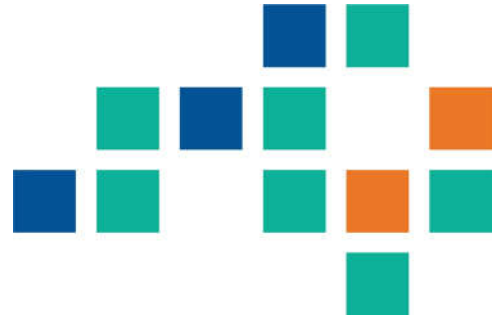







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# Soil and Water Management Plan EnergyConnect (NSW - Eastern Section) Stage 1 45860-HSE-PL-D-0112

REV	DATE	GENERAL DESCRIPTION	PREPARED	REVIEWED	VERIFIED	VERIFIED	APPROVED
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Revision History	
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B	Issued for Transgrid review. Developed in accordance with the draft Infrastructure Approval (Ver 1).
C	Updated to address Transgrid's comments. Issued for agency consultation.
D	Updated to address the Infrastructure Approval. Issued to relevant councils for consultation.
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Key Document Stakeholders
To be communicated with during reviews and revisions of this document

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## Abbreviations

Acronym	Definition
AHD	Australian height datum
Amendment Report	<i>Amendment Report EnergyConnect (NSW – Eastern Section)</i>
AS/NZ	Australian Standard/New Zealand Standard
ASS	Acid sulfate soils
AWS	Automatic weather station
BC Act	<i>Biodiversity Conservation Act 2016</i>
BoM	Bureau of Meteorology
BTENX	Benzene, toluene, ethylbenzene, xylene, and naphthalene
CEMP	Construction Environmental Management Plan
CLM Act	<i>Contaminated Land Management Act 1997</i>
Contamination	Contamination means the presence in, on or under land or any other aspect of the environment of a substance (i.e. gas, chemical, liquid or other matter) whether occurring naturally or otherwise, which is: <ul style="list-style-type: none"> <li>a) at a concentration above the concentration at which the substance, gas, chemical, liquid or other matter, whether occurring naturally or otherwise, is normally present in, on or under land or any other aspect of the environment in the same locality, being a presence that presents a risk of harm to human health or any other aspect of the environment; or</li> <li>b) toxic, flammable or otherwise capable of causing harm to humans or damage to the environment including asbestos (man-made or naturally occurring), toluene, polychlorinated biphenyls, lead based paints, glues, solvents, cleaning agents, paints, water treatment chemicals, acid producing spoil.</li> </ul>
CSSI	Critical State significant infrastructure
Cth	Commonwealth
DAWE	Department of Agriculture, Water and the Environment, now known as Department of Climate Change, Energy, the Environment and Water
DCCEEW	Department of Climate Change, Energy, the Environment and Water (Commonwealth)
DPE or Department	NSW Department of Planning and Environment
EIS	<i>Environmental Impact Statement EnergyConnect (NSW – Eastern Section)</i>
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
EPL	Environment Protection Licence
ESCP	Erosion and Sediment Control Plan
ESCS	Erosion and Sediment Control Strategy
GDEs	Groundwater dependent ecosystems
GIS	Geographical information system
NSW	New South Wales
PASS	Potential acid sulfate soils
PCBs	Polychlorinated biphenyls
PESCP	Progressive Erosion and Sediment Control Plan
Planning Secretary	Planning Secretary under the EP&A Act, or nominee
POEO Act	<i>Protection of the Environment Operations Act 1997</i>

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Acronym	Definition
project, the	EnergyConnect (NSW – Eastern Section)
Response to DPE Request for Information	EnergyConnect (NSW – Eastern Section) Response to Department of Planning and Environment Request for Information (30 August 2022)
RMMs	Revised mitigation measures
SA	South Australia
SAPs	Sensitive area plans
SecureEnergy	Elecnor and Clough Projects Australia Pty Ltd have formed the SecureEnergy Joint Venture (SecureEnergy). SecureEnergy is the contractor who will be carrying out the project on behalf of Transgrid.
Submissions Report	<i>Submissions Report EnergyConnect (NSW - Eastern Section)</i>
SWMP	Soil and Water Management Plan
UXO	Unexploded Ordnance
WAL	Water access licence
WM Act	<i>Water Management Act 2000</i>
WMS	Work method statements
WWTP	Wastewater treatment plant

## 1 Introduction

### 1.1 Context

This Soil and Water Management Plan (SWMP or this plan) forms part of the Construction Environmental Management Plan (CEMP) for Stage 1 of EnergyConnect (NSW – Eastern Section).

