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Former Mushroom Farm – Operational Environmental Management Plan

NSW Department of Industry, Lands & Water



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Document title

Former Mushroom Farm – Operational **Environmental Management Plan**

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Approved by Luke Speechley

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Executive Summary

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The NSW Department of Industry, Lands and Water (DoI) owns land located off Barnett Street on the Greater Western Highway, Glenbrook. The land comprises Lot 1 DP196131 and Lot 7010 DP026604 and is herein referred to as the site. The site is vacant and generally noy occupied, however has recently been used by Council for the purposes of storage and handling of woodchips and sandstone and is regularly accessed by members of the public as a thoroughfare (walking/cycling).

Portions of the site have historically been subject to uncontrolled filling and have been used for various purposes, including mushroom farming and storage of related materials. Recent investigations have indicated that the site is subject to contamination and requires remediation in order to facilitate ongoing use and/or proposed future development.

The purpose of this Operational Environmental Management Plan (OEMP) is to provide a framework for the management of environmental hazards at the site until such time as the site is remediated.

The objectives of this OEMP are to:

- » Identify known and potential environmental hazards at the site;
- » Identify risks which may occur due to the presence of environmental hazards;
- » Detail controls and mitigation measures for the management of risks; and
- » Identify the persons responsible for implementing and maintaining the OEMP.

Soils on the site are known to be contaminated by the presence of asbestos containing materials and Polycyclic Aromatic Hydrocarbons at concentrations which in some circumstances may represent a risk to human health. Soils also contain concentrations of metals which may represent a risk to the offsite environment.

An environmental risk assessment has been completed based on the likely site activities, the impacts they cause and the receptors likely to be impacted. The risk assessment considers site activities which may feasibly have a negative impact on human health, environmental receptors and other elements of DoI business and identifies appropriate controls to mitigate the risks.

The below table provides a summary of the high risk items identified through the risk assessment process and identifies the relevant Control Plan(s) and summarises the required controls.

High Risk Items	Control Plan	Summary Controls
» Disturbance of ACM and/or contaminated soils resulting in exposure of workers or trespassers.	 » CONTROL PLAN: Asbestos and Soil Contamination (Section 5) » CONTROL PLAN: Monthly Site Inspection (Section 9) 	 » Limiting disturbance of soil in high risk areas » Limiting access to portions of the site for members of the public » Demarcation and signage of high risk areas » Prevention of the use of plant, machinery and excavation in high risk areas » Monthly inspections
» Offsite migration of contaminated soils.	 » CONTROL PLAN: Environment (Section 6) » CONTROL PLAN: Monthly Site Inspection (Section 9) 	 Maintenance of current Erosion and Sediment Controls Installation of new sediment controls as necessary Monthly inspections
» Pollution Incidents	 » CONTROL PLAN: Pollution Incidents (Section 7) 	» Processes to manage pollution incidents

High Risks Items, Control Plans and Summary Controls



» Unexpected Finds	 » CONTROL PLAN: Unexpected Finds (Section 8) 	» Processes to manage unexpected finds
» Changes to hazards and/or degradation of control	» CONTROL PLAN: Monthly Site Inspection (Section 9)	» Monthly inspection requirements

Should the type and nature of site activities and operations change, this OEMP shall be reviewed and updated in accordance with the changed use. Review of this OEMP shall be undertaken by the property manager regularly at six-monthly intervals, or upon significant changes to site uses and activities. Any revisions to this OEMP shall be recorded and documented in the document control register at the front of this OEMP.



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1. Introduction

1.1. Overview & Objective

The NSW Department of Industry, Lands and Water (DoI) owns land located off Barnett Street on the Greater Western Highway, Glenbrook. The location of the site is shown in **Appendix A, Figure 1**. The land comprises Lot 1 DP196131 and Lot 7010 DP026604 and is herein referred to as the site. The site boundary and general site configuration is shown in **Figure 2**.

Portions of the site have historically been subject to uncontrolled filling and have been used for various purposes, including mushroom farming and storage of related materials. Recent investigations have indicated that the site is subject to contamination and requires remediation in order to facilitate ongoing use and/or proposed future development.

The purpose of this Operational Environmental Management Plan (OEMP) is to provide a framework for the management of environmental hazards at the site until such time as the site is remediated. An environmental hazard in the context of this OEMP is any hazard resulting from the presence of contamination, which has the potential to impact negatively on the environment, the health and safety of those accessing the Site or any other aspect of Dol operations.

The objectives of this OEMP are to:

- » Identify known and potential environmental hazards at the site;
- » Identify risks which may occur due to the presence of environmental hazards;
- » Detail controls and mitigation measures for the management of risks; and

» Identify the persons responsible for implementing and maintaining the OEMP.

Where practical, this OEMP has been prepared in general accordance with the NSW Department of Infrastructure and Planning and Natural Resources Guideline for the Preparation of Environmental Management Plans (DIPNR, 2004).

1.2. Site Description

The Site, is in a semi-rural area in the municipality of Blue Mountains City Council (**refer Figure 1**). The area subject to this OEMP is comprised of the area defined in Figure 2 and site details are provided in **Table 1**.

Table i Gaillinary	
Current Site Owner:	Department of Industry, Lands and Water (Dol)
Address:	Off Barnett St, Glenbrook
Location:	Approximately 62 kilometres west of Sydney's CBD
Legal Identification:	 » Lot 1 DP196131 » Lot 7010 DP1026604
Site Area:	~ 1.1 ha
Local Government Area:	City of Blue Mountains Council

Table 1 – Summary Site Details



Site History Summary	The adjacent Lapstone Hill Tunnel and the Western Portal (which is present on in the southern central area of the site) was an operational rail line from 1892 until 1913 and during this time the site was largely vacant (excepting the associated rail use). Following the closure of the rail tunnel in 1913 the site was leased for the purposes of mushroom farming. From 1939 to 1946 the Tunnel was utilised by the Royal Australian Air Force (RAAF) for the storage of explosives and mustard gas – the extent to which the site was used for these purposes is unclear. Following 1946 the site and the adjacent Tunnel reverted to use as a mushroom growing farm. During 2016, mushroom farming ceased and the site was abandoned by the tenant. Significant
	volumes of rubbish and other refuse was abandoned on site. During 2016 Dol undertook clean up and demolition works. The Site has been historically filled. It is unclear from available information, when this may have occurred.
Current Site Uses	The site is generally vacant, however portions of the site have recently been used by Council for the storage of lopped vegetation, woodchips and sandstone. Various maintenance activities (spraying, vegetation management etc) also intermittently occur on the site.
	The site is accessible to the public on foot and is regularly accessed as a thoroughfare by walkers, runners and cyclists. Portions of the site also appear to be used for recreational purposes (skating, riding).
	A number of services also exist on the site and these are accessed on occasion for maintenance and inspection purposes.

1.3. Context

This OEMP has been prepared by Nation Partners, on behalf of the site owner, Dol. This OEMP has been prepared following the demolition conducted at the property by Dol in 2017, and will come into effect following approval by Dol.

