Stolthaven Australia Pty Ltd
20-May-2014
60311678

Bulk Fuel Storage Facility - Throughput Increase

s75W Modification Environmental Assessment

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Client: Stolthaven Australia Pty Ltd

ABN: 26 075 030 992

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Quality Information

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Prepared by Simon Murphy

Reviewed by Catherine Brady

Revision History

Revision	Revision Date	Details	Authorised	
			Name/Position	Signature
1	20-Apr-2014	Draft - Internal Review	Simon Murphy Senior Environmental Planner	
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3	07-May-2014	Final	Simon Murphy Senior Environmental Planner	
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Certification

Submission of Environmental Assessment (EA) prepared under the *Environmental Planning and Assessment Act 1979*

EA prepared by		
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in respect of:	Throughput increase for a Bulk Liquids and Fuel Storage Facility.	
Project application		
Applicant name:	Stolthaven Australia Pty Ltd c/o AECOM Australia Pty Ltd (AECOM).	
Applicant address:	PO Box 73 HRMC NSW 2310.	
Land to be developed		
Lot no., DP/MPS, vol/fol etc:	Part of 33 D.P. 1116571.	
Proposed project:	Proposed modification for throughput increase of Bulk Liquids and Fuel Storage Facility. Map(s) attached.	
Environmental Assessment	An Environmental Assessment (EA) is attached.	
Certification	I certify that I have prepared the contents of this Environmental Assessment and to the best of my knowledge it is true in all material particulars and does not, by its presentation or omission of information, materially mislead.	
		
	Signature:	Signature:
	Name: Simon Murphy	Name: Catherine Brady
	Date: 20 May 2014	Date: 20 May 2014

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Executive Summary

Introduction

This Environmental Assessment (EA) has been prepared by AECOM Australia Pty Ltd (AECOM) on behalf of Stolthaven Australia Pty Ltd (Stolthaven) for the proposed modification to Project Approval 08_0130 to allow for additional throughput at their existing bulk liquids storage facility (the Facility), Mayfield. The modification would complement the approved use of the site to receive, store and distribute diesel and biodiesel for customers throughout the Hunter Region.

Modification approval is being sought under section 75W of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The Minister for Planning would be the approval authority for this application under the transitional arrangements of Part 3A of the EP&A Act. AECOM has prepared this EA in accordance with the provisions of the former Part 3A of the EP&A Act and the *Environmental Planning and Assessment Regulation 2000*, The EA also addresses the Project Director-General's Requirements (DGR's) which were issued to the proponent on 7 July 2011, to guide the environmental assessment.

Site and Context

The Facility is located on part of the former BHP Steelworks Site in Mayfield, approximately 5 km north-west of Newcastle CBD. The land on which the Facility is located is currently leased by Stolthaven from the Newcastle Port Corporation, and is currently subject to concept approval 09_0096 by the Newcastle Port Corporation (Mayfield Concept Approval Submission).

The nearest residential area is located at Mayfield, with the closest receptors (resident) approximately 900m from the proposed Site. Neighbouring industries include OneSteel and Koppers Coal Tar Products.

Project Description

The proposal is for the modification of Project Approval 08_0130 to increase the allowable throughput of fuels at the facility from 400ML to 500ML per year using the existing approved infrastructure.

Infrastructure to be used for the management of fuels onsite includes wharf pipeline, pumps and truck loading gantry.

Statutory Planning

The Site is located within the Newcastle City LGA where the relevant local environmental planning instrument is the Newcastle Local Environmental Plan (LEP 2012). However the LEP 2012 identifies the Site as lying within the boundary of Three Ports Site (*State Environmental Planning Policy (Major Projects) Amendment (Three Ports) 2005*), and thus falling under the provisions of the *State Environmental Planning Policy (Major Development) 2005* (Major Development SEPP). The proposed modification to a declared Major Development approved under Part 3A can by assessed through section 75W of the *Environmental Planning and Assessment Act 1979.*

By virtue of Part 20(4) of Schedule 3 Major Development SEPP, the provisions of the LEP 2012 and all other environmental planning instruments do not apply to the proposed Site. The Project is nevertheless consistent with the provisions of local, regional and state planning instruments which would otherwise apply.

Identification of Issues

An assessment of the likely environmental issues and associated level of risk was made for the proposed modification based on issues raised in the DGRs, from community consultation and as a result of experience during planning for the Facility. The assessment identified that the focus of environmental assessment for this modification should be as follows:

- High: none;
- Medium: traffic and access, air quality and noise and vibration; and
- Low: hazard and risk, soils and water; waste and greenhouse gas.

Traffic and Transport

A Traffic Impact Assessment was prepared to assess the potential traffic impacts associated with the throughput increase.

The proposal would not require construction works therefore no construction traffic impacts would occur.

During operation of the terminal facility, daily traffic movements will consist of fuel tanker deliveries and the movements of employees and visitors. In order to accommodate fluctuations in customer demand the modification may result in truck movements of up to 112 movements (from 56 trucks) on a given day. Intersection analysis found that the main site access point from Industrial Drive would continue to perform at acceptable Levels of Service under both typical and maximum anticipated operational traffic loads.

Noise

A Noise and Vibration Impacts Assessment was to assess the potential noise and vibration impacts from the throughput increase. The assessment utilised acoustic measurements of residential areas in the vicinity of the proposal to determine the background noise levels. Noise modelling was undertaken for a number of atmospheric and operational scenarios and concluded that under all scenarios, for day and night activities during both construction and operational phases, there would be no exceedance of the site specific noise criteria.

Air Quality

An Air Quality Impact Assessment was prepared by AECOM to assess the potential impacts associated with the proposed throughput increase. Consistent with the previous terminal assessments, cumene was used as an indicator pollutant for VOCs associated with diesel and biodiesel emissions. Cumene concentrations resulting from the increased throughput were estimated through dispersion modelling undertaken using the AUSPLUME program in accordance with the Environment Protection Authority (EPA) guidelines for air pollution assessments. The results of the modelling predicted that cumene concentrations would be less than the EPA guideline criterion at all sensitive receptor locations.

Other Environmental Considerations

Other issues that were considered included hazard and risk, soils and water, waste and greenhouse gas. Overall it is considered that the proposed modification would have minor or negligible impacts in relation to these factors given that there will be no construction impacts and the ongoing operation of the Facility would result in similar impacts as currently occur.

Statement of Commitments

The Statement of Commitments has been prepared in respect of the proposed throughput increase and has been compiled on an issues basis, as informed by the EA and the environmental risk analysis. Stolthaven has an existing environmental management system for the Facility. This system will be updated and extended to include the additional measures identified in this EA to manage the proposed throughput increase.

Consistency with Mayfield Concept Plan

The Facility is situated within a larger area to which the Port Terminal Facilities at Mayfield Concept Plan (09_0096) applies. This Concept Plan was approved by the Minister for Planning and Infrastructure on 16 July 2012. The Concept Plan environmental assessment included provision for a bulk fuels precinct which was planned to house facilities such as that proposed. The Concept Plan, as modified has identified a potential bulk liquid throughput of up to 3,400ML per year. From the review of applicable conditions, it has been concluded that the proposed modification is consistent with the Concept Plan.

Proposal Justification

The proposed modification would provide economic benefits to the local, regional and State economies. The additional throughout will introduce greater efficiency, diversity and competition in the fuel market, which may result in lower fuel prices. Re-deploying existing demand onto a more appropriate distribution route is a major transport risk reduction benefit. This can occur through the use of an established facility with minimal environmental impacts as demonstrated in this EA. The proposed modification is therefore considered to be justifiable.

Conclusion

This EA has fully considered the beneficial and adverse effects of the proposed throughput increase, with full consideration of the principles of Ecologically Sustainable Development. With the implementation of environmental mitigation measures outlined in this EA, it is considered unlikely that significant impacts would occur as a result of the proposal within the area of the Bulk Liquid Fuels Storage Facility or on the surrounding environment.

1.0 Introduction

1.1 Overview

This Environmental Assessment (EA) has been prepared by AECOM Australia Pty Ltd (AECOM) on behalf of Stolthaven Australia Pty Ltd (Stolthaven), for modification of Project Approval 08_0130 for a Bulk Liquid Fuels Storage Facility (Facility). The Facility is located on a parcel of land within an area managed by the Newcastle Port Corporation (NPC) in the Port of Newcastle. This Facility is within the Port Terminal Facilities Mayfield Concept Plan Approval 09_0096 (Concept Plan) area. The existing Facility provides terminal infrastructure for the receipt, storage and distribution of bulk liquid fuels, including diesel and biofuels. The modification is for the increase of throughput by 100ML per annual (pa) to a total annual throughput for the Facility of 500ML pa.

Stolthaven is seeking approval for the proposed modification under Section 75W (repealed) of the *Environmental Planning and Assessment Act 1979* (EP&A Act) under transitional arrangements . As such, an EA is required to be submitted by Stolthaven to the Minister for assessment. The Director-General of the Department of Planning and Infrastructure (DP&I) has issued Director Generals Requirements (DGRs) for the Project which provide the framework for the assessment of environmental impacts of the proposed modification.

1.2 Proposed Project

Stolthaven is seeking approval to increase the throughput of its operations at the existing Bulk Liquid Fuel Storage Facility, increasing the annual throughput of diesel and biofuels form 400ML pa to 500ML pa in order to meet growing demand. This EA assesses the potential environmental impacts of the proposed throughput increase, as well as the associated increases in fuel imports by ship, and the delivery and dispatch of fuels by road. The modification includes:

- Increased throughput of diesel and biofuels by 100ML pa, to a total of 500ML pa;
- Increased domestic and international imports of fuel, with an additional 12 ships (24 ship movements) increasing the number of ship visits to approximately 32 ships (64 ship movements) per year; and
- Increased delivery and dispatch of fuels by road, allowing for a total increase of up to 56 trucks (112 movements) during the worst case scenario per day. This would occur on a campaign basis driven by increased demand for fuel.

The existing infrastructure and equipment has sufficient capacity to manage the proposed increase in throughput and no physical works or additions to the Facility are proposed as part of the modification. Rather, the frequency of fuel delivery and dispatch operations at the Facility would increase and plant and equipment operated more efficiently.

All other activities, including the process of delivery of fuels by ship, delivery and dispatch of fuels by road, and onsite fuel management and logistics, would be undertaken in line with the current operations of the Facility, approved as part of the Phase 1 development (08_0130) and the Phase 1A Modification.

Further detail regarding the proposed throughput increase is provided in Section 3.0.

1.3 Structure of this Report

This report is structured as follows:

Section 1.0 provides an introduction to the Project, including background information relevant to the development context.

Section 2.0 provides the site context and approvals history, as well as a brief description of the land uses and ownership surrounding the Facility.

Section 3.0 discusses the need for the project and alternatives considered.

Section 4.0 describes the proposed project and the scope of the modification.

Section 5.0 describes the statutory approval pathway for the proposed development and its relationship to the existing approvals.

Section 6.0 describes the stakeholder consultation undertaken for the modification.

Section 7.0 outlines the key environmental issues identified for the Facility, and their prioritisation relative to the modification.

Section 8.0 provides an assessment of the potential impacts of the modification on key environmental issues and outlines mitigation measures to be implemented.

