

Stolthaven Bulk Liquids Fuel Storage Facility, Mavfield

Operational Noise and Vibration Management Plan

Stolthaven Bulk Liquids Fuel Storage Facility, Mayfield

Operational Noise and Vibration Management Plan

Client: Stolthaven Australia Pty Ltd

ABN: 26 075 030 992

Prepared by

AECOM Australia Pty Ltd

Level 21, 420 George Street, Sydney NSW 2000, PO Box Q410, QVB Post Office NSW 1230, Australia

T +61 2 8934 0000 F +61 2 8934 0001 www.aecom.com

ABN 20 093 846 925

28-May-2020

Job No.: 60212465

AECOM in Australia and New Zealand is certified to the latest version of ISO9001, ISO14001, AS/NZS4801 and OHSAS18001.

© AECOM Australia Pty Ltd (AECOM). All rights reserved.

AECOM has prepared this document for the sole use of the Client and for a specific purpose, each as expressly stated in the document. No other party should rely on this document without the prior written consent of AECOM. AECOM undertakes no duty, nor accepts any responsibility, to any third party who may rely upon or use this document. This document has been prepared based on the Client's description of its requirements and AECOM's experience, having regard to assumptions that AECOM can reasonably be expected to make in accordance with sound professional principles. AECOM may also have relied upon information provided by the Client and other third parties to prepare this document, some of which may not have been verified. Subject to the above conditions, this document may be transmitted, reproduced or disseminated only in its entirety.

Quality Information

Document Stolthaven Bulk Liquids Fuel Storage Facility, Mayfield

Ref 60212465_ONMP.08

Date 03-Sep-2019

Prepared by Tom Roseby

Reviewed by Patrick Martinez

Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
0	27-Sept-13	Draft for Review	Patrick Martinez Associate Director	
1	21-Oct-2013	Final for PCA review	Patrick Martinez Associate Director	
2	27-May-2014	Update for throughput increase to 400ML	Simon Murphy Project Manager	
3	28-Oct-2015	Update for throughput increase to 1,300ML (SSD_6664 MOD1)	Simon Murphy Project Manager	
4	30-Oct-2015	Update for throughput increase to 1,300ML (SSD_6664 MOD1) - Final	Simon Murphy Project Manager	
5	10-May-2018	Updated in line with new consent and EPL requirements - Draft	Simon Murphy Project Manager	
7	03-Sep-2019	Updated to include previous predicted noise levels	Simon Murphy Project Manager	
8	28-May-2020	SSD-6664 surrender - amendment	Ryan Duckmanton Site Manager	

Table of Contents

Abbreviations	i
1.0 Background	1
1.1 Introduction	1
1.2 Objective of the ONMP	2
1.3 Stolthaven Bulk Liquids Fuel Storage Facility description	2
1.3.1 Location	2
1.3.2 Operational activities and facilities	3
1.3.3 Operational noise sources	3
1.3.4 Hours of operation	3
1.3.5 Nearby sensitive receiver locations	3
1.4 Legal and regulatory requirements	6
2.0 Statutory Framework and Regulatory Guidelines	7
2.1 Legislation	7
2.2 Standards and guidelines	7
2.3 Development Consent (the consent)	7
2.4 Environment Protection Licence	10
2.5 Mayfield Concept Plan requirements	14
2.5.1 Stolthaven Stage 3 (SSD_7065) - Specific MCP Requirements	16
2.6 Updating of the plan	18
3.0 Noise Management and Mitigation Measures	19
3.1 Commencement of operations	19
3.2 Emergency fire pump operations	19
3.3 Operational vibration	19
4.0 Noise Monitoring and Reporting	20
4.1 Monitoring	20
4.1.1 Summary of monitoring requirements	21
4.1.2 Compliance tracking program	23
4.2 Reporting	23
4.2.1 EPA requirements	23
4.2.2 Mayfield Concept Plan reporting requirements	24
4.3 Investigation procedures for non-compliance	24
4.4 Corrective action	24
4.5 Direction by PON	25
5.0 Previous Noise Compliance Assessment Results	26
5.1 Reference documents	27
5.2 Reasonable worst-case intrusiveness scenario (15-minute period)	27
5.3 Reasonable worst-case amenity (whole of day, evening or night period) scenarios	30
5.4 Sleep disturbance assessment	32
6.0 Complaint Reporting and Responsibilities	33
6.1 Complaints and enquiries management	33
6.2 Complaint / Event reporting	33
6.3 Responsibilities and accountabilities	34
6.3.1 Community consultation	34
7.0 Data Storage and Plan Review	35
8.0 References	36

List of Figures

Figure 1	Approved Bulk Liquids Fuel Storage Facility	5
Figure 2	Site Operational Area for Derivation of MCP Noise Quota – Stolthaven Stage 3 (Not yet Constructed)	17

List of Tables

Table 1	Representative Sensitive Receiver Locations	4
Table 2	Project Conditions of Approval	8
Table 3	Environment Protection Licence 20193	10
Table 4	Mayfield Concept Plan Conditions of Approval	14
Table 5	Summary of MCP Noise Quotas for Noise Assessment for Stolthaven Stage 3 (SSD_7065)	18
Table 6	Summary of Site $L_{Aeq(15 \text{ minute})}$ Intrusive Noise Limits	21
Table 7	Summary of $L_{A1(1 \text{ minute})}$ Noise Limits	22
Table 8	Summary of Project's Cumulative Amenity Noise Quotas	22
Table 9	Predicted noise levels intrusiveness scenario (15 minute period) – Night Scenario 2015 & 2016	28
Table 10	Predicted noise levels intrusiveness scenario (15 minute period) – Night Scenario 2017 & 2018	29
Table 11	Predicted noise levels amenity scenario – Night scenario 2015 & 2016	30
Table 12	Predicted noise levels amenity scenario – Night scenario - 2017 & 2018	31
Table 13	Sleep disturbance assessment	32
Table 14	Key Project Personnel	34

Abbreviations

AS	Australian Standard
AS/NZS	Australian/New Zealand Standard
CENMT	Cumulative Environmental Noise Management Tool
CoA	The Minister for Planning's Conditions of Approval
DPIE	Department of Planning, Industry and Environment
EA	Environmental Assessment
EPA	NSW Environment Protection Authority (formerly Office of Environment and Heritage)
EPL	Environment Protection Licence
INP	Industrial Noise Policy
MCP	Mayfield Concept Plan
MCP NVMP	MCP Noise Verification Monitoring Plan
ML	Mega Litres
OEMP	Operation Environmental Management Plan
ONMP	Operation Noise Management Plan
PA	Public Address
PON	Port of Newcastle
Stolthaven	Stolthaven Australia Pty Ltd
the Facility	Stolthaven Bulk Liquids Fuel Storage Facility
WH&S	Work Health and Safety

1.0 Background

1.1 Introduction

This Operation Noise Management Plan (ONMP) for the Stolthaven Australia Pty Ltd (Stolthaven) Bulk Liquids Fuel Storage Facility at Mayfield, NSW (the Facility) provides an operation noise and vibration management protocol to ensure that feasible and reasonable controls to manage potential noise and vibration impacts during the operation of the facility are established and maintained. This ONMP has been developed as a sub-plan to the Operation Environmental Management Plan (OEMP) for the Facility.

Stolthaven had approval to operate the Facility, under State Significant Development 6664 (SSD_6664), to receive, store and dispatch diesel and biodiesel fuels. The Facility is located within the area covered by the Mayfield Concept Plan (MCP). The Facility has an approved annual throughput of 1,300 mega litres (ML) being a combination of diesel and biodiesel fuels. Diesel is delivered to the facility by ship and distributed by truck, while biodiesel is delivered and distributed by truck.

Stolthaven was granted updated approval on SSD_6664 (MOD 1), on 28 September 2015. The development consent (the consent) identified requirements for implementation, monitoring and auditing of operational noise, these requirements are addressed in this ONMP.

Stolthaven was issued development consent SSD_7065, 15 December 2016, for the expansion of the existing terminal. It is proposed to increase the annual throughput from the previously approved 1,300 ML per annum to a total of 3,500 ML per annum via a staged approach in the approval.

Additionally, the Facility would be associated with a receiving terminal for ships at Mayfield Berth No.7 (approved under separate assessment) with pipeline infrastructure linking the two sites.

Mayfield No. 7 Berth operated by Stolthaven was recently commissioned and now services the Facility for the import and export of petroleum products. Mayfield No. 7 Berth is classified as Complying Development under State Environmental Planning Policy (Three Ports) 2014 and a Complying Development Certificate (CDC 2016-00067), dated 5 March 2016, was issued by Newcastle City Council for this project. No noise assessment was required for the Complying Development therefore no noise level or operational criteria have been developed specifically for Mayfield No. 7 Berth. Discussions between Stolthaven and EPA (email dated 20 December 2018) indicates that shipping activities associated with Mayfield No. 7 Berth are not required to be included as part of operational noise compliance assessments.

The existing facility (Stage 1) and the area of the proposed facility (Stage 3) to be constructed are shown in Figure 2.

For clarity, Stolthaven has been issued development consent SSD_7065 for the expansion of the existing terminal, however it has not undertaken the proposed expansion yet. On the 23rd of April 2020, development consent SSD 6664 (as modified) was surrendered and accepted by the Department of Planning and the site now operates solely under development consent SSD_7065 (stage 1).

This ONMP is consistent with:

- Stolthaven overarching OEMP Framework
- The Minister for Planning's Project Approval State Significant Development 7065 (SSD_7065), dated 15th December 2016 (the consent)
- The EPA issued Environment Protection Licence No. 20193, version date 31 January 2020 (EPL 20193)
- Mayfield Concept Approval (Application 09_0096) dated 16 July 2012 (latest modification 12 December 2014) (the concept approval)
- Port of Newcastle (PON) MCP overarching ONMP framework (to be developed).

This ONMP should be submitted to PON and the Department of Planning, Industry and Environment (DPIE) for review and approval.

It should be noted that a noise management framework is being developed as part of the MCP site and should contain noise management, monitoring and reporting requirements. This ONMP should be updated as required, following issuing of the MCP Noise Management Framework.

