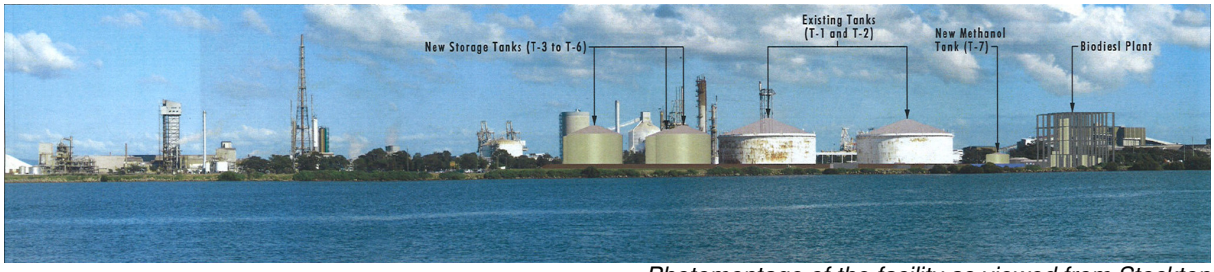
NSW GOVERNMENT
Department of Planning

MAJOR PROJECT ASSESSMENT: Manildra Park Marine Fuel Storage and Biodiesel Production Facility Kooragang Island



Photomontage of the facility as viewed from Stockton

Director-General's
Environmental Assessment Report
Section 75I of the
Environmental Planning and Assessment Act 1979

May 2008

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EXECUTIVE SUMMARY

Manildra Park Pty Ltd (Manildra Park) currently operates a marine fuel storage and distribution facility at Port Kembla, and forms part of the Manildra Group that produces products from grain, including flour, starches, gluten, glucose and ethanol.

Manildra Park proposes to construct a marine fuel storage and distribution facility, and a biodiesel production facility on Kooragang Island in the Port of Newcastle. The site is located at the southern end of Kooragang Island adjacent to the north arm of the Hunter River. The site is surrounded by other industrial land uses with the nearest residents located in Stockton, 600m to the east. The site is currently not occupied; however it contains two disused fuel storage tanks.

The proposed facility would receive bulk marine fuel oil and diesel primarily by ship imports unloading at the existing Kooragang 2 and 3 ship berthing facilities (K2 and K3). Fuels from the berthing facilities would be transferred to the terminal site via a dedicated underground pipeline. The distribution of fuels to ships would be undertaken via a refuelling barge to be located at Wallarah Berth, immediately north of K3. Fuels transferred to the terminal would be stored and distributed to customers in the locality and the broader Hunter region via road tankers. The biodiesel production facility would operate using imported or domestic feedstock. Biodiesel produced on site would be stored for later distribution to regional customers via road tankers.

During the exhibition period, the Department received six submissions on the project including five submissions from public authorities and one from an adjacent landowner. None of these submissions objected to the proposal. Submissions from public authorities raised issues in relation to contamination and remediation, spill containment and management, bund lining materials, port safety and fire detection and suppression. All authorities provided recommendations in relation to the above issues. The adjacent landowner raised the issue of hazards and impacts on adjacent properties.

The key issues associated with the project include hazards and risk, soil and groundwater contamination, noise, visual impacts and greenhouse gas emissions.

The Department has assessed the merits of the project and is satisfied that the impacts of the project can be mitigated and managed to ensure an acceptable level of environmental performance.

It is also satisfied that the project responds to increased demands for fuel, including alternative fuels and locates a storage facility in close proximity to import locations and the expanding market for fuel products in the Hunter region. The project would also reduce road transport of fuels from the existing Manildra Park facilities in the Illawarra region and provide an alternative to diesel use through the production and supply of biodiesel.

Consequently, the Department believes the project is in the public interest and should be approved subject to conditions.

1. BACKGROUND

1.1 Project Setting

Manildra Park currently operates a marine fuel storage and distribution facility at Port Kembla, and forms part of the Manildra Group that produces products from grain, including flour, starches, gluten, glucose and ethanol.

Manildra Park proposes to construct a marine fuel storage and distribution facility, and a biodiesel production facility on land currently owned by the Regional Land Management Corporation (RLMC) on Kooragang Island in the Port of Newcastle (see Figure 1).

Figure 1: Site Location

Kooragang Island primarily supports industrial land uses and is served by good transport links to Newcastle, the F3 Freeway and the mid-north coast. Kooragang Island is located between the north and south arms of the Hunter River and receives bulk materials, primarily coal for export from the Port of Newcastle. The southern tip of Kooragang Island contains the Orica and Incitec Pivot facilities, two ship berthing facilities (K2 and K3), and a barge tie up and refuelling berth, Wallarah Berth (see Figure 2).

The proposed facility is located approximately 3km north of the central business district of Newcastle with the nearest residential areas being Stockton (600m to the east), Fern Bay (over 1km to the north) and Carrington (1.6km to the south-west). The site is currently not occupied; however it contains two disused fuel storage tanks that were used to store naptha in the 1970's and early 1980's. These tanks would refurbished as part of the project.

The proposed Manildra Park facility comprises a terminal located on Greenleaf Road, a pipeline connecting the terminal to the berths, unloading facilities at the K2 and K3 berths, a barge refuelling facility to be docked at the Wallarah Berth and a biodiesel plant at the terminal (see Figure 2).

The project comprises:

Marine fuel receival and distribution

- receive imported bulk marine fuel at the K2 and K3 berths from ships;
- fuels would be transferred and stored at the terminal on Greenleaf Road via a dedicated pipeline;
- some fuels would be transferred to a refuelling barge docked at Wallarah Berth; and
- the refuelling barge would refuel ships within the Port of Newcastle.

Diesel receival and distribution

- receive imported bulk diesel at the K2 and K3 berths from ships;
- diesel would be transferred and stored at the terminal on Greenleaf Road via a dedicated pipeline;
- some diesel would be transferred to a refuelling barge at Wallarah Berth;
- the refuelling barge would refuel ships within the Port of Newcastle; and
- diesel would be transferred from the terminal via road tankers to customers in the locality and the broader Hunter region.

Biodiesel production

- produce 52ML a year of biodiesel using imported or domestic feedstock brought to the site via the K2 and K3 berths or road tankers; and
- distribute biodiesel from the terminal to regional customers via road tankers.

The total storage volume of marine fuel, diesel and biodiesel would be 577ML a year.

1.2 Need for the Project

Shipping activity in the Port of Newcastle is expected to grow with a projected increase in coal exports. Recently approved developments including the Port Waratah Coal Services and Newcastle Coal Infrastructure Group projects will significantly increase throughput at the port, thereby increasing shipping movements and demand for fuel. Similarly, redevelopment of the ex-BHP site is also expected to increase shipping activities.