The controls in this OEMP have been developed on the basis that the remediation of the site will occur within a period of less than 12 months and are not designed to be protective of personnel or the environment in the long term. The controls have been developed as a pragmatic approach to managing safety and the environment in the period prior to remediation.

1.4. Previous Site Investigations

The following environmental studies precede this document and have assisted in the identification of risks and the formulation of control measures:

- » Contaminated Environmental Site Audit Assessment, Glenbrook Mushroom Farm, Barnett Street, Glenbrook NSW, EnviroTech, 3 February 2016 (REF-263315-A);
- » Advisory Note: Glenbrook Contamination Technical Advice, Nation Partners, 24 March 2017;
- » Analysis report: STC-722-12356 ASB 1, ADE Consulting Group, 2017; and
- » Lapstone Tunnel Detailed Site Investigation (DSI), Nation Partners, April 2018.

1.5. Contacts

Relevant contacts for the site, as well as emergency contacts, are provided in the contacts register at the front of this OEMP.

Appropriate contacts for pollution incidents are provided in Section 5 of this OEMP.



2. Legislative and Regulatory Requirements

As owners of the site, Dol must comply with the following legislative and regulatory requirements with respect to environmental management and protection.

2.1. Legislation

The following legislation is applicable to management of contamination risks at the site.

2.1.1. Protection of the Environment Operations Act (POEO Act)

As owners of the site, DoI must comply with the POEO Act, including the following aspects relating to pollution:

- » General duties not to allow or cause pollution of land, air or water;
- » Duty to notify the NSW EPA of pollution incidents causing or threatening material harm to the environment;
- » Compliance with any Clean Up Notices or Prevention Notices issued by regulators in relation to the properties; and
- » Compliance with the requirements of the Protection of the Environment Operations (Waste) Regulations 2014, requiring appropriate classification and lawful disposal of wastes.

2.1.2. Contaminated Land Management Act (CLM Act)

The CLM Act requires site owners to comply with the following requirements in relation to contamination:

- » Requirement to take reasonable steps to prevent contamination from occurring;
- » Duty to report contamination (above certain thresholds) to the NSW EPA. Reporting would be triggered upon DoI becoming aware of significant contamination, noting that DoI should take reasonable steps to become aware; and
- » Compliance with the requirements of any Management Orders or Voluntary Management Plans (VMPs) issued by the NSW EPA.

2.1.3. Environmental Planning and Assessment Act (EP&A Act)

The EP&A Act requires consideration of environmental impacts for any proposed development or redevelopment of the site. Any proposed redevelopment of the site would require assessment and approval under the EP&A Act and State Environmental Planning Policy 55 (Remediation of Land).

2.1.4. Work Health and Safety Act 2011

Safework NSW must be notified in writing at least five days prior to commencement of any licensed asbestos removal works. Notification to WorkCover will need to be considered for all excavation works associated with the asbestos containment area.

2.1.5. Noxious Weeds Act 1993

The Noxious Weeds Act requires Dol to control noxious weeds on land for which they are responsible. Dol are responsible for the management of noxious weeds within the site boundary.

2.2. Guidelines

The following best practice guidelines are applicable to management of surface water and are to be adopted, where appropriate, to manage environmental risk.

2.2.1. Water Quality Monitoring and Reporting

Australian and New Zealand Guidelines for Water Quality Monitoring and Reporting (ANZECC) (2000) provides a framework for conserving ambient water quality in waterways. In accordance with the requirements of the POEO, Dol must not cause pollution of waterways. The ANZECC criteria are a generic



measure applied to the discharge of water to surface water bodies to determine the impacts of contamination on the aquatic ecosystem. ANZECC criteria are applicable to any surface water migrating off the site.

2.2.2. Managing Stormwater

Managing Urban Stormwater: Soils and Construction, 14th Edition (2004) provides guidance on erosion and sediment controls to be applied during land disturbance activities as well as the design, construction and implementation of measures to improve stormwater management, during the construction-phase of urban development.

Dol are required to manage erosion and sediment migrating from the site in accordance with this document during construction works. Management measures are considered best-practice and are appropriate for adoption during interim management of the site (i.e. prior to remediation).



3. Site Conditions

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Site conditions relevant to the identification and management of environmental hazards are identified below.

3.1. Soil Conditions

Multiple activities that have historically occurred on the site have resulted in contamination of soils. These activities include uncontrolled filling, mushroom farming (including poor storage practices), demolition of structures containing hazardous materials and the storage and use of chemicals.

Known soil contamination is generally described as follows:

- » Uncontrolled fill is present at ground level across a large portion of the Site. Visible embankments of fill, ranging from 0.8m to >3.0m in height, are present on the northern boundary of the Site running parallel with Knapsack Gully and the depth of fill decreases towards the south. Areas to the south of the access road that bisects the site are generally not subject to significant filling.
- » Visible ACM is present on the Site surface at numerous locations (likely due to dumping and/or demolition of structures). A significant mass of Asbestos Containing Material (ACM) is present on the embankment skirting the northern boundary of the site and smaller fragments of ACM are intermittently present on the remainder of the Site surface. ACM on the site surface is generally in reasonably poor condition and is highly fragmented suggesting that the presence of Asbestos Fines (AF)¹ is also likely.
- » ACM is also intermittently present within the fill soil matrix and is therefore expected to be present in all areas of the site subject to uncontrolled filling.
- » Elevated concentrations of Polycyclic Aromatic Hydrocarbons (PAHs) exceeding the Health Investigation Levels (HILs) for commercial/industrial landuse criteria² are intermittently present in fill soils. HIL exceedances indicate that under conservative exposure scenarios, the contamination may represent a risk to human health.
- » The presence of elevated heavy metals and TRH concentrations exceeding the Environmental Investigation Levels (EILs)³ in multiple fill soil samples indicate that surface fill may represent a risk to the local environment and the adjacent Knapsack Gully.

Contamination may represent a risk to current users of the site including Council workers, maintenance workers and trespassers (Nation Partners, 2017). Soil contamination may also represent a risk to the offsite environment.

3.2. Groundwater Conditions

Sources of contamination with the potential to have significantly impacted groundwater have not been identified on the site. In addition, the current land use scenario does not include activities that would result in exposure to, or extraction of, groundwater. Groundwater contamination is not considered to represent a risk to current site users or the environment.

¹ National Environment Protection Measure (NEPM, 2013) - *AF includes free fibres, small fibre bundles and also small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve. (Note that for bonded ACM fragments to pass through a 7 mm x 7 mm sieve implies a substantial degree of damage which increases the potential for fibre release.) From a risk to human health perspective, FA and AF are considered to be equivalent to 'friable' asbestos in Safe Work Australia (2011), which is defined therein as 'material that is in a powder form or that can be crumbled, pulverised or reduced to a powder by hand pressure when dry, and contains asbestos'.*

² Exceeding the Health Investigation Level (HIL) for commercial/industrial land uses as defined in the National Environment Protection Measure (NEPM, 2013)

³ Exceeding the Environmental Investigation Levels (EILs) as defined in the National Environment Protection Measure (NEPM, 2013)



3.3. Surface Water

No permanent sources of surface water exist on the Site, however the adjacent surface water body (Knapsack Gully) is an important receptor of possible contamination originating from the site.