Operations to which this OEMP Apply

The operations to which this OEMP applies are:

- The operation of approved established terminal & the new combustible fuels wharf line which connects the existing terminal to Mayfield Berth No. 7, as approved under SSD_7065. The operation of the wharf line also includes the following ancillary elements:
 - Fire and safety systems
 - Lighting and CCTV
 - Power and communications systems
 - Fencing.

Note: The operation of any other elements of the project approved under SSD_7065 would be subject to additional updated to this OEMP, review and approval by the Department of Planning and Environment.

1.2 Objective of the ONMP

The main objectives of this ONMP are to:

- Meet the Minister for Planning's Conditions of Approval (CoA)
- Meet the requirements outlined in the Facility's Environment Protection License No. 20193 (EPL 20193)
- Meet the acoustic requirements of the MCP
- Ensure compliance with relevant environmental legislation
- Outline the method of compliance with the statutory requirements for the management of noise at the facility; in order to realise the specific noise goals set out in the consent and EPL 20193
- Detail required mitigation measurements and management methods to mitigate noise from operations at the Facility
- Meet noise monitoring requirements
- Minimise the potential for noise emissions from the Facility operational activities, including from plant, equipment and trucks accessing the site
- Define the responsibilities and actions required to manage operational noise and respond to noise incidents.

1.3 Stolthaven Bulk Liquids Fuel Storage Facility description

1.3.1 Location

The Facility is located on the former BHP steelworks site in Mayfield North, adjacent to the Hunter River, approximately 5 km north-west of Newcastle CBD. The site location falls within the MCP area, which is currently being redeveloped as an industrial precinct.

During existing operations, haulage ships dock at Mayfield No. 7 Berth and pump fuel into storage tanks to be blended and held on site. Haulage trucks receive the blended fuels and transport them through an access road leading to the intersection of Industrial Drive and Ingall Street.

The nearest residential areas to the Facility are located to the south-west of the site at Mayfield, with the closest receivers in Crebert Street, approximately 500 m from the Facility. To the south east there

are residential receivers located in Carrington, approximately 2 km away. To the south east there are residential receivers located in Stockton, approximately 3 km away.

The Facility location and key sensitive receivers are shown in Figure 1.

1.3.2 Operational activities and facilities

Stolthaven has approval to operate the Facility to receive, store and dispatch diesel and biodiesel fuel. The Facility has approval for an annual throughput of 1,300 ML of diesel and biodiesel. The approved Facility includes nine above-ground storage tanks (seven diesel and two biodiesel).

The Facility currently makes use of the existing Mayfield No. 7 Berth to receive diesel fuel, which is transferred to site using an above-ground, dedicated pipeline approximately 1 km in length. Delivery and dispatch of the fuel at the current throughput level is undertaken by approximately 300 truck movements per day. Delivery and dispatch occurs 24 hours per day, 7 days per week.

1.3.3 Operational noise sources

The following noise generating activities and associated noise sources were identified in the annual Operational Noise Compliance Assessment (2018) for the Facility (reference: AECOM, 60326869-RPNV-06_0, dated 21 January 2019):

- | | |
|--------------------------------------|---|
| Internal private access roads | <ul style="list-style-type: none">• Moving trucks, idling trucks. |
| Industrial noise sources | <ul style="list-style-type: none">• Fuel pumps;• Haulage tanker trucks filling/depositing;• Ships in berth filling/depositing (currently at Mayfield No. 7 Berth. A Complying Development Certificate (CDC 2016-00067), dated 5 March 2016, was issued by Newcastle City for the operation of Berth 7. As advised by the EPA, shipping activities associated with Mayfield No. 7 Berth are not required to be included as part of the operational noise compliance assessments. |

The acoustic assessment report contains details on the adopted sound power levels for the identified activities and associated noise sources. Sound power levels of the different operations at the Facility were determined through on-site measurements conducted on 30 November 2018.

1.3.4 Hours of operation

The operational hours for the Facility are Monday to Sunday 24 hours per day.

1.3.5 Nearby sensitive receiver locations

The locations of the Facility site and nearby sensitive receivers are shown in Figure 1. The representative receiver locations and the associated receiver areas for assessment purposes, along with the land use classification, as defined in the NSW Environment Protection Authority (EPA) NSW Industrial Noise Policy (INP) (EPA 2000), of each receiver are presented in Table 1.

Table 1 Representative Sensitive Receiver Locations

EPL 20193 receiver number / Mayfield Concept Plan receiver location ¹	Address	Land use classification	Associated receiver area
R1/A	1 Arthur Street, Mayfield	Residence - Urban–	Mayfield
R2	52 Arthur Street, Mayfield	Residence - Urban–	Mayfield
R3/B	2 Crebert Street, Mayfield	Residence - Urban–	Mayfield
R4	21 Crebert Street, Mayfield	Residence - Urban–	Mayfield
R5	24 Crebert Street, Mayfield	Residence - Urban–	Mayfield
R6	30 Crebert Street, Mayfield	Residence - Urban–	Mayfield
R7	50 Crebert Street, Mayfield	Residence - Urban–	Mayfield
R8	2 McNeil Close, Mayfield	Residence - Urban–	Mayfield
C	32 Elizabeth Street, Carrington	Residence - Suburban–	Carrington
D	186 Fullerton Road, Stockton	Residence - Suburban	Stockton

Notes:

- Letters indicate the Mayfield Concept Plan assessment receiver location designation

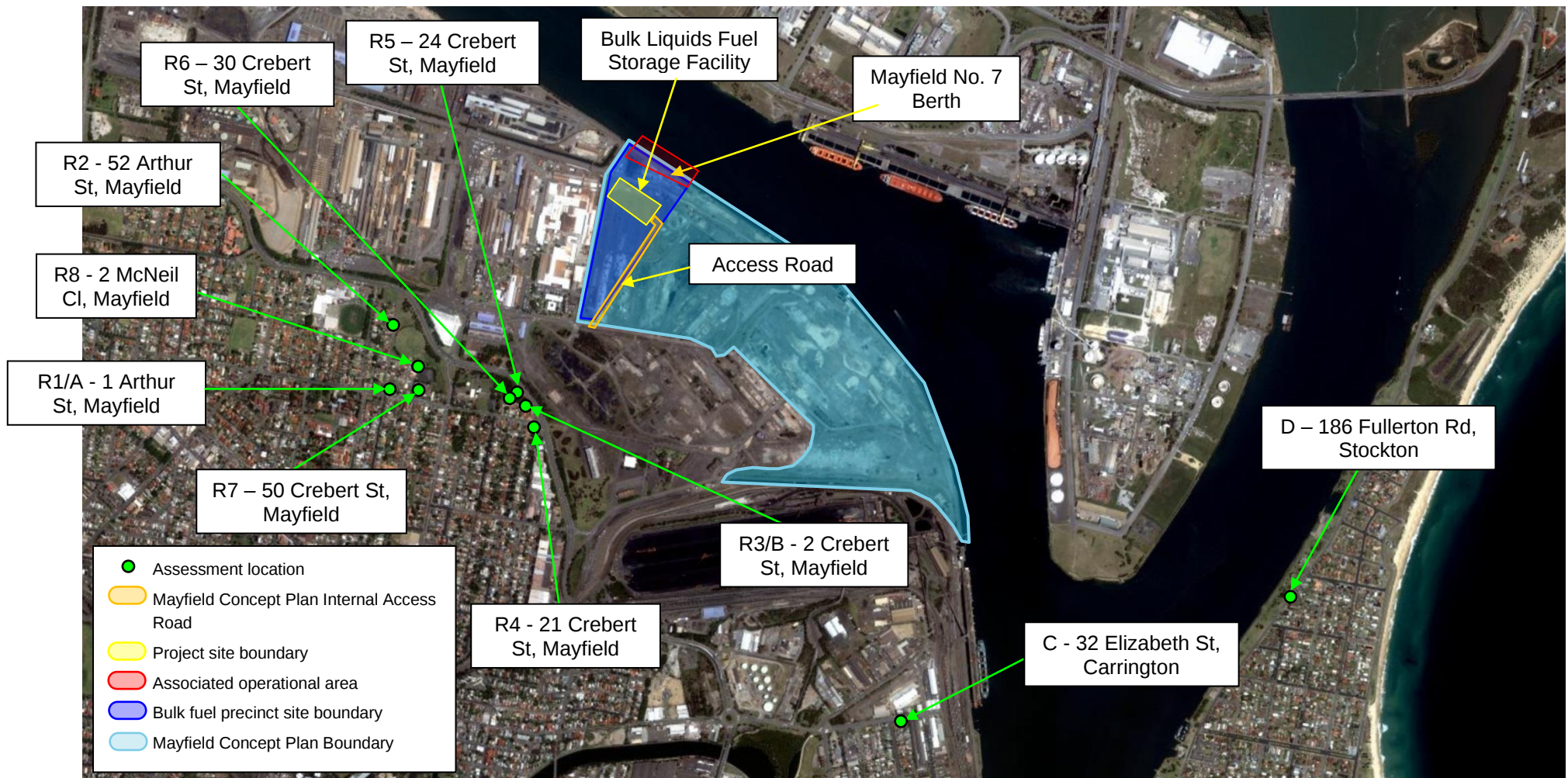


Figure 1 Approved Bulk Liquids Fuel Storage Facility

1.4 Legal and regulatory requirements

Section 26 of the consent outlines the Minister for Planning's requirements for the ONMP, it states that:

Noise Management Plan

- 26.** *The Applicant shall update the existing Noise Management Plan for the site to include the Development, to the satisfaction of the Secretary. The plan must:*
- a. be prepared by a suitably qualified expert, in accordance with EPA Guidelines;*
 - b. be approved by the Secretary prior to the commencement of construction;*
 - c. describe the measures that would be implemented to ensure compliance with the relevant noise goals included in the Mayfield Concept Plan or noise quota established by the PON;*
 - d. include a procedure for implementing noise mitigation measures, should the Applicant be directed to by the PON, or should non-compliances be detected; and*
 - e. include procedures to receive, record and respond to complaints.*

2.0 Statutory Framework and Regulatory Guidelines

This ONMP has been prepared to fulfil the requirements of relevant legislation, approved conditions, EPL 20193 commitments and relevant standards and guidelines.

