MAJOR PROJECT ASSESSMENT
Bulk Liquids Berth No. 2 at Port Botany
Vopak Terminals Sydney Pty Ltd

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

March 2008

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EXECUTIVE SUMMARY

Vopak Terminals Sydney Pty Ltd (the Proponent) has lodged a major project application and Environmental Assessment to construct and operate a second Bulk Liquids Berth facility at Port Botany, in the Randwick local government area, on behalf of Sydney Ports Corporation.

The project would be constructed over a period of approximately 22 months and operated in a similar way to the existing adjacent bulk liquids berth. The main difference between the existing bulk liquids berth and the project is that the working platform associated with the new berth would be 80% larger to enable more effective operations and all the pipework would be located above deck to reduce corrosion and improve access for maintenance. The project has a capital cost of approximately $70 million and would employ up to 80 people during its construction and provide between two and five full-time positions during its operation.

The Proponent has estimated that the most significant increase in throughput at the bulk liquids berth will be in petroleum products with a three-fold increase predicted between 2010 and 2022 due to the existing Exxon Mobil Botany and the pipeline from Shell Clyde and Caltex Kurnell approaching capacity. The bulk liquids berths and associated facilities will therefore play a major role in satisfying growing airport fuel requirements. In addition, the construction and operation of at least one biodiesel facility at Port Botany in the next three years will also result in the requirement to handle raw and finished products through the bulk liquid berths. The import and export of gas through the port is also expected to increase gradually.

The Department has assessed the Environmental Assessment, Statement of Commitments, Response to Submissions Report and the 11 submissions received from the exhibition of the proposal. The main issues that were raised in submissions and through the Department's assessment of the project were potential hazards and safety impacts, noise and vibration impacts, traffic impacts and water quality/stormwater impacts. The Department is satisfied that the impacts of the project can be mitigated and/or managed to ensure an acceptable level of environmental performance, subject to the adherence to strict environmental conditions. The Department has recommended that specific conditions of approval be imposed on the Proponent to address the key issues raised in the assessment process:

- Hazards and safety impacts – the requirement to undertake a number of safety and hazard studies during construction and prior to the commissioning of the project and requiring the recommendations from the studies to be implemented as part of berth operations;
- Noise and vibration impacts – specific conditions to limit hours of construction to acceptable times and to limit noise generated from the berth during operations to protect surrounding amenity;
- Traffic impacts – the requirement to prepare a Construction Traffic Management Protocol to manage construction traffic within the port area; and
- Water quality/stormwater impacts – the requirement to ensure that all stormwater captured on the working platform undergo initial treatment to remove particles, oils and grease prior to it being discharged into Botany Bay.

Based on its assessment, the Department is satisfied that the project is necessary to alleviate future utilisation constraints predicted to occur on the existing bulk liquids berth and the site for BLB2 is suitably located adjacent to existing bulk liquid handling facilities within Port Botany.

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1. BACKGROUND

Vopak Terminals Sydney Pty Ltd (the Proponent) proposes to construct and operate a second Bulk Liquids Berth facility (BLB2) at Port Botany adjacent to the existing Bulk Liquids Berth (BLB1) at the south western end of Brotherson Dock, Port Botany within the Randwick local government area.

1.1 Location

The project site is located in the suburb of Port Botany approximately 11 km south of the Sydney central business district (CBD). The site for the new BLB2 facility is located on the western side of the privately owned Fishburn Road and adjacent to BLB1 to the south west of Brotherson Dock, Port Botany.

The location of the site in relation to the existing BLB1 and the residential areas of Randwick and Botany is shown in Figure 1.

1.2 Surrounding Land Use

The existing BLB1 was commissioned in 1979 as a common-user facility and currently handles hazardous and non-hazardous bulk liquids and gases which are transferred by pipeline to nearby storage and distribution facilities. The following companies have established bulk liquids/gas storage terminals at the Port and are current tenants of Sydney Ports Corporation (SPC):

- Terminals Pty Ltd;
- Qenos Australia Pty Ltd (hydrocarbon storage);
- Origin Energy;
- Elgas Pty Ltd; and
- Vopak Terminals Australia.

The Proponent operates two bulk liquid storage terminals in Port Botany. The first is known as Site A and is located at 49 Friendship Road and the second facility is the Site B terminal at 20 Friendship Road, as shown on Figure 2. Site A stores chemicals and Site B stores petroleum products.

The site of BLB2 is proposed adjacent to Site B and adjacent to the boundary with the Elgas LPG caverns. A hydrocarbon storage facility operated by Qenos Australia Pty Ltd is located to the east of the site.

Figure 1: Project Location and Surrounding Land Use

Source: Figure 1-1 of Proponents EA (SKM, 2007)

Figure 2: Location of Vopak Site A and Site B Terminal

2. PROPOSED DEVELOPMENT

2.1 Project Description

The Proponent proposes to construct and operate a second bulk liquids berth adjacent to the existing BLB1 at Port Botany. The proposal would comprise the following elements as outlined in Figure 3:

- a central working platform (measuring 76 metres by 32 metres) and working area, with berthing face (including bollards and fenders) and pipe manifold/marine loading arm arrangements;
- adjacent berthing dolphins on each side of the working platform designed to accommodate the maximum length vessel;
- two mooring dolphins on each side of the working platform (four in total). Mooring dolphins would be required on the northern side of the working platform, instead of the existing land based mooring point arrangement as used for the BLB1 due to the geometry of the existing shoreline;
- walkways (catwalks) connecting the dolphins and working platform;
- an access bridge structure connecting the working platform with the shore, providing vehicle access and pipeline support structures;
- support infrastructure including fire control facilities (pumps, foam/water monitors and associated tanks, gatehouse and amenities (the need for a gatehouse is dependant on site security arrangement); and
- berth fitout, including fire fighting monitors, services such as water, sewer, electrical and communications, amenities and blast proof operator shelter.

