Tallawarra Stage B Gas Turbine Power Station

Soil and Water Management Sub-Plan

EnergyAustralia Tallawarra Pty Ltd

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Abbreviations

Abbreviation	Meaning
AEC	Areas of environmental concern
AEP	Annual exceedance probability
CCGT	Combined cycle gas turbine
CEMP	Construction environmental management plan
CoA	Conditions of Approval to Major Project MP07-0124
DPIE	Department of Planning, Industry and Environment
EA	Environmental Assessment (SKM, 2009)
EMS	Environmental management strategy
ENM	Excavated natural material
EP&A Act	*Environment Planning and Assessment Act 1979*
EPA	NSW Environment Protection Agency
EPL	Environment protection licence
ER	Environmental representative
EWMS	Environmental work method statements
GECL	GE Clough, engineering, procurement and construction contractor
HSSE	Health, safety, security and environment
kV	Kilovolts
Mod-1	Modification 1 to Major Project MP07-0124
Mod-2	Modification 2 to Major Project MP07-0124
MW	Megawatts
NRAR	Natural Resources Access Regulator
OEMP	Operational environmental management plan
OCGT	Open cycle gas turbine
PESCP	Progressive erosion and sediment control plans
POEO Act	*Protection of the Environment Operations Act 1997*
PMF	Probable maximum flood
SEPP	State Environmental Planning Policy
SoC	Statement of Commitments within the Environmental Assessment and Submissions Report (SKM, 2009/2010)
SWMP	Soil and water management plan
VENM	Virgin excavated natural material
WARR Act	*Waste Avoidance and Resource Recovery Act 2001*
WMP	Waste management plan

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1 Introduction

1.1 Document structure

The Tallawarra Stage B Gas Turbine Power Station (the Project) Environmental Management Strategy (EMS) provides the strategic environmental management framework for the construction and operation of the Project.

Within the EMS the Construction Environment Management Plan (CEMP) provides a system of management, including procedures, policies, and processes for EnergyAustralia to establish and maintain project compliance and best practice controls to manage potential environmental impacts during the construction of the Project.

The CEMP provides a structure for project specific management sub-plans, including this document, to translate the corresponding environmental management requirements, commitments, and conditions of approval into an actionable construction management plan.

This SWMP has been prepared to supplement the CEMP. It should be read in conjunction with the EMS and CEMP and used to inform the development of activity specific Environmental Work Method Statements (EWMS).

1.2 Project delivery structure

The project will be delivered through various entities and contracts including:

- EnergyAustralia, as proponent / owner has overarching accountability for the project delivery. During construction, EnergyAustralia will manage delivery of certain owner directed works which may include transmission line works or other ancillary works.
- GE Clough (GECL) has been awarded the Engineering, Procurement and Construction (EPC) main contract for construction and commissioning of the Tallawarra B Power Station. GECL will be responsible for the power station design, construction and commissioning, including the establishment of associated construction ancillary facilities.
- Sub-contractors may be engaged by EnergyAustralia or GECL, as required.
- EnergyAustralia would operate the project following construction.

This SWMP is applicable to all personnel including contractors and subcontractors associated with the delivery of the project.

1.3 Background

This Soil and Water Management Sub-Plan (SWMP) has been prepared for the construction and commissioning of the proposed Tallawarra Stage B Gas Turbine Power Station (MP07-0124) (the Project). It includes provisions for:

- Contaminated land management
- Water quality management
- Erosion and sediment control
- Flooding constraints management.

This plan aligns with the corresponding environmental management commitments made on behalf of the Project in the Environmental Impact Assessment and Modification and the requirement of the Conditions of Approval and Environmental Protection Licence.

1.4 Location and land use

The Project is located at Yallah Bay Road, Yallah approximately 13 km south of Wollongong and 60 km south of Sydney. The site was previously used for a coal-fired power station, which was decommissioned in 1989. The Project will be constructed immediately adjacent to the existing Tallawarra A closed cycle gas turbine power station. As a result of its previous uses, the majority of the land surrounding the Project site (Tallawarra Lands) is vacant and has been cleared of vegetation. Currently, cattle grazing, and other rural activities constitute the primary land use beyond the power station site boundary.

1.5 Tallawarra A power station

The existing Tallawarra A closed cycle gas turbine power station is operated by EnergyAustralia. It will continue be operational throughout construction of the Project. The Project will utilise much of the existing Tallawarra Stage A power station equipment and infrastructure during construction, including but not limited to stormwater catchment systems.

1.6 Objectives

Objectives, targets, and details of how they will be achieved through the SWMP are identified below in Table 1-1.

Table 1-1: SWMP objectives and targets

item	Objective	Targets	Measurement tool
Construction compliance	Construction of the project in accordance with environmental approvals and licences	Compliance with all statutory approvals and licences	Safeguards and management measures – Section 5 Audits – Section 7.3 Construction compliance reporting – CEMP Section 13 Management reviews – CEMP Section 13 and 14
Soil erosion and sediment	Prevent soil loss and associated waterway impacts	Erosion and sediment controls are appropriate designed, implemented and maintained. No impacts to waterways surrounding the project from sediment resulting from the project.	Safeguards and management measures – Section 5 Audits – Section 7.3 Construction compliance reporting – CEMP Section 13 Management reviews – CEMP Section 13 and 14
Water quality	Protect water quality in waterways surrounding the project	No change to water quality in waterways surrounding the project resulting from the project	Safeguards and management measures – Section 5 Audits – Section 7.3 Construction compliance reporting – CEMP Section 13 Management reviews – CEMP Section 13 and 14
Flooding	Minimise adverse hydrological impacts resulting from the project	No adverse effects to adjoining land as a result of flooding and runoff	Safeguards and management measures – Section 5 Audits – Section 7.3 Construction compliance reporting – CEMP Section 13 Management reviews – CEMP Section 13 and 14

2 Relevant legislation and guidelines

2.1 Relevant legislation

The relevant legislation addressed in this SWMP include:

- *Environmental Planning and Assessment Act 1979* (EP&A Act).
- *Environmental Planning and Assessment Regulation 2000*
- *Protection of the Environment Operations Act 1997*
- *Contaminated Land Management Act 1997*
- *Soil Conservation Act 1938*
- *Water Management Act 2000.*
- *Water Management (General) Regulation 2018*

Responsibilities for addressing approvals, licenses, and permits required for the Project are listed in the legislative requirements responsibility table provided in Appendix G of the EMS.

2.2 Guidelines and policies

The guidelines and policies addressed in this SWMP include:

- Managing Urban Stormwater: Soils and Construction - Volume 1, 4th edition, Landcom 2004
- Managing Urban Stormwater: Soils and Construction - Volume 2A Installation of services, DECC 2008
- Storing and Handling Liquids: Environmental Protection Participant's Manual, EPA 2007
- NSW Waste Guidelines, Part 1 Classifying Waste, EPA 2014
- NSW Waste Guidelines, Addendum to Part 1: Classifying Waste, EPA 2016
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality, ANZECC 2000
- Controlled activities: Guidelines for watercourse crossings, DPI Office of Water 2012
- Controlled activities: Guidelines for instream works, DPI Office of Water 2012
- Controlled activities: Guidelines for outlet structures, DPI Office of Water 2012
- Controlled activities: Guidelines for riparian structures, DPI Office of Water 2012
- Controlled Activities Guidelines, DPIE Water 2008
- BMT (2019), Lake Illawarra Coastal Management Program, Draft Report, June 2019, prepared for Wollongong City Council and Shellharbour City Council
- Wollongong City Council (2005), Lake Illawarra Floodplain Risk Management Study and Plan, version 6 (May 2005).

2.3 Conditions of approval

The conditions of approval specifically relating to this SWMP are provided in Table 2.1-along with the responsibility for compliance. Where these conditions translate into an environmental safeguard or management measure, Table 2.1 - indicates where in this SWMP (or other management plan) the condition is addressed.

Table 2-1: Conditions of approval relevant to the SWMP

No	Condition	Where addressed
Water quality and soils		
3.30	Except as may be provided by an Environment Protection Licence for the project, the Proponent shall comply with section 120 of the *Protection of the Environment Operations Act 1997* which prohibits the pollution of waters.	Table 5-1
3.31	Soil and water management controls shall be employed to minimise soil erosion and the discharge of sediment and other pollutants to lands and/or waters during construction activities, in accordance with Landcom's (2006) *Managing Urban Stormwater: Soils and Construction*.	Table 5-1
Hydrology		
3.34	The Proponent shall utilise existing crossings over Yallah Creek and shall avoid constructing temporary watercourse crossings for heavy vehicles and machinery.	Table 5-1
3.35	The Proponent shall ensure that any construction activities within 40 metres of the bank of Yallah Creek, and any other watercourses, are consistent with Controlled Activity Guidelines (Department of Water and Energy, 2008) including, but not limited to, 'In-stream Works', 'Outlet Structures', 'Riparian Corridors', 'Vegetation Management Plans', and 'Watercourse Crossings', or any guidelines which supersede these documents.	Table 5-1
3.36	The Proponent shall ensure that the project is designed, sited, and constructed so that it is not subject to inundation by floodwaters up to or at a level of the Probable Maximum Flood, nor does it exacerbate flooding on adjacent land. Where the Proponent can demonstrate to the satisfaction of the Secretary that it is not reasonable and feasible to design to the Probable Maximum Flood, the Proponent may nominate an alternative design flood level for the approval of the Secretary. The alternative flood level shall be developed using a risk-based approach and in consultation with Wollongong City Council.	Table 5-1
3.37	The project shall be designed, and employ surface water management techniques, such that existing runoff volumes along drainage lines from the site are maintained at pre-construction levels and there are no adverse effects to adjoining land as a result of flooding and runoff.	Table 5-1
Environmental management - general		
5.1 and Appendix 1	The Secretary must be notified in writing via the Major Projects website immediately after the Proponent becomes aware of an incident. The notification must identify the development (including the application number and the name of the development if it has one) and set out the location and nature of the incident. Subsequent notification requirements must be given, and reports submitted in accordance with the requirements set out in Appendix 1 [of the major project approval].	Section 7.5 Appendix E
7.3	As part of the CEMP for the project, required under condition 7.2 of this approval,the Proponent shall prepare and implement the following: (d) a Soil and Water Management Plan prepared in consultation with the DPIE Water, EPA and Wollongong City Council to detail measures to mitigate and manage soil erosion and the discharge of sediment and other pollutants to landand/or water during construction. The Plan must include, but not be limited to:	This plan Appendix A

No	Condition	Where addressed
	a) identification of the construction activities that could cause soil erosion or discharge sediment or water pollutants from the site.	Section 3
	b) a description of the management methods to minimise soil erosion or discharge of sediment or water pollutants from the site, including a strategy to minimise the area of bare surfaces and stabilise disturbed areas, and plan drawings showing the locations for sediment and erosion control measures.	Table 5-1 Appendix D
	c) demonstration that the proposed erosion and sediment control measures will conform with, or exceed, the relevant requirements of Managing Urban Stormwater: Soils and Construction (Landcom, 2004).	Table 5-1 Appendix D
	d) details on the installation, monitoring and maintenance requirements for each of the recommended measures for erosion and sediment control.	Table 5-1 Appendix D
	e) details of stormwater overflow paths and measures for managing overflows.	Table 5-1 Appendix D
	f) detailed drawings of any engineering structures such as sediment and evaporation ponds, including design standards and management regimes.	Table 5-1 Appendix D
7.7	Within 3 months, unless the Secretary agrees otherwise, of: a) the submission of an incident report under condition 5.1 of this approval; b) the submission of an Independent Environmental Audit report under condition 5.11 of this approval; c) the approval of any modification to the conditions of this approval; or d) a direction from the Secretary under condition 1.3 of this approval; the Proponent must review and, if necessary, revise the studies, strategies or plans required under the conditions of approval to the satisfaction of the Secretary. Where this review leads to revisions in any such document, then within 4 weeks of the review the revised document must be submitted to the Secretary for approval, unless otherwise agreed with the Secretary.	Section 7.7

3 Aspects and impacts

This SWMP is informed by the identification and analysis of environmental aspects and impacts, and the mitigation of associated risks. Section 7 of the CEMP details how environmental aspects, impacts and environmental risks are identified and assessed as part of the development of activity specific environmental work method statements (Section 5.1).

This section provides details on the soil and water aspects and impacts relevant to the construction of the project.

3.1 Aspects

The aspects described in this section are referenced where appropriate to the soil and water features presented in Figure 3-1.

3.1.1 Drainage

The Tallawarra site is located along the eastern edge of Lake Illawarra and is intersected by three watercourses: Duck Creek, Wollingurry Creek, and Yallah Creek. Yallah Creek is piped under the north-west section of the Project site before discharging into Lake Illawarra. An ephemeral stream located in Yallah Gully flows in a west-east direction and is piped under the southern portion of the Tallawarra Stage A power station site before discharging to Lake Illawarra.

A bunded artificial wetland located in the upper Yallah Creek catchment is fed by first flush and small intermittent flows. During periods of high and sustained flow, water from Yallah Creek bypasses the wetland down its original course. Some flow then enters the northern drain which is an open channel to the site road where it passes underneath the development through a 1.8 m diameter pipe. The remaining flow enters a pipe which runs adjacent to the site, with some water being diverted to the sewage treatment plant. Water from the treatment plant is used to irrigate the surrounding catchments and does not re-enter the creek.

From about 200 metres into the project boundary, Yallah Creek is channelised into an underground culvert drain known as the ‘north drain’. The north drain conveys stormwater from Yallah Creek through to Lake Illawarra. Consultation with Wollongong City Council identified a concern that the north drain may become blocked during heavy rains.

3.1.2 Lake Illawarra water quality

Lake Illawarra is an important ecological and community resource that supports diverse uses. In 2009 the EA characterised water quality in Lake Illawarra as generally poor due to the narrow connection to the Pacific Ocean which results in limited flushing. Because of this, urban, industrial, and agricultural pollutants, including silt and nutrients, tend to be retained in the lake (SKM 2009). More recently, the Lake Illawarra Estuary Health and Water Quality Report 2021 (WCC 2021), rated water quality as good to very good for 2020/221. It reports that the condition of the estuary has improved over the period 2013 - 2021.

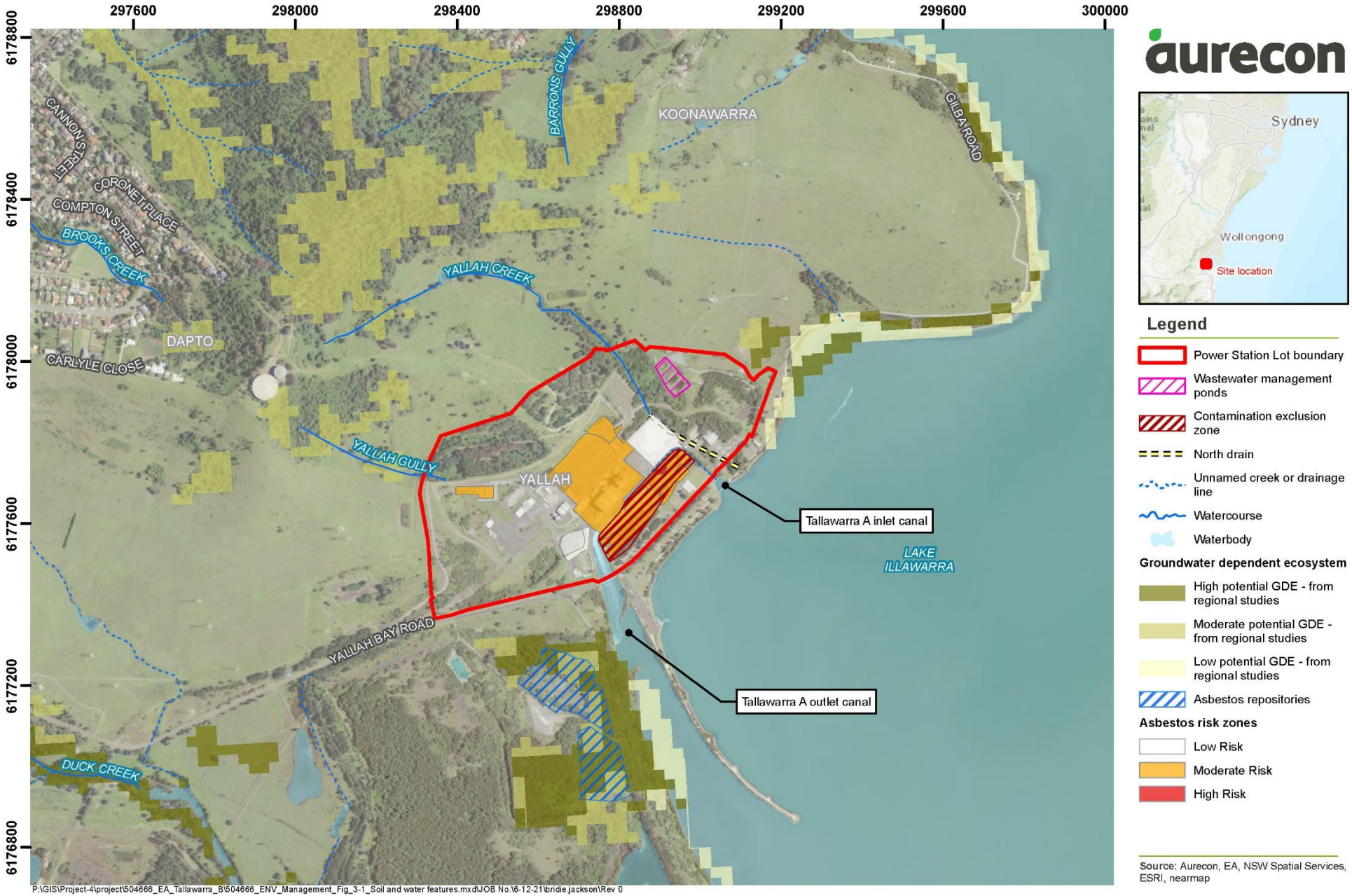
The project is generally located adjacent to the western bank of Lake Illawarra and project works will be undertaken up to 20 metres from Lake Illawarra. Due to this proximity, water quality in Lake Illawarra could be directly impacted by the mobilisation of sediment, or from contaminated runoff.

3.1.3 Controlled activities

Clause 43 of the Water Management (General) Regulation 2018 provides for an exemption for the project from requirements to obtain controlled activity approval. Notwithstanding this exemption, the project Condition of approval 3.35 requires any construction activities within 40 metres of the bank of Yallah Creek, and any other watercourses (including Lake Illawarra), to be undertaken consistent with Controlled Activity Guidelines (Department of Water and Energy, 2008). These guidelines referenced in the conditions of approval have now been superseded.

The current version of the guidelines for controlled activities and the protection of waterfront land is available from **https://www.dpie.nsw.gov.au/nrar/how-to-apply/controlled-activities/guidelines-for-controlled-activities**. Several aspects of the project will need to be undertaken consistent with the controlled activities guidelines. These activities are identified in Table 3-1 along with the management controls to be implemented in accordance with each guideline.

Table 5.1- includes a requirement for activity specific EWMS (refer to Section 5.1) to include evidence of compliance with the relevant controlled activity guidelines, where appropriate.



Projection: GDA 1994 MGA Zone 56

Tallawarra B Power Station

FIGURE 3-1: Soil and water features

Table 3-1: Controlled activities and controls to be implemented

Controlled activity	Potential project activities within the scope of the controlled activity	Controlled activity guideline controls to be implemented
Guideline – instream works **Instream works** – including works on waterfront land including the bed and bank of any river, lake or estuary and all land within 40 metres of the highest bank of the river, lake or estuary	■ Establishment of project laydown areas within 40 metres of Lake Illawarra ■ Establishment of the switchyard laydown area within 40 metres of Yallah Creek ■ Construction of a new transmission line within 40 metres of Yallah Creek ■ Construction of the Tallawarra B Power Station main turbine hall within 40 metres of Yallah Creek	■ Identify the width of the riparian corridor in accordance with the NSW Office of Water guidelines for riparian corridors. ■ Consider the full width of the riparian corridor and its functions in the design and construction of any instream works. Where possible, the design should accommodate fully structured native vegetation. ■ Minimise the design and construction footprint and proposed extent of disturbances to soil and vegetation within watercourse or waterfront land. ■ Maintain or mimic existing or natural hydraulic, hydrologic, geomorphic and ecological functions of the watercourse. Demonstrate the instream works will not have a detrimental impact on these functions. ■ Maintain the natural geomorphic processes. – Accommodate natural watercourse functions. – Establish natural bed and bank profiles, for example meanders, chain of ponds, surface water pools and riffles and bed controls. – Allow for the movement of sediment and woody debris. – Prevent increased scour and erosion of the watercourse bed or banks in any storm events. – Avoid locating works or structures on bends in the channel unless they are structures to restore stability. – Address existing bed degradation to protect structures and restore channel and bed stability. ■ Maintain the natural hydrological regimes. – Accommodate site hydrological conditions, for example maintain low flows. – Do not alter natural bank full or floodplain flows. Modifications to watercourses should be based on roughness coefficients that represent the 'natural' state including fully structured mature riparian vegetation. – Do not change the gradient of the bed except to address existing bed and bank degradation. – Do not increase velocities by constricting flows. ■ Protect against scour by designing and providing necessary scour protection, for example, rock rip-rap and vegetation. ■ Stabilise and rehabilitate all disturbed areas including topsoiling, revegetation, mulching, weed control and maintenance in order to adequately restore the integrity of the riparian corridor. ■ Monitor and maintain all in-stream works until suitably stabilised.
Guideline – outlet structures **Outlet structures** – on waterfront land being land within the bed and bank of any river, lake or estuary and all land within 40 metres of the highest bank of the river, lake or estuary	■ Potential for temporary construction water discharges within 40 metres of Lake Illawarra ■ Potential for the construction of new drainage outlets within 40 metres of Lake Illawarra	■ Define the infrastructure route and identify the specific point of discharge. Where possible select a route along an existing cleared or disturbed area that avoids trees, preferably beyond their drip line. ■ Choose a stable section of the stream for the discharge point, preferably mid-way between bends. Alternatively, incorporate outlet discharge points into disturbed/eroded areas which are to be stabilised or rehabilitated.

Controlled activity	Potential project activities within the scope of the controlled activity	Controlled activity guideline controls to be implemented
		■ Minimise construction footprint and proposed extent of disturbance to soil and vegetation within the watercourse or waterfront land. ■ Demonstrate that changes to the hydrology of the receiving watercourse have been assessed and there is no detrimental impact on discharge volumes and channel velocities. Discharge velocities and flow rates should mimic natural flows and not initiate erosion. ■ Discharge from an outlet should not cause bed or bank instability. ■ Protect the bed of the watercourse below the outlet if not bedrock, or if bed scour is likely. Consider bank material and outlet jet effect and protect the opposite streambank if required. ■ Point outlet structure and direct discharge downstream. ■ The outlet should not protrude beyond the streambank but tie in with the adjoining bank alignment. ■ Calculate tractive stresses generated from outlet discharges and from bank full discharges to determine appropriate rock size requirements for the structure. ■ Rock rip-rap is the preferred material to provide a natural outlet. Rip-rap should extend for the full extent of the design scour apron and adjoining flanks/streambank. Rip-rap must be appropriately keyed in to withstand the velocities of runoff or discharge from the site and cut-off trenches should be provided where necessary. ■ Rip-rap should consist of durable, angular run-of-quarry rock placed over a bedding layer of angular cobbles over geotextile. Where possible, incorporate vegetation such as sedges and rushes into scour management as Figure 1 [of the guideline] for further stability. ■ Grade scour apron to bed level of the watercourse or just below any permanent water created by any stable feature such as a rock bar within the watercourse. ■ Stabilise and rehabilitate all disturbed areas including topsoiling, revegetation and regeneration, mulching, weed control and maintenance.
Guideline – Riparian corridors **Riparian corridors** – including works within designated riparian corridor as defined under the guideline	■ Consistent with CoA 3.42 a vegetated riparian zone will be established to a width of 50 metres on either side of Yallah Creek for the project. Under this condition, all works and disturbance areas associated with the project must be located outside of the riparian zone. The establishment of this zone is managed through the FFMP. The project will therefore be consistent with the riparian corridor guideline.	■ Seek to maintain or rehabilitate a riparian corridor/vegetated riparian zone with fully structured native vegetation in accordance with Table 1 [of the guideline]. ■ Seek to minimise disturbance and harm to the recommended riparian corridor/vegetated riparian zone. ■ Minimise the number of creek crossings and provide perimeter road separating development from the riparian corridor/vegetated riparian zone. ■ Locate services and infrastructure outside of the riparian corridor/vegetated riparian zone. Within the riparian corridor/vegetated riparian zone provide multiple service easements and/or utilise road crossings where possible. ■ Treat stormwater run-off before discharging into the riparian corridor/vegetated riparian zone.
Guideline - Watercourse crossings **Watercourse crossings** - relates to the design and construction of watercourse crossings and	■ Consistent with CoA 3.34 the project will be designed and constructed to utilise existing crossings over Yallah Creek and will avoid constructing temporary watercourse crossings for heavy vehicles and machinery. The project is	If new watercourse crossings are required, they should be designed and constructed to: ■ Identify the width of the riparian corridor in accordance with the NSW Office of Water guidelines for riparian corridors. ■ Consider the full width of the riparian corridor and its functions in the design and construction of crossings.

Controlled activity	Potential project activities within the scope of the controlled activity	Controlled activity guideline controls to be implemented
ancillary works, such as roads on land within 40 metres of the highest bank of the river, lake or estuary	therefore likely to be consistent with the watercourse crossings guideline.	Where possible, the design should accommodate fully structured native vegetation. ■ Minimise the design and construction footprint and extent of proposed disturbances within the watercourse and riparian corridor. ■ Maintain existing or natural hydraulic, hydrologic, geomorphic and ecological functions of the watercourse. ■ Demonstrate that where a raised structure or increase in the height of the bed is proposed there will be no detrimental impacts on the natural hydraulic, hydrologic, geomorphic and ecological functions. ■ Maintain natural geomorphic processes. – Accommodate natural watercourse functions. – Maintain the natural bed and bank profile. – Ensure the movement of sediment and woody debris is not inhibited. – Do not increase scour and erosion of the bed or banks in any storm events. – Avoid locating structures on bends in the channel. – Where bed degradation has occurred, address bed degradation to protect the structure and restore channel and bed stability. ■ Maintain natural hydrological regimes. – Accommodate site hydrological conditions. – Do not alter natural bank full or floodplain flows or increase water levels upstream. – Do not change the gradient of the bed except where necessary to address existing bed and bank degradation. – Do not increase velocities by constricting flows, for example filled embankments on approaches. ■ Protect against scour. – Provide any necessary scour protection, such as rock rip-rap and vegetation. – Ensure scour protection of the bed and banks downstream of the structure is extended for a distance of either twice the channel width or 20 metres whichever is the lesser. – If cutting into banks, protect cuttings against scour. ■ Stabilise and rehabilitate all disturbed areas including topsoiling, revegetation, mulching, weed control and maintenance in order to adequately restore the integrity of the riparian corridor. **Bridges - additional design considerations** ■ Ideally, bridges shall be elevated and span the riparian corridor. ■ Bridge piers or foundations should not be located within the main channel of the watercourse. ■ The bridge design must be certified by a suitably qualified engineer. **Causeways or bed level crossings - additional design considerations** ■ The deck of the crossing shall be at the natural bed elevation. ■ The crossing should have a vertical cut-off wall on the downstream side of the crossing to a minimum depth of one metre and minimum width of 100 millimetres.

Controlled activity	Potential project activities within the scope of the controlled activity	Controlled activity guideline controls to be implemented
		■ Approaches to crossings should be sealed and incorporate appropriate roadside drainage, such as stabilised table drains where necessary **Culverts - additional design considerations** ■ Box culverts are preferred to pipes. ■ Align culverts with downstream channel. ■ Incorporate elevated dry cells and recessed wet cells with the invert at or below the stable bed level. ■ The culvert design must be certified by a suitably qualified engineer.

3.1.4 Flooding

Flood risk to the Project from Duck Creek is minimal in all events up to and including the 1% annual exceedance probability (AEP) (1 in a 100-year event) as flooding is generally limited to the south of the Tallawarra site. Flood risk to the Project from smaller tributaries including Wollingurry Creek, Barrons Gully, and Pithungar Gully is also minimal as flooding in these watercourses are unlikely to breach their banks (SKM, 2009).

Flood risk to the Project from Lake Illawarra is minimal in all events up to and including the 1% AEP. In a 1% AEP flood, without mitigation waters would back up Yallah Creek resulting in inundation up to approximately 35m from the Project (SKM, 2009).

The probable maximum flood (PMF) for the Project is defined as the largest flood that could conceivably occur at the Project site. At the Project site, this equates to a relative level of 3.24 metres Australian Height Datum. This PMF level is identified in the project conditions of approval.

