare or endangered species, their habitat requirements and sensitivity to changes;
- important ecological relationships/processes, with consideration in the context of surrounding waters;
- indicate how well represented these terrestrial and marine plant and animal communities are in Moreton Bay today and how well represented they were in the past;
- use of the area by migratory species;
- movement corridors and barriers to movement; and
- existing commercial, recreational, educational and aesthetic uses of the biota.

These descriptions should be graphically supported by maps, aerial photographs, photographs and diagrams.

6.3 Existing Social and Economic significance

Provide an outline of the social and economic activities occurring in Moreton Bay which are likely to be affected as a result of the proposal. This must include identification of existing users of Green Island and its environs including:

- the number and distribution of commercial fishing operations using the Island and environs;
- the nature, composition and value of the commercial fish catch;
- the nature, composition and value of the recreational fish catch;
- the number of people and nature of other industries directly or indirectly dependent on Green Island;
- the potential for the above factors to increase;
- the number of employees of QCL directly dependent on existing production, those directly dependent on the approval of the proposal and those dependent on secondary employment;

● areas of cultural significance to European and Aboriginal and Islander people.

Provide a summary of the above points to detail the existing and potential economic

identified known
see page 11

benefits provided by Green Island and its environs and compare and contrast these with the benefits of allowing the proposal to proceed.

7. IMPACTS

This section should clearly identify the principal impacts expected to result from the development. The reliability and validity of predictions should be discussed.

Direct and indirect, temporary and irreversible, adverse and beneficial effects should be described and, where possible, quantified.

Actions proposed to mitigate or accommodate these impacts should be explained.

Types of impacts which should be considered are listed below.

7.1 Biophysical Environment

Details should include:

- impacts due to changes to coastal processes or coastal management on the coastline as a result of the proposal, particularly impacts on foreshore and near-shore sand and coral rubble movements;
- extent of loss of important animal/plant communities and implications of this;
- any other impacts on flora and fauna and the marine ecosystem;
- effect of changes in the balance of mangrove plants and the need for adequate buffer areas between the proposal and any existing mangroves;
- impacts of dredging and operations including dispersion of resuspended solids, disposal of dredged materials and impacts on the marine environment of the area, including benthic species and any living corals and macroalgae in the area. In this respect it would be necessary to model plumes associated with the dredging and to identify related impacts.
- impacts of permanent changes to coastal and seabed morphology and coastal processes;
- impacts on the marine fauna, including changes in community structure, species presence/abundance as a result of the development;
- impacts on safe navigation with particular regard to existing and proposed navigation channels and any potential navigation hazards that may be created by the dredging operations;
- impacts of expected siltation/erosion, and the nature of siltation material; and
- diagrams of the cross sectional view of the mineral area at the conclusion of mining, and analysis of the effects of mining on the future geomorphology and ecology of Green Island.

7.2 Water Quality

Details should include:

- a detailed assessment of the likely effects on water quality of dredging; and
- impacts of spillage of fuel and other hazardous substances and the potential for water quality deterioration due to discharge of bilge water and other wastes.

7.3 Social, Cultural and Economic Impacts

This section will discuss the social, cultural and economic impacts of the proposal. Matters to be included are:

- effects on any areas of cultural significance for both European and Aboriginal and Islander people, which are identified through both anthropological and archaeological studies in conjunction with the relevant communities;
- effects of the proposed development on commercial and recreational fishers of the area. This should include an economic analysis of the value of the commercial and recreational fishing based on or resulting from habitats around Green Island including sand and mud flats, corals, coral rubble and marine plants. Evidence from available literature of any changes to recreational and commercial fishing in Moreton Bay which have occurred as a result of coral dredging in other parts of the Bay particularly around Mud and St. Helena Islands should be provided;
- effects on the current use of the site areas by members of the public including public access to the foreshores of Green Island and on any established moorings in the vicinity of the proposed dredging works;
- visual and aesthetic impacts;
- effects of the proposal in relation to the Moreton Bay Strategic Plan and proposed Moreton Bay Marine Park;

Summarise critical costs and benefits of the proposal and present a balanced overview of its net impact.

8. ENVIRONMENTAL MANAGEMENT AND MONITORING

Detail environmental safeguards and describe proposed management arrangements to cover establishment and operational phases. This should incorporate a summary of measures proposed in Section 7. The section should also describe all monitoring programs:

- to ensure safeguards and management plans are being effectively applied;
- to identify any unpredicted impacts requiring remedial measures; and
- to measure any differences between predicted and actual impacts.

References should be made to relevant legislation and standards.

8.1 Draft Environmental Management Plan

This plan should include safeguards:

- to minimise noise, turbidity, erosion, water pollution, sediments, etc;
- to rehabilitate any areas disturbed as a result of the proposal including total removal of infrastructure and equipment e.g. piles, cables, anchors etc.;
- to provide for appropriate management of waste and accidental spillage;
- to ensure employees and construction managers understand their environmental protection obligations, eg. codes of environmental conduct; and
- to ensure maintenance of navigation aids;

and detail

- pollution control measures (such as screens to reduce turbidity) and waste management; and oil spill contingency plans; and
- emergency/accident management (equipment failure, fire, explosion, cyclones), contingency plans including communication and staff responsibilities.

The plan should incorporate measures to:

- maximise protection of the more significant areas;
- protect existing flora and fauna and provide habitats suitable for recolonization of impacted areas by endemic fauna and flora after the completion of the extractive process; and
- ensure the recreational and aesthetic values of the area are maintained to the greatest possible extent during the establishment, operation and post extraction phases of the project.

8.2 Monitoring

Details should include:

- programs/procedures to monitor establishment and operational phases;
- monitoring of coastal changes, which may necessitate aerial photography and foreshore surveys;
- procedures for reporting on monitoring programs; and
- responsibility and funding for the monitoring program.

APPENDIX A. ADVISORY BODIES

Queensland Department of Premier, Economic and Trade Development

Queensland Department of Environment and Heritage (Divisions of Environment and Conservation)

Queensland Department of Transport (Marine and Ports Division)

Queensland Department of Housing and Local Government (Planning Services)

Port of Brisbane Authority

Department of Family Services and Aboriginal and Islander Affairs

Queensland Museum

Queensland Fish Management Authority

Brisbane City Council

Queensland Department of Business, Industry and Regional Development

APPENDIX B. ORGANISATIONS TO BE CONSULTED

Queensland Commercial Fishermen's Organization

Queensland Sport and Recreational Fishing Council

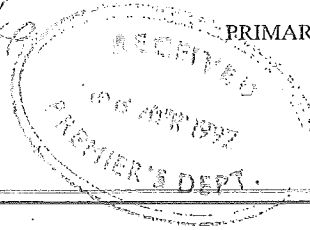
Australian Littoral Society

Moreton Bay Trailer Boat Club

Queensland Yacht Squadron

Queensland Ornithological Society

164946



Our Reference: 92/FBR 03X.002 (BP:LW)
Your Reference:
Contact: Dr Barry Pollock [Ph. (07) 239 3418]



1 April 1992

| RETURN TO RECORDS | |
|-------------------|-------------|
| FILE NUMBER | MAIL NUMBER |
| | 0995 |

F190 R0146

Director-General
Department of Premier
Economic and Trade Development
PO Box 185
NORTH QUAY Q 4002

Dear Sir,

**CORAL LIMESTONE
PROPOSAL TO DREDGE AT GREEN ISLAND (MORETON BAY)
IMPACT ASSESSMENT**

Please find attached an Initial Advice Statement from Queensland Cement Limited in relation to a proposal to dredge coral limestone from the eastern side of Green Island in Moreton Bay.

It has been determined by the Department of Primary Industries that a full Impact Assessment Study will be undertaken in relation to this proposal. Such a study would need to be completed before the issue of any approvals may be considered.

The primary approval necessary for the proposal is a licence to take coral limestone issued under the Fisheries Act. Administration of this legislation is the responsibility of the Department of Primary Industries.

It should be noted that the Impact Assessment of this proposal will be dealt with under the provisions of Section 29 of the State Development and Public Works Organisation Act.

At this juncture, it is requested that you indicate whether your agency wishes to act as an Advisory Body in relation to this development proposal and its Impact Assessment procedures. If so, could you please indicate any specific approvals, permits, licences, etc. which may be required by the developer (for the proposal) to satisfy legislation administered by your agency. In addition could you please provide appropriate and precise terms of reference for the Impact Assessment Study which will satisfy the requirements of your agency or which will assist your agency in dealing with this development proposal.

The Queensland Government has decided that Queensland Cement Limited shall have until September 1993 to complete all procedures in relation to applications for this proposal. It

ATTACHMENT HELD IN RECORDS
RTID429.pdf - Page 67 of 168

is therefore important that all agencies deal with the present process with due regard to time. It is requested that your terms of reference be sent to this Department within six weeks of the date of this letter.

Should you require any further information or explanation the contact officer is Dr Barry Pollock, Acting Manager (Fisheries), Fisheries Division - Telephone 239 3418.

Yours faithfully,



(P.J. Neville)
ACTING GENERAL MANAGER
FISHERIES DIVISION

Released under RTI - DIC

MINISTER FOR ENVIRONMENT AND HERITAGE

Hon. Pat Comben, MLA
Member for Windsor
19th floor 160 Ann Street, Brisbane
PO Box 155, NORTH QUAY QLD 4002 · Telephone (07) 227 8819 · Facsimile (07) 221 7082



Ref: 204209

10 DEC 1991

| RETURN TO RECORDS | |
|-------------------|-------------|
| FILE NUMBER | MAIL NUMBER |
| F180 | TF |

Mr N Lawson
Executive Director
Economic Development
Department of the Premier, Economic and
Trade Development
Executive Building
100 George Street
BRISBANE QLD 4000

Dear Mr Lawson,

Reference is made to your correspondence of 31 October, 1991 which included a letter from Dr P Hutchings of the Australian Coral Reef Society Inc..

I have taken the liberty of forwarding a copy of my response to Dr Hutchings, for your information.

Yours sincerely,


PAT COMBEN

Ref: 200559

26 NOV 1991

Dr P Hutchings
President
Australian Coral Reef Society Inc.
PMB 3 MC
TOWNSVILLE, Qld 4810

Dear Mr Hutchings,

Reference is made to your letter of 15 October 1991 concerning coral reefs in Moreton Bay.

The issues you have raised on behalf of your Society are well appreciated. Indeed, you may be aware of my initiatives for the planning and future management of Moreton Bay, which are outlined in the attached document. You might note that a Marine Park is proposed to assist in Bay Management, and that conservation of the Bay's natural resources is the primary goal of the Moreton Bay Strategic Plan.

You may also be aware that the Honourable Ed Casey MLA, Minister for Primary Industries has recently announced the signing of a new coral dredging licence agreement between the Department of Primary Industries, and Queensland Cement Limited (QCL). While the dredging of coral and the granting of associated leases is the responsibility of the Department of Primary Industries, my Department does identify the need for any coral dredging to be carried out in an environmental responsible manner, and that dredged areas should be rehabilitated to ensure there are no continuing adverse impacts. You might also wish to note that a requirement of the leases is that no substantial live coral be removed during dredging operations.

The new licence agreement allows coral dredging at Mud Island and the eastern side of St Helena, subject to stringent environmental safeguards concerning the manner and method of coral extraction.

Before any consideration is given by the Government to dredging at Green Island, QCL is required to undertake a comprehensive Environmental Impact Statement, including community input and scientific study of the full costs and benefits of coral dredging in the Green Island area.

As well, the new licence agreement provides for the protection of large areas of Moreton Bay which were previously the subject of coral extraction licences. QCL has relinquished rights in the areas of Empire Point, Wellington Point, Cleveland and the western sides of Green Island and St Helena Island.

Yours sincerely,

PAT COMBEN

Released under RTI - DPC

Please Quote
Reference: F180/TF:AMB

31st October, 1991.

121414

Dr. P. Hutchings,
President,
Australian Coral Reef Society Inc.,
C/- Australian Museum,
P.O. Box A285,
SYDNEY SOUTH. N.S.W. 2000.

Dear Dr. Hutchings,

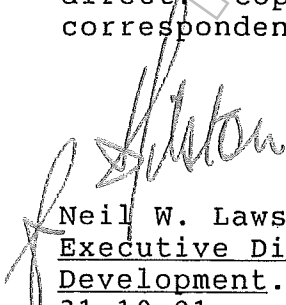
to reply to your
al reefs in Moreton

the jurisdiction of
for Environment and
etter for his reply

the matters you
r's office

B/c: The Honourable P. Comben, M.L.A.,
Minister for Environment
and Heritage,
160 Ann Street,
BRISBANE.

Referred by direction of the
Honourable the Premier, for reply
direct. Copy of the inwards
correspondence is attached.


Neil W. Lawson,
Executive Director - Economic
Development.
31.10.91

Please Quote
Reference: F180/TF:AMB

31st October, 1991.