The Proponent has indicated that the working platform for BLB2 would be 80% larger than the existing working platform associated with BLB1 (i.e. an increase of approximately 26 m in length at its narrowest point and an increase of approximately 20 m in its width) to enable more effective operation of the berth. The pipes are proposed to remain above deck to reduce corrosion and improve access for maintenance. The working platform would support the following:

- marine loading arms/hose manifolds;
- pipework;
- pedestrian access bridges;
- hose storage;
- personnel hut;
- fire foam water monitors;
- lighting;
- services;
- hose crane/ship access tower; and
- spill containment.

The layout of the proposal is shown in Figures 4 and 5**.**

The berth would comprise 23 product connection points, five of which would be marine loading arms, four of which would be for petroleum and one for gas. The remainder would be for chemicals and other products. An access bridge with a width of approximately 17 m would be constructed to support vehicular and pedestrian access and pipework to the working platform.

The current pipelines that run to the existing BLB1 would remain largely unchanged although some may be modified and re-routed to the new BLB2. Approximately 25 pipelines will be located within the pipe corridor on the access bridge.

The major culvert on Charlotte Road was designed to accommodate the additional pipelines however the Environmental Assessment states that some new construction works may be required. A new culvert is required to be constructed on the northern side of Fishburn Road and would be approximately 10 m long by 5 m wide.

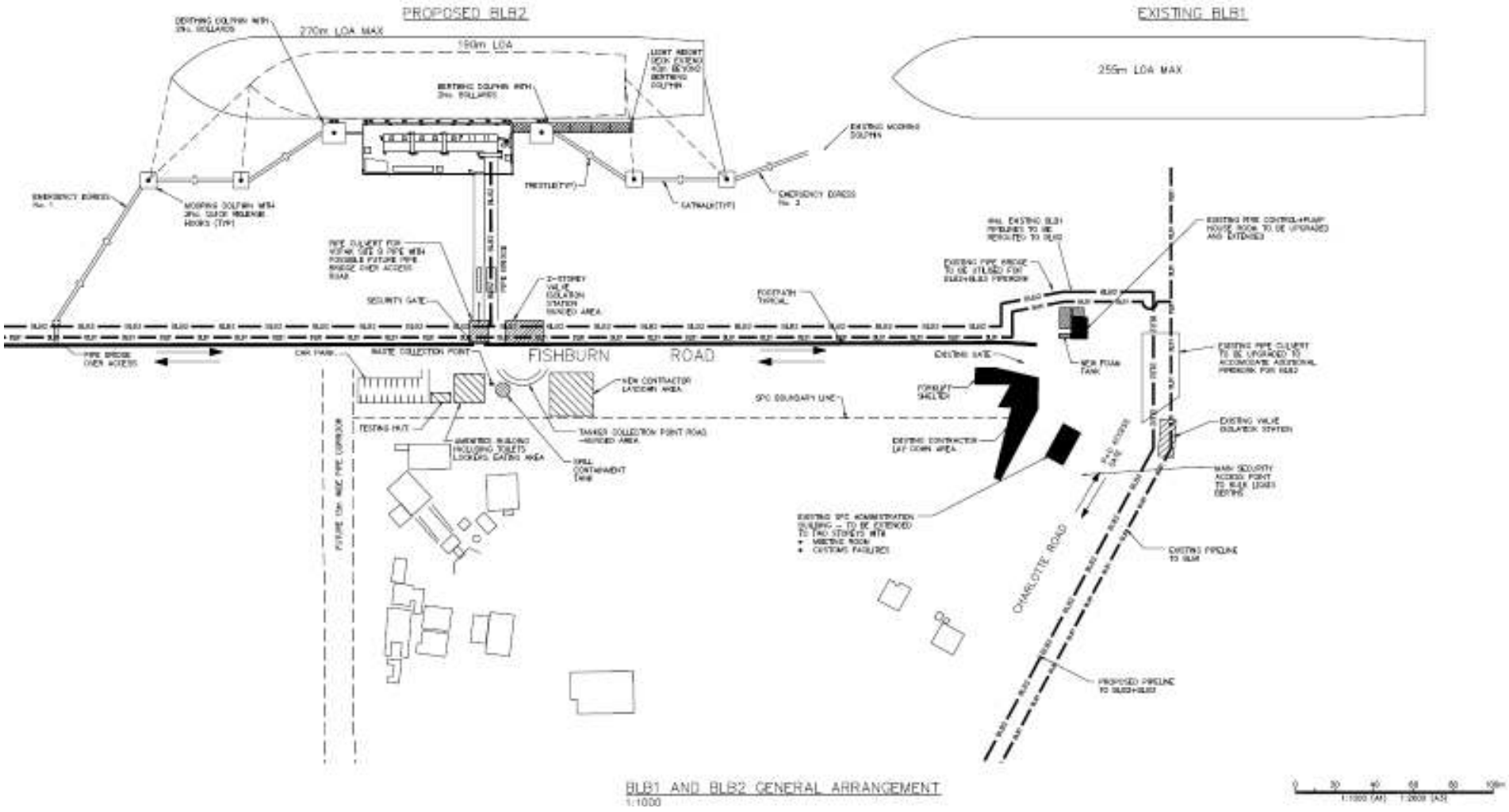
Construction of the project would involve various barges, work boats and dive boats as well as mobile cranes, forklifts and compressors. A jack-up barge comprising a crane/rig would be used for the installation of piles into the seabed for the construction of the maritime structures. Piles are proposed to be bored, not driven, into the seabed. Following construction of maritime structures, the pipelines would be installed followed by wharf furniture. Construction of maritime

structures is expected to take 18 months and land-based infrastructure work 10 months. Offshore maritime work and land-based work would be undertaken concurrently.