Contamination present on the site and activities undertaken onsite carry the risk of contaminating surface water in Knapsack Gully during high rainfall events.

3.4. Vegetation Conditions

The portion of the site that exists to the south of the access road is generally vegetated by native vegetation and some invasive plant species (including multiple mature trees and thick brush and shrubs).

The portion of the site to the north of the access road is partially vegetated by exotic species of largely immature trees and groundcover. Many areas of vegetation are in poor health and soils are exposed.

3.5. Existing Environmental Controls

The following existing environmental controls are present at the Site:

- » Erosion and sediment controls, consisting of coir logs and soil bunds are present on the northern boundary of the Site at the edge of the filled area. The controls seek to prevent flow of sediment laden surface water off the site into Knapsack Gully during rainfall events. Sediment controls are in various states of repair; however their configuration and design is largely appropriate.
- » The Site access is locked to vehicles and plant, however is accessible to personnel with a key and the site is accessible to trespassers on-foot or bike at both the eastern and western ends.



4. Site Risks

A source, pathway, receptor (SPR) model for contamination risks has been completed and is presented in Table 2. With regards to the presence of ACM and soil contamination, a risk only exists when a source, pathway and receptor are all present (an SPR linkage).

- » Source The cause or source of the contamination.
- » Pathway The pathway is the route the source takes to reach a given receptor.
- » Receptor If contamination is to cause harm, it must reach a receptor (a person, an environment or another entity).

Table 2 – Source Pathway Receptor Model

Source	Pathways	Receptors	
Contaminated fill and ACM on the site surface	Asbestos fibres / contaminated dust inhalation		
	Dermal contact / ingestion	Site workers, visitors, neighbours and trespassers.	
	Wind/water erosion of surface soils	Knapsack Gully and the adjacent bushland	

The SPR model specifically addresses contamination sources that are known to be present on-site. Contamination and the presence of ACM are identified as the predominant environmental hazard on the site, however unexpected sources of contamination and other activities that may result in a risk to site users or Dol are addressed in the risk assessment (refer **Section 4.4**).

4.1. Site Activities

The following activities are considered likely to occur on the site and may disturb the current contamination source(s) and/or carry the risk of unexpected finds of contamination. Due to the disturbance of an environmental hazard and the presence of a receptor, these activities may result in a risk.

- » Importation, storage, handling and/or offsite transport of sandstone, woodchips and related materials for use at off-site locations;
- » Shredding/chipping of vegetation, branches and trees stockpiled on the site;

» General site maintenance, including:

- -Mowing, pruning, weeding, spraying;
- -Use of minor plant and machinery;
- -Small excavations (for maintenance);
- -Maintenance of services (power, water, telecommunications, sewer); and
- -Maintenance of environmental controls.
- » Use of the site by workers as a thoroughfare to access the property to the east;
- » Trespass by walkers, runners, skateboarders, riders, campers and the homeless.



4.2. Environmental Risks

The activities considered likely to occur on-site (**Section 4.1**) may result in the following possible risks to site users and the environment:

- » Generation and inhalation of respirable asbestos fibres or contaminated dust during disturbance of the site surface;
- » Transport of ACM fragments to an offsite location during handling and transport of stockpiles;
- » Ingestion or dermal contact with contaminated soils;
- » Damage to vegetation, environmental controls or other surface disturbance increasing the risk of erosion;
- » Damage to hardstand or excavation of previously unidentified contaminants; and/or
- » Offsite migration of contaminated soils due to erosion events or windblown dust.

Operational activities at the Site may also result in additional site contamination and/or exacerbate current contamination through spills, leaks, damage to vegetation or damage to vegetation or current environmental controls.

4.3. Hazard Areas

Based on the known contamination (the sources) and the likely site use scenarios (pathways and receptors), the following 'Hazard Areas' have been identified and are defined in **Figure 3**:

- » Hazard Area 1 This area contains high concentrations of visible ACM on the site surface and within fill soils. Soils are also intermittently contaminated with PAHs. The area has historically been filled, is generally flat and has been used for storage of pruned vegetation and woodchips;
- » Hazard Area 2 This area contains visible ACM on the surface of the hardstand and on the surface of soils in the immediate vicinity of the hardstand. The area is used by trespassers for various activities which appear to include skateboarding and cycling;
- » Hazard Area 3 Hazard Area 3 is subject to the presence of small amounts of ACM containing materials on the site surface and (likely) within the shallow fill. The area is unsealed and variably vegetated. Hazard Area 3 is generally not in use for any productive purpose, however the easternmost portion of the area includes a well used, unsealed walking/riding track (used by trespassers); and
- » Hardstand Area The Hardstand Area is characterised by asphalt or concrete hardstand without observable ACM present on the surface. The hardstand areas are variably used for access and storage/handling of imported sandstone and other materials.

4.4. Risk Assessment

An environmental risk assessment has been completed based on the likely site activities (Section 4.1), the impacts they cause (Section 4.2) and the receptors likely to be impacted (in the context of the Hazard Areas identified in Section 4.3). The risk assessment considers site activities which may feasibly have a negative impact on human health, environmental receptors and other elements of Dol business (reputation). The risk assessment identifies appropriate controls to mitigate the identified risks.

Table 3 summarises the high risk items identified through the risk assessment process and identifies the relevant Control Plan(s). Risks identified as Medium or Low are to be managed via the application of the CONTROL PLAN: Monthly Site Inspection (**Section 9**) and the completion of site inductions.

The complete risk assessment is included in **Appendix B** and the Dol risk framework used to undertake the assessment is provided as **Appendix C**.



Table 3: High Risks and related Control Plans

High Risk Items	Control Plan					
Disturbance of ACM and/or contaminated soils resulting in exposure of workers or trespassers.	CONTROL PLAN: Asbestos and Soil Contamination (Section 5) CONTROL PLAN: Monthly Site Inspection (Section 9)					
Offsite migration of contaminated soils.	CONTROL PLAN: Environment (Section 6) CONTROL PLAN: Monthly Site Inspection (Section 9)					
Pollution Incidents	CONTROL PLAN: Pollution Incidents (Section 7)					
Unexpected Finds	CONTROL PLAN: Unexpected Finds (Section 8)					
Changes to hazards and/or degradation of control	CONTROL PLAN: Monthly Site Inspection (Section 9)					

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5. CONTROL PLAN: Asbestos and Soil Contamination

CONTROL PLAN – Asbestos and Soil Contamination

ACM fragments and contaminated fill soils are present on the site and represent a risk to the health of site users. The following actions are necessary to mitigate risks until such time as the site is remediated. The controls have been developed on the basis that the site will be remediated within a period of 12 months. Where remediation takes longer than this, the controls will require review.

