

JAMES ROSE CONSULTING

ABN 64 175 064 511

Unit F21, 1-15 Barr Street

Balmain NSW 2041

T: 02 9555 8588

F: 02 9555 8599

E: mail@jamesrose.com.au

www.jamesrose.com.au

ENVIRONMENTAL ASSESSMENT FOR MAJOR PROJECTS APPLICATION

JANUARY 2007

REF: 034-W1.1-032

ISSUE: ONE

PROJECT:

INSTALLATION OF IN-GROUND STORMWATER TREATMENT UNIT P&O PORTS SHIPPING TERMINAL 42 FRIENDSHIP ROAD MATRAVILLE NSW 2036

CLIENT:



Document Control

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	Submission of Environmental Assessment Prepared under the Environmental Planning and Assessment Act 1979
EA prepared by	
name	Catherine Blaine
qualifications	BEng Civil & Environmental (Hons), Dip Eng Prac, MIEAust
address	James Rose Consulting Unit F21, 1-15 Barr Street BALMAIN NS 2041
in respect of	P&O Port Botany Shipping Terminal – minor works
Development Application	
applicant name	P&O Ports Limited
applicant address	42 Friendship Road Matraville NSW 2036
land to be developed	part of Lots 1-13 / DP 260692
proposed development	Proposed installation of an in-ground stormwater treatment unit at the P&O Port Botany Shipping Terminal
Environmental Assessment	An Environmental Assessment is attached
Declaration	I certify that I have prepared the contents of this Environmental Assessment and to the best of my knowledge: - it is in accordance with the requirements of the Environmental Planning and Assessment Act and Regulations; and - it contains all available information that is relevant to the environmental assessment of the development to which the statement relates; and the information contained in the statement is neither false nor misleading.
signature	
name	Catherine Blaine
date	5 December 2006

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1 EXECUTIVE SUMMARY

This Environmental Assessment (EA) has been prepared by James Rose Consulting (JRC) as part of a Major Projects Development Application submission to the Department of Planning seeking consent for the proposed installation of an in-ground stormwater treatment unit at the P&O Port Botany Shipping Terminal, 42 Friendship Road, Matraville.

P&O lease the shipping terminal site from landowners, Sydney Ports Corporation. The site is located within the Randwick City Council Local Government area.

The application is made pursuant to State Environmental Planning Policy (Major Projects) 2005 to be determined by the Minister under Part 3A of the *Environmental Planning and Assessment Act 1979*. This EA addresses the requirements of the Director-General, issued by the Department of Planning on 30 November 2006, and included in Appendix B for reference.

The proposal involves the installation of a “SPEL Stormceptor” treatment unit for the removal of contaminants from stormwater runoff over a 10,000m² area of the terminal identified to pose significant potential risk in terms of surface contamination. The proposed works are represented in development drawings provided in Appendix A. The estimated cost of the proposed works is \$150,000.

No change to the existing operational activities, operating hours or number of employees is proposed by this development.

This Environmental Assessment reviews the project’s benefits, compliance with relevant planning instruments, regulatory controls and legislation, and potential impacts in both the operational and construction phases.

Review of the proposed works in relation to existing land use, planning and legislative controls indicates that the project is an allowable activity.

The proposal will create the overall positive benefit of improved stormwater water quality output into Brotherson Dock, the adjacent water body to the site. There are no negative environmental impacts associated with the proposal.

The EA concludes that the proposal is permissible under current planning legislation and guidelines and will create an overall positive benefit in the locality.

2 INTRODUCTION

This Environmental Assessment has been prepared by James Rose Consulting (JRC) as part of a Major Projects Development Application submission to the Department of Planning seeking consent for the proposed installation of an in-ground stormwater treatment unit at the P&O Port Botany Shipping Terminal, 42 Friendship Road, Matraville.

The application is made under the State Environmental Planning Policy (Major Projects) 2005 which defines major projects to be determined by the Minister for Planning under Part 3A of the *Environmental Planning and Assessment Act 1979*. The information herein addresses the *Environmental Assessment* requirements of the Director-General, issued by the Department of Planning on 30 November 2006, and included in Appendix B for reference.

P&O propose to install a pre-fabricated “SPEL Stormceptor” by-pass separator unit within the identified area to treat stormwater prior to discharge to Brotherson Dock. The Stormceptor unit is to be installed in-ground and will treat runoff water collected from an area of approximately 10,000m². The proposed location of the unit is shown in attached JRC Drawing No. 034-L1-02.

No change to the existing operational activities, operating hours or number of employees is proposed by this development.

This report is supported by the following supporting documentation, included as appendices to this EA: -

- Development Drawings (JRC Drawing Nos. 034-L1-01 to 034-L1-04).
- Director General's Requirements for the preparation of this EA.
- “SPEL Stormceptor” treatment unit product information.
- Consultation correspondence with Randwick City Council.
- Draft Construction Environmental Management Plan (CEMP).

3 BACKGROUND AND JUSTIFICATION

P&O have recently conducted a review of the Port Botany Shipping Terminal site to identify any areas which pose potential risk in terms of contamination to the site's existing stormwater system through surface water runoff. The majority of the existing site is paved and the site's existing in-ground stormwater system conveys surface water runoff through a system of pits and pipes to the waters of Brotherson Dock. Stormwater is generally not treated prior to discharge into Brotherson Dock.