This plan has been prepared to address the relevant requirements of the Infrastructure Approval (SSI-9172452), the *Environmental Impact Statement EnergyConnect (NSW – Eastern Section)* (EIS), *Submissions Report EnergyConnect (NSW – Eastern Section)* (Submissions Report) and the *Amendment Report EnergyConnect (NSW – Eastern Section)* (Amendment Report).

### 1.2 Background

On 29 August 2019 the New South Wales (NSW) Minister for Planning and Public Spaces declared the NSW component of EnergyConnect to be critical State significant infrastructure (CSSI) under the *Environmental Planning and Assessment Act 1979* (EP&A Act) on the basis that it is critical to the State for environmental, economic or social reasons. Within NSW, EnergyConnect is therefore subject to assessment under Part 5, Division 5.2 of the EP&A Act.

Transgrid have two environmental planning approval applications for the sections within NSW:

- EnergyConnect (NSW – Western Section) – SA/NSW border to Buronga and Buronga to the NSW/Victorian border; and
- EnergyConnect (NSW – Eastern Section) – Buronga to Wagga Wagga (the project).

A referral under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) was submitted on 25 August 2020. The Australian Department of Agriculture, Water and the Environment (DAWE) determined the project to be a controlled action on 30 September 2020 and thus, it would be assessed using the bilateral assessment process. As such, the project also requires approval from the Australian Minister for the Environment under the EPBC Act.

The EIS was prepared for the project in January 2022 and was placed on public exhibition from 19 January 2022 to 15 February 2022. A total of 75 submissions were received, with five from special interest groups, nine from local councils and 44 from the public. In addition, 17 government agencies also provided advice during this time.

The Submissions Report was prepared for the project in response to the submissions received during the public exhibition of the EIS and includes the final set of revised mitigation measures (RMMs) that are to be applied. The Submissions Report was finalised in May 2022.

Transgrid also prepared a separate Amendment Report to document design changes and additional environmental assessment undertaken since exhibition of the EIS. The Amendment Report was also finalised in May 2022.

On 2 June 2022, the Department requested additional information (Project EnergyConnect (NSW - Eastern Section) (SSI-9172452) Request for Additional Information (June 2022)) to assist with the assessment of the project. In response, TransGrid prepared and provided the EnergyConnect (NSW – Eastern Section) Response to Department of Planning and Environment Request for Information (Response to DPE Request for Information) to address the requests for information raised by the Department. The Response to DPIE Request for Information was dated 30 August 2022.

Approval for the project under the EP&A Act was granted by the NSW Minister for Planning (Infrastructure Approval SSI-9172452). Approval for the project under the EPBC Act was granted by the Australian Minister for the Environment.

Transgrid have engaged SecureEnergy, a joint venture between Elecnor and Clough Projects Australia Pty Ltd to design and construct their portion of the EnergyConnect project.



### 1.3 Staging

Condition A8 allows preparation of plans on a staged basis, with the approval of the Planning Secretary. Where a plan is staged, the scope of works can be carried out without addressing requirements of the Infrastructure Approval that are not applicable to that stage. This SWMP is staged in accordance with condition A8. The two stages are as follows:

- Stage 1 – establishment of three accommodation camps, establishment and operation of five construction compounds, upgrade of Wagga Wagga substation and construction of Dinawan substation, water supply points; and
- Stage 2 – all other construction activities.

SecureEnergy will construct the project in accordance with the approved stages identified above and will prepare and submit the CEMP and CEMP Sub-plans (and other relevant strategies, plans or programs - including this SWMP) on a staged basis.

This SWMP has been prepared specifically for EnergyConnect (NSW – Eastern Section) Stage 1 of construction and will be implemented for the duration of Stage 1 construction.

The SWMP for Stage 2 will include details of Stage 2 construction activities and will ensure that the relevant conditions of the Infrastructure Approval are addressed in relation to those activities. Construction of Stage 2 will not commence until the Planning Secretary is satisfied with the CEMP and CEMP Sub-plans for Stage 2.