Figure 3: Project Location

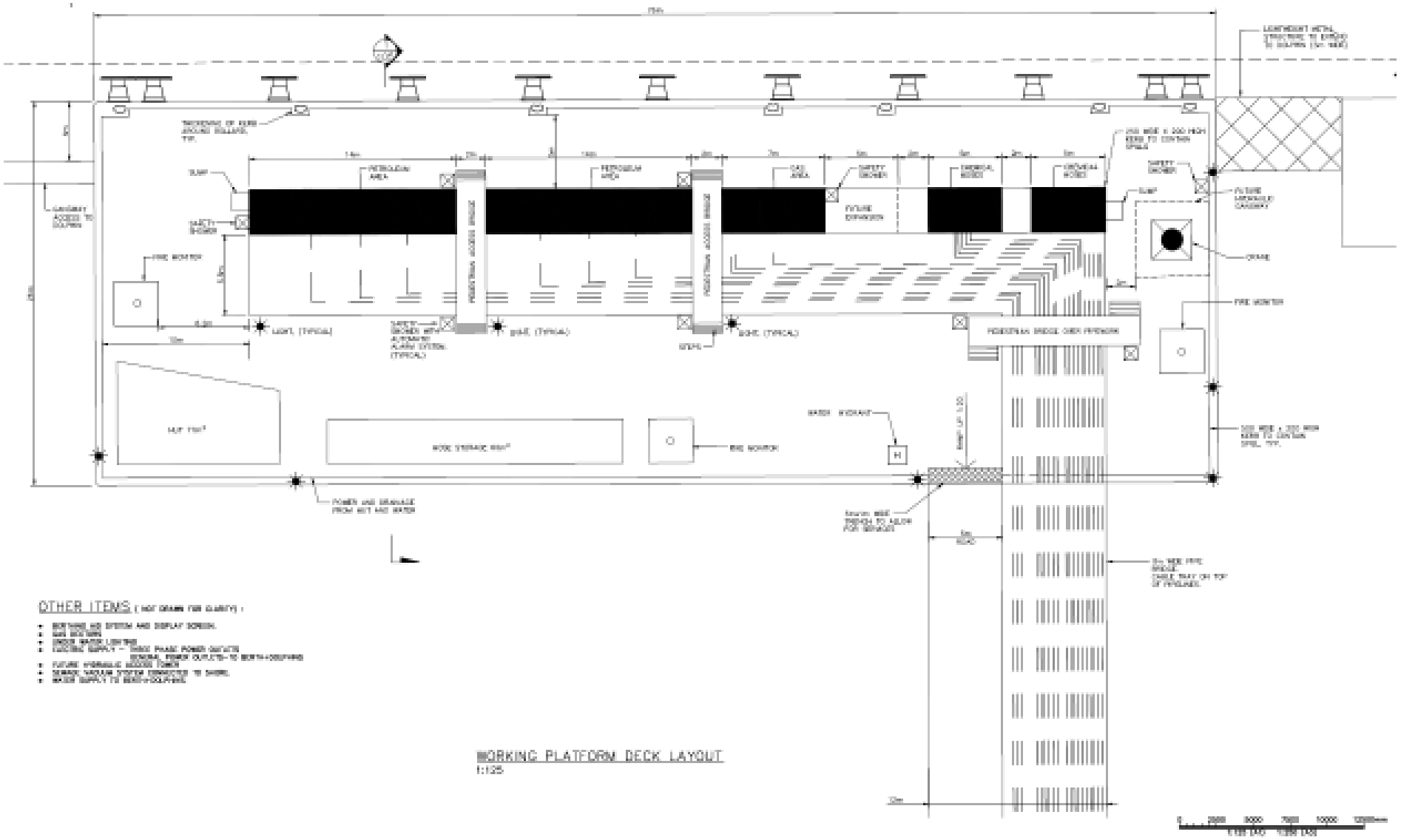
Source: Figure 4-2 of Proponents EA (SKM, 2007)

Figure 4: General Arrangement of BLB1 and Proposed BLB2



Source: Figure 4-1 of Proponents EA (SKM, 2007)

Figure 5: Layout of Proposed Working Platform



Source: Figure 4-3 of Proponent's EA (SKM, 2007)

Construction of the project is proposed to commence in 2008 and be completed by mid 2009. The project would employ up to 40 people during construction and between two and five full time positions during operation.

The Proponent has estimated that the capital cost of the project is approximately $70 million.

2.2 Project Need and Justification

The primary objective of the project is to ensure that NSW has adequate berth capacity to satisfy existing and future forecast demands for the import and export of bulk liquids.

The Proponent has estimated that the most significant increase in throughput at the bulk liquids berth will be in petroleum products with a three-fold increase predicted between 2010 and 2022 due to the existing Exxon Mobil Botany and the pipeline from Shell Clyde and Caltex Kurnell approaching capacity. The Proponent considers that the bulk liquid berths and facilities will play a major role in satisfying growing airport fuel requirements.

Total expected delivery of chemicals is not expected to change over the next 15 years although gas imports and exports are expected to increase gradually (0.5% per annum for imports and 3% per annum for exports respectively). The construction and operation of at least one biodiesel facility at Port Botany in the next three years will also result in the requirement to handle raw and finished products through the bulk liquid berths.

The expected total import and export volume of bulk liquids through Port Botany are outlined in Table 1.

Table 1: Total Import and Export Volumes of Bulk Liquids (kL) for Port Botany

	2007	2008	2009	2010	2011	2012
Chemicals	140,918	140,918	140,918	140,918	140,918	140,918
Gas	1,000,538	1,034,830	1,054,820	1,063,536	1,072,895	1,082,422
Biodiesel	65,625	112,500	288,719	288,719	449,998	449,998
Refined Petroleum	1,116,603	1,234,053	1,445,652	1,575,264	1,619,193	1,843,744
Total	**2,323,684**	**2,522,301**	**2,930,109**	**3,068,437**	**3,283,004**	**3,517,082**

The Environmental Assessment states that a berth utilisation factor of 65% is a practical and economical working limit for a bulk liquids berth. The document states that higher utilisation creates the potential for increasing demurrage costs where transport economics are severely impacted. With the increase predicted in the volume of imported and exported bulk liquids, a second bulk liquids berth would be required by 2010 to provide economical workable limits to existing BLB1 berth utilisation and for the future bulk liquid berth. The projected berth utilisation with the operation of BLB2 is shown in Table 2.