The review identified an area of potential risk in the southeast corner of the site, which incorporates the forecourt area of the maintenance garage and areas directly adjacent to the operational equipment washbay and refuelling areas. Although the washbay and refuelling areas are covered and bunded, the potential exists for minor amounts of contaminants to be tracked out of the bunded areas on the tyres of operational equipment. Due to activities in the identified area, it is also highly trafficked by trucks and operational equipment including forklifts, inter-terminal vehicles and the like, which contributes to the risk of contamination of surface water.

The proposal involves the installation of an in-ground stormwater treatment unit, which will remove pollutants from the stormwater collected, providing the benefit of improved quality of water released into Brotherson Dock. This significant benefit is nominated as justification for the project.

Alternatives to the proposal considered during concept development included a variety of proposed stormwater treatment units. The unit selected was based on the ability to remove anticipated contaminants in the affected region, including hydrocarbons and sediments. Further details of the proposed unit and treatment performance are provided in Section 5 of this EA.

4 SITE DETAILS

P&O's Port Botany Shipping Terminal is located at 42 Friendship Road, Matraville and is identified as Lots 1-13 / DP 260692. The site locality is shown on JRC Drawing No. 034-L1-01 provided in Appendix A of this EA.

P&O Ports lease the 39ha site from Sydney Ports Corporation for the operation of a shipping terminal for the import and export of shipping cargo. The site has been operated as a shipping terminal since its initial development in the 1970s. The main activity onsite involves the import and export of containerised shipping cargo. The site operates 24 hours a day, 7 days a week.

Prominent structures and features on the shipping terminal site include an administration building, maintenance workshops and facilities, sheds, container stacks and operational equipment including quay cranes and gantry cranes. The attached site layout plan (JRC Drawing No. 034-L1-01) shows the general arrangement of the terminal.

5 PROJECT DESCRIPTION

5.1 Proposed Works

P&O propose to install a pre-fabricated *SPEL Stormceptor Class 1* by-pass separator unit (Model No. S480.C1.20.SC) in the southeast corner of the terminal. The prefabricated unit is approximately 6.2m in length and 2.7m in diameter and will be installed below ground and hence not visible.

The Stormceptor unit is to be installed in-line between a section of existing stormwater pipe connecting two existing stormwater collection pits. The selected location for installation will allow the treatment of stormwater collected over approximately 10,000m² of sealed pavement.

Construction works will involve excavation of a section of pavement approximately 12m x 5m x 3.5m deep to allow installation of the unit. The walls of the excavation are to be adequately shored and the excavation de-watered to create safe working conditions during installation. The excavated area will be prepared and the unit placed and secured by holding straps and concrete surround, to ensure in-situ stability. The excavation will be backfilled with crushed rock to allow drainage of groundwater, and the structural pavement above reinstated.

The estimated cost of the proposed works is \$150,000.

5.2 SPEL Stormceptor Treatment Unit Details

The Stormceptor unit is designed and manufactured by SPEL Products for the removal of contaminants commonly found in stormwater runoff in developed areas. The Stormceptor unit incorporates two main treatment chambers; a primary settling chamber for the removal of silt/sediment; and a main separation chamber (secondary chamber) containing a stainless steel coalescer unit which removes oils/hydrocarbons.

The unit removes gross pollutants, such as garbage and general debris, as well as finer sediments and silt. The unit also removes free floating hydrocarbons and oils from stormwater to a concentration level of 5mg/L or less.

The tank shell is cylindrical in shape and is constructed from fibreglass in accordance with *AS2634:1983 Chemical plant equipment made from glass-fibre reinforced plastics (GRP) based on thermosetting resins*.

The treatment unit will operate continuously, whilst water is flowing through the stormwater system. In times of heavy rain and resultant high flows, the unit contains a by-pass chamber which allows stormwater to by-pass the secondary chamber and flow directly to the outlet. The stormwater released to by-pass is deemed to be sufficiently clean, as contaminants are generally captured in the first portion of runoff collected, effectively cleaning the pavement surface.

The treatment unit will be maintained by regular pump-out of sludge and oil films by a licensed waste contractor. The unit will be fitted with an alarm monitoring system, which involves the installation of an oil probe which will warn of high oil levels within the tank, alerting maintenance staff to the requirement for pump-out of the tank. Sludge collected in the coalescer unit will be removed by raising the unit to the surface via an internal guide rail and pumping the waste contained into a waste removal truck. The waste removed will be transported by a licensed waste contractor to an approved waste disposal facility in accordance with the requirements of the Department of Environment and Conservation (DEC) and the *Waste Avoidance and Resource Recovery Act 2001*.

Additional product information for the Stormceptor unit and alarm monitoring system is provided in Appendix C of this EA.

6 PLANNING & DEVELOPMENT CONTROLS

6.1 State Environmental Planning Policy (Major Projects) 2005

State Environmental Planning Policy (Major Projects) 2005 (SEPP 2005) identifies developments that are considered major projects under Part 3A of the *Environmental Planning and Assessment Act 1979* and hence determined by the Minister for Planning in NSW.