The key project components of Stage 1 of construction include, but are not limited to, the activities provided in Table 1.1. The location of the key project components of Stage 1 are presented in Figure 1.1.

**Table 1.1 - Key project components of Stage 1 of construction**

Key activity	Description of key activity
Environmental investigations, including biodiversity and heritage protection, salvage and recordings.	These key activities nominated in this stage will have already commenced as part of the pre-construction minor works permitted in accordance with the Infrastructure Approval. The definition of 'construction' within the Infrastructure Approval excludes these pre-construction minor works (defined separately within the Infrastructure Approval), road upgrades and operation of the accommodation camps. These activities will therefore not be subject to the Stage 1 CEMP and CEMP sub-plans.
Other survey work, such as road dilapidation surveys, and surveys of the general alignment and existing utilities.	
Bulk earthworks at Wagga Wagga substation upgrade and expansion site and at Dinawan substation site	<p>Bulk earthworks to form the Dinawan substation pad including placement of approximately 200,000 cubic metres of material to allow for the construction of the substation pad.</p> <p>Earthworks are also required at the Wagga Wagga substation upgrade and expansion site. Contaminated material within the existing building and nearby areas will be removal from site, where required.</p> <p>Crushing and screening activities may be required to meet the engineering and volume requirements on both sites. Existing soil that does not meet engineering requirements for the substation pad will be segregated and placed as temporary stockpiled for removed from site.</p> <p>Bulk earthworks for both sites will continue along with excavation and preparation of the site for concrete foundations, footings, pads and general site drainage works.</p>
Site establishment and construction works at Wagga Wagga substation upgrade	<p>The existing Wagga Wagga substation will be upgraded and expanded to accommodate the new transmission lines, transformer bays and relocating existing bays including associated electrical and civil works. The main site establishment activities and construction works to be undertaken at Wagga Wagga substation upgrade and expansion site includes:</p> <ul style="list-style-type: none"> <li>• clearing of vegetation within the disturbance area (including scrub, undergrowth and ground vegetation);</li> </ul>

Key activity	Description of key activity
	<ul style="list-style-type: none"> <li>• localised earthworks and associated civil works within the existing substation site and where required, replacement of topsoils;</li> <li>• establishing crushing and screening plants (if required), ancillary facilities, including but not limited to offices and amenities, and internal pavements/roads;</li> <li>• installation of construction environmental management measures, where required, including general site drainage works, erosion and sediment controls;</li> <li>• demolition of the existing transformer storage, oil storage and equipment sheds to accommodate the double circuit configuration. Works would be required to clear the concrete base, bunds and other utilities (oil and water pipes which would require relocation);</li> <li>• installation of reinforced concrete and piled foundations for specialised electrical equipment and for the new and expanded substation buildings</li> <li>• removal and where appropriate re-use of existing electrical equipment (as required based on detailed connection requirements) and final design agreement with Transgrid;</li> <li>• installing temporary and permanent fencing (including perimeter security fencing around the site where required), signage and security measures;</li> <li>• new electrical line bays constructed to the west of the existing infrastructure and associated civil works which will require new foundations and cable trench extension;</li> <li>• extension of the existing switchyard and installation of electrical equipment such as cables, conduits, earth grid and trenches;</li> <li>• relocation of existing and proposed new circuit for incoming transmission lines;</li> <li>• relocation, modification and replacement of existing utility infrastructure within the Wagga Wagga substation site including existing capacitor banks and associated equipment, line disconnectors/ earthing switches, surge arresters and capacitor voltage transformers; and</li> <li>• adjustment of existing and/or installation new stormwater drainage system.</li> </ul>
<p>Site establishment and construction works at Dinawan substation site</p>	<p>A new substation will be constructed halfway between Coleambally and Jerilderie. The new substation is referred to as Dinawan substation and located approximately 500 to 700m east of Kidman Way and accessed via a newly constructed access road. The infrastructure and equipment that will be installed at Dinawan substation includes:</p> <ul style="list-style-type: none"> <li>• two line bays installed at the western end of the substation to provide a connection to the Buronga substation and two line bays installed at the eastern end of the substation to provide a connection to the Wagga Wagga substation; and</li> <li>• installation of a range supporting electrical components including capacitor banks, synchronous condensers, transformers, shunt reactors, overhead conductors, busbars, gantries and circuit breaker switchgear equipment.</li> </ul> <p>The main site establishment activities and construction works to be undertaken at the Dinawan substation includes:</p> <ul style="list-style-type: none"> <li>• clearing of vegetation within the disturbance area (including scrub, undergrowth and ground vegetation);</li> <li>• localised earthworks and associated civil works within the new substation site and where required, replacement of topsoils;</li> <li>• establishing crushing and screening plants (if required), ancillary facilities, including but not limited to offices and amenities, and internal pavements / roads;</li> <li>• installation of reinforced concrete and piled foundations for specialised electrical equipment for the new substation buildings;</li> <li>• construction of secondary system control buildings to accommodate protection for new switchgear and fixed portions of secondary system;</li> <li>• installation of control and protection systems including relays, metering, disturbance recorder, etc;</li> <li>• installation of electrical distribution system;</li> <li>• construction of oil containment system (including bunding and containment tank);</li> <li>• installation of lighting and lighting mast(s);</li> <li>• installation of security fencing and security system (such as security cameras and asset protection zones);</li> <li>• adjustment of existing and/or construction of new stormwater drainage system; and</li> </ul>