There are various pieces of legislation and associated regulations that govern noise in NSW. This section summarises the acts, regulations, guidelines and approvals relevant to the consent.

In addition to state legislation and associated regulations, Stolthaven has three approval/license documents that control the operations of the Facility which must be satisfied. These documents are:

- The Minister for Planning's Project Approval SSD_7065 dated 15 December 2016
- The EPA issued Environment Protection Licence No. 20193, version date 31 January 2020
- Mayfield Concept Approval (Application 09_0096) dated 16 July 2012 (latest modification 12 December 2014).

2.1 Legislation

The main applicable legislation relevant to operational noise impacts is the *Protection of the Environment Operations Act 1997 (POEO Act) – Section 139*;

2.2 Standards and guidelines

This ONMP is consistent with the following NSW Government and relevant Standard published documents:

- NSW Environment Protection Authority, Industrial Noise Policy (EPA, 2000)
- Australian Standard AS 1055 -1997 Acoustics - Description and measurement of environmental noise.

The *NSW Industrial Noise Policy* (EPA 2000) was withdrawn in November 2017 and replaced by the *Noise Policy for Industry* (EPA 2017) except as described in the EPA document *Implementation and transitional arrangements for the Noise Policy for Industry (2017)*, point 8, as presented below:

8. *The NSW Industrial Noise Policy (2000) will continue to apply where it is referenced in existing statutory instruments (such as consents and licences), except for the NSW Industrial Noise Policy Section 4 modifying factors, which will be transitioned to the Noise Policy for Industry (2017) Fact Sheet C through a NSW Industrial Noise Policy application note. This approach has been taken because the Noise Policy for Industry (2017) modification factor approach reflects more recent understanding of the impact of tonal and low-frequency noise on the community.*

Therefore the NSW Industrial Noise Policy (2000) continues to apply to the operation of the Facility.

2.3 Development Consent (the consent)

The development consent SSD_7065 1 under Section 96(1A) of the EP&A Act was granted by the Minister for Planning on 15 December 2016 for the subject site.

Condition C34 of the consent requires the preparation and implementation of an ONMP for the Facility, to outline monitoring, management procedures and measures to minimise operational noise impacts. This condition and the rest of the consent conditions which relate to operational noise and vibration associated with the Facility are outlined in Table 2. The table also includes references to where the requirements have been addressed in this ONMP.

Table 2 Project Conditions of Approval

CoA	Requirement	ONMP reference																																																		
Schedule C – Specific Environmental Conditions																																																				
Noise																																																				
Operational Noise																																																				
C29	Prior to the commencement of construction of the Development, the Applicant shall provide the Noise and Vibration Impact Assessment for the Development prepared by AECOM, dated 19 February 2016 including all modelling data, to the PON for the purposes of updating the Site Noise Model.	Section 3.1																																																		
C30	The Applicant shall ensure noise from the Site does not exceed the noise limits in Table 3. <table><tr><th>Location</th><th>Day</th><th>Evening</th><th>Night</th><th>Night</th></tr><tr><td></td><td>L_{Aeq}(15min)</td><td>L_{Aeq}(15min)</td><td>L_{Aeq}(15min)</td><td>L_{A1}(1min)</td></tr><tr><td>R1 - 1 Arthur Street, Mayfield</td><td>35</td><td>35</td><td>35</td><td>45</td></tr><tr><td>R2 - 52 Arthur Street, Mayfield</td><td>35</td><td>35</td><td>35</td><td>48</td></tr><tr><td>R3 - 2 Crebert Street, Mayfield</td><td>41</td><td>41</td><td>41</td><td>49</td></tr><tr><td>R4 - 21 Crebert Street, Mayfield</td><td>40</td><td>40</td><td>40</td><td>47</td></tr><tr><td>R5 - 24 Crebert Street, Mayfield</td><td>42</td><td>42</td><td>42</td><td>51</td></tr><tr><td>R6 - 30 Crebert Street, Mayfield</td><td>41</td><td>41</td><td>41</td><td>50</td></tr><tr><td>R7 - 50 Crebert Street, Mayfield</td><td>35</td><td>35</td><td>35</td><td>50</td></tr><tr><td>R8 - 2 McNeil Close, Mayfield</td><td>35</td><td>35</td><td>35</td><td>48</td></tr></table> Note: - To identify a noise receiver location, refer to the figure in Appendix 5. - Noise generated by the Site is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the EPA NSW Industrial Noise Policy.	Location	Day	Evening	Night	Night		L _{Aeq} (15min)	L _{Aeq} (15min)	L _{Aeq} (15min)	L _{A1} (1min)	R1 - 1 Arthur Street, Mayfield	35	35	35	45	R2 - 52 Arthur Street, Mayfield	35	35	35	48	R3 - 2 Crebert Street, Mayfield	41	41	41	49	R4 - 21 Crebert Street, Mayfield	40	40	40	47	R5 - 24 Crebert Street, Mayfield	42	42	42	51	R6 - 30 Crebert Street, Mayfield	41	41	41	50	R7 - 50 Crebert Street, Mayfield	35	35	35	50	R8 - 2 McNeil Close, Mayfield	35	35	35	48	Section 4.1
Location	Day	Evening	Night	Night																																																
	L _{Aeq} (15min)	L _{Aeq} (15min)	L _{Aeq} (15min)	L _{A1} (1min)																																																
R1 - 1 Arthur Street, Mayfield	35	35	35	45																																																
R2 - 52 Arthur Street, Mayfield	35	35	35	48																																																
R3 - 2 Crebert Street, Mayfield	41	41	41	49																																																
R4 - 21 Crebert Street, Mayfield	40	40	40	47																																																
R5 - 24 Crebert Street, Mayfield	42	42	42	51																																																
R6 - 30 Crebert Street, Mayfield	41	41	41	50																																																
R7 - 50 Crebert Street, Mayfield	35	35	35	50																																																
R8 - 2 McNeil Close, Mayfield	35	35	35	48																																																
C31	The Applicant shall ensure fire pumps on the Site are designed and operate so that noise from the routine testing or maintenance is not more than L _{eq} (15min)53 dB(A) at sensitive receivers. Routine testing or maintenance must only occur during the day time.	Section 3.2 3.1																																																		
C32	The Applicant shall: a. ensure noise from the Site does not exceed the noise quotes provided by the PON in accordance with the Site Noise Model; and b. comply with the directions of the PON in relation to the management of noise from the Site.	Section 2.5 4.1.1.2 4.5																																																		
C33	The Applicant shall: a. implement all reasonable and feasible noise management and mitigation measures to prevent and minimise noise from the Site; b. implement, where possible, a safe system of work so that tonal movements alarms, such as reversing beepers, are not needed on the Site; c. maintain the effectiveness of any noise suppression equipment or plant at all times and ensure defective plant that may generate offensive noise is not used operationally until fully repaired; and	Section 3.0 4.0																																																		

CoA	Requirement	ONMP reference
	d. regularly assess noise monitoring data and relocate, modify and/or stop operations to ensure compliance with the relevant conditions of consent.	
C34	Noise Management Plan The Applicant shall update the existing Noise Management Plan for the Site to include the Development,. This plan must: a. be prepared by a suitably qualified expert, in accordance with EPA Guidelines; b. be approved by the Secretary prior to the operation of the Development; c. describe the measures that would be implemented to ensure compliance with the: i. noise limits in Condition C30; and ii. Noise quotas provided by PON, to maintain compliance with the noise goals in the Mayfield Concept Plan. d. include a procedure for implementing noise mitigation measures, should the Applicant be directed to by the EPA, PON, or the Secretary, or should non-compliances be detected; and e. include procedures to receive, record and respond to complaints.	Entire document c) Section 4.2 - 4.4 d) Section 4.3 e) Section 6
C35	Noise Monitoring The Applicant shall monitor noise from the Site. The monitoring shall: a. be undertaken annually, or to address genuine noise complaints that are related to the Site as determined by the Secretary, EPA or the PON; b. be undertaken in accordance with the <i>NSW Industrial Noise Policy</i> and the <i>Noise Verification Monitoring Plan, October 2015</i> or its latest version; c. demonstrate compliance with the relevant noise limits in this consent and the noise quotas provided by the PON in accordance with the Mayfield Concept Plan; and d. be reported annually to the Secretary, EPA and the PON. <i>Note: The monitoring requirements could be satisfied by the monitoring network require for the Mayfield Concept Plan once it is established.</i>	Section 4.0

2.4 Environment Protection Licence

An Environment Protection Licence No. 20193, version date 28 August 2017, was issued by the EPA for the subject site. Table 3 presents the sections applicable to operational noise from the Facility. The table also includes references to where the requirements have been addressed in this ONMP.