121414

Dr. P. Hutchings,
President,
Australian Coral Reef Society Inc.,
C/- Australian Museum,
P.O. Box A285,
SYDNEY SOUTH. N.S.W. 2000.

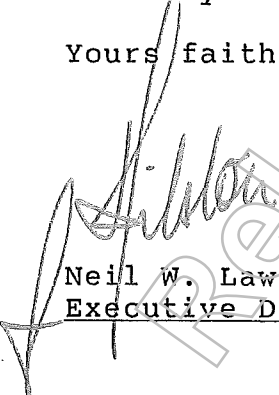
Dear Dr. Hutchings,

I am directed by the Honourable the Premier to reply to your letter of 15th October, 1991 concerning coral reefs in Moreton Bay.

As the matters you have raised fall within the jurisdiction of the Honourable P. Comben, M.L.A., Minister for Environment and Heritage, I have forwarded a copy of your letter for his reply direct to you.

If you have any further enquiries regarding the matters you have raised, you should contact the Minister's office directly.

Yours faithfully,


Neil W. Lawson,
Executive Director - Economic Development.

COPY

Please Quote
Reference: F180/TF:AMB

18th October, 1991

Mr. G. Wills,


Dear Mr. Wills,

I refer to your letter of 7th October, 1991 concerning live coral in Moreton Bay.

As this matter falls within the jurisdiction of the Department of Environment and Heritage and the Department of Primary Industries, I have forwarded your letter to them for their direct response to you.

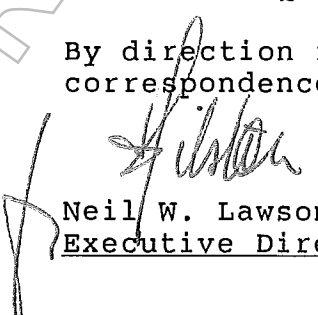
Yours faithfully,


Neil W. Lawson,
Executive Director - Economic Development.

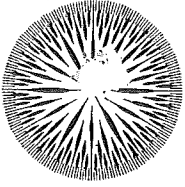
B/c: Director-General,
Department of Environment and Heritage,
160 Ann Street,
BRISBANE. QLD. 4000.

Director-General,
Department of Primary Industries,
80 Ann Street,
BRISBANE. QLD. 4000.

By direction for reply direct. Copies of inwards correspondence are attached.


Neil W. Lawson,
Executive Director - Economic Development.

18.10
20/11/91



Australian Coral Reef Society Inc.

A society promoting scientific study of Australian Coral Reefs



The Honourable Wayne Goss,
Premier, Minister for Economics and Trade Development and Minister for The Arts
Ministerial Office
15th Floor
Executive Building,
100 George Street
BRISBANE QLD 4000

Hon. Secretary: Dr T. J. Done
Telephone: (077) 789 344
Facsimile: (077) 725 852
Address: Australian Institute of Marine Science
PMB 3, MC
TOWNSVILLE QLD 4810

| RETURN TO RECORDS | |
|-------------------|-------------|
| FILE NUMBER | MAIL NUMBER |
| F180 | 72088 |

TE

Dear Mr Goss

On behalf of the Australian Coral Reef Society, I am writing to express our grave concern over the future of the coral reefs of Moreton Bay. Reefs surrounding Mud, St. Helena, and Green Islands in Moreton Bay have been subjected to dredging by Qld Cement for many years, however significant areas of reef still remain. Despite the adverse effects of flooding in 1974 on reef corals, these reefs have recovered remarkably since that time, and now harbour significant communities of both hard and soft corals. The reefs represent an important aesthetic resource on the doorstep of Brisbane, and also provide essential habitat for a significant recreational fishery.

If this dredging is allowed to continue as it has been conducted in the past, these reef areas will be lost forever. A renewal of the leases for dredging in these areas will remove the last of the remaining sub-tidal reef platform, on which the corals must grow. The larvae of corals, which have re-colonised this reef since the last major floods, will no longer be able to establish the reef communities since corals cannot settle on mud. Modifications to dredging procedure cannot alter this fact. This will constitute a significant alteration of the ecosystem in Moreton Bay, not only through the outright loss of these reef habitats, but through the loss of resiliency in the greater Moreton Bay coral community. The potential for recovery of coral communities from any future disturbance, natural or anthropogenic, will be reduced by the loss of a source of colonizing larvae.

A further major impact of the dredging operations will be the destruction of mangrove communities. As a result of disturbance to the reef framework, loose coral rubble has facilitated the formation of beach ramparts which block the tidal flow of sea water over mangrove areas. The result of this process, wholesale death of mangrove communities, can already be seen at Mud Island. The importance of mangrove ecosystems in supporting the food chain and life cycle of both commercial and recreational fish stocks is a scientifically proven fact, and the future loss of mangrove areas cannot be rationally supported.

The coral reefs of Moreton Bay are important areas of recreational, aesthetic and financial significance, and their location adjacent to Australia's fastest growing urban area means that their value as natural resources can only increase. Such assets should not be sacrificed for the sake of renewing a lease which will see the resource mined out by the end of the century. We oppose the continuation of dredging leases on these Islands, as well as any future coral extraction licences. The costs of such activities to the broader community now far outweigh the benefits.

Should you require any further comment or wish to discuss particular points raised in this letter, please contact me directly on (02) 339 8243, or by Fax on (02) 360 4350.

Thank you.

Yours sincerely

Pat Hutchings

Dr Pat Hutchings
President

15. 10. 91

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Geoffrey
WILLS

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|-------------------|-------------|
| RETURN TO RECORDS | |
| FILE NUMBER | MAIL NUMBER |
| F180 | T.F |

Executive Director
Economic Development
Dept. of the Premier

October 7 1991

Dear Sir, Reference F-180/T.F. Jm

Thanks for your letter of 11/5/91 concerning
live coral in Moreton Bay - with emphasis
on its' extraction which was the issue central
to my letter of 13/7/91.

There seems to be some confusion
which is of concern to me. Reference is made
to "limestone extraction". To my knowledge
there is no limestone deposit in Moreton Bay.
The only stone to my knowledge is iron stone
beds on which the coral prefers to grow.

Indeed the limestone deposits being
mined at Mount Larcom are the preferable source
of material which should be used for cement
and the use of coral should cease altogether.
I'll be glad to hear your views.

Yours faithfully

Geoffrey Wills

Chai Basinda Environmental
Networks.

Please Quote
Reference: F180/TF:JM

1st October, 1991.

^F1^

Dear ^F2^,

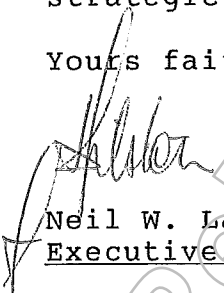
The Honourable the Premier has asked me to acknowledge your letter of ^F3^ concerning live coral in Moreton Bay.

The Department of Environment and Heritage together with the Department of Primary Industries, which is responsible for overseeing any limestone extraction, are aware of the presence of live coral in Moreton Bay and its environmental significance.

A Strategic Plan for Moreton Bay has been prepared by the Department of Environment and Heritage for consideration by Government. The plan is currently available for public review and if you require further information and/or a copy of the plan you should contact the Department of Environment and Heritage direct.

This plan addresses the issue of a marine park in Moreton Bay. A marine park is proposed to be declared over most of the tidal lands and waters of Moreton Bay with a zoning plan, regulations, management guidelines and policies based on the strategic plan. For more specific details you should consult a copy of the strategic plan.

Yours faithfully,


Neil W. Lawson
Executive Director - Economic Development.

W 1.10.91
Lollo.

RD 1/10

[REDACTED]
[REDACTED]
[REDACTED]
11th July, 1991, ^R
^E

Mr. G. Wills,

[REDACTED]
Mr. Wills ^R
13th July, 1991, ^R
^E

[REDACTED]
[REDACTED]
[REDACTED]
10th July, 1991, ^R
^E

Mr. K. Spencer,
Moreton Bay Protection Society,

[REDACTED]
Mr. Spencer ^R
12th July, 1991, ^R
^E

[REDACTED]
[REDACTED]
[REDACTED]
11th July, 1991, ^R
^E

Released under RTI - DPC

Please Quote
Reference: F180/CSC:MEP

11th September, 1991.

Mr. Frank G. Bradley,
Chairman, Region 4 Environment Committee,
Queensland Commercial Fishermen's Organisation.

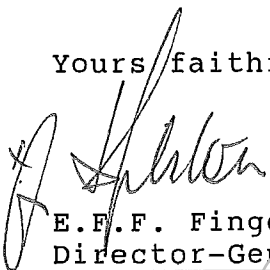
Dear Mr. Bradley,

The Honourable the Premier has asked me to acknowledge your letter of 6th August, 1991, concerning Green Island and Wellington Point Reef in Moreton Bay.

The Premier has noted the contents of your letter and as the matter you have raised falls within the jurisdiction of the Honourable P. Comben, M.L.A., Minister for Environment and Heritage, I have forwarded a copy of your letter for his reply direct to you.

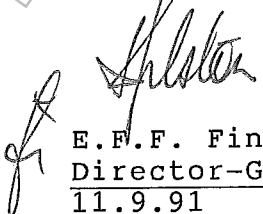
If you have any further enquiries regarding the matter you have raised, you should contact the Minister's office direct.

Yours faithfully,


E.F.F. Finger,
Director-General.

B/c The Honourable the Minister for Environment and Heritage,
160 Ann Street,
BRISBANE. QLD. 4000.

Referred, by direction of the Honourable the Premier, for reply direct. Copy of the inwards correspondence is attached.


E.F.F. Finger,
Director-General.
11.9.91

Please Quote
Reference: F180/CSC:MEP

9th September, 1991. °) *FR*

[Redacted]
[Redacted]

Dear [Redacted] *FR*

The Honourable the Premier has asked me to acknowledge your letter of 15th August, 1991, concerning Green and Peel Islands being declared as Marine Parks.

The Premier has noted the contents of your letter and as the matter you have raised falls within the jurisdiction of the Honourable P. Comben, M.L.A., Minister for Environment and Heritage, I have forwarded a copy of your letter for his reply direct to you.

If you have any further enquiries regarding the matter you have raised, you should contact the Minister's office direct.

Yours faithfully,

E.F.F. Finger
E.F.F. Finger,
Director-General.

B/c The Honourable the Minister for Environment and Heritage,
160 Ann Street,
BRISBANE. QLD. 4000.

Referred, by direction of the Honourable the Premier, for reply direct. Copy of the inwards correspondence is attached.

E.F.F. Finger
E.F.F. Finger,
Director-General.

JUS.
eac 9/9/91

15/8/91

o WAYNE GOSS

Dear Sir,

It has recently been established that significant areas of live coral exist in Moreton Bay.

The so far untouched areas of Green Island & Peel Island, located east of Manly & Cleveland respectively, should be immediately declared Marine Parks similar to those established on the Great Barrier Reef.

The complete protection of this valuable natural resource by your Government is earnestly sought on behalf of current & future generations of Queenslanders & tourists.

Yours faithfully,

Please Quote
Reference: F180/CSC:MEP

9th September, 1991.

[Redacted]
[Redacted]

Dear [Redacted]

The Honourable the Premier has asked me to acknowledge your letter of 9th August, 1991, concerning the declaration of conservation areas in Moreton Bay.

The Premier has noted the contents of your letter and as the matter you have raised falls within the jurisdiction of the Honourable P. Comben, M.L.A., Minister for Environment and Heritage, I have forwarded a copy of your letter for his reply direct to you.

If you have any further enquiries regarding the matter you have raised, you should contact the Minister's office direct.

Yours faithfully,

E.F.F. Finger
E.F.F. Finger,
Director-General.

B/c The Honourable the Minister for Environment and Heritage,
160 Ann Street,
BRISBANE. QLD. 4000.

Referred, by direction of the Honourable the Premier, for reply direct. Copy of the inwards correspondence is attached.

E.F.F. Finger
E.F.F. Finger,
Director-General.

825.
ell 9/9

15/8/91

| | |
|---------------------|-----------------------|
| RETURN TO RECORDS | |
| FILE NUMBER F180 | MAP. NUMBER 69370. |



TO WAYNE GOSS

CC
23/8/91



Dear Sir,

It has recently been established that significant areas of live coral exist in Moreton Bay.

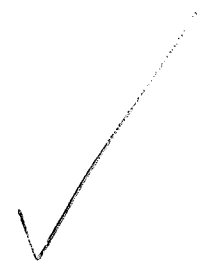
The so far untouched areas of Green Island & Peel Island, located east of Manly & Cleveland respectively, should be immediately declared Marine Parks similar to those established on the Great Barrier Reef.

The complete protection of this valuable natural resource by your Government is earnestly sought on behalf of current & future generations of Queenslanders & tourists.