Consultation with Wollongong City Council has been undertaken on flooding. In response to this, the design of the project will consider:

- The Lake Illawarra Flood Risk Management Study to determine if it is reasonable and feasible to design the Project to an alternative PMF level derived from the study.
- Sea level rise scenarios and the Lake Illawarra Coastal Management Program, Draft Report, June 2019 to determine if the Project could be impacted by high risk inundation areas and where tidal movement may create inundation to the site.

3.1.5 Acid sulfate soils

Actual or potential acid sulphate soils (ASS) have been identified during previous investigations in Coffey (2010). ASS has been identified predominantly in the southern part of the site around the current/former lower lying alluvial/estuarine environments. The majority of these areas coincide with the former ash ponds and/or low lying areas.

Given the potential acid sulphate soil areas are mapped outside of the power station boundary and given the project would not include any excavations greater than one metre deep in these areas, the risk of encountering acid sulfate soils during the project is low.

If the project was amended to interact with potential or actual ASS the HSSE Lead must prepare appropriate procedures and update this SWMP, or approve appropriate actions and safeguards as part of an activity specific EWMS.

3.1.6 Groundwater

Groundwater depth varies across the site from greater than 15 metres below ground level in the wester upper slope areas of the site to greater than 3.5 meters below ground level closer to Lake Illawarra (Coffey 2010, Earth 2 Water 2010). Groundwater generally flows towards Lake Illawarra.

Evidence from the Tallawarra A power Station construction indicates that the power station island is not subject to any groundwater infiltration. The project design is still being developed, however excavations greater than three metres deep are not proposed. As such the risk of groundwater interception through the project is very low.

If groundwater is encountered during the project, the following processes will be followed:

- Stop work and consult with the HSSE Lead and Environmental Representative
- If practical, complete the works without extracting groundwater from the excavation
- If groundwater extraction is required:
  - The HSSE Lead would confirm that the works can continue under the Schedule 4, Part 1(7) of the Water Management (General) Regulation 2018 allowing up to 3ML/year to be extracted.
  - If groundwater volumes are likely to be less than 1000 litres, groundwater would be contained and directed to the nearest sediment basin.
  - If groundwater volumes are likely to be greater than 1000 litres, a dewatering plan will be developed to consider water levels, flow direction and rates, groundwater quality and proposed dewatering effluent disposal methods.
  - Volumes of all groundwater extracted will be recorded.

3.1.7 Groundwater dependent ecosystems

Groundwater Dependent Ecosystems (GDEs) are susceptible to clearing of vegetation, contamination of groundwater and may be impacted by the release of contaminants or oxidation of acid sulphate soils (ASS).

Direct impacts to GDEs are unlikely because the closest groundwater dependent ecosystems are located outside of the power station boundary (approximately 100 metres from the project works at the closest point) and the project is not likely to intersect or extract groundwater (refer to Section 3.1.6).

If groundwater is extracted for the project, the volume would be less than 3 ML per year (refer to Section 3.1.6). Given the strong connectivity of the aquifer to Lake Illawarra and the proximity of the works to this recharge source (Coffey 2010), any groundwater drawdown resulting from the project would be minor and temporary.

Indirect impacts to GDEs are also unlikely because the disturbance of potential or actual acid sulfate soils is not expected to occur (refer to Section 3.1.5) and measures will be in place to prevent accidental spillages from contaminating groundwater.

3.1.8 Contamination

AECOM (2021a) provides the most recent contaminated soils assessment for the Project area. This assessment has been used to identify an area of potential contamination located south of the inlet canal (refer to Figure 3-1). This area has been identified to contain contamination, predominantly associated with asbestos (chrysolite and amosite), and is noted not to be suitable for construction activities. This area has been identified in the GeoPortal as a construction exclusion zone to be securely fenced off and signposted to prevent access during construction.

Due to the previous site land uses the Project area is likely to contain contaminated soils, including asbestos containing materials. Not all areas that may be subject to soil disturbance for the project have been recently or fully assessed for contamination. As such the risks of the project disturbing contaminated materials is high. To manage potential contamination impacts all project works that would disturb soils are required to follow the Unanticipated Find Procedure provided in Section i and Appendix H, AECOM (202120211b).

Potential Areas of Environmental Concern (AEC) outside of the Power Station boundary have been identified during previous investigations in the Geotechnical, Contamination and Groundwater Investigation Tallawarra Lands, Yallah, NSW report (Coffey 2010). Of the AECs identified, actual soil contamination has been identified at AEC2, AEC3, AEC4, AEC8, and AEC9. The range of contaminants identified across these locations include asbestos, lead, arsenic, petroleum hydrocarbons and aldrin (a pesticide). The potential for

soil contamination from these AECs to constrain the project is considered low because all the identified AECs are located outside the project boundary. If any project works are proposed outside of the power station boundary, the AECs identified in Coffey (2010) should be considered.

3.1.9 Erosion and sediment control

All construction activities will be undertaken in accordance with the Project's Progressive Erosion and Sediment Control Plan (PESCP) (refer to Appendix D) and mitigation measures outlined in Table 5-1. The initial version of the PESCP addresses the initial construction areas that will be subject to soil disturbance. As the construction planning and construction activity for the project progresses, updates to the PESCP will be made prior to soil disturbance occurring in any previously undisturbed area.

As part of the erosion and sediment control risk strategy, all ground disturbance will be progressive within local management areas. This will enable site specific erosion and sediment control measures to be designed, installed, and maintained to achieve control of potential sedimentation risks downstream.

The vegetation clearing program will be staged according to the construction works program to further reduce disturbed areas. Existing vegetated or grassed areas will remain undisturbed until temporary or permanent works are programmed to commence.

As a priority, permanent treatments will be implemented on finished surfaces in accordance with the Landscape Plan, otherwise temporary measures such as establishment of a cover crop or the use of soil binders will be used to minimise erosion and stabilise areas.

As detailed in the PESCP (Appendix D), the Project will collect and reuse site waters for construction purposes including dust suppression as part of the strategy to reduce potential sedimentation to Lake Illawarra and adjoining watercourses.

Vehicle movements will be restricted to nominated carparking areas and nominated construction ancillary sites. Most site access will be on-foot to reduce unnecessary traffic movements and additional ground disturbance.

Upstream catchment waters will be diverted around the site works using the natural flow path as per the PESCP to ensure clean and site water separation. Existing drainage within the site will be protected using site controls such as sandbags, sediment fence, etc. Drainage lines and flow paths will remain free of mobile and loose construction materials including stockpile management which will be as per the PESCP (Appendix D) and activity specific EWMS.

3.2 Potential impacts

3.2.1 Project GeoPortal and sensitive area maps

The Project's environmentally sensitive areas (waters, wetlands, asbestos risk zones, potential or actual sulfate soil areas and/or areas of contaminated soil areas of potential concern) are identified and visually displayed in the project **GeoPortal** and are also detailed in Figure 3-1. The GeoPortal is a web-based geospatial mapping tool that digitally identifies site environmentally sensitive areas and key project features and ancillary facilities.

The Project will avoid, manage and/or mitigate impacts to these environmentally sensitive areas. Further information is available in Section 6.4 of the CEMP.

3.2.2 Construction activity potential impacts

Key Construction activities that have the potential to impact on water and soil include:

- General site establishment, clearing of vegetation, and general construction works would disturb groundcover and expose soils which would increase the risks of erosion and sediment and potentially risk encountering ASS.

- General construction works would present the risk of spills (such as during refuelling of equipment) that could run off and impact waterways.
- Site preparation of the remaining Tallawarra coal fired power station footings may be required to establish building platforms and access roads for the Project. This area has the potential to be contaminated with asbestos.
- Major plant items and buildings would be established on concrete foundations. The design of foundations would be determined following the detailed structural design process. Deep excavations that would have the potential to encounter contamination, ASS, or groundwater are not expected to be required.
- Excavation is not expected to be required to install the gas feeder pipeline. If trenching was required for pipeline works, it would have the potential to encounter contamination, ASS, and groundwater. Excavation and stockpiling may result in erosion and sediment control impacts.
- Once installed the pipeline would be hydrostatically tested for leaks. Hydraulic testing may result in the loss of water under pressure through leaks and defects, which may result in erosion and sediment control impacts. The loss of testing fluids that are dyed could result in pollution to nearby waterways.
- Flooding of the construction worksite, if it occurred, would have the potential to carry sediment and pollutants from the worksite to nearby waterways.
- The construction workforce for the Project would require up to 200 personnel that would generate wastewater / sewage that would be managed by the existing site wastewater treatment facilities and by pump out facilities. Discharges from these systems may result in water or soil pollution.

4 Roles and responsibilities

Project personnel roles and responsibilities are described in the CEMP. Responsibilities for the implementation of specific environmental mitigation measures are indicated in Section 8.

5 Environmental safeguards and management measures

5.1 Activity specific Environmental Work Method Statements

The preparation of activity specific EWMS (EWMS) is required as a hold point for all construction activities.

As part of the development of EWMS the Contractor will prepare progressive erosion and sediment control plans (PESCP). PESCP will be completed by a suitably qualified person. An initial PESCP is provided in Appendix D. As the construction planning and construction activity for the project progresses, updates to the PESCP will be made prior to soil disturbance occurring in any previously undisturbed area.

Any suspected or actual contaminated soils will be managed in accordance with the unanticipated find protocol – contamination (Appendix B) and the Waste Management Plan (WMP).

Any suspected or actual asbestos will be managed in accordance with the waste management plan and the Tallawarra Power Station Asbestos Management Plan(AECOM (2021b). If contaminated land or asbestos containing materials is found, any related works will need to be considered as part of an activity specific EWMS.

These requirements, and the Project environmental safeguards and management measures to be implemented for the Project, are consolidated in Table 5-1.

5.2 Conditions of approval

The Project (MP07-0124) was granted approval by the then Minister for Planning on 21 December 2010. The Project was declared as Critical State Significant Infrastructure (CSSI) by the Minister for Planning on 26 February 2008 in accordance with section 5.13 of the *Environment Planning and Assessment Act 1979* (EP&A Act).

An approval modification (Mod-1) for extension of the lapse date was approved March 2016, which extended the Project Approval lapse date by five years to 21 December 2020. A second approval modification (Mod-2) was approved by the Department of Planning, Industry and Environment (DPIE) in December 2020. Mod-2 extended the Project Approval lapse date by a further two years to December 2022 and amended several conditions of approval, including allowing for a single OCGT to be used for the project.

The conditions of approval specifically relating to this SWMP are provided in Table 2-1 along with the responsibility for compliance. Where these conditions translate into an environmental safeguard or management measure, they are included in Table 5-1.

5.3 Statement of commitments

The Environmental Assessment Statement of Commitments (EA, 2009) provides the mitigation measures and safeguards that have been developed to manage potential environmental impacts associated with the Project. The Environmental Assessment Statement of Commitments specifically applicable to this SWMP are consolidated in Table 5-1.

One Statement of Commitment requires asbestos containing materials to be managed on site within the EnergyAustralia asbestos repository. However, since the EA was prepared EnergyAustralia has closed the asbestos repository and removed the repository from EPL555. Accordingly, any asbestos containing materials would be will be removed from site to an appropriacy licensed facility and generally managed in accordance with Tallawarra Power Station Asbestos Management Plan(AECOM 2021b).. This approach is considered to be generally in accordance with the EA and as such complies with CoA 1.1.

5.4 Commitments made in Project modifications

Major Project MP07_0124 Modification 2 (December 2020) contained a safeguard designed to protect surface water from impacts associated with wastewater generated by construction personnel. This has been included in Table 5-1.

No other commitments have been made in Modification 1 (March 2016), Modification 2 (December 2020), submissions reports associated with these modifications, or technical specialist studies that were prepared to support the modification applications.

5.5 Environmental protection licence

EnergyAustralia holds an Environmental Protection Licence (EPL) number 555 under Section 58(5) of the *Protection of the Environment Operations Act 1997* for the project site. The EPL covers the operational licence requirements for the Tallawarra A project and construction requirements relevant to the construction of the Tallawarra B project.

The construction relevant EPL requirements related to the project are detailed and maintained as part of the EMS. See Appendix H of the EMS for relevant EPL responsibilities.

Condition L1.1 of the environmental protection licence requires that EnergyAustralia not cause or permit any waters to be polluted above the limits prescribed in the licence or at locations not prescribed. Condition L1.1 is consolidated with the Project environmental safeguards and management measures in Table 5-1.

Table 5-1: Safeguards and management measures

ID	Objective	Action / CoA	Timing	Responsibility	Evidence	Reference
1	Minimise impact of construction on surrounding area	As part of the CEMP for the project, required under condition 7.2 of this approval, the Proponent shall prepare and implement the following: (d) a Soil and Water Management Plan prepared in consultation with the DPIE Water, EPA and Wollongong City Council to detail measures to mitigate and manage soil erosion and the discharge of sediment and other pollutants to land and/or water during construction	Pre-construction	▪ HSSE Lead ▪ Contractor	▪ This plan	▪ Statement of Commitments ▪ Minister's Condition of Approval 7.3
2	Prevention of water quality impacts	The project will be designed, and employ surface water management techniques, such that existing runoff volumes along drainage lines from the site are maintained at pre-construction levels and there are no adverse effects to adjoining land as a result of flooding and runoff	Construction	▪ HSSE Lead ▪ Contractor	▪ Drainage and flooding detailed design reports	▪ EPL 555 ▪ Minister's Condition of Approval 3.37
3	Ensure all work conforms to the requirements of the relative permits, licences, approvals, and legislation	All licences, permits and approvals are obtained and maintained as required throughout the life of the project. No condition of this approval removes the obligation for the Proponent to obtain, renew or comply with such licences, permits or approvals. The Proponent will ensure that a copy of this approval and all relevant environmental approvals are available on the site at all times during the life of the project.	Construction	▪ HSSE Lead ▪ Contractor	▪ CEMP and sub-plans ▪ Audits	▪ Best practice
4	Prevention of water quality impacts	Except as may be provided by an Environment Protection Licence for the project, the Proponent shall comply with section 120 of the *Protection of the Environment Operations Act 1997* which prohibits the pollution of waters	Construction	▪ Contractor	▪ EWMS ▪ PESCPs ▪ Audits	▪ Minister's Condition of Approval 3.30
5	Minimise erosion and sediment loss from the site	Soil and water management controls will be employed to minimise soil erosion and the discharge of sediment and other pollutants to lands and/or waters during construction activities, in accordance with Landcom's (2006*) Managing Urban Stormwater: Soils and Construction*	Construction	▪ HSSE Lead ▪ Contractor	▪ SWMP ▪ EWMS ▪ Audits	▪ Minister's Condition of Approval 3.31
6	Minimise erosion and sedimentation of nearby watercourses	The Proponent will utilise existing crossings over Yallah Creek and shall avoid constructing temporary watercourse crossings for heavy vehicles and machinery.	Construction	▪ HSSE Lead ▪ Contractor	▪ TMP ▪ Audits	▪ Minister's Condition of Approval 3.34
7	Prevent impacts to watercourses and riparian zones	The Proponent will document compliance with any Controlled Activity Guidelines relevant to any project works as part of activity specific environmental work method statements.	Construction	▪ HSSE Lead ▪ Contractor	▪ EWMS ▪ SWMP	▪ SWMP Section 3.1.3

ID	Objective	Action / CoA	Timing	Responsibility	Evidence	Reference
					▪ FFMP ▪ Audits	▪ Minister's Condition of Approval 3.35
8	Flood impacts are minimised	The project will be designed, sited, and constructed so that it is not subject to inundation by floodwaters up to or at a level of the Probable Maximum Flood (as defined in the conditions of approval), nor does it exacerbate flooding on adjacent land. Where the Proponent can demonstrate to the satisfaction of the Secretary that it is not reasonable and feasible to design to the Probable Maximum Flood, the Proponent may nominate an alternative design flood level for the approval of the Secretary. The alternative flood level will be developed using a risk-based approach and in consultation with Wollongong City Council. The design of the project will consider the Lake Illawarra Flood Risk Management Study to determine if it is reasonable and feasible to design the Project to an alternative PMF level derived from the study. The design of the project will consider sea level rise scenarios and the Lake Illawarra Coastal Management Program, Draft Report, June 2019 to determine if the Project could be impacted by high risk inundation areas and where tidal movement may create inundation to the site.	Pre-construction and Construction	▪ EA Project Director ▪ Contractor	▪ Drainage and flooding detailed design reports	▪ Minister's Condition of Approval 3.36 ▪ Consultation requirement with Wollongong City Council
9	Water quality impacts are minimised	Temporary pump-out toilet facilities will be provided during construction to prevent the risk of additional wastewater load resulting the contamination of Yallah Creek and Lake Illawarra. Temporary pump-out toilet facilities will be sited at least 40 metres away from sensitive areas and will be regularly inspected and maintained to ensure no wastewater discharges to the environment.	Construction	▪ Contractor	▪ Audits	▪ Mod-2
10	Minimise likelihood of impacts on aquatic and riparian habitats	Appropriately bunded areas will be provided to store and manage fuels and oils on the project site. Spill containment equipment will be available on site at all times to prevent and contain accidental spills near local waterways.	Construction	▪ Contractor	▪ Audits	▪ Statement of Commitments
11	Avoidance of known areas of contamination	An area of potential asbestos contamination identified in AECOM (2021) and shown in Figure 3-1 of the SWMP must be treated as a construction exclusion zone by securely fencing off the area and signposting to prevent access during construction.	Construction	▪ HSSE Lead	▪ Audits	▪ AECOM (2021)

ID	Objective	Action / CoA	Timing	Responsibility	Evidence	Reference
12	Proper management of asbestos containing material	Asbestos and suspected asbestos containing materials will be managed in accordance with Tallawarra Power Station Asbestos Management Plan(AECOM 2021b) and the NSW Waste Management Guidelines. Asbestos containing materials must either be removed from site to an appropriately licensed facility, or, with the approval of the HSSE Lead and in accordance with the EPL requirements be retained and contained on site in the existing EPA approved site asbestos repository established as part of the Tallawarra A approval.	Construction	▪ HSSE Lead ▪ Contractor	▪ Records management as required by Hazmat Services (2011)	▪ Statement of Commitments (amended) ▪ SWMP Section 5.3
13	Groundwater interception is managed	The project will be designed and constructed to minimise groundwater interception. If groundwater is encountered during the project, the following processes will be followed: – Stop work and consult with the HSSE Lead and Environmental Representative – If practical, complete the works without extracting groundwater from the excavation – If groundwater extraction is required: ▪ The HSSE Lead would confirm that the works can continue under the Schedule 4, Part 1(7) of the Water Management (General) Regulation 2018 allowing up to 3ML/year to be extracted. ▪ If groundwater volumes are likely to be less than 1000 litres, groundwater would be contained and directed to the nearest sediment basin. ▪ If groundwater volumes are likely to be greater than 1000 litres, a dewatering plan will be developed to consider water levels, flow direction and rates, groundwater quality and proposed dewatering effluent disposal methods. ▪ Volumes of all groundwater extracted will be recorded.	Design and Construction	▪ HSSE Lead ▪ Contractor	▪ Drainage and flooding detailed design reports ▪ Dewatering plan ▪ Groundwater extraction volume records	▪ SWMP Section 3.1

ID	Objective	Action / CoA	Timing	Responsibility	Evidence	Reference
14	To manage unanticipated contamination	All project works that would disturb soils will follow the Unanticipated Find Procedure – Contamination (SWMP Appendix B) and the Unanticipated Find Procedure – Asbestos (SWMP, Appendix C, Section 19.2).	Construction	▪ HSSE Lead ▪ Contractor	▪ EWMS ▪ Audits	▪ SWMP Section 3.1, Appendix B and Appendix C
15	Flood impacts are minimised	The north drain will be checked and cleared of debris following rainfall events to reduce the likelihood of blockage.	Construction	▪ HSSE Lead	▪ Audits	▪ Consultation requirement from Wollongong City Council
16	Appropriate wastewater management	EnergyAustralia will connect the Tallawarra A and Tallawarra B power stations to a networked sewage system when it is installed for the adjacent Tallawarra Lands development. EnergyAustralia will continue to consult with the Tallawarra Lands developer on timing of the Tallawarra Lands networked sewage system installation.	Construction Operation	▪ Project Director	▪ Consultation records	▪ Consultation requirement from EPA
17	To obtain a Water Access Licence	A Water Access Licence (WAL) must be obtained from NRAR prior to water take unless an exemption under the Water Management (General) Regulation 2018 applies.	Construction	▪ HSSE Lead	▪ Controlled activity exemption e-tool	▪ Consultation requirement from DPIE Water / NRAR

6 Monitoring and inspections

6.1 Monitoring

Monitoring, measurement, analysis and evaluation for the project is detailed and maintained as part of the EMS, Section 7.5. Specific monitoring requirements that apply to this SWMP are provide in Table 6-1.

Table 6-1: SWMP monitoring requirements

Type	Purpose / methodology	Frequency	Responsibility
Potential acid sulfate soil (PASS)	To prevent PASS oxidation soils must be tested for acid soil potential by a qualified person whenever excavations deeper than 1m are proposed.	Whenever excavations deeper than 1m are proposed	HSSE Lead Contractor
Stormwater runoff quality	To prevent water quality impacts to sensitive receiving environments erosion and sediment controls are to be inspected and maintained.	Weekly, and immediately following rainfall events	HSSE Lead Contractor
Groundwater interception volumes	To prevent taking or contaminating groundwater all excavations greater than 1m deep should be inspected visually for groundwater interception.	While any excavations are open that are greater than 1 metre below ground level.	HSSE Lead Contractor

Regular inspections are a requirement of the CEMP (Section 12). Regular inspections are to include consideration of:

- EWMS compliance
- Controlled activity guideline compliance
- North drain maintenance to prevent blockages
- PESCP measures are appropriately designed, installed and maintained.

7 Compliance management

7.1 Communication

Communication shall be undertaken as outlined in Section 6 of the EMS.

7.2 Training and competency

All project personnel are required to undergo site environmental induction training which incorporates soil and water management measures in accordance with Section 8 of the CEMP.

7.3 Audit

Regular audits are to be completed in accordance with Section 12 of the CEMP. Audits will assess SWMP compliance, to identify any issues of noncompliance, and to confirm licence and approval conditions are being met.

EnergyAustralia has engaged an approved independent auditor to undertake independent audits in accordance with the Independent Audit Post Approval Requirements (DPIE, 2020). Further information on the independent auditing schedule and requirements is found in the EMS Section 7.2.

Weekly inspections of the Project Works within the Scope of Works will be undertaken by the contractor. Weekly inspections will include the assessment and maintenance (where needed) of safeguards and mitigation measures required in Table 5-1.

Audits and inspections will specifically consider how targets that apply to this SWMP are being addressed, including:

- Adherence to relevant legislation, statutory requirements, permits and/or licenses
- Status of control in meeting progressive sediment and erosion control plans
- Adherence with the asbestos management plan
- Adherence with the unanticipated finds procedure
- Reportable incidents
- Complaints.

7.4 Reporting

To comply with project condition of approval 5.5 and 5.6, compliance reports of the project must be carried out in accordance with the Compliance Reporting Requirements and timing requirements outlined in the *Compliance Reporting Post Approval Requirements (2020)*. To comply with project condition of approval 5.7 each compliance report must be made publicly available within 60 days of submitting it to the Secretary, unless otherwise agreed by the Secretary. Full details of compliance reporting requirements are addressed in the CEMP Section 13.

Any complaints identified through audits or inspections will be managed in accordance with project approval condition 6.3. Full details of complaint management are provided in Section 11 of the CEMP.

Any non-conformances identified through audits or inspections will be managed in accordance with project approval conditions 5.2, 5.3 and 5.4. Full details of non-conformance management are provided in Section 13 of the CEMP.

Any breach of a licence condition will be reported as per licence requirements.

7.5 Incident management and corrective actions

The management, investigation, reporting and notification process for environmental incidents is to be undertaken in accordance with:

- GECL Emergency Response Plan for Tallawarra B (where related to the construction of the project)
- EnergyAustralia TQMS12-HSE-L001 - Emergency Response Plan (where related to the broader project site or Tallawarra A operations)
- Conditions of Approval incident reporting requirements
- EPL 555 requirements.

If an incident does occur, project personnel in the immediate area are required to promptly cease works and follow the processes in line with the EnergyAustralia TQMS12-HSE-L001 - Emergency Response Plan, and notification and reporting requirements outlined in the following sections.

If the incident is under the control of GECL during construction, then the GECL Emergency Response Plan for Tallawarra B must be followed.

Generally environmental incident notification and reporting would ensure that all environmental incidents and non-compliances must be immediately reported to the HSSE Lead and Construction Manager. Verbal notification must occur immediately on becoming aware of the incident or non-compliance. EnergyAustralia will notify NSW EPA immediately of all pollution incidents that cause or threaten material harm to the environment. EnergyAustralia will also notify the ER of any environmental incident immediately or within 24 hours of becoming aware of the incident.

EnergyAustralia will notify the Secretary in writing via the Major Projects website immediately after it becomes aware of an environmental incident following the requirements of CoA 5.1 and Appendix 1 of the major project approval. The major project approval Appendix 1 incident reporting requirements are replicated in Appendix E of this SWMP.

For full details of incident management requirements, refer to Section 10.3 of the CEMP.

7.6 Consultation

During development of the SWMP, consultation has been undertaken with the stakeholders. Table 7-1 identifies the SWMP consultation and provides a summary of the agency key issues.

Table 7-1: Agency consultation summary

Agency	Key issues
DPIE Water / NRAR	▪ Compliance with the Controlled Activities Guidelines, where appropriate ▪ Water Access Licence (WAL) unless an exemption applies
Wollongong City Council	▪ Confirmation of flood planning levels and associated site drainage design ▪ Asbestos management
EPA	▪ On-site wastewater management ▪ Proposed erosion and sediment controls

Full details of agency consultation undertaken for the SWMP, including details of how stakeholder issues have been addressed by this SWMP is provided in Appendix A.

7.7 Review

This plan will be subject to continuous review throughout the construction and pre-operational stage of the Project, aimed at identifying areas for improvement. Review will be carried out in accordance with procedures described in the Section 14 of the CEMP.

This plan will be subject to continuous review throughout the construction stage of the Project, aimed at identifying areas for improvement.

Specific review of this plan is required to comply with Condition of Approval 7.7. This condition requires that within 3 months, unless the Secretary agrees otherwise, of:

a) the submission of an incident report under condition 5.1 of this approval;

b) the submission of an Independent Environmental Audit report under condition 5.11 of this approval;

c) the approval of any modification to the conditions of this approval; or

d) a direction from the Secretary under condition 1.3 of this approval;

EnergyAustralia must review and, if necessary, revise the studies, strategies or plans required under the conditions of approval to the satisfaction of the Secretary.

Where this review leads to revisions in any such document, then within 4 weeks of the review the revised document must be submitted to the Secretary for approval, unless otherwise agreed with the Secretary.

In accordance with project condition of approval 7.8, to ensure the studies, strategies and plans for the project are updated on a regular basis and incorporate any required measures to improve the environmental performance of the project, EnergyAustralia may submit revised studies, strategies or plans required for the project under the conditions of approval at any time.

With the agreement of the Secretary, EnergyAustralia may also submit any study, strategy or plan required under the conditions of this approval on a staged basis. The Secretary may approve a revised strategy or plan required under the conditions of approval, or the stage submission of these documents, at any time.

With the approval of the Secretary, EnergyAustralia may prepare the revised or staged strategy or plan without undertaking consultation with all parties nominated under the applicable condition in this approval.

References

AECOM (2021a) Tallawarra B Laydown Area Supplementary Assessment, Job No.: 60602160

AECOM (2021b) Tallawarra Power Station Asbestos Management Plan, ref: 60650884

BMT (2019), Lake Illawarra Coastal Management Program, Draft Report, June 2019, prepared for Wollongong City Council and Shellharbour City Council

Cardno (2007) Forbes Rigby Duck Creek flood study

Coffey (2010) *Geotechnical, Contamination and Groundwater Investigation Tallawarra Lands, Yallah, NSW report*

Earth 2 Water (2010) Groundwater Site Assessment, TRUenergy Tallawarra Pty Ltd, Yallah, NSW, Report number: E2W-0124 R001

Hazmat Services, (2011) Tallawarra Power Station Asbestos management plan, Version 7, ref: HAZ009_AMP_FIN_270111

SKM (2009) Contamination Assessment North Shore Precinct: Appendix 22C of the Environmental Assessment, Tallawarra Stage B Power Station

SKM (2009) Register of Hazardous Materials Report Residences in the Northern Precinct: Appendix 22D of the Environmental Assessment, Tallawarra Stage B Power Station

Wollongong City Council (2005), Lake Illawarra Floodplain Risk Management Study and Plan, version 6 (May 2005)

Appendix A: Agency consultation log

Consultation undertaken for this SWMP is summarised below.