Section 9.0 provides an assessment of other environmental considerations and outlines mitigation measures to be implemented.

Section 10.0 provides an assessment of the potential cumulative impacts of the modification.

Section 11.0 summarises the environmental management and mitigation measures proposed for the modification.

Section 12.0 details the justification for the development with respect to net project benefits and the principles of Ecological Sustainable Development (ESD).

Section 13.0 provides a summary of findings and a conclusion to the EA.

2.0 The Site and Context

2.1 Site Description

The Facility is located on a parcel of land identified as Lot 2 DP 1177466, located approximately 5 km northwest of the Newcastle CBD in the suburb of Mayfield. Stolthaven currently have an agreement in place with NPC for the lease of the site. The site lies at approximately 1.9 m AHD and abuts the south arm of the Hunter River to the north and industry to the west. The site currently contains the approved Facility (Refer Section 2.4.1) as described in the original project EA (AECOM, 2011). The regional location of the site is shown in Figure 1.

2.2 Surrounding Land Use

The area surrounding the Facility is characterised by a mixture of port related activities, industrial uses and residential and commercial areas.

Land use surrounding the Facility primarily comprises industrial development and land uses including:

- North – Hunter River and Port Waratah Coal Services Coal Loaders;
- South – Currently vacant land. Anticipated future use for industrial/business park uses;
- West – One Steel operations; and
- East – Current vacant industrial land and Koppers Australia pipeline.

The nearest residential area is located at Mayfield (Refer Figure 2), with the closest receptors approximately 900m from the Facility's site boundary. Other residential areas in proximity to the Facility include the suburbs of Carrington, Wickham and Tighes Hill.

2.3 Mayfield Concept Plan

NPC has obtained Concept Plan Approval (09_0096) for the development of port-related activities within the former BHP Steelworks site at Mayfield. The site (known as the Closure Area or Concept Plan area) is a 90-hectare portside portion which contains the Facility (refer Figure 2).

The Concept Plan identifies five key operational land uses that would be developed and operated through 2034 (AECOM, 2010). These land uses included bulks liquids import and distribution land uses. Section 3.7 of the original Project EA (AECON, 2011), demonstrated that the Facility was consistent with the Concept Plan approval. Similarly this EA will demonstrate how the modification is consistency with the relevant conditions of the Concept Plan Approval as described in Section 4.3.

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AECOM

REGIONAL CONTEXT

Bulk Fuel Storage Facility,
Proposed Throughput Increase

FIGURE 1

AECOM

SITE LOCATION

Bulk Fuel Storage Facility,
Proposed Throughput Increase

FIGURE 2

2.4 Approvals History

2.4.1 Project Approval (Phase 1)

The original project approval included approval for the construction and operation of the following site elements:

- 3 x 18ML diesel tanks;
- 1 x 0.5ML biodiesel tank;
- 1 x additives tank;
- 1 x slops tank;
- Truck loading gantry and associated driveway access and egress;
- Workshop;
- Fire water storage tanks;
- Fire pump house;
- Tanks bunding;
- Terminal pipe connecting to Mayfield Berth 4 (M4);
- Office and amenities building; and
- Annual throughput of 300ML per year.

2.4.2 Modification No. 1 (Phase 1A)

Modification 1 provides approval for the following additional site elements:

- 2 x 18ML diesel tanks;
- 1 x 4.2ML biodiesel tank;
- Additional tanks bunding for the new tanks; and
- An additional throughput of 100ML, to allow a total of 400ML of throughput from the Facility per year.

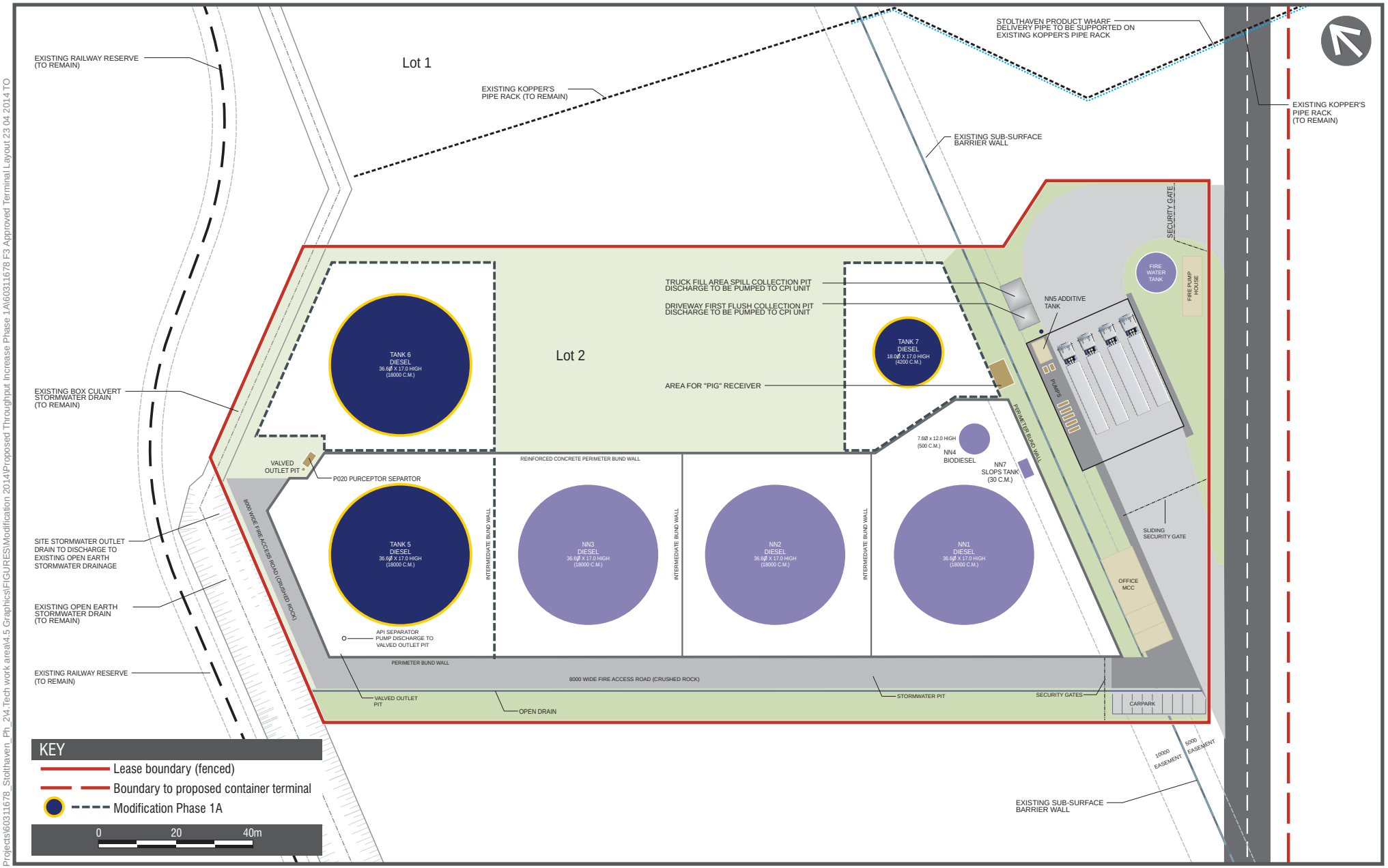
Figure 3 shows the site layout as approved including the Phase 1A modification.

2.4.3 Modification No. 2 – Amendment of Condition 4 Schedule 4

Modification No. 2 sought the modification of the wording of Condition 4 of Schedule 4 in December 2013. This modification changed the condition to remove reference to preparing a Human Health Risk Assessment to the satisfaction of NSW Health. Instead the Human Health Risk Assessment condition was amended and Stolthaven prepared the Human Health Risk Assessment to meet the requirements of the DP&I prior to the start of operation at the Facility in late 2013.

2.4.4 Current Operations

The site currently operates in accordance with the requirements of the original project approval as modified based on a 400ML per year throughput. Stolthaven is nearing the completion of construction of the Phase 1A diesel storage tanks. Commission of Phase 1A tanks is expected mid-2014 followed closely by these tanks becoming operational.



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APPROVED TERMINAL LAYOUT

Bulk Fuel Storage Facility,
Proposed Throughput Increase

FIGURE 3

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3.0 Project Needs and Alternatives

3.1 Project Need

Demand for fuels within the Hunter, particularly from the mining sector, has created a need for more locally based importation, storage and dispatch facilities to reduce the Hunter's dependence on fuel from Sydney. Furthermore the changing structure of the fuel industry in Australia, primarily the divestment in refining capacity by the major oil companies and the reliance on imported refined product, makes it more economical to import fuels directly to the region in which they are required. An increase in fuels imported directly into the Port of Newcastle will allow customers to further improve the safety and efficiency of their fuel supply chains by:

- Reducing road transport costs associated with transporting fuels from Sydney;
- Reducing road safety risks associated with moving fuels by tanker from Sydney;
- Avoiding costs and potential capacity issues associated with the Sydney – Newcastle pipeline;
- Improving security of supply by introducing an additional source of fuels; and
- Improving competition in the fuels supply market.

3.2 Alternatives

3.2.1 Alternative Locations

Port of Newcastle

A number of alternative locations exist in and around the Port of Newcastle which could be used for the establishment of a bulk fuels receipt, storage and dispatch terminal. These locations were assessed as part of the original approval for the terminal (MP08_0130). The proposal seeks approval for an increase in throughput for the existing terminal. The existing Facility was constructed on an already heavily disturbed site and using this site would avoid many of the environmental impacts associated with development of a new terminal at another port location. In addition constructing a new terminal while there is capacity in the existing Facility would be an inefficient use of resources.

The subject site is considered ideal as additional throughput will make use of the wharf, pumps and truck loading facilities that are already approved and operational. This sharing of infrastructure would create increased efficiencies that would not be available at any other site.

Other Ports

Other options exist for the transport of fuels from other import facilities outside of Newcastle. These include Port Botany, Port Hacking, Port Kembla and to a lesser extent the Port of Brisbane. Fuels supplied to the Hunter region primarily arrive from Port Botany either via the Newcastle-Sydney Fuels pipeline or by truck.

Using any of the alternative ports would not support the efficiency improvements the modification offers. Alternative Port options would require significant levels of trucking to provide ongoing supply to the Hunter market. The existing Facility can be used to import fuels directly into Newcastle for use in the Hunter Valley providing cost and time efficiencies that cannot be matched by other port options.

3.2.2 Do Nothing

The do nothing alternative would continue to see a business as usual situation exist in the regional fuel supply market. This alternative offers none of the positive aspects listed in Section 3.1 and the Newcastle and Hunter region dependence on fuels transported from other import facilities in Sydney would continue.

Importing fuels to the Hunter from outside the region would also generate additional heavy vehicle traffic on the regional and state road networks, adding to congestion and safety issues as well as placing greater pressure on the Sydney – Newcastle pipeline. .

The do nothing option would limit the diversification of fuel supplies leading to susceptibility to shortages if one or more existing supply chains are interrupted.