In addition to the growing demand for marine fuel, the Hunter region is experiencing population and employment growth due to its strong mining and agricultural sectors, resulting in an expanding market for fuel in the region. By locating a storage facility in the Port of Newcastle, Manildra Park would be able to take advantage of being in close proximity to ship imports and to the markets of the Hunter region. Existing delivery of fuels to the Hunter region are undertaken by road and pipeline from Port Kembla and are limited by capacity and cost. A benefit of locating storage facilities within the region of distribution would be the decreased cost of fuel transport from Port Kembla.

The construction and operation of a biodiesel production facility by Manildra Park would contribute to establishing a biodiesel market in Australia as an alternative to fossil fuels.

1.3 Alternatives to the Project

Manildra Park considered the following alternatives:

- alternative site locations;

- an alternative location for the barge refuelling berth;
- servicing growth from the existing facility at Port Kembla; and
- transportation of fuel by rail to the Hunter region.

The assessment of alternatives considered the following key criteria for a viable facility:
- proximity to the target market - ships and bulk users in the Newcastle region;
- economies of scale in sharing wharf and pipeline facilities for receival and distribution; and
- access to port infrastructure.

Consideration of other locations, including White Bay in Sydney Harbour and Botany Bay concluded that the distance from the Newcastle market considerably reduced their competitiveness. To service demand growth from the existing Port Kembla facility would increase trucks on the road, increase costs and lead to negative environmental impacts associated with increased truck traffic.

An alternative barge refuelling location on Kooragang Island was considered, however this was discounted due to the distance from ships and the greater length of pipeline required. Transportation of fuel by rail to the Hunter region was considered costly and ineffective.

Therefore, the Hunter region and Kooragang Island was considered the most viable location for the proposed facility.

Figure 2: Proposed Marine Fuel Storage and Biodiesel Facility and Pipeline

2. PROPOSED DEVELOPMENT

2.1 Project Description

The major components of the project are summarised in Table 1, illustrated in Figure 2 and Figure 3 and detailed in the Environmental Assessment (EA) for the project (see Appendix E).

Table 1: Major Components of the Project

Component	Description
Project Summary	***Construct and operate a marine fuel storage and distribution centre and a biodiesel production facility***
Terminal	<u>Tank Farm</u> Construction of fuel storage tanks with a total capacity of 77 million litres (ML). The tank farm would be constructed in 3 phases, would be bunded, lined with an impervious membrane and a leak detection system installed. The tank farm would comprise: • Phase 1: refurbish 2 existing steel tanks, 24m high, (T1 and T2) each with a capacity of 25.5ML for marine fuel oil and diesel; • Phase 2: Construction of 3 x 7ML diesel storage tanks, 19m high (T3 to T5); • Phase 3: Construction of a biodiesel production facility 24m high, 1 x 5ML (19m high) and 1 x 0.5ML tanks (7m high) (T6 and T7) for storage of biodiesel feedstock oil and methanol. <u>Road Tanker Loading/Receival Bay</u> The road tanker loading bay would be roofed, bunded and drained to an oil separator. Loading operations would be semi-automated to prevent overfilling and potential spills.
Fuel Pipeline	Construction of a 400mm diameter steel pipeline to transfer fuel between the terminal, the K2 and K3 ship berthing facilities and Wallarah berth. The pipeline would be buried from the wharf to the terminal within the road reserve of Heron Road and Greenleaf Road.
Berth Facilities	<u>K2 and K3 Berths</u> Construction of a flexible hose and manifold within a bunded area for transfer of fuels via pipeline. <u>Wallarah Berth</u> Operation of a refuelling barge, moored at the berth. Ships would be refuelled in the Port of Newcastle.
Ancillary Structures	• office and amenities building; • equipment storage compound; • sewage treatment facility; and • car and truck parking areas.
Transport	27 shipments a year and 190 refuelling barge movements a year. 64 heavy vehicle trips per day and 37 light vehicle trips (for staff) per day.
Hours of Operation	24 hours a day, seven days a week.
Total Storage Volume	577 million litres of fuel a year.
Biodiesel Production	52 million litres of biodiesel a year.
Capital Value	$37 million.
Jobs	23 during construction; 37 during operation.
Construction Duration	Approximately 3 to 5 years. Phase 1 and 2 would overlap and be completed in 16 months. Phase 3 is expected to take 14 months.

2.2 Construction Activities

Key construction activities would include excavation of areas for tank foundations, pile driving, construction of reinforced concrete tank foundations and bund walls, preparation of bund floor, installation of services, internal roadways, pouring of concrete pavement and pipeline construction. A significant component of the tank materials would be pre-fabricated off site.