The Control Plan seeks to prevent impacts to human health by controlling and limiting the scenarios in which site workers and trespassers are exposed to known and likely sources of contamination.

Nothing in this control plan seeks to prevent access to any portion of the site on-foot for the purposes of inspection, spraying or general maintenance (where plant, machinery and ground disturbance is not required).

The effectiveness of controls must be managed by the Property Manager via monthly site inspections and implementation of a site induction process.

Site Access, Induction and Safety Plans

The Property Manager must ensure through signage and access restrictions that all personnel entering the site are inducted to the requirements of this plan and wherever undertaking work on the site must develop and hold an appropriately detailed safety plan, in accordance with the requirements of this OEMP.

This requirement does not apply to personnel remaining solely on defined hardstand areas for the purposes of inspecting or traversing the site.

Where access to identified Hazard Areas is required on-foot (and where no plant/machinery or significant ground disturbance is to occur) appropriate PPE is required (P2 masks and tyvex suits) and the presence of ACM and soil contamination is to be identified in the job safety documentation and appropriately considered in the site induction.

General Site Signage

Signage is required at the site access points as indicated in Figure 3. Signage must identify the presence of ACM on the site, state the need for induction prior to accessing the site and provide a contact phone number for those needing to undertake site works.

Hazard Area 1

The boundaries of Hazard Area 1 are defined in **Figure 3**. Hazard Area 1 is subject to high concentrations of ACM on the site surface and chemical contaminants are intermittently present within the fill. Controls must therefore prevent disturbance of the ACM, the creation of dust, transport of contaminants/ACM offsite and dermal contact and ingestion of contaminated soils.

The following controls are to be implemented in Hazard Area 1:

- » Access to Hazard Area 1 is to be restricted. The site is to be demarcated via the use of hi-visibility tape or mesh fencing that provides a visible boundary between Hazard Area 1 and the remainder of the site.
- » Stockpiling of materials, use of plant/machinery, mowing, chipping of vegetation and/or other activities which may result in disturbance of the ground surface are to cease unless under the direct supervision of an appropriately qualified hygienist.
- » Stockpiles and other materials that are currently present on the site must only be removed in the presence of an appropriately qualified hygienist and under the control of an appropriate work plan that includes controls to protect



the health of workers and to prevent the transport of ACM or other contamination out of Hazard Area 1. Controls will include:

- PPE for all personnel potentially exposed (P2 masks, tyvex suits).
- The bottom 200m of all stockpiles are to remain on-site (to prevent cross contamination).
- Observation by the hygienist of the loadout.
- Clearance of the work area by the hygienist prior to works proceeding.
- Monitoring as considered necessary by the hygienist.
- » In the event of any ground penetrating earthworks within Hazard Area 1, suitable work practices and management controls must be implemented, in accordance with the requirements of the NSW SafeWork Code of Practice for Asbestos Removal (2016).
- » Vegetation cover should be maintained wherever possible.

Hazard Area 2

The boundaries of Hazard Area 2 are defined in **Figure 3**. Hazard Area 2 is subject to the presence of ACM containing materials on the site surface. The area is largely sealed, however ACM fragments are present on the hardstand surface and on the soil surface immediately surrounding the area.

Hazard Area 2 is used by trespassers for various recreational purposes that appear to include skateboarding & cycling. The presence of ACM and members of the public means that controls must either prevent access to Hazard Area 2 by trespassers or remove the hazard (i.e. the ACM).

The following controls are to be implemented in Hazard Area 2:

» Removal of the ACM fragments via an emu-pick, using an appropriately licenced contractor and clearance by an appropriately qualified hygienist;

OR

» Covering of the area with an appropriate medium to prevent the attractiveness of the area for recreational use (e.g. placement of 100mm layer of woodchips) on the surface. This will act as a barrier to prevent damage to ACM material and make the area unusable for riding/skateboarding;

OR

» Placement of temporary demarcation fencing and signage to prevent access to Hazard Area 2 (as indicated in Figure 3).

Hazard Area 3

The boundaries of Hazard Area 3 are defined in **Figure 3**. Hazard Area 3 is subject to the presence of small amounts of ACM on the site surface and likely within the fill. The area is unsealed and variably vegetated. Hazard Area 3 is generally not in use for any productive purpose, however the easternmost portion of the area includes a well used, unsealed walking/riding track (trespassers/public). Access to the track is unlikely to represent a significant human health risk, however uncontrolled access into the Hazard Area 3 by trespassers/public or workers may represent a risk. Controls must therefore seek to restrict access to and work within Hazard Area 3.

The following controls are to be implemented in Hazard Area 3:

- » Access to Hazard Area 3 is to be restricted. The site is to be demarcated via the use of hi-visibility tape or mesh fencing that provides a visible boundary between Hazard Area 3 and the remainder of the site.
- » Stockpiling of materials, use of plant/machinery, mowing, chipping of vegetation and/or other activities which may result in disturbance of the ground surface are to cease unless under the direct supervision of an appropriately qualified hygienist.
- » Materials that are currently present on the site must only be removed in the presence of an appropriately qualified hygienist and under the control of an appropriate work plan that includes controls to protect the health of workers and to prevent the transport of ACM or other contamination out of Hazard Area 1.



» In the event of any ground penetrating earthworks within Hazard Area 3, suitable work practices and management controls must be implemented, in accordance with the requirements of the NSW SafeWork Code of Practice for Asbestos Removal (2016).

» Vegetation cover should be maintained wherever possible.

Remainder of the Site

The remainder of the site is generally hardstand and/or not subject to the presence of known contamination or ACM containing materials. These portions of the Site may be used in an unrestricted manner where the hardstand is not to be removed/excavated. Unexpected finds are to be managed in accordance with **CONTROL PLAN: Unexpected Finds (Section 8)**.

Where hardstand is to be removed and/or excavation is to be undertaken, the presence of fill containing ACM and chemical contaminants is to be assumed and in the event of any ground penetrating earthworks, suitable work practices and management controls must be implemented, in accordance with the requirements of the NSW SafeWork Code of Practice for Asbestos Removal (2016).



6. CONTROL PLAN: Environment

CONTROL PLAN: Environment

Heavy metals are present in fill soils within Hazard Area 1 and Hazard Area 2 (Figure 3) at concentrations which may represent a risk to adjacent and downstream sensitive environmental receptors. Due to the current use of the site and the proposed remediation which is to occur within the short to medium term, protection of environmental values (from contamination) do not require control within the bounds of the site (these will be managed via the remediation). Controls are however required to prevent offsite migration of contaminated soils which may impact downgradient environments.

The Control Plan seeks to prevent impacts to the offsite environment by controlling and limiting the scenarios in which contamination is able to migrate from its current location to an offsite environment.

The effectiveness of controls must be managed by the Property Manager via monthly site inspections and implementation of a site induction process.

The following controls are necessary to mitigate risks until such time as the site is remediated.