Yours faithfully,



Released under RTI





Department of Environment and Heritage

160 Ann Street • Brisbane Queensland • PO Box 155 • North Quay Qld 4002 • Telephone (07) 227 7111 • Facsimile (07) 227 6534

| |
|------------------|
| RETURN TO OFFICE |
| FILE NUMBER |
| F180 |
| 69508 |

Enquiries to
 Telephone
 Your reference
 Our reference

200559/JM/jsm

13 August 1991

Mr E. Finger
 Director-General
 Department of the Premier, Economic
 and Trade Development
 15th floor, Executive Building
 BRISBANE QLD 4000

Dear Mr Finger,

Reference is made to your correspondence of 19 July 1991, concerning the existence of live coral in Moreton Bay.

The Honourable Pat Comben M.L.A., Minister for Environment and Heritage has recently responded to a similar letter received from Ms G.M. Sutherland of Cleveland. A copy of this response is enclosed for your information.

Yours sincerely,

Craig Emerson
 Craig Emerson
 Director-General

RECORDS

Please find our DG's letter of 19/7/91 referred to herein.

It may be on file F180

Chris Cook

Ref:200559/203795/JM

[Redacted]
[Redacted]

Dear [Redacted]

Reference is made to your correspondence of 11 July 1991 addressed to the Deputy Premier of Queensland, the Honourable Tom Burns M.L.A., concerning live coral in Moreton Bay. Mr Burns has referred your letter to me for direct reply.

My Department, together with the Department of Primary Industries which is responsible for any limestone extraction, is well aware of the presence of live coral in Moreton Bay, and its environmental significance.

A Moreton Bay Strategic Plan has been prepared for consideration by Government, and it is my intention this plan will be released for public review as a statement of the Government's intent. This Plan does address the important issues you have raised.

Yours sincerely,

PAT COMBEN

F180

69206



The Hon W.K. Gibb,
Parliament House,
Brisbane.

RE: CORAL DREDGING IN MORETON BAY.

Dear Sir,

I'm writing to ask you and your cabinet colleagues to declare the whole of Moreton Bay a Protected Region, and not to renew Q.C.'s licence to dredge coral.

I was out on the Bay recently and saw dead mangroves and bleached creeks on Mud Island, both caused by the build up of dead coral pieces loosened by dredging.

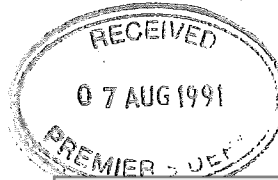
I saw live coral across most of the Bay area, and the cut edge where Q.C. had dredged shows. I believe that cutting live coral is against the conditions of their lease.

I was told that commercial species of fish are being depleted due to the deepening of the water.

I believe that Q.C. is a subsidiary of a Dutch company. This means that our beautiful Bay is being destroyed for profits some of which don't even stay in this country.

Yours Sincerely,

| RETURN TO RECORDS | |
|-------------------|-------------|
| FILE NUMBER | MAIL NUMBER |
| F180 | 69286 |



Hon. W. Goss, MLA,
Premier,
Floor 15, Executive Building,
100 George St,
BRISBANE

*Arrived with me
23/8/91
ell*

Dear Premier,

On Monday next when considering Queensland Cement and Limes' proposal to consolidate their coral extraction leases please take into account the depth of public feeling and disgust that was evident at the public protest rally against the proposed sewerage outfall at the Gold Coast Seaway.

I attended that meeting and was amazed at the amount of public feeling against your Government's decision. I feel that if you agree to QCL's proposal to mine Green Island and Wellington Point Reef you will be condemned, not only by the boating fraternity but by the general community as well for allowing this destruction to occur, and treated the same way Minister Comben was treated today at Southport.

Last week I contacted Ken Brown of Channel Seven and he was unaware of this coral mining proposal. He assured me that the boating fraternity will be outraged by this suggestion and will act accordingly.

If these proposals are allowed to go ahead the credibility your Government has built up within the amateur and professional fishing communities will be destroyed and plans such as the soon to be released Moreton Bay Strategic Plan will be viewed with suspicion and likely receive little support. Great hopes were held at the last election that the reef would be saved from vandals, desecrators but this is now seen not to be so.

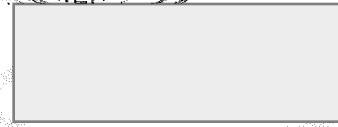
ask you to consider that the QCL proposal is in the interests of the public of Queensland and to act accordingly.

After outlining QCFO's recommendations on the agenda at an Industry meeting held on July 2, 1991, the Department of Primary Industries.

*4/11. → (DB)
Please refer to Dept for response.*

Provo

| RETURN TO RECORDS | |
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| FILE NUMBER | MAIL NUMBER |
| F180 | 69286 |



Hon. W. Goss, MLA,
Premier,
Floor 15, Executive Building,
100 George St,
BRISBANE

*Arrived with me
23/8/91
ell*

Dear Premier,

On Monday next when considering Queensland Cement and Limes' proposal to consolidate their coral extraction leases please take into account the depth of public feeling and disgust that was evident at the public protest rally against the proposed sewerage outfall at the Gold Coast Seaway.

I attended that meeting and was amazed at the amount of public feeling against your Government's decision. I feel that if you agree to QCL's proposal to mine Green Island and Wellington Point Reef you will be condemned, not only by the boating fraternity but by the general community as well for allowing this destruction to occur, and treated the same way Minister Comben was treated today at Southport.

Last week I contacted Ken Brown of Channel Seven and he was unaware of this coral mining proposal. He assured me that the boating fraternity will be outraged by this suggestion and will act accordingly.

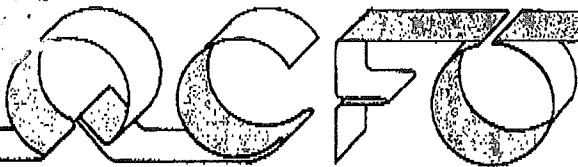
If these proposals are allowed to go ahead the credibility your Government has built up within the amateur and professional fishing communities will be destroyed and plans such as the soon to be released Moreton Bay Strategic Plan will be viewed with suspicion and likely receive little support. Great hopes were held at the last election that Moreton Bay at last would be saved from vandals, desecrators and developers but this is now seen not to be so.

Finally, I would ask you to consider that the QCL proposal is not in the best interests of the public of Queensland and make your decision accordingly.

Attached is a letter outlining QCFO's recommendations on the matter arising from an Industry meeting held on July 2, 1991, at the Department of Primary Industries.

Yours sincerely,

FRANK G. BRADLEY
CHAIRMAN - REGION 4 ENVIRONMENT COMMITTEE
QUEENSLAND COMMERCIAL FISHERMEN'S ORGANISATION

**QUEENSLAND COMMERCIAL FISHERMEN'S ORGANISATION**Clayfield Courtyard 699A-713 Sandgate Road, Clayfield,
Brisbane, Q. 4011

P.O. Box 392, Clayfield, Q. 4011

Telephone: (07) 262 6855 Fax: (07) 262 7650

md/MD
469/91

July 11, 1991.

Mr Peter Neville,
Director,
Fisheries and Wetland Division,
Department of Primary Industries,
GPO Box 46,
BRISBANE 4001

Dear Mr Neville,

I refer to the consultation meeting held on Tuesday, July 2, 1991, concerning coral extraction licences in Moreton Bay.

After considering the finding of the Environmental Study and the viewpoints of all the interested parties the Queensland Commercial Fishermen's Organisation recommends the following course of action.

1. QCL retain the licence for coral extraction on Mud Island until the current lease expiry date of July 21, 2006.
2. Licences covering Green Island and Empire Point should not be renewed after August 31, 1991.
3. The coral extraction licence covering St Helena Island be extended to May 31, 1999, providing QCL relinquishes the Wellington Point licence.
4. The extension of the St Helena Island licence be subject to an Environmental Impact Study assessing plume effects on coral communities within Moreton Bay, particularly Green Island.

FOR INFORMATION ONLY

5. All conditions on existing licences should remain the same.
6. Remedial works be undertaken to address concerns tabled at the meeting, i.e. mangrove destruction, navigational hazards left after dredging (coral bank remnants, dredge piles, mooring cables and anchors).

If you require any further information or clarification of the matters raised above, please do not hesitate to contact me.

Yours faithfully,

MARK DOOHAN
ENVIRONMENT OFFICER

FOR INFORMATION ONLY

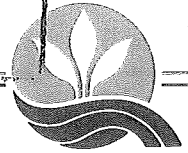


**Department of Primary Industries
Queensland Government**

Our Reference: PDL
Your Reference:
Contact: Mr W. Kidston (Ph: 239 3023)

PRIMARY INDUSTRIES BUILDING, 80 ANN STREET
GPO Box 46, Brisbane Qld 4001
Telephone: (07) 239 3111 Telex: AA41620
Facsimile: (07) 221 2490

| RETURN TO RECORDS | |
|-------------------|-------------|
| FILE NUMBER | MAIL NUMBER |
| F180 | |



25 July 1991 *zk*

Received 10.00 am Tues 30/7

Exempt Sch.3(2)(1)(b) Cabinet considerations

Ms Cynthia Newbown
Cabinet Legislation and Liaison Officer
Department of the Premier, Economic and
Trade Development
13th Floor, Executive Building
100 George Street
BRISBANE Q 4000

Dear Ms Newbown,

The future of coral limestone extraction in Moreton Bay has been the subject of on-going consultation for over two years.

Exempt Sch.3(2)(1)(b) Cabinet considerations

Yours sincerely,

(W. Kidston)
CABINET LEGISLATION AND LIAISON OFFICER

Att

*Mail: Seen PM Tues 30/7
Would you provide
advice to Bill Kidston
directly please. I
would appreciate it if
you could let me
know when this
has been dealt with
John Mahoney.*

Pages 93 through 101 redacted for the following reasons:

Exempt Sch.3(2)(1)(a) Submitted to Cabinet

Released under RTI - DPC

| RETURN TO RECORDS | |
|-------------------|-------------|
| FILE NUMBER | MAIL NUMBER |
| F180 | 69076 |

CGH
 ↓
 TB
 Subk. ✓

RECEIVED
 12 AUG 1991
 PREMIER'S DEPT.



Premier's Department
 Hon. Mr W Goss
 Executive Building
 100 George Street
 BRISBANE Q 4000

Dear Mr Goss

It has recently been established that there are live coral colonies on Green and Peel Islands. I had no idea that there was live coral in Moreton Bay and consider this a most wonderful discovery. Further, to hear that on Green Island there are at least five different species of coral with a mixture of tropical and temperate types, makes me believe that Moreton Bay is possibly a unique environment.

It is my belief that far sighted policy makers would not possibly extend mining leases for Queensland Cement Limited which might jeopardise such a wonderful resource and tourist asset.

I therefore earnestly desire that you declare these areas as Marine Park on lines similar to those of the Great Barrier Reef with Habitat Protection Zoning,

Yours sincerely



Released under RTI/DPS

Geoffrey WILLS

RECEIVED
13 JUL 1991
MEMBERS SECT.

July 13 1991

13/7/91

The Premier
Hon Wayne Goss,

9/19/91

RD RD110

| | |
|-------------|-------|
| REF ID | 67956 |
| FILE NUMBER | 67956 |

Dear Wayne,

I write as a long time member of the coral dredging of A.C. at Mud Island and St. Helena Island, where we caused very serious damage.

It has been established recently that significant areas of live coral still exist in the Bay.

I'd like to support the idea that the untrucked areas round Green Island and Peel Island be declared Marine Parks similar to those established on the Barrier Reef with Habitat Protection Zoning.

The protection of this valuable natural resource by your government is earnestly sought on behalf of current and future generations of Queenslanders and tourists.

Yours faithfully

Geoffrey Wills

Hon. Chair. Bayside Environmental Network
Bynum



Released under RTI - DPC

17 JUL 1991

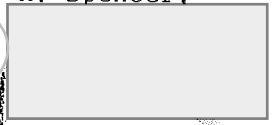
MORETON BAY PROTECTION SOCIETY
INCORPORATED
"Protect our Heritage"



All correspondence to:
K. Spencer.

9/17
RD RD 1/10

| RETURN TO RECORDS | |
|-------------------|-------------|
| FILE NUMBER | MAIL NUMBER |
| F180 | 67955 |



12.7.91.

Dear Sir,

I enclose for your consideration a copy of a letter addressed to the Director of Division of Fisheries and Wetlands, Department of Primary Industries.

Yours faithfully,

[Signature]

Released under RTI

MORETON BAY PROTECTION SOCIETY
INCORPORATED
"Protect our Heritage"

All correspondence to:
K. Spencer.

10th July, 1991.

Mr. Peter Neville,
Director,
Divn. of Fisheries & Wetlands,
Dept. of Primary Industries,
62-80 Ann Street,
BRISBANE. Q. 4000.

Dear Sir,

Thank you for the opportunity to attend the Consultation Meeting on the subject of Coral Extraction Licences Moreton Bay on Tuesday, 2nd July, 1991.