Table 3 Environment Protection Licence 20193

Condition	Requirement	ONMP reference																																																		
Section 3 - Limit Conditions																																																				
L5	Noise limits																																																			
L5.1	Noise generated at the premises must not exceed the noise limits specified in the table below:	Section 4.1																																																		
	<table><tr><th>Location</th><th>Day</th><th>Evening</th><th>Night</th><th>Night</th></tr><tr><td></td><th>L_{Aeq}(15min)</th><th>L_{Aeq}(15min)</th><th>L_{Aeq}(15min)</th><th>L_{A1}(1min)</th></tr><tr><td>R1 - 1 Arthur Street, Mayfield</td><td>35</td><td>35</td><td>35</td><td>45</td></tr><tr><td>R2 - 52 Arthur Street, Mayfield</td><td>35</td><td>35</td><td>35</td><td>48</td></tr><tr><td>R3 - 2 Crebert Street, Mayfield</td><td>41</td><td>41</td><td>41</td><td>49</td></tr><tr><td>R4 - 21 Crebert Street, Mayfield</td><td>40</td><td>40</td><td>40</td><td>47</td></tr><tr><td>R5 - 24 Crebert Street, Mayfield</td><td>42</td><td>42</td><td>42</td><td>51</td></tr><tr><td>R6 - 30 Crebert Street, Mayfield</td><td>41</td><td>41</td><td>41</td><td>50</td></tr><tr><td>R7 - 50 Crebert Street, Mayfield</td><td>35</td><td>35</td><td>35</td><td>50</td></tr><tr><td>R8 - 2 McNeil Close, Mayfield</td><td>35</td><td>35</td><td>35</td><td>48</td></tr></table>		Location	Day	Evening	Night	Night		L _{Aeq} (15min)	L _{Aeq} (15min)	L _{Aeq} (15min)	L _{A1} (1min)	R1 - 1 Arthur Street, Mayfield	35	35	35	45	R2 - 52 Arthur Street, Mayfield	35	35	35	48	R3 - 2 Crebert Street, Mayfield	41	41	41	49	R4 - 21 Crebert Street, Mayfield	40	40	40	47	R5 - 24 Crebert Street, Mayfield	42	42	42	51	R6 - 30 Crebert Street, Mayfield	41	41	41	50	R7 - 50 Crebert Street, Mayfield	35	35	35	50	R8 - 2 McNeil Close, Mayfield	35	35	35	48
	Location		Day	Evening	Night	Night																																														
			L _{Aeq} (15min)	L _{Aeq} (15min)	L _{Aeq} (15min)	L _{A1} (1min)																																														
	R1 - 1 Arthur Street, Mayfield		35	35	35	45																																														
	R2 - 52 Arthur Street, Mayfield		35	35	35	48																																														
	R3 - 2 Crebert Street, Mayfield		41	41	41	49																																														
	R4 - 21 Crebert Street, Mayfield		40	40	40	47																																														
	R5 - 24 Crebert Street, Mayfield		42	42	42	51																																														
	R6 - 30 Crebert Street, Mayfield		41	41	41	50																																														
R7 - 50 Crebert Street, Mayfield	35	35	35	50																																																
R8 - 2 McNeil Close, Mayfield	35	35	35	48																																																
Notes: The locations of the receptors listed in the table above in condition L5.1 are identified in Figure 2 and Table 2 of document titled 'Noise and Vibration Impact Assessment - Stolthaven Mayfield Bulk Terminal - SSD_7065", prepared by AECOM Australia Pty Ltd, dated 19 February 2016 (EPA ref. DOC16/187092-11).																																																				
L5.2	Fire pumps at the premises must be designed and operated so that noise from routine testing or maintenance is not more than LAeq (15min) 53dB(A) at the most affected residential or sensitive receiver. Routine testing or maintenance must only occur during the day time.	Section 3.2 4.1																																																		
L5.3	For the purpose of conditions L5.1 and L5.2: a. Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sundays and Public Holidays; b. Evening is defined as the period from 6pm to 10pm; and c. Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sundays and Public Holidays.	Section 4.1.1.1.1																																																		
L5.5	The noise limits specified in Conditions L5.1, L5.2 and L5.4 apply under all meteorological conditions except for any of the following: a. Wind speeds greater than 3 metres/second at 10 metres above ground level; or b. Stability category F temperature inversion conditions and wind speeds greater than 2 metres/second at 10 metres above ground level; or	Section 4.1.1.1.1																																																		

Condition	Requirement	ONMP reference
	c. Stability category G temperature inversion conditions.	
L5.6	For the purposes of Condition L5.5: a. Data recorded by the weather station on the premises must be used to determine meteorological conditions; and b. Temperature inversion conditions (stability category) are to be determined by the sigma-theta method referred to in Part E4 of Appendix E to the NSW Industrial Noise Policy.	Section 4.1.1.1.1
L5.7	To determine compliance: a. with the L_{Aeq} (15 minute) noise limits in conditions L5.1, L5.2 and L5.4, the noise measurement equipment must be located: i. approximately on the property boundary, where any dwelling is situated 30 metres or less from the property boundary closest to the premises; or ii. within 30 metres of a dwelling façade, but not closer than 3 metres, where any dwelling on the property is situated more than 30 metres from the property boundary closest to the premises; or, where applicable iii. within approximately 50 metres of the boundary of a National Park or a Nature Reserve; b. with the $LA1$ (1 minute) noise limits in condition L5.1, the noise measurement equipment must be located within 1 metre of a dwelling façade; c. with the noise limits in conditions L5.1, L5.2 and L5.4, the noise measurement equipment must be located: i. at the most affected point at a location where there is no dwelling at the location; or ii. at the most affected point within an area at a location prescribed by conditions L5.7(a) or L5.7(b).	Section 4.1.2
L5.8	A non-compliance with Conditions L5.1, L5.2 and L5.4 will still occur where noise generated from the premises in excess of the appropriate limit is measured: a. at a location other than an area prescribed by conditions L5.7(a) and L5.7(b); and/or b. at a point other than the most affected point at a location.	Section 4.1.2
L5.8	For the purposes of determining the noise generated at the premises, the modification factors in Section 4 of the NSW Industrial Noise Policy must be applied, as appropriated, to the noise levels measured by the noise monitoring equipment. Note: Definition of Terms - NSW Industrial Noise Policy – the document titled “New South Wales Industrial Noise Policy” published by the EPA in January 2000. - Noise – “sound pressure levels” for the purposes of conditions L5.1 to L5.9.	Section 4.2
Section 5 – Monitoring and Recording Conditions		
M1	Monitoring records	
M1.1	The results of any monitoring require to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.	Section 4.1.2
M1.2	All records required to be kept by this licence must be: a. in a legible form, or in a form that can readily be reduced to a legible form; b. kept for at least 4 years after the monitoring or event to which they relate took place; and	Section 4.1.2

Condition	Requirement	ONMP reference
	c. produced in a legible form to any authorised officer of the EPA who asks to see them.	
M1.3	The following records must be kept in respect of any samples required to be collected for the purposes of this licence: a. the dates(s) on which the sample was taken; b. the times(s) at which the sample was collected; c. the point at which the sample was taken; and d. the name of the person who collected the sample.	Section 4.1.2
M6	Recording of pollution complaints	
M6.1	The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.	Section 6.2
M6.2	The record must include details of the following: a. the date and time of the complaint; b. the method by which the complaint was made; c. any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect; d. the nature of the complaint; e. the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and f. if no action was taken by the licensee, the reasons why no action was taken.	Section 6.2
M6.3	The record of a complaint must be kept for at least 4 years after the complaint was made.	Section 6.2
M6.4	The record must be provided to any authorised officer of the EPA who asks to see them.	Section 6.2
M7	Telephone complaints line	
M7.1	The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.	Section 6.1
M7.2	The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that impacted community knows how to make a complaint.	Section 6.1
M7.3	The preceding two conditions do not apply until 3 months the date of the issue of this licence.	Section 6.1
M7.4	The licensee must nominate a representative of the company who is available at all times and is capable of providing immediate assistance or response during emergencies or any other incidents at the premises. The name of the nominated representative and their contact details, including a telephone number, must be current at all times. Note: This condition does not apply until two (2) weeks after the date of issue of this licence.	Section 6.1
M9	Other monitoring and recording conditions	
M9.1	To assess compliance with Condition L5.1, attended noise monitoring must be undertaken in accordance with Condition L5.7 and: a. at each one of the locations listed in Condition L5.1; b. occur annually during the license reporting period; c. occur during each day, evening and night period as defined in the NSW Industrial Noise Policy for a minimum of: i. 1.5 hours during the day;	Section 4.1.2

Condition	Requirement	ONMP reference
	ii. 30 minutes during the evening; and iii. 1 hour during the night; d. occur for three consecutive operating days	
R4	Other reporting conditions Noise compliance assessment report	
R4.1	A noise compliance assessment report detailing the attended noise monitoring undertaken under Condition M5.1 must be submitted to the EPA with the Annual Return each year. The assessment must be prepared by a suitably qualified and experienced acoustical consultant and include: a. an assessment of compliance with the noise limits detailed in Condition L5.1; and b. an outline of any management actions proposed to be undertaken at address any exceedances of the noise limits details in Condition L5.1.	Section 4.2

2.5 Mayfield Concept Plan requirements

The Facility lies within the MCP site. The MCP site requires the consideration of all future development when assessing noise impacts. PON is in the process of developing and implementing a Cumulative Environmental Noise Management Tool (CENMT) to take into consideration all existing and future development to determine the applicable noise quotas for individual sites within the MCP area. A concept approval (Application 09_0096) under Section 75O of the EP&A Act was granted by the Minister for Planning on 16 July 2012 for the MCP site (latest modification 12 December 2014). As such, the requirements of the MCP approval also apply to the Facility. The relevant sections from the MCP approval are outlined in Table 4. The table also includes references to where the requirements have been addressed in this ONMP.

Table 4 Mayfield Concept Plan Conditions of Approval

CoA	Requirement	ONMP reference																							
Operational Noise																									
2.16	The Proponent shall, within six months of the date of this approval, but prior to the lodgement or consideration of any project associated with this Concept Plan approval, unless otherwise agree by the Director General, develop a Site Noise Model for the Concept Plan as described in requirement 2.19. The Site Noise Model shall be developed for the day, evening and night time periods to ensure that the amenity noise goals identified in Table 5 below are met. The Site Noise Model shall be developed having regard to the noise assessment undertaken for the Concept Plan Environmental Assessment. The levels shall be reported to the Director General and incorporated into the Concept Plan Site Noise Model.	Section 4.1.1.2																							
2.17	Projects associated with the Concept Plan must comply with the amenity noise goals at sensitive residential receivers as detailed in Table 5 below. Table 5 – Noise Goals at Nearby Residences <table><tr><th rowspan="2">Location</th><th colspan="3">Project Specific Noise Goals (dBA) $L_{Aeq}(\text{period})$ (dBA)</th></tr><tr><th>Day (7.00 am to 6.00 pm)</th><th>Evening (6.00 pm to 10.00 pm)</th><th>Night (10.00 pm to 7.00 am)</th></tr><tr><td>A - 1 Arthur Street, Mayfield (Urban)</td><td>60</td><td>49</td><td>43</td></tr><tr><td>B - 2 Crebert Street, Mayfield (Urban)</td><td>60</td><td>50</td><td>43</td></tr><tr><td>C – 32 Elizabeth Street, Carrington (Urban)</td><td>57</td><td>44</td><td>45</td></tr><tr><td>D – Stockton (Suburban)</td><td>55</td><td>37</td><td>37</td></tr></table> The above noise goals apply under winds of up to three metres per second (measured at 10 metres above the ground level) and Pasquill stability class from A to F. Note: To allow for cumulative noise generated by multiple projects under the Concept Plan, individual projects under the Concept Plan should not utilise all of the noise envelope specified by the criteria outlined in Table 5.	Location	Project Specific Noise Goals (dBA) $L_{Aeq}(\text{period})$ (dBA)			Day (7.00 am to 6.00 pm)	Evening (6.00 pm to 10.00 pm)	Night (10.00 pm to 7.00 am)	A - 1 Arthur Street, Mayfield (Urban)	60	49	43	B - 2 Crebert Street, Mayfield (Urban)	60	50	43	C – 32 Elizabeth Street, Carrington (Urban)	57	44	45	D – Stockton (Suburban)	55	37	37	Section 4.1.1.2
Location	Project Specific Noise Goals (dBA) $L_{Aeq}(\text{period})$ (dBA)																								
	Day (7.00 am to 6.00 pm)	Evening (6.00 pm to 10.00 pm)	Night (10.00 pm to 7.00 am)																						
A - 1 Arthur Street, Mayfield (Urban)	60	49	43																						
B - 2 Crebert Street, Mayfield (Urban)	60	50	43																						
C – 32 Elizabeth Street, Carrington (Urban)	57	44	45																						
D – Stockton (Suburban)	55	37	37																						

