STRUCTURE AND SCOPE OF THE PUBLIC ENVIRONMENTAL REPORT

This Public Environmental Report (PER) has been prepared to satisfy the requirements of the Northern Territory *Environmental Assessment Act (1982)*, and in accordance with the guidelines issued by the Northern Territory Minister for Lands Planning and Environment.

The PER comprises the following main sections:

SECTION 1 Introduction

This section introduces the project and provides background information on the development.

SECTION 2 Description of Proposed Development

This section describes the proposed development and the specific elements of the project, including the design, construction and operation of the facilities.

SECTION 3 Description of Existing Environment

This section describes the existing environment occurring at and in the vicinity of the site.

SECTION 4 Environmental Effects, Assessment and Management

This section predicts the potential environmental impacts arising from construction and operation of the development and outlines the proposed management strategies.

SECTION 5 Environmental Management Plan

This section outlines the framework for the establishment of a site-specific Environmental Management Plan.

SECTION 6 References

This section lists the references consulted and researched during the preparation of the PER.

PHELPS/PANIZZA HOLDINGS
BLACKMORE RIVER (EAST) AQUACULTURE PROJECT
MIDDLE ARM, DARWIN HARBOUR, NORTHERN TERRITORY

PUBLIC ENVIRONMENTAL REPORT

1. INTRODUCTION

1.1 PURPOSE OF THIS DOCUMENT

This document is a Public Environmental Report (PER) for a proposal to construct an aquaculture project to the east of the Blackmore River, Middle Arm, Darwin Harbour, Northern Territory. It is submitted by Phelps/Panizza Holdings (the proponent) to provide the Northern Territory Government and the public with the information necessary to allow an informed appraisal of the environmental acceptability of the proposed Blackmore River (East) Aquaculture Development.

The PER has been prepared in general accordance with the Northern Territory *Environmental Assessment Act (1982)* and guidelines prescribed by the Minister for Lands, Planning & Environment and the Department of Lands, Planning & Environment (DLPE). These guidelines are included as **Appendix A.**

1.2 DOCUMENT STRUCTURE

The PER comprises two volumes. The first volume includes the Executive Summary and main report. Technical appendices, which contain detailed information on many aspects of the project, are presented in Volume 2.

1.3 STUDY TEAM

The URS study team for this project included:

- Peter Mueller Project Manager
- Ian Baxter Marine Biology
- Keith Martin Fauna
- Anthony Maxwell Soils and Hydrology
- Michael Raymond Hydrology

The PER was undertaken in association with:

- Kirsten Metcalfe Environmental Consultant - flora survey
- Scott Mitchell Heritage Surveys - archaeological study

- Peter Whelan — Medical Entomology Branch - Territory Health Services, biting insects survey
- Gwenda Hayes — Medical Entomology Branch - Territory Health Services, biting insects survey
- Greg Phelps — Managing Director, Phelps/Panizza Holdings (Phelps/Panizza)
- Stuart Higgins — Phelps/Panizza

Additionally, specific advice was obtained from Nigel Preston, Commonwealth Scientific and Industrial Research Organisation (CSIRO) Marine Research, Cooperative Research Centre (CRC) on discharge water treatment strategies.

1.4 PROOF OF LEASE AND OTHER AUTHORISATIONS

A Letter of Authorisation has been presented to Phelps/Panizza by the Director for Lands, Planning & Environment. A copy of the Letter of Authorisation is presented in **Appendix B**.

A copy of the Authority Certificate for the development issued by the Aboriginal Areas Protection Authority (AAPA) is presented in **Appendix C**.

1.5 PROJECT JUSTIFICATION

Phelps/Panizza are proposing to construct and operate an aquaculture farm in the Middle Arm, Darwin Harbour area, on land adjacent to, and east of, the Blackmore River, south of Darwin. Primarily this venture is to be based on the commercial production of black tiger prawns *(Penaeus monodon)* with intention to consider other species as the farm is established.