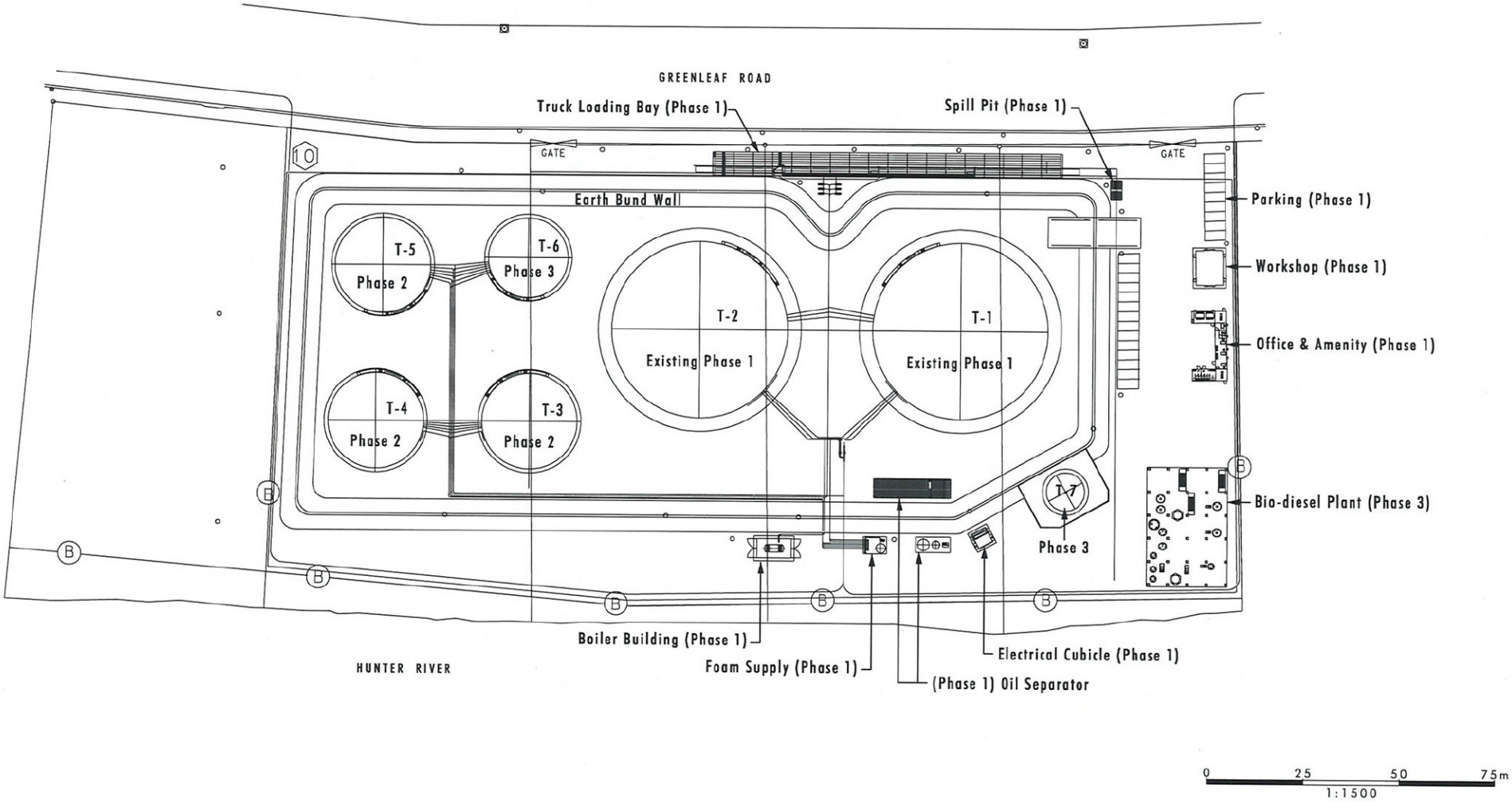

Figure 3: Layout of Proposed Marine Fuel Storage and Biodiesel Production Facility

3. STATUTORY CONTEXT

3.1 Major Project

The project is classified as a major project under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) because it is development for the purpose of chemical, manufacturing and related industries, including the manufacture or reprocessing of oils, fuels or petrochemicals, that has a capital investment value of more than $20 million and therefore triggers the criteria in Schedule 1, Clause 10(1)(f) of *State Environmental Planning Policy (Major Projects) 2005*.

Consequently, the Minister is the approval authority for the project.

3.2 Permissibility

Under Section 75J(3) of the EP&A Act, the Minister cannot approve the carrying out of a project that would be wholly prohibited under an environmental planning instrument.

The terminal site, pipeline route and refuelling berth location are zoned 4(b) Port and Industry zone under the *Newcastle Local Environmental Plan 2003.* Development for the purpose of a liquid fuel depot is permissible with development consent in this zone.

Consequently, the Minister may approve the project.

3.3 Public Exhibition

Under Section 75H(3) of the EP&A Act, the Director-General is required to make the environmental assessment of a project publicly available for at least 30 days.

After accepting the environmental assessment for the project, the Department:

- made it publicly available from 15 January 2008 until 18 February 2008:
  - on the Department's website;
  - at the Department's Information Centre;
  - at the Newcastle City Council's Offices; and
  - at the Nature Conservation Council Offices in Sydney.
- notified relevant State government authorities and Newcastle City Council by letter;
- notified landowners in the vicinity of the site about the exhibition period by letter; and
- advertised the exhibition period in the Newcastle Herald.

This satisfies the requirements in Section 75H(3) of the EP&A Act.

During the assessment process the Department also made a number of documents available for download on the Department's website. These documents included the:

- project application;
- Director-General's requirements for the environmental assessment of the project; and
- EA.

3.4 Environmental Planning Instruments

Under Section 75I of the EP&A Act, the Director-General's report is to include a copy of or reference to the provisions of any:

- *State Environmental Planning Policy* (SEPP) that substantially govern the carrying out of the project; and
- environmental planning instrument that would (but for Part 3A) substantially govern the carrying out of the project and that have been taken into consideration in the environmental assessment of the project.

The Department has considered the project against the relevant provisions of several environmental planning instruments (including SEPPs 11, 33, 55 and 71; the Infrastructure SEPP, the *Hunter Regional Environmental Plan* and the *Newcastle Local Environmental Plan 2003*). The Department is satisfied that, subject to the implementation of the recommended conditions of approval, the proposal is generally consistent with the aims and objectives of these instruments (see Appendix F).

3.5 Objects of the Environmental Planning and Assessment Act, 1979

The Minister is required to consider the objects of the EP&A Act when he makes decisions under the Act. These objects are detailed in Section 5 of the Act, and include:

'The objects of this Act are:

(a) to encourage:

(i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,

(ii) the promotion and co-ordination of the orderly and economic use and development of land,

(iii) the protection, provision and co-ordination of communication and utility services,

(iv) the provision of land for public purposes,

(v) the provision and co-ordination of community services and facilities, and

(vi) the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and

(vii) ecologically sustainable development, and

(viii) the provision and maintenance of affordable housing, and

(b) to promote the sharing of the responsibility for environmental planning between the different levels of government in the State, and

(c) to provide increased opportunity for public involvement and participation in environmental planning and assessment.'

The objects of most relevance to the Minister's decision on whether or not to approve this project are those under Section 5(a)(i), (ii) and (vii).

With respect to ecologically sustainable development (ESD), the EP&A Act adopts the definition in the *Protection of the Environment Administration Act 1991*. Section 6(2) of that Act states that ESD *'requires the effective integration of economic and environmental considerations in decision-making processes'* and that ESD *'can be achieved through'* the implementation of the principles and programs including the precautionary principle, the principle of inter-generational equity, the principle of conservation of biological diversity and ecological integrity, and the principle of improved valuation, pricing and incentive mechanisms. In applying the precautionary principle, public decisions should be guided by careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment and an assessment of the risk-weighted consequences of various options.

The Department has fully considered the objects of the EP&A Act, including the encouragement of ESD, in its assessment of the project application.

This assessment integrates all significant economic, social and environmental considerations and seeks to avoid any potential serious or irreversible damage to the environment, based on an assessment of risk-weighted consequences.

Manildra Park has undertaken an environmental risk analysis of the project, and considered the project in the light of the principles of ESD.

3.6 Statement of Compliance

Under Section 75I of the EP&A Act, the Director-General's report is required to include a statement relating to compliance with the environmental assessment requirements for the project.

The Department is satisfied that the environmental assessment requirements have been complied with.

4. ISSUES RAISED IN SUBMISSIONS

During the exhibition period, the Department received six submissions on the project (see Appendix D), including:

- 5 submissions from public authorities [Department of Environment and Climate Change (DECC), Newcastle City Council (Council), Newcastle Port Corporation (NPC), NSW Fire Brigade (NSWFB) and the Roads and Traffic Authority (RTA)]; and
- 1 submission from an adjacent landowner (Orica Australia Pty Ltd).

None of these submissions objected to the proposal. Submissions from public authorities raised issues in relation to contamination and remediation, spill containment and management, bund lining materials, port safety and fire detection and suppression. All authorities provided recommendations in relation to the above issues. Orica raised the issue of hazards and impacts on adjacent properties. These issues were addressed by Manildra Park in a Submissions Report provided in April 2008 (Appendix C). All issues are discussed in Section 5 below.