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4.0 Project Description

4.1 Project

The modification seeks approval to increase the fuel throughput of the Facility from at approved 400ML pa to 500ML pa. This will require 3 main operational changes:

- Increased import of fuels (increased shipping);
- Increased management of fuels within the Facility (increased pumping from storage tanks to truck loading gantries); and
- Increased distribution of fuels by road (increased vehicle movements).

4.1.1 Shipping Movements

Approximately 20 ship, or 40 shipping movements are currently required per year to service the existing permissible throughput of 400ML per year. In order to deliver the additional 100ML per year, approximately 12 additional ships, or 24 additional shipping movements will be required annually.

Combined with the existing operation, in order to service the proposed 500ML annual throughput the total shipping numbers would therefore be 32 ships per year or 64 shipping movements. The final number of ships would be dependent on a number of factors such as the size of the ship used and the available capacity at the Facility. To increase the efficiency of the operation, Stolthaven time ship deliveries when there is maximum space available at the Facility i.e. the tanks are empty. This can also lead to greater time between deliveries i.e. larger less frequent deliveries compares to smaller more frequent deliveries.

4.1.2 Facility Pumping

The logistical management of the additional fuels would be undertaken by the use of the Facilities existing pumps for the internal distribution and export to road tankers. There would be no requirement to provide additional pumps, pipes or storage infrastructure as part of the modification. The modification would simply see the existing pumps used at higher frequencies.

4.1.3 Truck Movements

Daily traffic movements would consist of fuel tanker movements and the movements of employees and visitors. No additional employee or visitor movements are expected as a result of the modification. The existing staff can continue to manage the Facility with the proposed throughput increase.

The proposed throughout increase would require total traffic movements for the Facility to increase. Typically a daily number of traffic movements would be approximately 60 however, however in the worst case scenario of maximum output for distribution by road driven by demand for fuel, up to approximately 112 movements per day may be required. Stolthaven requires this flexibility in order to adjust to customer demand. Where multiple customers required simultaneous supply Stolthaven may need to increase traffic movements to accommodate this demand. Annually, the total number of movements will ultimately reflect the permissible throughput for the Facility, which following the modification would be 500ML. Therefore throughput levels would not allow 112 movements per day to occur for a prolonged period. In order to ensure the worst case traffic impact of the modification is addressed, this EA assesses the impacts of 112 movements per day. Refer Section 8.1.

4.2 Modification to Project Approval 08_0130

A review of the existing Project Approval (08_0130) as modified was undertaken to examine conditions that would require amendment to effect the modification. These are detailed below.

4.2.1 Conditions 5, Schedule 3

Condition 5, Schedule 3 of the Project Approval, as amended as part of the Modification for Phase 1A, would require further amendment to account for the proposed increase in fuels throughput.

Existing Condition:

Limits on Approval

The Proponent shall not receive, store and dispatch more than:

a) 400 million litres of diesel and biodiesel combined per year.

Proposed Amended Condition (change shown in bold):

Limits on Approval

The Proponent shall not receive, store and dispatch more than:

*b) **500** million litres of diesel and biodiesel combined per year.*

4.2.2 Condition 16, Schedule 4

In order to manage the potential impacts of the proposed throughput increase in relation to traffic, it is also recommended that the Conditions 16 of Schedule 4, be amended to require the Traffic Management Plan for the facility to be reviewed and updated, prior to throughput exceeding the currently approved 400ML pa. The proposed addition to this condition is shown in bold below.

Traffic Management Plan

The Proponent shall prepare and implement a Traffic Management Plan to the satisfaction of the Director-General. The plan must:

a) be submitted to the Director-General for approval prior to commencement of construction;

b) be prepared in consultation with NPC, HDC, Council and RMS;

c) detail construction and operational vehicle routes, access arrangements and coordination with other developments in the Mayfield Concept Plan area;

d) include details of driver training awareness to minimise noise, in particular from reversing alarms and compression braking;

e) detail procedures for managing operational traffic, including adherence to the Australian Code for Transport of Dangerous Goods by Road and Rail, January 1998 or its latest version.

f) The Traffic Management Plan be updated to the satisfaction of the Director-General prior to the annual throughput of the site exceeding 400ML per year.

4.3 Consistency with Mayfield Concept Plan

Section 3.7 of the Phase 1 EA described how the approved project fits well with the bulk liquids precinct of the Concept Plan Area. The proposal would continue to be compatible with the land use originally identified in the Concept Plan.

Subsequent to the Project Approval of the Facility, the Concept Plan was modified on 17 March 2014 to remove certain precinct based controls for the development of the Concept Plan area. The proposed modification must therefore give due consideration to the following aspects of the Concept Plan approvals, as modified:

- Allowable bulk liquid throughputs;
- The maximum daily permissible traffic movements; and
- Coordination of the Project with the environmental management documents and plans required by the Concept plan Approval.

4.3.1 Bulk Liquid Throughput

The modified Concept Plan approval, through reference in Condition 1 of the modified approval to NPCs modification submission, makes allowance for up to 3,400ML pa throughput of bulk liquids.

The modification seeks approval to increase throughput from 400ML to 500ML. Following modification there would be an allowance of 2,900MLpa throughput remaining. Therefore the modification is well within the allowable bulk liquid throughput limit applied by the Mayfield Concept Plan.

4.3.2 Traffic Movements

Conditions 2.3 of Schedule 2 of the Concept Plan approval, as modified, makes allowance for 1,268 total truck movements per day from the Concept Plan site before additional traffic studies, monitoring and possibly infrastructure upgrades are required.

With increased demand for fuel there may be a requirement on a campaign basis for fuel deliveries to the Newcastle and Hunter area of up to 112 movements per day. Currently there are no other tenants operating, or planning to operate, from the Concept Plan area in the short term. Therefore the proposed level of 112 movements per day is well within the current allowance of 1,268 truck movements.

4.3.3 Concept Plan Approval Environmental Management Plans

There are a number of management plans required by the Mayfield Concept Plan approval which will apply to all future development in the Mayfield Concept Plan area. The Facility is required to adhere to these plans given its location within the Mayfield Concept Plan area. As the first project within the Mayfield Concept Plan area to have been approved and begin construction, Stolthaven has undertaken to meet all relevant requirements of the Mayfield Concept Plan approval as applicable.

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5.0 Statutory Planning

5.1 Local Matters

5.1.1 Newcastle Local Environmental Plan

The Site is located within the Newcastle City Local Government Area (LGA) where the relevant local environmental planning instrument is the Newcastle Local Environmental Plan 2012 (LEP 2012). However, clause 16 of LEP 2012 identifies the Facility as lying within the boundary of Three Ports Site (*State Environmental Planning Policy (Major Projects) Amendment (Three Ports) 2005*), and thus falling under the provisions of the *State Environmental Planning Policy (Major Development) 2005* (Major Development SEPP). By virtue of Part 20(4) of Schedule 3 of the Major Development SEPP, environmental planning instruments other than State Environmental Planning Policies do not apply to the Site as it is located within Three Ports land. Therefore the provisions of the LEP 2012 do not apply to the Site.

5.2 Regional Matters

5.2.1 Lower Hunter Regional Strategy

The modification would continue to be consistent with the aims and objectives of the *Lower Hunter Regional Strategy* (DoP, 2006) for the same reasons as were provided in the Phase 1 EA. In summary the modification would continue to support the regional economy and job growth whilst being compatible with surrounding land uses and maximizing the use of industrial and port zone land for appropriate uses.

5.3 State Matters

5.3.1 Environmental Planning and Assessment Act 1979 (EP&A Act)

The EP&A Act and the EP&A Regulation provide the framework for environmental planning in NSW and includes provisions to ensure that proposals which have the potential to impact the environment are subject to detailed assessment, and provide opportunity for public involvement.

As outlined above, the modification would be located on land listed in Schedule 3 of the Major Development SEPP (the “Three Ports Site”). Developments located within this area require development consent for all works within the Port.

Phase 1 was declared by the Minister to be a project to which Part 3A (repealed) of the EP&A Act applied before 1 October 2011. Stolthaven met with DP&I on 10 April 2014 to discuss the potential for a modification to increase throughput.

In accordance with Part 3A (repealed) of the Act, in determining whether a proposal can be approved through a modification to an existing project approval there is no express test to determine whether proposed works would constitute a modification or whether a fresh planning application may be required. As a general rule it is understood that an increase of up to 30% of the quantum of the relevant size of the Project, in this case throughput of fuels, can be used as a measure a matter that can be assessed as a modification. The proposal is seeking to increase the throughput of the Facility from the approved 400ML to 500ML per year. This additional 100ML represents 25% of the approved Facilities capacity. Accordingly it is considered that the proposal is within the acceptable limits and can be assessed under section 75W of the EP&A Act. Section 75W being the section allowing modifications to be made to project approved under Part 3A of the EP&A Act.

5.3.2 State Environmental Planning Policies

State Environmental Planning Policy (Infrastructure) 2007 (Infrastructure SEPP)

The aim of this Policy is to facilitate the effective delivery of infrastructure across the State. The proposed modification would be consistent with the aims of this SEPP, by utilising the Facility to more efficiently deliver fuels to industrial users in the Hunter by directly importing fuels into Newcastle instead of via truck from Sydney.

Schedule 3 lists development which requires referral to the Roads and Maritime Service (RMS) including:

> *Transport terminals, bulk stores, container depots or liquid fuel depots with a capacity of 8,000m^2 with site access to any road.*

Under section 104 of the Infrastructure SEPP, the Minister is required to forward the Development Application to the RMS for comment before making a determination.

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

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

The document *Applying SEPP 33 – Hazardous and Offensive Development Application Guidelines* was prepared by the Department of Urban Affairs and Planning in 1994 to provide assistance in implementing SEPP 33. The Guidelines recommend a 'risk screening' method for determining whether a proposal is hazardous, and provide guidance on assessing potentially offensive development proposals. The Phase 1 PHA found that the proposal would not constitute a hazardous or offensive development. As the modification is not introducing and new types of fuels, processes or infrastructure, it continues to represent a land use that does not constitute a hazardous or offensive development. This is considered further in **Section 9.1.**

State Environmental Planning Policy 55 – Remediation of Land (SEPP 55)

SEPP 55 promotes the remediation of contaminated land to reduce the risk of harm to human health or other environmental systems. Clause 7 of SEPP 55 requires a consent authority to consider whether the land is contaminated and whether it is suitable (or can be made suitable) for the proposed development. A Contaminated Sites Management Plan (CSMP) has been developed for the entire former BHP Steelworks Site, which forms part of the Voluntary Remediation Agreement (VRA) formed under the *Contaminated Land Management Act 1994*. Stages 1 and 2 of the remediation have been completed, including the construction of a groundwater barrier around the contaminated parts of the Site and remediation of the surface areas with the application of crushed rock (HDC, 2010). The proposed throughput increase would not interfere with the remediation works previously undertaken onsite as part of the remediation of the closure area.

State Environmental Planning Policy 71 – Coastal Protection (SEPP 71)

The proposed modification would be located within the coastal zone as defined by SEPP 71 which makes provisions regarding protection of coastal attributes, protection of natural and cultural heritage elements, coastal environmental protection, and the retention of foreshore public access. Clause 8 of the SEPP provides matters for consideration to be taken into account by a consent authority when determining an application to carry out development. The proposed modification would continue to be consistent with SEPP 71 for the reasons listed in Section 4.3.2 of the Phase 1 EA.