CoA	Requirement	ONMP reference
2.19	Concept Plan Site Noise Model The Proponent shall, prior to the lodgement or consideration of any project application associated with this Concept Plan, unless otherwise agreed by the Director-General, develop a <i>Concept Plan Site Noise Model</i> to facilitate the assessment of noise impacts and to report on compliance with the project, precinct and Concept Plan noise criteria. The Noise Model shall take into consideration pre-project background noise levels at affected sensitive receiver and shall be maintained for the Concept Plan site until such time as the site is fully developed. The Proponent shall ensure that any noise monitoring data collected as part of the <i>Noise Verification Monitoring Program</i> be incorporated into the Noise Model. The Noise Model shall be updated with details from each individual project and used to assess performance against the Concept Plan noise goals.	Section 4.1.1.2
2.20	Noise Verification Monitoring Program The Proponent shall develop a <i>Noise Verification Monitoring Program</i>, to outline how the noise impacts of the project associated with this Concept Plan approval will be monitored and proactively managed. The Program shall include, but not necessarily be limited to: - identification of a noise monitoring network, consistent with the guidelines provided in the <i>Industrial Noise Policy</i> (EPA. 2000); - locations, timing and methods for monitoring noise impacts as operations commence for each project associated with the Concept Plan to assess compliance with the precinct sound power levels¹, project specific noise criteria and Concept Plan noise goals, including identification of monitoring sites at which pre-project and post project noise levels can be ascertained; - a framework for identifying actual and potential noise impacts, and for applying pro-active and reactive mitigation and management measures to address those impacts; - provisions for reporting and monitoring results and complaints and enquires receiver to the EPA and the Department and for independent review and auditing of the Program (to be incorporated in the Compliance Tracking Program); and - mechanisms for updating the Program as may be required from time to time, including a system that allows for the periodic assessment of industry accepted management Practices and Available Technology Economically Achievable to satisfy the Concept Plan noise goals and the project specific noise criteria. The Program shall be prepared by an appropriately qualified person(s) and shall be submitted to the Director-General prior to the commencement of operations for any project associated with this Concept Plan approval.	Section 4.1.1.2

Notes:

- For future updates of the MCP Concept Approval, "sound power levels" should be modified to be "Site Noise Model".

For any proposed development within the MCP area, the available noise criteria for the entire MCP area should be proportionally distributed amongst all future developments. When lodgement or notification of a new development is received by PON, a noise allocation should be provided to the proposed development site that should become the cumulative amenity noise quotas that they should meet.

As part of the PON's CENMT (under development), reporting of the different types of operations that take place within the MCP area (e.g. fixed facilities, truck/train operations, etc.) may be required to be quantified.

As advised by the EPA, shipping activities associated with Mayfield No. 7 Berth are not required to be included as part of the operational noise compliance assessments.

Additionally, Section 1.6 of the MCP Approval states:

This Concept Plan approval does not apply to berths, berthing or harbour operations. It also does not apply to activities approved or legally operating at the site in accordance with other project approvals at the date of this Concept Plan approval.

Cumulative amenity noise quotas for the Facility are derived for the site as part of the MCP Noise Management Framework (under development). As part of the MCP noise model, the predicted impacts are used to guide the cumulative amenity noise quotas that are given to any individual site.

The Facility's cumulative amenity noise quota at each of the sensitive receivers is supplied to each applicant by PON. As part of the operational noise management, cumulative amenity noise quotas should be obtained from PON for compliance assessment.

2.5.1 Stolthaven Stage 3 (SSD_7065) - Specific MCP Requirements

PON is using the CENMT to manage individual site noise requirements for projects within the MCP. It is noted that site specific noise quota was not issued as part of the Stolthaven SSD_6664 MOD 1 submission. However, as part of Stolthaven Stage 3 (SSD_7065) Environmental Impact Statement, noise quotas were allocated to the Stolthaven Stage 3 development. In the absence of other quotas for the MCP those quotas from the development consent for SSD_7065 have been referenced in this ONMP.

Stolthaven Stage 3 (SSD_7065) specific cumulative amenity noise quotas derived using the Mayfield Concept Plan CENMT are presented in Table 5. The quotas are based upon the Facility area presented in Figure 2. Therefore, for the purpose of assessing the sites noise emissions (i.e. SSD_6664 MOD 1) against the requirements of the MCP; they should be assessed against the noise quotas allocated for Stolthaven Stage (SSD_7065).

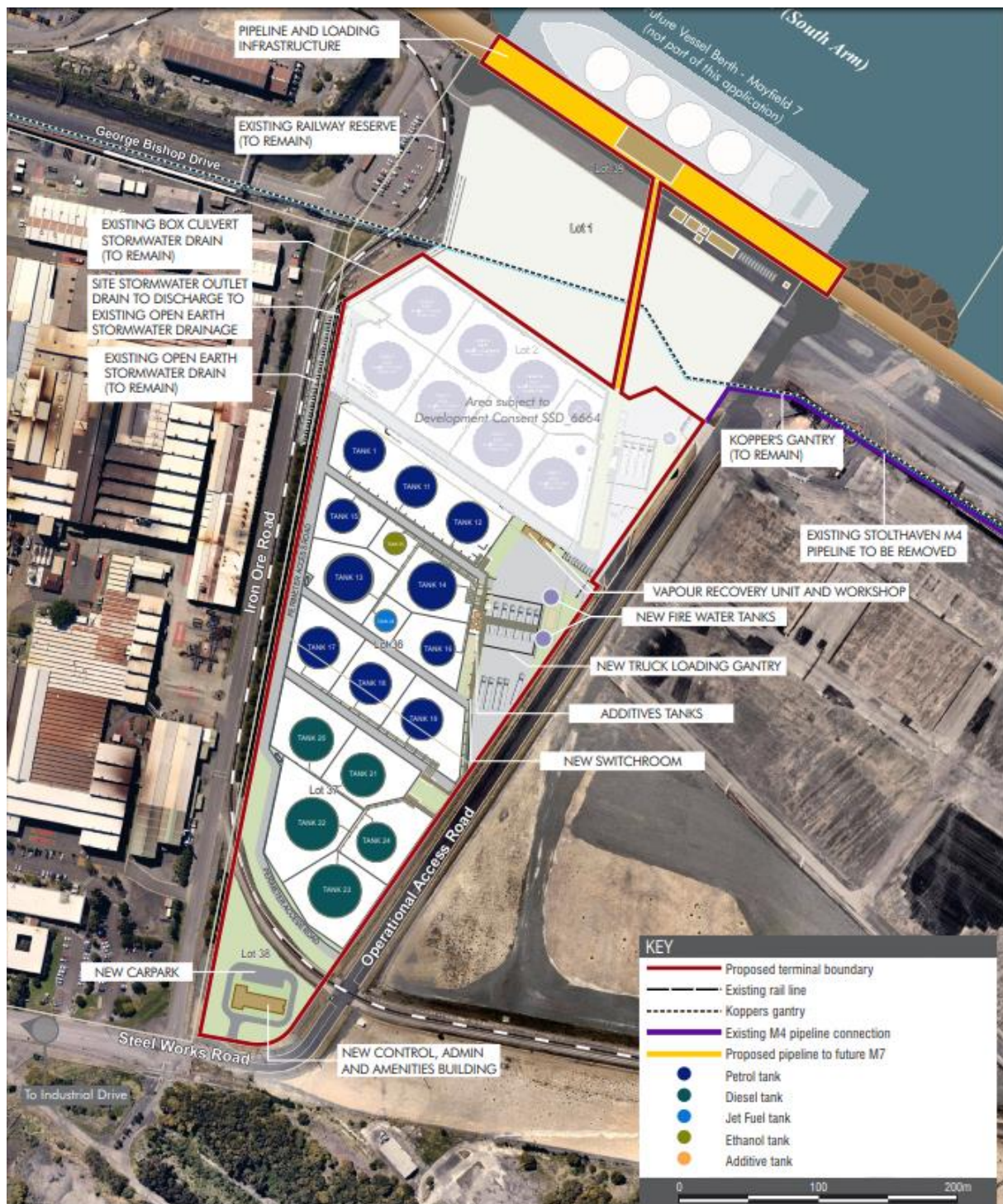


Figure 2 Site Operational Area for Derivation of MCP Noise Quota – Stolthaven Stage 3 (Not yet Constructed)

Table 5 Summary of MCP Noise Quotas for Noise Assessment for Stolthaven Stage 3 (SSD_7065)

Receiver	Applicable amenity noise quota ¹ , L _{Aeq, period} dB(A)		
	Day (7.00 am to 6.00 pm)	Evening (6.00 pm to 10.00 pm)	Night (10.00 pm to 7.00 am)
A – 1 Arthur Street, Mayfield	47	36	30
B – 2 Crebert Street, Mayfield	51	40	34
C – 32 Elizabeth Street, Carrington	42	30	25
D – 186 Fullerton Road, Stockton	39	28	22

Notes:

1. These cumulative amenity noise quota levels are subject to approval by PON and DPIE and have been included for assessment purposes

These noise quotas apply under winds of up to 3 metres/second (measured at 10 metres above the ground level) and Pasquill stability class from A to F.