5. ASSESSMENT

The Department has assessed the project, in accordance with the requirements of Clause 8B of the *Environmental Planning and Assessment Regulation 2000*, and considers the key issues to be hazards and risk, contamination, noise, visual and greenhouse gas emissions. Consideration of these and other issues is presented below.

5.1 Hazards and Risk

A Preliminary Hazard Analysis (PHA) was prepared to assess hazard related issues resulting from the transfer, storage and transportation of 577ML a year of marine fuel oil, diesel, biodiesel, methanol, sulphuric acid and potassium hydroxide on the site and at the K2 and K3 wharves.

The PHA identified that the facility is potentially hazardous with respect to storage and transportation of methanol and transportation of sulphuric acid and potassium hydroxide. The risk to the public from these activities was assessed and it was concluded that they would not generate a significant risk due to flammable or explosive events or toxic releases. The risks from these activities were considered to be negligible, except for the transportation of methanol.

Therefore, further quantitative assessment of the transportation of methanol was conducted as part of the PHA. The PHA identified scenarios with the potential for off-site impacts, including bund fire, combustion product impacts, explosions and interactions with existing wharf activities.

Incidents with the potential for off-site impacts were assessed for frequency and consequence to determine the risk at various locations along the site boundaries. The assessment concluded that:

- thermal radiation levels from a bund fire in the methanol storage area would not cause injury to people off-site;
- toxicity effects from combustion of hydrocarbons were considered to be insignificant;
- potential for explosion involving methanol vapour was considered to be extremely unlikely;
- potential for explosion involving ammonium nitrate and a fuel spillage on the wharf during the fuel unloading process would be extremely unlikely; and
- there was negligible risk of injury or fatality in residential areas associated with operation of the facility.

The PHA also considered potentially hazardous events within the plant that could cause further hazardous events within the plant or at adjacent plants. This included consideration of propagation due to fire and explosion. In relation to fire, propagation off site to other industrial facilities was considered to be negligible due to the critical thermal radiation levels for structural damage being limited to within the site boundaries. Also, the distance between the bunded area and adjacent facilities was significant when compared to the extent of thermal radiation impacts. As the likelihood of explosion was considered highly unlikely, the risk of propagation due to explosion overpressure was considered to be negligible.

In December 2007, the Minister for Planning approved a project application from Marstel Terminals Pty Ltd for a bulk liquids storage facility, also on Greenleaf Road. The Department considered the potential cumulative hazard risk from the two bulk liquids storage facilities and concluded that the two facilities would present no increased hazard risk as there was an adequate separation distance between them (approximately 250 metres).

Whilst the risks associated with the facility were assessed as negligible, a range of technical, management and operational control measures would be implemented by Manildra Park to reduce the level of risk associated with operation.

During the public exhibition period, Orica, as a neighbouring landowner, requested further quantitative risk assessment (QRA) to assess the risks and consequences of a major fire involving the combustible liquids stored at the site. The NSW Fire Brigade requested that radiant heat contours be provided to enable them to assess the ability of the NSWFB to adequately operate fire safety measures on site.

In response, Manildra Park conducted a QRA and prepared radiant heat contours from a major fire. The Department considers that the QRA adequately addresses the concerns raised by Orica and has demonstrated that the risk criteria would not be exceeded. Manildra Park has committed to provide details of fire detection and suppression systems within the Fire Safety Study to be prepared prior to construction. The Department requires via the recommended conditions that the Fire Safety Study be approved by the NSWFB prior to commencement of construction.

The Department is satisfied that the PHA and QRA adequately addressed the hazards and risks associated with the transfer, handling and storage of bulk liquids and operation of the biodiesel facility and that off-site risks from the facility would be negligible. Furthermore, Manildra Park has committed to implement the recommendations arising from the PHA to maintain risks as low as reasonably practicable. The recommended conditions of approval require that hazard related studies be submitted prior to construction, commissioning and during operation and that ongoing monitoring and auditing be undertaken. The Department considers that these measures would ensure hazards and risks are continually monitored and managed to acceptable levels.

5.2 Contamination

A baseline contamination assessment was undertaken as part of the EA. The assessment identified potential sources of soil and groundwater contamination, the potential for the project to impact on areas of contamination and the measures required to manage identified contamination. No statutory notices under the *Contaminated Land Management Act, 1997* have been issued for the site. However, the adjacent Orica site has a current declaration of remediation for arsenic and ammonia contaminated groundwater that has migrated off the site.

Soils

The baseline contamination assessment identified elevated concentrations of lead (Pb) in the soil at the base of the two existing storage tanks on site. Concentrations were two times above the criteria (*National Environmental Health Forum (F) – Commercial/Industrial)*. Further testing of the leachability potential was undertaken to determine the potential for lead contamination to move through the soil due to rainfall and infiltration. These tests indicated that the contaminated soils had a propensity to leach in water; however, this potential may have been overestimated by the testing methodology. The assessment identified that the elevated lead levels at the base of the existing storage tanks were likely to have resulted from sand blasting activities to remove lead based paint from the storage tanks resulting in contaminants from paints and particulate metals.

In order to manage the identified lead contamination, further investigation would be required to delineate lead impacted soils around the perimeter of the tanks. Once delineated, localised remedial works would be required to remove lead impacted soils and dispose of the contaminated material off site, at an appropriately licensed facility. Manildra Park has committed to preparing a Remedial Action Plan to manage the identified lead contamination. The Department has also recommended via the conditions of approval that additional sampling and analysis be undertaken to delineate the contamination, a Remedial Action Plan be developed and remediation undertaken in accordance with the *Contaminated Land Management Act, 1997*.

The Department considers these measures necessary prior to commencement of construction in order to effectively remediate contaminated soil prior to refurbishment of the existing tanks and excavation

for bund installation. The Department is satisfied that these measures would enable contaminated soil on site to be remediated prior to commencement of construction activities, thereby minimising human health and water quality impacts of exposing contaminated material and contaminated runoff.

Acid Sulfate Soils

The contamination assessment indicated that acid sulfate soils were present in areas surrounding Kooragang Island, including the river sediments adjacent to the site. There is potential for the underlying natural soils beneath the fill material on site to contain acid sulfate soils. The majority of excavation works would be undertaken within the fill material, however, where excavation occurs at depths greater than 1.5 to 2.5 metres below the ground surface, i.e. for the oil separation and spill pits at 5 and 2 metres respectively; then acid sulfate soils may be impacted. Manildra Park has committed to implementing an acid sulfate soil management plan for excavation works into natural soils. The Department is satisfied that the implementation of a management plan would adequately manage impacts associated with acid sulfate soils.

Groundwater

The groundwater table on site was observed between 1.3 and 2.2 metres below the existing surface and the flow was determined to be towards the east of the site towards the river. Tidal influences on the groundwater are expected to be significant due to the close proximity of tidal waters, thereby depths may vary.