The world's population is increasing at around 80 million people per year, that is, 219,000 people per day. The consequent energy requirement is increasing by 1.83 GJ per day, with protein needs increasing at a daily rate of 1.4 x 104 kg (Wheaton, 1993). The demand for high quality seafood, including prawns is increasing for a number of reasons including: an increasing world population; improving economies in neighbouring South East Asian countries; and improved diet education in the western world, highlighting the positive aspects of seafood.

Market supply from the world's natural fisheries appears to have plateaued in the 1970s at around 90 million tonnes. It is now generally accepted that natural fish catches are declining and that the deficit of natural fish stocks will be replaced by increasing farmed production. It is predicted that by 2010, global aquaculture production will contribute over 24% of total fisheries production (IAF 1985) and that over the next 50 years aquaculture production will come to equal, if not surpass, the harvest of wild fish (Larkin, 1988).

Australia's climate, land and water resources, combined with systematic research programs and technical knowledge have enabled the development of cost-efficient and environmentally acceptable aquaculture farms.

After extensive study into the potential and current status of aquaculture overseas, in New South Wales

and Queensland, Phelps/Panizza identified the Northern Territory as having several positive attributes:

- Climatically the Northern Territory offers temperature ranges that will facilitate maximum growth of warm water marine species for most of the year; this is projected to result in additional production of approximately 25% over farms in southern locations elsewhere in Australia.

- Sufficient land and water resources are available at reasonable expense and are suitably removed from associated chemicals and pollutants common to intensive agriculture/manufacturing production.

- The City of Darwin is ideally positioned geographically, and established trade and freight channels are open to southern Australian States and Singapore as a hub to Europe, USA and South East Asia.

- The Northern Territory government and bureaucracy are supportive of progressive industry, and efficient and ecologically sustainable utilisation of the region's resources.

1.6 PROJECTED MARKETS

Produce from the aquaculture project will initially be distributed to the Australian capital city markets. As production increases the market focus will move to establishing international export markets. The long-term viability of the project will depend on establishing international markets.

Emphasis will be placed on the quality and presentation of the product with utilisation of the Individual Quick Freezing (IQF) method of processing and packing. This method allows for presentation of an individually frozen product, with a constant and assured quality but without the risk associated with shipping unfrozen produce should delays in transportation be experienced.

The main international target markets in order of intended priority will be United Kingdom, Europe, USA, Japan and Hong Kong. Phelps/Panizza have established contacts in the United Kingdom and Asia that have expressed interest in distributing Australian farmed prawns.

1.7 ECONOMIC IMPACTS

The proposal is expected to create substantial economic benefits to the greater Darwin community.

1.7.1 Development and Construction

In the initial development it is estimated that $2.846 million will be outlaid for capital works, most of which will be spent with local contractors, suppliers or additional staff. Most items of equipment purchased to date have been sourced from Darwin suppliers. Local Darwin firms have provided all consultancy work in engineering, environment and legal aspects of the project.

Over the period until the project reaches full scale it is conservatively calculated that $8.2 million will be channeled into construction.

1.7.2 Employment

Phelps/Panizza have set a policy of employing local management and staff, whenever possible. Three management positions have already been offered to individuals situated in Darwin.

Initially, nine to twelve permanent employment positions will be created. As the project reaches full scale up to 40 permanent positions will be created.

With the high levels of mechanisation, automation and computerisation intended for this development, many of the permanent positions will be technically based and require intensive training, creating real career opportunities for local people.

1.7.3 Operational Expenditure

Annual operational expenditure for the farm at initial scale is in the order of $2.7 million. The largest single cost is the pelletised prawn feed which constitutes approximately one third of budget and is not available locally. Other major items of cost are salaries, fuel/power, equipment maintenance and repairs.

As the pond area increases it is projected that annual operational expenditure will grow upwards of $10.5 million.

A summary of the projected economic benefits to Greater Darwin is presented in **Table 1**.

Table 1

Projected Economic Benefits to Greater Darwin

Item	Amount - Stage 1	Amount to Completion	% $ Spent in Greater Darwin
Construction	$2.846 million	$8.2 million	75
Full time staff positions	9 – 12	Up to 40	100
Casual employment	1,500 hours/year	Up to 9,900 hours/year	100
Operational expenditure	$2.7 million/year	Upwards of $10.5 million/year	60