Agency	Date	Method	Actions and responses
Wollongong City Council	22/7/20	Consultation meetings and invitation to comment during public exhibition of Mod-2	• Given the construction workforce for the Project would require up to 250 personnel, the existing onsite wastewater treatment plant established on the site would have insufficient capacity to manage onsite wastewater generated during construction. To prevent this additional hydraulic load from contaminating Yallah Creek and Lake Illawarra, EnergyAustralia proposed to establish pump out wastewater facilities for the construction personnel. • In Council's submission to Mod-2 they indicated Council generally supports the expansion of the Tallawarra Power Station through the Tallawarra B project and has no objection to the modification request. • Regarding wastewater management, Council requested that comment be sought from NSW EPA.
NSW EPA	29/7/20	Consultation meetings and invitation to comment during public exhibition of Mod-2	• Given the construction workforce for the Project would require up to 250 personnel, the existing onsite wastewater treatment plant established on the site would have insufficient capacity to manage onsite wastewater generated during construction. To prevent this additional hydraulic load from contaminating Yallah Creek and Lake Illawarra, EnergyAustralia proposed to establish pump out wastewater facilities for the construction personnel. • EPA believes the proposed on-site wastewater management systems will adequately manage sewage. • EPA recommended EnergyAustralia commit to connect to a networked sewage system when it is installed for the adjacent Tallawarra Lands development.
DPIE Water	14/01/21	Email: Post-approval clarification of CoA 3.34 and 3.35	• Email to DPIE Water from EnergyAustralia asking for CoA 3.34 and 3.35 in the Project Approval 07_0124 clarification • CoA 3.34 details that "The proponent shall utilise existing crossings over Yallah Creek and shall avoid constructing temporary watercourse crossings for heavy vehicles and machinery" and CoA 3.35 details "The Proponent shall ensure that any construction activities within 40 metres of the bank of Yallah Creek, and any other watercourses, are consistent with Controlled Activity Guidelines (Department of Water and Energy, 2008) including, but not limited to, 'In-stream Works', 'Outlet Structures', 'Riparian Corridors', 'Vegetation Management Plans', and 'Watercourse Crossings', or any guidelines which supersede these documents" • EnergyAustralia requested DPIE Water confirm that an approval for a Controlled Activity is not required but rather EnergyAustralia is required to comply with the Controlled Activities Guidelines (Department of Water and Energy, 2008)
DPIE Water	15/01/21	Email: Post-approval clarification of CoA 3.34 and 3.35 – confirmed by DPIE Water	• Email response back from DPIE Water in relation to the post-approvals clarification request • Confirmed EP&A Act Section 5.23 is the appropriate legislation that details how some select NSW legislation does not apply for State Significant Infrastructure projects. Under (g) of the Section, which includes water use approval under section 89, a water management work approval under section 90 or an activity approval (other than an aquifer interference approval) under section 91 of the Water Management Act 2000. As such seeking approval from NRAR is not necessary for these activities. • Intent of CoA 3.35 is to ensure that any construction activities within 40 metres of the bank of Yallah Creek, and any other watercourses, are consistent with the content of the Controlled Activity Guidelines (Department of Water and Energy, 2008)

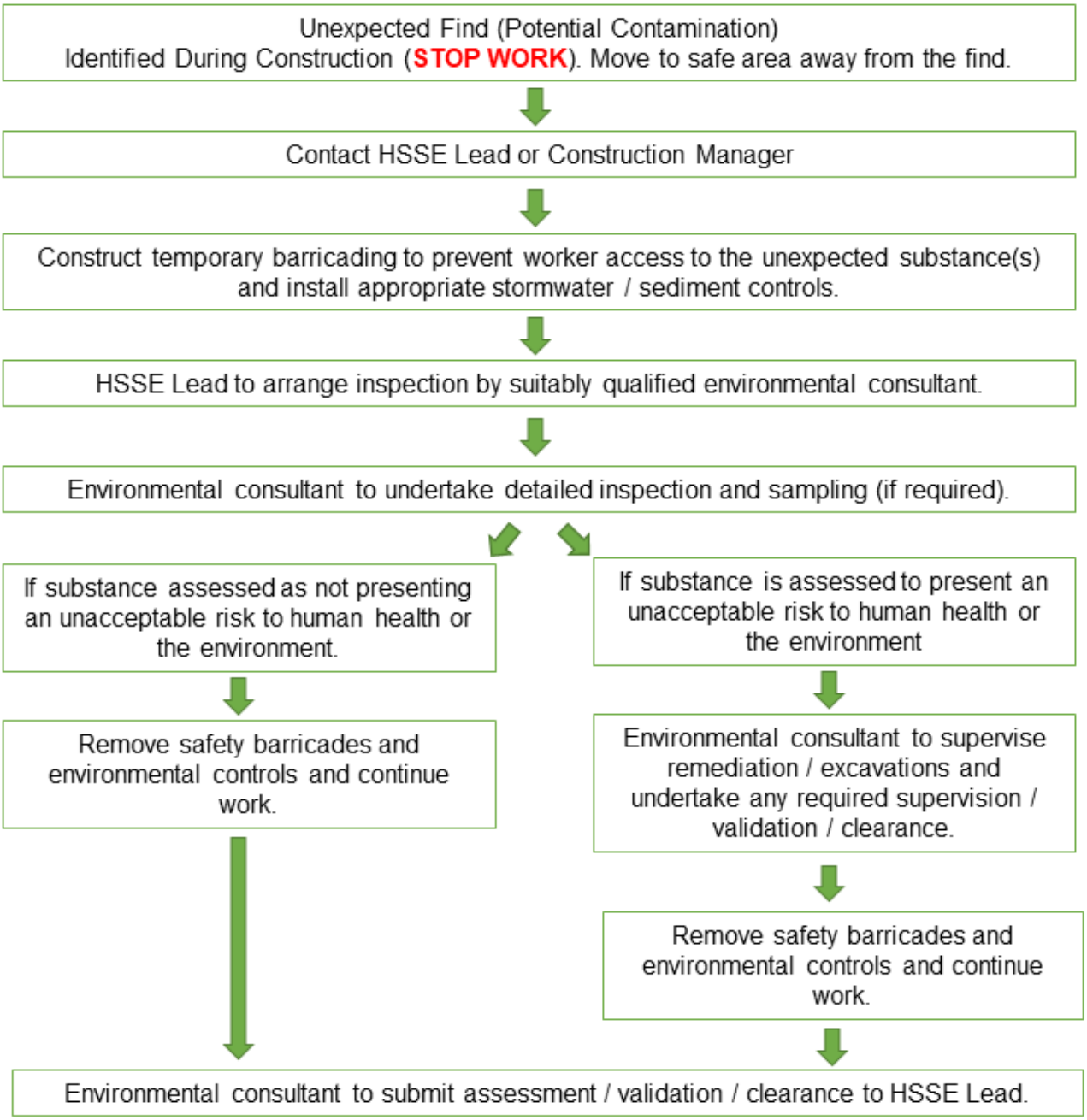
Agency	Date	Method	Actions and responses
			• Note the Guidelines also refer to other relevant NRAR guidelines such as 'Controlled activities: Guidelines for watercourse crossings' and 'Controlled activities: Guidelines for instream works'
Wollongong City Council	30/08/21	Email: introduction of the project	• Purpose of the email was to introduce the project, the proponent and the CoA requirement of consultation with Council for the traffic, water quality, flooding and the visual impact management plans • Aurecon requesting availability of Wollongong City Council for a TEAMs/virtual meeting of the relevant management plans • Aurecon requesting confirmation of contacts for consultation
DPIE Water	30/08/21	Email: introduction of the project	• Purpose of the email was to introduce the project, the proponent and the CoA requirement of consultation with DPIE Water on matters relating to the proposed measures to mitigate and manage soil erosion and the discharge of sediment and other pollutants to land and/or water during construction • Mention the development of a draft Soil and Water management plan (SWMP) for the project and the opportunity to consult on this plan with DPIE Water • Aurecon requesting availability of for a TEAMs/virtual meeting of the relevant management plans
Wollongong City Council	01/09/21	Email: response to initial project introduction email	• Response from Andrew Heaven from Council confirming a TEAMS/virtual meeting with key stakeholders within Council would be beneficial • Meeting proposed for 08/09/21 • Andrew Heaven requesting an agenda with key items for discussion during the meeting including background regarding the project, timing, constraints, as well as any plans / images
Wollongong City Council	02/09/21	Email: Aurecon confirmed meeting date	• Response email to email sent on 01/09/21 accepting/confirming proposed meeting day/time • Aurecon confirming that agenda and reference materials would be sent to Council prior to meeting
NSW EPA	02/09/21	Email: follow-up email on pre-construction consultation and draft NAQMP and SWMP for review/comment	• Email to follow up on pre-construction consultation for the Project • Introduction of the CoA requirement for consultation of the CEMP and sub-plans with NSW EPA • Attached to the email is the draft NAQMP and the SWMP for review/comment • Note that erosion and sediment control plan is still under preparation • Confirmation of agreed TEAMs/virtual meeting time for 10/09/21
Wollongong City Council	03/09/21	Email: sent meeting agenda and draft management plans	• Aurecon sent through meeting agenda • Attached to the email was the draft Soil and Water Management Plan (SWMP), draft Landscape Plan and the draft Traffic Management Plan (TMP)
Wollongong City Council	06/09/21	Email: Council confirmation of agenda and management plans received	• Confirmation email from Council that meeting agenda and attached management plans have been received
NSW EPA	07/09/21	Email: NSW EPA reviewed/comments on draft NAQMP and SWMP	• Email from NSW EPA confirming receipt and review of NAQMP and SWMP • Marc Cooper from NSW EPA provided key points/information to include in the management plans • Also recommended to consider drafting an AIE SWMP and NDAMP map listing controls

Agency	Date	Method	Actions and responses
NSW EPA	07/09/21	Email: NSW EPA provided example AIE SWMP	• Greg Newman provided an example AIE SWMP to assist in the development of the project specific AIE SWMP • Example AIE SWMP was attached to the email
Wollongong City Council	08/09/21	Online/virtual consultation meeting with Wollongong City Council	• Council raised issue around Yallah Creek and how this influences the PMF. This was resolved by Council and referred to the Lake Illawarra Flood Risk Management Study (SES Flood Portal and Data Hub) as a reference for 2100 sea level rise scenarios, and the newly adopted Lake Illawarra Coast Management Plan for high risk inundation areas and where tidal movement may create daily inundation to the site. – *Addressed in item 8 of Table 5-1 with a specific safeguard.* • Council raised an issue around the Northern Drain and that this drain needed to remain unblocked during heavy rains to ensure localised flooding didn't occur. Aurecon and EnergyAustralia both confirmed that maintenance would be undertaken to reduce the likelihood of the north drain blocking. – *Addressed in Section 3.1.1 and a safeguard added to Table 5-1 to require maintenance to reduce the potential for the north drain to become blocked.* • Council queried if digging through the slab was being considered and if asbestos was assessed. Aurecon and EnergyAustralia both confirmed in the affirmative to both – *Asbestos management is addressed in this SWMP in Section 3, Table 5-1 and Appendix C.*
Wollongong City Council	08/09/21	Email: Nicole Ashton providing direct contact details	• Email from Nicole Ashton from Wollongong City Council providing preferred contact details • Request to identify which condition Aurecon is providing the information for
Wollongong City Council	08/09/21	Email: Aurecon response with indicative timings for management plan submission	• Aurecon responding to Wollongong City Council with confirmation/commitment of re-submitting updated management plans including cross-references to the CoAs within a week
Wollongong City Council	09/09/21	Email: meeting minutes	• Email to Wollongong City Council and other attendees circulating meeting minutes. Meeting minutes attached to email • Commitment to Wollongong City Council to re-issue the documents that we provided along with the cross references to the conditions of approval that each addresses
Wollongong City Council	09/09/21	Email: re-attached management plans and CoA cross-reference	• Draft management plans re-attached to email • Email contains a CoA table with cross-references to where this is addressed in the Plan • Attached to the email was a full copy of the current CoAs for the project
DPIE Water	10/09/21	Email: introduction to the project – response from DPIE Water	• Email response from DPIE Water to the introductory email from the 30/08/21 • Jessica Braden from DPIE Water requesting a copy of the draft Soil and Water Management Plan for review/comment • Confirmation of meeting to be determined after review/comment
DPIE Water	10/09/21	Email: draft SWMP sent for review/comment	• Draft Soil and Water Management Plan sent to DPIE Water for review/comment. Management plan sent as an attachment
NSW EPA	15/09/21	Email: receipt of NSW EPA's comments/review and draft Preliminary	• Email confirming that NSW EPA's comments/review were received on the construction plans • Highlighting that the EPC contractor has prepared a draft Preliminary Erosion and Sediment Control Plan (ESCP) which has been signed off by a soil conservationist

Agency	Date	Method	Actions and responses
		Erosion and Sediment Control Plan (ESCP)	• Offer to organise a meeting to run through Preliminary ESCP if NSW EPA would like to be consulted further • Anticipating comment/review of the Preliminary ESCP
NSW EPA	16/09/21	Email: confirmation of receipt of email and attached Preliminary ESCP	• Email from Marc Cooper from NSW EPA confirming that he will undertake his review and provide comments
NSW EPA	20/09/21	Email: confirmation from NSW EPA no further comments	• Confirmation received from NSW EPA that there are no further comments on the Preliminary ESCP
DPIE Water	20/09/21	Email: following up email for review/comment of the SWMP	• Aurecon following up on consultation on the draft Soil and Water Management Plan for the project • Request to DPIE Water for likely timing for any consultation comments
DPIE Water	21/09/21	Email: comments received on SWMP	• Plan to ensure that information is provided on how the works will be in accordance with the NRAR Guidelines for Controlled Activities. – *SWMP updated with Section 3.1.3 and a new control in Table 5-1 to address controlled action guideline compliance* • Update reference to NRAR Guidelines for Controlled Activities to the current version – *SWMP updated with Section 3.1.3 identifying and linking to the updated controlled activity guidelines* • Indication that a full assessment will be conducted when this plan is formally submitted for review
DPIE Water	05/10/21	Email: Formal written comments on SWMP provided	• Provide details for any works on waterfront land or in-stream including outlet structures and crossings. Should there be any works on waterfront land please provide detail on how they will be in accordance with the NRAR Guidelines for Controlled Activities. – SWMP updated with Section 3.1.3 and a new control in Table 5-1 to address controlled action guideline compliance • A Water Access Licence (WAL) must be obtained from NRAR prior to water take unless an exemption under the Water Management (General) Regulation 2018 applies. – WAL exemption has been identified for the project under the Water Management (General) Regulation 2018
EPA	12/10/21	Meeting: MS Teams meeting with EPA (Marc Cooper and Greg Newman)	• Discussed using existing stockpiled material for project work located adjacent to the asbestos repository cells. EPA had no objections. • Discussed placing 'unsuitable' (uncontaminated) material excavated from the Project site at this existing stockpile site near the asbestos repository. EPA advised this was not supported. • Discussed placing contaminated spoil from the Project site within the existing asbestos repository cells (or creating a new cell if this is warranted). EPA advised the existing EPL provides for this to be undertaken (provided all measures related to the repository management in the relevant EPL variation are complied with). EPA advised that only asbestos contaminated material may be disposed of in the repository.
WCC	07/12/21	Email: Additional comments on the SWMP	• Council reiterated a previously raised issue that the flood report referenced in EnergyAustralia's submission is a 2001 study that was superseded by a 2003 study and then by the current Lake Illawarra Flood Risk Management Study.

Agency	Date	Method	Actions and responses
			• Council suggested that prior to finalising the design it is reviewed against the Lake Illawarra Flood Risk Management Study and Plan 2012, including a check against the sea level rise projections. – Addressed in item 8 of Table 5-1 with an amended made to the specific safeguard prepared to address this item when previously raised. – Added the updated Lake Illawarra Flood Risk Management Study and Plan 2012 to the guidelines and policies section 2.2 – Updated discussion of flooding risks in Section 3.1.4 – GECL design engineers have been instructed in writing by EnergyAustralia to consider the Lake Illawarra Flood Risk Management Study and Plan 2012 in the design.

Appendix B: Unanticipated Finds Procedure – Suspected Contamination



Appendix C: Asbestos Management Plan (AECOM2021)

Prepared for
Energy Australia Pty Ltd
ABN: 99 086 014 968

Asbestos Management Plan

Tallawarra Power Station

17-Dec-2021
Energy Australia Tallawarra

aecom.com

Delivering a better world

Asbestos Management Plan

Tallawarra Power Station

Client: Energy Australia Pty Ltd

ABN: 99 086 014 968

Prepared by

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17-Dec-2021

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Quality Information

Document Asbestos Management Plan

Ref 60650884

Date 17-Dec-2021

Prepared by Marc Wydro / Greg Matthews

Reviewed by Joanne Walters / Ross McFarland

Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
A	1-Aug-2021	Draft for client review	Peter Dean Senior Environmental Scientist	
B	10-Sep-2021	Preliminary Final	Peter Dean Senior Environmental Scientist	
0	08-Dec-2021	Final	Mark Tiedeman Project Manager	
1	17-Dec-2021	Final	Mark Tiedeman Project Manager	

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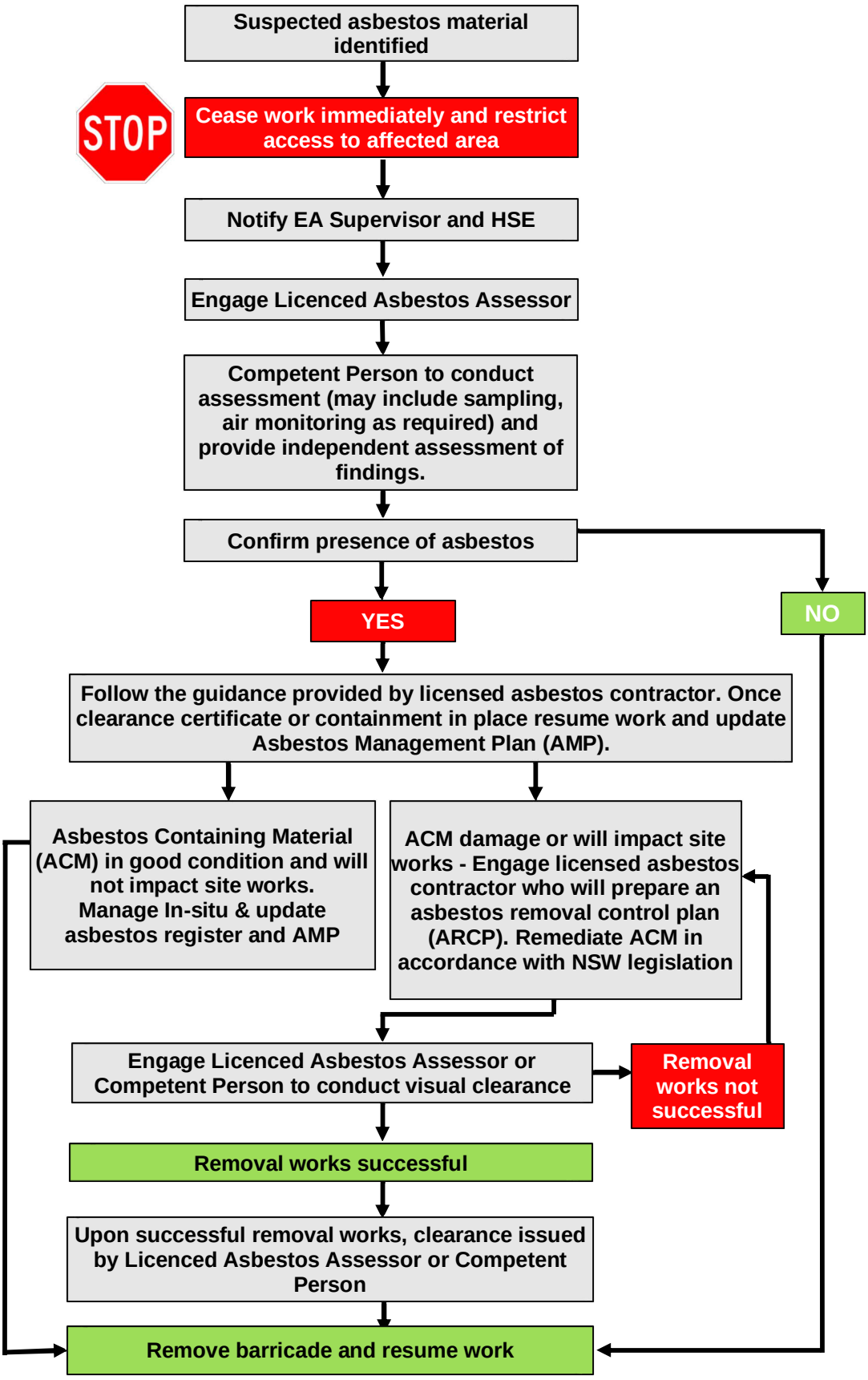
Unexpected Finds Procedure



The Unexpected Finds Procedure shall be followed when the capping layer (or soil >0.1 mbgl) has been breached, when suspected ACMs have been found, or when an emergency incident of material suspected to contain asbestos has occurred. When assumed asbestos or ACM is identified, the following procedure should be followed:

- The area should be restricted by the following means:
  - Internal area – closing any doors and erecting warning signage at entry points.
  - External area – isolating the area off with the use of a barrier and warning signage.
- An independent asbestos contractor (asbestos contractor) should be engaged to undertake an assessment of the unexpected find.
- The investigation may include airborne asbestos fibre monitoring within the area (if indoors) by an asbestos contractor with NATA accreditation for fibre counting in accordance with the Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibre, 2nd Edition [NOHSC: 3003 (2005)].
- The asbestos contractor should provide information following the inspection detailing the sample result, material classification (where asbestos is identified) and provide recommendation to appropriately mitigate the find (where asbestos is identified).
- If the unexpected find is deemed to be an emergency, the normal waiting period of 5 days associated with the SafeWork NSW notification shall not be required.
- An asbestos removal contractor should be engaged and must undertake the following:
  - Contact SafeWork NSW on 131050 and advised of the emergency works, and
  - Lodge the notification electronically using the asbestos and demolition online notification system within 24 hours of the telephone notification.
- Mitigation measures (e.g. removal, stabilisation, encapsulation) may require air monitoring during the works by either a Competent Person or Licenced Asbestos Assessor (dependent on the classification of asbestos).
- Following the mitigation measures a clearance inspection by a Licenced Asbestos Assessor may be required.
- Upon satisfactory clearance inspection and air monitoring (where required) a clearance certificate shall be issued by the asbestos contractor.
- The Asbestos Register and AMP should subsequently be updated by EA to detail the mitigation works.

Definitions

Asbestos	The asbestiform varieties of mineral silicates belonging to the serpentine or amphibole groups of rock forming minerals, including actinolite asbestos, amosite, anthophyllite, chrysotile, crocidolite, and tremolite.
Asbestos-containing material (ACM)	Any material or thing that, as part of its design, contains asbestos.
Asbestos-contaminated dust / debris (ACD)	Means dust or debris that has settled within a workplace and is, or assumed to be, contaminated with asbestos.
Asbestos Register	A register recording the type, condition and location of all ACM for all premises under Energy Australia control at the Tallawarra Site.
Asbestos Work	Work undertaken in connection with a work process with the potential for asbestos exposure such as maintenance work, encapsulation and removal of ACM.
Asbestos Work Area	The immediate area in which asbestos works is scheduled to occurs and as defined by barriers such as fencing, warning tape and signage.
Class A licence	Means a licence that authorises the carrying out of Class A asbestos removal work and Class B asbestos removal work by or on behalf of the licence holder. This allows the licence holder to conduct friable asbestos removal work and non-friable asbestos, ACM or ACD removal work.
Class B licence	Means a licence that authorises the carrying out of Class B asbestos removal work by or on behalf of the licence holder. This allows the holder to conduct the removal of more than 10 square metres of non-friable asbestos or ACM removal work and/or the removal of ACD associated with the removal of more than 10 square metres of non-friable asbestos.
Competent Person	A person possessing adequate qualifications, such as suitable training and sufficient knowledge, experience and skill, for the safe performance of the specific work.
Control Level	The airborne concentration of a particular substance which, if exceeded, indicates a need to implement a control, action or other requirement. Control levels are generally set at no more than half the workplace exposure standard (WES) for the substance. Control levels are occupational hygiene ‘best practice’, and are not health-based standards
Control Monitoring	Means air monitoring, using static or positional samples to measure the level of airborne asbestos fibres in an area during work on ACM. Control monitoring is designed to assist in assessing the effectiveness of control measures. Its results are not representative of actual occupational exposures and should not be used for that purpose.

Friable (asbestos)	Means material that is in a powder form or that can be crumbled, pulverised or reduced to powder by hand pressure when dry, and contains asbestos.
Hierarchy of hazard control	Measures taken to minimise risk to the lowest level reasonably practicable in the descending order of: Elimination, Substitution, Engineering controls, Administrative controls, and PPE.
Licensed Asbestos Assessor	Means a person who holds an asbestos assessor licence.
Licensed asbestos removal work	Means asbestos removal work for which a Class A asbestos removal licence or a Class B asbestos removal licence is required.
Non-friable (or bonded) asbestos	Material containing asbestos that is not friable, including material containing asbestos fibres reinforced with a bonding compound.
PCBU	Person with management or control of a workplace means a PCBU to the extent that the business or undertaking involves the management or control, in whole or in part, of the workplace. The person with management or control of a workplace must ensure, so far as is reasonably practicable, that the workplace, the means of entering and exiting the workplace and anything arising from the workplace are without risks to the health and safety of any person
Worker	In accordance with the Work Health and Safety Act 2011 1. a person who carries out work in any capacity for a PCBU, including work as: a. an employee, or b. a contractor or subcontractor, or c. an employee of a contractor or subcontractor, or d. an employee of a labour hire company who has been assigned to work in the person's business or undertaking, or e. an outworker, or f. an apprentice or trainee, or g. a student gaining work experience, or h. a volunteer, or i. a person of a prescribed class. 2. For the purpose of Work Health and Safety Act 2011, a police officer is: a. a worker, and b. at work throughout the time when the officer is on duty or lawfully performing the functions of a police officer, but not otherwise. 3. The PCBU is also a worker if the person is an individual who carries out work in that business or undertaking.

1.0 Introduction

This Asbestos Management Plan (AMP) has been prepared by AECOM Australia Pty Ltd (AECOM) for Energy Australia (EA) with regards to asbestos impacted soil and asbestos containing materials (ACM) at EA's Tallawarra Power Station located off Yallah Bay Road, Yallah, NSW 2530 and the associated asbestos repositories (the 'Site').

1.1 Purpose

The purpose of this AMP is to provide guidance to EA to meet their legal obligation under the NSW Work Health and Safety Act 2011 *(WHS Act, 2011)* and the NSW Work Health and Safety Regulation 2017 *(WHS Reg, 2017)* and detail EA's approach to managing asbestos related hazards identified at the Site, by documenting procedures designed to minimise the risk of asbestos exposure to employees, contractors and visitors.

1.2 Asbestos Management Plan Objective

This AMP has been developed and takes into consideration current guidance developed for managing asbestos in the workplace. This AMP has been developed in accordance with requirements outlined in Section 8.3, clause 429 of the *WHS Reg, 2017* as provided in **Appendix A**.

The objective of this AMP is to mitigate the risk of exposure to ACM to as low as is reasonably practicable for all persons at the Site. In addition, it is essential that all employees, visitors and contractors be fully informed of the control strategies that have been established and the factual health consequences of exposure to airborne asbestos fibres.

This AMP should be read in its entirety and in conjunction with the following:

- **Appendix A** – Regulatory Framework
- **Appendix B** – Key Reference Documents
- **Appendix C** – Asbestos Soil Register
- **Appendix D** – Asbestos Building Material Register
- **Appendix E** – Aerial Map
- **Appendix F** – Asbestos Risk Assessment Matrix
- **Appendix G** – Asbestos Activity Checklist
- **Appendix H** – Unexpected Finds Procedure
- **Appendix I** – AMP Records

2.0 Asbestos Information

2.1 Types of Asbestos

Asbestos is a term applied to some mineral silicates present in a fibre form. There are many members of this mineral group; common among these are blue asbestos (crocidolite), white asbestos (chrysotile) and brown asbestos (amosite).

Due to its unique properties – flexibility, tensile strength, insulation (from heat and electricity) and chemical inertness – asbestos was one of the most useful and versatile minerals.

Uses of asbestos have included fibro-sheeting, corrugated roofing, asbestos cement (AC) pipes, thermal insulation and fireproofing. It has also been used as an additive in paints and sealants, in textiles such as felts and theatre curtains, in gaskets, and in friction products like brake linings and clutches.

On 31 December 2003, a national ban on all forms of asbestos came into effect, including a prohibition on work involving asbestos in workplaces. Due to the extensive use of asbestos in a wide variety of products it is present in many workplaces in structural materials and can be found in soil as a result of past activities.