The EA identified that the groundwater on site may be contaminated by:

- zinc - elevated concentrations exceeding the ANZECC guidelines were recorded in 3 of the 5 groundwater samples analysed from boreholes on site; and
- ammonia – elevated concentrations exceeding the ANZECC guidelines were recorded in 3 of the 5 groundwater samples analysed from boreholes on site.

The EA also noted the existing declaration of remediation site on the adjacent Orica site noting that arsenic and ammonia contaminated groundwater has migrated off the site and may continue to migrate. The location of the contamination zone is shown in Figure 4. The contamination is noted to be migrating westwards towards the south arm of the Hunter River and away from the Manildra park site; however, as elevated concentrations of ammonia were found in borehole samples on site, migration of contaminants from the Orica site cannot be discounted. Elevated zinc levels have been found in regional groundwater in the area and are therefore considered to be consistent with regional groundwater quality.

No groundwater analysis was undertaken in the footprint of the fuel transfer pipeline, however, as the pipeline traverses the Orica contamination zone, there is potential for contaminated groundwater to be encountered during pipeline construction. The pipeline is expected to be located within 1.3m of the ground surface and therefore, may not encounter groundwater. However, works carried out within the identified contamination zone would be conducted in accordance with the Orica Environmental Management Plan (EMP) which requires preparation of a work method statement detailing soil and water management protocols and preparation of a health and safety plan for the works. The pipeline would also be constructed with a clay/bentonite plug around the northern and southern extents of the contamination zone to minimise potential migration of contaminated groundwater traversing along the pipeline excavation (see Figure 4).

The Department is satisfied that adequate controls have been identified for management of excavation works within the Orica contamination zone.

Interaction with groundwater during excavation for the terminal may occur when excavation exceeds 1.3m depth. Earthworks for the majority of the terminal construction would not exceed this depth, however, construction of the oil separation pit (5m depth) and spill pits (2m depth) would encounter groundwater. The EA notes that these structures do not pose a significant risk to groundwater as they are impermeable, however the EA does not provide measures for managing potentially contaminated groundwater encountered during construction of the pits. The Department therefore recommends that similar measures to those detailed in the Orica EMP be implemented during excavation of the oil separation and spill pits to ensure that contaminated groundwater is appropriately managed.

The EA identified hydrocarbon spills as the primary risk that could result in soil or groundwater contamination from operation of the facility, and nominated various control measures to manage such spills. However, the DECC noted that the integrity of the clay or HDPE liner within the tank farm bund

is critical for ensuring long-term protection of soil and groundwater from contamination. The DECC requested, and the Department concurs, that the following measures need to be implemented to provide greater assurance that there would be no leakage of materials through the clay liner in the long term:

- submit a detailed design and construction report for the tank farm bunding prior to commencement of construction;
- implement a groundwater monitoring program for construction and operation; and
- implement a containment bund, tank and pipeline integrity assessment program.

The Department considers that these measures would be adequate to ensure the long-term protection of soil and groundwater from contamination during operation of the facility.

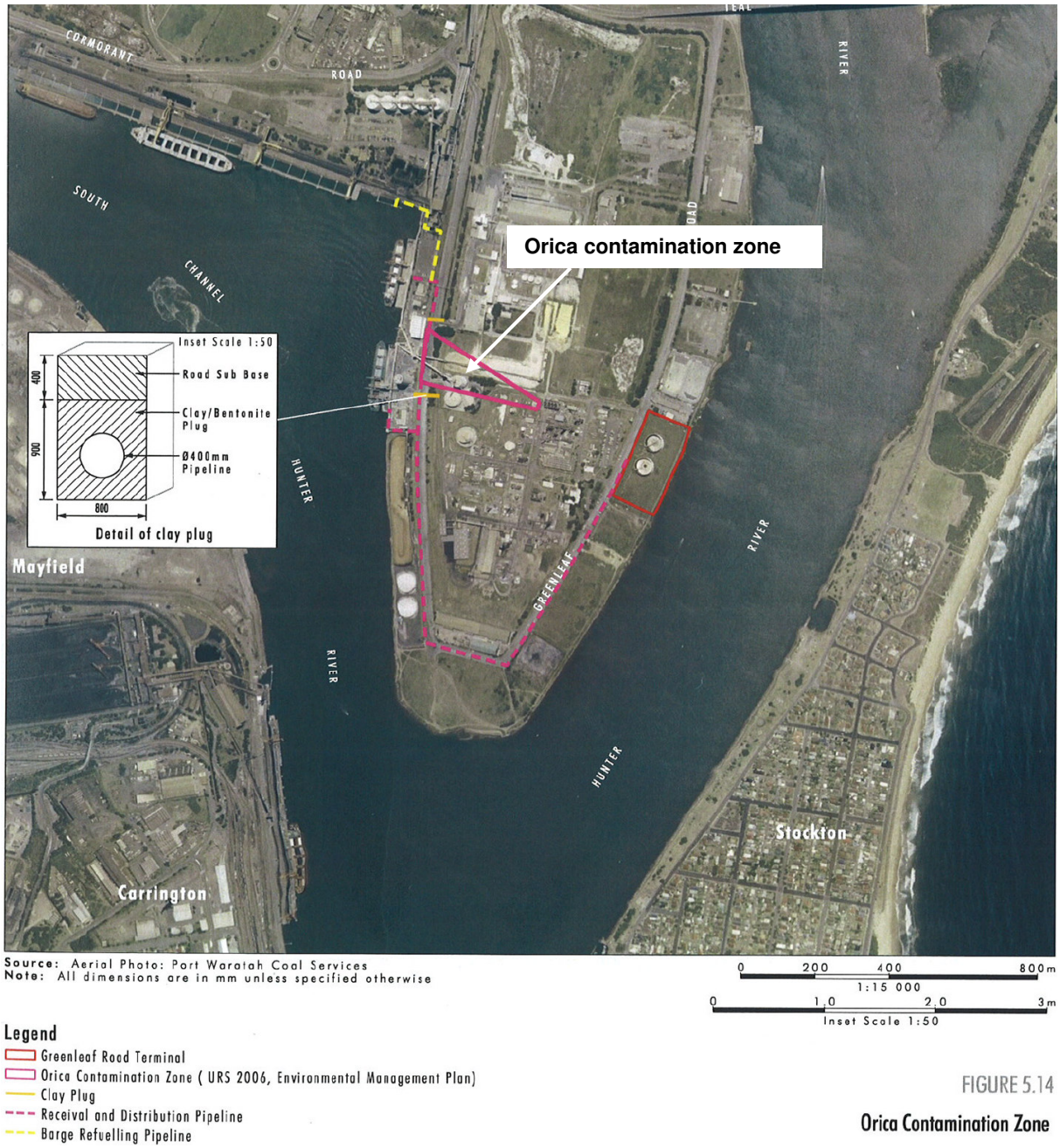

Figure 4: Orica Contamination Zone and Proposed Pipeline

5.3 Noise

The site is approximately 3km north of the central business district of Newcastle with the nearest residential areas being Stockton (600m to the east), Carrington (1.6km to the south) and Fern Bay

(1km to the north). Kooragang Island is characterised by industrial uses with Orica, Incitec and Port Waratah Coal Services located close to the site.