5.3.3 Protection of the Environment Operations Act 1997

The *Protection of the Environment Operations Act 1997* (POEO Act) prohibits any person from causing pollution of waters or air, and provides penalties for pollution offences relating to water, air and noise.

The existing Facility operates under Environmental Protection Licence (EPL) 20193 as a chemical storage facility for petroleum products under Clause 9, Schedule 1 of the Act. A variation to EPL 20193 will be required to account for the increased annual throughput capacity for the Facility. The application to vary the EPL should be obtained from the EPA prior to any increase in throughput beyond the current EPL limits.

5.3.4 Other Acts

A review of other legislation that may be applicable to the application was provided as part of the original project EA and subsequent modification 1EA. No other legislation is considered to be relevant to the proposed modification.

5.4 Environment Protection and Biodiversity Conservation Act 1999

Actions that may significantly affect matters of National Environmental Significance (NES) require assessment and/or approval from the Commonwealth under the *Environment Protection and Biodiversity Conservation (EPBC) Act 1999*. The EPBC Act lists eight matters of NES that must be addressed when assessing the environmental impacts of a proposal. As the project does not propose any physical works and environmental impacts have been shown to be within acceptable limits, no impacts to NES matters are anticipated. This is consistent with the EA for the Facility's Project Approval which also concluded there would be negligible impacts on NES matters.

6.0 Consultation and Identification of Issues

6.1 Consultation with Department of Planning and Infrastructure

On 10 April 2014 representatives of AECOM and Stolthaven met with DP&I to present and discuss potential future works beyond those approved as part of MP 08_0130. DP&I confirmed that an additional 100ML pa throughput could be assessed as a modification to the Project Approval.

In preparing this EA, the original Project DGRs dated 7 August 2011 have been addressed as required by Clause 75F of the EP&A Act, as relevant to the modification. Each of the matters raised by the Director General for consideration in the EA are outlined in Table 1, together with reference to the relevant section of the EA which addresses that matter. A full copy of the DGRs is in Appendix A.

Table 1 Environmental Assessment Requirements (DGRs)

Matter	Section of EA
General Requirements	
The EA must include:	
- An executive summary;	Executive Summary
- A detailed written description of the project, including;	
• The need for the project;	Section 3.1
• Alternatives considered;	Section 3.2
• The likely staging of the project;	N/A
• How the project would interact with other existing and approved port and industrial operations in the vicinity of the site; and	Sections 2.2
• Plans of all building works and associated infrastructure.	Figure 3
- A clear demonstration that the project is consistent with all environmental assessment requirements set out in the Concept plan for Port Facilities at Mayfield (09_0096) (if approved);	Section 4.3
- A risk assessment of the potential environmental impacts of the project, identifying the key issues for further assessment;	Section 7.2
- A detailed assessment of the key issues specified below, and for any other significant issues identified in the risk assessment, which includes:	Section 8.0
• A description of the existing environment, using sufficient baseline data;	Section 8.0
• An assessment of the potential impacts of all stages of the project on the environment, including any associated cumulative impacts associated with the operation of the project and any other approved or proposed port or industrial operations in the area;	Sections 8.0 and 9.0
• A description of the measures that would be implemented to avoid, minimise and if necessary offset the potential impacts of the project, including evidence that all relevant prevention and mitigation measures would be applied where reasonable and feasible; and	Section 11.0
• Contingency plans for managing any significant risks to the environment.	Section 11.0
- A statement of commitments, outlining all the proposed environmental management and monitoring measures;	Section 11.0
- A conclusion justifying the project, taking into consideration:	Section 12.0
• The suitability of the site;	
• The economic, social and environmental impacts of the project as a whole; and	
• Whether the project is consistent with the objects of the *Environmental Planning and Assessment Act 1979.*	Section 12.6
- A signed statement from the author of the EA, certifying that the information contained within the document is neither false nor misleading.	Quality Page
Hazards and Risks	
- An assessment of the potential hazards and risks to adjacent port and industrial operation, people and/or the environment associated with the project;	Section 9.1
- How ecological and human risks posed by contaminants in the context of past,	NA

Matter	Section of EA
existing and future land uses would be managed; and - How the project would comply with the approved remediation works and associated management measures across the former BHP Billiton steelworks site.	*
Soil and Water	
- An assessment of impacts to remediation works, soil and stability during the construction and operation of the project, including the controls that would be put in place to manage erosion and sediment, stormwater and acid sulphate; and - An assessment of impacts to groundwater and surface water resources during the construction and operation of the project, including the Hunter River Estuary.	Sections 9.2 *
Transport and Access	
- Accurate predictions of the traffic generated by the project; - A detailed assessment of the potential impacts of the project on the capacity, efficiency and safety of the road and shipping networks; - Details of any upgrades to road or shipping infrastructure that would be required due to the project; and - Site access, internal roads and vehicular parking required as a result of the project.	Section 8.1 Section 8.1 Figure 4 *
Noise and Vibration	
- Including a quantitative assessment of construction, operational and transport noise and vibration impacts to surrounding receivers from on site and off site activities (including shipping).	Section 8.2
Air Quality	
- Including a quantitative assessment of the air quality and odour impacts of the project on surrounding receivers.	Section 8.3
Greenhouse Gas	
- Including a quantitative assessment of the potential Scope One, Two and Three greenhouse gas emissions of the project and a qualitative assessment of the potential impacts of these emissions on the environment.	Section 9.4
Waste	
- Including accurate estimates of the quantity and classification of potential liquid and non-liquid waste streams of the project and a description of the measures that would be implemented to ensure that any waste produced is appropriately handled, processed and disposed of.	Sections 9.3

**Refers to matter suitably addressed in the Original Project EA (AECOM, 2011).*

6.2 Consultation with Agencies

The DGRs for the Project required consultation with certain government agencies and authorities with regard to the Project. These agencies were also consulted during the Phase 1A modification primarily due to potential construction impacts. As the modification is only for an increase of throughput and no physical works onsite, specific consultation with each agency is not considered warranted for this modification.

It is noted in Sections 8.0 and 9.0 that a number of management plans required under the Project Approval will be updated prior to the modification taking effect. Agencies will be able to provide feedback on the management of the Facility following the modification during their review of relevant management plans as required by the Project Approval.

6.3 Community Consultation

Stolthaven is a committed and responsible corporate citizen, and strongly believes that regular communication with residents and neighbouring industries is central to the creation of harmonious relationships. Stolthaven also supports community involvement in decision-making surrounding the environmental future of the Newcastle Port area, as well as the suburb of Mayfield.

Stolthaven currently attends regular meetings with the Correct Planning and Consultation for Mayfield Group (CPCMG) and provides updates on current and planned site works and activities, as well as future development plans.

Stolthaven last met with CPCMG in late 2013 to discuss its plans to increase throughput for the existing Facility, provided a high level overview of intentions for future projects associated with the terminal and more generally to provide an opportunity for discussion with the community.

Whilst planning for the modifications Stolthaven have sought to meet with the community and provide further details and an opportunity to ask questions relation to the proposal. Due to the availability of key individuals (from both Stolthaven and the CPCMG) this meeting has not been able to occur prior to the lodgement of this modification. Following the next community meeting Stolthaven will provide a copy of minutes to DP&I.

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7.0 Identification of Key Environmental Issues

7.1 Identification of Issues

7.1.1 Background

The key issues for the environmental assessment of the proposed modification have been based on the project DGRs and are listed in Table 3.

7.1.2 Identification of Potential Impacts of the Modification

As no additional infrastructure is proposed as part of this modification, the identification of issues associated with the modification primarily focused on:

- Increased volume of fuels (diesel and biofuels) requiring transport via ships and trucks;
- Increased frequency of operations at the Facility, with potential implications for increased noise and air quality emissions; and
- Increased volume of bulk liquids transferred through the Facility and the potential hazard and safety concerns associated with this increase.

7.2 Prioritisation of Issues

7.2.1 Approach

The prioritisation of issues for the modification was based on the need to recognise that a higher degree of assessment is required for the issues with the highest severity and greatest possible consequences. Table 2 shows the issues prioritisation matrix used to identify priorities.

Each issue was given a ranking between one and three for the potential severity of risks and the perceived consequence of those effects if left unmanaged. These two numbers were added together to provide a numerical ranking for the issue that was used to categorise each issue into high, medium and low priorities.

The allocation of risk is based upon the following considerations:

Severity of Risk

Low: localised implications; imperceptible or short term cumulative impacts.

Medium: regional implications; modest or medium term accumulation of impacts.

High: inter-regional implications; serious or long term cumulative impacts.

Consequences of Unmanaged Effects

Low: minor environmental change; offsets readily available.

Medium: moderate adverse environmental change; offsets available.

High: important adverse environmental change, offsets not readily available.

Table 2 Issues Prioritisation Matrix

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

7.2.2 Assessment of Risk

The prioritisation of environmental issues related to the proposed Project is provided in Table 3.

This environmental risk analysis prioritises environmental issues in the absence of appropriate safeguard measures to manage environmental effects. This analysis was then used to inform the environmental assessment for the modification and in the identification of appropriate safeguards.

Table 3 Prioritisation of Environmental Issues

Issue	Severity	Consequence	Priority
Transport and Access	2	2	4 (Medium)
Air Quality	2	2	4 (Medium)
Noise and Vibration	2	2	4 (Medium)
Hazard and Risk	1	2	3 (Low)
Soils and Water	1	2	3 (Low)
Waste	1	2	3 (Low)
Greenhouse Gas	1	1	2 (Low)

In summary, the environmental risks ranked as the highest priority for the proposed project include Traffic, Air Quality and Noise. Technical specialists studies have been undertaken to assess the potential impacts associated with these key issues are assessed in Section 8.0.

Other environmental considerations, ranked as a low risk are assessed in Section 9.0.

Based on this risk ranking process and the impact assessments carried out for the EA, a number of reasonable and feasible mitigation measures have been identified for the Project to minimise those risks identified as medium priority. Mitigation measures developed during the assessment process are presented in Section 11.0.

8.0 Assessment of Key Environmental Issues

8.1 Transport and Access

A Traffic Impact Assessment (TIA) for the proposed throughput increase was prepared by AECOM in 2013. It assessed the existing traffic conditions on the road network, including the existing operational traffic associated with the Facility, and predicted impacts of the proposed throughput increase. The TIA is provided in Appendix B and summarised in the following sections.

8.1.1 Existing Environment

Site Context

The primary access point to the Facility is via the traffic signal controlled intersection of Industrial Drive and Ingall Street. NPC has provided Stolthaven and its contractors with access to the Facility with a permanent road and services access from Ingall Street, along Steelworks Road and down the eastern side of the Facility (refer Figure 2).

OneSteel occupies the bulk of the land adjacent to and west of the Facility, with its Pipe and Tube, and Wire Works. Other land uses in the area to the east of Industrial Drive include industrial land uses that do not use the Ingall Street access. A Technical Training Centre is located on the north-eastern corner of Ingall Street and Steelworks Road, and a Storage World on the north-western corner of the intersection of Industrial Drive and Ingall Street.

