LANDSCAPE MANAGEMENT PLAN

Stolthaven Newcastle

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0	May 13	Draft Issue	JCB	JCB
1	Dec 15	Review – Updated DA (SSD 6664 MOD 1)	LBU	RDK
2	Sep 16	Review & change to review period	ANW	RDK
3	June 18	Amendments in accordance with SSD 7065	ANW/VIF	RDK
4	June 20	Surrender SSD 6664 amendment	ANW/RDK	RDK
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1 INTRODUCTION

In accordance with the Stolthaven Newcastle development consent SSD SSD 7065 approval conditions for terminal construction and operation. Stolthaven Terminals must prepare and implement design and landscape management plan for the project.

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.

2 SCOPE

The plan must be prepared in consultation with PON and be submitted to the Secretary for approval. The Plan must:

a) Demonstrate the building treatments are of sufficient design quality to minimise the visual impacts of the development, and include a variety of materials and external finishes;
b) Illustrate the location, species and mature heights of plants to be established on site;
c) Provide for the maintenance of the landscaping on site; and
d) Illustrate how the design of the buildings would integrate with the landscaping proposed, ensuring landscaping is used to minimise views of the site.

2.1 CONDITIONS OF APPROVAL (CoA)

Approval of development consent SSD_7065 under Section 89E of the EP&A Act was granted by the Minister for Planning on 15th December 2016 for the subject site. The following is a copy of the sections relevant to Landscape Management Plan in the consent conditions provided to the Facility.

CoA	Requirement	WMP Reference
Schedule C – Specific Environmental Conditions		
Condition C50.	The applicant shall update the existing design and landscape management plan for the site to include the development, to the satisfaction of the Secretary. The	Noted

	plan must:	
	a) be prepared in consultation with PON and in accordance with the relevant requirements of the Newcastle Development Control Plan, 2012;	Noted
	b) be updated and implemented prior to the commencement of operation;	Noted
	c) demonstrate the building treatments are of sufficient design quality to minimise the visual impacts of the SIte, and include a variety of materials and external finished;	Section 7.
	d) illustrate the location, species and mature heights of plants to be established on the Site;	Section 8.
	e) provide for the maintenance of the landscaping onsite; and	Section 7.3
	f) ensure the administration building and landscaping is consistent with the requirements of the PON acknowledging the Site's location at the entrance to the Mayfield Concept Plan area.	Section 7.

3 MAYFIELD CONCEPT PLAN

3.1 LOCATION

The terminal facility is located on part of the Mayfield concept plan, approximately 5 km northwest of the Newcastle CBD. The Project is wholly located within the following land holdings, which form the site:

- Lot 2 DP 1177466, the Terminal Site;
- Lot 39 DP 1191723, the location of M7; and
- Lot 1 DP 1177466, through which the pipeline between the Terminal and M7 traverses

3.2 CONTAMINATED SITE MANAGEMENT PLAN

The former BHP Steelworks Site Contaminated Site Management Plan (CSMP) provides a common framework for the ongoing management of the remediated land which falls within the Mayfield Concept Plan Approval Area. The CSMP is designed to provide the guidance for the ongoing management of the contaminated land such that the integrity of the remediation works is maintained to prevent the release of, or environmental impacts occurring from, liberated contamination. Therefore, any landscape management controls must adhere to the CSMP.

3.2.1 CAPPING LAYER

Any proposed landscape management activities must be conducted in accordance with the CSMP. A permit must be instated for any significant works that involve excavation. This is to ensure that the capping layer, which was installed during the main remediation stage is not disturbed.

3.2.2 IMPORTED MATERIAL

Any soil which is imported on to the Mayfield concept plan must satisfy the criteria for being either; Virgin Excavated Natural Material (VENM) or Excavated Natural Material (ENM).

4 ENVIRONMENTAL ASSESSMENT

The Environmental Assessment conducted by AECOM (November, 2011) indicated:

"To incorporate landscaping as a critical element to the development proposal. The controls indicate that particular development activities, visually prominent sites and development adjacent to open space require landscape planning. The proposal would not be visually prominent or adjacent to an open space reserve."

Landscaping of the car parking area and office buildings was proposed to be developed as part of the site management plan. However, the planting of boundary vegetation would not be included as this would present a fire safety hazard risk. Any remnant weeds that are present post site remediation would be removed and managed.

5 RESPONSIBILITIES

Position	Responsibility
Ncl Operations Manager	Ensure that groundwater monitoring wells are not damaged during normal operations; Ensure that operations undertaken at the site do not cause contaminants to be released to groundwater.
Operations Coordinator	It is the responsibility of the Operations Coordinator that all site personnel and contractors undertaking works at the site to ensure that the measures of the landscape management plan are adhered to.
Operational Team	Adhere to all the measures listed within this landscape management plan document.