Table 2: Projected Berth Utilisation for BLB1 and BLB2

	2010	2011	2012
BLB1	53.2%	54%	55%
BLB2	26.1%	35%	36.4%

The berth utilisation outlined in Table 2 indicates that the construction and operation of BLB2 would have a significant positive impact on the utilisation and efficiency of each of the berths therefore minimising the potential for adverse impacts to occur with respect to scheduling conflicts, the availability of berthing slots and the potential risk of increased demurrage costs.

2.2.1 Consideration of Alternatives

The Environmental Assessment outlined alternative locations that were considered for BLB2 as part of the assessment of the project. The assessment concluded that neither Port Kembla nor the Port of Newcastle were viable options given that these ports do not currently handle bulk liquid products and would therefore require significant infrastructure costs to establish facilities at these locations. In addition, the costs associated with the transfer of bulk liquids by either pipe or truck would be significant. Augmentation of the Shell facility at Gore Bay and the Caltex facility at Kurnell were also not considered viable alternatives to Port Botany as both facilities are privately owned and not available as common-user facilities. The "do nothing" option was not considered further by the Proponent as the utilisation of the existing berth will soon reach uneconomic limits which could lead to risk of increased demurrage costs and impacts on efficiency at the berth.

2.2.2 Department's Position

The Department considers that the project is consistent with the role and ongoing development of the Port and that the site is suitably located adjacent to an existing bulk liquids berth facility on an unused wharf area and close to Vopak's site B terminal. The project is specifically located within an area of Port Botany dedicated to bulk liquids handling and is well suited to operations 24 hours per day, seven days per week. The project will provide important infrastructure to enable Sydney to accommodate general Port growth and increased capacity to meet bulk liquids demand expectations.

The Department considers that the project provides a common-user facility, utilises existing infrastructure and would complement the operation of the adjacent BLB1.

3. STATUTORY CONTEXT

3.1 Major Project

The project is declared to be a Major Project under *State Environmental Planning Policy (Major Projects) 2005* because it is development for the purposes of port and wharf facilities which has a capital investment value of more than $30 million (clause 22). On 27 March 2007, the Director-General, under delegation from the Minister, formed the opinion that the project meets the requirements of the Major Projects SEPP and thus declared the project to be a major project under Part 3A of the *Environmental Planning and Assessment Act 1979* (the Act).

3.2 Director-General's Requirements and Adequacy of Environmental Assessment

The Director-General's requirements for the preparation of an Environmental Assessment for the project were issued on 4 July 2007. For the purpose of section 75I(2)(g) of the *Environmental Planning and Assessment Act 1979*, the Environmental Assessment for the project complied with the Director-General's requirements and the Proponent was notified of this compliance on 12 November 2007.

3.3 Environmental Planning Instruments

There are no State Environmental Planning Policies (SEPP) that apply to the proposal that substantially govern the carrying out of the development

The *Randwick Local Environmental Plan, 1998* applies to the site. The site is zoned Zone 4B (Port Botany Zone) and the project is permissible with development consent.

The principal objectives of Zone 4B (Port Botany Zone) are to:

- facilitate the development and operation of Port Botany as a major cargo handling and distribution centre;
- allow a range of activities which complement the continued and effective operation of the port;
- encourage development of, and accommodate innovation in, the sources of economic growth;
- enhance and improve the physical environment by minimising disturbances caused by air pollutants, water pollutants, noise pollutants and other pollutants, and
- enable development for the purposes of retailing or commercial offices only where it is associated with, and ancillary to, port related activities or where it serves the daily convenience needs of the local workforce.

The Department considers that the project is consistent with the above objectives. It is also consistent with Clause 37 of the LEP which aims to reinforce the role and function of the Port and permit only development suited to being in close proximity to the Port without affecting its operation. The Department considers that the project is suitably located within Port Botany adjacent to existing bulk liquid handling facilities.

3.4 Exhibition and Notification

The project application and Environmental Assessment were placed on public exhibition from Wednesday 21 November to Friday 21 December 2007 and submissions invited in accordance with section 75H of the Act. Exhibition locations were as follows:

- Department of Planning's head office in Sydney;
- Nature Conservation Council of NSW;
- Randwick City Council; and
- Botany Bay City Council.

The Environmental Assessment was also available for download on the Department's internet site. Notification of the exhibition period was made through two separate advertisements in the *Sydney Morning Herald* and the *Southern Courier* on 21 November 2007 and again on 5 December 2007.

4. CONSULTATION AND ISSUES RAISED

The application for the project and accompanying Environmental Assessment were publicly exhibited from Wednesday 21 November 2007 to Friday 21 December 2007. During the exhibition period 11 submissions were received. Submissions were received from State and local government agencies and one private organisation. No submissions were received from special interest groups or members of the local community.

Of the submissions received, no specific objections were raised with the exception of the City of Botany Bay Council clearly stating its objection to any expansion in intensity of use at the Port Botany site. The remainder of submissions either supported the project, provided comments for consideration as part of the assessment or stated that they had no objection to the project proceeding.