Schedule 2 of SEPP 2005 nominates specific sites, on which certain types of proposed development are considered major projects. Schedule 2 Part 7 states the following: -

“7 Port and Related Employment Lands

(1) Botany

Development within the area identified on Map 5 to this Schedule for the purpose of:

(a) a shipping berth, shipping terminal or associated building, structure or work, ...”

The subject shipping terminal site is located within the region shown on Map 5 to Schedule 2, hence the proposal is considered major project under SEPP 2005 and eligible for determination by the Minister for Planning.

The major projects assessment process involved the submission of an initial project description to the NSW Department of Planning seeking EA requirements from the Director-General. The Director-General's requirements were issued on 30 November 2006, and are included in Appendix B for reference.

The requirements to be included in this EA are summarised Table One.

Table One: Summary of Director-General Environmental Assessment Requirements

Director-General Requirements	Response
General Requirements	
Executive summary;	Provided in Section 1 of this EA.
Description of proposal, including construction, operation and staging;	Provided in Section 5 of this EA.
Assessment of environmental impacts of the project, with particular focus on the key assessment requirements specified below;	Provided in Section 7 of this EA.
Justification for the undertaking of the project, with consideration of the benefits and impacts of the proposal;	Provided in Section 3 of this EA.
Draft Statement of Commitments detailing measures for environmental mitigation, management and monitoring for the project; and	Provided in Section 8 of this EA.
Certification by the author of the Environmental Assessment that the information contained in the Assessment is neither false or misleading.	Provided on Page 3 of this EA.
Key Assessment Requirements	
Construction environmental management – the Environmental Assessment must provide a framework Environmental Management Plan which covers dust, noise and waste management issues, sediment and erosion control, acid sulfate soils and site access and safety.	- Environmental issues and mitigation addressed in Section 7 of this Assessment. - Draft Construction Environmental Management Plan (CEMP) provided in Appendix E of this EA.
Water Quality Management – the Environmental Assessment requires design details of the ‘SPEL Stormceptor’ which demonstrates appropriate water balances, predicted concentrations of outlet flows and details of silt and sludge removal and disposal.	Addressed in Sections 5.2 and 7.10 of this Assessment.
Consultation Requirements	
You must undertake an appropriate level of consultation with Randwick Council during the preparation of the Environmental Assessment which should indicate how issues raised have been addressed in the Environmental Assessment.	A copy of the draft EA was submitted to Randwick City Council on 5 December 2006. Consultation details are discussed further in Section 6.3 of this EA.

6.2 Randwick Local Environmental Plan

The P&O Shipping Terminal site is located within the Randwick Local Government Area and is hence subject to the requirements of the *Randwick Local Environmental Plan 1998 (LEP)*. LEP defines development zones within the Randwick area and outlines consent requirements for development within the zones. Clauses within the LEP that are relevant to the proposal are addressed in Table Two.

Table Two: Compliance with relevant excerpts of *Randwick LEP 1998*

Director-General Requirements	Response
Clause 16: Zone No. 4B (Port Botany Zone)	
The P&O Shipping Terminal site is zoned “4B – Port Botany Zone”. Clause 16(1) of the LEP identifies one of the objectives of Zone No. 4B, as follows:- <i>“(d) to enhance and improve the physical environment by minimising disturbances caused by air pollutants, water pollutants, noise pollutants and other pollutants,....”</i> Clause 16(3) of the LEP states that development for the purpose of Port Facilities are allowable with development consent.	The proposal will improve the quality of stormwater released into Brotherson Dock, minimising the disturbance of water pollutants and hence supporting the above objective of Zone No. 4B. The proposal is directly related to “port facilities” and is hence allowable with development consent.
Clause 36: Additional development in industrial zones	
Clause 36(4) of the LEP states the following: <i>“The Council may grant consent to the development of land within Zone No 4A or 4B only where it has considered the Port Botany Landuse Safety Study 1996, prepared by the Department of Urban Affairs and Planning, a copy of which is deposited in the office of the Council.”</i>	The Study relates to the potential increase in risk to the community related to proposed developments in the Port Botany area. The proposed development does not involve any hazardous activity or the use, generation or transport of hazardous or dangerous goods. Hence the proposal is not envisaged to require any risk assessment under the requirements of the <i>Port Botany Landuse Safety Study 1996</i>.
Clause 37: Development in the Port Botany industrial area	
Clause 37 of RLEP 1998 states the following: - <i>“The Council may grant consent to the development of land within Zone No 4B only if it is satisfied that the proposed development is, by virtue of the nature of the activity or activities involved, suited to being in close proximity to Port Botany and will not adversely affect the continued operation of the port.”</i>	The proposed treatment device is necessary in the proposed location in order to work effectively in removing water contaminants from stormwater. Construction works may cause minor temporary disturbance to operations, however the proposal will not adversely affect continued operation of the port.