6 POTENTIAL ENVIRONMENTAL IMPACTS

6.1 RISK MATRIX

Refer to Appendix A: Risk Matrix

6.2 RISK ASSESSMENT

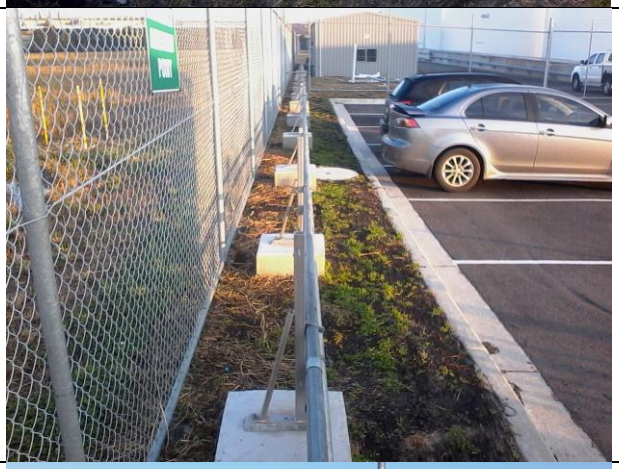
Site activities, which if not appropriately managed could potentially have risk to human safety.

Activity	Cause of Environmental Harm	Associated Risk
The use of lawn mowers and 'whipper snippers' for yard maintenance	Contact with blades and/ or cable. Manual Handling Incident	Medium
The use of Roundup chemical on weeds within the terminal	Loss of containment which comes into contact with groundwater flow	Low
Excavation and stockpiling of contaminated soils and/ or soil containing hydrocarbon	Excavation during earthworks on site, damaging the capping layer	Medium

impact		

7 LANSCAPED AREAS

The below areas have been identified for landscaping to add to the aesthetics of the terminal infrastructure. The areas are as follows:

Description	Size of Area	Image
A grassed area inside southern boundary fence from carpark to the workshop area. *This is scoped to contain a grassed surface of traditional buffalo grass.*	Area covers approximately 40 m^3.	
A grassed area located south of the staff carpark. *This is scoped to contain a gravelled surface.*	Area covers approximately 20 m^3.	
An ornamental grassed area inside the southern boundary beside the car park. Near the High Voltage Transformer. *This is scoped to have a grassed surface (traditional buffalo grass) with two potted plants; selected from the proposal in section 8. The pots will be a minimum of 500 mm in height.*	Area covers approximately 15 m^3.	

Note: There is no boundary vegetation planting as this presents a fire safety hazard risk.

A hard surfaced area near the fire water tank. *At the fence line there will be two large potted plants. Selected from the proposal in section 8. The pots will be a minimum of 500 mm in height.* *Note the potted plants may be relocated to the office building for shelter during hot periods.*	Area covers approximately 100 m^3.	

7.1 VISUAL IMPACT

7.1.1 PRODUCT TANKS

The product tanks are white to reduce heating by radiation (the sun) and minimise vapour disbursement; therefore the resultant visual impact is of a secondary importance in terms of environmental effects.

7.1.2 BUILDINGS AND GANTRY

The cladding for the load gantry, office building and fire water tank is a Woodland grey colour to minimise visual impact. The colour was selected due to its neutral appearance, which demonstrates a greater efficacy within the urban setting.

Woodland Grey, has a solar radiation absorbance factor of 0.71 (NaTHERs generated figure), which results in a moderate level of heat absorbance. This has become indicative to sustain a steady temperature within the site infrastructure.

The onsite facilities are architecturally and modern in design, which generates a contrast against the white cylindrical tanks. This has resulted in a low impact aesthetically pleasing design.

7.2 CONTROLS OF LANDSCAPED AREAS

7.2.1 ENGINEERING CONTROLS

During the initial construction of the terminal facility and in accordance with the projects current consents, landscape controls where installed to reduce some impeding environmental impacts, these are as follows:

- Earthen bunding, located along the western side of the bulk fuels precinct.
    - Installed to minimise erosion (wind and water) and direct any surface material into the western drain.
- Earthen drains; located along the northern and southern sides, within the boundary lease area.
    - Installed to reduce site ponding and directed any surface water into the western drain.
- Silt trap fences; located on the northern side of the terminal facility just outside the boundary lease area (construction area – future development).
    - Installed for erosion (wind and water) control.

7.2.2 MANAGEMENT CONTROLS

Stolthaven Newcastle has developed a site specific maintenance management plan, which covers the routine upkeep of the site facilities.

7.3 MAINTENANCE OF LANSCAPED AREAS

The maintenance of the landscaped areas will comprise off:

- Lawns mowed and edges trimmed;
- Shrubs watered and fertilised when required;
- Shrubs pruned when required;
- Lawns watered and fertilised when required;
- Repairs to lawn areas; and
- Weed control.

This work will be carried out by a Stolthaven personnel or an approved contractor.

8 PLANT SELECTION

The selection of shrubs species will be based height of mature growth, visual impact, suitability to survive in pots and tolerance to drought.

The selection of grasses species will be a selection of traditional grasses and ornamental grasses especially around the car park and office buildings areas. Their selection will be based on visual impact and tolerance to drought.