4.1 Submissions from State and Local Government

Submissions were received from six State government agencies and from Randwick City and the City of Botany Bay Councils:

- NSW Department of Environment and Climate Change (DECC) – **states that it is able to support the project** subject to a number of amendments being made to the draft Statement of Commitments or specific conditions being imposed specifically related to noise. The DECC has outlined specific conditions with respect to noise management and noise limits at the site and these have been incorporated as part of the recommended conditions of approval for the project.
- NSW Department of Primary Industries (DPI) – **raises no objections to the project being approved.**
- NSW Roads and Traffic Authority (RTA) – **raises no objection to the project** as it considers that the project will not have a significant traffic impact on the local classified road network.
- NSW Department of Water and Energy (DWE) – **has no comments to make regarding the project.**
- NSW Maritime – **has no objections to the project**.
- NSW Fire Brigades (NSWFB) – **does not state a position regarding the project** and states that the Environmental Assessment and the Preliminary Hazard Analysis have adequately addressed all anticipated hazards for the site although the assessment does not provide adequate information regarding fire detection and suppression. The NSWFB has requested that a Fire Safety Study be provided in accordance with the guidelines contained in Department of Planning's *Hazardous Industry Planning Advisory Paper No. 2 – Fire Safety Study Guidelines*.
- City of Botany Bay Council – **objects to any expansion or increase in intensity of use at the Port Botany site**. Council has raised a number of issues with the Environmental Assessment including the assessment of alternatives, traffic impacts during construction and operation, stormwater and water quality impacts, the lack of reliable ecological information utilised as part of the assessment and potential noise impacts. Council has also recommended that the Preliminary Hazard Assessment and the Air Quality Impact Assessment be independently reviewed to provide certainty to the community in relation to the impacts from the project.
- Randwick City Council – **raises no objection to the project** however has requested that a number of issues be investigated more thoroughly prior to the granting of an approval. Issues raised by Council include the need for assessment of contamination in accordance with clause 42B of the Randwick LEP, the need for noise monitoring during construction and during the initial operation of the berth, the possible risk to acid sulfate soils, traffic impacts during construction and operation on residential streets surrounding Port Botany

4.2 Submissions from Private Groups and Organisations

Only one submission was received from a private organisation (Urbis Pty Ltd) on behalf of Patrick Port Services. The main issue raised by this submission was that no consent has been sought for increases in liquid storage facility capacity as a result of the project. Patrick Port Services considers that increases in liquid storage within the vicinity of the site may disturb the smooth flow of traffic throughout the locality. Patrick Port Services has requested that vehicle movements to and from the Vopak operations be monitored during construction and operation of the new berth to ensure that traffic generation rates remain within approved limits and access to and from other operations are not impeded. It has requested that a construction and traffic management plan be in place before the commencement of works.

4.3 Summary of Issues Raised

Table 3 below outlines the main issues raised in submissions and where each issue has been considered in this report. Some submissions raised more than one issue of concern while others made no comments regarding the project.

Table 3: Issues Raised in Submissions

Issue	Number of Submissions Raising Issue	Where Addressed in this Report
Hazards and safety impacts	3	Section 5.1
Traffic and transport impacts	3	Section 5.3
Ecological impacts	1	Adequately addressed by Proponent in Response to Submissions Report
Noise and vibration impacts	3	Section 5.2
Contaminated Land/Acid Sulphate Soils	1	Adequately addressed by Proponent in Response to Submissions Report
Water quality impacts	2	Section 5.4
Alternatives considered and justification	1	Sections 2.2.1 and 2.2.2

5. ASSESSMENT OF ENVIRONMENTAL IMPACTS

Key issues raised in the submissions in response to the public exhibition of the project and/or identified during the Department's assessment included:

- hazard and safety impacts;
- noise and vibration impacts;
- traffic and transport impacts; and
- water quality/stormwater quality impacts.

All other issues raised in submissions are considered to be minor or have been addressed as part of the Proponent's Response to Submissions Report (dated 26 February 2008).

5.1 Hazard and Safety Impacts

Issue

BLB2 would be used to transfer dangerous goods such as flammable liquids and liquefied gases as well as other products from vessels berthed at the wharf to storage facilities at Port Botany. A Preliminary Hazard Analysis was conducted as part of the Environmental Assessment in accordance with the requirements of the *Hazardous Industry Planning Advisory Paper (HIPAP) No. 6 - Guidelines for Hazard Analysis*. The BLB2 would be constructed with two main liquid transfer mechanisms comprising marine loading arms and manifolds for the connection of flexible pipelines. Fuels (flammable liquids and liquefied gases) would be transferred using the marine loading arms and chemicals would be transferred using flexible hoses. The Environmental Assessment states that the operation is conducted in accordance with the requirements of the International Safety Guide for Oil Tankers and Terminals.

The analysis identified that the risk of a ship striking the wharf when mooring, a moored ship being struck by a passing ship, chemical pipeline failure, failure of mooring systems and the application of fire water (i.e. water used for fire fighting) were considered to be low. The analysis identified the following incidents as having the potential to increase the existing risk profile for the Port Botany area:

- LPG transfer marine loading arm failure;
- flammable/combustible liquid transfer hose failure;
- LPG pipeline failure;
- flammable/combustible liquid marine loading arm failure; and
- flammable/combustible liquid pipeline failure.

The analysis also considered minor leaks from valves, flanges, joints and gaskets at marine loading arms and pipelines as part of the assessment. Cumulative risks were also assessed.

The Environmental Assessment outlined a number of measures that would be implemented to prevent or minimise the risks and hazards associated with the project to the adjacent BLB1 and the surrounding environment. All of these measures would be implemented as part of the project's construction and operation.

Submissions

Three of the 11 submissions provided comments related to the Preliminary Hazard Analysis undertaken for the project as part of the Environmental Assessment. These submissions were from Randwick City Council, the City of Botany Bay Council and NSW Fire Brigades.

Randwick City Council indicated its satisfaction that the study met the requirements of clause 12 of *State Environmental Planning Policy No. 33 – Hazardous and Offensive Development* and requested that the findings of the study be implemented as part of any instrument of approval for the project. In its submission, the City of Botany Bay Council requested that the Preliminary Hazard Analysis be independently reviewed by a competent consultant in the field to provide some certainty to the wider community that they will be safe from any disastrous consequence from the construction of the project and its related infrastructure.

The submission received from NSW Fire Brigades indicated that the Preliminary Hazard Analysis adequately addressed all anticipated hazards for the site, however, the scope of the analysis did not adequately cover information regarding fire detection and suppression. In light of this, NSW Fire Brigades requested that a Fire Safety Study be provided in due course as part of the project approval process.