2.6 Updating of the plan

The existing Noise and Vibration Management Plan currently in place for the operating Facility would be reviewed and updated to ensure all reasonable and feasible noise and vibration management measures have been incorporated in the operation of the site. The review may be driven from a periodic review, annual monitoring results or non-compliance.

3.0 Noise Management and Mitigation Measures

3.1 Commencement of operations

Prior to the commencement of constructions of Stage 3 (SSD_7065), Stolthaven should provide the Noise and Vibration Impact Assessment for the Development prepared by AECOM, dated 19 February 2016 including all modelling data, to the PON for the purposes of updating the Site Noise Model for the Mayfield Concept Plan.

Following a review by PON of the Assessment for the Development, prior to the commencement of operation, Stolthaven shall provide written evidence to the Secretary demonstrating that the PON is satisfied that the methodology and outcomes of the Noise and Vibration Impact Assessment for the development, date 19 February 2016 are consistent with the Site Noise Model for the MCP.

3.2 Emergency fire pump operations

Additional Fire pumps are proposed to be installed as part of the SSD_7065 (Stage 3) development, and would operate for short durations only during periods of emergency, or during maintenance testing as currently managed. The current 3 site fire pumps are tested on a monthly basis. This is to occur for 10 minute per month per pump, and should be limited to testing during the daytime period. It is recommended that fire pump testing occur for individual pumps one at a time.

3.3 Operational vibration

Vibration criteria are set primarily according to whether the particular activities of interest are continuous or intermittent in nature, 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 nearest residential receivers (vibration sensitive) are located approximately 500 m from Facility site. The existing nearby industrial developments are located approximately 50 m from the Facility site, and is neither noise nor vibration sensitive.

At such distances, the risk of discomfort, regenerated noise and structural damage impacting receivers is extremely low and needs not to be considered further for operational activities.

4.0 Noise Monitoring and Reporting

4.1 Monitoring

Noise monitoring is required to address the monitoring requirements in both the conditions of approval and EPL 20193. The objective of the noise monitoring program is to have a methodology for identifying noise emissions from the operation of the Facility, and clearly identify compliance or non-compliance with the Facility acoustic requirements. The results of this monitoring program should provide information to the Facility to ensure that noise emissions are appropriately managed.

The verification of noise emission from the Facility, as part of the consent, should be undertaken in accordance with the MCP Noise Verification Monitoring Plan (NVMP). This ONMP should be read in conjunction with the MCP NVMP. The MCP NVMP supersedes all other requirements outlined in this current plan and outlines the required approach to verifying noise levels against the MCP requirements.

The Facility's noise monitoring requirements are outlined in Section 2.0. The monitoring receiver locations that are part of the monitoring program are listed in Table 6, Table 7 and Table 8.

The operational noise monitoring should comprise attended and/or unattended monitoring at a sufficient number of the noise sensitive receivers nominated in Section 2.0 which are listed in Table 1 to demonstrate the compliance noise levels at all nominated assessment locations. Noise monitoring should be conducted in general accordance with:

- Environment Protection Authority (EPA) *NSW Industrial Noise Policy* (EPA 2000)
- Australian Standard AS 1055.2-1997 Acoustics – Description and Measurement of Environmental Noise. Part 2: Application to specific situations.

Instrumentation used must comply with:

- *AS IEC 61672.1-2004 Electroacoustics - Sound level meters - Specifications*

Noise verification should be undertaken in accordance with the EPL 20193, the consent and the concept approval.

Inclusive to this monitoring, fire pump testing is recorded and modelled to review compliance. Fire pump testing & maintenance only occurs during operational hours (07:00 – 15:30 business days). Results of the noise testing are recorded in the Site's annual Operational Noise Compliance Assessment.

4.1.1 Summary of monitoring requirements

As the Facility is controlled by three different approval documents, below is a summary of the requirements for the operation of the site to determine compliance.

4.1.1.1 EPL 20193

4.1.1.1.1 Intrusive noise requirements

Table 6 Summary of Site $L_{Aeq}(15 \text{ minute})$ Intrusive Noise Limits

Receiver	Day	Evening	Night
	$L_{Aeq}(15min)$	$L_{Aeq}(15min)$	$L_{Aeq}(15min)$
R1 - 1 Arthur Street, Mayfield	35	35	35
R2 - 52 Arthur Street, Mayfield	35	35	35
R3 - 2 Crebert Street, Mayfield	41	41	41
R4 - 21 Crebert Street, Mayfield	40	40	40
R5 - 24 Crebert Street, Mayfield	42	42	42
R6 - 30 Crebert Street, Mayfield	41	41	41
R7 - 50 Crebert Street, Mayfield	35	35	35
R8 - 2 McNeil Close, Mayfield	35	35	35

These intrusive noise limits apply under all meteorological conditions except for any of the following:

- Wind speeds greater than 3 metres/second at 10 metres above ground level; or
- Stability category F temperature inversion conditions and wind speeds greater than 2 metres/second at 10 metres above ground level; or
- Stability category G temperature inversion conditions.

Data recorded by the weather station at the Facility must be used to determine meteorological conditions, with temperature inversion conditions (stability category) determined by the sigma-theta method referred to in Part E4 of Appendix E to the NSW INP.

For the purposes of compliance assessment, these limits are applicable during the following periods:

- Day is defined as the period from 7 am to 6 pm Monday to Saturday and 8 am to 6 pm Sundays and Public Holidays;
- Evening is defined as the period from 6 pm to 10 pm; and
- Night is defined as the period from 10 pm to 7 am Monday to Saturday and 10 pm to 8 am Sundays and Public Holidays.

4.1.1.1.2 Sleep disturbance requirements

Table 7 presents the sleep disturbance requirements applicable to the Facility.

Table 7 Summary of $L_{A1(1 \text{ minute})}$ Noise Limits

Receiver	Night
	$L_{A1(1 \text{ minute})}$
R1 - 1 Arthur Street, Mayfield	45
R2 - 52 Arthur Street, Mayfield	48
R3 - 2 Crebert Street, Mayfield	49
R4 - 21 Crebert Street, Mayfield	47
R5 - 24 Crebert Street, Mayfield	51
R6 - 30 Crebert Street, Mayfield	50
R7 - 50 Crebert Street, Mayfield	50
R8 - 2 McNeil Close, Mayfield	48

These should be measured (or levels predicted to be) within 1 metre of the dwelling façade.

4.1.1.2 Amenity noise requirements – Mayfield Concept Plan

The verification of noise emission from the Facility, for the consent, should be to be undertaken in accordance with the MCP NVMP. The Facility's site-specific cumulative amenity noise quotas derived using the Mayfield Concept Plan CENMT are presented in Table 8.

Table 8 Summary of Project's Cumulative Amenity Noise Quotas

Receiver	Applicable amenity noise quota, $L_{Aeq, period}$ dB(A)		
	Day (7.00 am to 6.00 pm)	Evening (6.00 pm to 10.00 pm)	Night (10.00 pm to 7.00 am)
A – 1 Arthur Street, Mayfield	47	36	30
B – 2 Crebert Street, Mayfield	51	40	34
C – 32 Elizabeth Street, Carrington	42	30	25
D – 186 Fullerton Road, Stockton	39	28	22

Notes:

- These cumulative amenity noise quotas are subject to approval by PON and DPIE, and should be included once approved.

The method of undertaking the modelling is in accordance with the MCP Cumulative Noise Modelling User Guide.

The computer noise model (i.e. using the proprietary SoundPLAN software) and modelling methodology used to determine compliance, should meet the requirements outlined in the MCP Noise Management Framework (to be developed). This should be undertaken in accordance with the modelling requirements outlined in the MCP Cumulative Noise Modelling User Guide, and the MCP NVMP.

4.1.2 Compliance tracking program

The EPL 20193 requires noise monitoring to be undertaken on an annual basis to adequately track the noise emissions from operations the Facility, refer to Section 2.4.

The following records must be kept in respect of all compliance measurements undertaken for the purpose of annual compliance reporting as part of the licence conditions:

- a. The dates(s) on which the sample was taken;
- b. The times(s) at which the sample was collected;
- c. The point at which the sample was taken;
- d. The name of the person who collected the sample;
- e. Details of the instrument type and calibration details; and
- f. The meteorological conditions during the monitoring period, based upon the weather station based on the premises. This is to include at a minimum, the wind speed and direction, as well as data suitable for quantifying the presence or otherwise of temperature inversions. The temperature inversion conditions (stability category) should be determined using the sigma-theta method referred to in Part E4 of the NSW Industrial Noise Policy.

All monitoring records should be kept in a legible form, or in a form that can readily be reduced to a legible form and kept for at least four years after the monitoring or event to which they relate took place. In the case that any authorised officer of the EPA requests to see them they should be produced for review.

Noise levels other than those from the Facility's operations need to be excluded from the measured levels. As such, where it can be demonstrated that direct measurement of noise from the premises is impractical, the EPA may accept alternative means of determining compliance in accordance with the requirements of Chapter 11 of the NSW Industrial Noise Policy and the MCP noise modelling requirements which are outlined in the Mayfield Concept Plan Cumulative Noise Modelling, User Guide (AECOM Report 60289391, Revision 1, dated 15 July 2015).

This is thought likely to occur based upon the existing noise environment presented in the Facility *Operational Noise Compliance Assessment (2017)* report (reference: AECOM, 60326869-RPNV-05_0, dated 2 February 2018). This report presents attended measurements at receiver locations quantifying the existing industrial noise contribution from the numerous industrial facilities in the area that are contributing to the overall noise levels at the assessment receiver locations.

4.2 Reporting

The reporting required to address the monitoring requirements in both the EPL 20193 and Conditions of Approval are outlined in the following section. The EPL 20193 and Conditions of Approval reports can be combined to form one consolidated verification report to be submitted to EPA, DPIE and PON.

