Environmental Assessment Scoping Report Proposed Bulk Liquids Storage Facility Kooragang Island

7 March 2007

Prepared for: Marstel Terminals Pty Ltd PO Box 175 Altona VIC 3018

 Report by:

 HLA-Envirosciences Pty Limited

 ABN: 34 060 204 702

 18 Warabrook Boulevarde Warabrook NSW 2304

 PO Box 73 HRMC NSW 2310

 Ph: +61 2 4968 0044

 Fax: +61 2 4968 0005

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Coples	Recipient	Copies	Recipient
1	Jeff Hibbert Engineering Manager Marstel Terminals Pty Ltd PO Box 175 Altona VIC 3018	1	David Kitto Department of Planning GPO Box 39 Sydney NSW 2000
1	HLA-Envirosciences Pty Limited Project File		

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By

HLA-Envirosciences Pty Limited ABN: 34 060 204 702 18 Warabrook Boulevarde Warabrook NSW 2304 PO Box 73 HRMC NSW 2310

Holiy Mariin Senior Environmental Scientist

Technical Peer Reviewer: Date: thie Michael Epgland National Practice Leader Environmental Planning

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1 INTRODUCTION

Marstel Terminals Newcastle Pty Ltd (Marstel) proposes to construct a bulk liquids storage facility (terminal facility) on land managed by the Regional Land Management Corporation (RLMC) on Kooragang Island in Newcastle, NSW. The proposed facilities will be used for the receival, storage, blending and distribution of high quality fuels and biofuels for customers throughout the Hunter Region. The capital costs associated with the facilities are approximately \$47 million.

Under the provisions of Part 3A of the Environmental Planning and Assessment Act 1979 (EP&A Act; amended 2005), Marstel intends to seek project approval for the proposed development.

1.1 Background

The consumption of fuel and biofuels in the Hunter Valley, and throughout Australia, is increasing. With the refining capabilities in Australia operating at maximum production, the increasing demand for fuel will need to be met through imports, which will in turn require waterfront terminalling facilities.

The existing fuel terminal facilities in Newcastle receive fuel via truck or pipeline from Sydney. Vehicle access from fuel facilities in Sydney is limited by route restrictions for hazardous bulk liquids, and the fuel pipeline is currently carrying capacity loads. The alterative transport route available to Newcastle facilities is via ship.

Biofuels (biodiesel and ethanol) are generated from renewable, organic sources. The use of fuels blended with biofuels can result in environmental benefits, including reduced exhaust emissions of some toxic pollutants and reductions in greenhouse gas emissions.

1.2 Project Context

Marstel wishes to develop a terminal that will primarily be used for the cost-effective import, blending and distribution of high-quality fuel and biofuels to the Hunter Region. Unleaded petrol and diesel will be received by ship. Ethanol and biodiesel will be primarily sourced from Australian markets and delivered by truck or ship. The fuels will be stored in bulk tanks prior to blending and distribution throughout the Hunter Region. The proposed project will increase the availability of more environmentally-friendly fuels and increase competition in the local fuel market. Marstel's future plans for development in the area include the construction of a new multi-user berthing facility that will be dedicated to bulk liquids.

1.3 Location

The terminal facility is to be located on Greenleaf Road, as shown in **Figure F1**. The site is adjacent to Walsh Point, approximately 3 km north of the Newcastle CBD. The land on which the facilities are to be located will be leased from the Regional Land Management Corporation.

The nearest residential areas are located at Fern Bay, Stockton and Carrington (see **Figure F1**), with the closest receptors approximately 700 m from the proposed terminal site. Neighbouring industry includes Incitec, Orica Limited, and the Boral woodchip mill as shown in **Figure F2**.

1.4 Approval Process

The proposed development potentially meets the criteria of a Major Project under Schedule 1 of State Environmental Planning Policy 2005 (SEPP 2005) as:

Bulk storage facilities with a capital investment of more than \$20 million (Group 3, Clause 10).

The proposal is, therefore, eligible for assessment under Part 3A of the EP&A Act, with the Minister as the decision-making authority. A project approval is sought for the proposed development.

1.5 Purpose and Structure of Report

The purpose of this report is to characterise the proposed project and provide an overview of its potential effects on the environment and the community. Additionally, this Environmental Assessment Scoping Report (EASR) is intended to provide the Department of Planning (DOP) and other statutory authorities with sufficient information to establish the key environmental issues associated with the proposed project. The information contained in this report will be used to determine whether the project meets the criteria for Major Project status under State Environmental Planning Policy (SEPP) 2005 and to develop the Director-General's Requirements for the Environmental Assessment.

The structure of this EASR is outlined below:

- **Sections 1** and **2** provide an introduction to the proposed project, including a description of the proposal and its main components;
- Section 3 describes the legislation applying to the proposed project;
- **Section 4** provides details of preliminary consultation undertaken with regulatory authorities, the community and neighbouring industry;
- **Sections 5** and **6** report on the environmental implications of the proposal, including the baseline situation and anticipated impacts;
- Section 7 examines the likely impacts of the proposed project on community, transport and natural resources;
- **Section 8** outlines the potential effects of the proposal on the community in terms of social, heritage and cultural impacts, together with the economic implications of the proposal;
- **Section 9** assesses the potential environmental risks associated with the proposed project and prioritises them; and
- **Section 10** presents a summary of the findings of the EASR and provides a conclusion on the level of environmental assessment required to support the preliminary project application.

1.6 The Proponent

Marstel is an independent bulk liquids storage and handling company that has been operating for 20 years, specialising in handling hazardous bulk liquids and edible oils. Marstel operates four marine terminals and one inland facility in New Zealand and Australia, including facilities at Altona and Coode Island in Victoria. Marstel seeks to diversify into the fuel terminalling sector in order to grow its business base.

Marstel places the highest priority on safety, operational integrity and good environmental practice. Documented work procedures and management systems have been developed for all of Marstel's terminals to ensure its operations are conducted safely. The Coode Island facility has been recognised as a world best practice operation for safety and environmental protection. Operator selection and training, emergency response procedures, risk management procedures and incident reporting are all key areas of emphasis in Marstel's management systems, which support the Company's quality, safety and environmental objectives.

2 CHARACTERISATION OF PROJECT

2.1 Overview

The proposed project involves the construction of a terminal facility that will be used for the import, blending and distribution of high quality fuels and biofuels. The facility will be designed to receive fuels and biofuels via ship and truck, which will be stored in bulk storage tanks prior to blending and distribution to customers. The terminal will be designed for a maximum throughput of approximately 300 million litres (megalitres, or ML) of fuel per year.

2.2 Project Objectives

The purpose of the project is to develop a world-class bulk fuels and biofuels terminal in Newcastle, which will help industries in the Hunter Region to grow with more cost-competitive fuel, greater efficiencies and a stable fuel supply. Marstel's vision is to secure a thriving and vibrant Hunter community built with economically, socially and environmentally sustainable industry.

The products imported, stored and dispatched from the terminal will conform to the Australian Fuels Standards. Product quality control systems will be adopted to ensure that the products meet grade at all stages of the supply chain and when delivered to customers.