The research conducted by Dr. Peter Harrison on Green Island and his comparative survey of Peel Island confirms the existence of a great variety of live coral colonies on Green Island. Some of this survived the 1974 flood and has shown, in some cases, particularly vigorous growth.

The existence of new colonies of several varieties, particularly brain coral, proves that coral reefs within Moreton Bay are quite capable of regrowth. This regrowth coral was shown to be at a significant development stage, and future growth rate would be expected to accelerate around Green Island. This regrowth includes a wide variety of coral species.

In view of these facts, it is essential that the Queensland Government should urgently move to create Marine Parks with Habitat Protection Zoning over Green and Peel Islands as the unique overlay of tropical coral species from the Great Barrier Reef and temperate coral species from areas south of Moreton Bay should be totally protected.

The presence of live corals in areas around Mud and St. Helena Islands, where coral mining has already been carried out, indicates that it is possible that live coral has been mined in contravention of the terms of leases. Observations carried out on Sunday, 7th July at low tide identified live coral on so far unmined areas of Mud and St. Helena Islands.

It seems essential that both politicians and heads of departments concerned with the renewal of leases for coral extraction, should obtain first hand information for themselves, possibly through the use of National Parks and Wildlife's barge, "Spoonbill" at an appropriate low-tide in the near future.

Yours faithfully,
MORETON BAY PROTECTION SOCY. INC.

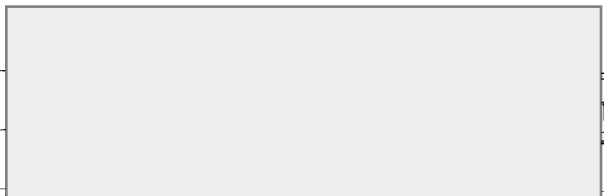


17 JUL 1981

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SEARCHED ✓
SERIALIZED ✓
INDEXED ✓
FILED ✓

TO RECORDS
MAIL NUMBER
67445



11 July 1991

F180

TB/ND

Refer to DEH
for closure

LD/10

M/K/7

Queensland Premier,
P.O. Box 185
North Quay
4002

Dear Sirs,

It has recently been established that significant areas of live coral exist in Moreton Bay.

The so far untouched areas of Grew Island and Peel Island, located east of Manly and Cleveland respectively, should be immediately declared Game Parks similar to those established as the State Protection

Please Quote
Reference: F264/RD:TLB

B/c: Dr. C. Emerson,
Director-General,
Department of Environment & Heritage,
19th Floor, 160 Ann Street,
BRISBANE. QLD. 4000

is valuable natural
to earnestly sought
for generations of

For advice please. Copy of letter
... to be replied to is attached.

E.F.F. Finger,
Director-General.
19.7.91

Bu fr 19-8-91

TO RECORDS

MAIL NUMBER

67445

11 July 1994

F180

TB/ND

Refer to DEH

RD/10

for show

11/10/7

Queensland Premier.
P.O. Box 185
North Quay.
4002

Dear Sir,

It has recently been established that significant areas of live coral exist in Moreton Bay.

The so far untouched areas of Grew Island and Peel Island, located east of Manly and Cleveland respectively, should be immediately declared marine parks similar to those established on the Great Barrier Reef, with Habitat Protection Zoning.

The complete protection of this valuable natural resource by your Government is earnestly sought on behalf of current and future generations of Queenslanders and tourists.

Yours faithfully

[Redacted Signature]

Released Under RTI - DPC

10/11/1994

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| <input checked="" type="checkbox"/> | | <input type="checkbox"/> |



M 19/7

11 July 1991

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| F180 | 67850 |

RD/DB
ACK

RD/10

Hon W Goss
Premier of Queensland
Executive Building
100 George St
BRISBANE 4001

Dear Sir,

It has recently been established that significant areas of live coral exist in Moreton Bay.

The so far untouched areas of Green Island and Peel Island, located east of Manly and Cleveland respectively, should be immediately declared Marine Parks similar to those established on the Great Barrier Reef, with Habitat Protection Zoning.

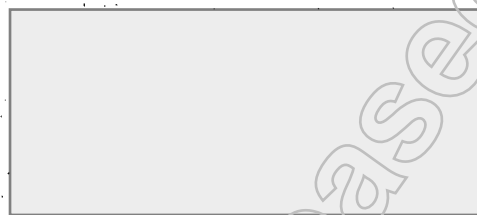
The main reason the dredging should be stopped is that the dead coral (which has been loosened because of the way they dredge) is washed up on places like Mud Island. This then causes the death of the mangrove trees plus it is blocking the entrance to the creeks which rely on the tidal fluctuations to maintain their delicate ecological balance.

If you wish to view the damage which is being done we will gladly take you out in our boat to show you that our claims are well founded.

Similar damage is taking place at several other dredging sites eg Wellington Point.

The complete protection of this valuable natural resource by your Government is earnestly sought on behalf of current and future generations of Queenslanders and tourists.

Yours faithfully,



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"100% recycled paper"

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Comden
[Signature]

76 JUL 1977

Re. OCL Lewis

Advice by John Johnson

Meeting OCL / Conbar E+H.
at Mutual 15/1/91.

Compromise agreed to.

OCL to have E side of M. Nelson
E ... free to

(OCL - Jim Drake / Len Walker / Mal Mackenzie)

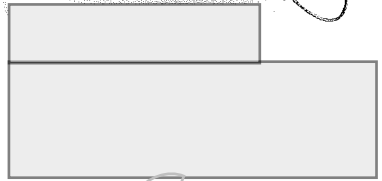
Try to arrange meeting with DPI week of
28/1/91.

Mu

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| F180 | 67964 |

10.7.91



1/17

RD RD 110

Mr. W. Goss,
Premier,
Parliament House,
Brisbane 4001



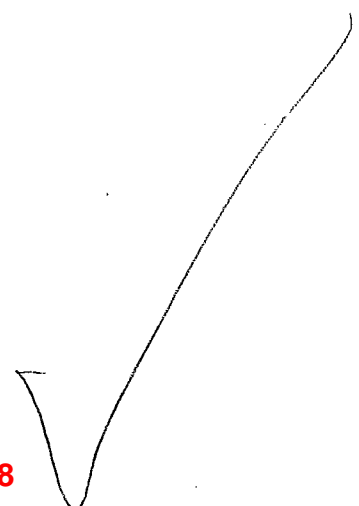
Dear Sir,

It has recently been established that significant areas of live coral exist in Moreton Bay.

Can we please lease Green Island + Peel Island, our so far untouched islands + immediately declare Marine Parks similar to those established on the Great Barrier Reef with Habitat Protection Zoning.

The complete protection of this valuable natural resource by your Government is earnestly sought on behalf of current + future generations of Queenslanders + visitors.

Yours faithfully,



Released under RTI - DPC

17 JUL 1997

[Handwritten signature]



Incorporated in Queensland
Head Office: 4 Station Avenue, Darra, 4076
P.O. Box 3, Darra, Queensland, Australia
Phone: (07) 375 0400, Fax (07) 375 3121, Telex: 42030
Cables: 'Cementco' Brisbane

Bulwer Island: Phone (07) 260 1733
Gladstone Works: Boat Creek Road,
Fishermans Landing via Gladstone
P.O. Box 285, Gladstone, Queensland,
Australia 4680
Phone (079) 73 6666 Telex: 49435
East End: Phone (079) 75 3544

Queensland Cement Limited

MMK:jgd

27 November, 1990

60165 F 180

The Hon. W.K. Goss, M.L.A.,
Premier, Minister for Economic & Trade Development
& Minister for The Arts,
15th Floor Executive Building,
100 George Street,
BRISBANE. 4000

Tracy
Dunn
MS
A

Dear Mr. Premier,

As you may recall, I wrote to you on 18 September concerning the renewal of our coral licences in Moreton Bay. To date, no response has been forthcoming.

...the licences for the area in which we are currently operating due to expire in August next year, ... to expedite this matter as quickly as possible. Accordingly, QCL ... to discuss this matter with either yourself or other members of

Yours faithfully,

J.L. ANDERSON,
Managing Director

Tim,
previous TG/DB
20 Sept.
AH,
I'm pretty sure I
sent this to the
DG
T- 27/12/90



Incorporated in Queensland
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P.O. Box 3, Darra, Queensland, Australia
Phone: (07) 375 0400, Fax (07) 375 3121, Telex: 42030
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Phone (079) 73 6666 Telex: 49435
East End: Phone (079) 75 3544

Queensland Cement Limited

MMK:jgd

27 November, 1990

60165 F 180

The Hon. W.K. Goss, M.L.A.,
Premier, Minister for Economic & Trade Development
& Minister for The Arts,
15th Floor Executive Building,
100 George Street,
BRISBANE. 4000

Tracy
Burruss pls
9

Dear Mr. Premier,

As you may recall, I wrote to you on 18 September concerning the renewal of our coral licences in Moreton Bay. To date, no response has been forthcoming.

With the licence for the area in which we are currently operating due to expire in August next year, I can only reiterate our desire to expedite this matter as quickly as possible. Accordingly, QCL would appreciate an opportunity to discuss this matter with either yourself or other members of your Government.

Yours faithfully,

J.L. ANDERSON,
Managing Director

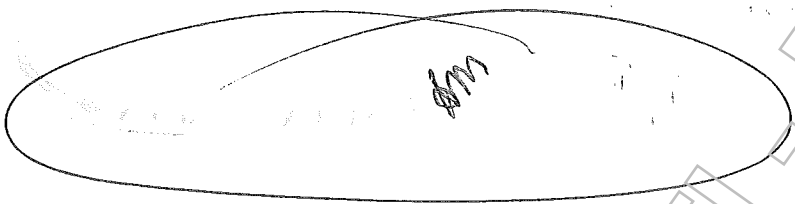
Coralett.doc

cc: Hon. E.D. Casey, M.L.A.

Reference:
B. Jones,

104812

F180



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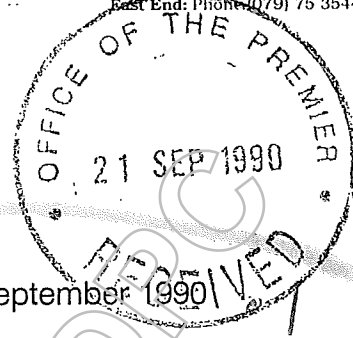
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 P.O. Box 285, Gladstone, Queensland,
 Australia 4680
 Phone (079) 73 6666 Telex: 49435
 East End: Phone (079) 75 3544

Queensland Cement Limited



18th September 1990

The Hon. W.K. Goss, M.L.A.,
 Premier, Minister for Economic &
 Trade Development & Minister for
 The Arts,
 15th Floor Executive Building,
 100 George Street,
BRISBANE 4000

g. D. 10/12

MME 57306

F180

* ATTACHMENT HELD
 IN RECORDS.

Dear Mr. Premier,

As we have previously discussed, QCL are extremely concerned about the delay in formally ratifying the renewal of our coral licences. It is our belief that the previous Government had committed itself to the renewal of the licences and it was on this basis that QCL proceeded with the expenditure of \$16 million for the construction of a new dredge and barge.

Coral licences which cover the area where QCL are currently operating are due to expire in August 1991.

The dead coral limestone reserves of Moreton Bay are the only economic source of raw material available for the Darra Operations. QCL see the Darra Operation continuing to be a major long term supplier of cement to S.E. Queensland.

QCL are confident that the long term impact of our dredging operations will have minimal effect on the overall Moreton Bay environment. For your information I have attached an account of the more recent negotiations and have attempted to answer some of the criticisms that have been directed at our dredging operations.

Yours faithfully,

J.L. Anderson

J.L. Anderson
 Managing Director.

Encl.
 Coralett.doc



QCL'S CORAL LICENCE'S IN MORETON BAY

QCL currently hold the following licences:-

- | | | |
|-----|---|-------------------|
| (a) | Mud Island | Expires 21/7/2006 |
| (b) | Cleveland Wellington Point | Expires 31/5/1999 |
| (c) | St. Helena Island Green Island Empire Point | Expires 31/8/1991 |

In October 1988 QCL wrote to the then Minister for Primary Industries requesting an amalgamation and extension to 2011 of the existing coral licences as a prerequisite for the impending commitment by QCL of some \$16 million for a new dredge and barge. Following advice from the Minister in February 1989 (letter attached) that the Government would recommend to His Excellency the Governor in Council an amalgamation and extension of our licences, QCL awarded the contract for the construction of the dredge and barge to N.Q.E.A.

Subsequent to the Government's commitment, discussions took place between the Department of Primary Industries, the Department of Environment and Conservation and QCL and agreement was reached in reducing the licence area by 25%. Discussions between Treasury, D.P.I. and QCL saw the royalties increased to 68 cents per tonne (CPI indexed) plus 23 cents per cubic metre river dues. QCL also agreed to contribute \$65,000 pa to D.P.I. for research in Moreton Bay.