2.2 Asbestos Classification

The *WHS Reg, 2017* defines ACM as any material or thing that, as part of its design, contains asbestos. Asbestos is classified as either friable or non-friable as outlined below:

- **Friable asbestos**: Is an ACM that is in a powder form or can be crumbled, pulverised or reduced to a powder by hand pressure when dry.
- **Non-friable asbestos:** Is any material (other than friable asbestos material) that contains asbestos, including material containing asbestos fibres reinforced with a bonding compound.

2.3 Health Effects

The asbestos related health risk from ACM that is in good condition is negligible.

The health effects from exposure to asbestos result from the inhalation of asbestos fibres. Whilst ACM located within a workplace may present a hazard, they do not present a risk if no asbestos fibres are released to the air.

If asbestos fibres are inhaled, they must first pass the filtration mechanisms lining the nose and the mouth down to the fine airways that lead to the small alveoli. Hence, only very small particles, barely visible with a high-powered microscope, may eventually reach the alveoli.

Asbestos fibres reaching the alveoli are handled in different ways. Some are carried out of the lung through the lymphatic system. Of those remaining some do not cause ill effects whilst some can lead to lung changes such as the following:

- Pleural plaques, benign plural effusion and fibrosis.
- Asbestosis: This is a form of fibrosis (scarring) of the lungs, which results in breathlessness.
- Lung cancer: This is a cancer of the larger and medium sized airways, which are similar to that caused by smoking.
- Mesothelioma: This is a rare cancer of the pleura and peritoneum.

3.0 Roles and Responsibilities

Full consultation, involvement and information sharing should occur between management and workers through a well-established consultative mechanism.

Duties in relation to workplace health and safety are imposed on any person conducting a business or undertaking (PCBU) by the *WHS Act, 2011* and the *WHS Reg, 2017*. The PCBU must ensure, as far as is reasonably practicable, a person's exposure to airborne asbestos, or if not reasonably practicable, to minimise so far as is reasonably practicable. A PCBU must ensure that the exposure standard for asbestos is not exceeded at the workplace.

Specific responsibilities in relation to asbestos as required by the *WHS Reg, 2017* are summarised below:

- Control the risk of exposure to asbestos.
- Ensure health monitoring is provided where required.
- Ensure adequate asbestos related training is provided to workers.
- Control the use of equipment and not direct or allow a worker to use certain types of equipment on ACM or asbestos.

- Where there is uncertainty whether work undertaken would be asbestos related work, assume the presence of asbestos unless a sampling and laboratory analysis confirms otherwise.
- Provide details of health risks, effects and monitoring to any person who is likely to be engaged in asbestos related work.
- Ensure asbestos related work is separated from other work areas with the use of adequate signage and barriers.
- Ensure air monitoring is conducted where there is an uncertainty over whether the asbestos exposure standard is likely to be exceeded.
- Ensure asbestos waste is appropriately contained, labelled and disposed of as soon as practicable.

Responsibilities for specific PCBU are detailed in **Table 1**.

Table 1 Summary of PCBU Roles Responsibilities

Summary of Roles and Responsibilities
Primary PCBU – Energy Australia
• Ensure the implementation of the AMP. This responsibility may be designated to appropriate personnel; however responsibility will reside with the primary PCBU (e.g. executive or officer). • Ensure anyone who undertakes work that may disturb, or damage ACM are inducted into the AMP, are aware of their responsibilities and asbestos management procedures. • Ensure the integrity of any asbestos management controls are maintained as detailed in this AMP. • Ensure compliance of the health and safety requirements as detailed in this AMP. • Ensure any incident regarding known or suspected ACM is managed and addressed in a timely manner to the appropriate authorities, in accordance with legislation.
Site Leaders
• Ensure known and identified occurrences of ACM are appropriately labelled and identified. • Ensure any re-inspection requirements are met. • Ensure the asbestos register is updated with new asbestos finds and any changes to the status of existing ACM. • Ensure the AMP is made readily available to Workers, Health & Safety Representatives, and PCBUs. • Ensure anyone engaged to undertake site activities is inducted into the requirements of this AMP and is aware of their responsibilities in relation to the presence of ACM. • Ensure compliance with all requirements outlined in this AMP and statutory requirements. • Where necessary co-ordinate airborne asbestos fibre monitoring, data assessment and reporting. • Oversee the implementation of control measures at the site for the duration of ACM related works. • Approve permits for works, including assess the proposed activity, determine whether the activity is deemed as an activity that will impede on asbestos impacted soil and whether the activity is required to be carried out by a specialist contractor.
Maintenance Contractors / all other site personnel
• Comply with the requirements of this AMP and any associated procedures as directed by EA. • Attend and comply with any AMP related training. Ensure no ACM is removed from the site without prior notification to the Site Managers and Manager / Technical Services. • Report any asbestos related incidents to the Site Managers and Manager / Technical Services.

Summary of Roles and Responsibilities
Licenced Asbestos Removal Contractor
• Be appropriately licensed to undertake ACM related works. • Undertake the works in accordance with the contract and in accordance with legislation. • Undertake the works in a safe manner and implement appropriate control measures to ensure the safety and protection of site personal during asbestos or ACM related works. • Comply with the requirements of this AMP and any associated procedures. • Notify SafeWork NSW within 24 hours of being advised of an ACM unexpected find and/or undertaking emergency works, where the unexpected find is deemed an emergency.
Licenced Asbestos Assessor/Competent Person (as described in Definitions provided within this report)
• Should be experienced with ACM identification, risk assessment, and management. • Provide consulting services pertaining to asbestos related works in accordance with any EA contracts. • Comply with the requirements of this AMP.

4.0 Status of Asbestos at the Site

4.1 Asbestos Register and Location

The documents detailed in **Appendix B** were reviewed to produce Asbestos Registers of identified and assumed asbestos occurrences at the Site.

The Asbestos Registers for the Site are provided in **Appendix C** (Asbestos Impacted Soil Register) and **Appendix D** (Asbestos Building Material Register) and can be accessed via EA online portal (i.e. Objective) or by requesting the information from the EA Supervisor.

4.2 Asbestos Impacted Soil

Asbestos impacted soil has previously been identified at the Site in the form of loose fibre bundles (classified as friable asbestos) and asbestos debris such as compressed asbestos cement pipes and asbestos cement fragments (classified as non-friable). The Asbestos Impacted Soil Register in **Appendix C** provides details of the identified asbestos impacted soil at the Site, and associated risk ratings.

The Aerial Maps in **Appendix E** provides a visual depiction of the location of asbestos impacted soil areas, areas of no identified asbestos risk and associated risk classification.

The risk classifications were determined following a set risk assessment process which outlined in **Appendix F**. Managing asbestos impacted soil is further discussed in **Section 6.0**.

Any activity with the potential to disturb asbestos impacted soil should be conducted by a licensed asbestos contractor meeting the requirements as provided in **Appendix G**.

4.3 Asbestos Building Materials

Asbestos is assumed to be present in the HRSG Silencers and Flask Tank Silencer. The Asbestos Building Material Register in **Appendix D** provides details of the assumed asbestos building materials present at the Site based on a desktop review of provided documentation.

The risk assessment for assessing asbestos building materials is provided in **Appendix F**.

A summary of asbestos building material management options is provided in **Section 7.2**.

Any activity with the potential to disturb asbestos building material should be conducted by a licensed asbestos contractor meeting the requirements as provided in **Appendix G**.

4.4 Review of Asbestos Register

In accordance with the *Reg, 2017*, EA will ensure that the Asbestos Register is reviewed and, where necessary, revised:

- Following revision of the AMP under clause 430.
- If further ACM is identified at the workplace.
- When asbestos or ACM is removed from, disturbed, sealed or enclosed at the workplace.
- After the completion of any asbestos related project work.

EA shall record reviews via EA's document management system and, where required, engage specialist advice.

Re-inspections of known asbestos will involve visual assessment of the condition of the materials (where available) to evaluate the materials condition and determine whether the material has deteriorated since the previous inspection. Such re-inspections will govern if any remedial action, such as encapsulation, isolation or removal of the asbestos materials, is required.

Normally, re-sampling of materials would not be required during re-inspections. If, however, previously unidentified or undocumented ACM, or materials suspected of containing asbestos, are encountered during the re-inspection process, sampling and analysis will need to be performed. When access it not available, implemented controls should be inspected such as vegetation, fences, signages and surrounding areas where damage or disturbance may be apparent.

The asbestos registers, where necessary, will be updated and re-issued at the completion of the re-inspection work.

5.0 Managing Asbestos Impacted Soil

At present, health risks associated with areas of identified asbestos impacted soil are managed via a variety of in-situ control measures which comprise capping layers, vegetation coverage, soil compaction stabilisation, and use of natural and anthropogenic barriers. These areas require regular inspections and ongoing management to maintain the integrity of current in-situ control measures.

Control measures for the management of asbestos impacted soils at the Site have been categorised in the following sections, based on the in-situ risk classifications defined by the Asbestos Impacted Soil Register in **Appendix C**.

Any new areas of asbestos impacted soil that are identified in future would be subject to risk classification and commensurate control strategies outlined below.

5.1 Management Requirements for Low-Risk Areas

Table 2 details the AMP requirements for low-risk areas and are identified as all areas not otherwise shaded in the Aerial Maps provided in **Appendix E**.

Table 2 Management Requirements - Low Risk Asbestos Impacted Soil Areas

Item	Response
Definition	No evidence of asbestos impacted soil.
Signage	• Not required.
PPE	• Not required.
Inspection requirements	• No inspection requirements.
Activities	• No site activity restrictions, access permitted by foot, light vehicles, and heavy vehicles. • Excavation/penetration permit required for all excavation / penetration works.

Item	Response
	• Refer to the unexpected finds protocol in **Appendix H** if suspected asbestos in encountered.

5.2 Management Requirements for Moderate Risk Areas

Moderate asbestos impacted soil risk areas are defined as areas with evidence of broad-scale asbestos impacted soil (i.e. not a single fragment) at a depth of greater than 0.1 metres below ground level (mbgl). **Table 3** details the AMP requirements for moderate risk areas and are identified with orange shading in Aerial Maps in **Appendix E.**

Table 3 Management Requirements - Moderate Risk Asbestos Impacted Soil Areas

Item	Response
Definition	Evidence of asbestos impacted soil at a depth greater than 0.1 mbgl.
Signage	• Display warning signage around the perimeter of the area indicating the presence of subsurface asbestos impacted soil.
PPE	• Not required when the integrity of the ground surface is stable. • P2 facemask recommended if the ground surface becomes disturbed or exposed.
Inspection requirements	• Quarterly intervals within the asbestos impacted soil area. • After a period of prolonged heavy rain. • Whenever damage or disturbance has been reported.
Activities	Permitted activities include: • Access permitted by foot and light vehicles only when integrity of ground surface is stable. • Access permitted by vehicles when integrity of ground surface is stable and not disturbed following an EA endorsed risk assessment. • Mowing and ground maintenance activities. • Landscaping, to build up the existing surface. • Excavation/penetration permit required for all excavation / penetration works. • Site activities into known asbestos impacted soil must follow the Methodology for Intrusive Asbestos Impacted Soil Activities as outlined in **Section 6.0**. • Refer to the unexpected finds protocol in **Appendix H** if suspected asbestos in encountered.

5.3 Management Requirements for High-Risk Areas

High asbestos impacted soil risk areas are defined as areas with evidence of asbestos contaminated soil at a depth of less than 0.1 mbgl. Prior to any potential soil disturbance EA must conduct and document a risk assessment before proceeding with activities with the potential to result in soil disturbance due to the shallow nature of the identified asbestos impacted soil. **Table 4** details the AMP requirements for high-risk areas and are depicted with red shading in Aerial Maps in **Appendix E**.

Table 4 Management Requirements - High Risk Asbestos Impacted Soil Areas

Item	Response
Definition	Evidence of asbestos impacted soil at a depth of equal or less than 0.1 mbgl.
Signage	• Display warning signage around the perimeter of the area indicating the presence of subsurface asbestos impacted soil
PPE	• P2 facemask and coveralls recommend if access by foot is required.
Inspection requirements	• Quarterly intervals around the perimeter of the asbestos impacted soil area.

Item	Response
	• After periods of prolonged heavy rain. • Whenever damage or disturbance of the ground surface has been identified.
Activities	• No activities allowed beyond inspections without an EA endorsed risk assessment. • Excavation/penetration permit required for all excavation / penetration works. • Refer to Methodology for Intrusive Asbestos Impacted Soil Activities in **Section 6.0**.

5.4 Management Requirements for Capped Areas

Soils within the capped areas, as demarcated as blue stripped shading in the Aerial Maps (**Appendix E**), that are located above the green geo-fabric membrane capping marker are considered clean and are therefore considered to pose a low risk, whilst soil located below the geo-fabric marker are considered to be of a high risk. **Table 5** details the AMP requirements for capped areas and are identified with stripped blue shading in Aerial Maps in **Appendix E.**

Table 5 Management Requirements - Capped Areas

Item	Response
Definition	• Clean soil overlaying a green geo-fabric membrane capping marker. • Potential presence of asbestos impacted soil beneath the green geo-fabric membrane capping marker.
Signage	• Display warning signage around the perimeter of the area indicating the presence of subsurface asbestos impacted soil beneath a green geo-fabric membrane capping marker
PPE	• Not required
Inspection requirements	• Quarterly intervals over the capped areas. • After periods of prolonged heavy rain. • Whenever damage or disturbance of the ground surface has been identified.
Activities (above capping)	• Access permitted by foot, light vehicles, and heavy vehicles. • Excavation/penetration permit required for all excavation / penetration works. • Refer to the unexpected finds protocol in **Appendix H** if suspected asbestos in encountered to soil above the green geo-fabric membrane capping marker. • Above the capped
Activities (below capping)	• No activities allowed without an EA endorsed risk assessment. • Excavation/penetration permit required for all excavation / penetration works. • Refer to Methodology for Intrusive Asbestos Impacted Soil Activities in **Section 6.0**.

5.5 Regular Inspections

Regular visual inspection of the areas identified in **Section 4.2** and detailed in the Asbestos Impacted Soil Register (**Appendix C**) should be undertaken to ensure the integrity of the ground surface is remains adequate to prevent disturbance below ground level from environment and or anthropogenic sources. Such inspections should occur on the following occasions:

- Quarterly intervals:
  - A walkover of asbestos impacted soil with moderate risk rating to ensure:

        - Ground surface integrity has not been disturbed beyond 0.1 mbgl.
        - Surface drainage and surface cover is satisfactory to prevent scour and erosion.
        - Warning signage is in place and readily visible.
    - A walkover around the perimeter of asbestos impacted soil with high-risk rating to ensure:
        - The area has not been accessed.
        - Fences / barriers are in place.
        - Warning signage is in place and readily visible.
- After a period of prolonged heavy rain:
    - A walkover of asbestos impacted soil with moderate and high-risk rating to ensure the ground surface integrity has not been compromised.
- Whenever damage or disturbance has been reported:
    - A walkover of asbestos impacted soil with moderate and high-risk rating to evaluate ground surface conditions and arrange interim management actions such as application of topsoil, mulch, or similar.

Should areas of exposed soil or geo-fabric (where present) be identified where previous containment has occurred or where encapsulating measures appear to be damaged or are no longer effective, then these areas should be re-covered immediately.

Remedial measures (e.g. as added surface layers of mulch and topsoils, and/or geo-fabric to ensure that a sufficient barrier layer is in place that is equivalent to the documented thickness and composition of the capping layer specific for that area), should be conducted by a licensed asbestos contractor meeting the requirements outlined in **Appendix G**.

Records of these inspections should be kept. Example templates are provided in **Appendix I**.

6.0 Requirements for Working in Asbestos Impacted Soils

Any activity in an asbestos impacted soil area that may disturb ground materials (e.g. soil, aggregate, vegetation) must be with conducted with consideration and implementation of appropriate management strategies detailed in **Table 6**. The asbestos impacted soils areas are depicted in the Aerial Maps provided in **Appendix E**.

Table 6 Requirements for working in Asbestos Impacted Soils

Risk		Asbestos Presence	Access Restrictions	Permits	Procedure	Approvals
Low		No known asbestos	Access permitted, no restrictions	Excavation penetration permit required	Refer to unexpected finds procedure (**Appendix H**).	NA
Moderate		Asbestos may be present	Access permitted with restrictions	Excavation penetration permit required	Intrusive asbestos impacted soil activities must be carried out by a **licensed asbestos contractor** which satisfies legislative requirements and with reference to **Appendix G**.	EA must review and approve the proposed methodology and health and safety documentation pertaining to the activity and induct the workers into the AMP.
High		Asbestos present	Access permitted with restrictions	Excavation penetration permit required	Intrusive asbestos impacted soil activities must be carried out by a **licensed asbestos contractor** which satisfies legislative requirements and with reference to **Appendix G**.	EA must review and approve the proposed methodology and health and safety documentation pertaining to the activity and induct the workers into the AMP.
Capped Area	**Above capping**[1]	No known asbestos	Access permitted, no restrictions	Excavation penetration permit required	Refer to unexpected finds procedure (**Appendix H**).	NA
	Below capping[2]	Asbestos present	Access permitted with restrictions	Excavation penetration permit required	Intrusive asbestos impacted soil activities must be carried out by a **licensed asbestos contractor** which satisfies legislative requirements and with reference to **Appendix G**.	EA must review and approve the proposed methodology and health and safety documentation pertaining to the activity and induct the workers into the AMP.

[1] It is understood the capping layer depth ranges between 0.1 – 1.5 mbgl for area 16, 17, 18, 22, 26a and 26b as defined in the 2021 AMP (Hazmat Services, version 7, 27/01/2011).
[2] Depth exceeding the material geofabric material marker layer associated with the capping containment systems.

7.0 Managing Asbestos Building Materials

7.1 Consideration for ACM

Prior to the commencing any Site works, the Asbestos Building Materials Register (**Appendix D**) must be consulted to determine whether the work has a potential to impact known asbestos building materials which may consequently result in the generation of airborne asbestos fibres.

Any work with the potential to impact known asbestos building material must be conducted by a licensed asbestos contractor that meets the relevant regulatory requirements with reference to **Appendix G**.

Asbestos building materials identified in **Section 4.3** and detailed in the Asbestos Building Materials Register (**Appendix D**) pose a low health risk provided they are in a stable condition, sufficiently protected from deleterious site activities and environmental factors.

7.2 ACM Management Strategies

When asbestos building materials are not in a stable condition, alternative control strategies such as encapsulation / sealing, enclosure, or removal should be considered. These are further outlined below:

1. **Elimination / Removal** – Removal of asbestos must be performed under controlled conditions, depending on the type of asbestos product to be removed. Removal is considered preferable to the other abatement options, such as enclosure or encapsulation, as it eliminates the hazard from the workplace.
2. **Encapsulation / Sealing** – Refers to the process of sealing the asbestos or ACM in a protective coating to or matrix to prevent exposure to airborne asbestos. Materials used for encapsulation/sealing may include reinforced plastics, vinyls, resins, mastics, bitumen, glues, plaint and cement.
3. **Enclosure / Isolation** – Refers to isolating the asbestos or ACM from the adjacent areas through the use of a barrier. For example, barriers may include plywood or sheet metal products, constructed as boxing around the asbestos or ACM.
4. **Safe Work Practices** – The Asbestos Building Materials Register for the site is available and must be consulted prior to commencing work if the plant item is flagged by ePAS and the EA leadership team must be consulted.
5. **Personal Protective Equipment** – The PPE requirements for work involving ACM are to be based on the relevant risk assessment conducted. Protective clothing and equipment is to be worn at all times during work in the asbestos work area, prior to the final clearance inspection.

7.3 Identification of the Presence of Asbestos in the Workplace

Legislative requirement for indicating the presence of asbestos in the workplace is applicable to both asbestos building materials and asbestos impacted soils. A prominent warning sign must be posted in its immediate vicinity when labels are not appropriate or if a risk assessment suggests it is not reasonably practicable to label asbestos.

Signs should be weatherproof, constructed of light-weight material and adequately secured. Signs should be placed at all of the main entrances to the work areas where asbestos is present.

All warning signs should comply with AS1319 Safety Signs for the Occupational Environment.

Where direct marking of asbestos is not possible, a permit-to-work system may be implemented to ensure that all workers are aware of the presence of ACM or assumed ACM prior to commencing work so it is not knowingly disturbed without correct precautions being taken. Examples of typical warning signs are presented **Figure 1**.

Figure 1 Examples of Warning Signs and Labels

8.0 Waste Disposal

All asbestos of ACM waste should be disposed off site to a licensed waste facility which can accept asbestos waste. An exception to this is when an assessment has determined that disposal on site to the asbestos waste repository is deemed at the best option.

8.1 Off Site Disposal (Asbestos / ACM)

- All asbestos or ACM that is removed must be either wrapped and sealed in 200 µm thick polythene plastic sheeting (ACM wrapped parcel) or placed in a 200 µm polythene bag which is no longer than 1,200 mm and no wider than 900 mm (ACM waste bag).
- Asbestos waste bags and/or ACM wrapped parcels must be wet wiped prior to leaving the asbestos work area.
- Asbestos waste bags and/or ACM wrapped parcels must be transported via an agreed path to the bins/trucks.
- Bins/truck containers must be lined with 200 µm thick polythene prior to being filled with the wrapped asbestos waste. The bins/truck containers must be sealed (covered with 200 µm thick polythene) at the end of each shift and prior to departure from the Site.
- When bins/trucks are ready to be moved from the work area they must be sealed and inspected by the Competent Person or licenced asbestos assessor to ensure they are sealed correctly prior to movement to the waste disposal facility.
- Any vehicle that enters / exits the asbestos work area must be decontaminated prior to leaving (e.g. excess material removed from tracks and/or tyres where applicable).
- Clause 79 of the NSW *Protection of the Environment Operations (waste) Regulation 2014* requires asbestos waste transporters (transporting a minimum of 100 kilograms of asbestos waste, or 10 m^2 of asbestos waste that is asbestos sheeting, in any single load) to provide tracking information to the EPA via the WasteLocate online tool. ACM must also be disposed of at a suitably approved waste collection facility. All tipping dockets must be retained and provided to EA.
- Waste classification is required for any excavated soil of fill material which is to be disposed off site to a licensed waste facility that can accept asbestos impacted soil. Waste classification must be conducted in accordance with the *NSW EPA Waste Classification Guidelines Part 1: Classifying Waste (2014)*.

8.2 Asbestos Waste Repository

The asbestos repositories are located south of the power station site in the Rehabilitated Ash Storage Areas No. 1 (**Appendix E**). The asbestos repositories cover an area of 2.462 ha and 1.754 ha for repository 1 and repository 2 respectively.

The asbestos repositories are not opened and should not be used unless assessed to be the best option. It is understood the Environmental Protection Licence no. 555 allows for an extension of the asbestos repositories should there be a requirement for additional asbestos contaminated materials from the Site to be buried there.

The preference is for all waste to go off site. When deemed to be the best option, the following process should be following when opening and closing the repository.

- A Class A licensed contractor is to be engaged to develop specific methodology, SWMS and submit notification.
- An exclusion zone must be established defining the work area and containing signage at potential entry points, with required controls and air monitoring in place (**Appendix G**).
- The opening of the capping lay should only be of a specific size to commemorate the volume of asbestos waste that would be loaded in each day.
- The opening should be in a location adjacent to the edge of the existing asbestos repository with contingency to prevent/minimise unintentional uncovering of the in-situ asbestos impacted soil.
- Once the open asbestos repository has been prepared, the wetted down asbestos waste can be unloaded into the repository.
- Once loading of the asbestos repository is complete the exposed asbestos waste must be covered with virgin excavated natural material or other material as approved in the licence. The depths of the required covering as per the *Protection of the Environment Operations (Waste) Regulation 2014* is as follows:
    - immediate covering with 0.15m of cover
    - 0.5m of cover at the end of each day
    - final cover of at least:
        - 1 m (in the case of non-friable asbestos material) or
        - 3 m (in the case of friable asbestos material).
- No compaction of asbestos is to occur.
- After burial the asbestos should not be disturbed.
- Any vehicle used to transport any type of asbestos waste must be cleaned before leaving the asbestos repository area to ensure all residual asbestos waste is removed for the vehicle.
- GPS coordinates of the new expansion of the repository must be recorded to map the location, type and quantity of all asbestos waste contributed in the repository on the plan.

9.0 Asbestos Management Plan Review Period

As per EA's Management System, this document is risk ranked 'High' and will be reviewed once a year or when:

- There is a review of the asbestos register or a control measure.
- Asbestos is removed from or disturbed, sealed or enclosed at the workplace.
- The AMP is no longer adequate for managing asbestos or ACM at the workplace.
- A health and safety representative requests a review if they reasonably believe that any of the matters listed in the above points affects or may affect the health and safety of a member of their work group and the AMP was not adequately reviewed.

New revisions of the AMP should be made readily available to site stakeholders for accurate and up to date asbestos management measures.

Records of the review of the AMP will be documented in EA's document management system and, where required, engage specialist advice.

10.0 Employee Information and Training

Asbestos Awareness Training is recommended for site personnel who may be required to work in areas known to contain asbestos. The training should be implemented in a manner that will ensure adequate awareness of the health and safety risks of known asbestos and ACM, methods of prevention and control and appropriate work practices. Asbestos Awareness Training will be provided for all EA staff which will include:

- Awareness of health and safety risks of known asbestos and ACM
- Types and locations of known ACM on site (building materials and soil)
- Types of signage used on site
- Location and use of the Asbestos Registers and AMP
- Methods of prevention and control
- Appropriate work practices (e.g. unexpected finds procedure).

Training records will be maintained for each employee and visitor at the Site for the duration of the work and for five years after cessation of the work in accordance with WHS Reg, 2011. EA will ensure training is conducted by suitably qualified personnel or contractors. Training will be deployed in the form of a recognised programme, with records maintained in accordance with the EA Document Management System.

11.0 Health Monitoring

In accordance with the *WHS Reg, 2011*:

"a person conducting a business or undertaking must ensure health monitoring is provided to a worker if they are carrying out licensed asbestos removal work, other ongoing asbestos removal work or asbestos-related work and are at risk of exposure to asbestos when carrying out the work"

Examples, other than licensed asbestos removal work, where there is a risk of exposure include:

- Ongoing unlicensed removal work
- Undertaking maintenance work on ACM regularly as part of another job (for instance, electricians or building maintenance staff in older buildings)
- Carrying out asbestos-related work.

The need for health monitoring for these workers should be determined on the basis of:

- The potential for exposure
- The frequency of potential exposure
- The duration of the work being undertaken.

Health monitoring should be provided to a worker at regular intervals after commencing asbestos-related work but at least once every two years.

Workers shall be informed of any health monitoring requirements before the work carries out work that may expose them to asbestos.

Health monitoring will include a medical examination to provide an initial baseline medical assessment. Unless another form of health monitoring is recommended by a registered medical practitioner, health monitoring must include the following:

- Consideration of the worker's demographic, medical and occupational history

- Consideration of records of the worker's personal exposure
- A physical examination of the worker with emphasis on the respiratory system, including standardised respiratory function tests unless another form of health monitoring is recommended by a registered medical practitioner.

12.0 Record Keeping

All asbestos records will be stored and maintained in accordance with EA Document Management System. The *WHS Reg, 2011* mandates the following durations with regards to keeping records:

- Training records must be kept for 5 years after the day the worker ceases working for EA.
- Health monitoring records must be kept for at least 40 years after the record is made.
- Clearance certificates and air monitoring certificates must be kept for 30 years after the date the record was made.

Details of any asbestos works (e.g. remediation, removal, re-inspection, discovery of ACM) or communications that discuss the decisions, and reasons for the decisions, about the management of asbestos, (e.g. meeting minutes, safe work procedures and control measures) must be documented in an amended AMP.

Appendix A

Regulatory Framework

Appendix A Regulatory Framework

The contents of this AMP have been prepared in accordance and with reference to the following:

- NSW *Work Health and Safety Act 2011 (WHS Act, 2011).*
- NSW *Work Health and Safety Regulation 2011 (WHS Reg, 2011).*
- *The Code of Practice: How to Manage and Control Asbestos in the Workplace.*
- *The Code of Practice: How to Safely Remove Asbestos.*
- *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibre, 2nd Edition [NOHSC: 3003 (2005)] (MFM, 2005).*

The contents of this AMP also consider the following key documents:

- *Protection of the Environment Operations (Waste) Regulation 2014.*
- AS 1319-1994 *Safety Signs in the Occupational Environment*.
- AS/NZS 1716-2012 *Respiratory Protective Devices.*
- AS/NZS 1715-2009 *Selection, Use & Maintenance of Respiratory Protective Equipment.*
- AS ISO 16900.3:2015 *Respiratory protective devices - Methods of test and test equipment - Determination of particle filter penetration.*
- AS/NZS 60335.2.69:2012 *Household and similar electrical appliances - Safety - Particular requirements for wet and dry vacuum cleaners, including power brush, for commercial use.*
- AS4260-1997 *High Efficiency Particulate Air (HEPA) Filters – Classification, Construction and Performance.*
- *Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants (2013).*
- *Western Australia Department of Health Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia. Environmental Health Directorate, Department of Health, Perth (2009)*.