2.3 Justification of Site Location

Newcastle was chosen as the location for the proposed facilities due to commercial and access issues. The main advantages of the location are:

- The existing port infrastructure and availability of land close to berthing facilities;
- Easy access to locations throughout the Hunter Region from the port;
- Population growth;
- The growing industrial base; and
- The supportive business development environment.

The proposed terminal facility is located close to existing berthing facilities, and can receive and distribute product directly from the ship via a short pipeline. The ability for Marstel to receive product from ships and supply this product to end users will provide a cost-effective supply chain that will provide future growth opportunities for the terminal once it is established.

In contrast, the Sydney region suffers from congested roads, limited transport routes for liquids with low flash points (such as fuels) and a lack of vacant land close to the port facilities.

2.4 Site Information

2.4.1 Description

The proposed terminal facility is to be located on Lots 1 - 4 DP 234887 on Greenleaf Road, Kooragang Island. The site abuts the Walsh Point reserve as shown in **Figure F1**.

2.4.2 Ownership

The site will be leased from the RLMC. A number of other landowners will also be affected by the proposed pipeline needed to convey fuels from the berth to the terminal facility. These include Orica and Newcastle City Council (for pipeline access across Heron / Greenleaf Road).

2.4.3 Access

The site is close to berthing facilities; product can, therefore, be transferred between the sites via a short pipeline. The site has existing vehicle access.

2.4.4 Security

The site will be bounded by a chain wire mesh fence with a razor wire top. Access to the site will be via two automatic traffic gates that will be opened by terminal staff or access cards (issued to inducted contractors). An in-ground induction loop will trigger the gates to open for vehicles leaving the site. Emergency egress points will be located at manually-opened gates and the main traffic gates. The site will have low-level, inward-directed floodlighting at night in addition to operational task lighting. Tank outlet valves will be 'locked down' at night.

2.4.5 Operational Hours

The terminal site will nominally be open for product dispatch between 6 am and 4 pm Monday to Friday and from 6 am to 12 noon on Saturdays when required. Marstel will, however, seek approval for 24-hour operations provided that noise levels from the facility meet amenity criteria at sensitive receptor locations. Shipping operations will be undertaken as required, which may be at any time or day of the week.

2.4.6 Interfaces

The terminal site will require servicing infrastructure such as potable water, electricity, communications and sewage. Electricity to service plant will be obtained from the local grid; distribution boards will be supplied from an on-site transformer linked to the high voltage electricity supply. On-site backup capability (batteries and engine-driven generator) will be installed to feed key safety-related systems to ensure the safe operation of the tanks during power outages. The fire system will be powered by diesel. Potable water will be obtained from Hunter Water, and an on-site septic system will be required.

2.4.7 Decommissioning

The proposed facilities have an intended operational life of 100 years. The materials from which the facilities are to be constructed are recyclable and readily decommissioned.

2.5 Key Components

2.5.1 Storage, Tanking and Terminals

The common user berth K2 will be used for ship berthing and product discharge. Ships will discharge through two eight-inch multi-product flexible hoses connected to a dedicated manifold on the wharf. The hoses will be rated for 14 bar working pressure. The current maximum pump pressure available from ships serviced is 9 bar, and the hose burst pressure is approximately five times the working pressure.

The hoses will be handled using the ship's crane or shore-based mobile cranes. The 16-inch wharf manifold will consist of a pig breech and standpipe connected to the 16-inch carbon steel discharge line that will initially run under the wharf area, and then above ground and roadways via an easement to the terminal site. The 16-inch line will terminate at a pig receiver and main product receipt manifold on site.

Each product class will be delivered to the terminal facility via a dedicated pipeline to ensure product integrity and safety. The wharfline will be 'pigged' clear after each product discharge. Shipping and truck loading operations will be controlled by a computerised control system that will be pre-programmed to enable feasible concurrent operations.

Diesel and biodiesel fuel will respectively be stored in one 25 ML and two 3 ML atmospheric steel storage tanks fitted with standard pressure/vacuum protection, venting to atmosphere. Unleaded and premium unleaded petrol will be stored in separate 12 ML steel tanks with internal floating roofs that will minimise vapour emissions and retain petrol quality. Ethanol will be stored in a 3 ML steel tank, also fitted with an internal floating roof. All tanks will be designed to meet the requirements of the Protection of the Environment Operations (Clean Air) Regulation in relation to the control of volatile organic liquids.

Each tank will have:

- Auto level gauging;
- High/low level alarms;
- Multi-level temperature measurement;
- Multi-level sampling equipment;
- Water draining; and
- Low-level product drains for maintenance purposes.

All tanks will be located within sealed bunds piped to stormwater collection systems.

2.5.2 Road Tanker Gantry

A three-bay road tanker gantry is proposed for the terminal site, with each bay capable of multiproduct loading of a 50,000 litre B-double road tanker in 40 minutes. The gantry will be fed from the product tanks via dedicated pumps and lines. Each gantry bay will be fitted with three diesel, one unleaded petrol and one premium unleaded petrol bottom loading arms, with each arm supporting additive injection facilities.

The facility will be operated by the vehicle driver using swipe card gantry access. The vehicles will be fitted with overfill and static protection. A dead-man button requiring regular activation by the vehicle driver will be integrated into the gantry emergency shutdown system. Various component interlocks will ensure safe operation during all phases of the vehicle loading operation.

The truck fill stand will take vapours via carbon adsorption processes for vapour recovery. Product will be reclaimed and pumped back into the system, thereby removing atmospheric emissions.

2.6 Physical Form

The site layout is shown in **Figure F3**. The primary elements of the terminal facility are the six 17 m high storage tanks and the truck-loading gantry. Details of the main structures on site are

provided in **Table 1**. Above-ground pipework will also be installed for the transfer of biofuels from the K2 wharf to the terminal facility.

The fuel storage tanks will be constructed on compacted crushed rock bases, and will have a polyethylene liner case in the base fitted with a tell-tale hole to detect under-floor leaks. The tank storage area will be surrounded by concrete bund walls 1.8 - 2 m high, with intermediate bunds 0.6 m high designed in accordance with AS 1940. The bunds will be lined with a Claymax liner and crushed rock, and sealed with a sprayed layer of non-combustible bituminous compound to create a barrier above the soil and groundwater and aid the collection of stormwater.

Structure	Approximate Size	No.	Description
Diesel tanks	44 m diameter; 17 m high	1	Steel tanks with white exterior
Unleaded Petrol	30 m diameter 17 m high	2	Steel tanks with white exterior
Ethanol/biodiesel tanks	16 m diameter; 17m high	3	Steel tanks with white exterior
Office and amenities	7 m x 4 m; 5 m high	1	Steel wall and roof cladding; colourbond finish
Truck-loading gantry	25 m x 16.5 m; 8 m high	1	Steel frame with colourbond cladding
Workshop	7 m x 4 m; 5 m high	1	(wall and roof)
Fire pump house	10 m x 5 m; 5 m high	1	
Static water tank	16 m diameter; 15 m high	1	Steel tank with galvanised finish

2.7 Environmental Controls

Marstel has implemented an extensive suite of environmental controls at its other bulk terminal facilities, with similar procedures and equipment to be installed at the proposed Kooragang terminal facility. These controls cover loading and unloading of road tankers, ship transfer operations, stormwater management and fire management as detailed in **Sections 2.7.1** – **2.7.4**.