Director-General Requirements	Response
Clause 40A: Master plans Clause 40A(1) of RLEP 1998 requires that a Masterplan be prepared for development applications made for sites larger than 4,000 square metres in size. Clause 40A(2) makes provision for a waiver for the master plan requirement to be granted in the following circumstances:- (2) <i>The consent authority may waive the requirement for a master plan, but only if it is satisfied:</i> (a) <i>that the proposed development is of a minor nature only or is ancillary to the current use of the land, or</i> (b) <i>that adequate guidelines and controls applying to the land are already in place.</i>	This application seeks a waiver for the Master Plan preparation under section 40A(a) of the LEP. The proposed installation of an in-ground stormwater treatment unit is considered ancillary to the main facility operations and does not constitute a change the overall use of the site.
Clause 42B: Contaminated land Clause 42B states the following: <i>Despite any other provisions of this plan, the Council must not grant consent to the development of contaminated land within any zone unless the Council is satisfied:</i> (a) <i>that the contaminated land will, after being remediated, be suitable for the purpose for which development is proposed to be carried out, and</i> (b) <i>that the contaminated land will be remediated before the land is used for that purpose, and</i> (c) <i>that the use of the land for that purpose is permissible in the zone.</i>	The existing ground surface in the proposed works area is paved and shows evidence of minimal amounts oil/grease and sediments on the pavement surface, which is likely due to mobile plant traffic. The structural pavement is comprised of approximately 150mm of asphalt wearing course overlaying 400mm of crushed rock, totalling a depth of 550mm. The constructed pavements overlay dredged sand, hydraulically placed during reclamation of the port area. The terminal pavement and substructure is relatively homogeneous and the risk of contamination in the substructure is negligible. The proposed excavation of the works area will remove any surface contamination and hence no remediation is required for this proposal. Excavated spoil will be disposed in accordance with DEC requirements.

The proposal displays an overall compliance with all relevant Clauses of the LEP.

6.3 Consultation

In accordance with the Director-General's requirements outlined in Section 6.1 of this EA, consultation with Randwick City Council was undertaken during preparation of the EA. A draft version of the EA was submitted to Council on 5 December 2006 seeking comments on issues to be addressed in the final EA. Comments were received from Council on 13 December 2006 and are summarised in Table Three.

Table Three: Summary of Director-General Environmental Assessment Requirements

Council's Comment	Response
Statutory Requirements	
Clause 16 Zone No 4B (Port Botany Zone) The land is zoned 4B – Port Botany. This clause, amongst other things, lists the landuses that are permissible in the zone. Appropriate assessment of the proposed development, its permissibility and consistency with the objectives of the zone should be undertaken.	Addressed in Section 6.2 of this EA.
Clause 36 (4) Additional development in industrial zones Clause 36(4) states that Council may grant consent to development of land in Zone 4B only where it has considered the port Botany Landuse Safety Study 1996 prepared by the Department of Urban Affairs and Planning. Statements clearly addressing this matter should be included in the Environmental Assessment Report for this project.	Addressed in Section 6.2 of this EA.
Clause 37 Development in the Port Botany industrial area Clause 37 states that Council may grant consent to land in Zone 4B only if it is satisfied that the proposed development is for port-related activity or activities and will not adversely affect the continued operation of the port. Statements clearly addressing this matter should be included in the Environmental Assessment Report for this project.	Addressed in Section 6.2 of this EA.
Clause 42B Contaminated Land Clause 42B requires that contaminated land be remediated and be suitable for its intended use. Accordingly, contaminated land should be remediated in accordance with SEPP No. 55 and the Contaminated Land Management Act.	Addressed in Section 6.2 of this EA.
Ecological issues arising from impacts on Botany Bay	
The proposal should address any potential ecological impacts, including, but not limited to, the following:	Potential ecological impacts are addressed generally in Section 7 of this EA, with the listed issues addressed specifically in the following Sections of this EA:

Council's Comment	Response
- Loss of biodiversity in the Botany Bay - Disturbance of acid sulphate soil particularly related to any earthworks - Impacts on water quality - Impact on the groundwater levels and quality including the Botany Aquifer - Impact on wetland areas Statements clearly addressing these issues should be included in the Environmental Assessment Report for this project.	- Section 7.8 - Section 7.7 - Section 7.5 - Section 7.6 - Not applicable
Potential noise, odour and pollution impacts	
As the proposal may potentially be a Department of Environment and Conservation (DEC) Scheduled Premises, DEC should appropriately condition any approval to ensure that protection of the environment, and the amenity of the nearby industrial and residential land, is maintained in regards to air emissions, water treatment and disposal and acoustic amenity. In this regard, the proposal must obtain general terms of approval from DEC as part of the Integrated Development provisions for State Significant Development (Section 92) of the EP&A Act. It should be noted that Council regularly receives complaints from residential neighbours pertaining to increased noise nuisances during the night and evening periods from the Sydney Ports area creating sleep disturbance. Appropriate acoustical assessment and report should be prepared for the proposed development. The proposal should ensure that the proposed construction, changes to the facility and the operation of all plant and equipment shall not give rise to an 'offensive noise' as defined in the Protection of the Environment Operations Act 1997 and Regulations. In this regard, the operation of the premises and plant and equipment shall not give rise to a sound pressure level at any affected premises that exceeds the background (LA90), 15 min noise level, measured in the absence of the noise source/s under consideration by more than 5dB(A). The source noise level is assessed as an LAeq, 15 min and adjusted in accordance with the NSW Environmental Protection Authority's Industrial Noise Policy 2000 and Environmental Noise Control Manual (sleep disturbance). The potential for odour and any other pollution from the future use of the in-ground stormwater treatment unit on the site should be addressed. There are to be no emissions or discharges from the premises which would give rise to a public nuisance or result in an offence under the Protection of the Environment Operations Act 1997 and Regulations. Any measures necessary to mitigate noise and odour impacts should be included in the proponent's Statement of Commitment that will form part of the Environmental Assessment for this project or alternatively included as a condition in any Instrument of Approval for the project.	This proposal is not a DEC Scheduled Activity, as defined in Schedule 1 of the Protection of the Environment Operations Act 1997. Furthermore, the site is not a DEC Scheduled Premises, hence the proposal does not require referral to the DEC for this purpose. Noise issues are addressed in Section 7.3 of this EA. The proposal is not envisaged to create excessive noise emissions during the construction or operational phases. Preparation of an Acoustic Assessment for this proposal is not appropriate due to the minor scale of the proposal and the existing industrial nature of the terminal operations and surrounds. Pollution is generally addressed in Section 7 of this EA. Odour is specifically addressed in Section 7.4 of this EA. All proposed mitigation measures are included in the Statement of Commitment provided in Section 8 of this EA.