	Common Name	Botanical Name	Mature Plant Height	Foliage	Plant Features
Potted plants†	Scented Leaf Geranium	Pelargonium	600 mm	Fragrant Flowering	Tough, heard and heat resistant
	Geranium	Zonal Pelargonium	500 mm	Flowering all year round	Tough, heard and heat resistant
	Pink Flowering Succulent	Sedum	300 mm	Flowering all year round	Low maintenance
	Kalanchoe Calandiva	Kalanchoe Blossfeldiana Calandiva	150 mm	Double flowers	Easy to grow, drought tolerant
	Haworthia	Haworthis spp	150 mm	Cacti-like	Low Maintenance
	Magnolia	Magnolia Nana	500 mm	Green foliage	Low Maintenance
	Yacca	Various	1600 mm	Green foliage/flowering	Tough, heat resistant
	Agave	Agave Americana	500mm	Green foliage/flowering	Tough, heat resistant, dry climate
	Ponytail Palm	Beaucarnea recurvata	9000mm (restricted size in pot)	Long slender cascading leaves	Full sun, swollen trunk helps through dry periods.
	Dragon Blood tree	Dracaena cinnabari	1500mm	Canopy of prickly, stiff grey	Sweet smelling

				leaves	greenish-white flowers & bright orange berries.
Ornamental Grasses	Mini Mondo Grass	Opiopogon japonicas	100 mm	Dark green with deep blue	Dense ground cover
	Liriope Muscari Variegata	Liriope Muscari	120 mm	Green and gold	Good plant in full sun
	Mondo Grass	Opiopogon japonicas	150 mm	Evergreen	Drought hardy
Traditional Grasses	Arid Smart Grass		50 mm	Thin leaf grass	Drought hardy
	Buffalo grass		50 mm	Broad leaf grass	Drought hardy

9 REPORTING

Any site personnel or contractor that becomes aware of an actual or potential failure in the landscape management controls will report this matter as soon as practically possible to the Ncl Operations Manager, as defined in the Site Emergency Response Plan (ERP).

Stolthaven will provide the detailed results from the Environmental Monitoring Program in an annual Environmental Management Report to the Secretary. The report will:

a) Review the environmental performance of the operation to determine if operations are complying with standards, performance measures and statutory requirements;
b) Identify any non-compliance with standards, performance measures and statutory requirements;
c) Include a summary of any complaints regarding environmental aspects of operations and indicate what actions were taken (or are being taken) to address these;
d) Include a detailed report from the environmental monitoring program in reference to the site EPA licence (20193); and
e) Where non-compliance has occurred describe actions taken (or being taken (to ensure compliance, who is responsible and when actions will be completed.

Stolthaven will also supply to the EPA an annual return in the approved form as noted in the site EPA licence (No. 20193). The annual return for the reporting period will be supplied to the EPA no later than 60 days after the end of each reporting period.

10 CORRECTIVE ACTIONS

In the event that performance monitoring indicates that the landscape management quality controls are not achieving compliance with the designated performance criteria causing a significant incident, the following actions will be implemented in line with Stolthaven Newcastle Emergency Response Plan (ERP) and Environmental Protection Licence (EPL):

- Immediate notification must be made to the Environmental Line Service (131 555);
- Reporting in accordance with part 5.7 of the Protection of the Environment Operations Act (PEOA, 1997);

- Determine the cause(s) of non-compliance to relevant criteria;
- Implement specific corrective measures, which may include replacement or maintenance of erosion and sediment control structure and/or stormwater quality improvement devices, removal of any fuel or liquid waste spillage, collection and removal of any fugitive litter, etc.;
- Relevant validation monitoring to verify that corrective measures have been implemented and are achieving the required performance level.

11 DOCUMENTATION

1. Contaminated Site Management Plan (CSMP)
2. Environmental Impact Statement (AECOM, 12 December 2014)
3. Development Approval (DA 7065)
4. Maintenance Schedule
5. Emergency Response Plan (ERP)
6. Pollution Incident Response Management Plan (PIRMP)

APPENDIX A: RISK MATRIX

Severity	Consequences				Increasing Likelihood				
	People	Asset	Environmental	Reputation	A Improbable OR Never heard of in Industry	B Possible OR Heard of in industry	C Incident has occurred in our Organisation or more than once in the Industry	D Has happened at the location or more than once per year in Our Organisation	E Happened more than once per year at the location
0	No health effect or injury	No Damage	No Effect	No Impact	L	L	L	L	L
1	Slight health effect/ injury	Slight damage <$10K, No disruption	Slight Effect	Slight Impact	L	L	M	M	M
2	Minor health effect/ injury	Minor damage $10K - $100K, Brief disruption	Minor Effect	Limited impact	L	M	M	H	H
3	Major health effect/ injury	Moderate damage $100K-$1M, Partial shutdown	Moderate Effect	Moderate impact	M	M	H	H	E
4	PTD or up to 3 fatalities	Major damage $1M-10M, Partial operational loss	Major Effect	Major/ National Impact	M	H	H	E	E
5	More than 3 fatalities	Extensive damage > $10M, Substantial/ total loss	Massive Effect	Massive/ international impact	H	H	E	E	E

APPENDIX B: SITE PLAN