Marstel is an environmentally responsible company, and will develop a comprehensive environmental improvement plan in consultation with key stakeholders including the community, neighbouring industry and regulators. Marstel will implement a program of continuous improvement for environmental performance, and will demonstrate management of the process through setting environmental objectives and measuring performance against those targets. Management will ensure that all team members are fully trained for their respective positions, with a full and clear understanding of their environmental responsibilities and the associated regulatory controls for industry.

2.7.1 Road Tanker Loading/Unloading

All loading and unloading activities will be undertaken by the Road Tanker driver under the control of the Terminal Operator. A dead-man button will be installed, with operations aborted if this button is not pushed every three minutes. Contractors, drivers and site visitors will undergo inductions in site safety, emergency systems, and environmental issues prior to being allowed on site. Procedures governing the types of tankers allowed on site and their proximity to other tankers will also be implemented. Loading and unloading operations will begin on low flow settings, with the product pumps starting once a feedback signal is received that indicates all the in-line valves are open. Valves will fully open to the receiving tank once a percentage volume of liquid has been transferred.

2.7.2 Ship Transfer Operations

The wharf transfer lines will be pressure-tested to ensure their integrity prior to the arrival of each ship and before products are transferred. All ship unloading operations will be undertaken initially under low flow conditions while additional checks are conducted to ensure the unloading operation is occurring appropriately. Hourly line walks and regular control room checks and wharf monitoring will also be implemented.

2.7.3 Stormwater Management

While there will be a small amount of landscaped land upon which some captured stormwater may be irrigated, the majority of the sites will be sealed. As the anticipated volumes of captured stormwater will exceed the irrigation potential of the landscaped areas, Marstel will seek to discharge clean stormwater to the Hunter River under the conditions of an Environment Protection Licence (EPL). In order to prevent pollution of waters from stormwater from the site, Marstel intends to implement a stormwater management system. Key aspects of the stormwater management system will include:

- A first flush system;
- Remote retention pits to collect bund stormwater;
- Testing of water quality prior to release to the retention pit and to river discharge;
- Prevention of spills;
- Water quality monitoring;
- System maintenance;
- Handling and disposal of contaminated fire water;
- Segregation of water drained from petrol tanks for offsite disposal;
- Contingency plans for the management of contaminated stormwater; and
- Staff training.

Proposed water quality testing measures include:

- Visual inspections of stormwater within the bunded areas for grease, foam, visible oil, and litter;
- In-field testing of bund water quality prior to its release to the bund water retention pit;
- Laboratory analysis of samples from the bund water retention pit; and

• Comparison of the results against water quality criteria prior to release of the water.

Site stormwater from the bunded areas and roads will be segregated. Bund stormwater will be retained in the bund until tested and released via the bund stormwater retention pit, where it will be further tested before release to the Hunter River via a final litter/oil/sediment interceptor. Stormwater from service roads will also pass through this interceptor prior to discharge to the river. Paved road services will be contoured such that stormwater from the paved roadway is captured in a first flush system that will capture stormwater for the first 15 - 20 mm of a rain event, and thereafter divert to the triple interceptor and, subsequently, to the Hunter River. The captured first flush water will then be treated / separated on site with any waste oils / solids sent off site for disposal. The remaining water will be retested and, subject to meeting the water quality criteria, discharged to the river.

The same procedures will apply to water in the bund retention pit that fails to meet the applicable water quality criteria.

2.7.4 Fire Management

The terminal facilities will be designed to minimise safety risks and hazards associated with operations, and will also be fitted with extensive fixed and portable fire-fighting capability. Water will be stored on the terminal site in a tank for fire-fighting purposes, which will be filled with collected stormwater whenever possible. Two diesel-driven fire pumps and a water ring main will provide firewater to tank and road gantry deluge systems, fixed monitors, fire hose reel sets and fire hydrant connections. The truckfill stand will have fixed automatic foam deluge protection activated by infrared flame detectors. The scope of the fire system will be determined by a fire safety study approved by the NSW Fire Brigade.

2.8 Construction Details

2.8.1 Program of Works

The target completion date for construction of the terminal facility is November 2008, following an anticipated construction period of approximately 15 months.

2.8.2 Outline of Construction Methods

Construction activities required for the project will include the following:

- Stripping of existing vegetation and top soil (which will be re-used in landscaped areas);
- Excavation of areas for tank foundations (details dependent on the results of the geotechnical study);
- Construction of reinforced concrete bund walls;
- Preparation of the bund floor (excavation, backfilling with crushed rock, installation of liner, additional backfilling with crushed rock and priming/sealing);
- Installation and diversion of services and infrastructure, including stormwater drainage lines;
- Construction of internal roadways (excavation, compacting of road base; pouring of concrete pavement (reinforced) for main driveway;

- Construction of a pipeline to transfer materials between the berth and the storage facility; and
- Construction vehicle movements.

Much of the material will be prefabricated and installed on site, particularly fuel facility components, thereby minimising the construction activities required on site.

The tanks will be prefabricated off-site prior to erection on their foundations. Following the welding and testing of the floor plates, the tank structures will be formed by welding together the rings in a staged approach, with temporary bracing added until the structure is completed and the roof is installed. The structure will be tested by x-ray, then filled with water and pressure tested.

3 STATUTORY PLANNING

3.1 Local Matters

The site is located within the Newcastle Local Government Area, and is subject to the provisions of the Newcastle Local Environmental Plan (LEP 2003). The map to LEP 2003 shows the site is located within the 4(b) – Port and Industry zone. The objectives of the 4(b) zone are:

(a) To accommodate port, industrial, maritime industrial, and bulk storage activities which by their nature or the scale of their operations require separation from residential areas and other sensitive land uses.

(b) To require that development of land within 750 metres from the high-water mark of the shores of the Port of Newcastle, capable of docking ocean-going vessels, is used for purposes that:

(i) require a waterfront location that provides direct access to deep water, or (ii) depend upon water-borne transport of raw materials or finished products, or (iii) have a functional relationship that necessitates proximity to the activities described above.

(c) To facilitate sustainable development through the application of industrial ecology.

(d) To provide for other development which will not significantly detract from the operation of large scale industries or port-related activities, that is primarily intended to provide services to persons employed in such industries and activities.

The proposed project is defined as a 'goods terminal' under the provisions of clause 37 of LEP 2003. Goods terminals are permissible within the 4(b) zone. The proposal is also consistent with the zone objectives.

3.2 Regional Matters

The Regional Environmental Plan (REP) of relevance to the subject site is Hunter REP 1989. The aims of the Hunter REP are:

(a) to promote the balanced development of the region, the improvement of its urban and rural environments and the orderly and economic development and optimum use of its land and other resources, consistent with conservation of natural and man made features and so as to meet the needs and aspirations of the community,

(b) to co-ordinate activities related to development in the region so there is optimum social and economic benefit to the community, and

(c) to continue a regional planning process that will serve as a framework for identifying priorities for further investigations to be carried out by the Department and other agencies.