The primary noise sources during operation include pumps used at the wharf, terminal and biodiesel facility and truck movements. The key noise sources from construction activities include excavation works, pile driving for foundations, construction of concrete bunds, welding of tanks and construction of the pipeline. A significant component of the materials would be pre-fabricated off site, thereby minimising noise from construction activities. Road traffic noise was also considered in the EA for construction and operational stages.

The results of the noise assessment for the facility concluded that there would be a minor exceedance of up to 2dB(A) above the construction noise goal for the day time period of $L_{A10(15\ minute)}$ 47dB(A) at residential areas on the western side of Stockton. This exceedance is considered minor as it would occur only during the day time and may not be discernable.

The noise assessment for operation of the facility concluded that there would be no exceedance of the project specific noise goals during day, evening or night time periods. Noise levels at the nearest residents on Fullerton Street, Stockton would just meet the noise goal of L_{Aeq} 37dB(A) for the night-time period under the worst-case scenario, which includes night-time operations under temperature inversion conditions.

The traffic noise assessment indicated that the proposal would result in a less than 0.1% increase in road traffic numbers in the Kooragang Island area and this would correspond to a less than 0.1dB increase in existing day-time and night-time noise levels. The increase is considered negligible.

A cumulative noise assessment considered the impacts of existing and approved developments in the area along with noise from the proposed facility. The assessment concluded that cumulative noise from all developments would exceed the acceptable night-time criteria of 45dB(A) by up to 4dB(A) during noise-enhancing weather conditions. However noise levels would not exceed the maximum noise criteria of 50dB(A). The contribution from the proposed Manildra Park facility would be only 1dBA. Generally, industrial noise is 5dB(A) less in the absence of noise-enhancing westerly winds and/or temperature inversions, therefore, for the majority of time, the cumulative noise level would be below the acceptable criteria of 45dB(A) and well below the maximum criteria.

The noise assessment assumed that all pumps would be enclosed or be a mitigated source. It is therefore important that the facility is designed, constructed and operated with all pumps enclosed and/or mitigated. This requirement has been incorporated into the recommended conditions of approval.

The Department is satisfied that the proposal would not result in unacceptable noise impacts due to construction, operation or increases in road traffic. Noise limits for operation of the facility have been incorporated into the recommended conditions of approval. Construction activities would be restricted to the hours suggested in the *Noise Control Guideline - Construction Site Noise*.

5.4 Visual

Components of the facility likely to be visible from neighbouring locations include:

- five new fuel storage tanks, varying in height from 7 to 19 metres;
- the biodiesel plant, 24 metres high and 30 metres long; and
- the road tanker loading facility, approximately 8 metres high.

The two existing storage tanks that would be refurbished are 24 metres high and are located in the centre of the site.

The proposal has the potential to impact views from Stockton, the Hunter River, Carrington and Greenleaf Road. The most significant visual impacts are likely to be from the Stockton foreshore which is directly opposite the site, 600m across the north arm of the Hunter River. The foreshore is adjacent to the residential areas of Stockton. The existing fuel storage tanks are likely to be the most distinguishable component of the site; however, they have been an existing feature of the landscape for over 35 years. The five new fuel storage tanks would be constructed of steel with white exteriors and would be visible from the residential areas of Stockton. An artist's impression of the view is provided in Figure 5 (however the tanks are shaded grey to distinguish them from the existing tanks).

Whilst the storage tanks would be highly visible, the Department considers the level of visual impact to be minimal as the facility is located adjacent to other significantly higher industrial structures including the existing tanks on site and the Orica plant. Parts of the foreshore along Stockton are also screened by existing riverbank vegetation, providing some screening of the Kooragang Island industrial area. Stockton also has views of the Port Waratah Coal Loader across the Hunter River at Carrington. No public concerns were raised regarding visual impacts during the exhibition period.

Given the storage volumes proposed, very little can be done to decrease the height or scale of the tanks, and they are required to be painted white to minimise heat effects. However, some landscaping has been proposed for the site boundaries which would soften views of the facility.

Council has requested that further design effort be provided to maximise landscaping along the boundaries whilst meeting fire safety requirements. The Department agrees that landscaping should be maximised particularly along the eastern waterfront boundary, whilst still meeting fire safety requirements. Therefore, the Department recommends that a detailed Landscape Plan, designed to soften views of the facility, should be submitted to the Director-General for approval prior to construction.

The Department concludes that the visual impacts of the facility would be minor and can be minimised by landscaping along the site boundaries.

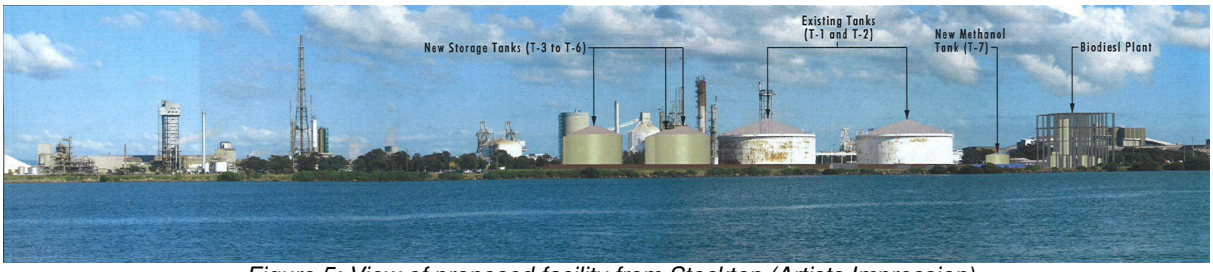

Figure 5: View of proposed facility from Stockton (Artists Impression)

5.5 Greenhouse Gas

A greenhouse gas assessment was undertaken as part of the EA. The assessment quantified the Scope 1, 2 and 3 (direct and indirect) emissions from the project, calculated in accordance with the *Australian Greenhouse Office: Factors and Methods Workbook, 2006*. A summary of emissions from the project are shown in Table 2.

Table 2: Annual Greenhouse Gas Emissions from the Project

Scope	Sources	Estimated Emissions [tonnes of carbon dioxide equivalent (t/CO_2-e)]
1	On-site diesel use for steam production and barge transport	2,278
2	On-site electricity use	1,661
3	Full fuel cycle emissions from on-site diesel and electricity use	580
3	Diesel use in transport of diesel and biodiesel to bulk users in the Hunter Valley	1,379
	Total emissions from on-site and transport activities	**5,898**
3	Emissions from end use of diesel and marine fuel oil	1,659,000
	Total scope 3 emissions	**1,659,000**

Aside from the emissions listed above, the project would also result in a net reduction of greenhouse gas emissions from the end use of biodiesel, compared with the use of the same amount of diesel. This equates to 42,640 t/CO_2-e per year.