The need for long term tenure of our coral licences areas is vital to QCL. The dead coral limestone reserves are the only economic raw materials available for the Darra Operations. Denial of this resource would cause the closure of the Darra works with the loss of 200 jobs and 500,000 tonnes of cement production capacity. It would have a major impact on our operations and the building industry generally in S.E. Qld.

Claims have been made that almost 50 years dredging around Mud Island has caused substantial damage to the island's mangroves. Some mangrove mortality was identified in the 1983 Environmental Impact Study. To avoid any reoccurrence of this problem, it was recommended and consequently inserted in the new coral licence agreement that dredging should not be permitted within 40 metres of the mangrove fringe.

During 1989 QCL on its own initiative undertook to remove all rubbish such as old dredging piles and wire ropes associated with our previous dredging operations. It also became apparent to QCL in early 1989 that there had been some recent mangrove mortality on Mud Island as a result of the fairly recent blockage of some drainage channels as a result of a build-up of coral rubble banks around parts of the island due to wave pile-up. QCL with the approval of Fisheries barged an excavator to the island and cut channels through the coral rubble in order to improve circulation to the mangroves. This work was carried out in April and May 1989 but heavy seas in the middle of the year closed most of the channels that had been cut. Acting on the advice of Fisheries and our own consultants, it was agreed the situation did not warrant any further action.

QCL were concerned why there had been a build-up of the coral rubble banks along the NW and NE coastlines of Mud Island, when the most recent dredging had occurred seven years ago and areas on the NW coastline had not been dredged for well over 20 years. With the assistance of Max Winders and Associates, who had been involved in the 1983 E.I.S, it was discovered that approximately 15 million cubic metres of sand was dredged from the western side of the Middle Banks between 1981 and 1985 to construct the Brisbane Airport. The resultant trebling in the width of the East Channel and the reduced average level of the banks, could have increased the exposure of Mud Island to storm waves from the NNE. Calculations of the changes in wave energy at Mud Island indicated a theoretical increase of 8% in the energy of waves resulting from 40 mph NNE winds. A larger increase would be expected with higher wind speeds. Thus this may have been a significant factor in the unexpected coral rubble wall migration which caused the recent mangrove mortality at Mud Island.

Irrespective of the explanation as to why there had been recent mangrove mortality on Mud Island, QCL were concerned about how significant an impact this would have on the island mangroves. On several occasions QCL had employed the services of Dr. Peter Saenger, Associate Professor of the Centre for Coastal Management at the University of New England's Lismore Campus. Dr. Saenger has studied mangroves extensively in Qld and other parts of the world and has been asked by the Hon. P. Comben to be a member of one of the advisory committees reviewing the Moreton Bay Strategic Plan. I attach a report of his findings on some of the direct impacts of our dredging operations. Specifically on Mud Island he states the damage caused to the island is minimal because the build-up of rubble banks is a natural process and the communities affected by it are resilient (able to accommodate) to such geomorphological changes. Aerial surveys of Mud Island indicate 1.3% of the mangrove cover has been affected. (As a comparison Green Island where QCL has never dredged, has 0.6% of its mangrove cover affected naturally.)

QCL's estimate of the reserves of dead coral indicates there is sufficient to supply the Darra operation for another 20 years and the investment decision for the new dredge and barge was based on this fact. Over half of these reserves are contained in the areas around Green Island, Wellington Point and Empire Point. It has been claimed that these areas are more environmentally significant. However the preferred users map released with the original Moreton Bay Strategic Plan, clearly designates these areas are for general use and not of major environmental significance. Dr. Saenger's report on his observation of the underwater environment supports this view. He indicates the algal-coral assemblages of Green Island and Wellington Point are depauperate in terms of coral species and abundance compared to those around Peel Island or near Dunwich. QCL views all licence areas as defined in the new licence agreement as essential to the Darra Operation.

One of the conditions contained in the new licence agreement is the implementation of a monitoring program. This was one of the recommendations made in the 1983 E.I.S. and both QCL and the Government are open for criticism for not implementing such a program earlier. QCL believe this is essential in collaboration with Primary Industries as part of the Moreton Bay Strategic Plan. Initial discussions on a monitoring program were

held with Primary Industries but have been stalled until a decision on the coral licences have been finalised.

M. MacKenzie

Released under RTI - DPC



Minister for Primary Industries



POSTAL: G.P.O. Box 46 Brisbane, Qld. 4001
OFFICE: State Law Building,
Cnr. Ann & George Streets, Brisbane
TELEPHONE (07) 227 4800 TELEK: 146352
FACSIMILE: (07) 229 0260

27 February 1989

Mr. J.L. Anderson,
General Manager,
Queensland Cement Limited,
P.O. Box 3,
DARRA Q 4076

Dear Mr. Anderson,

Ex Co



Yours faithfully,

N.J. HARPER
Minister for Primary Industries

Released under RTI - DPCO





Centre for Coastal Management

PO BOX 125, EAST LISMORE NSW 2480

PHONE: (066) 230 650

FACSIMILE: (066) 212 669

Mal MacKenzie
Assistant General Manager
Queensland Cement Limited
P.O. Box 3
Darra, Qld. 4076.

11 September 1990

Dear Mr. MacKenzie,

As discussed with you by phone, I now provide a brief report on the points raised in your letter of the 14 August 1990, and by the article from the "Bay Courier" which was attached. My comments are based on (i) diving inspections of the coral communities around Wellington Point and Green, St. Helena and Mud Islands, carried out by myself and Dr. David McConchie in January 1989; (ii) photographic surveys of these underwater areas in September 1983; (iii) an aerial and ground inspection of the mangroves of Mud Island in October 1989; and (iv) analysis of air-photos of Mud, Green and St. Helena Islands taken in November 1989.

Damage to Mud Island

As outlined in my earlier report of diving inspections in this area, two types of communities occur around Mud Island, namely a coral rubble flat and slope, and a deeper community of silty sand.

The coral rubble community is dominated by algae, comprising a cover of about 75%. Shelly sand and finer rubble occurs as patches throughout. In the deeper areas, algae are less dominant and sandy patches are larger. No living hard corals were observed during any of the inspections although other associated fauna included sponges, three species of soft corals, anemones, hydroids, mussels and ascidians. Few larger organisms such as crabs or fish were seen.

The silty sand community occurs in the deeper dredged areas. These support no obvious epibenthic organisms although a number of burrows (of crabs or mantis shrimp) were observed. It appears that little colonisation has taken place on the surface of these sediments. These sediments were sandier than those of the dredged area on St. Helena Island and given time, extensive recolonization should occur.

No detailed survey of larger organisms was carried out. However, despite the limited visibility, the larger organisms were not noticeably different in terms of their diversity and abundance at this area when compared with other similar areas (e.g. around Green Island).

On the island itself, several areas of dead mangroves were observed, apparently as a result from the build-up of rubble banks around parts of the island because of wave pile-up. This is a natural process on the island and the airphotos show a series of concentric beach-ridges on the north-western and south-eastern sides of the island resulting from past episodes of sand and rubble build-up. Similar beach ridges occur along the north-eastern shoreline of Green Island. However, the sudden seaward truncation of the subtidal platforms with coral dredging has resulted in an acceleration of this process on Mud Island.

Abrasion and smothering by sand and coral rubble may have contributed to these mangrove deaths but of greatest significance is the ponding of tidal waters within the island, whereby tidal circulation is decreased and the mangroves are unable to meet their root oxygen requirements. Four areas of mangrove mortality are apparent on the airphotos, each associated with impeded drainage. Two similar areas of impeded drainage has also caused mortality on the north-eastern side of Green Island.

The affected mangrove areas, determined by AEROMETREX Pty. Ltd. from the November 1989 airphotos, are as follows:

Mud Island

| | |
|---------------------|-------------|
| Area 1 | 1.0209 ha |
| Area 2 | 4.0706 ha |
| Area 3 | 0.3211 ha |
| Area 4 | 0.3212 ha |
| Total Area Affected | 5.7378 ha |
| Total Mangrove Area | 434.0901 ha |

Green Island

| | |
|---------------------|------------|
| Area 1 | 0.3833 ha |
| Area 2 | 0.0413 ha |
| Total Area Affected | 0.4246 ha |
| Total Mangrove Area | 68.1404 ha |

Ground inspection of Area 1 on Mud Island showed that a large drainage system had been blocked, causing mortality of adult grey mangroves (*Avicennia marina*). Some survival of small plants (< 1.5m high) was noted and seedlings were observed in this area. This suggests that the adverse effects of blockage of this drainage system are accentuated during periods of heavy rain and that recolonisation occurs between such periods.

To avoid, or at least minimise, such mortality on a long-term basis, measures to avoid ponding of waters within the mangrove communities are required. Given the geomorphological setting of these mangrove communities, such measures are unlikely to be successful and will need ongoing maintenance. On the other hand, there is no reason why the areas of mangrove mortality should increase further. However, where ponding presently occurs during high rainfall periods, short-term improvement can be attained, if deemed desirable, by opening drainage points which allow the free drainage (and increased exchange) of tidal waters.

Overall, however, the damage to the mangroves of Mud Island are insignificant.

Corals of Green Island and Wellington Point

Green Island: This area comprises a coral rubble community interspersed with shelly sand in the shallower areas (i.e. <2.5 m) and occasional coral heads up to 30 cm in diameter in the deeper areas (i.e. >3 m). Approximately 70% of the area is covered by algae, mainly of Asparagopsis taxiformis, Lobophora variegata, Sargassum sp. and Dictyopteris sp. Oncoliths (spherical growths of non-attached calcareous red algae) were scattered throughout the area, often being aggregated in the sandy areas between the coral rubble. Several small coral colonies were observed consisting of Favia speciosa - in the shallows, their abundance was approximately one colony per 25 m² while in the deeper areas the frequency was much lower. Occasional larger coral heads were observed consisting of Favia speciosa and one of Goniopora stutchburyi.

Living hard coral cover was markedly less than 1% throughout and these areas should be considered as algal communities with a very minor coral component [see underwater photos from September 1983]. Other associated fauna included sponges, three species of soft corals, seawhips, mussels and ascidians. Few larger organisms such as crabs or fish were seen.

Wellington Point: This area consists of coral rubble interspersed with shelly sand. The bottom was virtually covered with algae consisting of (in order of abundance) Asparagopsis taxiformis, Lobophora variegata and Sargassum sp. Oncoliths were abundant at this site. While coral rubble was abundant, few living coral colonies were seen: all were small and consisted of only one species - Favia speciosa. The colonies ranged in size from 5 to 12 cm in diameter. Total living coral cover was significantly less than 1%. Other associated fauna included sponges, three species of soft corals, zooanthids, mussels and ascidians. No larger organisms such as crabs or fish were seen although some juvenile fish were present..

While corals are restricted in area in and around Moreton Bay, the algal-coral assemblages of Green Island and Wellington Point are depauperate in terms of coral species and abundance when compared with those around Peel Island or near Dunwich. Corals within Moreton Bay are generally depauperate due to the periodic influence of markedly reduced salinities, and corals on the western shores of Moreton Bay, closer to the mainland, generally show greater reductions. Thus, Slack-Smith (1960) showed coral death occurred around Peel Island during floods in 1956 while Lovell (1976) found high mortality as a result of the 1974 floods as well as restricted distributions due to long-term turbidity.

The Situation at St. Helena Island

In the recently dredged area, two communities can be recognized: a coral rubble community occurs in the shallow areas and down the rubble slope of the cut, and a silty sand community at the base of the cut slope.

The silty sand community supported no obvious epibenthic organisms although a number of burrows (of crabs or mantis shrimp) were observed. It appears that little colonisation has taken place on the surface of these sediments and some deposition of fine sediments may still be occurring at this depth. Although an infauna, living in the top 5 cm of the sediments,

would undoubtedly be present, this was neither observed nor sampled.

The coral rubble habitat can be divided into two zones i.e. the shallow zone where the coral rubble is densely overgrown with algae, soft corals and mussels, and the slope zone which has few algae or other organisms.

The algae dominate in the shallow zone with Sargassum sp., Asparagopsis taxiformis, Lobophora variegata and Spyridia filamentosa being the most abundant. Algal cover is approximately 80%. Other associated fauna included sponges, soft corals, mussels and ascidians. Fish were abundant along the coral rubble slope and sizeable schools of bream were seen in addition to tarwhine, stripeys and morwong.

To the north, where an undredged area was also inspected, a coral rubble community similar to that of the shallows around Green Island was observed although no living coral was found. This area comprises a coral rubble community interspersed with shelly sand with much of the area covered by algae, mainly of Asparagopsis taxiformis, Lobophora variegata, Sargassum sp. and Dictyopteris sp. Oncoliths were scattered throughout the area. Other associated fauna included sponges, three species of soft corals, hydroids, seawhips, mussels and ascidians. No larger organisms such as crabs or fish were seen although a number of juvenile fish were seen among the algae.