The objectives of the Hunter REP in relation to industrial development are:

(a) to ensure that sufficient zoned and serviced industrial land is provided in locations appropriate to the needs of industry, while ensuring protection of the environment, and

(b) to promote the distribution of employment in secondary industry in a manner compatible with the availability of services and distribution of population.

The objective of Part 7 (Division 1) of the Hunter REP is to control development such that air, noise and water pollution are minimised. As the potential environmental impacts of the proposed project are considered to be unlikely to significantly increase local pollution as discussed in **Section 5**, the proposal is considered to be consistent with the relevant objectives and principles of the Hunter REP.

3.3 State Matters

3.3.1 State Environmental Planning Policy (Major Projects) 2005

SEPP 2005 identifies developments that are considered to be Major Projects under Part 3A of the Environmental Planning and Assessment Act 1979. The approval authority for a Major Project is the Minster for Planning.

The primary aim of SEPP 2005 is:

To identify development of economic, social or environmental significance to the State or regions of the State so as to provide a consistent and comprehensive assessment and decision making process for that development.

Schedule 1 of SEPP 2005 identifies the major development classifications. These classifications include

Bulk storage facilities with a capital investment of more than \$20 million (Group 3, Clause 10)

The cost of establishing the bulk storage facilities is estimated at \$47 million. As such, the project is eligible for declaration as a Major Project, making the Minister the approval authority for the proposed project.

3.3.2 State Environmental Planning Policy (SEPP) 11 – Traffic Generating Development

The aim of SEPP 11 is to provide the traffic management authority with the opportunity to provide feedback on certain traffic-generating developments before a consent authority makes a determination about a development application.

Schedule 1 of the policy lists types of development to which this policy applies, including:

(j) transport terminals, bulk stores, container depots or liquid fuel depots.

The proposed project would therefore, be forwarded to the Roads and Traffic Authority (RTA and Newcastle City Council (NCC) for comment. The proponent intends to consult with the RTA and NCC prior to the submission of the EA to ensure relevant issues are addressed.

3.3.3 State Environmental Planning Policy (SEPP) 33 - Hazardous and Offensive Development

SEPP 33 was designed to ensure that sufficient information is provided to consent authorities to determine whether a development is hazardous or offensive. Conditions can then be imposed on the development to reduce or minimise adverse impacts. Any development application for a potentially hazardous development must be supported by a Preliminary Hazard Analysis (PHA).

The document Applying SEPP 33 – Hazardous and Offensive Development Application Guidelines was prepared by the Department of Urban Affairs and Planning in 1994 to provide

assistance in implementing SEPP 33. The Guidelines recommend a 'risk screening' method for determining whether a proposal is hazardous, and provide guidance on assessing potentially offensive development proposals.

The proposed project is defined as a 'goods terminal' under the provisions of clause 37 of LEP 2003, and SEPP 33 does not apply to the proposal. Due to the potentially hazardous nature of the proposed project (storage of petroleum products), however, a PHA will be prepared for the EA as outlined in **Section 8.1**.

3.3.4 State Environmental Planning Policy (SEPP) 55 - Remediation of Land

SEPP 55 promotes the remediation of contaminated land to reduce the risk of harm to human health or other environmental systems. Clause 7 of SEPP 55 requires a consent authority to consider whether the land is contaminated and whether it is suitable (or can be made suitable) for the proposed development.

A contaminated site assessment is currently being undertaken by the Proponent. Results of this assessment will be incorporated into the EA, which will also specify any mitigation measures or remediation actions required to bring the site to a suitable condition for the proposed project. Given the proposed continued industrial use of the site, land contamination is not expected to pose a constraint to the proposed project.

3.4 Commonwealth Matters

As well as any state-based approvals required, actions that may significantly affect matters of national environmental significance (NES) require approval from the Commonwealth under the Environment Protection and Biodiversity Conservation (EPBC) Act 1999. The EPBC Act lists seven matters of NES that must be addressed when assessing the environmental impacts of a proposal. These matters are:

- World heritage properties;
- National heritage places;
- Ramsar wetlands of international significance;
- Threatened species and ecological communities;
- Migratory species;
- Commonwealth marine area; and
- Nuclear actions (including uranium mining).

As the proposed project is not anticipated to have a significant impact on any of these matters, no approvals would be required under the EPBC Act. It should be noted, however, that a Ramsar wetland is located on Kooragang Island approximately 4 km from the development sites (discussed further in **Section 6**).

3.5 Approvals Required

The site has been previously cleared, and the proposed project will not increase the development area or encroach on vegetation. Only the permits/approvals outlined below are, therefore, expected to be required for the proposed project.

3.5.1 Protection of the Environment Operations Act (POEO) 1997

Schedule 1 of POEO outlines activities that require an Environment Protection Licence (EPL). The proposed project will require an EPL for petroleum works as it has an intended petroleum storage capacity greater than the 2,000 tonne threshold specified in POEO. The proposed project may also meet the criteria for shipping facilities (bulk) as the planned throughput of the terminal is 300 ML per annum.

3.5.2 Roads Act 1993

The proposed project involves the installation of pipelines that will travel from the berthing facilities to the storage tanks. While utilising the K2 wharf, Marstel intends to use pipelines that will travel across land owned by Orica. As per current practice in most terminals and refineries around the world, Marstel would prefer the pipelines to be above ground to allow for better inspection and maintenance access and corrosion protection. Consent for the pipelines will be required under Section 138 of the Roads Act (works and structures), which specifies that:

(1) A person must not:

- (a) erect a structure or carry out a work in, on or over a public road, or
- (b) dig up or disturb the surface of a public road, or
- (c) remove or interfere with a structure, work or tree on a public road, or
- (d) pump water into a public road from any land adjoining the road, or
- (e) connect a road (whether public or private) to a classified road,
- otherwise than with the consent of the appropriate roads authority.

(2) A consent may not be given with respect to a classified road except with the concurrence of the RTA.

4 STAKEHOLDER INVOLVEMENT

Preliminary consultation was undertaken with representatives from a number of government departments, industries and the community, which is summarised in **Table 2**.

Table 2: Stakeholder Consultation

Agency	Representatives	Issues Discussed		
Government agencies				
Department of Planning	Brad Deane Jacqueline Ingham	 Outlined development approval process. Information identifying how the project meets the criteria for state significant development will be required. Consent from landowners for development application lodgement and the pipeline is required. 		
Department of Environment and Conservation	Trevor Henderson	 Environmental assessment will need to address water quality (particularly stormwater management), air quality (VOCs and greenhouse gases), noise (in accordance with the Industrial Noise Policy), and hazards, and provide a clear explanation of how the plant works, points of emission, and how emissions will be controlled. Bunding is an issue of concern. Performance / manufacturer's guarantees will be required for proposed bund liner; details of intermediate bunding required. First flush capacity will need to be replenished ASAP after rainfall events. Widespread contamination exists under Kooragang Island. 		
Department of Lands	Stephen Francis	 Expressions of interest for development on Walsh Point will be called for following rezoning of the area. Security issues have been identified on Kooragang Island due to free public access to the area. 		
Newcastle Port Corporation	Annette Woods Priscilla Radice	 They are installing two new dolphins at K2 that will allow two small ships to use the berth at the same time. They are receptive to private industry constructing an additional berth on Walsh Point. 		