Existing Traffic Conditions

The most recent Roads and Maritime Service (RMS) traffic volume data have been obtained to determine the historical traffic growth and current mid-block traffic flows on Industrial Drive. The data show that between 1995 and 2004, there has been an average yearly growth rate of 0.27% in the surrounding area. However, a growth rate of 1% was specified by RMS for the traffic impact assessment undertaken for the Mayfield Concept Plan, and this rate has been used to assess traffic volumes associated with the modification for consistency and conservatism.

To obtain more recent traffic data and provide a better understanding of peak hour traffic conditions at the Industrial Drive / Ingall Street intersection, a classified intersection traffic count was commissioned on 6 September 2012. The survey was conducted for two hours in the weekday AM peak (7:00-9:00am) and the PM peak (4:00pm-6:00pm). The survey identified peak hours of 7:30-8:30am and 4:30-5:30pm. Using this information, the performance of the Industrial Drive/Ingall Street Intersection was evaluated using SIDRA Intersection 5.1, a computer-based modelling package designed for calculating isolated intersection performance.

Modelling provides an indication of the Level of Service (LoS) of the intersection. LoS is a measure of the overall performance of an intersection with LoS A to C being good to satisfactory, LoS D being near capacity and LoS E to F being at or above capacity. Detailed descriptions of the different LoS can be found in Appendix B.

The analysis indicates that the Industrial Drive/Ingall Street Intersection currently operates at LoS B during both AM and PM peak hour periods. The Industrial Drive/Ingall Street intersection operates with spare capacity of approximately 35% and 29% in the AM and PM peaks respectively.

8.1.2 Potential Impacts

Traffic Generation

The TIA considered the future operational performance of the Industrial Drive/Ingall Street intersection, in the context of the expected background traffic growth, for two scenarios: without and with traffic volumes proposed to be generated as part of the throughput increase.

Without Project Related Traffic

The future performance and capacity assessment of the intersection without Project related traffic was undertaken to provide a base case and benchmark for the impact assessment.

A base year of 2014 for traffic generation has been chosen. It is understood that in the future year base case scenario, the approved Phase 1 and Phase 1A development of the Facility would be fully operational, and as a result, the traffic movements from the these operations have been included in the base year traffic. The Phase 1

and Phase 1A combined throughput of 400ML per annum generates two tanker movements (one in and one out) and seven staff vehicle movements in peak hours.

As of late 2013 Stolthaven is the only operating facility within the Concept Plan area. It is understood that the only other development approved for the Concept Plan area, the ICL Cement Terminal, is on hold. Therefore no other developments within the Concept Plan area have been considered in the TIA.

With Project Related Traffic

Based on a throughput of 500ML pa and a tanker capacity of 50,000L, a total of 10,000 tankers would access the Facility per annum. Operating 365 days a year, yields an average daily requirement of 28 tankers, which equates to 56 tanker movements per day (28 in and 28 out). Despite this, due to changes in customer demand requirements, the Facility may need to increase movements on any given day up to 112 movements. Across a year, this would mean total traffic movements would average out to a lower number in accordance with the Facility's 500ML pa capacity limit. Using the 112 movements per day provides a worst case conservative assessment from which to examine impacts.

Of these heavy vehicle trips, 60% would be concentrated from 7am to 4pm; therefore there is an AM arrival peak and PM departure peak. Based on a nine-hour peak operation, this equates to a worst case of average of eight truck movements per peak hour. The Phase 1 and Phase 1A development generate four tanker movements per peak hour. Therefore, the throughput increase would generate an additional four tanker movements per peak hour (two in and two out).

The existing access via Ingall Street would be used to access the Facility, with 80% of the traffic coming from the north and 20% from the south, which is consistent with the Mayfield Concept Plan. Table 4 summarises the distribution of the additional operational traffic generated. Operational access and egress for the Facility is shown in Figure 4.

Table 4 Distribution of Additional Operational Traffic

Directional split	AM Peak		PM Peak	
	In	Out	In	Out
From/to North	2	2	2	2
From/to South	0	0	0	0
Total	**2**	**2**	**2**	**2**

Intersection Performance

A summary of peak hour intersection performance is provided in Table 5 for the 2012, 2014 without project and 2014 with project scenarios. The key result to determine the impact of increased traffic on the performance of the intersection is the final LoS after modification traffic is factored into the intersections operation. Detailed outputs of the SIDRA Intersection 5.1 modelling results are provided in Appendix B.

Table 5 Summary of SIDRA Results for Industrial Drive/Ingall Street Intersection

Intersection	AM Peak				PM Peak			
	Vehicles Per Hour	Deg. of Satn.*	Avg. Delay (s)	Level of Service	Vehicles Per Hour	Deg. of Satn.*	Avg. Delay (s)	Level of Service
2012	3,057	0.648	17.9	B	3,155	0.706	23.0	B
2014 without Project	3,131	0.667	18.1	B	3,231	0.738	23.9	B
2014 with Project	3136	0.668	18.2	B	3235	0.738	23.9	B

*Degree of Saturation Scale of 0 (low saturation) to 1 (high saturation).

Once operational, analysis indicates a negligible impact of the increased throughput to overall intersection performances during the 2014 AM and PM peaks. The intersections would continue to operate at LoS B in both peak periods. The spare capacity of the Industrial Drive/Ingall Street would reduce slightly in the PM peak. As detailed in Appendix B, an LoS of B indicated a good operation with spare capacity. LoS C indicated an intersection is operating satisfactorily, and LoS D indicated operation near capacity.

Consistency with Mayfield Concept Plan

The proposed throughput increase, to a maximum of 500 ML per annum, and the worst case proposed increase in traffic volumes of up to 112 truck movements per day, is within the development envelope established and assessed for the Mayfield Concept Plan's Bulk Liquid Precinct as originally approved. Despite recent modification to the Concept Plan that removed precinct boundaries, 112 movements per day was originally demonstrated in the Concept plan EA (AECOM, 2010) to be within acceptable levels(refer Appendix B). As no other elements of the Concept Plan are proposed to be developed to any significant extent during 2014 or in the immediate future, the TIA demonstrates that the Facility can operate without triggering intersection upgrades for the Industrial Drive/Ingall Street intersection. Therefore traffic associated with the proposed throughput increase is consistent with the conditions of approval of the Concept Plan.

The TIA has demonstrated that the road network has existing capacity to operate based on 2014 traffic levels. In regards to longer term traffic impacts, conditions 2.3 – 2.9 of Schedule 3 of the Concept Plan approval puts in place requirements for NPC to undertake certain studies and recommend appropriate infrastructure upgrades to manage traffic growth over time. It is considered that future traffic growth impacts can be appropriately managed through the Concept Plan approval requirements.

Internal Access and Parking Criteria

Operational activity would continue to take place 24 hours a day, 7 days a week, in accordance with the Phase 1 and Phase 1A Project Approval (08_0130). Eight onsite parking spaces are provided for staff parking in a designated area next to the entrance of the Facility. No increase in employee numbers is proposed as part of the Project, hence there is no requirement for additional operational staff parking.

8.1.3 Management and Mitigation Measures

A Traffic Management Plan was prepared for the existing Facility, in accordance with the original project approval, and was prepared in consultation with NPC, Hunter Development Corporation (HDC), Newcastle City Council (NCC) and the Roads and Maritime Service (RMS).

Measures identified to manage potential traffic impacts include:

- An induction process for drivers;
- Entry and exit conditions; and
- Approved operational access and egress routes via Steelworks Road to the Industrial Highway.

The Traffic Management Plan would be amended to incorporate the increased traffic numbers expected to be generated as a result of the proposed throughput increase.

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AECOM

SITE ACCESS

Bulk Fuel Storage Facility,
Proposed Throughput Increase

FIGURE 4

8.2 Noise and Vibration

A Noise and Vibration Impact Assessment (NVIA) was prepared by AECOM for the approved Phase 1 and Phase 1A Bulk Fuel Storage Facility EAs in July 2011 and March 2013 respectively. To assess the potential noise impacts of the increased throughput proposed in this modification an NVIA has been prepared. Results of the NVIA are summarised in the following section and the full report is attached at Appendix C.

8.2.1 Existing Environment

The nearest residential areas to the site are located to the south-west of the project site at Mayfield, with the closest receptors in Crebert Street, approximately 900 m from the proposed terminal site. To the south east there are residential receivers located in Carrington, approximately 2km away.

In order to establish the existing noise environment adjacent to the project area, ambient noise monitoring results presented in a noise assessment that incorporates the project area has been reviewed in addition to attended and unattended measurements undertaken by AECOM. The following noise assessments were referenced:

- *"Mayfield Site Port-Related Activities Concept Plan EA"*, Report No. 09077, Revision F, July 2010 by Wilkinson Murray; and
- *Noise Impact Assessment, Modification of Project Approval 08_0129*, by AECOM referenced as 60306451, Rev 3, dated 13 November 2013.

Information from this report was incorporated into a Noise and Vibration Impact Assessment undertaken specifically for the proposed modification. A copy of the Noise and Vibration Impact Assessment is attached at Appendix C**.**

As part of previous assessment noise loggers where used to examine background noise levels for the purpose of establishing baseline criteria for further assessment of potential noise impact form the modification. A noise logger measures the noise level over the sample period and then determines L_{A1}, L_{A10}, L_{A90}, L_{Amax} and L_{Aeq} levels of the noise environment. The L_{A1}, L_{A10} and L_{A90} levels are the noise levels exceeded for 1%, 10% and 90% of the sample period respectively. The L_{Amax} is indicative of maximum noise levels due to individual noise events. The L_{A90} is taken as the background noise level.

Using the obtained environmental noise data, project specific noise criteria have been calculated in accordance with the NSW Industrial Noise Policy (INP) (EPA, 2000). The project specific noise criteria are described below with further detail provided in Appendix C.

Project Specific Criteria

As there is no construction proposed as part of the modification, no construction noise assessment is necessary.

Operational Noise

Industrial noise emissions are assessed against the requirements of the INP. In relation to residential receivers, the INP specifies two noise criteria: an *intrusiveness criterion* which limits Leq noise levels from the industrial source to a value of a 'background plus 5dB and an *amenity criterion* which aims to protect against excessive noise levels where an area is becoming increasingly developed. The actual project specific noise goals are the lower of the intrusiveness and amenity criteria, in each of the time periods 'day,' 'evening' and 'night.' Both *amenity* and *intrusiveness* criteria are shown in Table 6**.**

Table 6 Project Specific Noise Levels

Receiver area	Period	RBL ($L_{A90, 15\ minute}$)	Intrusive criterion RBL + 5, ($L_{Aeq, 15\ minute}$)	Ambient ($L_{Aeq, period}$)	Industrial contribution, ($L_{Aeq\ 15\ minute}$)	Amenity criterion[1] ($L_{Aeq, Period}$)
Mayfield	Day	43	**48**	58	48[4]	**60**
	Evening	38	**43**	46	47[5]	**47**
	Night	37	**42**	47	45[3]	**37**
Carrington	Day	44	**49**	57	57[2]	**57**
	Evening	43	**48**	54	54[2]	**44**
	Night	39	**44**	46	47[3]	**37**
Stockton	Day	47[6]	**52**	58	47[2]	**55**
	Evening	46[6]	**51**	54	47[2]	**37**
	Night	46[6]	**51**	54	47[2]	**37**

Notes:

1) The amenity criterion has been modified in accordance with the industrial contribution adjustment in Table 2.2 of the EPA INP;

2) *Mayfield Site Port-Related Activities Concept Plan EA"*, Revision F, July 2010 by Wilkinson Murray;

3) AECOM attended measurement, 16 January 2012;

4) AECOM attended measurement, 15 September 2011;

5) This industrial contribution has been based upon the evening Mayfield industrial contribution presented in *"Noise Impact Assessment, Marstel Terminals Newcastle, Mayfield (BHP) Site, NSW"*, 2008 by Spectrum Acoustics; and

6) 218 Fullerton Road, Stockton from AECOM report *Noise Impact Assessment, Modification of Project Approval 08_0129*, referenced as 60306451, Rev 3, dated 13 November 2013, with measurements undertaken from 20 May 2013 until 28 May 2013.