Summary

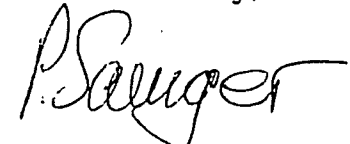
Overall, the damage caused to Mud Island by dredging is minimal because (1) the dredging has occurred in algal communities (with only a very minor coral component) which consist of commonly occurring species capable of rapid recovery; and (2) the build-up of sand and rubble banks has been accelerated by dredging and has caused localised mortality of mangroves. However, it is a natural process and the communities affected by it are resilient (able to accommodate) to such geomorphological changes.

Similarly, the damage caused to St. Helena by dredging is minimal as most of the dredging involves areas consisting of algal communities with only a depauperate and minor coral component. In addition, because of the generally more sheltered position, this island is less prone to the formation of rubble banks than is Mud Island.

Because of the more exposed position of Mud Island, its wave regime makes it more susceptible to the development of sand and rubble pile-up than either Green or St. Helena Islands. Despite this, dredging around St. Helena or Green Islands should leave a wider shallow margin to dissipate wave energy, particularly in the directions of the dominant wave sets i.e. generally on the north-western and south-eastern margins of these island.

I hope these comments and observations are helpful.

Yours sincerely,



Dr. Peter Saenger

References

Lovell, E.R., 1976. The reef building corals (Coelenterata: Scleractinia) of Moreton Bay, Queensland: their distribution and ecology. Unpublished M.Sc. Thesis, Zoology Department, University of Queensland.

Slack-Smith, R.J., 1960. An investigation of coral deaths at Peel Island, Moreton Bay, in early 1956. Pap. Dept. Zool., Univ. of Qld., 1:211-222.

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Queensland Cement Limited

18th September 1990

The Hon. W.K. Goss, M.L.A.,
Premier, Minister for Economic &
Trade Development & Minister for
The Arts,
15th Floor Executive Building,
100 George Street,
BRISBANE 4000

Dear Mr. Premier,

As we have previously discussed, QCL are extremely concerned about the delay in formally ratifying the renewal of our coral licences. It is our belief that the previous Government had committed itself to the renewal of the licences and it was on this basis that QCL proceeded with the expenditure of \$16 million for the construction of a new dredge and barge.

Coral licences which cover the area where QCL are currently operating are due to expire in August 1991.

The dead coral limestone reserves of Moreton Bay are the only economic source of raw material available for the Darra Operations. QCL see the Darra Operation continuing to be a major long term supplier of cement to S.E. Queensland.

QCL are confident that the long term impact of our dredging operations will have minimal effect on the overall Moreton Bay environment. For your information I have attached an account of the more recent negotiations and have attempted to answer some of the criticisms that have been directed at our dredging operations.

Yours faithfully,

J.L. Anderson
Managing Director.

Encl.
Coralett.doc

*Louise,
Get copy of DG's
response.*

T = 25/9/90

QCL'S CORAL LICENCE'S IN MORETON BAY

QCL currently hold the following licences:-

- | | | |
|-----|---|-------------------|
| (a) | Mud Island | Expires 21/7/2006 |
| (b) | Cleveland Wellington Point | Expires 31/5/1999 |
| (c) | St. Helena Island Green Island Empire Point | Expires 31/8/1991 |

In October 1988 QCL wrote to the then Minister for Primary Industries requesting an amalgamation and extension to 2011 of the existing coral licences as a prerequisite for the impending commitment by QCL of some \$16 million for a new dredge and barge. Following advice from the Minister in February 1989 (letter attached) that the Government would recommend to His Excellency the Governor in Council an amalgamation and extension of our licences, QCL awarded the contract for the construction of the dredge and barge to N.Q.E.A.

Subsequent to the Government's commitment, discussions took place between the Department of Primary Industries, the Department of Environment and Conservation and QCL and agreement was reached in reducing the licence area by 25%. Discussions between Treasury, D.P.I. and QCL saw the royalties increased to 68 cents per tonne (CPI indexed) plus 23 cents per cubic metre river dues. QCL also agreed to contribute \$65,000 pa to D.P.I. for research in Moreton Bay.

The need for long term tenure of our coral licences areas is vital to QCL. The dead coral limestone reserves are the only economic raw materials available for the Darra Operations. Denial of this resource would cause the closure of the Darra works with the loss of 200 jobs and 500,000 tonnes of cement production capacity. It would have a major impact on our operations and the building industry generally in S.E. Qld.

Claims have been made that almost 50 years dredging around Mud Island has caused substantial damage to the island's mangroves. Some mangrove mortality was identified in the 1983 Environmental Impact Study. To avoid any reoccurrence of this problem, it was recommended and consequently inserted in the new coral licence agreement that dredging should not be permitted within 40 metres of the mangrove fringe.

During 1989 QCL on its own initiative undertook to remove all rubbish such as old dredging piles and wire ropes associated with our previous dredging operations. It also became apparent to QCL in early 1989 that there had been some recent mangrove mortality on Mud Island as a result of the fairly recent blockage of some drainage channels as a result of a build-up of coral rubble banks around parts of the island due to wave pile-up. QCL with the approval of Fisheries barged an excavator to the island and cut channels through the coral rubble in order to improve circulation to the mangroves. This work was carried out in April and May 1989 but heavy seas in the middle of the year closed most of the channels that had been cut. Acting on the advice of Fisheries and our own consultants, it was agreed the situation did not warrant any further action.

QCL were concerned why there had been a build-up of the coral rubble banks along the NW and NE coastlines of Mud Island, when the most recent dredging had occurred seven years ago and areas on the NW coastline had not been dredged for well over 20 years. With the assistance of Max Winders and Associates, who had been involved in the 1983 E.I.S, it was discovered that approximately 15 million cubic metres of sand was dredged from the western side of the Middle Banks between 1981 and 1985 to construct the Brisbane Airport. The resultant trebling in the width of the East Channel and the reduced average level of the banks, could have increased the exposure of Mud Island to storm waves from the NNE. Calculations of the changes in wave energy at Mud Island indicated a theoretical increase of 8% in the energy of waves resulting from 40 mph NNE winds. A larger increase would be expected with higher wind speeds. Thus this may have been a significant factor in the unexpected coral rubble wall migration which caused the recent mangrove mortality at Mud Island.

Irrespective of the explanation as to why there had been recent mangrove mortality on Mud Island, QCL were concerned about how significant an impact this would have on the island mangroves. On several occasions QCL had employed the services of Dr. Peter Saenger, Associate Professor of the Centre for Coastal Management at the University of New England's Lismore Campus. Dr. Saenger has studied mangroves extensively in Qld and other parts of the world and has been asked by the Hon. P. Comben to be a member of one of the advisory committees reviewing the Moreton Bay Strategic Plan. I attach a report of his findings on some of the direct impacts of our dredging operations. Specifically on Mud Island he states the damage caused to the island is minimal because the build-up of rubble banks is a natural process and the communities affected by it are resilient (able to accommodate) to such geomorphological changes. Aerial surveys of Mud Island indicate 1.3% of the mangrove cover has been affected. (As a comparison Green Island where QCL has never dredged, has 0.6% of its mangrove cover affected naturally.)

QCL's estimate of the reserves of dead coral indicates there is sufficient to supply the Darra operation for another 20 years and the investment decision for the new dredge and barge was based on this fact. Over half of these reserves are contained in the areas around Green Island, Wellington Point and Empire Point. It has been claimed that these areas are more environmentally significant. However the preferred users map released with the original Moreton Bay Strategic Plan, clearly designates these areas are for general use and not of major environmental significance. Dr. Saenger's report on his observation of the underwater environment supports this view. He indicates the algal-coral assemblages of Green Island and Wellington Point are depauperate in terms of coral species and abundance compared to those around Peel Island or near Dunwich. QCL views all licence areas as defined in the new licence agreement as essential to the Darra Operation.

One of the conditions contained in the new licence agreement is the implementation of a monitoring program. This was one of the recommendations made in the 1983 E.I.S. and both QCL and the Government are open for criticism for not implementing such a program earlier. QCL believe this is essential in collaboration with Primary Industries as part of the Moreton Bay Strategic Plan. Initial discussions on a monitoring program were

held with Primary Industries but have been stalled until a decision on the coral licences have been finalised.

M. MacKenzie

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Minister for Primary Industries



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TELEPHONE (07) 227 4800 TELEEX: 145352
FACSIMILE: (07) 229 0260

27 February 1989

Mr. J.M. Anderson,
General Manager,
Queensland Cement Limited,
P.O. Box 3,
NARRA Q 4076

Dear Mr. Anderson,

Ex Co



Yours faithfully,

N.J. HARPER
Minister for Primary Industries

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Centre for Coastal Management

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PHONE: (066) 230 650

FACSIMILE: (066) 212 669

Mal MacKenzie
Assistant General Manager
Queensland Cement Limited
P.O. Box 3
Darra, Qld. 4076.

11 September 1990

Dear Mr. MacKenzie,

As discussed with you by phone, I now provide a brief report on the points raised in your letter of the 14 August 1990, and by the article from the "Bay Courier" which was attached. My comments are based on (i) diving inspections of the coral communities around Wellington Point and Green, St. Helena and Mud Islands, carried out by myself and Dr. David McConchie in January 1989; (ii) photographic surveys of these underwater areas in September 1983; (iii) an aerial and ground inspection of the mangroves of Mud Island in October 1989; and (iv) analysis of air-photos of Mud, Green and St. Helena Islands taken in November 1989.

Damage to Mud Island

As outlined in my earlier report of diving inspections in this area, two types of communities occur around Mud Island, namely a coral rubble flat and slope, and a deeper community of silty sand.

The coral rubble community is dominated by algae, comprising a cover of about 75%. Shelly sand and finer rubble occurs as patches throughout. In the deeper areas, algae are less dominant and sandy patches are larger. No living hard corals were observed during any of the inspections although other associated fauna included sponges, three species of soft corals, anemones, hydroids, mussels and ascidians. Few larger organisms such as crabs or fish were seen.

The silty sand community occurs in the deeper dredged areas. These support no obvious epibenthic organisms although a number of burrows (of crabs or mantis shrimp) were observed. It appears that little colonisation has taken place on the surface of these sediments. These sediments were sandier than those of the dredged area on St. Helena Island and given time, extensive recolonization should occur.

No detailed survey of larger organisms was carried out. However, despite the limited visibility, the larger organisms were not noticeably different in terms of their diversity and abundance at this area when compared with other similar areas (e.g. around Green Island).

On the island itself, several areas of dead mangroves were observed, apparently as a result from the build-up of rubble banks around parts of the island because of wave pile-up. This is a natural process on the island and the airphotos show a series of concentric beach-ridges on the north-western and south-eastern sides of the island resulting from past episodes of sand and rubble build-up. Similar beach ridges occur along the north-eastern shoreline of Green Island. However, the sudden seaward truncation of the subtidal platforms with coral dredging has resulted in an acceleration of this process on Mud Island.

Abrasion and smothering by sand and coral rubble may have contributed to these mangrove deaths but of greatest significance is the ponding of tidal waters within the island, whereby tidal circulation is decreased and the mangroves are unable to meet their root oxygen requirements. Four areas of mangrove mortality are apparent on the airphotos, each associated with impeded drainage. Two similar areas of impeded drainage has also caused mortality on the north-eastern side of Green Island.

The affected mangrove areas, determined by AEROMETREX Pty. Ltd. from the November 1989 airphotos, are as follows:

| | |
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| Mud Island | |
| Area 1 | 1.0209 ha |
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| Total Area Affected | 5.7378 ha |
| Total Mangrove Area | 434.0901 ha |
| Green Island | |
| Area 1 | 0.3833 ha |
| Area 2 | 0.0413 ha |
| Total Area Affected | 0.4246 ha |
| Total Mangrove Area | 68.1404 ha |

Ground inspection of Area 1 on Mud Island showed that a large drainage system had been blocked, causing mortality of adult grey mangroves (*Avicennia marina*). Some survival of small plants (< 1.5m high) was noted and seedlings were observed in this area. This suggests that the adverse effects of blockage of this drainage system are accentuated during periods of heavy rain and that recolonisation occurs between such periods.

To avoid, or at least minimise, such mortality on a long-term basis, measures to avoid ponding of waters within the mangrove communities are required. Given the geomorphological setting of these mangrove communities, such measures are unlikely to be successful and will need ongoing maintenance. On the other hand, there is no reason why the areas of mangrove mortality should increase further. However, where ponding presently occurs during high rainfall periods, short-term improvement can be attained, if deemed desirable, by opening drainage points which allow the free drainage (and increased exchange) of tidal waters.

Overall, however, the damage to the mangroves of Mud Island are insignificant.