Agency	Representatives	Issues Discussed
Regional Land Management Corporation	Paul Bender Nathan Juchau	 Supportive of project.
Newcastle City Council	John Tate (Mayor)	Supportive of project.
Department of State and Regional Development	Nicolas Van der Voort Tony Sansom	 Letter of support for project is provided in Appendix A.
Neighbouring Industry		
Orica	Sean Winstone	 Orica have provided a 10 m wide area near their south boundary for use as an access easement for pipework.
		 Issues regarding location of Marstel pipeline and their ammonium nitrate plant will need resolution.
		 Orica are installing new supports for a pipeline that will transfer materials from K2 to their plant; it is possible that the Marstel pipework could be included with this work.
Incitec Pivot	Steve Quigley	 No significant issues of concern.
P&O Ports	Mike Staff	 There is an existing culvert that can potentially accommodate the Marstel dockline from K2.
		 Would welcome a new user to the berth; the two additional dolphins at K2 will allow two ships to berth concurrently, which will largely alleviate current demurrage issues.
		 Ships of < 150 M and 40 – 50 KT would result in minimal delays.
		 No fire fighting system is currently installed at K2; fixed monitors will be required to discharge flammables.
Boral Woodchip	Dean Nelson	 Boral have around 10 ship movements per year.
		 The proposed Marstel pipeline route to K2 affects an easement on their north boundary.
		 Marstel's proposed 36 hour discharge period would not severely affect their operations.
		 No issues with the proposed project were foreseen.

Agency	Representatives	Issues Discussed
Port Waratah Coal Services	Wayne Carman Warwick Cashmere Trevor Simmons Stephen Bragg	 Concerned about hydraulic interaction between passing ships and their loading of vessels. Additional traffic at the intersection of Cormorant and Heron Road is a potential issue; alternative truck routes for Marstel vehicles would be preferable. No major issues identified.
Cargill	Daniel Flynn	 Cargill has approximately 8 ships dock at K2 per year; they have a small storage terminal there and a pipeline to their manufacturing plant. Considered Marstel's proposal would have little effect on their operations; were supportive of Marstel's plans.
Community		
Stockton Residents Group	Pat Keating Steven Allen Jan Collier	 Issues raised were: Truck movements (route; use of Tourle St Bridge; transport of fuel and ammonium nitrate using same transport corridor; cumulative impacts); Construction noise; Security measures (previous fires in the area were of concern); Surface and groundwater protection measures; Odour; and PACIA award received by Marstel was of interest.
Mayfield Residents Group	Pat Flowers	 Issues raised were: Location of terminal; Ship berthing arrangements; Employment; Truck route; and Odour.

Marstel is committed to acting as a responsible corporate citizen, and strongly believes that regular communication with residents and neighbouring industries is central to the creation of harmonious relationships. Marstel also supports community involvement in decision-making processes surrounding the environmental future of the Kooragang area.

Further consultation with the community will be undertaken during the preparation of the Environmental Assessment.

5 PHYSICAL AND POLLUTION EFFECTS

5.1 Air

5.1.1 Baseline Conditions

Air quality in Newcastle is dominated by motor vehicle emissions, but is also affected by the major industry located around the port area. Sources of air emissions include the neighbouring Orica and Incitec plants, the Delta EMD facility at Mayfield West, and the Tomago Aluminium smelter. Additional pollutant sources include dust emissions from the coal and grain terminals, and odour from seed processing (Cargill). There are three fuel storage facilities in Newcastle: Caltex (Wickham), BP (Carrington) (see **Figure F1**) and Shell (Hamilton), which are located adjacent to or near to residential areas.

The pollutants of prime concern in NSW are ozone and particulates, with levels of these pollutants approaching or exceeding the national standards prescribed in the National Environment Protection Measure for Ambient Air Quality (NEPM) on occasion. Pollutant levels in Newcastle, however, are generally acceptable, with few exceedances noted (NSW State of the Environment 2006, DEC).

5.1.2 Potential Impacts

The main potential sources of air emissions associated with the proposed development are vapour emissions from the storage and transfer of fuels (volatile organic compounds, or VOCs, which are precursors of photochemical smog and ozone formation) and fugitive dust emissions from the construction works.

In order to manage potential operational impacts of the facility, Marstel intends to implement a number of design features and control mechanisms. These include the design of storage tanks to minimise emissions, such as through the use of internal floating roofs for petrol tanks, and the use of a Vapour Recovery Unit (VRU) for the truck filling process. Vapours from the biodiesel tanks may also be fed into this unit.

The VRU will be designed to meet 1 - 10 milligrams of VOC release per litre of product loaded, or 1 –10 grams per cubic metre of vapour vented. The VRU can be installed in hazardous areas, has no flame to serve as an ignition source, and has no supplemental fuel requirements or trade-off pollutants. The units are accepted worldwide as standard for evaporative hydrocarbon vapour control, with proven reliability and easy operation and maintenance. The US EPA has recognised VRU technology as being both the Best Demonstrated Technology and Maximum Available Control Technology, and use of these systems, therefore, represents best practice.

The control of dust emission during construction will be managed by procedures outlined in a Construction Environmental Management Plan (CEMP) prepared for the facilities.

An Air Quality Impact Assessment will be prepared for the EA, which will identify sources of air emissions and assess the potential effects on sensitive receptors from the operation of the facility.

5.2 Water

5.2.1 Baseline Conditions

The Hunter River Estuary has been significantly modified by urban and industrial activity, but remains an important resource for recreation and industry. The main threats to water quality include erosion and sedimentation, weed infestation, and rubbish and other pollutants transferred in stormwater runoff (State of Environment Report 2004/2005, Newcastle City Council).

Recent assessments conducted for development applications in the area have indicated that the natural aquifer system in the Kooragang area is affected by existing and historical developments in the area.

5.2.2 Potential Impacts

The main threats to water quality from the operation of the terminal facilities involve accidental spillage of product and the release of contaminated stormwater. Potential construction impacts include sedimentation and exposure of acid sulfate soils, which will be addressed in the CEMP, and possible effects on groundwater systems.

The bunding required for the terminal facility will create impervious surfaces. Captured stormwater cannot be reused in operational procedures, and the facilities will not have areas suitable for disposal by irrigation. As such, there are no practical alternatives to the discharge of captured stormwater.

Based on the control measures to be implemented to prevent pollution of waters from the facilities, whereby stormwater quality will be monitored and undergo a controlled discharge process (see **Section 2.7.3**), no significant impacts on water quality in the Hunter River are expected. Water quality impacts from the construction and operation of the proposed facilities will be addressed in the EA, including the provision of a groundwater assessment.

5.3 Soil and Stability

5.3.1 Baseline Conditions

Kooragang Island was originally a series of low-lying islands that were progressively infilled with sediment dredged from the harbour. The proposed project sites are part of the areas formed by reclamation activities. Due to the history of the sites and the neighbouring areas, contaminated soil may be present on the terminal site.