- » Erosion and sediment:
 - Wherever possible vegetation is not to be disturbed.
 - Erosion control measures are required on the northern site boundary as indicated in Figure 3.
 - Erosion controls are to be checked on a monthly basis and maintained as necessary.
 - Erosion controls are to comprise sediment fencing, coir logs, bunding, hay bales or other method whereby sheet flow, sediment migration and erosion across this boundary is suitably mitigated.
 - Erosion controls are to be installed generally in accordance with the Blue Book.
 - The nature of the site gradient and the locations of identified contamination are such that current erosion control on the northern boundary is adequate to limit migration of contaminants into the adjacent Knapsack Gully.
 - The uncontrolled migration of sediment or sediment laden water offsite may represent a pollution event and must be considered in accordance with CONTROL PLAN: Pollution Incident (Section 7)
- » Air Quality and Dust
 - Wherever possible vegetation is not to be disturbed;
 - Loads entering and leaving the site are to be covered at all times;
 - Where the site surface is to be disturbed (in accordance with CONTROL PLAN: Asbestos and Soil Contamination, Section 5), dust emissions must be controlled by the use of water spraying whenever visible dust may migrate off the site;
- » Flora and Fauna (where the use of plant and machinery or other disturbance onsite is necessary):
 - Identify and establish areas of flora and fauna to be protected and control access to these areas.
 Define access tracks/roads.
 - Wash wheels wherever necessary to prevent offsite migration of soil and exotic seeds.
 - Mark clearing limits with flagging tape prior to commencement of work.
 - Delineate areas that are native habitats.
 - If any injured native fauna is identified the work area or is injured, notify the client and WIRES immediately.
- » Spills and Leaks
 - All plant and machinery is to be inspected prior to use for leaks and general condition. Where leaks, or poor maintenance is evident the plant/machinery is not to be used on the site.
 - No refueling is to occur on the site.
 - No storage of significant quantities of chemicals (>20L or kg) is to occur on the site;
 - Spill response equipment is to be available to site personnel working with plant or machinery onsite.



7. CONTROL PLAN: Pollution Incidents

CONTROL PLAN: Pollution Incidents

Pollution incidents causing or threatening material harm to the environment must be notified to the appropriate regulatory authorities. In this context:

- » A 'pollution incident' includes a leak, spill or escape of a substance, or circumstances in which this is likely to occur; and
- » 'Material harm' includes on-site harm, as well as harm to the environment beyond the premises where the pollution incident occurred, actual or potential harm to the health or safety of humans or to ecosystems that is not trivial, or it results in actual or potential loss or property damage exceeding \$10,000.

If a pollution incident occurs, all necessary action should be taken to minimise the size, extent, and any adverse effects of the release (without compromising safety).

Pollution Incident Notification

Under the Protection of the Environment Operations Act 1997 (POEO Act), the following people have a duty to notify a pollution incident occurring in the course of an activity that causes or threatens material harm to the environment:

» the person carrying on the activity;

- » an employee or agent carrying on the activity;
- » an employer carrying on the activity; and
- » the occupier of the premises where the incident occurs.

Notification must be given immediately, i.e. promptly and without delay, after the person becomes aware of the incident.

In the event of an incident, if the incident presents an immediate threat to human health or property, call 000. Fire and Rescue NSW, the NSW Police and the NSW Ambulance Service are the first responders, as they are responsible for controlling and containing incidents.

If the incident does not pose an immediate threat, or once the 000 call has been made, pollution incidents posing material harm to the environment must be notified to each 'relevant authority'. Relevant authorities and the order in which they must be contacted are provided as follows.

Order of Notification	Authority	Contact Details
1	EPA – Environment Line	131 555
2	Ministry of Health (via the local Public Health Unit)	(02) 9391 9000
3	WorkCover Authority	13 10 50
4	Blue Mountains City Council	(02) 4723 5000
5	Fire and Rescue NSW (if 000 was not already called)	1300 729 579



8. CONTROL PLAN: Unexpected Finds

CONTROL PLAN: Unexpected Finds

'Unexpected finds' refer to the discovery of the following conditions, in a location that they have not been previously noted and/or are not managed by other sections of this EMP:

- » Asbestos (on the ground surface, in soils or within refuse);
- » Contaminated soils (odourous, stained or otherwise polluted soils);
- » Contaminated groundwater (odourous, discoloured or otherwise contaminated groundwater);
- » Contaminated surface water (odourous, discoloured or otherwise contaminated water on the surface of the site and/or migrating off the site); and
- » Contamination Sources (such as chemical spills or previously unidentified buried waste).

Upon discovery of the 'unexpected find' the following actions are necessary:

- » All work in the area must cease immediately. Do not disturb the unexpected find in any way;
- » The Property Manager is to be notified immediately;
- » If the unexpected find represents a safety or environmental risk, the Property Manager must ensure that the affected area is secured to prevent access. Fencing, barrier tape and/or warning signs may be appropriate;
- » A qualified Occupational Hygienist or Environmental Scientist is to be engaged by the Property Manager to inspect the area and confirm the presence or otherwise of hazardous materials or contamination, and to determine the required actions;
- » A report detailing this information will be compiled by the Occupational Hygienist/Environmental Scientist and provided to the Property Manager ;
- » Work cannot re-commence in the area until such time as the area is safe. It is the responsibility of the Property Manager to ensure the area is safe, before access to the area is allowed; and
- » The Property Manager shall keep detailed records of all actions and all communication associated with the unexpected find. This should include a series of photos such that the sequence of events associated with the find and its management are appropriately recorded.



9. CONTROL PLAN: Monthly Site Inspection

CONTROL PLAN: Monthly Site Inspection

Monthly site inspections are required to ensure that the site environmental controls remain suitable to manage known contamination on the site and to address general environmental maintenance requirements.

The site inspection must be undertaken by personnel familiar with the site and the relevant environmental risks. Additional site inspections may be required following extreme weather events.

As a minimum, the site inspection must include assessment of the following environmental hazards and include the completion of a brief inspection report, recording of site observations, providing rectification recommendations where required and nominating the next inspection date.

Site inspections shall include assessment of the following:

- » Demarcation fences are present and appropriate in accordance with Figure 3;
- » Site signage is present in accordance with Figure 3;
- » Hazard Area 1 controls are in accordance with CONTROL PLAN Asbestos and Soil Contamination
- » Hazard Area 2 controls are in accordance with CONTROL PLAN Asbestos and Soil Contamination
- » Hazard Area 3 controls are in accordance with CONTROL PLAN Asbestos and Soil Contamination
- » Hardstand areas are in suitable condition to prevent exposure to fill soils beneath.
- » Sediment and erosion controls are present and effective:
 - the condition of bunds, sediment fences and drainage paths are appropriate;
 - any erosion or scour that may have occurred since the last inspection. Particular note should be taken of the condition of the northern site boundary;
 - the extent and suitability of groundcover to minimise ongoing erosion;
 - the quality of surface water in Knapsack Gully (if present);
 - the quality of surface water runoff (if occurring).
- » Note the presence of invasive or noxious weeds;
- » Observe, note and report any illegal dumping of waste on the site. Identify if additional controls are required to manage contamination due to illegally dumped waste;
- » Observe, note and report significant changes in vegetation;
- » Observe the presence of possible chemical spills, dumping and/or visible asbestos;
- » Site security inspect security fences/gates to manage unauthorised access;
- » Air quality observe and assess the likelihood of dust migration across the site boundary (in unfavourable conditions);
- » Observe, note and report on trespasser activity and/or unauthorised works (where possible);
- » Identify any other unexpected or emerging hazard not otherwise identified in this plan.