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Key activity	Description of key activity
	<ul style="list-style-type: none"> <li>• installation of associated communications network infrastructure.</li> </ul>
<p>Site establishment of accommodation camp</p>	<p>Stage 1 of the project will require the establishment and operation of the following accommodation camps, construction compounds and laydown areas:</p> <ul style="list-style-type: none"> <li>• construction compound at Wagga Wagga;</li> <li>• accommodation camp and construction compound at Lockhart;</li> <li>• accommodation camp and construction compound at Dinawan;</li> <li>• accommodation camp and construction compound at Cobb Highway;</li> <li>• construction compound at Balranald; and</li> <li>• continued use of the construction compound at Buronga.</li> </ul> <p>The main activities that would be undertaken at the construction compound and accommodation camp includes:</p> <ul style="list-style-type: none"> <li>• bulk earthworks including clearing of vegetation within the disturbance area (including scrub, undergrowth and ground vegetation),</li> <li>• clearing and removal and where required, replacement of topsoils, and general site drainage works;</li> </ul>
<p>Site establishment and operation of the construction compound and laydown</p>	<ul style="list-style-type: none"> <li>• for the accommodation camp, establishing the accommodation camp and associated facilities, including but not limited to site offices, amenities, wastewater treatment plant, power generators, hazardous material and fuel storage area and internal roads;</li> <li>• for the construction compound, establishing and operating site offices, crushing and screening plants (if required), laydown areas, other ancillary facilities, including but not limited to and amenities, and internal roads;</li> <li>• connections and pre-commissioning of on-site utilities (wastewater treatment plant, connection to mains power grid and etc.) for the construction compound and accommodation camps; and</li> <li>• installing temporary fencing, signage and security measures as well as any necessary construction environmental management measures such as erosion and sediment controls, where required.</li> </ul> <p>The definition of 'construction' within the Infrastructure Approval excludes the operation of the accommodation camps. The operation of the accommodation camp is addressed in their respective Accommodation Camp Management Plan required under condition C50. Therefore the operation of the accommodation camps will not be subject to the Stage 1 CEMP and CEMP sub-plans. Irrespective of this, these activities will occur in accordance with the relevant conditions of the Infrastructure Approval.</p>
<p>Traffic haulage routes and access points</p>	<p>Construction vehicle movements will be required for a variety of activities (i.e. earthworks, clearing and grubbing activities). All construction vehicles associated with the development will travel via the haulage routes as identified in Appendix 3 of the Infrastructure Approval or as otherwise approved.</p> <p>The establishment of access points would include establishing vehicle access and egress points to ensure safe vehicle movements. Existing access points may also be used.</p> <p>The definition of construction within the Infrastructure Approval does not include road upgrades (which includes access points). Road upgrade works are, however, incorporated within the Traffic and Transport Management Plan as required by condition C35.</p>
<p>Water supply points – establishment and/or use</p>	<p>A number of water supply points have been identified along the length of the project to support construction water needs for the project. The proposed water supply points which are to be established and/or used include:</p> <ul style="list-style-type: none"> <li>• Church Street, Balranald Shire Council;</li> <li>• 111 Jerilderie Street, Murrumbidgee Council;</li> <li>• Dinawan Stock &amp; Domestic, Murrumbidgee Council;</li> <li>• Bulgary (Rohan Road), Lockhart Shire Council;</li> <li>• Lockhart (Lockhart - the Rock Road), Lockhart Shire Council;</li> <li>• Lake Albert (Plumpton Road), Wagga Wagga City Council;</li> <li>• Ashfords Road, Wagga Wagga City Council;</li> <li>• Dinawan Camp and Laydown, Murrumbidgee Council;</li> <li>• 137 Cadell Road, Jerilderie, Murrumbidgee Council*;</li> <li>• 6204 Yanga Way, Yanga*, Murray River Council;</li> </ul>