Appendix B

Key Reference Documents

Appendix B Key Reference Documents

- AECOM Australia Pty Ltd (2010), Auditor's Interim Opinion of Control Room and Switchyard (Area 20 and 29) TRUenergy Tallawarra, Yallah NSW, dated 15 December 2010.
- AECOM Australia Pty Ltd (2012) Site Audit Report and Site Audit Statement: Tallawarra Power Station, dated 27 June 2012
- AECOM Australia Pty Ltd (2019), Targeted Environmental Land Use Suitability Assessment, dated 18 July 2019. (doc. ref: 60602160_EA_Targeted_Env_Land_Use_Assessment_Ltr).
- AECOM Australia Pty Ltd (2020), Tallawarra B – Land Use Suitability Assessment and Data Gaps Analysis, Tallawarra B Power Station, dated 24 September 2020. (doc. ref: 60602160_TallawarraB_LandUseAssessment_DataGapAnalysis_0).
- AECOM Australia Pty Ltd (2021), Tallawarra Power Station – Area 7 and Area 24 Asbestos in Soils Site Investigation, dated 26 February 2021. (doc. ref: 60602160_Area 7_24_Environmental Site Inspection_210226_0).
- AECOM Australia Pty Ltd (2021), Tallawarra B – Laydown Area Supplementary Assessment, dated 24 March 2021. (doc. ref: 60602160_Tallawarra B_210324_R0_Final).
- AECOM Australia Pty Ltd (2021), Tallawarra Power Station – Switchyard Environmental Site Investigation / Waste Classification Letter (DRAFT), dated 13 October 2021
- Hazmat Services Pty Ltd (2011), TRUenergy, Tallawarra Power Station Asbestos Management Plan, Version 7, dated 27 January 2011. (doc. ref: HAZ009_AMP_FIN_270101).
- Coffey Geosciences Pty Ltd (2002), Site Contamination Assessment: Tallawarra Power Station, Yallah, NSW, dated 3 July 2002.
- Coffey Environments Australia Pty Ltd (2010): Geotechnical, Contamination and Groundwater Investigation: Tallawarra Lands, Yallah, NSW, dated 22 December 2010.
- Environmental Health and Safety Solutions (2011) Final Hazardous Materials Site Report: Tallawarra Power Station, Yallah, dated 1 April 2011.
- Hazmat Services Pty Ltd (2011), TRUenergy, Tallawarra Power Station Asbestos Management Plan, Version 7, dated 27 January 2011. (doc. ref: HAZ009_AMP_FIN_270101).
- JBS Environmental (2009), Detailed Site Contamination Assessment: Area 20; Former Switchyard and Area 21 Asbestos Containment Mounds, Tallawarra Lands Yallah Bay Road, Yallah, NSW, dated April 2009.
- JBS Environmental (2010), Detailed Site Assessment: Former Control Room Building (Area 29) and Former Switch Yard (Area 20), dated December 2010.
- Pacific Power (1998), Combined Cycle Gas Turbine Power Station: Environmental Impact Assessment, dated 23 December 1998.
- TXU (2005), Asbestos Management Plan: Tallawarra Energy Facility – Version 4, dated April 2005.

Historical Report Summary

Pacific Power (1998), Combined Cycle Gas Turbine Power Station: Environmental Impact Assessment, dated 23 December 1998.

The EIS states that an environmental audit and contamination assessment of the Tallawarra Power Station site was commissioned by Pacific Power in 1990 (Dames & Moore, 1990). The consultant identified asbestos insulation as a CoPC at the site. The consultant reported that "*All asbestos insulation and asbestos products have been removed from the power station and buried in a licenced asbestos disposal area on-site or disposed of at a licenced off-site facility. The licenced disposal area located within the ash dams is operated in accordance with the NSW Chemical Control Order in relation to asbestos waste, and is subject of a Section 35 Notice under the Environmentally Hazardous Chemicals Act 1985. The area will be rehabilitated following completion of site decommissioning.*"

Coffey Geosciences Pty Ltd (2002), Site Contamination Assessment: Tallawarra Power Station, Yallah, NSW, dated 3 July 2002.

Surface soils containing fibres of amosite and chrysotile asbestos were detected in four localised areas in the former power station area:

- Upper platform of the former power station building;
- Lower platform of the former power station building;
- Near the main oil interceptor pit/sump; and
- At one location on the terrace near the former above ground fuel oil tanks.

The consultant concluded that the asbestos detected in the vicinity of the former power station is likely to be confined to the surface of the crushed concrete pockets, and that other pockets that were not identified may still exist.

The consultant identified that the identified asbestos could pose a potential risk to site users, and that a Management Plan to address the risk, as well as remediation and/or management of impacted areas would be required prior to the site being redeveloped.

TXU (2005), Asbestos Management Plan: Tallawarra Energy Facility – Version 4, dated April 2005.

Former Asbestos Management Plan outlining the known asbestos risks, controls and responses for working with asbestos.

JBS Environmental (2009), Detailed Site Contamination Assessment: Area 20; Former Switchyard and Area 21 Asbestos Containment Mounds, Tallawarra Lands Yallah Bay Road, Yallah, NSW, dated April 2009.

JBS undertook a detailed site contamination assessment at a part of the former Tallawarra Power Station site known as Area 20/21.

JBS reported that the area was formerly a switchyard associated with the former power station development which has subsequently been decommissioned. Following demolition of the power station, several landscaped mounds containing asbestos concrete rubble have been constructed within the investigation area in accordance with an existing asbestos management plan.

Physical inspection and laboratory analysis of the capping materials applied to the asbestos containment mounds within Area 21 did not identify the presence of asbestos containing materials or the presence of asbestos fibres on the ground surface or within the capping outer profile. Assessment of potential chemical contaminants within the imported capping material has indicated that the material is suitable for the proposed open space use. The capping measures applied to the Area 21 mounds were considered by the consultant to be appropriate for ongoing containment of the potentially asbestos containing crushed concrete located within the mounds provided that reasonable vegetation cover is established and maintained.

Several former underground services trenches were identified during test pitting activities in the north-west section of Area 20. Minor quantities of asbestos containing fragments associated with cement sheeting and pipes were identified within backfilled material in these trenches. Asbestos containing materials were not identified on the ground surface or within fill material in the remaining sections of Area 20 during this investigation. The presence of asbestos containing materials in this section of the site was reported to state that this should be addressed in accordance with the site asbestos management plan. Assessment of the extent of the backfilled trenches was beyond the scope of this investigation.

JBS Environmental (2010), Detailed Site Assessment: Former Control Room Building (Area 29) and Former Switch Yard (Area 20), dated December 2010.

JBS undertook an assessment of site contamination conditions in the vicinity of the former power plant control room building (Area 29). In addition to assessment of the former control room building area, the works were to include further assessment of the adjoining former switchyard (Area 20) to address outstanding site contamination assessment issues (JBS 2009) in this area of the site. With regard to asbestos, JBS reported that based on the findings of this investigation:

- Assessment of buried trenches/channels associated with former site facilities by visual inspection and use of a ground penetrating radar identified the inferred extent of existing buried facilities which may contain ACM or have been partially demolished and backfilled with ACM impacted material; and
- Fibre cement fragments were not identified on the ground surface or in soil samples at any of the sampling locations completed during this stage of site assessment works. In addition, asbestos fibres were not detected in any soil sample submitted for analysis.

On the basis of the conclusions, JBS recommended that the following actions be implemented to ensure the suitability of the Site for the intended uses:

- Implementation of remediation and/or management measures for asbestos containing materials identified within several backfilled underground services trenches in the vicinity of the former switchyard and electrical control room in accordance with the site AMP (TRUenergy 2009).

AECOM Australia Pty Ltd (2010), Auditor's Interim Opinion of Control Room and Switchyard (Area 20 and 29) TRUenergy Tallawarra, Yallah NSW, dated 15 December 2010.

The investigation report to which this Interim Opinion relates is the following Investigation:

- JBS Environmental Pty Ltd (November, 2010), Detailed Site Assessment, Former Control Room Building (Area 98) and Former Switch Yard (Area 20) Tallawarra Lands, Yallah Bay Road, Yallah NSW (reference: JBS40630-15707) herein referred to as JBS (2010).

The Auditor concurs with the conclusions and recommendations presented in JBS (2010). The auditor considers implementation of the recommendations made by JBS (2010) would support the suitability of the Site for the proposed land use.

Coffey Environments Australia Pty Ltd (2010): Geotechnical, Contamination and Groundwater Investigation: Tallawarra Lands, Yallah, NSW, dated 22 December 2010.

An investigation was undertaken of the Tallawarra Lands (excludes the Power Station and Public Access areas around the Lake Illawarra foreshore owned by the Lake Illawarra Authority). A Concept Master plan was developed which divided the site into four general land uses, and TRUenergy required further information on contamination to meet the relevant Director General and Wollongong City Council requirements. Nine potential Areas of Environmental Concern (AECs) were identified:

- AEC1 – Ash Ponds;
- AEC2 – Other fill sources of unknown origin and quality;
- AEC3 – Weathering of Hazardous Building Materials, Pesticide Use, Chemical Storage;
- AEC4 – Former Heggies Contractor Area;
- AEC5 – Small Testing Laboratory and Coal Fired Oven;
- AEC6 – Filling and disposal of waste in farm dams or other areas;

- AEC7 – Weed Control;
- AEC8 – Oil Skimmer Area;
- AEC9 – Access Road and Grassed Area.

The report concluded that based on the level of data available, it is considered that, in general, the potential for soil contamination to constrain the proposed concept master plan is low. The consultant considered that further investigation of the identified AECs that fall within proposed development areas can be addressed at the time of (or just prior to) any earthworks for subdivision works in these areas.

Hazmat Services Pty Ltd (2011), TRUenergy, Tallawarra Power Station Asbestos Management Plan, Version 7, dated 27 January 2011. (doc. ref: HAZ009_AMP_FIN_270101).

Former Asbestos Management Plan outlining the known asbestos risks, controls and responses for working with asbestos.

Environmental Health and Safety Solutions (2011) Final Hazardous Materials Site Report: Tallawarra Power Station, Yallah, dated 1 April 2011.

The purpose of the report was to assist in determining if Tallawarra Power Station site, is suitable for ongoing commercial industrial land use as required by the Project Approval. The report details the identified CoPCs, Areas of Concern and associated management requirements – Details on specific areas of the site are provided in the Appendices.

AECOM Australia Pty Ltd (2012) Site Audit Report and Site Audit Statement: Tallawarra Power Station, dated 27 June 2012

The Auditor reported that based on the extensive investigations that have occurred on the Tallawarra Power Station Site and subject to the limitations stated in Section 11, EHS (2011) stated the following conclusions (with relation to asbestos):

- Asbestos containing construction material impacts associated with former site developments were identified at the site. Remediation of the asbestos impacts included removal of a portion of the impacted material to an EPA licensed site within the Tallawarra lands, in-situ containment of a portion of impacted materials below a marker layer, and also containment of potentially impacted material within the assessment site as a series of landscaped (capped) mounds.
- As a result, there are a number of areas within the site that require ongoing management in accordance with an AMP developed for the site. These include those noted under the current AMP (Version 6) and additional potential areas within Area 20 and Area 29 as recently identified. The AMP is currently being updated to ensure appropriate identification of all areas of the site known to require management with respect to the potential occurrence of asbestos.
- The approach adopted in design and implementation of remediation works, the AMP and also the EMP are considered to be appropriately conservative to address any uncertainties identified during assessment works undertaken at the site.
- There has been extensive work to identify all known contamination, however, if there is anything further found, the controls within the AMP will ensure any unexpected finds of additional contamination are managed appropriately. Any future excavations within the site are required to be conducted with extreme care and will be controlled by procedures documented in the AMP.
- The site is considered suitable for the proposed commercial/industrial use, with the outlined additional groundwater sampling and management of asbestos contamination as per the Asbestos Management Plan.

It was the Auditor's opinion that the assessment, remediation and validation works conducted on the Site have generally been carried out in accordance with the relevant guidelines endorsed by NSW EPA and that the scope of work completed was appropriate to meet the objectives of the investigation and subsequent remediation.
It was the Auditor's opinion that, based on the information provided and his observations of the Site, that there do not appear to be any unacceptable risks in the subject area for the land use proposed subject to the continuation of the implementation of the AMP and EMP.

AECOM Australia Pty Ltd (2019), Tallawarra "B" – Area 28 Land Use Suitability Assessment – Revision A, dated 24 July 2019.

AECOM was commissioned by Energy Australia Pty Ltd (EA) to review and advise on the land use suitability (with respect to land contamination), for a portion of land within the Tallawarra Power Station (NSW), in preparation for Tallawarra "B" development works for a portion of land has generally known as "Area 28".

Based on the works undertaken by AECOM in accordance with the scope described in the Letter, utilising a review of available background information and including supplementary AECOM investigations, and based on current industry guidelines for landuse suitability, Area 28, defined by the Goodmans (2008) survey is considered to be suitable for commercial/industrial land use, with no special ongoing management requirements.

It was reported that due to the uncertain nature of redevelopment of any former industrial area, conventional development works (such as excavation of subsurface foundations and general civil engineering works) would be expected to be undertaken using conventional safe work method practices, including an "Unexpected Finds Protocol" to address any unexpected finds that may be uncovered during the area's redevelopment.

AECOM Australia Pty Ltd (2020), Tallawarra B - Land Use Suitability Assessment and Data Gaps Analysis, Tallawarra B Power Station, dated 24 September 2020.

AECOM was engaged by Energy Australia (EA) to undertake a land use suitability assessment for the Tallawarra B Laydown Area located at Tallawarra Power Station, Yallah, New South Wales. EA wished to investigate the feasibility of Areas 20A, 21 and 29 (Site) for potential future development options, including a formal laydown area and/or the development of permanent structures.

AECOM Australia Pty Ltd (2021), Tallawarra Power Station – Area 7 and Area 24 Asbestos in Soils Site Investigation, dated 26 February 2021

Historic reports identified Area 7 and a portion of Area 24 as containing trace amounts of asbestos fibre bundles (EHS, 2011). AECOM was unable to assess the validity of the historic data as the original assessment was not attached to the EHS, 2011 report. AECOM undertook the investigation to identify the presence/absence and extent of ASBINS historically identified within Area 7 and a portion of Area 24 to determine the remedial requirements for the area (if any) for future changes in land use.
AECOM's investigation found no asbestos detected in any of samples analysed with no visual indication of potential ACMs. Following AECOM's investigation and review of available historic reports, the below recommendations have been made:

- The investigation area (Area 7 and a portion of Area 24) outlined in Attachment A is classified as low risk due to data suggesting minimal asbestos impact present and dense vegetation covering ground surfaces.
- The area may be accessed for above ground maintenance activities following the unexpected finds protocol outlined in the site's AMP. Subsurface activities within the area should follow the site's AMP with the requirement for a "Dig Permit" before works begin. Additional soil sampling may be required before subsurface works begin to determine the controls and waste classification requirements for the works.
- Current asbestos warning signage may be removed from the fence boundary assuming the asbestos management requirements for the area are clearly communicated to work parties operating within the area and the current exclusion fencing remains in place.
- Future clearance (removal) of the ground cover vegetation may impact the risk rating for the area and may require additional investigations to reclassify the area.

AECOM Australia Pty Ltd (2021), Tallawarra B – Laydown Area Supplementary Assessment, dated 27 April 2021

AECOM was commissioned by Energy Australia to undertake a supplementary environmental assessment within the proposed Tallawarra B Laydown Area. EA wish to investigate the suitability of Areas 20, 21 and 20A/29 (the Site) for potential future development, including a formal laydown area and/or the development of permanent structures. The purpose of the assessment was to close out information gaps identified within Areas 20, 21 and 20A/29 at Tallawarra. The supplementary assessment included:

- Completion of 14 test pits and 3 hand augers within the two stockpiles in Area 21 to assess the presence of asbestos;
- Completion of three hand augers within the loose gravel area adjacent to the water inlet canal to assess the potential presence of asbestos;
- Completion of 16 test pits to investigate the reported presence of demolition fill material within the redundant service trench lines and surrounding the former electrical control room (Area 20A/29);
- Completion of 8 test to investigate the reported presence of an oil drainage line (Area 20); and
- Gauging and sampling of four groundwater monitoring wells; and
- Aboriginal Archaeological Due Diligence Assessment.

The following conclusions were made:

Area 29/Area 20A Former Service Trenches and Electrical Control Room
A fibre cement fragment and loose fibre bundles within four soil samples were reported as containing asbestos (Chrysolite and Amosite). These samples were collected at depths between 0.1 m and 0.5 mbgl. These samples were collected from demolition fill material within the former service trenches. The demolition fill material generally comprised crushed concrete, tiles, brick, coal and shale rock fragments. Minor amounts of plastic waste, redundant electrical cabling, glass and metal fragments were also noted.
Concentrations of other Chemicals of Potential Concern (CoPC) were reported below the adopted Investigation Levels (ILs).
A potentially complete source-pathway-receptor linkage was identified thought the inhalation of asbestos fibres and dust to on-site maintenance and commercial intrusive workers.

Area 21 - Stockpiles
The presence of asbestos (Chrysolite) was detected within one sample in loose fibre bundles at 0.1 mbgl.
The area contains two stockpiles within the south-east portion of the site, noted to be densely vegetated with minor amounts of loose gravelly soil and crushed concrete.

- Fill material was encountered from the surface within each test pit, predominantly comprising a heterogenous mix of silty gravelly sand, crushed concrete, tiles brick and minor amounts of plastic waste.

- The demolition style fill material was noted to generally terminate at approximately 1.0 m into the stockpiles or at ground level and transitioned to either a silty gravel fill material not characteristic of demolition waste or transitioned into natural material when at ground level. TP08, TP09 and TP10 however were noted to transition from fill material into natural at approximately 0.2 m below ground level.

A potentially complete source-pathway-receptor linkage was identified thought the inhalation of asbestos fibres and dust to on-site maintenance and commercial intrusive workers.

Area 20 – Oil Drainage Line
No detections of asbestos were reported and concentrations of other CoPC were below the adopted ILs. Test pits were progressed to a depth of up to 2.0 mbgl in the vicinity of the oil drainage line, however no indication of the oil drainage line remaining insitu was noted.

Landuse Suitability
Based on the investigation data (both historic and current), the Site is currently considered to be not suitable for use as a Contractor Laydown Area. The impacts identified above should be managed and/or remediated to enable the Site to be made suitable for its proposed use.

Indicative Remedial Options and Preliminary Cost Estimates
A series of preferred remediation options and cost estimates have been provided by AECOM in order for EA to review and undertake to consider the Site suitable for the intended purpose.

Due to the identified project uncertainties, the proposed remedial responses and preliminary cost estimations have been presented for workshopping with EA.

Remaining Data Gaps
The footprint of the bowling club located east of the Area 21 stockpiles were identified as a potential data gap as outlined in AECOM, 2019. AECOM was unable to access the bowling club footprint to close the data gap as part of the investigation works completed in December 2020. Where contamination is identified, above the land use criteria, in future site investigations the following preferred remediation option is suggested to render the area suitable for the intended land use.

Where contamination is not detected or is below the specified threshold for the intended land use then no further remediation activities will need to occur.

AECOM Australia Pty Ltd (2021), Addendum to Tallawarra B Laydown Area Assessment: Bowling Club Supplementary Environmental Site Assessment, dated 30 September 2021.

AECOM undertook a Data Gap Analysis (Tallawarra B – Land Use Suitability Assessment and Data Gaps Analysis, September 2020) (AECOM, 2020), where the footprint of the Bowling Club building (the Site) was identified as a data gap. The subsurface below the Site could not be accessed (i.e. building still in place) as part of the intrusive works carried out as part of the Supplementary Investigation by AECOM in December 2020. Post the demolition of the Bowling Club building, AECOM remobilised in August 2021 to obtain soil samples at the Site (the assessment).

The works involved the advancement of six (6) sampling locations to a maximum depth of 3.0 m below ground level (mbgl) or refusal using an excavator. Up to two discrete samples per test pit were collected for laboratory analysis.
Concentrations of CoPCs were reported below the adopted ILs for all samples collected, furthermore asbestos was not detected in any of the samples collected and as such no complete source-pathway-receptor linkage was identified for the Site. The Site is therefore considered suitable for the intended commercial/industrial land use. No further assessment of conditions or consideration for remediation is required for the Site.

AECOM Australia Pty Ltd (2021), Tallawarra Power Station – Switchyard Environmental Site Investigation / Waste Classification Letter (DRAFT), dated 13 October 2021

AECOM Australia Pty Ltd (AECOM) were engaged by Energy Australia Development Pty Ltd (EA) to undertake an Environmental Site Investigation (ESI) at the proposed switchyard extension at Tallawarra Power Station located at Yallah Road, Yallah, New South Wales (the Site). The Site is operated by Endeavour Energy.

The purpose of this letter is to provide a supplementary investigation to the existing Baseline Investigation Report (JBS, 2008), and provide waste classification guidance of capping layer material located within the proposed switchyard extension footprint.

EA requires the assessment / classification of the capping layer material to inform the proposed redevelopment design and manage potential off-site disposal of the capping layer material in accordance with NSW Waste Regulations.

In order to meet the objectives, the following EA-agreed scope of works was undertaken:

- preparation of a project specific safety, health, and environmental management plan (SHEMP), including task specific safe work method statements (SWMS)
- use non-destructive drilling techniques (high-pressure water lance) to advance shallow boreholes at 53 locations
- visually identify the capping layer (green geo-fabric membrane marker) within boreholes, unless shallow refusal is encountered
- record the depth at which the capping layer overlaying the green marker layer was encountered at to inform the switchyard detailed design
- investigate the depth of the former concrete footing in the southeast of the switchyard (Ground Penetrating Radar and Boreholes)
- conduct a visual assessment and screening with Photo-Ionisation Detector (PID) of the excavated spoil from each sample location

- collect 14 samples representative of capping layer material from nominal depths within the capping layer to confirm the chemical composition of the fill at each sample location.
- Laboratory analysis of 14 primary soil samples at a NATA accredited laboratory for the following CoPCs:
  - Total Recoverable Hydrocarbons (TRH)
  - Benzene, toluene, ethylbenzene and xylenes, naphthalene (BTEXN)
  - Suite of 16 Polycyclic Aromatic Hydrocarbons (PAHs)
  - Organochlorine (OC)/ Organophosphorus (OP)
  - Polychlorinated Biphenyl (PCB)
  - 8 Metals (As, Cd, Cr[total], Cu, Pb, Hg, Ni, Zn)
  - Analysis for asbestos (absence/presence)
  - Suite of 28 Per- and polyfluoroalkyl substances (PFAS).

The assessment targeted soil material used as a capping layer located within the proposed switchyard extension footprint. The assessment concluded:

- No exceedances of the adopted site criteria for the identified CoPC
- No evidence of a significant change in site conditions or contamination since the reported findings of JBS (2008).
- Concrete believed to be the former footing was identified with NDD at 1.1 mbgl (BH46).
- The Green marker layer was identified in six boreholes completed by AECOM, and eight boreholes subsequently completed by SMEC. The depth to the marker layer ranged between 0.2 mbgl and 1.15 mbgl. Energy Australia provided information to AECOM indicating that the marker layer was >1 mbgl in three boreholes completed by SMEC in September 2021.
- Based on the available data collected, the capping layer material assessed as part of this August to September 2021 ESI at the Site meets the requirements of General Solid Waste in accordance with NSW EPA (2014) and NSW EPA (2016) guidelines and may be disposed off-Site to an appropriately licenced waste management facility under this classification, if required. It is recommended that this is confirmed through additional sampling once the material has been excavated.
- The site is currently controlled by the AMP; and those controls appear to be appropriately conservative.

Appendix C

Asbestos Impacted Soil Register

Client: Energy Australia
Job Number: 60602160
Site ID: Tallawarra Power Station
Address: Yallah Bay Road, Yallah, NSW 2530
Survey Date: N/A - Desktop Review
Surveyor: N/A - Desktop Review

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Asbestos Impacted Soil Register