4.2.1 EPA requirements

In addition, to meet the EPL 20193 requirements, a report shall be prepared annually, and include the following minimum information:

- a. describe the operations that were carried out in the past year;
- b. analyse the monitoring results undertaken in accordance with Section 4.1 and complaints records in accordance with Section 6.0, during operations over the past year, which includes a comparison of these results against the
 - relevant statutory requirements, limits or performance measures/criteria
 - monitoring results of previous years
 - relevant predictions in the EA
- c. identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;

- d. identify any trends in the monitoring data over the life of the Facility; and
- e. describe what measure should be implemented over the next year to improve the environmental performance of the Facility.

For the purposes of assessing compliance with the facility specific requirements the modification factors in Section 4 of the NSW INP must be applied to the modelled/measured noise levels.

4.2.2 Mayfield Concept Plan reporting requirements

The method of verification and reporting requirements for the MCP are outlined in the MCP NVMP. This ONMP should be read in conjunction with the MCP NVMP. What is included in the MCP NVMP supersedes all other requirements outlined in this current plan.

As part of the MCP CENMT, reporting of the different types of operations that take place within the MCP area may be required to be quantified (to be confirmed). This is in addition to the cumulative impact of all operational sources, which should be compared against the criteria presented in Table 8 to determine overall compliance by the MCP precinct.

Following the compliance monitoring, and the assessment of compliance through SoundPLAN noise modelling as outlined in the MCP Noise Management Framework (to be developed) the model should be submitted to PON for review. Following approval of the model, the following should be supplied back to PON for their records:

- Annual Noise Verification report; and
- SoundPLAN Verification Model.

4.3 Investigation procedures for non-compliance

Where monitoring results indicate values in excess of the noise criteria/quota, Stolthaven should implement investigation procedures. The investigation should commence as soon as practicable, generally on the same day as the completion of data validation or following the receipt of relevant environmental monitoring reports. The investigation should be conducted to review the potential causes of the exceedance and should include the following information:

- The date and timing of the exceedance(s)
- General location of the exceedance(s)
- Meteorological conditions at the time and location of the exceedance(s)
- Identification of project related noise activities and location
- Identification of non-project related noise emission activities and location.

The investigation should involve the consideration of the monitoring results in conjunction with site activities being undertaken at the time, the prevailing and preceding meteorological conditions and any changes to activities being undertaken in the vicinity. If considered appropriate, the investigation may involve the engagement of relevant specialists. The results of any such investigations should be summarised in a noise incident report and recorded in the compliance tracking program.

This procedure should also apply in the case that a noise complaint is received from a member of the public.

Investigation procedures should be in general accordance with the guidelines presented in the INP, and should be set up and executed in general accordance with Section 6.1 Stolthaven “Incident and Accident Reporting Procedure”.

4.4 Corrective action

If following the above assessment, the exceedance of the applicable noise quotas/criteria is determined to be due to the operation of the Facility, Stolthaven should determine appropriate management and mitigation strategies and implementation of contingency measures in consultation with PON and EPA or DPIE where appropriate. These should be in addition to those implemented as part of normal operational activities of the Facility (including modifications to operational

methodologies, if necessary). Following any actions, details should be provided to PON and any other relevant agencies.

4.5 Direction by PON

If PON direct Stolthaven to incorporate appropriate noise management and mitigation strategies they should be incorporated in consultation with PON. However, it should be noted that these instructions should be feasible and reasonable.

5.0 Previous Noise Compliance Assessment Results

Attended noise measurements were undertaken at receiver locations to assess the Facility's operational compliance in 2015, 2016, 2017 and 2018 in accordance with the Facility's Consent Conditions and the EPL. Measurements were conducted at receivers R1, R4, R5, R7 and R8, as presented in Figure 1.

At all the measurement locations, except R3 and C (2 Creber Street, Mayfield and 32 Elizabeth Street, Carrington) exceedances of the noise limits were noted when only industrial noise was apparent at the measurement locations in the absence of traffic contribution from Industrial Drive or other adjacent roads.

During the attended measurements, it was not possible to distinguish the noise contribution from the Facility from the other industrial sources in the surrounding area at all measurement locations. Thus, it was not possible to determine the noise contribution from the Facility in isolation through direct measurement. The INP provides guidance in Chapter 11 as to how to review the noise emissions of a site where the existing noise levels are already high.

Section 11.1.2 Notes on noise monitoring of the INP states:

Where existing noise levels are high

“When compliance is being measured it may be found that, in many cases, existing noise levels are higher than noise level from the source, making it difficult to separate out the source noise level. When this happens, it may not be feasible to measure compliance at the specified location, and other methods will be needed. In these cases, measurements may be taken closer to the source and then calculated back to the specified location.”

Accordingly, on-site measurements of individual plant items and typical operations were undertaken at the Facility in order to develop the noise model used for this noise compliance assessment.

Observations were made of the onsite operations, which have then been reviewed in conjunction with the facility operational data to model 'reasonable' worst case operational scenarios over the assessment periods.

In order to determine compliance with the recommended noise limits, the predicted noise levels for each operational scenario were determined at each of the assessment locations.

Modelling was undertaken using SoundPLAN noise modelling software. The Facility operates 24 hours a day, 7 days a week. Therefore, predicted noise levels for the worst-case night-time period are presented for ('reasonable 'worst' 15-minute period) operational scenarios and night amenity (whole of period) scenarios during adverse weather conditions were assessed against the night time criteria for each scenario.

The noise model was validated using the noise logger results and the attended measurements.

5.1 Reference documents

The results from the previous noise compliance assessments presented in this section are extract from the following documents:

- 2015 Operation Noise Compliance Assessment , reference 60326869-RPNV-02-C dated 29 October 2015
- 2016 Operation Noise Compliance Assessment , reference 60326869-RPNV-04-C dated 20 December 2016
- 2017 Operation Noise Compliance Assessment , reference 60326869-RPNV-05-FINAL dated 02 February 2018
- 2018 Operation Noise Compliance Assessment , reference 60326869-RPNV-06_0 dated 21 January 2019.

5.2 Reasonable worst-case intrusiveness scenario (15-minute period)

The predicted noise levels from the operation of the Facility in 2015 and 2016 were assessed against the operational noise limits provided in Section L5.1 of the EPL No. 20193, License version date 27 August 2015. Table 9 present the predicted noise levels at each of the assessment locations during worst case wind conditions, during each of the reasonable worst-case operational scenarios and determine compliance with the noise limits provided in EPL No. 20193, License version date 27 August 2015.

Following an update of the EPL 20193, the predicted noise levels from the operation of the Facility in 2017 were assessed against the operational noise limits provided in Section L5.1 of the EPL 20193, License version date 28 August 2017. Operation of the Facility in 2018 were assessed against the operational noise limits provided in Section L5.1 of the EPL 20193, License version date 14 September 2018.

Table 10 presents the predicted noise levels at each of the assessment locations during worst case wind conditions, during each of the reasonable worst-case operational scenarios and determine compliance with the noise limits provided in EPL No. 20193, License version date 28 August 2017 and License version date 14 September 2018 (License version date 2017/2018).

Table 9 Predicted noise levels intrusiveness scenario (15 minute period) – Night Scenario 2015 & 2016

Receiver	EPL No. 20193, License version date 27 August 2015, noise limits, L _{Aeq} (15 min), dB(A)	2015 - Predicted noise level ¹ , L _{Aeq} (15 min), dB(A)			2016 - Predicted noise level ¹ , L _{Aeq} (15 min), dB(A)		
		Worst case site operations	Worst case truck operations	Compliance	Worst case site operations	Worst case truck operations	Compliance
R1	42	29	34	Yes	31	30	Yes
R2	42	30	36	Yes	32	31	Yes
R3	42	30	35	Yes	33	32	Yes
R4	42	36	39	Yes	41	39	Yes
R5	42	36	39	Yes	40	38	Yes
R6	42	36	40	Yes	40	39	Yes
R7	42	31	36	Yes	26	26	Yes
R8	44	22	24	Yes	22	21	Yes
R9	51	19	22	Yes	22	21	Yes
R10	N/A	35	39	Yes	30	29	Yes

Notes:

1. Predicted noise levels were assessed under noise enhancing weather conditions, i.e. 3 m/s source to receiver wind.

Table 10 Predicted noise levels intrusiveness scenario (15 minute period) – Night Scenario 2017 & 2018

Receiver	EPL No. 20193, License version date 2017/2018, noise limits, L _{Aeq} (15 min), dB(A)	2017 - Predicted noise level ¹ , L _{Aeq} (15 min), dB(A)			2018 - Predicted noise level ¹ , L _{Aeq} (15 min), dB(A)		
		Worst case site operations	Worst case truck operations	Compliance	Worst case site operations	Worst case truck operations	Compliance
R1	35	32	32	Yes	30	30	Yes
R2	35	33	32	Yes	32	32	Yes
R3	41	41	39	Yes	37	36	Yes
R4	40	40	39	Yes	36	36	Yes
R5	42	40	39	Yes	37	37	Yes
R6	41	37	37	Yes	36	36	Yes
R7	35	34	33	Yes	32	32	Yes
R8	35	34	33	Yes	32	32	Yes

Notes:

1. Predicted noise levels were assessed under noise enhancing weather conditions, i.e. 3 m/s source to receiver wind.

It can be seen in Table 9 and Table 10 that the predicted noise from reasonable worst case operational scenarios during adverse weather conditions are within the applicable EPL criteria.

5.3 Reasonable worst-case amenity (whole of day, evening or night period) scenarios

The 2015 amenity noise assessment of the Facility was modelled assuming the maximum trucks through the Facility in accordance with SSD_7065 approval (stage 1 - 1'300 ML per year). After 2015, to more accurately represent the Facility amenity noise emission at the time of the compliance assessment, reasonable worst-case trucks movements through the Facility were developed based on the truck movements for each year.

At the time of 2015 and 2016 assessment the MCP noise quotas for the Facility had yet to be developed. The predicted noise level determined in the 2015 and 2016 were therefore assessed against the MCP overall noise goals for compliance. Table 11 presents the predicted noise levels at each of the amenity assessment locations during each of the amenity operational scenarios and determine compliance with the MCP overall noise goals.