As the terminal site is essentially flat, fill material should not be required for the construction of the facilities.

5.3.2 Potential Impacts

The quality and stability of the soils on the sites may be affected by the following activities:

- Earthworks, including installation of stormwater drainage channels and services;
- Construction of foundations for the storage tanks; and
- Tank leakage/spillage during operation.

An environmental benchmark audit is being undertaken to determine the baseline site conditions. Results of this investigation will be incorporated into the EA, with mitigation measures included in the final design and operation of the facility as required. The CEMP prepared for the facility will include erosion and sediment control measures, and the Environmental Management Plan prepared for the site will include procedures for maintenance and routine checks for leakage of tanks, bunds and fuel transfer equipment.

5.4 Noise and Vibration

5.4.1 Baseline Conditions

The proposed project is to be located within an industrial area adjacent to a working port. The recent noise monitoring program undertaken as part of a noise assessment for the proposed third coal loader on Kooragang Island (Resource Strategies, 2006) described the existing noise environment of the residential and industrial areas surrounding the port. Industrial noise at the sensitive locations of Stockton, Fern Bay and Carrington was attributed to the Kooragang Island industries. Night-time amenity levels at the sensitive receptor locations of Stockton, Fern Bay and Carrington were found to be generally below acceptable amenity criteria, with some exceedances found at the western sides of Stockton and Fern Bay during westerly winds and temperature inversions.

5.4.2 Potential Impacts

Construction and operation of the proposed facility has the potential to create noise through the use of equipment and increased traffic (road and ship), while vibration may be caused by the pile-driving activities during the construction phase, should geotechnical analysis determine piling is required.

Noise associated with the operation of the terminal facility will be the proposed project's main source of impact to sensitive receptors due to the proximity of residences. The main noise-generating equipment, however, are the fuel pumps. As the pumps will be separated from the tanks and the sensitive receptors by a concrete bund wall 1.8 - 2 m in height, noise impacts from the project will not be significant.

Operation of the facility is expected to be within the existing noise profile of the area, with no cumulative increase in impact expected. A noise impact assessment will be prepared for the EA, which will develop noise goals for the project, assess the potential impacts (site-specific and cumulative) from the project, and identify mitigation measures where required.

6 BIOLOGICAL EFFECTS

The proposed terminal site is currently unoccupied, and is covered with grass and limited other vegetation including Bitou Bush, which is a noxious weed that has been declared as a key threatening process.

Threatened plant species have not been identified on Kooragang Island during previously conducted vegetation surveys. The DEC Wildlife Atlas, however, lists a number of threatened fauna species that have been recorded in the area, including the:

- Australasian Bittern (Botaurus poiciloptilus);
- Green and Golden Bell Frog (*Litoria aurea*);
- Eastern Bent-wing Bat (Miniopteris shreibersii); and
- Grey-headed Flying Fox (*Pteropus poliocephalus*).

The site is located within 4 km of the Kooragang Island Nature Reserve, which forms part of the Ramsar-listed Hunter Estuary Wetlands. The wetlands are an important area for migratory and Australasian wetland species, including species protected under the Agreement Between the Government of Japan and the Australian Government for the Protection of Migratory Birds and Birds in Danger of Extinction and their Environment (JAMBA) and the Agreement Between Australia and the People's Republic of China for the Protection of Migratory Birds and Their Environment (CAMBA).

The proposed project is unlikely to have a significant effect on native flora and fauna. The site is already highly modified and, as such, contains little habitat value for native species. The proposed project incorporates measures to reduce off-site impacts and it is, therefore, unlikely that the works will affect the Kooragang Nature Reserve or any other native flora and fauna in the areas surrounding the site.

An assessment of ecological issues will be included in the EA.

7 RESOURCE IMPLICATIONS

7.1 Community

Public access to the Walsh Point Reserve will not be affected by the proposed project during either construction or operation of the facilities. Furthermore, the proposed works will not result in a significant use of community resources and will provide additional fuel supplies to the region.

7.2 Natural

The proposed project will require the use of minimal natural resources, including land, energy and water.

7.3 Transportation

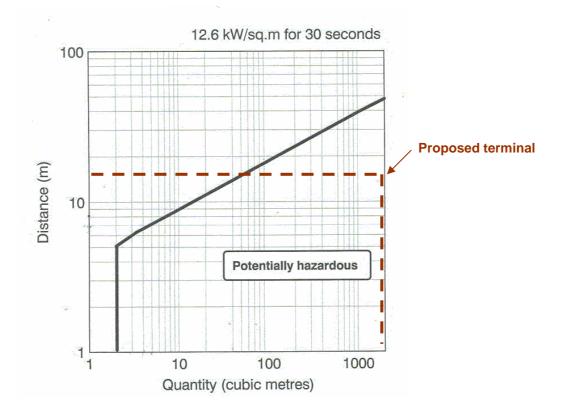
The proposed project will require the use of public roads and shipping channels in the port. While the proposed project will increase the amount of heavy vehicle traffic on Kooragang Island, this increase is not expected to significantly affect traffic volumes. Access points to the proposed sites are not located on main roads, and are not considered to be in sensitive locations in relation to traffic and transport.

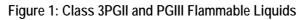
8 COMMUNITY EFFECTS

8.1 Hazards and Risks

The fuels that are proposed to be stored at the facility are classified as Dangerous Goods under the Australian Dangerous Goods Code (ADG). The quantities of fuel to be stored exceed the threshold levels detailed in the Department of Planning's guidelines *Applying SEPP 33 – A Hazardous Industry Guideline* (the Guidelines). Although SEPP 33 does not apply to the proposed project (see **Section 3.3.3**), a review of the proposed fuel storage quantities and distances of storage facilities from site boundaries was undertaken in accordance with the Guidelines.

Based on the site layout (**Figure F3**), a 12 megalitre (ML) petroleum storage tank will be located approximately 15 m from the site boundary. Under the ADG, petroleum is classified as a Class 3 flammable liquid, packaging group (PG) II. **Figure 1** (below) indicates the threshold levels outlined in SEPP 33 to be used to determine whether the storage of Class 3 PG II materials is potentially hazardous.





As shown in **Figure 1**, the proposed storage of petroleum at the site is potentially hazardous and a Preliminary Hazard Analysis (PHA) will, therefore, be undertaken as part of the EA. The PHA will be conducted in accordance with the methodology prescribed in *Hazardous Industry Planning Advisory Paper (HIPAP)* 6 – *Hazard Analysis Guidelines* (NSW Department of Planning, 1992). These HIPAP Guidelines require the assessment of risks to surrounding land to demonstrate whether the site is potentially hazardous or actually hazardous. As detailed in HIPAP 6, this will be performed by the following processes:

- Hazard identification;
- Consequence analysis;

- Frequency analysis;
- Risk assessment;
- Comparison of risks with criteria; and
- Risk review and reduction where required.

Based on existing knowledge of the industries adjacent to the proposed development, and the risk contours associated with those industries, the risks associated with the proposed project are expected to fall within the existing risk contours for the Walsh Point area. That is, the cumulative risk of the proposed project is not expected to differ from the existing risk profile.