Description				Risk Management
Area	**Description**	**Asbestos Type**	**Risk Rating**	**Comments and Recommendations**
Area 7	No asbestos detected during intrusive investigation. (AECOM, Feb 2021)	N/A	Low	No evidence of asbestos impacted soil. **Access** - Area may be accessed by foot, light vehicles, and heavy vehicles. **PPE** - No PPE requirement to access the area. **Excavation** - Excavation allowed under the provision that the unexpected finds protocol is adhered if suspected asbestos is encountered.
Area 16	Asbestos contaminated soil was removed to a level below the planned construction level and was encapsulated with road base and certified imported fill with an approximate thickness of 0.1-1.5 mbgl followed by a green geo-fabric textile layer to indicate where the asbestos impacted soil begins. (Hazmat, Jan 2011)	Friable	Moderate	Asbestos impacted soil encapsulated with a minimum of 0.1-1.5 mbgl. **Access** - Area may be accessed by foot and light vehicles when integrity of the ground surface is stable. **PPE** - No PPE requirement to access the area when integrity of the ground surface is stable. **PPE** - P2 facemask recommended if ground surface becomes disturbed or exposed. **Inspection** - Regular inspection recommended to ensure the ground integrity does not become compromised. Adhered to the unexpected finds protocol if suspected asbestos is encountered. **Excavation** - Excavation may only occur as per AMP requirements.
Area 17	Asbestos contaminated soil was removed to a level below the planned construction level and was encapsulated with road base and certified imported fill with an approximate thickness of 0.1-1.5 mbgl followed by a green geo-fabric textile layer to indicate where the asbestos impacted soil begins. (Hazmat, Jan 2011)	Friable	Moderate	Asbestos impacted soil encapsulated with a minimum of 0.1-1.5 mbgl. **Access** - Area may be accessed by foot and light vehicles when integrity of the ground surface is stable. **PPE** - No PPE requirement to access the area when integrity of the ground surface is stable. **PPE** - P2 facemask recommended if ground surface becomes disturbed or exposed. **Inspection** - Regular inspection recommended to ensure the ground integrity does not become compromised. Adhered to the unexpected finds protocol if suspected asbestos is encountered. **Excavation** - Excavation may only occur as per AMP requirements.
Area 18	Asbestos contaminated soil was removed to a level below the planned construction level and was encapsulated with road base and certified imported fill with an approximate thickness of 0.1-1.5 mbgl followed by a green geo-fabric textile layer to indicate where the asbestos impacted soil begins. (Hazmat, Jan 2011)	Friable	Moderate	Asbestos impacted soil encapsulated with a minimum of 0.1-1.5 mbgl. **Access** - Area may be accessed by foot and light vehicles when integrity of the ground surface is stable. **PPE** - No PPE requirement to access the area when integrity of the ground surface is stable. **PPE** - P2 facemask recommended if ground surface becomes disturbed or exposed. **Inspection** - Regular inspection recommended to ensure the ground integrity does not become compromised. Adhered to the unexpected finds protocol if suspected asbestos is encountered. **Excavation** - Excavation may only occur as per AMP requirements.
Area 20a - isolated area	Friable asbestos detected at one location at 0.1 mbgl. (AECOM, Mar 2021).	Friable	High	Evidence of asbestos impacted soil at a depth less than 0.1 mbgl. **Access** - Area should be restricted. **PPE** - P2 facemask and coveralls recommended if access by foot is required. **Capping/Remediation** – Removal or capping of asbestos impacted soil should be considered to mitigate and minimise the inherent risk of superficial asbestos. **Inspection -** Regular inspection around the perimeter recommended to ensure the area has not been accessed without approval. Adhered to the unexpected finds protocol if suspected asbestos is encountered. **Excavation** - Excavation may only occur as per AMP requirements.
Area 20a (excluding isolated area)	Non-friable asbestos detected at two location at 0.4 mbgl and 1.2 mbgl. Friable asbestos detected at one location at 0.5 mblg. (AECOM, Mar 2021).	Non-friable and Friable	Moderate	Evidence of asbestos impacted soil at a depth greater than 0.4 mbgl. **Access** - Area may be accessed by foot and light vehicles when integrity of the ground surface is stable. **PPE** - No PPE requirement to access the area when integrity of the ground surface is stable. **PPE** - P2 facemask recommended if ground surface becomes disturbed or exposed. **Inspection** - Regular inspection recommended to the stockpile material to ensure the integrity does not become compromised. Adhered to the unexpected finds protocol if suspected asbestos is encountered. **Excavation** - Excavation in the stockpile material may only occur as per AMP requirements.
Area 21	Friable asbestos detected at one location at 0.5 mbgl within the stockpile material. No asbestos was detected in sub-surface material. Risk assessment applicable to the stockpile material only. (AECOM, Mar 2021).	Friable	Moderate	Evidence of asbestos impacted soil at a depth greater than 0.5 mbgl in the stockpile material. **Access** - Area may be accessed by foot and light vehicles when integrity of the ground surface is stable. **PPE** - No PPE requirement to access the area when integrity of the ground surface is stable. **PPE** - P2 facemask recommended if ground surface becomes disturbed or exposed. **Inspection** - Regular inspection recommended to the stockpile material to ensure the integrity does not become compromised. Adhered to the unexpected finds protocol if suspected asbestos is encountered. **Excavation** - Excavation in the stockpile material may only occur as per AMP requirements.
Area 22	Asbestos contaminated soil was removed to a level below the planned construction level and was encapsulated with road base and certified imported fill with an approximate thickness of 0.1-1.5 mbgl followed by a green geo-fabric textile layer to indicate where the asbestos impacted soil begins. (Hazmat, Jan 2011)	Friable	Moderate	Asbestos impacted soil encapsulated with a minimum of 0.1-1.5 mbgl. **Access** - Area may be accessed by foot and light vehicles when integrity of the ground surface is stable. **PPE** - No PPE requirement to access the area when integrity of the ground surface is stable. **PPE** - P2 facemask recommended if ground surface becomes disturbed or exposed. **Inspection** - Regular inspection recommended to ensure the ground integrity does not become compromised. Adhered to the unexpected finds protocol if suspected asbestos is encountered. **Excavation** - Excavation may only occur as per AMP requirements.
Area 24	No asbestos detected during intrusive investigation. Area capped with hardstand. (AECOM, Feb 2021)	N/A	Low	No evidence of asbestos impacted soil. **Access** - Area may be accessed by foot, light vehicles, and heavy vehicles. **PPE** - No PPE requirement to access the area. **Excavation** - Excavation allowed under the provision that the unexpected finds protocol is adhered if suspected asbestos is encountered.
Area 26a	Asbestos contaminated soil was removed to a level below the planned construction level and was encapsulated with road base and certified imported fill with an approximate thickness of 0.1-1.5 mbgl followed by a green geo-fabric textile layer to indicate where the asbestos impacted soil begins. (Hazmat, Jan 2011)	Friable	Moderate	Asbestos impacted soil encapsulated with a minimum of 0.1-1.5 mbgl. **Access** - Area may be accessed by foot and light vehicles when integrity of the ground surface is stable. **PPE** - No PPE requirement to access the area when integrity of the ground surface is stable. **PPE** - P2 facemask recommended if ground surface becomes disturbed or exposed. **Inspection** - Regular inspection recommended to ensure the ground integrity does not become compromised. Adhered to the unexpected finds protocol if suspected asbestos is encountered. **Excavation** - Excavation may only occur as per AMP requirements.
Area 26b	Asbestos contaminated soil was removed to a level below the planned construction level and was encapsulated with road base and certified imported fill with an approximate thickness of 0.1-1.5 mbgl followed by a green geo-fabric textile layer to indicate where the asbestos impacted soil begins. (Hazmat, Jan 2011)	Friable	Moderate	Asbestos impacted soil encapsulated with a minimum of 0.1-1.5 mbgl. **Access** - Area may be accessed by foot and light vehicles when integrity of the ground surface is stable. **PPE** - No PPE requirement to access the area when integrity of the ground surface is stable. **PPE** - P2 facemask recommended if ground surface becomes disturbed or exposed. **Inspection** - Regular inspection recommended to ensure the ground integrity does not become compromised. Adhered to the unexpected finds protocol if suspected asbestos is encountered. **Excavation** - Excavation may only occur as per AMP requirements.
Area 28	No asbestos detected during intrusive investigation. Area capped with hardstand. (AECOM, Jul 2019)	N/A	Low	No evidence of asbestos impacted soil. **Access** - Area may be accessed by foot, light vehicles, and heavy vehicles. **PPE** - No PPE requirement to access the area. **Excavation** - Excavation allowed under the provision that the unexpected finds protocol is adhered if suspected asbestos is encountered.
Area 29	No asbestos detected during intrusive investigation. However, residual service trench anticipated to contain non-friable and friable asbestos. (AECOM, Mar 2021).	Non-friable and Friable Assumed	Moderate	Asbestos impacted soil assumed at depths similar to that identified in Area 20a along the service trench (0.4-0.5 mbgl). **Access** - Area may be accessed by foot and light vehicles when integrity of the ground surface is stable. **PPE** - No PPE requirement to access the area when integrity of the ground surface is stable. **Inspection** - Regular inspection recommended to ensure the ground integrity does not become compromised. Adhered to the unexpected finds protocol if suspected asbestos is encountered. **Excavation** - Excavation (excluding the service trench) is allowed under the provision that the unexpected finds protocol is adhered if suspected asbestos is encountered. **Excavation** - Excavation may only occur as per AMP requirements near the service trench.
Asbestos Repository 1	Friable and non-friable asbestos located under capping layer (minimum depth 3m)	Non-friable and Friable Assumed	Moderate	Asbestos impacted soil encapsulated with a minimum of 3 mbgl. **Access** - Area may be accessed by foot and light vehicles when integrity of the ground surface is stable. **PPE** - No PPE requirement to access the area when integrity of the ground surface is stable. **Inspection** - Regular inspection recommended to ensure the ground integrity does not become compromised. Adhered to the unexpected finds protocol if suspected asbestos is encountered. **Excavation** - Excavation must not occur unless associated with addition to asbestos repository.
Asbestos Repository 2	Friable and non-friable asbestos located under capping layer (minimum depth 3m)	Non-friable and Friable Assumed	Moderate	Asbestos impacted soil encapsulated with a minimum of 3 mbgl. **Access** - Area may be accessed by foot and light vehicles when integrity of the ground surface is stable. **PPE** - No PPE requirement to access the area when integrity of the ground surface is stable. **Inspection** - Regular inspection recommended to ensure the ground integrity does not become compromised. Adhered to the unexpected finds protocol if suspected asbestos is encountered. **Excavation** - Excavation must not occur unless associated with addition to asbestos repository.

Appendix D

Asbestos Building Material Register

Client: Energy Australia
Job Number: 60650884
Site ID: Tallawarra Power Station
Address: Yallah Bay Road, Yallah, NSW 2530
Survey Date: N/A - Desktop Review
Surveyor: N/A - Desktop Review

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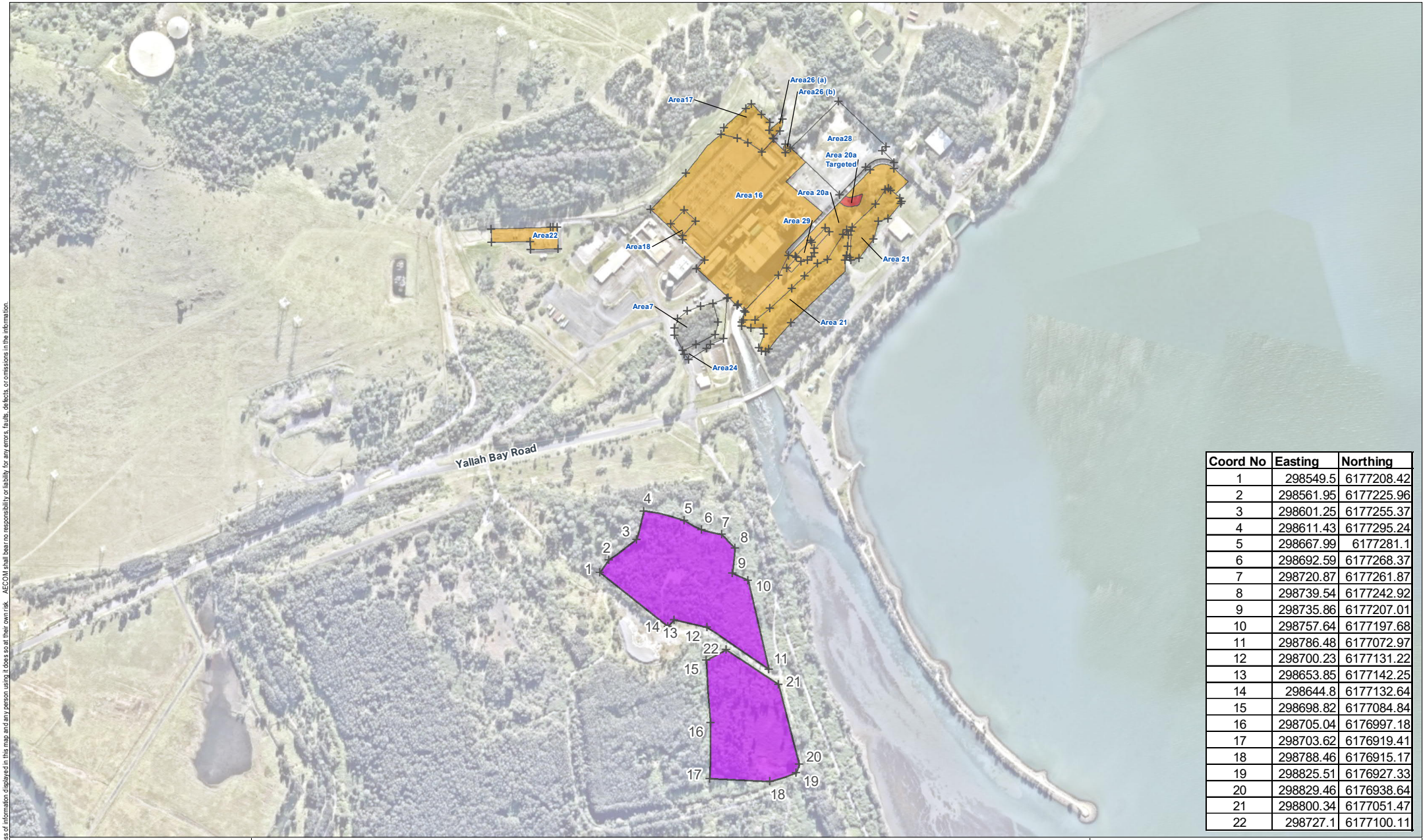
Asbestos Building Materials Register

Location				Description		Quantity		Sample result		Risk Assessment						Risk Management
No.	Internal / External	Level	Area	Material Description	Material Application	Approx. Quantity	Unit	Survey Result	Sub-Result	Friability	Condition	Activities	Risk of Fibre Release	Location	Risk Rating	Comments and Recommendations
1	External	Roof	HRSG Roof	KKS no: 11LBA50BS001 HP Superheater Safety Valve Silencer	Internal asbestos assumed	1	Item	N/A Desktop review	Asbestos assumed	To be confirmed	To be confirmed	Low	To be confirmed	Low	To be confirmed	Evaluate and record the following factors (Friability, Condition, Risk of Fibre Release) during the next maintenance inspection, and determine the associated risk status based on the asbestos risk assessment provided in the asbestos management plan (Appendix F).
2	External	Roof	HRSG Roof	KKS no: 11LBC50BS051 Cold Reheat Safety Valves Silencer	Internal asbestos assumed	1	Item	N/A Desktop review	Asbestos assumed	To be confirmed	To be confirmed	Low	To be confirmed	Low	To be confirmed	Evaluate and record the following factors (Friability, Condition, Risk of Fibre Release) during the next maintenance inspection, and determine the associated risk status based on the asbestos risk assessment provided in the asbestos management plan (Appendix F).
3	External	Roof	HRSG Roof	KKS no: 11LBA40BS001 Hot Reheat Safety Valve Silencer	Internal asbestos assumed	1	Item	N/A Desktop review	Asbestos assumed	To be confirmed	To be confirmed	Low	To be confirmed	Low	To be confirmed	Evaluate and record the following factors (Friability, Condition, Risk of Fibre Release) during the next maintenance inspection, and determine the associated risk status based on the asbestos risk assessment provided in the asbestos management plan (Appendix F).
4	External	Roof	HRSG Roof	KKS no: 11HAD50BS001 HP Drum Safety Valves Silencer	Internal asbestos assumed	1	Item	N/A Desktop review	Asbestos assumed	To be confirmed	To be confirmed	Low	To be confirmed	Low	To be confirmed	Evaluate and record the following factors (Friability, Condition, Risk of Fibre Release) during the next maintenance inspection, and determine the associated risk status based on the asbestos risk assessment provided in the asbestos management plan (Appendix F).
5	External	Roof	HRSG Roof	KKS no: 11HAD30BS001 IP Drum Safety Valves Silencer	Internal asbestos assumed	1	Item	N/A Desktop review	Asbestos assumed	To be confirmed	To be confirmed	Low	To be confirmed	Low	To be confirmed	Evaluate and record the following factors (Friability, Condition, Risk of Fibre Release) during the next maintenance inspection, and determine the associated risk status based on the asbestos risk assessment provided in the asbestos management plan (Appendix F).
6	External	Roof	HRSG Roof	KKS no: 11HAD10BS001 LP Drum Safety Valves Silencer	Internal asbestos assumed	1	Item	N/A Desktop review	Asbestos assumed	To be confirmed	To be confirmed	Low	To be confirmed	Low	To be confirmed	Evaluate and record the following factors (Friability, Condition, Risk of Fibre Release) during the next maintenance inspection, and determine the associated risk status based on the asbestos risk assessment provided in the asbestos management plan (Appendix F).
7	External	Roof	HRSG Roof	KKS no: 11LCQ80BS001 Blowdown Silencer	-	-	-	-	-	-	-	-	-	-	-	No action required. Asbestos removed in 2018.
8	External	Roof	Feedwater tank	KKS no: 11LCQ80BS002 Flash Tank Silencer	Internal asbestos assumed	1	Item	N/A Desktop review	Asbestos assumed	To be confirmed	To be confirmed	Low	To be confirmed	Low	To be confirmed	Evaluate and record the following factors (Friability, Condition, Risk of Fibre Release) during the next maintenance inspection, and determine the associated risk status based on the asbestos risk assessment provided in the asbestos management plan (Appendix F).

Appendix E

Aerial Map



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6	298692.59	6177268.37
7	298720.87	6177261.87
8	298739.54	6177242.92
9	298735.86	6177207.01
10	298757.64	6177197.68
11	298786.48	6177072.97
12	298700.23	6177131.22
13	298653.85	6177142.25
14	298644.8	6177132.64
15	298698.82	6177084.84
16	298705.04	6176997.18
17	298703.62	6176919.41
18	298788.46	6176915.17
19	298825.51	6176927.33
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PROJECT ID 60602160
CREATED BY NIKOLAEVD
LAST MODIFIED 07 SEP 2021

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0 50 100 m

Datum: GDA 1994 | Coordinate System: GDA 1994 MGA Zone 56
1:7,000 (when printed at A4)

Legend

Risk Assessment

- Asbestos Repositories
- High Risk
- Moderate Risk
- Low Risk

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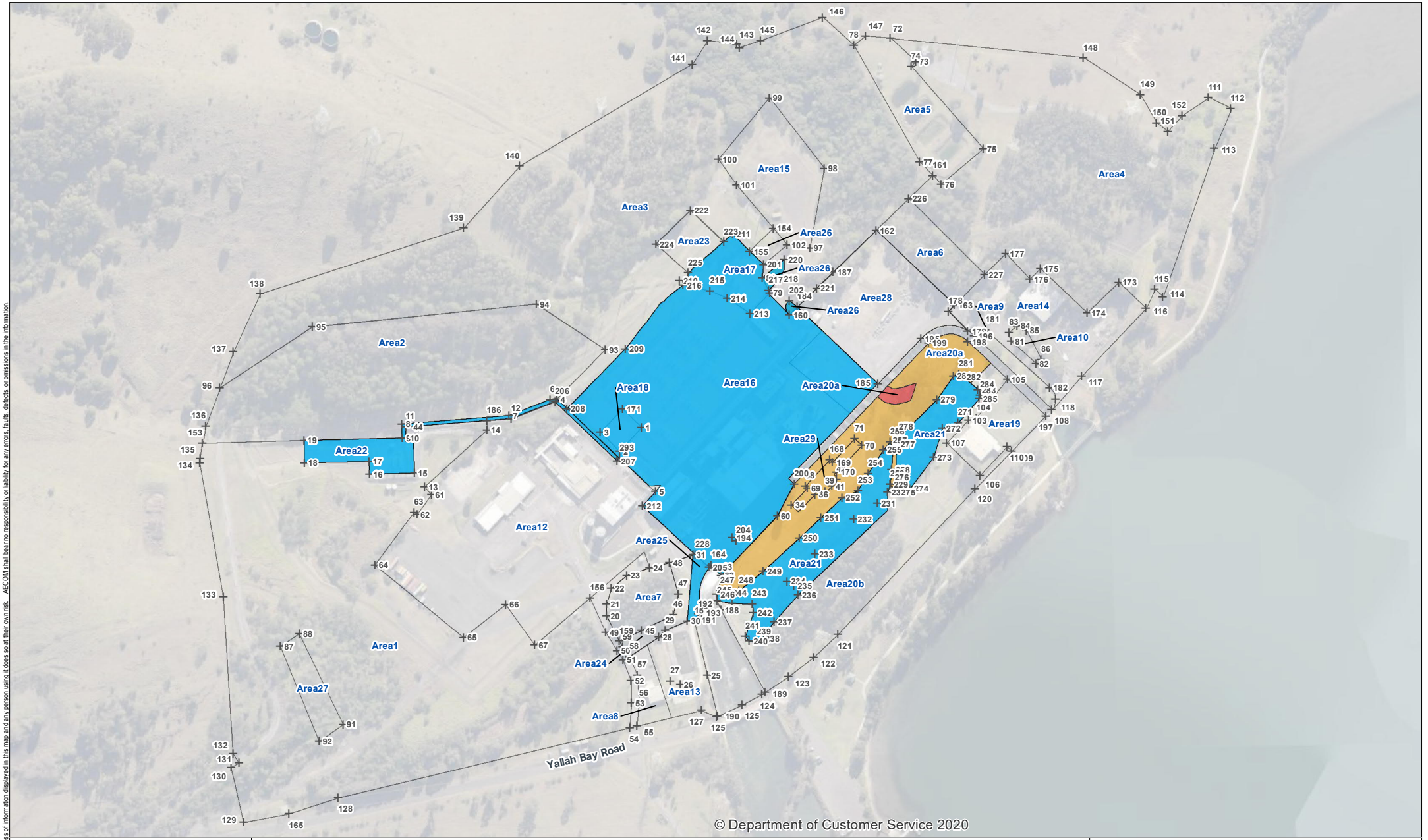
TITLE: Asbestos Repositories

Project: TALLAWARRA
Contamination Management Support

Figure
F1

Map Document: (\\AUNTL1FP001\Projects\60602160\900_CAD_GIS\920_GIS\02_Maps\G005_01_A4P_F5_AsbestosRepository_210907.mxd)

A4 size



PROJECT ID 60602160
CREATED BY NIKOLAEVD
LAST MODIFIED 03 DEC 2021

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0 50 100 m
Datum: GDA 1994 | Coordinate System: GDA 1994 MGA Zone 56
1:4,250 (when printed at A4)

Legend

Risk Assessment

- (P4) Capping Layer in Place
- High Risk
- Moderate Risk
- Low Risk

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TITLE: Site Plan- Risk Assessment

Project: TALLAWARRA Contamination Management Support

Figure F2

A4 size

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No	Easting	Northing	No	Easting	Northing	No	Easting	Northing
1	298684.4	6177702.1	95	298403.9	6177787.7	189	298790	6177476.3
2	298665.9	6177681.6	96	298324.6	6177735.6	190	298749.4	6177455.8
3	298649.3	6177698.2	97	298828.2	6177855.1	191	298732.2	6177538
4	298612.3	6177726.3	98	298840.4	6177923.3	192	298732.9	6177542.9
5	298696.5	6177647.5	99	298793.5	6177983.4	193	298736.2	6177544.1
6	298606.3	6177725.7	100	298750.2	6177930.7	194	298762.1	6177608.2
7	298571.5	6177712.2	101	298765.6	6177908.7	195	298922.9	6177777.7
8	298480.3	6177705.1	102	298808.8	6177857.6	196	298968.2	6177780.3
9	298480.5	6177693.1	103	298963.4	6177708.2	197	299029.3	6177711.9
10	298483.7	6177693.2	104	298969.9	6177710.1	198	298962.9	6177775.4
11	298483.4	6177702.5	105	298996.6	6177743.1	199	298929.3	6177774.1
12	298573.3	6177709.5	106	298973.2	6177661.2	200	298814.7	6177654.1
13	298499.6	6177651.6	107	298944.9	6177688.8	201	298788.6	6177841
14	298553	6177700	108	299034.4	6177717.2	202	298810.6	6177810.1
15	298490.8	6177663.3	109	299000.3	6177681.6	204	298765.1	6177605.5
16	298452.5	6177662.1	110	298996.1	6177685.5	205	298742.2	6177582.8
17	298452.1	6177673.2	111	299168	6177983.5	206	298610.7	6177723.8
18	298397.1	6177672	112	299187.1	6177974	207	298663.6	6177673.5
19	298396.6	6177690.9	113	299173	6177940.4	208	298620.9	6177718.1
20	298654.8	6177541.3	114	299128.9	6177813.5	209	298670.8	6177769
21	298654.8	6177551.4	115	299122.2	6177820	210	298717	6177827.6
22	298658.6	6177564.8	116	299114.5	6177803.8	211	298762.3	6177867
23	298672.1	6177575.9	117	299059.9	6177746.1	212	298685.4	6177635.2
24	298691.5	6177582.5	118	299037.7	6177726.4	213	298777.2	6177799.2
25	298740.8	6177490.7	120	298968.7	6177649.7	214	298757.5	6177812.5
26	298717.5	6177483	121	298851.8	6177525.4	215	298742.7	6177818.5
27	298709.1	6177485.7	122	298831.4	6177506	216	298720	6177823.4
28	298699.5	6177523.4	123	298809.8	6177489.5	217	298792.8	6177818.9
29	298704.8	6177529	124	298787.1	6177474.5	218	298802.5	6177829.1
30	298723.4	6177536.9	125	298770.1	6177465.3	220	298806.3	6177845.5
31	298728.3	6177593.4	125	298748.6	6177455.4	221	298833.9	6177820.9
32	298752.4	6177575.9	127	298735.5	6177460.8	222	298726.2	6177887.3
33	298754	6177574.2	128	298425.8	6177386.1	223	298754.7	6177860.4
34	298812.3	6177635.9	129	298345.2	6177365.3	224	298696.7	6177858.3
36	298832.5	6177645	130	298334.5	6177412.2	225	298724.2	6177833.9
39	298841.1	6177647.6	131	298341.1	6177416.3	226	298912.3	6177897.2
41	298847	6177651.7	132	298336.1	6177424	227	298977.3	6177832.4
43	298850.9	6177657.7	133	298327.8	6177557.6	228	298730.1	6177594
44	298490	6177693.3	134	298307.9	6177671.9	229	298896.4	6177653.8
45	298684.6	6177529.3	135	298308	6177675.9	230	298894.2	6177646.9
46	298711.5	6177542.5	136	298312.7	6177703.3	231	298885.6	6177637.3
47	298715.7	6177559.7	137	298336.4	6177767	232	298865.4	6177623.7
48	298708.3	6177586.6	138	298359.3	6177815.9	233	298832.6	6177594.2
49	298654	6177527.4	139	298532.7	6177872.3	234	298808.7	6177571
50	298663.7	6177511.8	140	298580.4	6177925	235	298814.5	6177567.2
51	298668.8	6177504	141	298727.8	6178012.1	236	298818.1	6177559.2
52	298675.5	6177486.3	142	298740.6	6178031.8	237	298797.4	6177536.4
53	298676.1	6177467.3	143	298765.7	6178028.9	238	298786.8	6177521.9
54	298674.4	6177446	144	298768.1	6178026	239	298782.7	6177519
55	298680.7	6177447.6	145	298786.1	6178032	240	298776.5	6177519.8
56	298682.5	6177467.1	146	298838.9	6178051.8	241	298773.1	6177524.2
57	298680.9	6177490.9	147	298875.6	6178035.9	242	298780	6177544.1
58	298674.1	6177506.9	148	299061.3	6178017.3	243	298778.8	6177551.4
59	298668.2	6177514.9	149	299109.9	6177985.7	244	298762	6177552.3
60	298800.3	6177626.5	150	299123.7	6177962.1	245	298749	6177554.3
61	298505.4	6177644.8	151	299133.3	6177954.6	246	298748.6	6177559.7
62	298493	6177627.9	152	299145.7	6177967.7	247	298751.4	6177563
63	298490.5	6177629.8	153	298310.1	6177688.6	248	298767.7	6177563
64	298457.1	6177584.8	154	298796.7	6177871.9	249	298788.3	6177579.5
65	298532.7	6177523	155	298776.8	6177852.2	250	298819.2	6177607.9
66	298568.8	6177551.1	156	298640.8	6177556.8	251	298837.4	6177625.3
67	298593.5	6177516.7	157	298729.5	6177537	252	298855.5	6177842.1
68	298824.1	6177652.3	159	298665.6	6177520	253	298869.2	6177648.4
69	298826.1	6177650.5	160	298810.6	6177798.2	254	298877.8	6177662.9
70	298872.3	6177686.6	161	298932.8	6177917.1	255	298890.8	6177683.1
71	298866.2	6177692.4	162	298884.6	6177870.2	256	298896.6	6177689.5
72	298896.7	6178033.9	163	298951.4	6177806.4	257	298898.7	6177682.2
73	298918.3	6178014.3	164	298744	6177584.5	258	298897.7	6177666.3
74	298914.4	6178010	165	298383.9	6177372.7	259	298896.4	6177653.8
75	298976	6177939.7	168	298845.2	6177674.6	271	298954.4	6177705.8
76	298940.2	6177909.5	169	298847.3	6177672.5	272	298941	6177701.5
77	298921.7	6177928.7	170	298850.9	6177663.9	273	298933.6	6177676.8
78	298865.5	6178027.9	171	298668.4	6177717.7	274	298913.5	6177650.2
79	298793.8	6177816.9	173	299091.4	6177826.1	275	298902.5	6177646.8
80	298787.5	6177829.6	174	299064.7	6177799.6	276	298900.5	6177650.5
81	298999.8	6177775.6	175	299024.6	6177837.5	277	298902.1	6177688
82	299020.9	6177756.5	176	299015.7	6177828.7	278	298904	6177694
83	298998	6177783.3	177	298995.2	6177850.3	279	298936.5	6177726
84	299004.9	6177789.1	178	298946.1	6177801.1	280	298950.4	6177746.2
85	299012.6	6177784.9	179	298962.9	6177784.4	281	298955.3	6177747.6
86	299025.5	6177760	181	298977.7	6177785.5	282	298958.3	6177745.3
87	298376.6	6177515.3	182	299032.6	6177736	283	298971.3	6177734.2
88	298392.9	6177526.4	184	298817.3	6177804.8	284	298973.3	6177730.1
91	298430	6177449	185	298886.1	6177739.1	285	298972.3	6177726.8
92	298409.5	6177434.4	186	298552.4	6177707.9	293	298666	6177676
93	298653.7	6177768.5	187	298848.1	6177834.7			
94	298594.8	6177807.4	188	298752.1	6177546.3			

Appendix F

Asbestos Risk Assessment Matrix

Appendix F Asbestos Risk Assessment Matrix

Asbestos Building Materials

Risk assessments for asbestos building materials shall be conducted for all areas identified as having asbestos and/or ACM to determine appropriate control measures and inspection schedules. If asbestos has not been detected, the Risk Assessment is not applicable.

The potential risks posed by ACM in premises are due to a number of risk factors including the:

- ACM classification/friability of the material;
- condition of the material;
- activities which may affect the material;
- risk of fibre release from the material; and
- location of the material.

The risk assessment methodology used by AECOM considers the Australian Standard AS4360-2004 Risk Management. The hazard levels for this assessment have been determined as follows:

Table F1 Asbestos Hazard Level

Risk Factor/Description			Hazard Level
ACM Classification	Bonded or Non-Friable	Materials that contain asbestos in a bonded matrix (may consist of Portland cement or various resin/binders and cannot be crushed by hand when dry).	2
	Friable	ACM which, when dry, is or may become crumbled, pulverised or reduced to powder by hand pressure.	5
Condition	Good	*In situ* materials that exhibit little or no sign of damage or deterioration.	1
	Fair	Materials that exhibit mild to moderate damage and/or deterioration.	2
	Poor	Materials that exhibit moderate to severe damage or deterioration.	3
Activities	Low	The location of the material and use of the area indicate that the material will not likely be disturbed during normal operations.	1
	Moderate	The location of the material and use of the area indicate that the material might be disturbed during normal operations.	2
	High	The location of the material and use of the area indicate that the material is likely to be disturbed during normal operations. Evidence of prior disturbance may be present.	4
Risk of Fibre Release	Low	Material is not prone to release asbestos fibres (e.g. resins, floor tiles).	1
	Moderate	Material that may release fibres upon disturbance (e.g. cement products).	2
	High	Material likely to release significant fibre concentrations upon disturbance (e.g. spray coating).	3
Location	Low	ACM is present in an open environment (e.g. outdoors).	1
	Moderate	ACM is present within a semi-enclosed environment.	2
	High	ACM is located within an enclosed environment and exposed to forced ventilation.	4

The multiplication of the asbestos type and each risk factor can be then used to determine the Hazard Level as follows:

ACM Classification x Condition x Activities x Risk of Fibre Release x Location = Hazard Level

The recommended health risk/action priority rating for each Hazard Level is provided in **Table F2**.