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Key activity	Description of key activity
	<ul style="list-style-type: none"> <li>• 812 Windomal Road, Balranald, Balranald Shire Council;</li> <li>• 394 Hay Rd, Deniliquin, Edward River Council;</li> <li>• 9 Lang Street, Wanganella, Edward River Council;</li> <li>• 50 Elizabeth Avenue, Forest Hill, Wagga Wagga City Council*;</li> <li>• 39 Urana Street, The Rock, Lockhart Shire Council;</li> <li>• 2850 Lockhart the Rock Road, Tootool, Lockhart Shire Council;</li> <li>• Old French Park-Bullenbong Road, French Park, Lockhart Shire Council;</li> <li>• Richmond Street, Boree Creek, Federation Council;</li> <li>• Alcheringa Drive, Buronga, Wentworth Shire Council <sup>1</sup>;</li> <li>• Modica Crescent, Buronga, Wentworth Shire Council <sup>1</sup>; and</li> <li>• Fletchers Lake Road, Dareton, Wentworth Shire Council <sup>1</sup>.</li> </ul> <p>The establishment and use of water supply points are enabling works required early in the overall construction program to support road upgrades and pre-construction minor works, and to facilitate the commencement of substantial construction.</p> <p>Several water supply points may require works to the existing infrastructure to enable connection and use by the water supply vehicles.</p> <p>The definition of ‘construction’ within the Infrastructure Approval excludes these activities. They will therefore not be subject to the Stage 1 CEMP and CEMP sub-plans. Irrespective of this, these activities will occur in accordance with the relevant conditions of the Infrastructure Approval.</p> <p>* The water supply points denoted above with an asterisk are additional to the water supply points identified in the EIS. Section 6.9.2 of Appendix B of the Amendment Report identifies potential sources of water for the project and notes that the final water sources, including any additions, would be confirmed in consultation with the water suppliers. Consultation with potential water suppliers has progressed and the list of proposed water supply points above has been amended accordingly. Prior to the use of each additional water supply point, the project would:</p> <ul style="list-style-type: none"> <li>– confirm that the water supply point could be accessed using the approved access routes identified in Appendix 3 to the Infrastructure Approval, or otherwise obtain the Planning Secretary’s agreement in accordance with condition C32;</li> <li>– reach agreement with the water supplier regarding the use of the water supply point for the project; and</li> <li>– carry out any additional assessments which may be required.</li> </ul> <p><sup>1</sup> These water supply points have been included in Project EnergyConnect (NSW - Western Section) Construction Environmental Management Plan and the associated CEMP Sub-plans and will continue to be used for Project EnergyConnect (NSW – Eastern Section).</p>
Utility adjustments and protection	<p>General utility protection and adjustment works, where required. In particular, to allow for the Wagga Wagga substation expansion and Dinawan substation installation, the establishment of the accommodation camp and the establishment and operation of the construction compound, and elsewhere as required.</p> <p>The definition of ‘construction’ within the Infrastructure Approval excludes minor adjustment to services/utilities for pre-construction minor works. Such adjustment for pre-construction minor works will therefore not be subject to the Stage 1 CEMP and CEMP sub-plans. Irrespective of this, these activities will occur in accordance with the relevant conditions of the Infrastructure Approval.</p>

Some activities nominated in this stage will have already commenced as part of the pre-construction minor works permitted in accordance with the Infrastructure Approval. These works will remain excluded from the definition of ‘construction’ and will therefore not be subject to the Stage 1 CEMP and this SWMP.