10. Training and Review

This OEMP shall remain in effect at the site in the course of normal site activities and operations until such time as the site is remediated.

10.1. Inductions and Training

All persons accessing the site shall be inducted by the property manager (or their representative), prior to commencing any activities at the site. All persons undertaking activities at the site shall be provided with, read, and acknowledge understanding of the requirements of this OEMP.

Any activities with potential to adversely impact site users or the environment are required to implement health, safety and environmental management controls prior to commencement. All contractors or workers undertaking such activities shall provide details of such management and control measures to the property manager prior to the commencement of works.

Control procedures (SWMS, JSEAs etc.) must account for the risks identified in this OEMP and provide a job or work specific assessment of risks. Control procedures for operational activities must include the following elements (as required by the activity):

- » Site layout.
- » Safety procedures.
- » Requirements of this OEMP and consequences of non-compliance.
- » Environmental aspects of the project, including: Surface Water; Sediment and Erosion; Contamination; Noise; Air Quality; Flora and Fauna; and Waste Management.
- » Location of environmental hazards.
- » Incident management procedures.
- » Documentation systems.
- » The responsibility of individual project personnel for protection of the environment.

10.2. Monitoring, Non-Conformances and Corrective Actions

It is the responsibility of the property manager to monitor and report on the effectiveness of the EMP and the controls. Any non-conformances with this EMP shall be addressed according to the following corrective action process (responsibilities indicated in parentheses):

- » Reporting to the Property Manager any significant adverse environmental conditions, incidents or trends encountered in the implementation and operation of this OEMP (all personnel);
- » Issuing non-conformance notices to initiate action to correct unsatisfactory environmental conditions (Property Manager);
- » Implementing actions to identify and correct causes of environmental non-conformances in the implementation and operation of the OEMP (Property Manager);
- » Verifying that corrective actions have been appropriately implemented (Property Manager); and
- » Recording changes to documented procedures as a result of non-conformances and corrective actions (Property Manager).

Details of non-conformances issued under this EMP will be recorded in a register along with any preventative and corrective actions taken in response. The register is provided as **Appendix D**.



10.3. OEMP Review

Should the type and nature of site activities and operations change, this OEMP shall be reviewed and updated in accordance with the changed use. Review and implementation of this OEMP shall be undertaken by the property manager regularly at six-monthly intervals, or upon significant changes to site uses and activities. Any revisions to this OEMP shall be recorded and documented in the document control register at the front of this OEMP.



11. Limitations

The sole purpose of this report is to identify environmental hazards and present appropriate controls in the form of an Operational Environmental Management Plan (OEMP) for the site as defined in this OEMP at Glenbrook, NSW. This OEMP has been prepared by Nation Partners for the sole use of the NSW Department of Primary Industries, Lands and Water (DoI) (the 'Client') and in accordance with the scope of services developed and agreed between Nation Partners and the Client.

All reports and conclusions that deal with sub-surface conditions are based on interpretation and judgement of Site conditions at the time Site investigations were conducted, and as a result the description of Site conditions have inherent uncertainty attached to them. Conditions at the Site may have changed due to natural forces and/or operations on or near the Site. Any decisions based on the recommendations of the OEMP must take into account any subsequent changes in Site conditions and/or developments in legislative and regulatory requirements. Nation Partners accepts no liability to the Client for any loss and/or damage incurred as a result of a change in the Site conditions and/or regulatory/legislative framework since the date of the supporting investigation documents (refer Section 1.4).

This OEMP should only be presented in full and should not be used to support any objective other than those detailed in the OEMP. In particular, the OEMP does not contain sufficient information to enable it to be used for any use other than the project specific requirements for which the OEMP was carried out. Nation Partners accepts no liability to the Client for any loss and/or damage incurred as a result of changes to the usage, size, design, layout, location or any other material change to the intended purpose contemplated under this Agreement. The OEMP is based on an interpretation of factual information available and the professional opinion and judgement of Nation Partners. Unless stated to the contrary, Nation Partners has not verified the accuracy or completeness of any information received from the Client or a third party for the purposes of preparing the OEMP. Nation Partners accepts no liability to the Client for any loss and/or damage incurred as a result of any inaccurate or incomplete information.

The OEMP was developed as an interim document on the basis that the site is to be remediated⁴ within a period of less than 12 months from the date of issue of the OEMP. Where this is exceeded the controls identified within this OEMP are no longer considered valid and must be reassessed on the basis of the relevant site conditions and land use scenario. This OEMP considers only land use scenarios identified within the document and cannot account for all possible scenarios. Nation Partners accepts no liability to the Client for any loss and/or damage incurred as a result of landuse not specifically identified in this document and/or the failure of any controls due to negligence, trespass or vandalism.

Any reliance on this OEMP by a third party shall be entirely at such party's own risk. Nation Partners provides no warranty or guarantee to any third party, express or implied, as to the information and/or professional advice indicated in the OEMP, and accepts no liability for or in respect of any use or reliance upon the OEMP by a third party.

⁴ adopting the definition of remediate/remediated/remediation from the NSW Contaminated Lands Management Act (1997)