Corals of Green Island and Wellington Point

Green Island: This area comprises a coral rubble community interspersed with shelly sand in the shallower areas (i.e. <2.5 m) and occasional coral heads up to 30 cm in diameter in the deeper areas (i.e. >3 m). Approximately 70% of the area is covered by algae, mainly of Asparagopsis taxiformis, Lobophora variegata, Sargassum sp. and Dictyopteris sp. Oncoliths (spherical growths of non-attached calcareous red algae) were scattered throughout the area, often being aggregated in the sandy areas between the coral rubble. Several small coral colonies were observed consisting of Favia speciosa - in the shallows, their abundance was approximately one colony per 25 m² while in the deeper areas the frequency was much lower. Occasional larger coral heads were observed consisting of Favia speciosa and one of Goniopora stutchburyi.

Living hard coral cover was markedly less than 1% throughout and these areas should be considered as algal communities with a very minor coral component [see underwater photos from September 1983]. Other associated fauna included sponges, three species of soft corals, seawhips, mussels and ascidians. Few larger organisms such as crabs or fish were seen.

Wellington Point: This area consists of coral rubble interspersed with shelly sand. The bottom was virtually covered with algae consisting of (in order of abundance) Asparagopsis taxiformis, Lobophora variegata and Sargassum sp. Oncoliths were abundant at this site. While coral rubble was abundant, few living coral colonies were seen: all were small and consisted of only one species - Favia speciosa. The colonies ranged in size from 5 to 12 cm in diameter. Total living coral cover was significantly less than 1%. Other associated fauna included sponges, three species of soft corals, zooanthids, mussels and ascidians. No larger organisms such as crabs or fish were seen although some juvenile fish were present..

While corals are restricted in area in and around Moreton Bay, the algal-coral assemblages of Green Island and Wellington Point are depauperate in terms of coral species and abundance when compared with those around Peel Island or near Dunwich. Corals within Moreton Bay are generally depauperate due to the periodic influence of markedly reduced salinities, and corals on the western shores of Moreton Bay, closer to the mainland, generally show greater reductions. Thus, Slack-Smith (1960) showed coral death occurred around Peel Island during floods in 1956 while Lovell (1976) found high mortality as a result of the 1974 floods as well as restricted distributions due to long-term turbidity.

The Situation at St. Helena Island

In the recently dredged area, two communities can be recognized: a coral rubble community occurs in the shallow areas and down the rubble slope of the cut, and a silty sand community at the base of the cut slope.

The silty sand community supported no obvious epibenthic organisms although a number of burrows (of crabs or mantis shrimp) were observed. It appears that little colonisation has taken place on the surface of these sediments and some deposition of fine sediments may still be occurring at this depth. Although an infauna, living in the top 5 cm of the sediments,

would undoubtedly be present, this was neither observed nor sampled.

The coral rubble habitat can be divided into two zones i.e. the shallow zone where the coral rubble is densely overgrown with algae, soft corals and mussels, and the slope zone which has few algae or other organisms.

The algae dominate in the shallow zone with Sargassum sp., Asparagopsis taxiformis, Lobophora variegata and Spyridia filamentosa being the most abundant. Algal cover is approximately 80%. Other associated fauna included sponges, soft corals, mussels and ascidians. Fish were abundant along the coral rubble slope and sizeable schools of bream were seen in addition to tarwhine, stripeys and morwong.

To the north, where an undredged area was also inspected, a coral rubble community similar to that of the shallows around Green Island was observed although no living coral was found. This area comprises a coral rubble community interspersed with shelly sand with much of the area covered by algae, mainly of Asparagopsis taxiformis, Lobophora variegata, Sargassum sp. and Dictyopteris sp. Oncoliths were scattered throughout the area. Other associated fauna included sponges, three species of soft corals, hydroids, seawhips, mussels and ascidians. No larger organisms such as crabs or fish were seen although a number of juvenile fish were seen among the algae.

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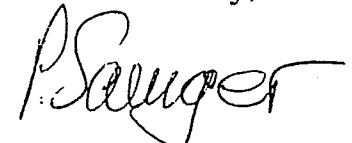
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Similarly, the damage caused to St. Helena by dredging is minimal as most of the dredging involves areas consisting of algal communities with only a depauperate and minor coral component. In addition, because of the generally more sheltered position, this island is less prone to the formation of rubble banks than is Mud Island.

Because of the more exposed position of Mud Island, its wave regime makes it more susceptible to the development of sand and rubble pile-up than either Green or St. Helena Islands. Despite this, dredging around St. Helena or Green Islands should leave a wider shallow margin to dissipate wave energy, particularly in the directions of the dominant wave sets i.e. generally on the north-western and south-eastern margins of these island.

I hope these comments and observations are helpful.

Yours sincerely,



Dr. Peter Saenger

References

Lovell, E.R., 1976. The reef building corals (Coelenterata: Scleractinia) of Moreton Bay, Queensland: their distribution and ecology. Unpublished M.Sc. Thesis, Zoology Department, University of Queensland.

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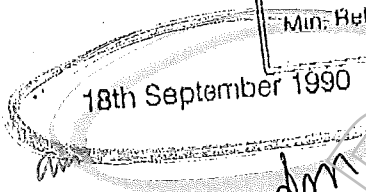
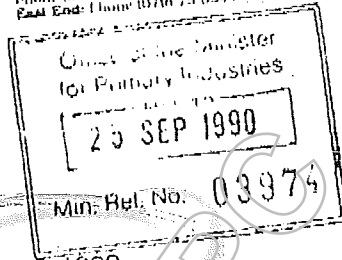
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Trade Development & Minister for
The Arts,
15th Floor Executive Building,
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Yours faithfully,

J.L. Anderson
Managing Director.

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Coralett.doc

TO: (1) H.S. JONES @ D.F.W.
FOR: Dist. Ronly
Information only
Approved for Action
[Signature]
for PRIVATE SECRETARY

Acc: 1 2 3 4 5

Re:

C.C. Hon. E.D. Casey, M.L.A.

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Empire Point

In October 1988 QCL wrote to the then Minister for Primary Industries requesting an amalgamation and extension to 2011 of the existing coral licences as a prerequisite for the impending commitment by QCL of some \$16 million for a new dredge and barge. Following advice from the Minister in February 1989 (letter attached) that the Government would recommend to His Excellency the Governor in Council an amalgamation and extension of our licences, QCL awarded the contract for the construction of the dredge and barge to N.Q.E.A.

Subsequent to the Government's commitment, discussions took place between the Department of Primary Industries, the Department of Environment and Conservation and QCL and agreement was reached in reducing the licence area by 25%. Discussions between Treasury, D.P.I. and QCL saw the royalties increased to 68 cents per tonne (CPI indexed) plus 23 cents per cubic metre river dues. QCL also agreed to contribute \$65,000 pa to D.P.I. for research in Moreton Bay.

The need for long term tenure of our coral licences areas is vital to QCL. The dead coral limestone reserves are the only economic raw materials available for the Darra Operations. Denial of this resource would cause the closure of the Darra works with the loss of 200 jobs and 500,000 tonnes of cement production capacity. It would have a major impact on our operations and the building industry generally in S.E. Qld.

Page 2

Claims have been made that almost 50 years dredging around Mud Island has caused substantial damage to the island's mangroves. Some mangrove mortality was identified in the 1983 Environmental Impact Study. To avoid any reoccurrence of this problem, it was recommended and consequently inserted in the new coral licence agreement that dredging should not be permitted within 40 metres of the mangrove fringe.

During 1989 QCL on its own initiative undertook to remove all rubbish such as old dredging piles and wire ropes associated with our previous dredging operations. It also became apparent to QCL in early 1989 that there had been some recent mangrove mortality on Mud Island as a result of the fairly recent blockage of some drainage channels as a result of a build-up of coral rubble banks around parts of the island due to wave pile-up. QCL with the approval of Fisheries barged an excavator to the island and cut channels through the coral rubble in order to improve circulation to the mangroves. This work was carried out in April and May 1989 but heavy seas in the middle of the year closed most of the channels that had been cut. Acting on the advice of Fisheries and our own consultants, it was agreed the situation did not warrant any further action.

QCL were concerned why there had been a build-up of the coral rubble banks along the NW and NE coastlines of Mud Island, when the most recent dredging had occurred seven years ago and areas on the NW coastline had not been dredged for well over 20 years. With the assistance of Max Winders and Associates, who had been involved in the 1983 E.I.S, it was discovered that approximately 15 million cubic metres of sand was dredged from the western side of the Middle Banks between 1981 and 1985 to construct the Brisbane Airport. The resultant trebling in the width of the East Channel and the reduced average level of the banks, could have increased the exposure of Mud Island to storm waves from the NNE. Calculations of the changes in wave energy at Mud Island indicated a theoretical increase of 8% in the energy of waves resulting from 40 mph NNE winds. A larger increase would be expected with higher wind speeds. Thus this may have been a significant factor in the unexpected coral rubble wall migration which caused the recent mangrove mortality at Mud Island.

Irrespective of the explanation as to why there had been recent mangrove mortality on Mud Island, QCL were concerned about how significant an impact this would have on the island mangroves. On several occasions QCL had employed the services of Dr. Peter Saenger, Associate Professor of the Centre for Coastal Management at the University of New England's Lismore Campus. Dr. Saenger has studied mangroves extensively in Qld and other parts of the world and has been asked by the Hon. P. Comben to be a member of one of the advisory committees reviewing the Moreton Bay Strategic Plan. I attach a report of his findings on some of the direct impacts of our dredging operations. Specifically on Mud Island he states the damage caused to the island is minimal because the build-up of rubble banks is a natural process and the communities affected by it are resilient (able to accommodate) to such geomorphological changes. Aerial surveys of Mud Island indicate 1.3% of the mangrove cover has been affected. (As a comparison Green Island where QCL has never dredged, has 0.6% of its mangrove cover affected naturally.)

QCL's estimate of the reserves of dead coral indicates there is sufficient to supply the Darra operation for another 20 years and the investment decision for the new dredge and barge was based on this fact. Over half of these reserves are contained in the areas around Green Island, Wellington Point and Empire Point. It has been claimed that these areas are more environmentally significant. However the preferred users map released with the original Moreton Bay Strategic Plan, clearly designates these areas for general use and not of major environmental significance. Dr. Saenger's report on his observation of the underwater environment supports this view. He indicates the algal-coral assemblages of Green Island and Wellington Point are depauperate in terms of coral species and abundance compared to those around Peel Island or near Dunwich. QCL views all licence areas as defined in the new licence agreement as essential to the Darra Operation.

One of the conditions contained in the new licence agreement is the implementation of a monitoring program. This was one of the recommendations made in the 1983 E.I.S. and both QCL and the Government are open for criticism for not implementing such a program earlier. QCL believe this is essential in collaboration with Primary Industries as part of the Moreton Bay Strategic Plan. Initial discussions on a monitoring program were

held with Primary Industries but have been stalled until a decision on the coral licences have been finalised.

M. MacKenzie

Released under RTI - DPC

Please Quote
Reference: F180/CSC:TLB

22nd August, 1990. *B*

Dear [redacted] *B*

The Honourable the Premier has asked me to acknowledge your letter of 18th July, 1991, concerning the live coral colonies on Green and Peel Islands.

The Premier has noted the contents of your letter. As the matter you have raised falls within the jurisdiction of the Honourable P. Comben, M.L.A., Minister for Environment and Heritage, I have forwarded a copy of your letter for his reply direct to you.

If you have any further enquiries regarding the matter you have raised, you should contact the Minister's office direct.

Yours faithfully,

Neil W. Lawson,
Executive Director - Economic Development.

B/c: The Honourable the Minister for Environment
and Heritage,
19th Floor,
160 Ann Street,
BRISBANE. QLD. 4000

Referred, by direction of the Honourable the Premier,
for reply direct. Copy of the inwards correspondence is
... attached.

Neil W. Lawson,
Executive Director - Economic Development.
21.8.91

LETTER FOR ENVIRONMENT AND HERITAGE

Pat Comben, MLA
Minister for Windsor
9th floor 160 Ann Street, Brisbane
PO Box 155, NORTH QUAY QLD 4002 · Telephone (07) 227 8819 · Facsimile (07) 221 7082



Ref: 204809

- 8 JUN 1990

The Hon. E.D. Casey MLA
Minister for Primary Industries
BRISBANE QLD 4000

Dear Mr Casey,

Thank you for your letter of 21 May, 1990, concerning extension of the exclusive licences held by Queensland Cement Ltd for the dredging of coral limestone in Moreton Bay.

I agree that this matter needs to be resolved quickly, particularly as it has implications for Moreton Bay planning. There are also significant public expectations regarding controls on extractive industry in Moreton Bay.

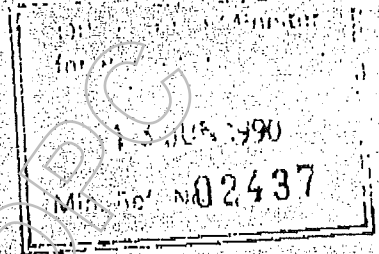
A number of the existing coral extraction licences cover or are adjacent to some areas of high conservation value, and a review of the licences provides the ideal opportunity to ensure that both the requirements of Queensland Cement and of marine conservation are properly assessed and resolved.