Table F2: Risk Rating/Hazard Level

Risk Rating	Overall Hazard Level
Low	0 – 19
Moderate	20 – 49
High	> 50

Control measure guidelines for each Risk Rating is provided in **Table F3**.

Table F3: Definitions of Risk Rating and Control Measure Guidelines

Risk Rating		Definition
Health Risk	Low	Products or materials that pose negligible risk to employees and the general public. They consist of materials that currently are in a good condition, located in areas which are not subject to activities that may impact upon them and are of a type which do not readily release asbestos fibres upon contact. These materials should be identified, and warning signs erected. The material does not present a significant risk unless disturbed by intrusive work such as drilling, cutting, breaking or sanding.
Hazard Level	0 – 19	
Action Priority	AP3	
Health Risk	Moderate	Products or materials that pose a risk to employees and the public in their current state. They consist of materials whose condition has degraded, in an area where they may be impacted upon by surrounding activities and of a type that can release asbestos fibres upon contact. Removal or encapsulation and regular reviews or assessments are recommended for these materials.
Hazard Level	20 – 49	
Action Priority	AP2	
Health Risk	High	Products or materials that pose an immediate or elevated risk to employees or the public in their current state. They consist of materials that are in poor condition, may be located within return air plenums or are in an area where activities are very likely to impact upon the material. Immediate actions should be taken for these materials to be removed by a licensed asbestos removal contractor. Alternative management strategies must be considered where removal of ACM is not practicable.
Hazard Level	> 50	
Action Priority	AP1	

Asbestos Impacted Soil

The risk rating used to classify asbestos impacted soil takes into consideration a weight of evidence approach regarding the potential for asbestos fibres to be released and the depth of identified ACM during intrusive investigative works. It further accounts for the requirements outlined in the *Western Australia Department of Health Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia. Environmental Health Directorate, Department of Health, Perth (2009)*.

A summary of the asbestos in soil risk rating and associated recommended actions is provided in **Table F4**.

Table F4: Asbestos in Soil Risk Rating and Recommended Actions

Risk Rating	Definition	Recommended Actions
Low	No evidence of asbestos impacted soil.	• **Access** - Area may be accessed by foot, light vehicles, and heavy vehicles. • **PPE** - No PPE requirement to access the area. • **Excavation** - Excavation allowed under the provision that the unexpected finds protocol is adhered if suspected asbestos is encountered.
Moderate	Evidence of asbestos impacted soil at a depth of greater than 0.1 metres beneath ground level (mbgl).	• **Access** - Area may be accessed by foot and light vehicles when integrity of the ground surface is stable. • **PPE** - No PPE requirement to access the area when integrity of the ground surface is stable. • **PPE** - P2 facemask recommended if ground surface becomes disturbed or exposed. • **Inspection** - Regular inspection recommended. • **Excavation** - Excavation may only occur under controlled asbestos conditions.
High	Evidence of asbestos impacted soil at a depth of equal or less than 0.1 mbgl.	• **Access** - Area should be restricted. • **PPE** - P2 facemask and coveralls recommended if access by foot is required. • **Capping/Remediation** – Removal or capping of asbestos impacted soil should be considered to mitigate and minimise the inherent risk of superficial asbestos. • **Inspection** - Regular inspection recommended. • **Excavation** - Excavation may only occur under controlled asbestos conditions.

Appendix G

Asbestos Activity Checklist

Appendix G Asbestos Activity Checklist

Asbestos Activity Checklist	
Prior to works commencing	
Has a licensed contractor been engaged? (see below)	Yes / No
Has a specific methodology for the works been developed? Note: outline the process, equipment, and controls to mitigate the risk of asbestos, and that this has been reviewed by EA.	Yes / No
Has an Asbestos Removal Control Plan (ARCP) been developed?	Yes / No
Has an Asbestos notification been submitted to SafeWork NSW at least 5 days prior to proposed works? A copy of the SafeWork NSW notification should be requested for record keeping and reference during the activity.	Yes / No
Is a hygienist required? (see below)	Yes / No
Is air monitoring required? (see below)	Yes / No
Have the following been provided to Energy Australia and reviewed?: License, Methodology, ARCP, SWMS, SafeWork NSW notification.	Yes / No
Establishing the asbestos work area	
Has the asbestos work area been defined e.g. barrier, fencing, flagging?	Yes / No
Are asbestos warning signage and contact details located at the entry to the asbestos work area (in accordance with AS1319-1994)?	Yes / No
Are controls in place as defined in the licensed contractor's methodology. e.g. water misting, HEPA vacuum, negative air pressure.	Yes / No
Has a decontamination area been set up as per the approved methodology (see below).	Yes / No
Is air monitoring in place and operational?	Yes / No
Entering the asbestos work area	
Have all personnel who are aware of the asbestos hazards and scheduled to undertake the activity or related activities: - been inducted into this AMP - signed onto the SWMS, and approved methodology?	Yes / No
Do all personnel who are aware of the asbestos hazards and scheduled to undertake the activity or related activities have appropriate Personal Protective Equipment (PPE) / Respiratory Protective Equipment (RPE) in accordance with this AMP.	Yes / No
Ongoing evaluation during asbestos works	
Have air monitoring certificates from the previous day been issued (where air monitoring is conducted) and results communicated to the workers involved with the asbestos works	Yes / No
Is the concentration of airborne asbestos fibres from the previous day <0.01fibre / ml? (see below)	Yes / No
Do existing controls need to be reviewed?	Yes / No
Following asbestos works	
Has a clearance certificate been conducted?	Yes / No

Asbestos Activity Checklist	
Has the asbestos register and AMP been updated to reflect the change (if any) following the asbestos works?	Yes / No
Additional	
Is PPE on hand at the decontamination area	Yes / No
Are disposal arrangement in place (refer to **Section 8.0** of the AMP)	Yes / No

Engaging Asbestos Specialist / Removal Contractor

EA staff will not undertake any activity that has the potential to impact asbestos and suspected asbestos materials. Any activity that has the potential to impact asbestos and suspected asbestos materials will be required to be undertaken by a qualified asbestos specialist. This is further discussed below.

Asbestos Hygienist

Asbestos hygienist such as a Competent Person and/or Licensed Asbestos Assessor should be engaged where required to provide associated services such as the following:

- Sample suspected ACM and reporting on the sample analysis
  - Submission of sample to a National Association of Testing Authorities (NATA) accredited external laboratory for analysis of asbestos.
  - Perform a risk assessment if asbestos is detected in the sample.
  - Provide recommendations and guidance for the management of the identified asbestos impacts.
- Undertake airborne fibre monitoring
  - Where required by legislation.
  - When it is not clear whether new or existing control measures are effective.
  - There is evidence (e.g. dust deposits outside enclosures) the control measures have deteriorated as a result of poor maintenance.
  - Where there has been an uncontrolled disturbance of asbestos at the workplace
  - The Asbestos work area is in, or next to, a public location.
- Undertake supervision
  - Be an independent supervisor during asbestos removal / remedial activities to evaluate the activity in accordance with legislation, approved methodology, and track progress of the activity.
- Conduct clearance inspection
  - Undertake a visual inspection at the completion of asbestos removal work and prior to re-occupation of the Asbestos Work Area. Grant re-occupation of the asbestos work area by issuing a Clearance certificate.

Asbestos Removal Contractor

Details of the licence type and conditions associated with that licence for asbestos removal contractors are presented in the below.

Licence Type	Conditions
Class A	Can remove any amount or quantity of asbestos or ACM including: • Any amount of friable asbestos or ACM

Licence Type	Conditions
	• Any amount of asbestos containing dust • Any amount of non-friable asbestos or ACM
Class B	Can remove: • Any amount of non-friable asbestos or ACM • Asbestos contaminated dust associated with the removal of non-friable asbestos or ACM
No licence required	Can remove: • Up to 10 m^2 of non-friable asbestos or ACM • Asbestos containing dust that is associated with < 10 m^2 of non-friable asbestos or ACM (not associated with the removal of friable or non-friable asbestos and is only minor contamination).

Airborne Asbestos Fibre Monitoring

Airborne asbestos fibre monitoring (air monitoring) may be required when activities are identified as having the potential to disturb asbestos or ACM. The requirements for air monitoring are dependent on the classification of asbestos, the location and condition of asbestos or ACM, whether the works are indoors or outdoors. Air monitoring may be required in the following instances:

- When it is not clear whether new or existing control measures are effective.
- There is evidence (e.g. dust deposits outside enclosure) the control measures have deteriorated as a result of poor maintenance.
- Modification or changes in safe work methods have occurred that may adversely affect worker exposure.
- There has been an uncontrolled disturbance of asbestos at the workplace.
- The Asbestos work area is in a in or next to a public location.

The requirements for air monitoring based on the classification of asbestos are detailed in the following table.

Asbestos Classification	Asbestos Removal Licence Requirement	Air Monitoring Requirements
Non-friable	Class A or Class B	• Air monitoring may be conducted where deemed necessary by EA. • Air monitoring may be conducted by either an independent Licensed Asbestos Assessor or Competent Person.
Friable	Class A	• Air monitoring must be conducted by an independent Licensed Asbestos Assessor.

Where required, air monitoring is to be conducted around the asbestos work area perimeter boundary (e.g. temporary barrier) and be conducted in accordance with the *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibre, 2nd Edition [NOHSC: 3003 (2005)]* (MFM, 2005).

Decontamination

Decontamination of personnel, tools as asbestos waste bags must occur prior exiting the asbestos work area.

Decontamination of tool and asbestos waste bags is achieved by using a High Efficiency Particulate Air (HEPA) fitted vacuum cleaner and/or wet wipes to remove any residual asbestos contain debris and dust from the items. Any item than cannot be decontaminated (e.g. HEPA fitted vacuum cleaner) must be placed and sealed into a 200um polythene bags prior to being removed from Site.

Personal decontamination is always required upon leaving an asbestos contaminated area. The methods required for personal decontamination may vary depending on the classification of asbestos or ACM associated with the scheduled works. The following sections provide guidance for the two types of decontamination processes available.

Dry Decontamination Procedure

- This type of decontamination is suitable for non-friable asbestos or ACM removal works.
- Dry decontamination may consist of a dedicated area adjacent to but separate from the asbestos work area (e.g. with bunting or flagging) with an asbestos waste bag, portable water sprayer and 200 µm thick polythene plastic sheeting used as floor covering.
- Personnel within the asbestos work area must follow the decontamination procedure in the following sequence detailed below:
    - Use portable water sprayer to dampen their coveralls, respirator, boots and gloves.
    - Remove coveralls and gloves and place into the dedicated asbestos waste bag.
    - Clean respirator and boots with wet wipes, and hands with wet wipes. Wet wipes are to be placed into the dedicated asbestos waste bag after each item is decontaminated and a new wet wipe used for the next item.
    - Remove respirator and exit the decontamination area.

Wet Decontamination Procedure

- This type of decontamination is suitable for friable asbestos or ACM removal works.
- The decontamination area should consist of a dedicated three-state decontamination unit that is adjacent to and directly connect with the enclosed asbestos work area.
- The three-state decontamination unit will consist of the following:
    - A dirty decontamination area.
    - A clean decontamination area.
    - A clean change area.
- Personnel within the enclosed asbestos work area must follow the decontamination procedure in the following sequence detailed below:
    - Enter the dirty decontamination area, vacuum and hose down all contaminated coveralls, gloves and footwear. Remove footwear and leave boots upside down within the dirty decontamination area. Shower while wearing coveralls, gloves and respirator with warm water. Leave respirator on and remove coveralls and gloves and place in the dedicated asbestos waste bag.
    - Progress to the clean decontamination area, shower and remove respirator. Wash hands, fingernails, face, heads and respirator.
    - Progress to the clean change area, towel dry and change into clean clothes, place respirator into a clean storage box and exit.

Appendix H

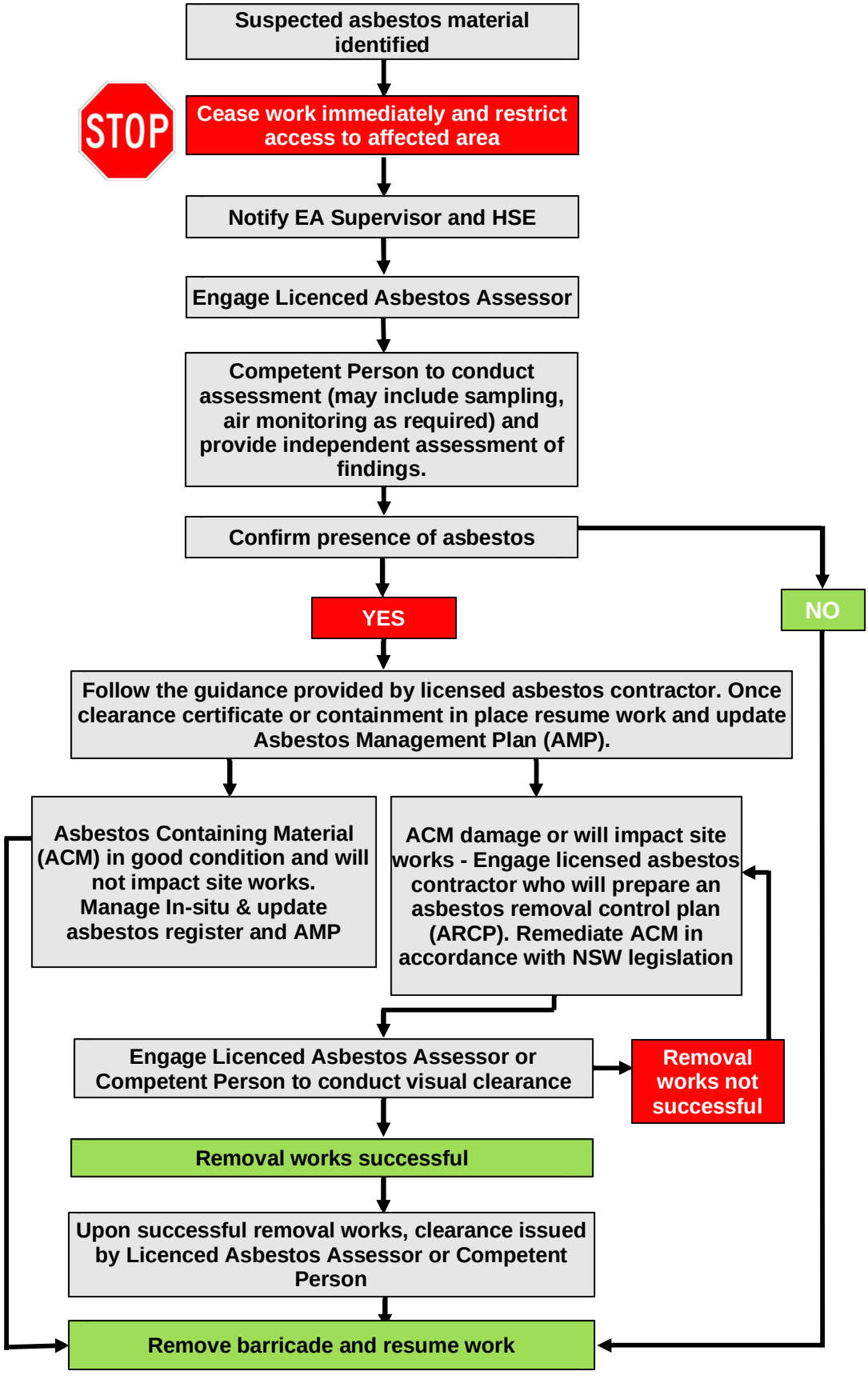
Unexpected Finds Procedure

Appendix H Unexpected Finds Procedure

When assumed asbestos or ACM is identified the following procedure should be followed:

- The area should be restricted by the following means:
  - **Internal area** – closing any doors and erecting warning signage at entry points.
  - **External area** – isolating the area off with the use of a barrier and warning signage.
- A Competent Person (such as an independent asbestos consultant) should be engaged to undertake an assessment of the unexpected find.
- The investigation may include airborne asbestos fibre monitoring within the area (if indoors) by a Competent Person with NATA accreditation for fibre counting in accordance with the *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibre, 2nd Edition [NOHSC: 3003 (2005)].*
- The Competent Person should provide information following the inspection detailing the sample result, material classification (where asbestos is identified) and provide recommendation to appropriately mitigate the find (where asbestos is identified).
- If the unexpected find is deemed to be an emergency, the normal waiting period of 5 days associated with the SafeWork NSW notification shall not be required.
- An asbestos removal contractor should be engaged and must undertake the following:
  - Contact SafeWork NSW on 131050 and advised of the emergency works, and
  - Lodge the notification electronically using the asbestos and demolition online notification system within 24 hours of the telephone notification.
- Mitigation measures (e.g. removal, stabilisation, encapsulation) may require air monitoring during the works by either a Competent Person or Licenced Asbestos Assessor (dependent on the classification of asbestos).
- Following the mitigation measures a clearance inspection by a Competent Person or Licenced Asbestos Assessor (dependent on the classification of asbestos) may be required.
- Upon satisfactory clearance inspection and air monitoring (where required) a clearance certificate shall be issued.
- The Asbestos Register and AMP should subsequently be updated to detail the mitigation works.

The Unexpected Finds Procedure detailed in the figure below provides a flowchart to follow when unexpected finds are considered an emergency.


Suspected asbestos material identified
STOP
Cease work immediately and restrict access to affected area
Notify EA Supervisor and HSE
Engage Licenced Asbestos Assessor
Competent Person to conduct assessment (may include sampling, air monitoring as required) and provide independent assessment of findings.
Confirm presence of asbestos
YES
NO
Follow the guidance provided by licensed asbestos contractor. Once clearance certificate or containment in place resume work and update Asbestos Management Plan (AMP).
Asbestos Containing Material (ACM) in good condition and will not impact site works. Manage In-situ & update asbestos register and AMP
ACM damage or will impact site works - Engage licensed asbestos contractor who will prepare an asbestos removal control plan (ARCP). Remediate ACM in accordance with NSW legislation
Engage Licenced Asbestos Assessor or Competent Person to conduct visual clearance
Removal works not successful
Removal works successful
Upon successful removal works, clearance issued by Licenced Asbestos Assessor or Competent Person
Remove barricade and resume work

Appendix I

AMP Records

Appendix I AMP Records

AMP FORM 1 – Example Asbestos Inspection Checklist

Asbestos Inspection Checklist		
Date of Inspection		
Inspect perimeter fences and gates of power station site		Yes / No
Observations		
Remedial Action Required		
Inspect asbestos management areas for signs of erosion		Yes / No
Observations		
Remedial Action Required		
Inspect asbestos management areas for signs of damage to capping layer		Yes / No
Observations		
Remedial Action Required		
Inspect perimeter fences and gates of asbestos repository		Yes / No
Observations		
Remedial Action Required		
Inspect of asbestos repository for signs of erosion		Yes / No
Observations		
Remedial Action Required		
Inspect of asbestos repository for signs of damage to capping layer		Yes / No
Observations		

Asbestos Inspection Checklist			
Remedial Action Required			
Inspect western retaining wall for signs of damage			Yes / No
Observations			
Remedial Action Required			
Inspect eastern canal wall for signs of damage			Yes / No
Observations			
Remedial Action Required			
Has remedial actions been completed			Yes / No
Attach photos pre and post remediation been attached			Yes / No
Attach marked up site plan from AMP showing areas requiring remedial action			Yes / No
Sign (worker)		Date:	
Sign (supervisor)		Date:	

AMP FORM 2 – Example Asbestos Activity Report

Asbestos Activity Report				
Location of asbestos works				
Date of commencement of asbestos works				
Date of conclusion of asbestos works				
Brief description of asbestos works				
Supervisors name				
Employees engaged on works	#1			
	#2			
	#3			
	#4			
	#5			
	#6			
Name of person wok inspected and cleared the site				
Brief description of findings of the site inspection				
Sign (supervisor)			Date:	

AMP Form 3 – Example Record of Review of AMP and Asbestos Register

Date of Review	Review Performed by	Reason for Review	Details of Actions	Next Review Due

AMP Form 4 - Example Record of Asbestos Investigations and Air Monitoring

Date	Detail of Asbestos Related Investigation Conducted	Work Completed By?	Details of Findings or Location of Report

Appendix D: Progressive erosion and sediment control plan

TALLAWARRA POWER STATION B
PROGRESSIVE EROSION AND SEDIMENTATION CONTROL PLAN

GENERAL NOTES

1. THIS PLAN WILL BE READ TOGETHER WITH RELEVANT ENVIRONMENTAL DOCUMENTATION (eg SWMP, EWMS).
2. WEATHER FORECASTS TO BE REGULARLY MONITORED.
3. NUMBERING INDICATES 'ORDER' OF WORKS WHERE RELEVANT (eg 1, 2, 3).
4. THE PRINCIPLE OF MINIMUM DISTURBANCE TO EXISTING VEGETATION TO BE IMPLEMENTED WITH 'NO-GO' ZONES ISOLATED WITH FLAGGING ETC.
5. PRIORITY TO BE PLACED ON THE CONSTRUCTION OF PERMANENT DRAINAGE WORKS FOR 'CLEAN' WATER MANAGEMENT.
6. 'CLEAN' AND 'DIRTY' OR CONSTRUCTION RUNOFF TO BE SEPARATED.
7. TEMPORARY EROSION AND SEDIMENT CONTROLS TO BE INSTALLED PRIOR TO SITE DISTURBANCE WHERE REASONABLE AND FEASIBLE.
8. CROSSINGS TO BE CONSTRUCTED AS PER 'BLUE BOOK' GUIDELINES AND PRIOR TO ANY PLANT/VEHICLE MOVEMENT OVER WATERCOURSES.
9. STOCKPILE LOCATIONS CONTROLS ARE TO BE AS PER DRAWINGS.
10. RUNOFF CONTROL FROM FORMATIONS/TOPS OF FILLS TO SEDIMENT BASINS TO BE VIA ONE OR A COMBINATION OF FILL SHAPING, DIVERSION DRAINS/BANKS, EARTH BUNDS ALONG TOP EDGES OF FILL BATTERS DISCHARGING TO BATTER DRAINS AND STORM WATER PITS ETC.
11. CULVERT INLET AND OUTLET PROTECTION TO BE CONSTRUCTED IMMEDIATELY AFTER PIPE OR BOX UNIT INSTALLATION (eg. HEAD & WING WALLS, DISSIPATERS).
12. THE LOCATIONS OF TEMPORARY CONTROLS ON THIS PLAN ARE INDICATIVE ONLY WITH ACTUAL SITES TO BE DETERMINED DURING WORKS.
13. TEMPORARY CONTROLS IN ADDITION TO THOSE SHOWN ON THE DRAWINGS TO BE CONSTRUCTED AT 'KEY' LOCATIONS AS REQUIRED AND CONSIST OF:
    EROSION CONTROLS (eg WINDROWS ON CONTOURS TO REDUCE SLOPE LENGTH AND SURFACE FLOW VELOCITIES); and
    SEDIMENT CONTROLS (eg SEDIMENT FENCES, MULCH SEDIMENT TRAPS, MULCH BUND SEDIMENT TRAPS).
14. THE ONSITE TEAM ARE TO ENSURE PROPOSED SLOPE LENGTHS ARE ADHERED TO.
15. ISTURBED AREAS ARE TO BE PROGRESSIVELY STABILISED (eg TEMPORARY TREATMENTS SUCH AS SOIL BINDER, FINAL DESIGN TREATMENTS SUCH AS REVEGETATION).
16. CONTROLS REMOVED OR DISTURBED DURING WORKS TO BE REINSTATED PRIOR TO WEEKENDS AND FORECAST RAIN.
17. AREAS TO BE FULLY 'SECURED' WITH CONTROLS PRIOR TO ANY TEMPORARY SUSPENSION OF WORKS.
18. ADEQUATE TIME TO BE PERMITTED TO' SECURE' THE PROJECT PRIOR TO FORECAST RAIN.
19. MULCH TO BE STORED AND MANAGED IN ACCORDANCE WITH THE DOCUMENT – 'ENVIRONMENTAL DIRECTION MANAGEMENT OF TANNINS FROM VEGETATION 'MULCH' (ROADS & MARITIME SERVICES, 2012 B).
20. DEWATERING OF EXCAVATIONS ETC TO BE CONDUCTED AS PER THE REQUIREMENTS OF THE SWMP.
21. THE TRACKING OF MUD/SOIL MATERIAL ONTO LOCAL ROADS TO BE MONITORED AND CONTROLLED (eg SHAKER RAMPS).
22. DUST TO BE CONTROLLED ON SITE AND ALONG UNSEALED ROADS WITH CONTROLS SUCH AS WATER CARTS AND OR LIMITING VEHICLE SPEEDS.
23. TEMPORARY CONTROLS TO BE INSPECTED REGULARLY WITH MAINTENANCE/REPAIRS UNDERTAKEN AS REQUIRED.
24. THIS PLAN HAS BEEN PREPARED AS PER 'BLUE BOOK' GUIDELINES AND STANDARD DRAWINGS – VOLUMES 1 & 2D.
25. THIS PLAN IS TO BE REVISED WHEN REQUIRED (eg CHANGE IN CONSTRUCTION METHODS AND/OR SITE CONDITIONS).