8.2 Socio-economic Impacts

The proposed project will generate positive economic benefits for Newcastle and the Hunter Region through the significant capital investment and establishment of port infrastructure. The facility will support the development and growth of the Hunter region, and fits with the Regional Economic Development Strategy, by:

- Providing key infrastructure for the region, indirectly strengthening employment opportunities;
- Stimulating business growth and development through the cost-effective supply of fuel and biofuels;
- Creating port infrastructure that reinforces the region as a strategic eastern seaboard gateway;
- Making the Hunter Region a more environmentally sustainable trading hub by placing fuels storage closer to the end user, thereby reducing the amount trucked from Sydney and lowering overall supply chain costs; and
- Supplying high quality biofuels to the region.

Local specialist consultants will be engaged wherever practical during the approvals process, and suitably qualified local building and engineering contractors will be used during construction.

The number of permanent staff required to operate the facility is minimal, with 2 - 3 employees on-site during operation plus tanker drivers, and approximately 12 additional staff required when ship unloading operations are underway. The facility will, however, indirectly generate employment in the region through increased economic activity (driven by the flow-on benefits for industry of a cost-effective fuel supply) and the ready access to an independent bulk liquids terminal.

Regional industries will directly benefit from access to competitive fuel prices, which will provide indirect benefits to the Hunter in the form of potential for increased investment in infrastructure and services. In particular, the increased profitability of heavy industry, agribusiness and the transport and freight sectors derived from the increased competition in the fuel supply market will have significant positive flow-on economic consequences for the Hunter Region.

These economic benefits will contribute to the economic well-being of the region, and serve to promote stability.

8.3 Heritage and Cultural Impacts

An internet search of the State Heritage Inventory conducted on 18 January 2007 indicated that there are no known items of heritage significance on the proposed project sites that have been listed by local government or state agencies. Additionally, no items were found during a search of the Register of the National Estate (the Australian Heritage Database) conducted on the same day.

Although Kooragang Island was formed through reclamation activities, recent archaeological investigations in the area have indicated that archaeological deposits may be present within the soil profiles. Artefacts have a high rate of survival around the margins of the harbour (State of Environment Report 2004/2005, Newcastle City Council).

Indigenous heritage issues will be considered in the EA, with all actions and required consultation undertaken in accordance with DEC guidelines.

8.4 Land Use and Visual Impacts

The proposed project is to be located on land that is designated as suitable for port and industrial facilities under the Newcastle LEP 2003, and is consistent with the relevant provisions of the Hunter Regional Environmental Plan 1989. The site is proximal to an existing tank facility.

The appearance of the proposed project will be consistent with the existing facilities in the area. The largest of the proposed tanks will be the same height as the tanks located in proximity to the site, but will be of smaller diameter.

An assessment of visual impacts will be included in the EA, and mitigation measures will be developed to minimise these impacts where feasible. Landscaping will be undertaken in accordance with Newcastle DCP 2005.

8.5 Traffic

Traffic movements during the construction phase of the development will be minimal, as much of the material, particularly fuel facility components, will be prefabricated.

During operation of the terminal facility, daily traffic movements will consist of fuel tanker deliveries and the movements of employees and visitors. Maximum truck movements when the terminal facility is operating at maximum capacity (300 ML) will be in the order of 20 B-double movements per day, consisting of 18 trucks for product dispatch and two trucks for product delivery (biodiesel and ethanol). Ship movements will be in the order of 10 vessels per year.

9 ENVIRONMENTAL RISK APPRAISAL

9.1 Identification of Issues

As identified in **Sections 5** – **8** of this report, the main issues associated with the project are:

- Air quality;
- Water;
- Noise;
- Traffic; and
- Hazards.

Other issues include ecology, use of resources, soils, heritage and visual impacts.

9.2 Prioritisation of Issues

9.2.1 Approach

The prioritisation of issues for the proposed project was based on the need to recognise that a higher degree of assessment is required for the issues with the highest severity and greatest possible consequences. **Table 3** shows the issues prioritisation matrix used to identify priorities. Each issue was given a ranking between one and three for the severity of effects and the perceived consequence of those effects if left unmanaged. These two numbers were added together to provide a numerical ranking for the issue that was used to categorise each issue into high, medium and low priorities.

Severity	Consequence of Unmanaged Effects			
of	3	2	1	
Effects	High	Medium	Low	
1 Low	4 (Medium)	3 (Low)	2 (Low)	
2 Medium	5 (High)	4 (Medium)	3 (Low)	
3 High	6 (High)	5 (High)	4 (Medium)	

Table 3: Issues Prioritisation Matrix

9.2.2 Assessment

The ranking of the environmental issues associated with the proposed development is shown in **Table 4**. The allocation of risk is based upon the following considerations:

Severity of Risk

Low:	localised implications; imperceptible or short term cumulative impacts.
Medium:	regional implications; modest or medium term cumulative impacts.
High:	inter-regional implications; serious or long term cumulative impacts.

Consequences of Unmanaged Effects

Low:	minor environmental change; offsets readily available.
Medium:	moderate adverse environmental change; offsets available.
High:	important adverse environmental change, offsets not readily available.

It should be noted that the rankings were determined in the absence of the proposed mitigation measures and design features.

Table 4: Prioritisation of Environmental Issues

Issue	Severity	Consequence	Priority
Hazards	2	3	5 (High)
Surface water quality	2	2	4 (Medium)
Air quality	2	2	4 (Medium)
Noise	2	2	4 (Medium)
Soils and stability	1	2	3 (Low)
Groundwater quality	1	2	3 (Low)
Indigenous heritage	1	2	3 (Low)
Traffic	1	2	3 (Low)
Ecology	1	1	2 (Low)
Demand upon community, natural or transport resources	1	1	2 (Low)
Visual impacts	1	1	2 (Low)

10 FINDINGS

The proposed project involves the construction and operation of a bulk liquid storage facility on Kooragang Island. The facility will be used to receive, store, blend and distribute fuels to customers throughout the Hunter Region. The Proponent has developed a thorough understanding of the scope of potential environmental impacts of the facility, and has implemented effective management strategies at its other facilities in Australia and New Zealand.

The EA for the proposed facilities will focus on the key potential impacts identified in **Sections 5** – **8**. This EASR has identified the key environmental issues as:

- Hazards;
- Surface water quality;
- Noise; and
- Air quality.

These issues would be considered through specialist assessment included in the EA. Additionally, the results of geotechnical investigations will also be provided. Other environmental issues, such as noise, heritage and ecology, will also be considered in the EA, but will require a lower level of assessment than the key environmental issues.

Due to the predictability of the potential impacts, and the relatively benign nature of the proposed project from an environmental perspective, this report has identified that a high level of environmental assessment is not required for this project.