Operational Vibration

Vibration criteria are set primarily according to whether the particular activities of interest are continuous in nature or intermittent, whether they occur during the daytime or night-time and the type of receiver to be assessed e.g. commercial or residential.

The effects of vibration in buildings can be divided into three main categories:

- Those in which the occupants or users of the building are inconvenienced or possibly disturbed, i.e. human disturbance or discomfort;
- Those in which the integrity of the building or the structure itself may be prejudiced; and
- Those where the building contents may be affected.

Therefore, vibration levels at sensitive receiver locations must be controlled so as to prevent discomfort and regenerated noise, and in some extreme cases, structural damage.

The existing nearby industrial developments are located approximately 50 metres from the boundary of the proposed bulk fuel storage site. Those facilities are neither noise nor vibration sensitive. At such distances, the risk of discomfort, regenerated noise and structural damage impacting receivers from a result of operations is extremely low and needs not to be considered further.

Mayfield Concept Plan Site Noise Model

As part of the Concept Plan Approval NPC is required to prepare a Site Noise Model for the future assessment and management of Project associated noise across the Concept Plan area. It is understood that this model has been developed and is in the process of being implemented by NPC.

Given that the Project proposes a modification to the existing Project Approval, for consistency this modification has been assessed using the existing model developed for the original Project Approval. The existing model was

also used in the assessment of MOD 1. Having been issued prior to the approval of the Concept Plan, the Project Approval could not have been assessed under the requirements of the Concept Plan.

It should also be noted that the model used in the assessment of this modification take into account appropriate background data and in accordance with EPA requirements.

All future Project Applications within the Concept Plan Area would be assessed under the Mayfield Concept Plan Site Noise Model in accordance with the requirements of NPC.

8.2.2 Potential Impacts

Operational Noise Impacts

Operational Noise

The results of the environmental noise emissions during normal operations, temperature inversion and prevailing wind conditions, from the Facility have been predicted to nearby representative receiver locations.

The predicted noise levels have been assessed against the INP amenity criteria (Refer Table 7) and against the INP intrusiveness criteria (Refer Table 8). Noise contour maps for both scenarios are presented in Appendix C.

Table 7 Noise Contribution at Representative Receiver Locations during Night-time Operational Conditions – Amenity Criteria

Receiver	Criterion	Neutral		Temperature inversion (F-Class, 3˚C/100 m)		3 m/s source to receiver wind	
		Result	Exceed	Result	Exceed	Result	Exceed
R1	37	19	-	23	-	24	-
R2	37	26	-	30	-	31	-
R3	37	21	-	25	-	25	-
R4	37	26	-	30	-	31	-
R5	37	<15	-	18	-	19	-
R6	65	24	-	29	-	29	-
R7	37	21	-	24	-	25	-
R8	37	21	-	24	-	25	-
R9	37	<15	-	17	-	17	-
R10[1,2]	45	26	-	29	-	30	-
R11	70	45	-	46	-	47	-

Notes:

1) In the INP the school classroom criteria is an internal noise level, with an acceptable noise level of 35 dB(A) and a recommended maximum of 40 dB(A). A 10 dB reduction has been assumed between external and internal noise levels based upon a window being open for adequate natural ventilation.

2) The noise impacts on schools are to be assessed during school hours. As there is not a significant variation in noise levels between the day and night operations, the predicted night-time noise levels at the school have been assessed against the school criteria to determine the noise impact.

Table 8 Noise Contribution at Representative Receiver Locations during Night-time Operational Conditions – Intrusiveness Criteria

Receiver	Criterion	Neutral		Temperature inversion (F-Class, 3˚C/100 m)		3 m/s Source to receiver wind	
		Result	Exceed	Result	Exceed	Result	Exceed
R1	42	24	-	28	-	29	-
R2	42	31	-	35	-	35	-
R3	42	26	-	30	-	30	-
R4	42	30	-	34	-	35	-
R5	44	18	-	23	-	23	-
R6	-	29	-	33	-	34	-
R7	42	26	-	29	-	30	-
R8	42	25	-	29	-	30	-
R9	51	15	-	21	-	21	-
R10[1,2]	45	31	-	34	-	35	-
R11	-	51	-	52	-	53	-

Notes:

1) In the INP the school classroom criteria is an internal noise level, with an acceptable noise level of 35 dB(A) and a recommended maximum of 40 dB(A). A 10 dB reduction has been assumed between external and internal noise levels based upon a window being open for adequate natural ventilation.

2) The noise impacts on schools are to be assessed during school hours. As there is not a significant variation in noise levels between the day and night operations, the predicted night-time noise levels at the school have been assessed against the school criteria to determine the noise impact.

The predicted operational industrial noise levels presented in Table 7 and Table 8 indicate that compliance is predicted under neutral and prevailing meteorological conditions at all assessment locations during the night-time period, which also results in compliance during the daytime, evening periods.

Additionally, it should be noted that the predicted noise levels in Table 7 and Table 8 would also meet the requirements of the existing approval and licence conditions presented in Appendix C.

Sleep Disturbance

The night-time sleep disturbance assessment has been undertaken against the most stringent meteorological condition. As such predicted noise levels for 3 m/s source to receiver winds and F-Class temperature inversion has been predicted for all receiver locations, and as the noise levels are generally higher for the 3 m/s source to receiver winds situation, only these results have been presented. The results are presented in Table 19 in Appendix C. Noise contour maps are also provided in Appendix C.

The 900m separation between the site and the nearest residential receivers means that the maximum external noise levels are not predicted to exceed 51 dB(A) due to the night-time operations of the Facility. Therefore, the assessment indicates compliance with the sleep disturbance screening criterion at all assessment locations during the night-time period.

Road Traffic Noise

Predicted traffic noise increases on roads surrounding the proposed development have been predicted to be less than 1 dB(A) for the completed Facility following the increase in throughput based upon the estimated daily vehicle movements presented in Table 21 of Appendix C. The existing traffic noise levels were presented in the Spectrum Report No.07314 dated September 2008. Even though the existing traffic noise levels exceed the recommended traffic noise criteria in accordance with the RNP, the increase in traffic noise as a result of traffic from the project site would not have a noticeable impact on sensitive receivers adjacent to Industrial Drive, Mayfield, and it would not be reasonable or feasible to provide noise mitigation measures as the worst case traffic noise increase from the project site would not be noticeable to nearby receiver locations.

Operational Vibration

As detailed in Section 8.2.1 due to the nature of the proposal and the existing offset distances to the nearest receivers, operational vibration impacts would be negligible.

8.2.3 Management and Mitigation Measures

The Noise and Vibration Impact Assessment for the proposed modification to the Bulk Fuels Facility made the following conclusions in relation to development phases and noise criteria.

Operational noise and Vibration

The operational environmental noise emission criteria for the development have been quantified in Appendix C have been established to comply with the EPA's Industrial Noise Policy (INP, 2000).

The operational noise impact assessment indicates compliance under neutral and prevailing meteorological conditions at all assessment locations during the daytime, evening and night-time periods.

No items of plant and equipment used in operation of the project site are expected to generate significant levels of vibration and therefore, operational vibration impacts are consequently expected to be negligible.

Sleep Disturbance

A sleep disturbance assessment has been conducted, which indicates compliance at all assessment locations during the night-time period.

Cumulative noise Impacts

An assessment of the cumulative impact of concurrent construction noise and vibration activities was undertaken. As there are no other known approved construction activities to occur concurrently with the proposed construction works there would not be any additional increase in the predicted noise impacts from construction activities on nearby noise sensitive receiver locations.

An assessment of the cumulative operational noise impacts from other industrial sites nearby to the project site in addition to the project site was undertaken to determine the total noise exposure of nearby receivers. The assessment has found that the modification would not increase the existing and approved noise levels at nearby receiver locations.

Road traffic Noise

The construction and operational road traffic noise assessment was conducted in accordance with EPA's Road Noise Policy (RNP, 2011) guideline.

The road traffic noise assessment associated with construction and operational phases of the Bulk Fuel Facility conforms with RNP acoustic criteria.

Summary

Noise impacts associated with the modification would be within the relevant project environmental noise criteria.

It is recommended that should the modification be approved, the Facilities Noise and Vibration Management Plan be reviewed and updated to ensure all reasonable and feasible noise and vibration management measures have been incorporated into the operation of the site.

8.3 Air Quality

Air Quality Impact Assessments (AQIA) were prepared by AECOM for the approved Phase 1 and Phase 1A Bulk Fuel Storage Facility EAs in July 2011 and March 2013 respectively. To assess the potential air quality impacts of the increase in throughput proposed in this modification, an AQIA has been prepared examining the potential impacts of the 500ML per year throughout of fuels. Results of the AQIA are summarised in the following sections and the full report is attached in Appendix D.

8.3.1 Existing Environment

Newcastle's air quality has improved in recent years following the cessation of steel manufacturing in the area. A number of pollutant sources remain, however, including industrial, domestic and transportation activities, with motor vehicles considered to provide the greatest emission load to local air sheds. The primary pollutants of concern in the Newcastle airshed are particulate matter and photochemical smog/ozone and its precursors (oxides of nitrogen and Volatile Organic Compounds (VOCs)). Industrial emissions sources include the nearby Orica and Incitec plants, and the Tomago Aluminium smelter. Dust emissions arise from the coal and grain terminals, while odour emissions from seed processing (Cargill) and coal tar processing (Koppers) commonly affect the Mayfield and Kooragang Island areas. There are three other fuel storage facilities in Newcastle: Caltex (Wickham), BP (Carrington) and Shell (Hamilton), which are located adjacent to or near to residential areas.

The main emissions of interest for fuel storage activities are VOCs. VOCs are organic compounds with a vapour pressure exceeding 0.13 kPa at a temperature of 20^{o}C. VOCs have been implicated as a precursor in the production of photochemical smog, which causes atmospheric haze, eye irritation and respiratory problems. VOCs can be emitted from storage tanks, filling stations vents, pipelines and process equipment leaks at plant associated with fuel storage.

Mayfield Concept Plan Site Air Quality Model

As part of the Concept Plan Approval NPC is required to prepare a Site Air Quality Model for the future assessment and management of Project associated air quality across the Concept Plan area. It is understood that this model has been developed and is in the process of being implemented by NPC.