Council's Comment	Response
Acid Sulphate Soil	
The draft EA states that soil tests undertaken directly adjacent to the proposed works area indicates that results were below Action Criteria Values which trigger the need to prepare Acid Sulphate Soils Management Plan. Notwithstanding this, the draft EA proposes a mitigation measure that requires all works to cease and excavation to be inspected by suitably qualified consultants to determine appropriate management procedures prior to recommencement should ASS be encountered during works. This measure has not been nominated in the list of draft Statement of Commitments and should be included.	Noted. ASS management measure has been included in the list of draft Statement of Commitments in provided Section 8 of this EA.
Traffic	
The draft EA mentions in Section 7.1 Page 14 that a mitigation measure to address construction traffic impact will be provided involving appropriate temporary barricades with flashing lights to be installed around the perimeter of the construction works area throughout the entirety of the construction period. This measure has not been included in the draft Construction Environmental Management Plan (CEMP) Appendix E and should be included.	The identified mitigation measure is already included as Point 1.3 in the checklist provided on Page 3 of the draft Construction Environmental Management Plan (CEMP) in Appendix E of this EA.
Water Quality/Erosion Control	
The mitigation measures for sediment and erosion control during construction works (Section 7.5 Page 18) has not been included in the draft Construction Environmental Management Plan (CEMP) Appendix E and should be included.	All sediment and erosion control measures are already included as Points 5.1 to 5.4 on Page 4 of the draft Construction Environmental Management Plan (CEMP) in Appendix E of this EA.
Excavation	
As the proposal involves excavation of up to 3.5 metres, suitable geotechnical investigation shall be undertaken to determine whether the proposed works will encounter groundwater. Should groundwater be encountered within the depth of the proposed excavation, the applicant shall liaise directly with the Department of Natural Resources regarding their requirements for temporary dewatering.	As shown in JRC Drawing No. 034-L1-03 provided in Appendix A of this EA, it is expected that groundwater will be encountered during excavation works, being present at a level of approximately 1.8m below existing surface level. Groundwater issues are addressed in section 7.6 of this EA.

Copies of consultation correspondence with Randwick City Council are provided in Appendix D of this EA.

7 ENVIRONMENTAL ISSUES

7.1 Access, Traffic and Safety

Existing Environment

The terminal is accessed via Gates B34 and B37 off Friendship Road, Matraville. Gate B34 is predominantly used for heavy-vehicle, contactor and delivery vehicle access and Gate B37 used for light vehicle access by staff and visitors. The existing site generates a significant number of heavy and light vehicles movements each day.

The terminal's operational areas generally experience high amounts of internal activity and traffic.

Potential Impacts

The proposal will generate approximately one ongoing heavy vehicle movement every 3 months for waste removal purposes associated with maintenance of the stormwater treatment unit.

The construction stage will generate some temporary heavy and light vehicle traffic, mainly consisting of trucks delivering construction materials and vehicles belonging to construction personnel. All construction traffic will enter the site via the Gate B34 security entrance off Friendship Road. The expected volume of construction traffic will be minimal compared with the existing truck movements to and from the site. Considering the minimal amount of temporary and ongoing traffic associated with the proposal, there is no requirement for traffic management.

The construction works area will be barricaded from the operational area of the terminal using temporary barriers and flashing lights for visibility to ensure safety of terminal staff and construction contactors.

Mitigation Measures:

- Appropriate temporary barricades with flashing lights are to be installed around the perimeter of the construction works area throughout the entirety of the construction period.

7.2 Visual Impact

Existing Environment:

Prominent structures at the terminal are visible from surrounding public streets and the waters of Brotherson Dock and Botany Bay. Visible structures include the main administration building and maintenance workshop, container stacks and operational equipment including quay cranes and gantry cranes.

Potential Impacts:

The proposed stormwater treatment unit will be installed wholly beneath the existing ground surface and hence will not be visible. The only visual element associated with the proposal are two 600mm round service/inspection holes (with concrete pit covers), which will be cast level with the ground surface.