To consider the impacts associated with the greenhouse gas emissions from the project, they must be reviewed in the context of annual Australian and global emissions:

- total emissions from on-site and transport activities of 5,898 t/ CO_2-e would be less than 0.001% of Australia's total emissions of 559 million t/ CO_2-e per year and would be insignificant in the global context; and

- total emissions from the end use of fuel of 1,659,000 t/ CO_2-e would be less than 0.3% of Australia's total emissions of 559 million t/ CO_2-e per year and would be less than 0.006% of global emissions of 26,583.3 million t/ CO_2-e per year.

While the Department considers the direct emissions (i.e. Scope 1 and 2 emissions) of the proposal to be extremely minor both in the national and global context, it considers that Manildra Park should be required to implement all reasonable and feasible measures to minimise these emissions. Consequently, it has recommended that Manildra Park be required to prepare an Energy Savings Action Plan for the proposed facility in accordance with the guidelines of the Department of Water and Energy.

Although the indirect emissions of the proposal, generated by the downstream use of the fuels, would be much greater than the direct emissions of the proposal, the Department does not consider it to be reasonable or desirable to require Manildra Park to offset or try to minimise these emissions, principally because:

- these emissions are the Scope 1 and 2 emissions of other industries/activities, and should be considered in the assessment of these industries/activities rather than Manildra Park's activities;
- Manildra Park, as a supplier and distributor of fuel, has limited power to influence the generation of these downstream emissions;
- these emissions should be regulated through a broad-based emissions trading scheme rather than the conditions of approval for individual projects; and
- these emissions are likely to be generated whether or not the Manildra Park project goes ahead, because the demand for (and use of) fuel in NSW is driven by the structural make up of the economy as a whole which cannot be changed quickly, rather than by the supply or distribution of these fuels.

Finally, the project would result in a net reduction of greenhouse gas emissions from the end use of biodiesel, as it would offset the use of the same amount of diesel.

Consequently, the Department is satisfied that the greenhouse gas impacts of the proposal are acceptable.

5.6 Other Issues

Other issues and impacts associated with the project are summarised in Table 3.

Table 3: Other Impacts

Issue	Impact
Water Quality	• Stormwater from the tank farm bund, biodiesel bund, truck loading bays and internal roads and parking areas would be captured in the spill pit or bunded areas then directed to the oil/water separator and tested prior to discharge to the Hunter River. • Details of wastewater generated by the biodiesel facility (approximately 11ML/year) were not available in the EA. Therefore, the DECC and the Department recommend that wastewater be transported off site for disposal.
Air Quality	• Primary emissions are from combustion products from the boiler, including carbon monoxide (CO), nitrogen dioxide (NOx) and sulphur dioxide (SO_2) and odorous volatile organic compounds (VOCs) from the biodiesel facility. • There would be no exceedances of short-term or annual average goals for these pollutants taking account of conservative estimates of background concentrations and emissions from the facility. • Measures to reduce methanol emissions from the biodiesel facility include a Methanol Recovery System and nitrogen blanketing within the storage tanks. Predicted concentrations from the facility are below the air quality goals. • The Department and the DECC are satisfied that emissions would be at acceptable levels.
Transport	• The existing road network has adequate capacity to accommodate additional vehicle movements associated with operation (64 heavy vehicle movements and 37 light vehicle movements a day). • The project would generate 27 additional ship movements a year and 190 refuelling barge movements a year. The additional movements are considered minor. Newcastle Port Corporation recommended that a Port Operations Management Plan be prepared to manage these activities. This requirement is incorporated into the recommended conditions of approval. • Construction of the pipeline adjacent to Greenleaf and Heron Roads would require temporary traffic management such as one-lane closure. This is expected to have little, if

Issue	Impact
	any impact on the operating efficiency of the roads and nearby intersections. • The Department is satisfied that the transport impacts of the project would be minimal.
Aboriginal Cultural Heritage	• The EA indicated that archaeological items are unlikely to occur on site due to extensive filling of Kooragang Island from the 1900's. • Potential impacts would be limited to excavation works below the fill material, in particular, for the spill pit and oil separator pit, and for piling works for foundations. • If archaeological items are uncovered, the Department recommends that work would cease, the DECC would be notified and measures would be developed to manage the items.
Waste	• The project would generate approximately 7225 tonnes of glycerine per year which would either be passed through an additional biodiesel process to generate biodiesel, or would be sold as crude glycerine to other industries. • 1873 tonnes of salt would be generated, which would be sold. • As primary waste products can be sold, the requirement to landfill is considered minor.
Feedstock for biodiesel production	• The biodiesel facility would use 53,515 tonnes per year of feed oils, comprising either palmolein, canola oil, soya bean oil, palm oil, palm kernel oil or tallow. • The oil type that would be used would vary, depending on the market supply and demand at any given time. • Manildra Park would need to satisfy any requirements imposed by the Commonwealth relevant to a decision to import feedstock. Manildra Park has committed to sourcing any palm oil in accordance with the principles and criteria of the Roundtable on Sustainable Palm Oil. • The recommended conditions of approval require Manildra Park to implement a Procurement Plan identifying environmentally and socially responsible feedstock materials and detailing procedures for sourcing such materials.

6. RECOMMENDED CONDITIONS OF APPROVAL

The Department has prepared recommended conditions of approval for the project which are summarised in Appendix A and included in Appendix B.

These conditions are required to:
- manage hazards and risk;
- identify and monitor contaminated groundwater and remediate contaminated soil;
- monitor the design and installation of bund lining;
- minimise visual impacts; and
- seek continual improvements in energy efficiency.

Manildra Park does not object to the imposition of the recommended conditions.

7. CONCLUSION

The Department has assessed the EA and submissions on the project in accordance with the requirements of the *Environmental Planning and Assessment Regulation 2000*.

This assessment shows the key issues relate to hazards and risk, groundwater and soil contamination, noise, visual and greenhouse gas emissions. Other minor issues include water and air quality, transport, Aboriginal cultural heritage, waste management and procurement of feedstock for biodiesel production.

The Department has assessed these concerns in detail having regard to the objects of the EP&A Act, and the principles of ecologically sustainable development. The Department is satisfied that the facility would not lead to unacceptable environmental impacts.

The hazards and risks associated with the facility would be adequately managed through design and pre-construction and pre-commissioning hazard related studies. Soil and groundwater contamination would be further identified and monitored with soil contamination remediated prior to construction.