Given that the Project proposes a modification to the existing Project Approval, for consistency this modification has been assessed using the existing model developed for the original Project Approval. The existing model was also used in the assessment of MOD 1. Having been issued prior to the approval of the Concept Plan, the Project Approval could not have been assessed under the requirements of the Concept Plan.

It should also be noted that the model used in the assessment of this modification take into account appropriate background data and in accordance with the EPA *Approved Methods for the Modelling and Assessment of Air Pollutants* (DEC, 2005).

All future Project Applications within the Concept Plan Area would be assessed under the Mayfield Concept Plan Site Air quality Model in accordance with the requirements of NPC.

8.3.2 Potential Impacts

As there is no construction required for the modifications there would be no construction-related air quality impacts, specifically dust, as a result of construction activities.

Potential operational air quality impact sources from the proposed modification would be consistent with those identified for the original Project. These are:

- Emissions from trucks and shipping; and
- Emissions from the storage tanks and tankers during the transfer and storage operations.

The main emissions from fuel storage activities are VOCs. These are typically emitted from unleaded petrol (ULP) storage tanks, filling stations vents, pipelines and plant associated with ULP storage. Whilst VOCs are not typically associated with diesel based on feedback received from the Environmental Protection Authority in relation to the Phase 1 EA, cumene has been chosen as the indicator VOC for the Project. In order to determine likely cumene levels in the local air shed as a result of the modification modelling was undertaken using AUSPLUME v6.0. AUSPLUME has been used for consistency with the modelling undertaken for the for Phase 1 and 1A environmental assessments.

AUSPLUME v6.0 is an advanced Gaussian plume dispersion model developed by the Victorian EPA. AUSPLUME is approved by the EPA for use in regulatory assessments undertaken in NSW. The model uses the Gaussian

dispersion model equation to simulate the dispersion of a plume from point, area or volume sources. The model requires a meteorological data file that provides wind speed, wind direction and other dispersion parameters on an hourly basis. The plume dispersion is determined for each hour using the conventional Gaussian model assumptions. Dispersion modelling for this assessment was undertaken in accordance with the guidelines published by the EPA.

For consistency with the Phase 1 and 1A air quality assessments, meteorology was chosen from the Bureau of Meteorology (BOM) station at Williamtown, approximately 13 km northeast of the proposed Site. Selected regional meteorological data were obtained from the BOM Williamtown monitoring station for input into the AUSPLUME model. Further details regarding the climate data used in the modelling is included in Appendix D.

Other modelling inputs include impacts from ships, the approved tanks and truck filling station, terrain effects, building wake effects, source characteristics emissions inventories and sensitive receiver characteristics. Appendix D contains further discussion in relation to these inputs.

Table 9 shows the maximum predicted hourly ground level concentration of cumene at the sensitive receptor with the highest modelled (Receptor 9 as described in Appendix D) exposure. As the highest modelled exposure at a receptor complies with the EPA criteria, no exceedance of the hourly ground level concentrations are expected at other receptors. A full list of the modelled hourly ground level concentrations for each of the modelled receptors is included in Appendix D.

Table 9 Predicted Maximum Ground Level Concentrations of Cumene (µg/m^3) at Sensitive Receptor Locations

Receptor / Criteria	1 Hour Cumene Concentration (µg/m^3)	
	99.9th Percentile	100th Percentile
Maximum Predicted Concentration at a Sensitive Receptor	*14.4*	*19.1*
Criterion (NSW EPA, 2005)	***21***	***NA***

It should be noted that the assessment was conservative in that the modelling assumed constant emissions; in reality, substantial emissions would only occur during tank and truck filling activities. As cumene was used as an indicator pollutant, the results suggest no adverse impacts are likely to occur from emissions of VOCs from the proposed facility.

A plot showing the predicted concentration contours is shown in Figure 5.

Projects\603111678_Stolthaven_Ph_2\4_Tech work area\4.5 Graphics\FIGURES\Modification 2014\Proposed Throughput Increase\603111678 F5 Predicted 1 Hour Cumene Concentrations 05 05 2014 TO

AECOM

PREDICTED 1 HOUR CUMENE CONCENTRATIONS 99.9th PERCENTILE

Bulk Fuel Storage Facility,
Proposed Throughput Increase

FIGURE 5

8.3.3 Management and Mitigation Measures

The AQIA investigated the potential air quality impacts of the proposed throughput increase on surrounding receptors. For consistency with previous impact assessments undertaken for the Facility, cumene was chosen as an indicator species for VOCs, and was the only pollutant modelled.

The results of the modelling predicted that cumene concentrations would be less than the EPA guideline criterion at all sensitive receptor locations and at all locations beyond the boundary of the Stolthaven facility. As such, no significant air pollutant impacts on the surrounding environment would be expected from the increased throughput.

While no specific measures are recommended for the management of air quality impacts associated with the modification, Stolthaven would:

- Review the existing site Air Quality Management Plan and make the necessary updates to accommodate the increased throughput;
- Seek a variation to increase the throughput permissible under EPL 20193. Changes to air quality monitoring required under the EPL would be reflected in the updated Air Quality Management Plan; and
- Consult with NPC regarding the Air Quality Management Plan and provide NPC with the air quality modelling details for input into the NPC Mayfield Concept Plan Site Air Quality Model.

9.0 Other Environmental Considerations

As described in Section 7.0, the identification of environmental issues concluded that a number of environmental factors were considered to have a low level of impact or potential impact on the environment and community as a result of the proposed modification. Despite this an assessment of these environmental aspects, as they apply to the modification has been undertaken.

9.1 Hazard and Risk

A Preliminary Hazard Analysis (PHA) was undertaken to assess the potential risks of the Facility. The PHA was submitted with the Project EA and undertaken in accordance with the NSW DP&I's Applying SEPP 33: Hazardous and Offensive Industry Development Application Guidelines (DP&I, 1994). Due to the inert nature of the materials stored (combustible not flammable) and handled at the Facility, as well as the nature of the surrounding land uses (industrial, with the nearest residential area located approximately 900 m away), a qualitative form of analysis was undertaken. It assessed the potential for the Project to result in additional risk to the community and found that the Facility would not result in a significant risk with appropriate safety measures in place.

The modification does not propose to increase the amount of fuels that can be stored at the Facility or change any of the sites infrastructure as previously approved, nor does the modification propose a change in the type of fuels that would be stored. The Facility would continue to only store combustible (diesel and biodiesel) fuels.

The modifications would not result in changes to the site's fire and safety management systems, the design of which has been approved by NSW Fire and Rescue.

Given that the modification does not propose an increase or change in the type of fuels that can be stored in the Facility or how they are stored, there would be a negligible change in the level of risk the Facility presents. The additional throughput would require additional handling (pumping) of fuels. To minimise the potential for this increased handling of fuels to present a risk, plant preventative maintenance schedules would be updated in accordance with manufactures requirements to minimise the potential for leaks or spills that may led to a hazard occurring.

9.2 Soil and Water

9.2.1 Water

The Facility has an existing stormwater management system in place as described in the Phase 1 EA, The stormwater system has been designed to provide the effective containment of stormwater from the Site, to capture leaks and spills which may occur, from discharging to the Hunter River, and to facilitate the discharge of only clean stormwater to the Hunter River.

In the event that stormwater is not suitable for release to the Hunter River, the contaminated water would be disposed of offsite by a licensed contractor. The remaining water would be retested and, if clean, discharged to the Hunter River via the outlet point into the stormwater drain that runs along the western boundary of the site.

Given the nature of the modification there would be no changes to the water management infrastructure or systems at the Facility. Therefore no potential impacts and mitigation measures associated with construction works are required.

The existing Environmental Management Plan describes the measures undertaken onsite to minimise potential surface and groundwater impacts.

9.2.2 Soils

With no construction activities or changes to infrastructure proposed as part of the modification no excavation or disturbance of soils is required.

Due to the increase in throughput there may be increased potential for contamination impacts to occur due to the increase in handling, transfer and transport of fuels (increased potential for leaks and spills). Tank leakage and fuel transfer equipment malfunction or failure can potentially release various fuels into the soils and potentially groundwater. The existing separation of tanks, the pumping facilities and the truck loading gantry by bunds would continue to minimise the spread of, and effectively contain, spilled of leaked fuels.

The sites existing groundwater monitoring system would continue to operate in accordance with the requirements of EPL 20193 following the modification to detect leaks and spills into soils. The quarterly monitoring required by the EPL provides an indication of potential soil contamination should leaks or spills occur.

No additional mitigation measures are anticipated to be required to manage potential soil impacts.

9.3 Waste

No construction waste would be generated by the modification. Given that the Facility primarily operates as a storage facility and does not involve the refining of fuels, and given the low level of personnel employed at the site, the existing Facility does not produce significant quantities of operational waste. Waste streams generated by the operation of the Facility, their classification and approximate quantities were identified as part of the Phase 1 Environmental Assessment (AECOM, 2011). The proposed modification would give rise to similar waste streams.

Additional waste generated as a direct result of the modification would be minor with expected waste levels as generated from the Facilities existing staff unlikely to change due to the modification.

9.4 Greenhouse Gas

Greenhouse gases (GHGs) are gases found in the atmosphere that absorb outgoing heat that is reflected from the sun. The primary GHG is carbon dioxide (CO_2). Different GHGs have different heat absorbing capacities. In order to achieve a basic unit of measurement, each GHG is compared to the absorptive capacity of CO_2, and measurements and estimates of GHG levels are reported in terms of CO_2 equivalent emissions (CO_2-e).

Estimation of the GHG emissions associated with the proposed terminal's operations was undertaken using the emission factors and methods outlined in the National Greenhouse Accounts (NGA) Factors[1]. The NGA Factors provide three types of assessment categories:

- **Scope (1)**, which covers direct emissions from sources within the boundary of an organisation, such as fuel combustion and manufacturing processes;
- **Scope (2)**, which covers indirect emissions from the consumption of purchased electricity, steam or heat produced by another organisation; and
- **Scope (3)**, which includes all other indirect emissions that are a consequence of an organisation's activities but are not from sources owned or controlled by the organisation; that is, emissions associated with the production or consumption of fuels, and emissions associated with the transmission and distribution of purchased electricity.

The main operations likely to generate GHGs at the Facility are:

- **Electricity Consumption** – Electricity to run plant operations such as administration buildings, fuel pumps, and plant lighting (Scopes 2 and 3);
- **Delivery and distribution** – Movement of fuels via road and ship tanker (Scope 3);
- **Staff trips** – Passenger vehicles transporting staff to and from site (Scope 3); and
- **Use of product fuel** – Combustion of fuel distributed from the facility (Scope 3).

For this assessment, estimation of emissions was undertaken for the activities listed above for both the approved operation and modification to estimate the change in emissions associated with the proposed modification. The results summarised in **Table 10**. It is noted this estimation has been refined from the Phase 1A modification which also looked at GHG emissions associated with 500ML however with varying traffic and shipping.

[1] DECCEE. (2012). Australian National Greenhouse Accounts - National Greenhouse Accounts Factors, July 2012. Commonwealth of Australia (Department of Climate Change and Energy Efficiency).