Appendix A – Figures



Figure 1: Site Location

Lapstone Tunnel OEMP

Legend

Site Location





Figure 2: Mushroom Farm – Site Layout Lapstone Hill Tunnel OEMP



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Secure Gate



Erosion / Sediment Controls

Demarcation Fencing -



Appendix B – Risk Assessment

Mushroom Farm - Operational Environmental Management Plan Risk Assessment

			Unmitigated Risk					Residual Risk		
Hazard or Source	Activity/Action/Event	Receptors	Consequence	Likelihood	Risk Rating	Risk Treatments	Consequence	Likelihood	Risk Rating	
Asbestos on Site surface	Disturbance of asbestos present on the site surface during excavation, site maintenance, movement of stockpiles or other use of plant and machinery resulting in the creation of respirable asbestos fibres. This includes plant/machinery and personnel movements required to chip/shred remnant stockpiles of vegetation on the site.	Site workers, neighbours, trespassers.	(IV) - Major	(B) - Likely	B - High	Prevention of further stockpiling, handling of stockpiles and other materials in high risk portions of the site (via demarcation and signage). Prevention of the use of plant and machiner in high risk portions of the site. High risk portions of the site are identified as Hazard Areas 1,2 and 3 in Figure 3. Induction of all site users to the requirements of the OEMP and effective ongoing communication with site users regarding changes to the hazards. All workers to be inducted to site. Location and nature of the Hazard Areas and other remnant contamination to be clearly advised. Mark hot spots / areas of significant surface ACM or other contaminants, and ensure appropriate PPE (hard had, steel capped boots, glasses) are worn by authorised personnel when entering site and additional PPE including P2 Masks and Tyvex suits are available and utlised where any disturbance of soil is to occur. Avoidance of ground disurbance in high risk portions of the site. Where disturbance is necessary work is to be completed by appropriately licenced personnel under asbestos removal conditions in accordance with OEMP Control Plans.	(IV) - Major	(D) - Unlikely	C - Medium	
Asbestos on Site surface	Disturbance of asbestos present on the site surface during trespass.	Trespassers.	(V) - Extreme	(C) - Possible	B - High	Installation of signage at site entrances. Demarcation fencing around high risk portions of the site (defined as Hazard Areas 1,2,3 in Figure 3). Placement of materials on hardstand in Hazard Area 2 to reduce the suitability of the site for trespasser activities (e.g. placement of 100mm of woodchips would prevent use for skateboarding/riding).	(IV) - Major	(D) - Unlikely	C - Medium	
Asbestos on Site surface	Disturbance of asbestos present on the site surface during movement of stockpiled materials/vegetation resulting in offsite transport of asbestos fragments.	Site workers, neighbours, trespassers.	(IV) - Major	(B) - Likely	B - High	Prevention of further stockpiling and pick-up of materials (vegetation, woodchips and any other materials) in high risk portions of the site (via demarcation and signage). To be clearly identified in site induction.		(D) - Unlikely	C - Medium	
Asbestos on Site surface	Unexpected finds of ACM or contamination in soils or or the site surface	n Site workers, trespassers.	(IV) - Major	(C) - Possible	B - High	Maintenance of groundcover. Unexpected finds protocol is to be adopted.	(II) - Minor	(C) - Possible	C - Medium	
Asbestos on Site surface	Community / stakeholder enquiries and complaints effecting perception of the project/Department of Industry	Dol Reputation	(II) - Minor	(C) - Possible	C - Medium	Document, manage and respond to community / stakeholder complaints and enquiries related to the site condition, management and controls.	(II) - Minor	(C) - Possible	C - Medium	
Surface soil contamination	Dermal contact / ingestion of contaminated soils or materials during environmental maintenance works, services maintenance	Site workers, trespassers.	(IV) - Major	(B) - Likely	B - High	Prevention of further stockpiling, handling of stockpiles and other materials in high risk portions of the site (via demarcation and signage). Prevention of the use of plant and machiner in high risk portions of the site. High risk portions of the site are identified as Hazard Areas 1 in Figure 3. Induction of all site users to the requirements of the OEMP and effective ongoing communication with site users regarding changes to the hazards. All workers to be inducted to site. Location and nature of the Hazard Areas and other remnant contamination to be clearly advised. Mark hot spots / areas of significant surface contamination, and ensure appropriate PPE (hard had, steel capped boots, glasses) are worn by authorised personnel when entering site and additional PPE including P2 Masks and Tyvex suits are available and utlised where any disturbance of soil is to occur. Avoidance of ground disurbance in high risk portions of the site. Where disturbance is necessary work is to be completed by appropriately licenced personnel in accordance with OEMP Control Plans.	(IV) - Major	(D) - Unlikely	C - Medium	
Surface soil contamination	Erosion and sediment runoff from site carrying existing contamination to Knapsack Gully, nearby stormwater or other surface water bodies.	Surface Water, Knapsack Gully and downstream environment	(III) - Moderate	(C) - Possible	C - Medium	Regular (monthly) inspection of sediment/erosion fencing and rectify any issues.		(D) - Unlikely	C - Medium	
Surface soil contamination	Dust generation and migration of existing soil contamination, surface asbestos and litter to adjacent bushland	Offsite environment	(III) - Moderate	(B) - Likely	B - High	Maintenance of groundcover. No use of machinery in Hazard Areas. Induction of workers.	(III) - Moderate	(D) - Unlikely	C - Medium	
Surface soil contamination	Dust generation / migration from contaminated soils	Site workers, neighbours, trespassers.	(IV) - Major	(B) - Likely	B - High	Maintenance of groundcover. No use of machinery in Hazard Areas. Induction of workers. Appropriate dust control measures where work is necessary (no work on windy days, watering down etc)	(III) - Moderate	(D) - Unlikely	C - Medium	
Surface soil contamination	Odour generation from contaminated soils / stockpiles	Site workers, neighbours, trespassers.	(III) - Moderate	(D) - Unlikely	C - Medium	Inspect site for abnormal odour during site inspection and after extreme weather events, and rectify any issues.	(II) - Minor	(D) - Unlikely	D - Low	
Surface soil contamination	Dust migration from uncontrolled fill / surface asbestos impacting local / neighbouring residences causing unres and discomfort	t Neighbours	(III) - Moderate	(D) - Unlikely	C - Medium	Maintenance of groundcover. No use of machinery in Hazard Areas. Induction of workers. Appropriate dust control measures where work is necessary (no work on windy days, watering down etc)	(II) - Minor	(D) - Unlikely	D - Low	
Noxious Weeds	Spread of noxious weeds	Offsite Environment	(III) - Moderate	(B) - Likely	B - High	Inspect condition of vegetation, undertake mowing, pruning and weeding (where possible and in accordance with asbestos safety requirements). Washdown of vehicles where possibly contaimnated with seed. Induction of personnel. Maintain erosion/sediment controls to limit offsite migration of seed in stormwater.	(III) - Moderate	(D) - Unlikely	C - Medium	