SPECIFIC NOTES

PLEASE REFER TO ATTACHED DRAWINGS:-

- PROGRESSIVE EROSION AND SEDIMENT CONTROL PLAN LOCATION PLAN SHEET 2 OF 6
- PROGRESSIVE EROSION AND SEDIMENT CONTROL PLAN SHEET 3 OF 6
- PROGRESSIVE EROSION AND SEDIMENT CONTROL PLAN SHEET 4 OF 6
- PROGRESSIVE EROSION AND SEDIMENT CONTROL PLAN SHEET 5 OF 6
- PROGRESSIVE EROSION AND SEDIMENT CONTROL PLAN DETAILS SHEET 6 OF 6

PLAN No.	PREPARED BY	DESIGNATION	SIGNATURE	DATE	REVIEWED BY	DESIGNATION	DATE
	JOHN WRIGHT	SENIOR SOIL CONSERVATIONIST – T.R.E.E.S P/L		07.10.21			

REFERENCE DRAWING

No	TITLE

REVISIONS

REV	BY	DATE	DESCRIPTION	CKD	DESIGN	ENG APPR	PROJ APPR
0	DHa	19.11.21	ISSUED FOR CONSTRUCTION	KKa	KKa	AYa	BPr

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STATUS: IFC

GE POWER DWG No.: TWB/90/K/u--CEP2P/CG/010

EnergyAustralia LIGHT THE WAY

ENERGY AUSTRALIA DWG No.: TALLAB-GECL-30210-CTA010-2063

CLIENT: ENERGY AUSTRALIA

TITLE: TALLAWARRA B POWER STATION

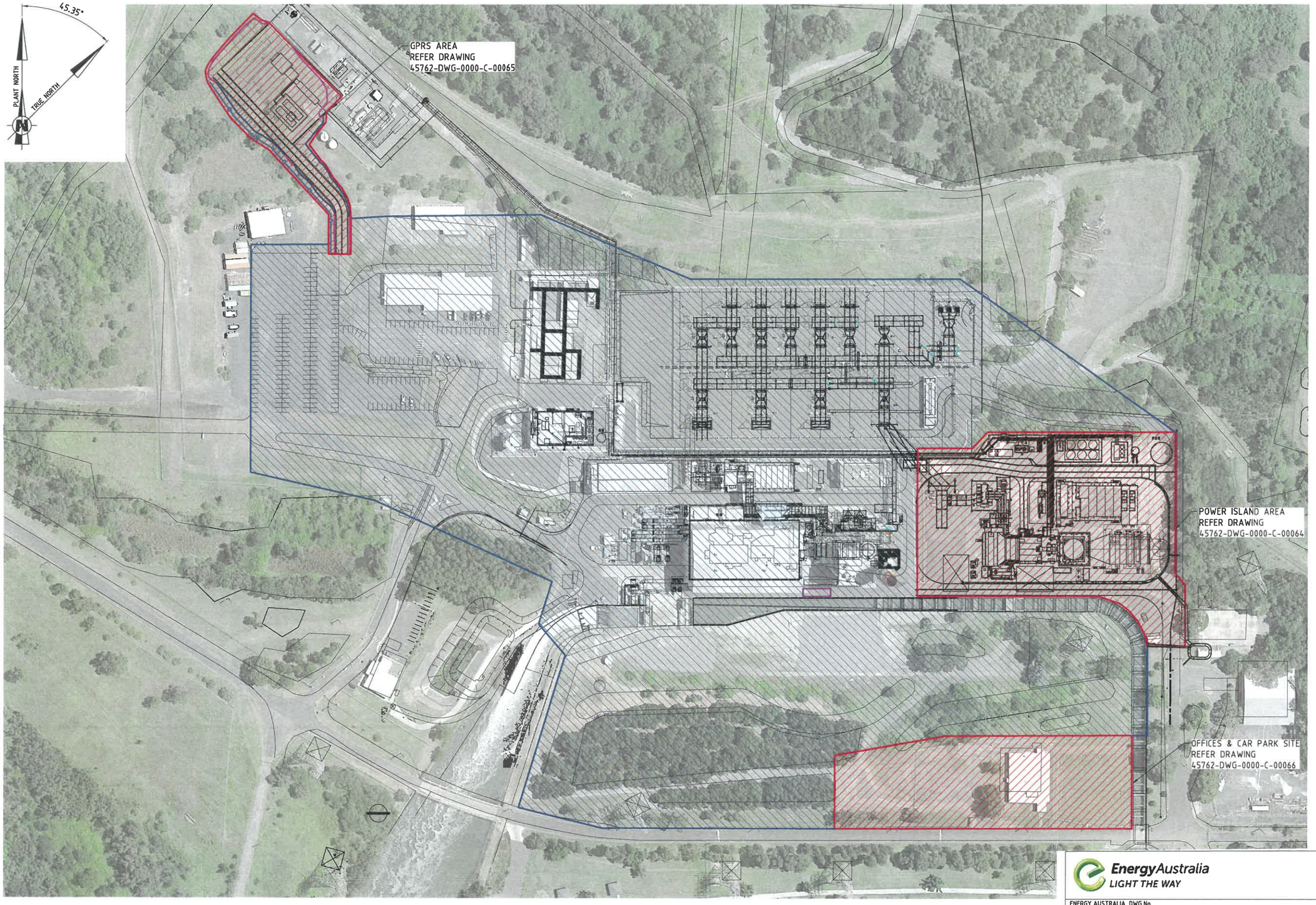
PROGRESSIVE EROSION & SEDIMENT CONTROL COVERPAGE AND NOTES SHEET 1 OF 6

A1

SCALE: NTS

CLOUGH DRAWING No.: 45762-DWG-0000-C-00068

REV.: 0



LEGEND

- PLANNED DISTURBANCE AREAS
- EXISTING SEDIMENTATION AND CONTROL

NOTES:

1. FOR GENERAL NOTES REFER DRG 45762-DWG-0000-C-00006
2. FOR CIVIL WORKS DETAILS REFER DRG 45762-DWG-0000-C-00010

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ENERGY AUSTRALIA DWG No. TALLAB-GECL-30210-CTA010-2007

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CLIENT ENERGY AUSTRALIA

TITLE TALLAWARRA B POWER STATION

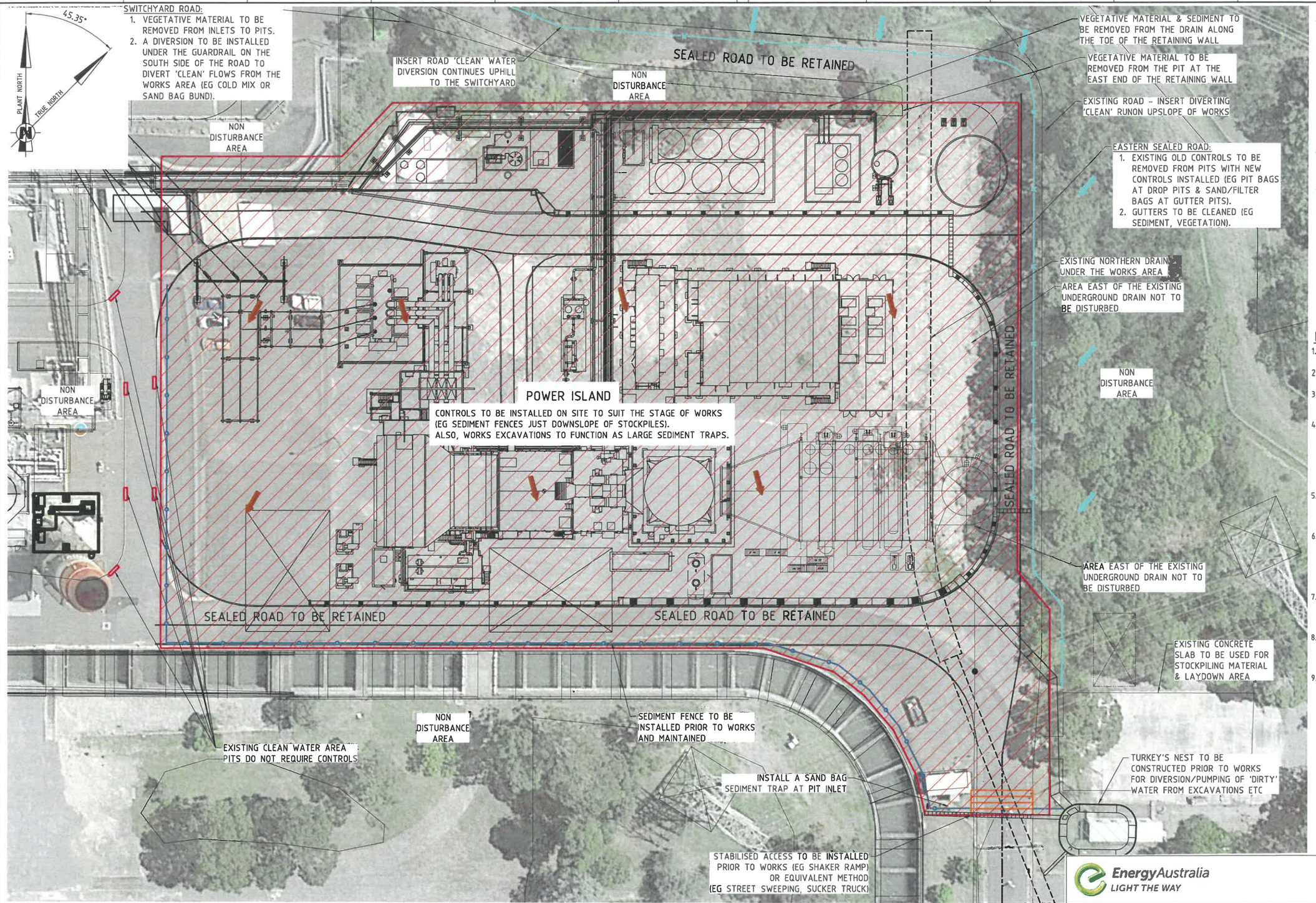
EROSION AND SEDIMENT CONTROL PLAN
LOCATION PLAN

A1

SCALE 1:1000

CLOUGH DRAWING No. 45762-DWG-0000-C-00005

REV. 0



POWER ISLAND AREA

LEGEND

- STABILISED ACCESS
- PRE-DISTURBED WORKS AREA
- TURKEY'S NEST
- SEDIMENT FENCE
- 'CLEAN' WATER DIVERSION
- KERB INLET PIT SEDIMENT TRAP
- 'DIRTY' WATER SURFACE FLOW
- 'CLEAN' WATER SURFACE FLOW

NOTES:

1. FOR GENERAL NOTES REFER DRG 45762-DWG-0000-C-00006
2. FOR CIVIL WORKS DETAILS REFER DRG 45762-DWG-0000-C-00010
3. SEDIMENT FENCES SHALL BE INSTALLED AT DOWNSLOPE OF DISTURBED AND EXCAVATED MATERIAL STOCKPILE AREAS.
4. SEDIMENT FENCES INTERCEPTING DIRTY WATER AT CONTAMINATION SENSITIVE AREA SUCH AS THE TALLAWARRA A COOLING WATER INTAKE CHANNEL SHALL INCLUDE THE USE OF GEOFABRIC WRAPPED GRAVEL FILTER TO ENHANCE THE FILTRATION EFFECT.
5. USE OF SOIL BINDER AGENT OVER BARE / DISTURBED AREAS PRIOR TO FORECAST RAINFALL AND 'SHUTDOWN' PERIOD DURING CONSTRUCTION.
6. THE 'TURKEY'S NEST' SHALL BE CONSTRUCTED ONLY DURING CONSTRUCTION PHASE WITH THE PURPOSE OF TEMPORARY STORING DIRTY WATER FROM THE FOUNDATIONS EXCAVATION ACTIVITIES.
7. DIRTY WATER GENERATED AS A RESULT OF EXCAVATION ACTIVITIES SHALL BE PUMPED IN THE 'TURKEY'S NEST' TO AVOID OVERLAND FLOW CONTAMINATION.
8. DIRTY WATER STORED IN 'TURKEY'S NEST' SHALL BE REUSED ON SITE SUCH AS WATERING VEGETATION AND DUST SUPPRESSION.
9. ANY EXCESS DIRTY WATER FROM EXCAVATION ACTIVITIES SHALL BE DIRECTLY PUMPED INTO WATER CART FOR REUSE, IF THE 'TURKEY'S NEST' STORAGE IS FULL.

REFERENCE DRAWING

No	TITLE

REVISIONS

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EnergyAustralia LIGHT THE WAY

ENERGY AUSTRALIA DWG No. TALLAB-GECL-30210-CTA010-2060

CLIENT ENERGY AUSTRALIA

TITLE TALLAWARRA B POWER STATION

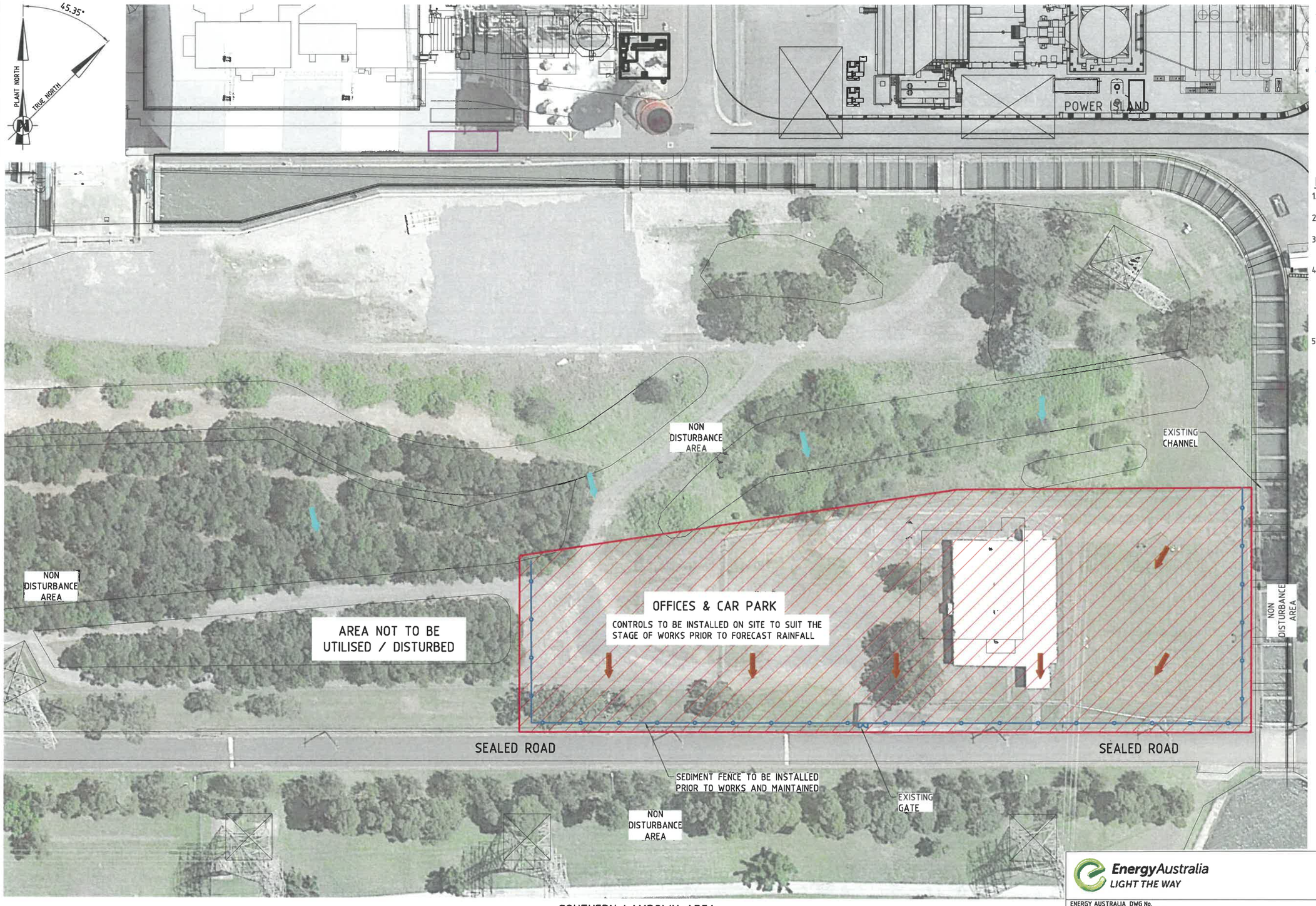
EROSION AND SEDIMENT CONTROL PLAN SHEET 1

A1

SCALE 1:300

CLOUGH DRAWING No. 45762-DWG-0000-C-00064

REV. 0



SOUTHERN LAYDOWN AREA

LEGEND

- PRE-DISTURBED WORKS AREA
- SEDIMENT FENCE
- 'DIRTY' WATER SURFACE FLOW
- 'CLEAN' WATER SURFACE FLOW

NOTES:

1. FOR GENERAL NOTES REFER DRG 45762-DWG-0000-C-00006
2. FOR CIVIL WORKS DETAILS REFER DRG 45762-DWG-0000-C-00010
3. SEDIMENT FENCES SHALL BE INSTALLED AT DOWNSLOPE OF DISTURBED AND EXCAVATED MATERIAL STOCKPILE AREAS.
4. SEDIMENT FENCES INTERCEPTING DIRTY WATER AT CONTAMINATION SENSITIVE AREA SUCH AS THE TALLAWARRA A COOLING WATER INTAKE CHANNEL SHALL INCLUDE THE USE OF GEOFABRIC WRAPPED GRAVEL FILTER TO ENHANCE THE FILTRATION EFFECT.
5. USE OF SOIL BINDER AGENT OVER BARE / DISTURBED AREAS PRIOR TO FORECAST RAINFALL AND 'SHUTDOWN' PERIOD DURING CONSTRUCTION.

REFERENCE DRAWING

No	TITLE

REVISIONS

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GE POWER DWG No. TWB/90/K/u--CEP2P/CG/009

EnergyAustralia LIGHT THE WAY

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CLIENT ENERGY AUSTRALIA

TITLE TALLAWARRA B POWER STATION

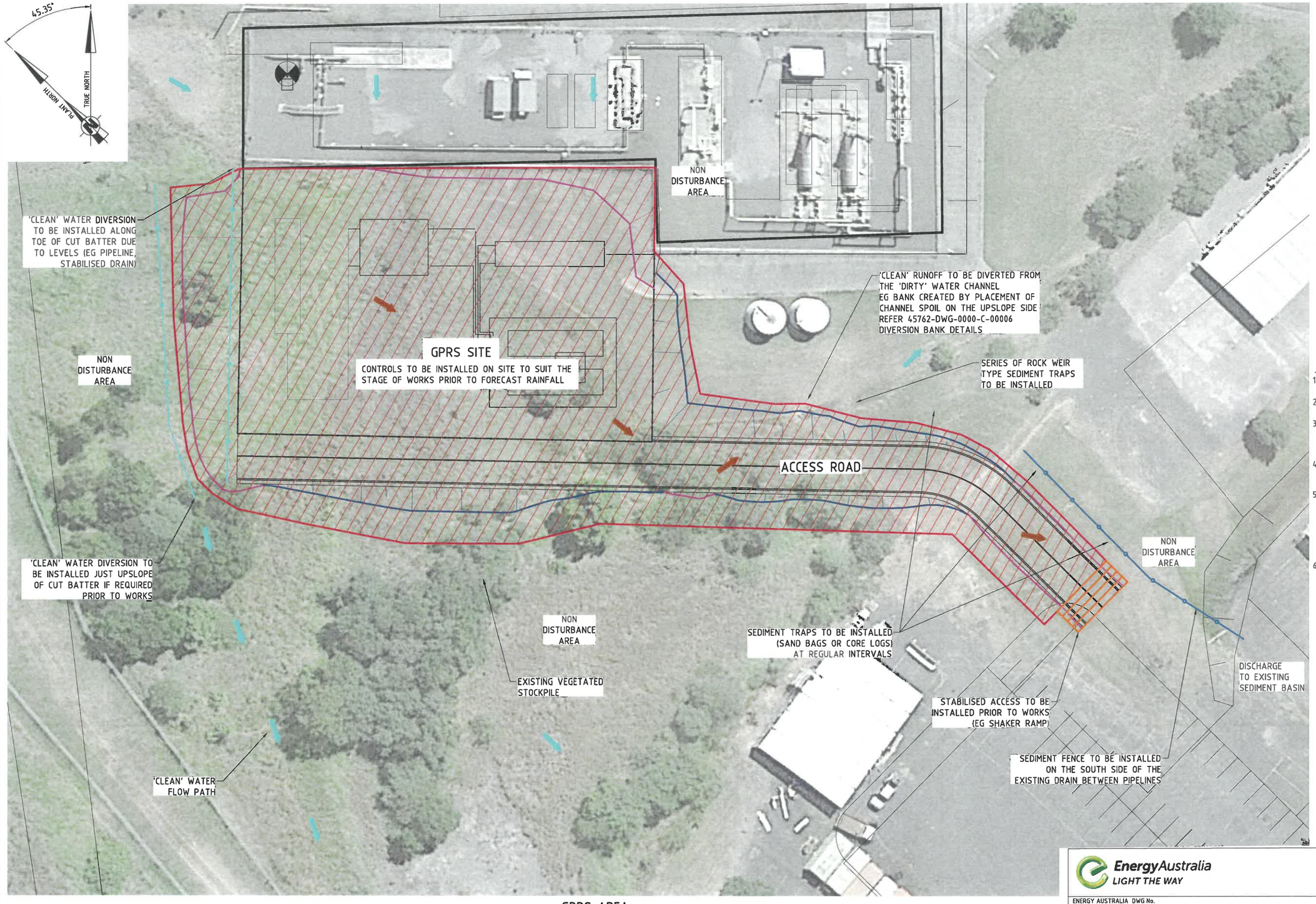
EROSION AND SEDIMENT CONTROL PLAN SHEET 3

A1

SCALE 1:400

CLOUGH DRAWING No. 45762-DWG-0000-C-00066

REV. 0



GPRS AREA

LEGEND

- STABILISED ACCESS
- PRE-DISTURBED WORKS AREA
- SEDIMENT FENCE
- 'DIRTY' WATER EARTH CHANNEL
- 'CLEAN' WATER DIVERSION
- CUT BATTER TO BE EXCAVATED
- FILL BATTER TO BE PLACED
- 'DIRTY' WATER SURFACE FLOW
- 'CLEAN' WATER SURFACE FLOW

NOTES:

1. FOR GENERAL NOTES REFER DRG 45762-DWG-0000-C-00006
2. FOR CIVIL WORKS DETAILS REFER DRG 45762-DWG-0000-C-00010
3. DIVERSION OF UPSLOPE CLEAN WATER BY CREATING DIVERSION BANK ON THE UPSLOPE EDGE OF DIRTY WATER CHANNEL.
4. SEDIMENT FENCES SHALL BE INSTALLED AT DOWNSLOPE OF DISTURBED AND EXCAVATED MATERIAL STOCKPILE AREAS.
5. SEDIMENT FENCES INTERCEPTING DIRTY WATER AT CONTAMINATION SENSITIVE AREA SUCH AS THE TALLAWARRA A COOLING WATER INTAKE CHANNEL SHALL INCLUDE THE USE OF GEOFABRIC WRAPPED GRAVEL FILTER TO ENHANCE THE FILTRATION EFFECT.
6. USE OF SOIL BINDER AGENT OVER BARE / DISTURBED AREAS PRIOR TO FORECAST RAINFALL AND 'SHUTDOWN' PERIOD DURING CONSTRUCTION.

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ENERGY AUSTRALIA DWG No. TALLAB-GECL-30210-CTA010-2061

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PROJ APPR.	BPr

CLIENT ENERGY AUSTRALIA

TITLE TALLAWARRA B POWER STATION

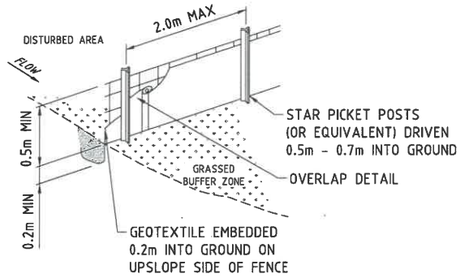
EROSION AND SEDIMENT CONTROL PLAN SHEET 2

A1

SCALE 1:250

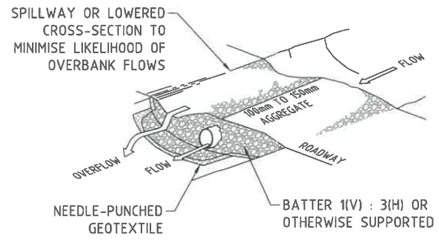
CLOUGH DRAWING No. 45762-DWG-0000-C-00065

REV. 0



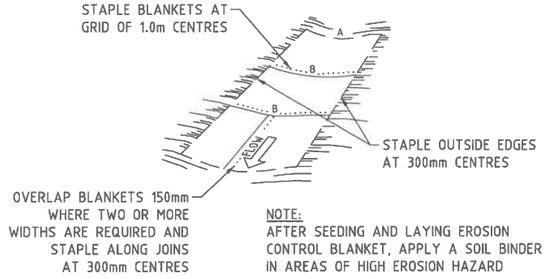
GEOFABRIC SEDIMENT FENCE - PERSPECTIVE

NOT TO SCALE



TEMPORARY WATERWAY CROSSING

NOT TO SCALE



RECP: CONCENTRATED FLOW - PERSPECTIVE

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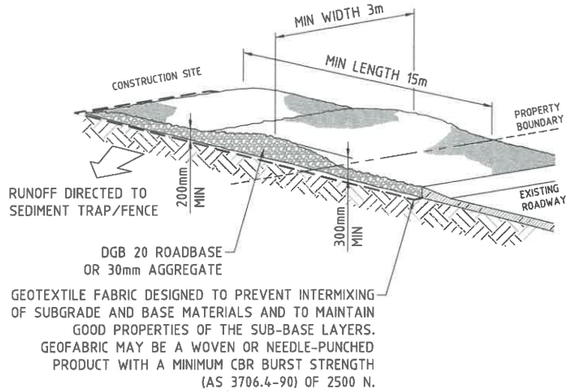
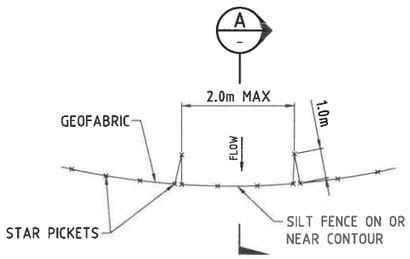


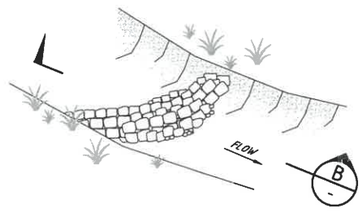
STABILISED ACCESS - PERSPECTIVE

NOT TO SCALE



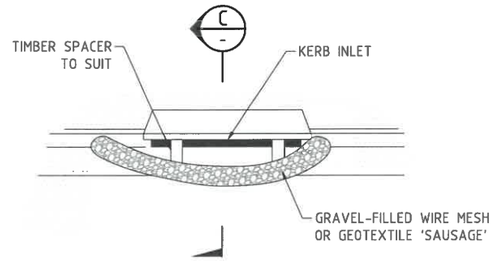
GEOFABRIC SEDIMENT FENCE - PLAN

NOT TO SCALE



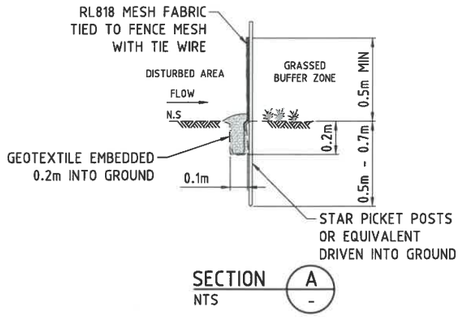
CHECK DAM - PERSPECTIVE

NOT TO SCALE

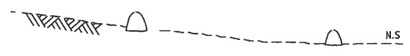


KERB INLET PIT SEDIMENT TRAP - PLAN

NOT TO SCALE

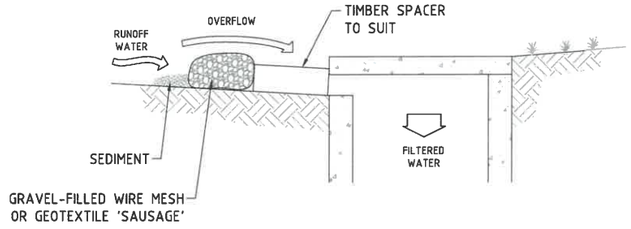


SECTION A
NTS



NOTE:
SPACING OF CHECK DAMS ALONG CENTRELINE 20m MAX SPACING UON.
SCOUR PROTECTION BELOW EACH CHECK DAM TO BE SPECIFIED ON CONSTRUCTORS SWMP/ESCP.

SECTION B
NTS



SECTION C
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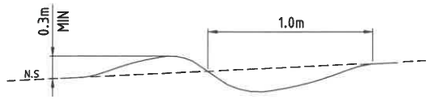
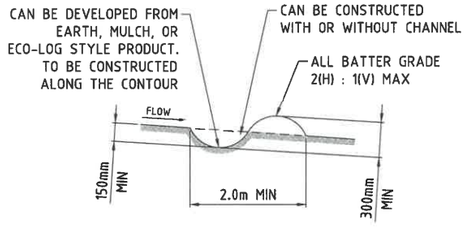


DIVERSION BANK - ELEVATION

NOT TO SCALE



LOW FLOW / FLOW BREAK - ELEVATION

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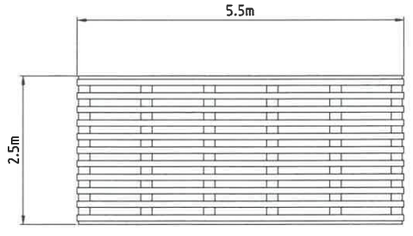

SHAKER GRATE - DETAIL

NOT TO SCALE

NOTES

1. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO COMPLY WITH THE NOTES ON DRAWING 45762-DWG-0000-C-00006.

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ENERGY AUSTRALIA DWG No. TALLAB-GECL-30210-CTA010-2024

REFERENCE DRAWING

No	TITLE

REVISIONS

REV	BY	DATE	DESCRIPTION	CKD	DESIGN	ENG APPR	PROJ APPR
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PROJ APPR.	BPr

STATUS IFC

GE POWER DWG No. TWB/29/K/u--CEP2P/CG/005

CLIENT ENERGY AUSTRALIA

TITLE TALLAWARRA B POWER STATION

PROGRESSIVE EROSION & SEDIMENT CONTROL DETAILS SHEET 6 OF 6

A1

SCALE NTS

CLOUGH DRAWING No. 45762-DWG-0000-C-00010

REV. 0

Appendix E: Incident notification requirements (major project approval, Appendix 1)

Written incident notification requirements:

1. A written incident notification addressing the requirements set out below must be submitted to the Secretary via the Major Projects website within seven days after the Proponent becomes aware of an incident. Notification is required to be given under this condition even if the Proponent fails to give the notification required under condition 5.1 or, having given such notification, subsequently forms the view that an incident has not occurred.

2. Written notification of an incident must:

    a. identify the development and application number;
    b. provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);
    c. identify how the incident was detected;
    d. identify when the Proponent became aware of the incident;
    e. identify any actual or potential non-compliance with conditions of approval;
    f. describe what immediate steps were taken in relation to the incident;
    g. identify further action(s) that will be taken in relation to the incident; and
    h. identify a project contact for further communication regarding the incident.

3. Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Secretary, the Proponent must provide the Secretary and any relevant public authorities (as determined by the Secretary) with a detailed report on the incident addressing all requirements below, and such further reports as may be requested.

4. The Incident Report must include:

    a. a summary of the incident;
    b. outcomes of an incident investigation, including identification of the cause of the incident;
    c. details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and
    d. details of any communication with other stakeholders regarding the incident.

Document prepared by

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