Table 10 Greenhouse Gas Emissions Summary

Activity	Estimated total GHG Emissions (t CO_2-e/year) for existing facility and proposed modification
Electricity consumption	432
Fuel consumption – delivery and dispatch (truck)	3,135
Fuel consumption – delivery (ship[1])	6,080
Fuel consumption – staff commuting	26
Fuel consumption by end users	100,170
Total GHG emissions	109,831

While the proposed modification is associated with an increase in GHG emissions, the scale of these emissions in the broader context of GHG emissions from the transport sector and from Australia as a whole is not considered significant. As shown, the total emissions of the proposed modification were estimated at 0.1 Mt CO_2-e per year (based on an additional 500ML throughput), equating to approximately 0.02 % of the total Australian emissions (560.8 Mt CO_2-e) and 0.46 % of the total transport emissions in Australia in 2010 (23.9 Mt CO_2-e). The greatest contributor to emissions was the consumption of the fuel supplied by Stolthaven to end users. As the actual throughput would only be an additional 100ML annually, emissions from the consumption of fuels as a result of the modification would be significantly lower representing a fraction (20%) of that modelled.

Furthermore this assessment needs to take into consideration the large reduction (estimates to be around 5,500per annum) in Sydney to Newcastle heavy vehicle movements that will be displaced by the delivery of fuels directly to Newcastle. This reduction in trips would significantly offset GHG generated by the modification.

Under the existing approval, Stolthaven is required to prepare an Energy Efficiency and Greenhouse Gas Management Plan. This plan would be modified to include the proposed modifications, if approved, and will include measures to reduce and mitigate energy use associated with the facility.

The relationship between GHG concentrations and climate change is very complex and nonlinear. The proposed project represents a very minor source of GHG emissions, both in terms of the economic sector emissions and Australia's national emissions. As such, the proposed project is not expected to significantly adversely affect the environment, as a result of GHG production.

10.0 Cumulative Impacts

The Mayfield Concept Plan took into consideration the impacts of a Bulk Fuels Facility with the characteristics of a facility which is approximately double the operational size of this proposal. It is considered that the cumulative impacts determined by the Concept Plan provide a conservative assessment of the potential cumulative impacts resulting from the proposal. At the time of writing, Stolthaven is the only operational facility within the Concept Plan area and there are no plans for any other facility to become operational.

The main potential for cumulative impacts to occur as a result of the modification, are in relation to air quality and noise impacts. The modelling undertaken for noise and air quality and (Appendix C and Appendix D respectively) have incorporated existing background impacts in the modelling. These background levels included the impacts of other air and noise impact sources providing a cumulative assessment of potential impacts.

The traffic assessment undertaken in Section 8.1 includes assessment of future potential impacts to the road network, including potential increases under traffic growth scenarios where cumulative impact may occur. Under these scenarios no significant impacts where identified.

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11.0 Statement of Commitments

11.1 Introduction

The following Statement of Commitments (SoC) provides a summary of the environmental management and monitoring that would be undertaken as a result of the modification.

Stolthaven commits to the updating of environmental management and monitoring plans prepared as part of the original Project Approval, as modified, with the environmental mitigation measures detailed in Table 11. Where applicable, management plans for the approved facility will be amended and used for the management of the proposed modification. Additionally, where monitoring and management plans specified by the Concept Plan Approval are required, these will supersede site specific management plans in accordance with the Concept Plan Approval.

11.2 Commitments

The SoC has been prepared in respect of the proposed modification and has been compiled on an issues basis, as informed by the EA and the environmental risk analysis. The SoC has been written in a format which can be incorporated into approval conditions and is shown in Table 11. Where the use of management plans has been committed, these may take the form of additions to, and extension of, management plans which have been prepared for Phase 1 to provide a single set of management documents for Stolthaven's Mayfield operations.

Table 11 Statement of Commitments

Environmental Matter	Commitments and Mitigations
Transport and Access	- The existing Traffic Management Plan will be reviewed and updated to incorporate additional traffic generated by the modification; - The Review and update will be undertaken with the Port of Newcastle, Newcastle Council and the roads and Maritime Service; and - The review will include consideration of any other traffic generating land uses in the vicinity not considered during its preparation.
Air Quality	- The existing site Air Quality Management Plan will be reviewed and updated to incorporate the modification.
Noise and Vibration	- The existing site Noise and Vibration Management Plan will be reviewed and updated to incorporate the modification; and - This will include a review of reasonable and feasible noise mitigation measures currently in place and recommend appropriate changes to minimise potential noise impacts.

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12.0 Project Justification

12.1 Justification

The proposed modification supports the ongoing use of the existing fuel terminal and will provide improved access to fuels for Hunter customers, particularly the mining sector. The proposed throughput increase makes use of the favourable position of the existing Facility in proximity to the Port and the arterial road network. The proposal would allow additional throughput to come through the Port of Newcastle with minimal changes to the current operation.

Increasing the throughput of the existing terminal would offset fuels currently being imported into the Hunter Valley from Sydney, by truck. This would result in a reduction the total number of kilometres travelled by trucks servicing the region. This would also result is less truck movements between Newcastle and Sydney and flow-on benefits in relation to safety and congestion.

12.2 Biophysical Factors

The potential biophysical effects associated with the proposed modification were assessed in Section 8.0 and Section 9.0. It was concluded that the residual risk associated with these potential impacts of the modification is low with appropriate management measures are implemented. The modification is therefore justifiable in terms of the biophysical elements of the environment.

12.3 Sociocultural Factors

The potential effects of the modification on social and cultural values and aspects (in the form of an assessment of potential impact on the community) that affect them were examined in Sections 8.0, and 9.0. It was concluded that the residual risk associated with these potential impacts of the modification is low with appropriate management measures are implemented. The modification is therefore justifiable in relation to these

12.4 Economic

The modification would provide economic benefits to the local, regional and State economies. Importantly the modification would support the ongoing operation of coal mines in the Hunter Valley that play a major role in supporting regional and State economies. The additional fuel supplied directly to the regional market would increase security of supply and provide greater competition and efficiency in the fuel market. The modification is therefore considered to be justifiable from the economic perspective.

12.5 Ecologically Sustainable Development

Schedule 2 of the EP&A Regulation establishes four primary principles of ESD, the precautionary principle; intergenerational equity; biological diversity and ecological integrity; and valuation and pricing of environmental resources. The application of these principles to the assessment of the modification is discussed below.

12.5.1 Precautionary Principle

The precautionary principle outlines the need to prevent environmental degradation whether a risk to the environment has been scientifically demonstrated or not. The identification of potential impacts to the environment through detailed specialist studies undertaken as part of this EA has identified that the modification would avoid significant environmental impacts, with appropriate environmental management measures in place. It is considered that an appropriate level of caution has been applied.

12.5.2 Intergenerational Equity

The principle of intergenerational equity aims to ensure that the health, diversity and productivity of the environment is maintained, or enhanced, for the benefit of future generations. This EA has demonstrated that the modification would have minimal impact on the environment or community. The modification would make use of an existing Facility on a site with a history of industrial use. It is considered that the modification is consistent with the principal of intergenerational equity.

12.5.3 Biological Diversity and Ecological Integrity

The original Project EA (AECOM, 2011) included an assessment of the potential impact to biodiversity and ecological integrity. This concluded that the Facility would have a negligible impact on biodiversity. As the proposed modification seeks to use the infrastructure approved as part of the existing site there will be a negligible impact on biodiversity.

12.5.4 Valuation and Pricing of Environmental Resources

The Intergovernmental Agreement on the Environment (IGAE) and POEO Act require improved valuation, pricing and incentive mechanisms to be included in policy making and program implementation. In the context of environmental assessment and management, this would translate to environmental factors being considered in the valuation of assets and services. Due to the type and relativity low scale nature of the proposed modification there would be negligible impact on the pricing and valuation of resources.

12.6 The Objects of the *Environmental Planning and Assessment Act 1979*

This EA has been prepared as per the requirements of Part 3A of the EP&A Act. In determining an application under the transitional arrangements for the former Part 3A, it is generally accepted that the Minister will have regard to the objects of the EP&A Act. The objects of the Act are found in Section 5 and are outlined below:

a) to encourage:

- *the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages of the purpose of promoting the social and economic welfare of the community and a better environment;*
- *the promotion and co-ordination of the orderly and economic use and development of land;*
- *the protection, provision and co-ordination of communication and utility services;*
- *the provision of land for public purposes;*
- *the provision of co-ordination of community services and facilities, and*
- *the protection of the environment, including the protection and conservation of native animals and pants, including threatened species, populations and ecological communities, and their habitats, and*
- *ecologically sustainable development, and*
- *the provision and maintenance of affordable housing,*

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

c) to promote increased opportunity for public involvement and participation in environmental planning and assessment.

The modification is compatible with these objects, as it is in keeping with the proper management, development and conservation of the resources and built landscapes in the vicinity of the Facility. The Facility would also potentially benefit the economy and community by providing infrastructure which is required to meet the current and predicted fuel demands of the Hunter Region. Increasing throughput through an existing Facility would maximise the use of existing port infrastructure without creating a disproportionate demand on resources and utilities.

The modification is compatible with zoning of the site under the Three Ports SEPP. In using existing port related infrastructure to maximise efficiency, the Project promotes economic use and development of land which has been specifically designated for that purpose as part of the Concept Plan to develop this area.

The Site is dedicated under Three Ports SEPP as land which is to be used for the development of port related infrastructure.

The modification is unlikely to create significant environmental risks for any threatened species, populations, or communities based on the investigations undertaken as part of the original Project EA and the fact that the development footprint won't change as originally approved.

Section 12.5 outlines how the modification complements the principles of ESD. The modification would assist the Hunter Region meet its current and future energy needs in a more efficient manner with minimal environmental impact, whilst also facilitating the distribution of renewable fuels.

With the closest residential area located over 900 m away from the Site, it is not anticipated that the modification would impact on residential areas that could affect housing availability or pricing.

Stolthaven has also initiated contact with the community during the planning and assessment phase of this Project as discussed in Section 6.0.

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13.0 Conclusion

The proposed modification is for the increase of throughput of fuels (diesel and biodiesel) through the existing Stolthaven Bulk Fuel Storage Facility by 100ML per year, to a total of 500ML per year. The land is leased from the Newcastle Port Corporation on the Mayfield Concept Plan Site in Newcastle, NSW. The additional fuel throughput will use existing capacity within the Facilities existing plant and infrastructure. The existing Facility is ideally suited to the increased throughput due to its deep berth port access and proximity to the arterial road network.

The proposed throughput increase would support an alternative supply chain for regular and renewable fuels within the Hunter Region. The ability to increase fuel imports directly into the Port of Newcastle will improve the efficiency of the fuel supply chain while reducing the need for fuel tankers to deliver fuel to the Hunter Valley by road from Sydney.

This EA has fully considered the beneficial and adverse effects of the proposed throughput increase, with full consideration of the principles of ESD. Given environmental mitigation measures outlined in this EA are to be implemented, it is unlikely that significant adverse impacts would occur within the area of the Bulk Liquid Fuels Storage Facility or on the surrounding environment.

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