Illegal dumping of waste	Illegal dumping of waste - contamination of soils and waters	Site workers, neighbours, trespassers.	(III) - Moderate	(C) - Possible	C - Medium	Inspect fencing, gates, during site inspections to manage unauthorised access to site. Report all illegal dumping to the appropriate authorities (EPA and Council). Inform EPA/Council/Police of the dumping incident. Remove waste where necessary. Use Induction to emphasise importance of locking gates. Monthly inspection to note and report on dumping incidents. Waste is not to be disturbed until such time as it is deemed safe (i.e. free of asbestos, contamination etc). Where contamination is suspected, an apporpriately qualified hygienist or environmental scientis must be engaged to classify and advise on the risk.	(III) - Moderate	(D) - Unlikely	C - Medium
Illegal dumping of waste	Illegal dumping of waste - contamination of soils and waters	Surface Water, Knapsack Gully and downstream environment	(III) - Moderate	(C) - Possible	C - Medium	Maintain site erosion/sediment controls. Cover waste stockpiles if necessary to prevent windblown or water erosion. Install temporary erosion/sediment fencing if necessary to prevent flow to Kanpsack Gully.	(III) - Moderate	(D) - Unlikely	C - Medium
Illegal dumping of waste	Illegal dumping of waste - visual/physical amenity	Neighbours, general public	(III) - Moderate	(C) - Possible	C - Medium	Inspect fencing, gates, during site inspections to manage unauthorised access to site. Report all illegal dumping to the appropriate authorities (EPA and Council). Take rectification action as necessary to manage risks.	(III) - Moderate	(D) - Unlikely	C - Medium
Unauthorised access by tresspassers (hikers, walkers, bikers etc)	Site access by tresspassers / public (runners, bikers, hikers) resulting in physical injury or death (other than exposure to asbestos or contamination).	Trespassers.	(IV) - Major	(C) - Possible	B - High	Placement of signage at site entrance and points of illegal entrance. Demarcation of Hazard Areas 1,2,3. Monthly inspection and rectification of emerging hazards based on site use patterns. Placement of materials in Hazard Area 2 to prevent use of hardstand for skateboarding/cycling.	(IV) - Major	(D) - Unlikely	C - Medium
Use of minor plant and equipment	Contamination via spills/leaks from minor plant and machinery	Soil and water quality	(III) - Moderate	(C) - Possible	C - Medium	All contractors to be inducted to the site. Appropriate controls to be put in place during use of equipment to avoid/manage spills and leaks, and ensure all equipment is appropriately decontaminated prior to and after use.	(III) - Moderate	(D) - Unlikely	C - Medium
Use of minor plant and equipment	Damage to existing vegetation / flora cover	Flora and fauna	(II) - Minor	(C) - Possible	C - Medium	All contractors to be inducted to the site, and made aware of any significant areas of vegetation / flora coverage. Inspect condition of vegetation during site inspections.	(II) - Minor	(E) - Rare	D - Low



Appendix C – Dol Risk Framework

NSW Department of Industry - Risk Matrix

		Risk Tolerance & Review							
	Risk Tolerance Basic guide	Risk Tolerance— Basic Health, Safety, or Environment risks guide	Review frequency				Likelihood		
G	enerally intolerable	Must obtain Secretary approval for Risks and their Treatments at this level	Monthly		(E) Rare	(D) Unlikely	(C) Possible	(B) Likely	(
Und	lesirable	Must obtain Division or equivalent Level 2 Head approval for Risks and their Treatments at this level. Division / Level 2 Head to escalate to Secretary as appropriate	Quarterly	Qualitative	Would only occur under exceptional circumstances	May occur only in unusual circumstances	Could occur but more than likely it won't	Likely to Occur	(
Tolerable		Business owner to review Risks and their Treatments at this level	6 Monthly	Probability	Less than 1% probability of occurring	1% to 19% probability of occurring	20% to 49% probability of occurring	>50% probability of occurring	955 pr
Broadly acceptable		Business owner should review Risks and their Treatments at this level for effectiveness and reliability.	Annually	Frequency	Once every 100 to 1,000 years	Once every 10 – 100 years	Once every 1–10 years	2 - 10 times / year (Could occur on monthly /quarterly basis)	>10 tir (Could daily /

Consequence							Likelihood						
Health & Safety	Environment & Heritage	Governance & Compliance	Industry & Customer Experience	Stakeholder Trust / Confidence	Service Delivery	Value & Benefits	Financial	↓Consequence Likelihood →	(E) Rare	(D) Unlikely	(C) Possible	(B) Likely	(A) Almost certain
One death.	Irreversible large-scale environmental impact with loss of valued ecosystems.	Prosecution leading to imprisonment of executive(s). Significant prosecution/litigation	Extensive shutdowns or extended disruptions with economy-wide and national effects. Structural change or long- term Industry impact.	Outrage — Material change in the public perception of the organisation. Confidence and trust are severely damaged. possibly irreparably. and full recovery both questionable and costly.	Catastrophic event with the clear potential to lead to the collapse or ineffectiveness of the organisation.	Failure to realise benefits of enterprise-wide operations. Publicly announced milestone or final completion significantly missed on critical path.	>\$50M OR >45% of Budget	(V) Extreme	Medium	High	High	Very High	Very High
Significant disability to one or more people.	Long-term environmental impairment in neighbouring or valued ecosystems. Extensive remediation required.	Substantial breach resulting in prosecution. fines and/or litigation. Ability to operate effectively impacted.	Short duration shutdowns or substantial disruptions affecting multiple industries with state or sector-wide cascading effects.	Displeasure — Extended negative state/national media coverage. Confidence and trust are damaged but recoverable at considerable cost. time and staff effort.	Severe event which requires extensive management effort but can be survived.	Severe delays with initiative that impacts divisions and/or significant decrease in benefits realised. Publicly announced milestone or final completion date missed on critical path.	>\$5M - ≤\$50M OR 45% of Budget	(IV) Major	Low	Medium	High	High	Very High
Hospitalisation / medical treatments to of one or more people	Impacts external ecosystem and considerable remediation is required.	Breach resulting in enforcement action and/or prohibition notices. Substantial fine or penalty and no disruption to services.	Significant disruptions affecting operations of one industry sector or region with state-wide effects on one or more other regions or sectors	Concern — Short-term negative state/national media coverage. Confidence and trust are diminished but are recoverable with time, extra staff effort & \$.	Significant event which can be absorbed. but substantial management effort is required.	Significant delays with initiative and/or major decrease in benefits realised. Publicly announced milestone or final completion date missed with clear external impact	>\$500k - ≤ \$5M OR 25% of Budget	(III) Moderate	Low	Medium	Medium	High	High
First aid treatment of one or more people	Short-term and/or well- contained environmental effects. Minor remedial actions probably required.	Significant non- compliance. Subject to comment and monitoring from applicable regulator. Small fine or penalty and no disruption to services.	Serious disruptions affecting operation of one industry sector or region.	Disappointment — Extended negative local/state media coverage. Confidence and trust dented but quickly recoverable at modest cost within existing budget and resources.	Minor event. the impact of which can be absorbed but much broader management effort is required.	F Several delays with the initiative and/or moderate decrease in benefits realised. Completion date missed for non- critical path.	\$50k - ≤ \$500k OR 10% of Budget	(II) Minor	Low	Low	Medium	Medium	Medium
Minor injury to one or more people, not requiring treatment	Change from normal conditions within environmental regulatory limits and environmental effects are within site boundaries.	Non-compliance with legal and/or regulatory requirement or duty. Investigation and/or report to authority.	Minor disruptions affecting several industries or regions.	Unease — negative articles in local/state media. Confidence remains with minor loss of goodwill. Recoverable with little effort or cost. Some ongoing scrutiny.	Complaint. the impact of which can be absorbed but some additional or localised management effort is required.	Minor delay with the initiative and/or a minor t decrease in the benefits realised. Minor delay on the project or another project.No public implications.	≤ \$50k OR 5 % Budget	(I) Insignificant	Low	Low	Low	Low	Medium



Appendix D – Non-Conformance Register

Description of Non- Conformance	Impact of Non- conformance	Corrective Actions Taken	Additional Corrective Actions Required	Responsible Party	Date Closed