Figures



N6044401 January 2007 HM HM

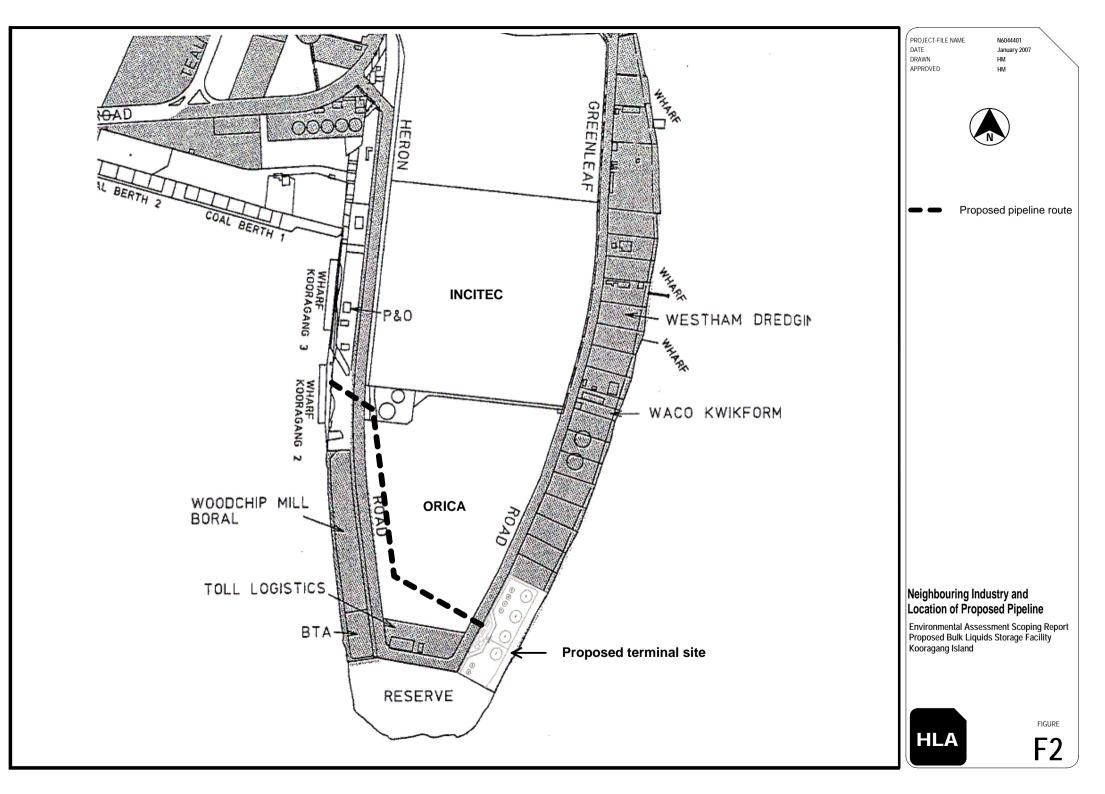


Location of Proposed Development

Environmental Assessment Scoping Report Proposed Bulk Liquids Storage Facility Kooragang Island

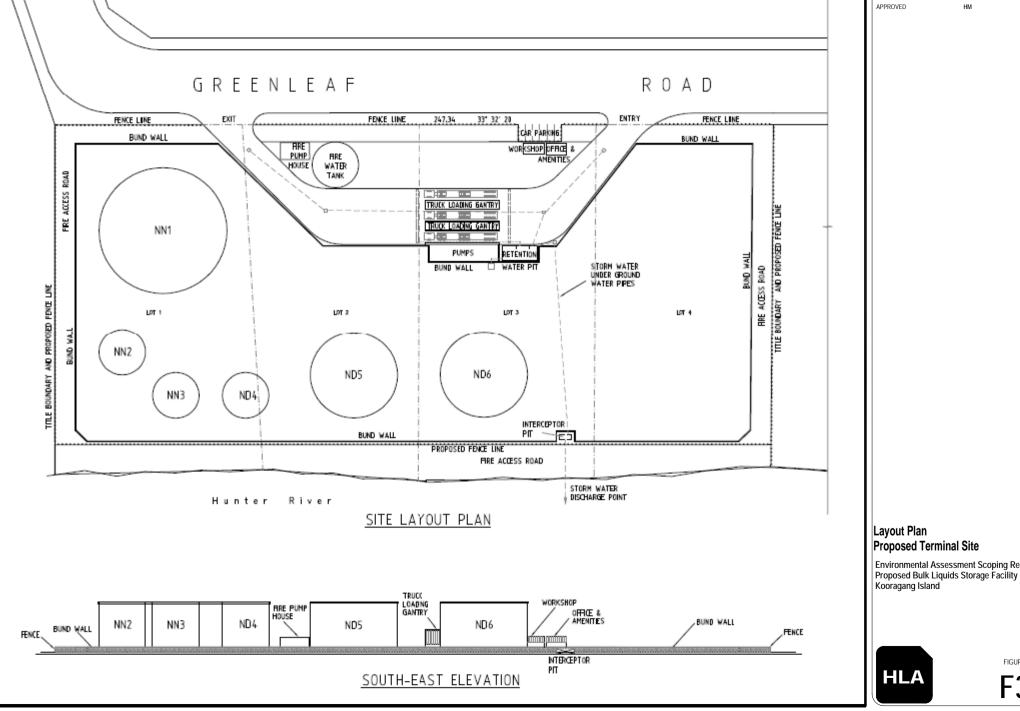


figure



PROJECT-FILE NAME DATE DRAWN

N6044401 January 2007 HM НМ



Layout Plan Proposed Terminal Site Environmental Assessment Scoping Report

HLA

FIGURE **F**3

Plates



Plate P1: Artist's Impression of Proposed Terminal Facility

Appendix A: Letter of Support



22 January 2007

New South Wales Department of State and Regional Development Level 3, 251 Wharf Road Newcastle NSW 2300 Telephone 02 4908 7333 Facsimile 02 4929 7096 http://www.business.nsw.gov.au

Mr Tim Gunning Marstel Terminals PO Box 175 Altona VIC 3018

Subject: **Development of a New Bulk Liquids Storage Facility at Kooragang Island (Newcastle)**

To Whom It May Concern,

The NSW Department of State & Regional Development (DSRD) is currently assisting Marstel Terminals with the development of a modern bulk storage facility at Kooragang Island, Newcastle. The company has negotiated a lease on NSW State owned land on lots 1-8 Greenleaf Road Kooragang Island.

The terminal will comprise a state-of-the-art biofuels terminal to be used for the import, blending and distribution of high quality bio-fuels. Petrol and diesel products will also be stored and distributed at the facility. The facility will be designed to receive bulk fuels and biofuels imports via ship, stored in bulk tanks, before blending ethanol with mogas, and biodiesel with diesel.

The terminal will also involve the construction of a new multi-user dedicated bulk liquid berth on Kooragang. The new berth will release pressure on the existing berths and provide additional bulk liquids infrastructure for the Port of Newcastle.

The Marstel Terminals Newcastle P/L project (to be operated by Marstel) is a good example of investment in Port related activities in the Hunter. The proposed project is in line with the wider regional strategies supported by the Department to create new investment opportunities.

Please don't hesitate to contact Nicolas Van der Voort, Business Development Manager on 4908 7333 if you want to discuss this further.

Kind Regards

Tony Sansom OAM Regional Manager - Newcastle & Central Coast



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