Consideration

The Major Hazards Unit of the Department comprises a team of qualified and skilled risk assessment specialists who review risk and hazard assessments prepared by Proponents as part of Environmental Assessments for projects of an industrial nature. Given the high calibre skills provided within the Unit, the need for an independent consultant to review the Preliminary Hazard Analysis (as requested by the City of Botany Bay Council in its submission) is not considered necessary.

The Major Hazards Unit of the Department reviewed the Environmental Assessment including the Preliminary Hazard Analysis and considers that the hazard related issues of the project have been sufficiently addressed and adequate safety levels can be maintained throughout the operating life of the facility provided specific safety related studies are carried out and the recommendations arising from those studies are implemented as part of the construction and operation of the project. The Major Hazards Unit has recommended that a number of specific studies be undertaken by the Proponent prior to and during construction as part of the conditions of approval for the project. These studies include a Fire Safety Study, a Hazard and Operability Study, a Final Hazard Analysis and a Construction Safety Study to be undertaken prior to the commencement of construction and various other plans and studies prior to commissioning and during the operation of the project. Each of the abovementioned studies require the Director-General's approval. The Department recommends that the instrument of approval includes a requirement for these studies.

5.2 Noise and Vibration Impacts

Issue

An assessment of potential noise impacts from the construction and operation of the project was undertaken as part of the Environmental Assessment. The results of the assessment indicate that predicted construction noise emissions are well below the relevant assessment criteria for all noise sensitive receivers under the worst case scenario when all equipment is operational. The predicted construction noise levels are shown below in Table 4.

Table 4: Predicted Construction Noise Levels

Location	Predicted L_{A10} Construction Noise Levels dBA	L_{A10} Construction Noise Objectives dBA
	Daytime (7 am to 6 pm)	Daytime (7 am to 6 pm)
Botany Road, north of the Golf Club (Location 4)	35	62
Australia Avenue (Location 5)	34	47
Wassel Street/Military Road (Location 6)	36	51
Elaroo Avenue (Location A)	35	43

The noise assessment for operational noise was based on noise emissions generated from the "Jasmine" undertaking loading/unloading operations at the existing BLB1. The predicted noise levels indicate that the project would comply with the relevant assessment criteria for all noise sensitive receivers under all scenarios assessed. Noise levels were also predicted from the combined operations of BLB1 and BLB2 which indicated that operations of the existing and the proposed berths are expected to be below the night time criteria of 40 dBA at all locations. The operational noise level predictions are outlined in Table 5.

Table 5: Predicted Operational Noise Levels

Location	BLB1 and BLB2 (neutral weather) dBA	BLB1 and BLB2 (adverse weather) dBA	Night Time Criteria (9hr) dBA
Botany Road, north of the Golf Club (Location 4)	28	32	35
Australia Avenue (Location 5)	28	32	35
Wassel Street/Military Road (Location 6)	30	34	35
Elaroo Avenue (Location A)	26	31	40

The assessment indicates that the noise levels from road traffic and other nearby industrial noise sources would provide a greater contribution to the overall noise environment in the vicinity of the port and the predicted noise level from the operation of BLB2 alone was not expected to be significant.

The Proponent indicates in the Environmental Assessment that a number of noise minimisation strategies would be implemented to reduce noise emissions from the site to ensure that the construction of the project remains within acceptable assessment criteria noise limits. These mitigation measures include:

- ensuring compliance with construction hours (nominated in the Environmental Assessment as Monday to Friday 7 am to 6 pm, Saturdays 7 am to 5 pm and undertaking work on Sundays and public holidays only as the construction schedule requires);
- equipment with directional noise characteristics to be oriented such that noise is directed away from sensitive areas;
- avoid the coincidence of noisy plant working simultaneously where possible;
- selection of plant with the lowest noise rating where it meets the requirement of the task;
- ensuring that internal combustion engines are fitted with suitable mufflers in good repair;
- ensuring that tailgates on trucks are securely fitted to avoid unnecessary "clanging";
- utilising silenced compressors on pneumatic equipment or using quieter hydraulic equipment;
- conducting regular inspections and effective maintenance of stationary and mobile plant and equipment; and
- ensuring that equipment not being utilised for tasks are not left standing with engines running for extended periods.

Submissions

Three submissions raised noise as an issue for the proposal. DECC recommended that noise limits and other noise management measures such as the implementation of a Construction Noise Management Plan and monitoring of operational noise be included as part of the conditions of approval.

Both the City of Botany Bay Council and Randwick City Council submissions raised noise impacts as an issue of concern. The City of Botany Bay Council was concerned that background "noise creep" due to successive developments in the area was not taken into consideration as part of the Environmental Assessment and requested the "Standard Noise Criteria" developed in conjunction with the former Environment Protection Authority in 2001 during the Port Botany Expansion Commission of Inquiry should be considered as part of the noise assessment.

Randwick City Council regularly receives complaints from residential neighbours relating to noise nuisances during the night from port related activities creating sleep disturbance. Randwick City Council has therefore requested that noise monitoring be undertaken during the construction phase of the project and for a limited period during its initial operations. Randwick City Council has also requested that greater detail be provided with respect to intended construction work on Sundays and Public Holidays to allow Council to respond to residents where noise complaints are received.

Consideration

The Department is generally satisfied that the Proponent has undertaken an adequate level of noise assessment and has appropriately responded to issues raised in submissions as part of its Response to Submissions Report. In terms of background "noise creep", the Proponent indicates that the amenity criteria were modified in the noise impact assessment as a result of the influence of surrounding industrial noise such that the amenity criteria levels were decreased by 10 dBA at Locations 4, 5 and 6. This was undertaken in accordance with Table 2.2 of the *Industrial Noise Policy* (EPA, 1999). The Department is satisfied with this approach as it complies with *Industrial Noise Policy* (EPA, 1999). The *Industrial Noise Policy* is specifically designed to manage and minimise noise creep.

The Department agrees with DECC that noise generated from the site should be limited to the greatest extent practicable and has therefore recommended that operational noise limits be imposed for the site. The noise limits in Table 6 have been recommended to form part of the instrument of approval.