Table 11 Predicted noise levels amenity scenario – Night scenario 2015 & 2016

Receiver	MCP overall noise goals, L _{Aeq} (period), dB(A)	2015 - Predicted noise level ¹ , L _{Aeq} (period), dB(A)		2016 - Predicted noise level ¹ , L _{Aeq} (15 min), dB(A)	
		Night-time	Compliance	Night-time	Compliance
A	43	30	Yes	26	Yes
B	43	35	Yes	35	Yes
C	45	20	Yes	17	Yes
D	37	18	Yes	17	Yes

Notes:

1. Predicted noise levels were assessed under noise enhancing weather conditions, i.e. 3 m/s source to receiver wind.

It can be seen in Table 11 that the predicted noise from reasonable worst-case amenity (whole period) operational scenarios during adverse weather conditions are within the MCP overall noise goals.

Stolthaven Stage 3 (SSD 7056) Environmental Impact Statement noise quotas were allocated to the Stolthaven Stage 3 development. The predicted noise level determined in the 2017 and 2018 were therefore assessed against the MCP noise quotas for the Facility for compliance. Table 12 presents the predicted noise levels at each of the amenity assessment locations during each of the amenity operational scenarios and determine compliance with the MCP noise quotas for the Facility.

Table 12 Predicted noise levels amenity scenario – Night scenario - 2017 & 2018

Receiver	MCP noise quota, L _{Aeq} (period), dB(A)	2017 - Predicted noise level ¹ , L _{Aeq} (period), dB(A)		2018 - Predicted noise level ¹ , L _{Aeq} (15 min), dB(A)	
		Night-time	Compliance	Night-time	Compliance
A	30	27	Yes	24	Yes
B	34	34	Yes	32	Yes
C	25	18	Yes	18	Yes
D	22	17	Yes	18	Yes

Notes:

1. Predicted noise levels were assessed under noise enhancing weather conditions, i.e. 3 m/s source to receiver wind.

It can be seen in Table 11 that the predicted noise from reasonable worst-case amenity (whole period) operational scenarios during adverse weather conditions are within the MCP noise quotas for the Facility.

5.4 Sleep disturbance assessment

Table 13 presents the predicted sleep disturbance noise level results extracted from the 2015, 2016, 2017 and 2018 compliance assessments and the EPL No. 20193 sleep disturbance noise limits.

Table 13 Sleep disturbance assessment

Receiver	EPL No. 20193, noise limits, L_1 (1 min), dB(A)	2015 - Predicted noise level ¹ , L_{A1} (1 min), dB(A)		2016 - Predicted noise level ¹ , L_{A1} (1 min), dB(A)		2017 - Predicted noise level ¹ , L_{A1} (1 min), dB(A)		2018 - Predicted noise level ¹ , L_{A1} (1 min), dB(A)	
		Night-time	Compliance	Night-time	Compliance	Night-time	Compliance	Night-time	Compliance
R1	52	42	Yes	43	Yes	44	Yes	44	Yes
R2	52	47	Yes	48	Yes	48	Yes	48	Yes
R3	52	48	Yes	48	Yes	49	Yes	48	Yes
R4	52	48	Yes	48	Yes	47	Yes	47	Yes
R5	54	45	Yes	46	Yes	51	Yes	51	Yes
R6	52	49	Yes	51	Yes	50	Yes	50	Yes
R7	52	46	Yes	47	Yes	47	Yes	47	Yes
R8	54	31	Yes	29	Yes	48	Yes	48	Yes
R9	61	28	Yes	30	Yes	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Notes:

1. Predicted noise levels were assessed under noise enhancing weather conditions, i.e. 3 m/s source to receiver wind.

It can be seen in Table 11 that the predicted L_{A1} (1 min), noise levels during adverse weather conditions are within the EPL No. 20193 sleep disturbance criteria for the Facility.

6.0 Complaint Reporting and Responsibilities

6.1 Complaints and enquiries management

In accordance with EPL 20193 Section M7 Stolthaven is required, within three months of the issuing date of the EPL 20193, to have a telephone complaints line in operation during its operating hours. The purpose of this is to receive any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant to ensure complaints are dealt with adequately.

Stolthaven must notify PON of any noise related complaint as soon as possible after a complaint has been received. Complaints should be investigated and addressed by Stolthaven in consultation with the PON.

The Facility's complaints contact number should be publicised as a complaint line, displayed on site and listed with a telephone company. This enables any member of the general public to reach a person who can arrange an appropriate response action to a complaint about the Facility.

Stolthaven must have a nominated representative of the company who is available at all times and is capable of providing immediate assistance or response during emergencies or any other incidents at the premises. The name of the nominated representative and their contact details, including a telephone number, must be current at all times. This should be in place within 2 weeks of the issuing date of the EPL 20193.

Contact details for the public to make enquiries or lodge complaints about the Facility are:

- Emergencies /Incidents Telephone: +61 498 762 177 (Ryan Duckmanton – Site Manager)

6.2 Complaint / Event reporting

If complaints are received, the Facility's Environment Manager (or similar position) should complete an Environmental Incident Report Form (or similar document) to record details of the occurrence and actions taken. Where applicable, completed forms should detail the following:

- The date and time of the complaint
- The method by which the complaint was made
- Any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect
- The nature of the complaint
- Description of noise source that is the subject of complaint, duration of event
- Location of complainant during time of incident, and general area in which the noise source was located
- Identification of project related noise activities and locations that could have or are known to have contributed to the incident
- If known, identification of non-project related noise emission activities and location at time of incident
- Meteorological conditions at the time of the incident
- The action taken by Stolthaven in relation to the complaint (Refer to Section 4.3 for method for investigation procedures for complaints)
- Any follow-up contact with the complainant
- If no action was taken by Stolthaven, the reason why no action was taken.

All records should be kept in a legible form, or in a form that can readily be reduced to a legible form and kept for at least four years after the complaint or event to which they relate took place. In the case that any authorised officer of the EPA requests to see them they should be produced for review.

6.3 Responsibilities and accountabilities

Details of roles, responsibility, authority and accountability of key project personnel are detailed in Table 14.

Table 14 Key Project Personnel

Role	Responsibility	Authority	Accountability
Site Manager	Ensure all site mitigation measures are undertaken in accordance with this ONMP.	Provide advice to the General Manager.	Reports to the General Manager.
	Provide reports in accordance with Section 6.1.	Advise of events and complaints.	Reports to the General Manager.
	Manage complaints and noise criteria exceedance events.	Follow contingency plan in accordance with Section 4.3.	Reports to the General Manager.
General Manager	Oversight of implementation of mitigation measures and be involved with the Site Manager in development of mitigation initiatives and community engagement.	Involvement in community engagement and impact mitigation strategies.	Reports to senior management.

6.3.1 Community consultation

Stolthaven is to contribute to the Community Communication Strategy as part of the MCP. The details and timing of this contribution should be determined by PON.

7.0 Data Storage and Plan Review

It is recommended that a consistent and concise data storage and collection procedure be implemented. This procedure should be used for the collection of all complaints, contingency plans, investigations and any other reporting related to any noise incident/event.

All records should be kept in a legible form, or in a form that can readily be reduced to a legible form and kept for at least four years after the monitoring or event to which they relate took place. In the case that any authorised officer of the EPA requests to see them they should be produced for review.

This ONMP should be reviewed by the Site Manager as required to ensure that the system is conforming to the requirements of the consent, EPL 20193, EA, Submissions Report and Statement of Commitments. Reviews should be undertaken as a result of any of the following:

- Three months after the commencement of its use;
- When there is a change in the operational scope/activity that requires a change in environmental controls;
- When there is a need to improve performance in an area of environmental impact;
- At the completion of environmental audits as required;
- Reasonable requirements of the Secretary (DPIE) arising from the Department's assessment of any reports, strategies, plans, programs, reviews, audits or correspondence that are submitted in accordance with the consent and the implementation of any actions or measures contained in these documents;
- As a result of changes in environmental legislation applicable or the MCP Noise Management Framework and relevant to the operation of the Facility;
- Upon request by PON, to remain consistent with the requirements of the MCP.
- In conjunction with the review schedule of related environmental management plans.

Reasons for a review of the ONMP should be documented. Details of any significant changes made to the ONMP should be supplied to the PON, EPA, and DPIE.

8.0 References

- *Noise Verification Monitoring Plan, Mayfield Concept Plan*, prepared by AECOM, Report No. 60437494, Revision C, dated 15 October 2015.
- *Mayfield Concept Plan Cumulative Noise Modelling, User Guide*, prepared by AECOM, Report No. 60289391, Revision 1, dated 15 July 2015.
- Australian Standard AS 1055:2018 Acoustics – Description and measurement of environmental noise.
- Australian/New Zealand Standard AS/NZS IEC 61672.1:2019 Electroacoustics - Sound level meters – Part 1: Specifications.
- Department of Infrastructure, Planning and Natural Resources (2004) Guidelines for the Preparation of Environmental Management Plans.
- Environment Protection Authority (EPA) (1999) *NSW Environmental Noise Criteria for Road Traffic Noise*.
- Environment Protection Authority (EPA) (2000) *NSW Industrial Noise Policy*.
- New South Wales Government Environment Protection Authority Environmental Protection Licence No. 20193, version date 27 August 2015.
- New South Wales Government Environment Protection Authority Environmental Protection Licence No. 20193, version date 28 August 2017.
- New South Wales Government Environment Protection Authority Environmental Protection Licence No. 20193, version date 14 September 2018.
- New South Wales Government, Department of Planning & Infrastructure (Application 09_0096) dated 16 July 2012 (latest modification 12 December 2014).
- AECOM Australia Pty Ltd, “*Stolthaven Mayfield Bulk Fuel Terminal – SSD_7065 – Noise and Vibration Impact Assessment*”, Report No. 60326869-RPNV-03_0, dated 19 February 2016.
- AECOM Australia Pty Ltd, “*Stolthaven Bulk liquids Fuel Storage Facility, Mayfield – Operational Noise Compliance Assessment (2017)*”, Report No. 60326869-RPNV-05_0, dated 2 February 2018.
- AECOM Australia Pty Ltd, “*Stolthaven Bulk liquids Fuel Storage Facility, Mayfield – Operational Noise Compliance Assessment (2017)*”, Report No. 60326869-RPNV-05_0, dated 2 February 2018.