There are no visual impacts associated with the proposal.

Mitigation Measures:

- No mitigation measures are required.

7.3 Noise

Existing Environment:

The terminal currently operates 24 hours a day, 7 days a week. Major sources of noise onsite are due to operational movements including trains, heavy vehicles, forklifts and container handling.

The closest residences to the site are located approximately 1km away.

Potential Impacts:

The proposal will not generate any significant ongoing noise emissions during the operational phase. The unit does not include any moving parts or pumps and hence generates no sound during operation. A localised beeping sound will be emitted from the monitoring alarm should

the level of contaminants in the system reach a high level, however the sound will be local and audible only within approximately 10m of the unit, in order to alert maintenance staff in the vicinity of the unit.

It is expected that some noise will be generated during construction activities, however, considering the industrial nature of the site and surrounds, the existing background noise levels, and that construction activities will be limited to daytime hours only, noise disturbance from construction is not expected. Should any complaints be received in relation to noise generated by the construction activity, the complaint should be recorded and all works ceased until the source is determined and rectified if appropriate.

Mitigation Measures:

- All construction works are to be carried out between the following hours: -
 - Monday to Friday 7:00am to 6:00pm
 - Saturdays 8:00am to 1:00pm
 - No work on Sundays or Public Holidays
- Any noise complaints received in relation to construction activity to be recorded, investigated and remedied as soon as possible.

7.4 Air / Odour

Existing Environment:

No studies of the local air quality or odour levels were undertaken as part of this assessment, however due to the nature of the area it is assumed that the existing local air quality is similar to that of most commercial/industrial areas in Sydney.

Existing operations onsite contribute minor amounts of air emissions from the operation of equipment such as cranes, forklifts, heavy vehicles and locomotives.

Potential Impacts:

The proposal will not generate any ongoing air emissions during the operational phase. Considering that the unit treats stormwater only, and not sewage or trade waste, there are no operational odour issues associated with the unit. Regular maintenance of the unit will ensure no odour issues from collected contaminants. The regular flow of stormwater through the

treatment system, even at very low flow, will ensure that water within the unit is circulated at regular intervals. The unit is effectively sealed, apart from the outlet, inlet and vent pipe, preventing any effects of open stagnant water. The unit's vent pipe allows air to flow through the chambers for operational reasons and not for venting of odours.

It is expected that some minor air emissions will be generated during construction activities, including minimal amounts of dust during excavation works and some air emissions from construction equipment.

The use of regularly maintained equipment will minimise the potential effect of air emissions. The adaptation of dust control measures will minimise including minimal air emissions from construction equipment. The use of regularly maintained equipment will minimise the potential effect.

Mitigation Measures:

- All construction equipment is to be in good working condition to minimise emissions to air.
- The following dust prevention measures are to be utilised during construction works: -
 - All excavated areas should be back-filled and sealed as soon as practicable.
 - All stockpiles of excavated material should be covered to avoid dust emissions.
 - All trucks entering and leaving the site are to be appropriately covered to prevent the escape of material.

7.5 Water Quality / Erosion and Sediment Control

Existing Environment:

The majority of the existing site is developed with impervious areas including structure roofing and pavement. Surface water from roofs and pavements is collected in a system of stormwater pits and pipes, ultimately discharging into the waters of Brotherson Dock. Stormwater is generally not treated prior to discharge into Brotherson Dock, however areas of activity that produce contaminants that could potentially pollute the stormwater system are managed by roofing and bunding, with separate drainage systems diverted to the site's tradewaste system for treatment.

A recent review of the general operational areas of the terminal revealed an area of potential risk of stormwater contamination in the southeast corner of the site, which incorporates the

forecourt area of the maintenance garage and areas directly adjacent to the operational equipment washbay and refuelling areas. The potential exists within the identified area for minor amounts of sediment and hydrocarbon contaminants to be conveyed into the stormwater system via stormwater runoff collected from the pavement area.

Potential Impacts:

The proposal involves the installation of an in-ground stormwater treatment unit, which will remove pollutants from the stormwater collected, providing the positive impact of improved quality of water released into Brotherson Dock. There are no ongoing negative water quality impacts associated with the proposal.

Proposed excavation works associated with the construction phase create the potential for erosion and sedimentation and subsequent water quality impacts. The extent of excavation will be limited to the removal of a 12m x 5m x 3.5m deep cavity for installation of the stormwater treatment unit. Water quality impacts will be mitigated by the use of sediment and erosion control measures for existing stormwater drains, stockpiles of loose material and stormwater drain pipes within the excavation area. Any water entering the excavation will be pumped out and conveyed to the unpaved area, approximately 40m away from the works area, where it will be directed through a sediment barrier before release to the unpaved area.

All sediment and erosion controls will be installed in accordance with *Managing Urban Stormwater Soils & Construction* - NSW Department of Housing. A proposed sediment and erosion control plan is shown on JRC Drawing No. 034-L1-06 included with the CEMP provided in Appendix E of this EA.