Table 6: Recommended Noise Limits

Location	Day/Evening/Night Bulk Liquids Berth No. 2 only	Day/Evening/Night Bulk Liquids Berth 1 and 2
	$L_{Aeq(15\ minute)}$ (dB(A))	$L_{Aeq(15\ minute)}$ (dB(A))
Botany Road, north of the Golf Club (Location 4)	35	38
Australia Avenue (Location 5)	35	38
Wassel Street/Military Road (Location 6)	35	38
Elaroo Avenue (Location A)	35	38

In its Response to Submissions Report, the Proponent disagrees with the imposition of the above noise limits. It states that while the operations of BLB1 were considered in the noise assessment they are not the subject of the project application and therefore noise limits on the operation of BLB1 should not be imposed. The Department disagrees with this analogy and has recommended that noise limits be applied to the site to ensure that cumulative impacts from the operation of both BLB2 and BLB1 do not adversely affect the surrounding noise environment. The Proponent has also objected to the imposition of limits for day, evening and night time periods based on night time criteria. The Department understands that the project is proposed to operate 24 hours per day and the Proponent has demonstrated in the Environmental Assessment that the project will comply with the most stringent night time noise criteria. The Department considers that if the project can comply with the night time criteria then it can also comply with these limits during both daytime and evening periods in accordance with best environmental practice. The imposition of these limits would also minimise background noise creep within the Port.

As outlined in the Environmental Assessment, it is not expected that construction noise will exceed construction noise level objectives, however given the large number of industrial activities undertaken within the Port area coupled with the commencement of the construction phase of the Port Botany Expansion project, construction noise could become an issue of concern. In its Response to Submissions Report the Proponent has indicated that a Construction Noise Management Plan would be prepared as part of the overall Construction Environmental Management Plan for the project and noise monitoring would be conducted during the construction phase to ensure compliance with the criteria. The Department agrees with this approach to managing construction noise from the site and surrounding area. This Plan should specifically address construction noise impacts in relation to piling operations for the construction of maritime structures.

The Department does not consider it appropriate that construction should occur on Sundays and public holidays "as the construction schedule requires". While the Department understands that construction on Sundays and public holidays would mean that the overall construction schedule could be completed sooner, it does not consider that removal of weekend respite hours is justified in this case. The Department recommends that the Minister impose similar construction hours to those which have been imposed as part of recent approvals within the Port Botany area, with the ability for the Director-General to agree to limited works outside these hours, on a case-by-case basis. Only construction works that are inaudible at the most affected residential receiver to the Port would be permitted to occur seven days per week.

The Department does not consider that the Proponent has adequately addressed the potential impacts from piling activities on the surrounding noise environment, however the Environmental Assessment indicates that piles will be bored into the seabed not driven which would result in reduced noise and vibration impacts. The Proponent has indicated in its Response to Submissions Report and verbally confirmed that all piles would be bored into the seabed and not hammer driven in order to protect the nearby Elgas LPG cavern. The Proponent has indicated that bored piles would be significantly less noisy than hammer driven piles and therefore may not be audible at the nearest residential receiver. In this regard, the Department has recommended as part of the conditions of approval that audible piling activities be limited to standard construction hours and only permitted to occur on weekdays. As an added precaution, the Department has recommended that the instrument of approval contain a condition which provides that no driven piles are to be undertaken as part of the construction of the wharf structure unless otherwise agreed by the Director-General.

5.3 Traffic and Transport Impacts

Issue

The Environmental Assessment indicates that there would a negligible increase in traffic associated with the operation of the project with less than five staff expected to be required to operate and maintain the facility. The project description provided in the Environmental Assessment states that any additional pipelines installed as part of the project would be connected to existing user sites. The Environmental Assessment states that increases in truck movements associated with the greater throughput of chemicals, gases and fuels from the berth would be considered as part of project applications for new or expanded bulk liquid storages that may be required to be developed within the port area and connected to the facility.

The Environmental Assessment indicates that some additional traffic would be generated during the construction of the project, comprising:

- Construction personnel – maximum of 80 vehicles per day;
- Deliveries of material for construction – five deliveries per day and up to 10 deliveries during peak construction activity such as for concrete pours.

The Proponent has advised that construction vehicles and deliveries would be directed to the privately owned Fishburn Road where a dedicated parking area, offices and laydown area would be established as part of the construction of the project. Fishburn Road is currently closed to traffic and therefore there would not be any conflict with existing traffic and access arrangements. The Environmental Assessment considered the increase in construction traffic on the surrounding road network as negligible comprising a very small proportion of the total daily traffic volumes on these roads.

Submissions

Three of the 11 submissions received during the exhibition period raised potential traffic impacts as a concern for the project. These included submissions by Randwick City Council, the City of Botany Bay Council and by Urbis Pty Ltd (prepared on behalf of Patrick Port Services). All of the submissions raised similar issues in relation to operational traffic, that is, the Environmental Assessment failed to clearly indicate the volumes of operational traffic movements (road tanker, visitor and staff) that the project is likely to generate as a result of the increased throughput of bulk liquids and/or storage capacity increases in the surrounding port area. A number of the abovementioned submissions requested that a construction and operational traffic management plan be required by the Proponent as part of any approval for the project.

A submission received from the NSW Roads and Traffic Authority indicated that the proposal will not have a significant traffic impact on the local classified road network.

Consideration

The Department considers that construction traffic was adequately addressed as part of the Environmental Assessment prepared for the project and expects that construction traffic impacts will be minor. However, to ensure that traffic is managed effectively during construction of the project, the Department has recommended that the Proponent be required to prepare a Construction Traffic Management Protocol to manage construction traffic.