In the first instance, my view is that progress towards resolution can best be achieved by discussions at officer level. I have therefore arranged for officers from my Department to seek an early meeting with the relevant officers of your Department.

While appreciating the legitimate concerns of Queensland Cement, I think that the discussions can result in an outcome which will be both publicly supported and of substantial benefit to the environment.

Yours sincerely,

PAT COMBEN



2ND COPY

2

I am aware that your Department is preparing a second Draft Moreton Bay Strategic Plan and that this is relevant to the matter at hand. Given that this Plan is due for release in October, I would welcome your early views on the QCL request, either by personal discussions or in writing, to resolve the matter quickly.

Yours sincerely,

(Sgd.) Edmund Casey

EDMUND CASEY
Minister for Primary Industries

JAG:PC
16.5.90
Min. No. 01763
90/FB.03X.005

MAY 1990

The Honourable P. Comben, MLA
Minister for Environment and Heritage
BRISBANE QLD 4000

Dear Mr. Comben,

I have received a letter dated 19 April 1990 (copy attached) from Queensland Cement Ltd (QCL) concerning renewal of its exclusive licences to collect coral limestone in Moreton Bay.

QCL currently holds three such exclusive licences the first of which covers St Helena Island, Green Island and Empire Point and expires in August 1991. The second licence covers Cleveland, Wellington Point and expires in May 1999. The third licence covers Mud Island and expires in July 2006.

In conjunction with its acquisition of a \$17m dredge QCL has sought:

- (a) amalgamation of the licence areas into a single licence area;
- (b) amalgamation of the licences into a single licence for the period to 2011.

Cabinet - 1989

As outlined in the QCL letter discussions between QCL, Treasury and my Department were well advanced at the time of our coming into government. Verbal agreement was reached at officer level to increase the royalty payment to Treasury and for QCL to pay an annual licence fee into the Fisheries Research Fund of my Department. The licence fee was inter alia to be used to fund research and other projects associated with fisheries and wetlands in the Moreton Bay region.

Thus, as mentioned in the QCL letter, a two year research and monitoring study centred on Mud, St Helena and Green Islands has been formulated. This will be implemented regardless of the outcome of the licence issue and will if necessary, be wholly funded by my Department.

Copy F180

30-7-90

dm.

QCL CORAL DREDGING LICENSES IN MORETON BAY

The company has held licenses to dredge dead coral from a number of sites in Moreton Bay including St. Helena Island, Mud Island and in the Wellington Point/Ormiston area.

It is understood that whilst some of these licenses are still valid for ten years or more, some of the licenses are currently due for renewal. Negotiations have been proceeding with the company over the past two years in an effort to review all licenses concurrently, mainly to achieve certain environmental objectives of the State relating particularly to the preparation of the Management Plan for Moreton Bay.

Agreement in principle had been reached between QCL, Department of Primary Industries (the Department which issues the license), and Department of Environment and Heritage (the Department responsible for preparation of the Management Plan). The agreement apparently involved the surrender of some areas near Mud Island and Ormiston by the company.

The current situation is outlined in copies of letters between the Honourable the Minister for Environment and Heritage and the Honourable the Minister for Primary Industries attached to this memorandum. It is understood that the company is concerned to have this matter resolved quickly, particularly as one of the leases expires in August 1991.

A meeting between officers of the two Departments has been arranged for Monday next to resolve outstanding issues.

Released Under the Official Information Act 1982

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FROM DIV, DEPT
MINISTRY

Released under RTI - DPC

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163204. 0 043 1:3
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22/2/87

[Faint, mostly illegible text from a document or form, possibly containing names and dates.]

APP of 24/2
M.C.
MUM 23/2

Released under RTI - DPC

02/22/89 17:20 (AEST)

TELECOM CALLFAX 02

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CORAL NO PROBLEM

Minister for Primary Industries, Mr. Neville Harper, says the fading of coral fringing the coast is not likely to cause a threat to Moreton Bay.

Mr. Harper said that large quantities of dead coral were being found in the areas over which the Queensland Dairy Company hold leases.

He said that the re-growth of coral which has been observed where the Company has been leasing the area.

Mr. Harper said that coral in the Bay through the 1974 floods and mudslides.

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19th January, 1984.

Dear Dr. Alexander,

Coral Dredging - Moreton Bay
Your Reference 84/2021 E.004

154.

I refer to your letter of 12 January 1984, enclosing guidelines and a cost estimate for a programme to monitor the dredging operations of the Queensland Cement and Lime Company Limited at St. Helena Island.

In that letter you suggest that the programme should be funded either wholly by this Department or by this Department in conjunction with the Company. Whilst the latter arrangements applied to funding of the Environmental Impact Assessment Report, I do not consider that those arrangements should be taken as a precedent for funding of the monitoring programme.

F2 → This Department's involvement with this matter was by direction of Cabinet and for the specific purposes outlined in Cabinet Decision No. 408979 of 26 July 1983. Following acceptance by Cabinet of the findings of the Impact Assessment Report and pursuant to Cabinet Decision No. 41795 of FdBA → 21 November 1983, the responsibility for further action on this matter lies with your Department as the agency responsible for the administration of the Fisheries Act.

F51 The General Manager of the Queensland Cement and Lime Company Limited has, by letter dated 2 December 1983, indicated his Company's willingness to co-operate with your Department along the lines recommended in the Study Report, and I enclose a copy of this letter for your information. It is considered that following discussions with the Company, your Department may then wish to seek additional funding for this programme through normal channels.

Yours faithfully,

(S5) S. S. Co-ordinator-General.

Dr. G.I. Alexander,
Director-General,
Department of Primary Industries,
Comalco House,
Chr. George and Ann Streets,
BRISBANE. Q. 4000.



Telephone: 224 0414
 Telex 41620
 Telegraphic Address:
 "Qldprimind"

In any further correspondence
 refer to No. 84/2021B.004

Department of Primary Industries

COMALCO HOUSE
 CNR. GEORGE AND ANN STREETS
 BRISBANE.

Please address all correspondence to—
 Director-General
 Dept. of Primary Industries
 G.P.O. Box 46
 Brisbane, Q. 4001

7219
 F180A

12 JAN 1984

Co-ordinator General
 Premier's Department
 PO Box 185
 North Quay Qld 4000

Dear Sir,

Coral Dredging - Moreton Bay

Cabinet - 1983



att

The cost of the monitoring programme will amount to about \$42 200 in the first year. I would expect this cost to be borne by the Co-ordinator General, and that the Co-ordinator General may seek to recoup in part or whole the costs of the monitoring programme from Queensland Cement and Lime Pty Ltd.

Yours faithfully,

A. Hegarty
 (G.I. Alexander)
 Director-General

DJC for discussion re
 reply
 f 16/1
 reply drafted as discussed
 12/1/84

RECEIVED
13 JAN 1984

111111

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Guidelines For a Monitoring Programme

Coral Dredging in Moreton Bay

This programme is to provide information on six (6) aspects of Queensland Cement and Lime Pty Ltd's dredging operations in Moreton Bay. The programme will extend over four to six weeks per year for aspects other than water quality where a monthly sampling schedule will be required and recreational fishery survey which will be undertaken quarterly.

The four to six week monitoring period will precede the times during which the dredging fleet is annually dry-docked in November. If the report on monitoring so indicates, any further modifications to dredging operations or to Licence Area boundaries may be considered and implemented prior to the recommencement of dredging.

Guidelines

(1) Dredging areas

The areal limits of the past year's dredging activities together with the final water depths, location of shoal grounds and location of any piles or beacons remaining are to be documented. Proposed dredging areas for the following twelve months are also to be delineated.

(2) Water quality

The objectives of the water quality monitoring should be two fold:-

(a) To collect data to allow management of the dredging operation and monitor the effects of any operational changes and;

(b) To monitor selected stations near the operation to determine whether any environmental damage occurs, and if it can be limited to an acceptable level.

This will require two areas of monitoring, one area in the plume and the other near the boundaries of the areas of environmental effects.

The programme for the plume area monitoring should include:-

- (i) Secchi disc transparency at all stations.
- (ii) Sampling for non-filtrable residue and turbidity at the surface and at one half a metre above the bottom at all stations.

- (iii) Sampling for B.O.D. and nutrients, twice per year at a small number of stations.
- (iv) Core sampling from the bottom to determine the rate of sedimentation and particle size distribution at two stations at each of two cross sections, at a quarterly frequency.

Stations would need to be related to the dredging operation and include one station up tide from the dredge, as a control. Within the plume, stations should start on a cross section 100 m from the dredge and then at four further cross sections 500 m apart downstream. Two stations each approximately one third width from the margin of the plume will be needed on each cross section. Samples for B.O.D. and nutrients should be collected from surface water at one station on each of the first three cross sections.

At the four boundary stations, as recommended by the consultants, sampling and analyses similar to (i), (ii) and (iv) as outlined for the plume monitoring will be undertaken. An additional remote control station should be selected and Secchi disc transparency measurement and samples as for the other stations should be carried out.

(3) **Bottom conditions**

Benthic sampling should be undertaken to identify representative areas within previously dredged locations and proposed dredging locations. At least five, 50 m transects within one of the previous locations and in the proposed next year's location are to be surveyed to provide qualitative comment and photographic evidence on existing conditions, particularly in relation to coral regrowth in past dredged areas. Constraints on proposed dredging are to be provided if appropriate. Visual inspection is to be made along each transect recording the number and diversity of major benthic organisms and an assessment made of their vigour.

(4) **Shoreline Survey**

The shoreline adjacent to past dredging areas should be inspected to identify any locations in which rubble banks have formed and to assess whether action needs to be taken to prevent them coming ashore into the mangrove fringe or of causing a critical amount of lagooning. Indications of dieback should be noted and potential causes examined. The shoreline adjacent to the proposed dredging area should be examined and any appropriate constraints to dredging recommended.

A number of standard survey or marker pegs are to be installed to provide fixed reference points. The beach line between the lime kilns and the causeway on St. Helena should be inspected and measurements made of the distance between the erosion face and the fixed reference points to provide historical record and a measure of erosion rate.

(5) Commercial Fishery

In order to obtain an estimate of the size of the commercial catch from the environs of St. Helena, and enable any changes or trends to be recognised, a log-book programme should be initiated amongst those commercial fishermen nominated by the Queensland Commercial Fishermen's Organization as using the area. The log book programme is to be in accord with the Docket Books being instituted by the Queensland Fish Management Authority, however using greater precision in defining target areas.

Given the current lack of sophistication in the gathering of fisheries statistics in Moreton Bay, it would however not be possible to carry out any comparisons with other local fisheries at the level implied in the Consultant's report.

(6) Recreational Fishery

Opinions upon the effect of dredging operations should be sought from the District Patrol Officer of the Queensland Boating and Fisheries Patrol and office bearers of the Queensland Amateur Fishing Council.

In view of possible deficiencies in objectivity in this source of information, however, and the dearth of quantitative data on recreational fishing activities at St. Helena, a quarterly creel census or boat ramp survey covering anglers using this area should be carried out on one weekend per quarter. The survey is to be on one standardised weekend at each of two ramps e.g. Wynnum and Manly Boat Harbour.

Annual Report

A report containing the results of the above monitoring activities and recommendations for any modifications to the following year's dredging programme should be produced annually at the time when work is halted for the dry-docking of the dredging fleet, and presented jointly to the Director-General, Department of Primary Industries, and the Queensland Cement and Lime Company, for consideration prior to commencement of the new season's dredging.

Production of the annual report is to be the responsibility of the Director, Division of Dairying and Fisheries, with appropriate assistance from the Queensland Cement and Lime Company and the Director of Water Quality in respect of sections (1) and (2) respectively.

Estimated costs of carrying out a monitoring programme over a five year period are provided in Table 1, including a 10% growth in costs each subsequent year.

TABLE 1. Total Costs/annum.

| | |
|----------|---------------------------------------|
| Year I | \$42 205 (\$38 055 + \$4 150 capital) |
| Year II | \$41 860 |
| Year III | \$46 046 |
| Year IV | \$50 651 |
| Year V | \$55 716 |

These costs cover purchase of a limited amount of capital equipment and the contingency costs to carry out the programme. Estimated costs of each individual task in the first year are given in Table 2.

TABLE 2. Individual Task Costs

| TASK | COST \$ |
|-------------------------|---------|
| 1. Dredging Area | 1 110 |
| 2. Water Quality | 17 075 |
| 3. Bottom Conditions | 5 430 |
| 4. Shoreline Survey | 5 690 |
| 5. Commercial Fishery | 5 500 |
| 6. Recreational Fishery | 5 500 |
| 7. Annual Report | 1 900 |
| | 42 205 |

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