Mitigation Measures:

- The following sediment and erosion control measures are to be utilised during construction works: -
 - Excavated areas should be back-filled and sealed as soon as practicable.
 - Appropriate sediment and erosion control measures to be installed around stormwater drains to prevent ingress of sediment in runoff.
 - All stockpiles of loose material should be covered to avoid erosion/dust emissions.
 - All truck tyres are to be brushed down prior to leaving the works area to prevent tracking of excavated soil. All trucks entering and leaving the site are to be appropriately covered to prevent the escape of sediment onto roadways.

7.6 Groundwater

Existing Environment:

The site is in close proximity to Botany Bay and the existing groundwater level is known to be approximately 1.8m below the existing pavement surface. The site is built upon land which was completely reclaimed during the late 1970s and hence is not likely to be part of the Botany Aquifer.

Potential Impacts:

The proposal involves excavation to a depth of approximately 3.5m, which indicates that the water table will be encountered during construction. Temporary dewatering of the 12m x 5m area will be necessary to allow safe installation of the stormwater unit. The excavation will be dewatered with the use of interlocking trench sheeting to shore the excavation and extraction of the water within the shoring by submersible pump. Dewatering spears will also be utilised. The water will be pumped through sediment control measures prior to discharge to the adjacent undeveloped area. It is envisaged that the dewatering process will be completed in approximately 1 week.

It is envisaged that the Department of Planning will consult the Department of Natural Resources (DNR) in order to gain consent conditions regarding any requirements for temporary dewatering during construction. Any requirements of the DNR will be addressed and incorporated into the detailed design and included in the CEMP and contractor's work method statement.

The site may also be affected by the *Groundwater Management Zone Deed* for the Botany area, which was made between the Sydney Ports Corporation (SPC), Elgas, the Marine Ministerial Holding Corporation and the Water Administration Ministerial Corporation, as a result of the construction of the underground Elgas caverns. Any requirements regarding the deed raised by the SPC, during landowner's consent assessment, will be addressed and incorporated into the detailed design and included in the CEMP and contractor's work method statement.

Considering that the area affected is relatively small and localised, it is not envisaged that the temporary dewatering process will have any permanent impact on the groundwater quality or the Botany Aquifer.

Mitigation Measures:

- Any requirements of the DNR and SPC for temporary dewatering during construction will be incorporated into the final design, the CEMP and the contractor's work method statement.

7.7 Acid Sulfate SoilsExisting Environment:

The terminal is located within a "Class 1" area as defined on the NSW Acid Sulfate Soils (ASS) Planning Maps. Class 1 areas pose the highest risk for possible ASS and any works to be carried out in such areas require initial investigation into the existing geomorphic and site conditions to ascertain the actual presence of ASS.

The existing ground surface in the proposed works area is paved. The structural pavement is comprised of approximately 150mm of asphalt wearing course overlaying 400mm of crushed rock, totalling a depth of 550mm. The constructed pavements overlay dredged sand, hydraulically placed during reclamation of the port area. The terminal pavement and substructure is relatively homogeneous.

Soil testing was completed at the terminal in December 2004 by OTEK Australia Pty Ltd, directly adjacent to the proposed works area. The testing included Peroxide Oxidation Combined Acidity and Sulfate (POCAS) analysis to investigate the presence of any ASS, in accordance with the requirements of a "Preliminary Acid Sulfate Soils Assessment" as defined in the *NSW Acid Sulfate Soils Manual (NSW Acid Sulfate Soil Management Advisory Committee, August 1998)*. Testing was completed at 1.0m intervals to a depth of 4.0m. The results were beneath Action Criteria Values which trigger the need to prepare an Acid Sulfate Soils Management Plan.

Potential Impacts:

Installation of the treatment unit will involve excavation to an approximate depth of 3.5m. Based on the results of the ASS investigation, the risk of encountering ASS during installation is not envisaged to be a high risk. Should any signs of ASS be observed during the works, all works will cease and the excavation inspected by suitably qualified consultants to determine appropriate management procedures prior to recommencement of works.

Mitigation Measures:

- Should ASS be encountered during works, all works will cease and the excavation inspected by suitably qualified consultants to determine appropriate management procedures prior to recommencement of works.

7.8 Flora & Fauna (Terrestrial and Aquatic)

Existing Environment:

The majority of the site is paved, with the exception of existing landscaped buffers around the perimeter of the site an area of undeveloped land in the northwest region of the site identified as Lot 13.

There are no notable terrestrial flora or fauna species existing in the operational areas of the site. The status of aquatic flora and fauna within the adjacent Botany Bay was not studied as part of this EA.

Potential Impacts:

There is no existing terrestrial flora or fauna in the proposed works area.

The proposal will create an improvement in the quality of water released into Botany Bay, and in turn, an improved environment for any aquatic life within the Bay. There are no ongoing negative impacts to biodiversity associated with the proposal.

Mitigation Measures:

- No mitigation measures are required.

7.9 Heritage

Existing Environment:

The terminal site is not within a *Heritage Conservation Area* as defined in the Randwick LEP 1998.

Potential Impacts:

There are no heritage impacts associated with the proposal.

Mitigation Measures:

- No mitigation measures are required.