For the operational phase, the Department agrees with the argument presented by the Proponent that the only increase in operational traffic will be as a result of increased personnel associated with the facility (less than 10 personnel). While it is accepted that the development of the berth would result in an increase in the throughput of bulk liquids, the bulk liquids would be transferred to existing storage facilities via pipeline and not by truck on the port road network. The assessment of storage facilities and their associated methods of distributing bulk liquids from their respective sites would have formed part of the overall environmental assessment of these storage facilities at that time and will continue to do so in the future. In its Response to Submissions Report, the Proponent indicates that the environmental impact assessment for storage facilities considers the maximum traffic generated from the facility based on its maximum capacity, throughput and method of bulk liquids delivery and cumulative impacts with other developments and therefore an operational traffic study for BLB2 is not required.

5.4 Water Quality Impacts

Issue

The construction of the berth and moorings associated with the project would involve piling into the seabed to provide support for the structures. The Environmental Assessment states that turbid water would be generated during piling however due to the seabed already being highly modified in the locality, the Proponent has indicated that it does not propose to utilise silt curtains to contain suspended sediment. The Department also understands that the nearest seagrass beds are at least 1.5 km away.

The Environmental Assessment indicates that standard mitigation measures would be implemented to protect water quality in Botany Bay and therefore the risk of impacts on water quality would be minor. These measures were detailed in the Environmental Assessment and include the storage of chemicals and fuels in appropriately bunded areas and the development of procedures for the handling and use of chemicals and fuels near or over water. The construction of land-based pipeline support structures would lead to some disturbance of the ground surface increasing the risk of the potential for erosion and sedimentation. The Environmental Assessment indicates that the ground surface to be disturbed is very small and appropriate sediment and erosion controls would be installed to minimise the risk to the water quality of Botany Bay. A soil and water management plan has been committed to by the Proponent as part of the Construction Environmental Management Plan.

The operation of the project has the potential to impact on surrounding water quality from potential spills of bulk liquids into the Bay or on the working platform during loading and unloading operations. The Environmental Assessment states that the design of the marine loading arms and associated infrastructure would incorporate a number of design features to minimise the risk of spills during unloading and loading operations. In addition, Sydney Ports Corporation has an oil boom facility at the nearby Brotherson Dock which is available for rapid deployment in the event of a spill. Sydney Ports Corporation has also developed a comprehensive spill response manual and procedures for operations conducted within Port Botany.

With reference to potential spills on the working platform, a spill containment bund is proposed to be constructed around the manifold area and a 200 mm bund would be constructed around the perimeter of the working platform. The Environmental Assessment indicates that the bunds would be closed during loading and unloading operations and once operations have been completed the bunded area would be visually inspected to determine whether the area is free from product spills. Stormwater runoff from the working platform assessed to be pollution free would be discharged to Botany Bay however contaminated stormwater would be captured in the bunded area, directed to the wastewater storage tank and disposed off-site to a DECC approved waste management facility. During times when there are no loading or unloading operations underway, the bunds would be left open so that any stormwater can be discharged to the Bay.

Submissions

The City of Botany Bay Council submission outlines its concerns that the stormwater within the bunded working platform will only be visually inspected prior to being discharged into the Bay and argues that all stormwater should be treated or passed through a separation pit prior to being discharged from the site. In addition Council does not support the visual monitoring of turbidity in the vicinity of piling operations and recommends the use of silt curtains during piling operations and insitu pouring of the concrete platform deck in order to protect the environment of the Bay.

The submission received from Randwick City Council requested that details of training of staff to deal with spills and any other risks to water quality be made available to the Department prior to the commencement of operations at the site.

Consideration

The Department has reviewed the Environmental Assessment and submissions in relation to the potential impact to surrounding water quality from the construction and operation of BLB2. The only concern the Department has is that the Proponent is not intending to treat all stormwater captured within the bunded berth area, opting only to direct potentially contaminated water to the treatment facility following a visual assessment. Given the diverse range of bulk liquids that are proposed to be loaded and unloaded from BLB2, the Department has

recommended, as part of the conditions of approval, that all stormwater captured within the bunded area undergo initial treatment to remove any particles, oils and grease prior to being discharged into Botany Bay.

In terms of controlling potential impacts of turbidity associated with piling activities, the Department agrees with statements made by the Proponent in its Response to Submissions Report. The Department understands that piles are more likely to be bored into the seabed instead of driven and only one pile would be drilled at any particular time. Given this, only localised turbidity would occur and would not result in any adverse or long term impacts to either surrounding water quality or aquatic ecology.

6. CONCLUSIONS AND RECOMMENDATIONS

The Department has assessed the EA, Statement of Commitments, Response to Submissions Report and submissions received during the exhibition period and is satisfied that the impacts of the project can be mitigated and/or managed to ensure an acceptable level of environmental performance. The Department recommends that the Minister approve the project, subject to conditions.

The development of BLB2 would include numerous mitigation measures to protect the surrounding environment and ensure the proper management of the project in accordance with the objectives of the Act. The Proponent has outlined a number of mitigation measures throughout the Environmental Assessment and its Statement of Commitments and the Department has included additional measures as part of its recommended conditions of approval to further mitigate potential impacts to the surrounding environment. In this regard, the Department has recommended that specific conditions of approval be imposed on the Proponent to address the key issues raised in the assessment process, as follows:

- Hazards and safety impacts – the requirement to undertake a number of safety and hazard studies during construction and prior to the commissioning of the project and requiring the recommendations from the studies to be implemented as part of berth operations;
- Noise and vibration impacts – specific conditions to limit hours of construction to acceptable times and to limit noise generated from the berth during operations to protect surrounding amenity;
- Traffic impacts – the requirement to prepare a Construction Traffic Management Protocol to manage construction traffic within the port area; and
- Water quality/stormwater impacts – the requirement to ensure that all stormwater captured on the working platform undergo initial treatment to remove particles, oils and grease prior to it being discharged into Botany Bay.

On balance, the Department considers that the project can be undertaken in an ecologically sustainable manner.

APPENDIX A – RECOMMENDED CONDITIONS OF APPROVAL

APPENDIX B – STATEMENT OF COMMITMENTS

APPENDIX C – SUBMISSIONS REPORT

APPENDIX D – ENVIRONMENTAL ASSESSMENT