Noise would be managed through the imposition of noise limits and restriction on construction hours and visual impacts would be minimised through landscaping. The requirement for energy savings would minimise greenhouse gas emissions to a small degree, however, as the majority of emissions relate to the end use of fuels, it is difficult to further minimise these emissions. By providing biodiesel as a fuel, a reduction is emissions would occur, as the same amount of diesel use would be offset. The sourcing of feedstock for biodiesel production would be managed through a procurement plan.

The Department is satisfied that the proposed mitigation measures and recommended conditions of approval can effectively reduce the impacts of the project to acceptable levels.

The project responds to increased demands for fuel and locates a storage facility in close proximity to import locations and the expanding market for fuel products in the Hunter region. The project would result in reduced truck movements from Port Kembla to the Hunter region.

Overall, the Department believes that the project has been adequately justified on economic, social and environmental grounds; it is in the public interest and should be approved subject to conditions.

8. RECOMMENDATION

It is recommended that the Minister:

- consider the findings and recommendations of this report;
- approve the project application, subject to conditions, under section 75J of the *Environmental Planning and Assessment Act 1979*; and
- sign the attached project approval (see Appendix B).

Deana Burn
Manufacturing and Rural Industries
Major Development Assessment
Tel: 9228 6471

Signed 12/05/08

David Kitto
Director
Major Development Assessment

Signed 12/05/08

Chris Wilson
Executive Director
Major Project Assessment

Signed 13/05/08

Sam Haddad
Director-General

Signed 02/06/08

Frank Sartor MP
Minister

APPENDIX A – SUMMARY OF CONDITIONS OF APPROVAL

Aspect	*Condition*	*Requirement*
Schedule 2: Administrative Conditions		
Section 94	7	Contributions in accordance with *Newcastle Contributions Plan No. 1, 2005*.
Schedule 3: Specific Environmental Conditions		
Hazards and Risk	13-17	Requires various hazard and safety studies prior to construction, commissioning and during operation.
Contamination	18-25	Requires a Groundwater Monitoring Program, further soil analysis and if appropriate, remediation of soil, an Acid Sulfate Soils Management Plan; and a Remediation Action Plan.
Soil and Water	26-34	Provides discharge limits, requirements for bunding design, spill prevention and management and erosion and sediment controls.
Noise	36-39	Noise limits and working hours for construction and operation and monitoring of compliance.
Air	40-43	Requires dust minimisation, air quality monitoring and an operational Air Validation Report.
Visual and Landscaping	44	Requires a landscaping plan to include provision of screening.
Greenhouse Gas	45	Requires an Energy Savings Action Plan.
Port Operations	48	Requires a Port Operations Management Plan.
Procurement of Feedstock	49-50	Requires a Procurement Plan for the use of biodiesel feedstock materials.

APPENDIX B – CONDITIONS OF APPROVAL

See Department's website, www.planning.nsw.gov.au under Project Assessments

APPENDIX C – RESPONSE TO SUBMISSIONS

See Department's website, www.planning.nsw.gov.au under Project Assessments

APPENDIX D – SUBMISSIONS

See Department's website, www.planning.nsw.gov.au under Project Assessments

APPENDIX E – ENVIRONMENTAL ASSESSMENT

See Department's website, www.planning.nsw.gov.au under Project Assessments

APPENDIX F – CONSIDERATION OF ENVIRONMENTAL PLANNING INSTRUMENTS

Section 75I(2) of the *Environmental Planning and Assessment Act 1979* requires that reference be made to the provisions of any environmental planning instrument that would (but for Part 3A of the Act) substantially govern the carrying out of the project. Consideration of the proposed development in the context of the objectives and provisions of the relevant environmental planning instruments is provided below.

State Environmental Planning Policy (Infrastructure) 2007
State Environmental Planning Policy (Infrastructure) 2007 (Infrastructure SEPP) commenced in January 2008, consolidating and updating a number of State planning instruments. The Infrastructure SEPP details planning provision and development controls for infrastructure works and development located adjacent to particular types of infrastructure development. However, the Infrastructure SEPP does not apply to project applications which were lodged but not determined before the commencement of the policy. As the project application was lodged prior to the commencement of the Infrastructure SEPP, the provisions of this SEPP do not apply to the project.

State Environmental Planning Policy No. 11 – Traffic Generating Developments
SEPP 11 aims to ensure that the RTA is made aware of and allowed to comment on projects for developments listed in Schedules 1 and 2 of SEPP 11. Schedule 1 identifies developments including transport terminals, bulk stores, container depots and liquid fuel depots. The proposed development therefore triggers SEPP 11. The project was referred to the RTA for comment in accordance with SEPP 11.

State Environmental Planning Policy No. 33 – Hazardous and Offensive Development
SEPP 33 applies to the facility as a potentially hazardous industry. SEPP 33 aims to identify proposed developments with the potential for significant off-site impacts, in terms of risk and/ or offence (odour, noise etc). A development is defined as potentially hazardous and/ or potentially offensive if, without mitigating measures in place, the development would have a significant risk and/ or offence impact, on off-site receptors. A Preliminary Hazard Analysis was conducted to assess the hazards and risks associated with storage, handling and transfer of bulk fuels and production of biodiesel. The analysis indicated that the project would comply with the relevant guidelines for hazard and risk. The Department is satisfied with this analysis.

State Environmental Planning Policy No. 55 – Remediation of Land
SEPP 55 applies to the project. SEPP 55 aims to ensure that potential contamination issues are considered in the determination of a development application. A contaminated site assessment was undertaken and further analysis has been recommended in the conditions of approval to identify areas for remediation. The Department is satisfied with the consideration of SEPP 55 in the EA.

State Environmental Planning Policy No. 71 – Coastal Protection
SEPP 71 applies to the site. SEPP 71 aims to protect and manage the NSW coast through improving public access, protecting Aboriginal cultural heritage, protecting visual amenity and coastal habitats and managing the scale, bulk and height of development along the coast. The Department is satisfied that the development is generally consistent with the objectives of SEPP 71.

Hunter Regional Environmental Plan
Hunter Regional Environmental Plan (REP) applies to the site. Specifically Part 7 (Division 1 and 4) requires air, noise and water pollution to be minimised; and buildings over 14m in height to be considered in the context of local impact and regional significance. The highest structure on the site is 24 metres. The EA has adequately assessed the project against the provisions of the REP. The Department is satisfied that the project is consistent with the objectives of the REP.

Newcastle Local Environmental Plan 2003
Newcastle Local Environmental Plan 2003 (LEP) provides development controls for development in the Newcastle local government area. The proposed facility is located in land zoned 4(b) Port and Industry. The objectives of the zone are to accommodate port, industrial, maritime industrial and bulk storage activities that require separation from residential areas. The Department is satisfied that the proposed facility is consistent with the objectives of the zone. Other relevant provisions of the LEP

include Clause 25 Acid Sulfate Soils and Clause 31 Development affecting places or sites of Aboriginal heritage significance. The Department is satisfied that the EA has adequately assessed these provisions and concludes that the project generally complies with the aims and objectives of the LEP.