7.10 WasteExisting Environment:

Operations and ancillary activities at the terminal generate various types of ongoing liquid and non-liquid wastes. Liquid wastes are removed from the site via the existing trade wastewater system or by pump-out by licensed waste contractors. Non-liquid wastes are stored at central garbage collection points and removed by licensed waste contractors.

Potential Impacts:

Operation of the treatment unit will produce waste in the form of sludge and oil films, generated by sediment, silt and oils removed from the stormwater. Waste will be removed from the unit by regular pump-out of the chambers by a licensed liquid waste contractor and disposed of at an approved waste facility, in accordance with the requirements of the Department of Environment and Conservation (DEC) and the *Waste Avoidance and Resource Recovery Act 2001*. Removal of waste from the unit is anticipated to be conducted once every 3 months.

Waste from construction works is anticipated to include the following: -

- Excavated material consisting of asphalt, crushed rock, stabilised and sand subgrade.
- Packaging waste and any construction material off-cuts.

All waste will be collected and reused, recycled or disposed in an approved legal fashion in accordance with a *Waste Management Plan* to be prepared by the works Contractor.

Mitigation Measures:

- All construction waste to be reused, recycled or disposed in accordance with a *Waste Management Plan* to be prepared by the works Contractor.

8 DRAFT STATEMENT OF COMMITMENTS

The proponent commits to undertaking the proposed installation of the inground-stormwater treatment unit at the P&O Port Botany Shipping Terminal with the following Statement of Commitments.

1. General

- The development is to be carried out in accordance with the document entitled *Environmental Assessment – Installation of In-ground Stormwater Treatment Unit*, dated December 2006.

2. Health and Safety

Construction and maintenance contractors and all site personnel shall meet and comply with Workcover Authority requirements and Occupational Health and Safety legislation.

3. Noise Impact

- Construction works are to be undertaken between 7:00am and 6:00pm Monday to Friday and 8:00am to 1:00pm on Saturdays. No works are to be undertaken on Sundays or Public Holidays.
- Any noise complaints received in relation to construction activity to be recorded, investigated and remedied as soon as possible.

4. Air Quality Impact

- All construction equipment is to be in good working condition to minimise emissions to air.
- The following dust prevention measures are to be utilised during construction works: -
 - All excavated areas should be back-filled and sealed as soon as practicable.
 - All stockpiles of excavated material should be covered to avoid dust emissions.
 - All trucks entering and leaving the site are to be appropriately covered to prevent the escape of material.

5. Water Quality Impact

- The proposed new stormwater treatment unit is to be regularly maintained to ensure continued design performance.
- All construction water quality management procedures, including all specified sediment and erosion control measures, are to be included in the CEMP referred to in Commitment No. 9.

6. Groundwater

- Any requirements of the DNR and SPC for temporary dewatering during construction will be incorporated into the final design, the CEMP and the contractor's work method statement.

7. Acid Sulfate Soils

- Should ASS be encountered during works, all works will cease and the excavation inspected by suitably qualified consultants to determine appropriate management procedures prior to recommencement of works.

8. Waste Management

- Waste collected from the treatment unit is to be transported and disposed of at an approved waste facility by a licensed waste contractor, in accordance with DEC requirements and the *Waste Avoidance and Resource Recovery Act 2001*.

9. Construction Management

- A Construction Environmental Management Plan (CEMP) is to be prepared prior to commencement of works. The CEMP is to outline proposed environmental management practices and procedures to be followed throughout construction works and be in accordance with *Guideline for the Preparation of Environmental Management Plans* (DIPNR, 2004). A draft CEMP is provided in Appendix E, which addresses all management and mitigation measures outlined in this EA. The CEMP will be finalised upon receipt of the Development Consent and implemented for the construction phase of the works to manage environmental impacts.

10. Community Consultation

- A sign shall be clearly displayed near the entrance in a position that is clearly visible to the public, and which clearly indicates the purposes of the sign to the site, stating the following: -
 - The name of the primary contractor;
 - a telephone number on which complaints about construction and operational activities at the site may be registered; and
 - a postal address to which written complaints may be sent.
- All complaints received must be recorded in the Complaints Register provided with this CEMP. The Complaints Register shall be kept onsite at all times.

9 CONCLUSION

This Environmental Assessment has been prepared in accordance with Director-General Environmental Assessment requirements issued by the Department of Planning on 30 November 2006.

The Assessment finds that significant environmental benefits can be gained by the proposed installation of an in-ground stormwater treatment unit for the removal of surface water contaminants at the P&O Port Botany Terminal.

Potential environmental effects associated with the construction works can be mitigated with appropriate environmental management procedures and techniques, as outlined in the draft Statement of Commitment provided in Section 8.

The proposed project is within allowable use of the land and meets the requirements of planning controls relevant to the site.

10 REFERENCES

- ASSMAC, 1998; *Acid Sulfate Soils Manual*, NSW Acid Sulfate Soil Management Advisory Committee, Wollongbar, NSW Australia.
- Department of Infrastructure, Planning and Natural Resources (DIPNR), 2004; *Guideline for the Preparation of Environmental Management Plans*, Department of Infrastructure, Planning and Natural Resources, Sydney, Australia.
- NSW Dept of Housing, 1998; *Managing Urban Stormwater Soils & Construction*.