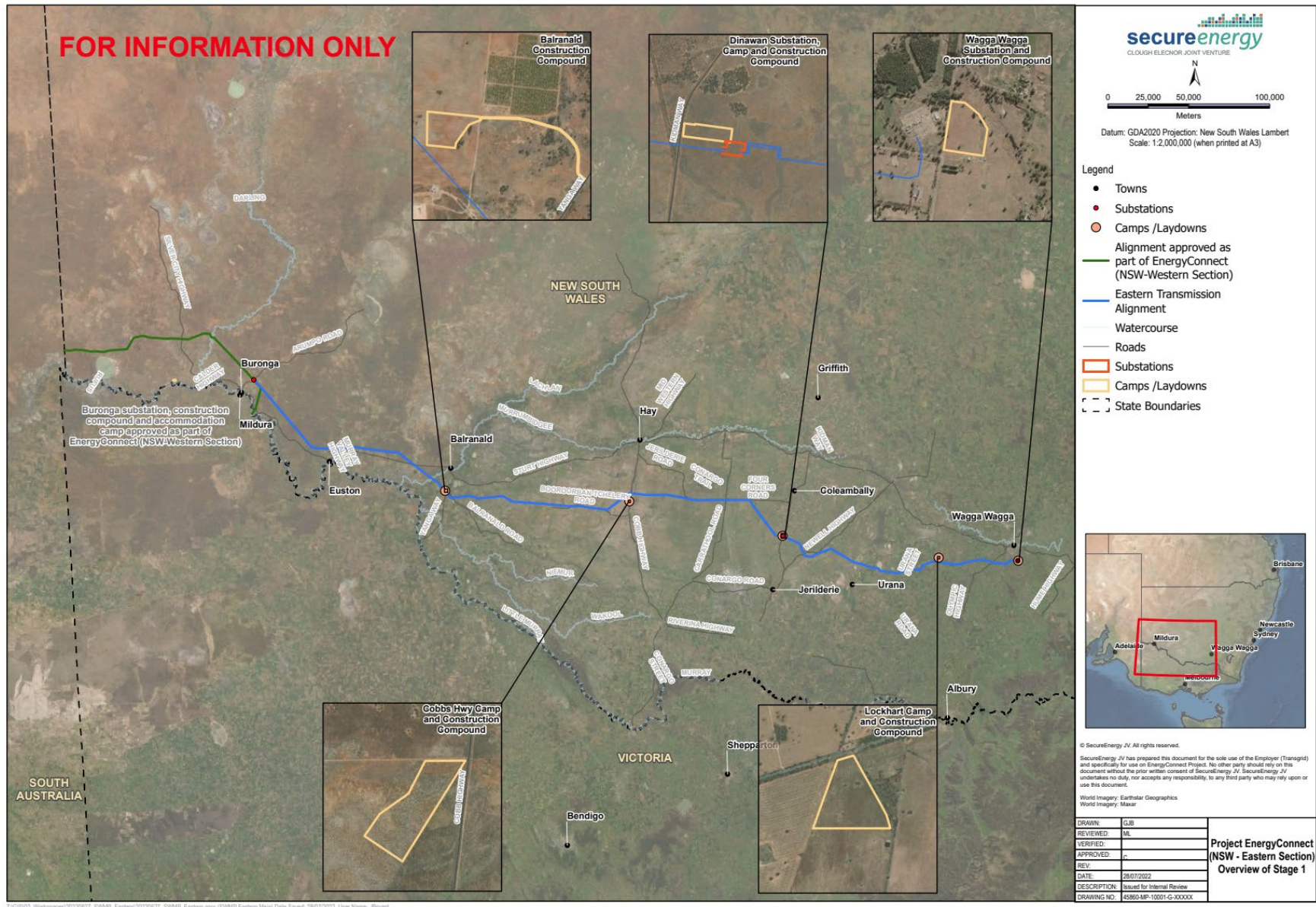


Figure 1.1 - Location of key project components of Stage 1

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### 1.4 Environmental management system

The overall environmental management system for the project is described in Section 4 of the CEMP. This SWMP is a sub-plan that forms part of the CEMP and is also part of the environmental management framework for the project, as described in the CEMP. Figure 1.2 shows the CEMP framework for the project.

Management measures identified in this plan will be incorporated into relevant site-based documents including, but not limited to, site or activity specific work packs or work method statements (WMS), the geographic information system (GIS)/sensitive area plans (SAPs) or training and awareness activities.

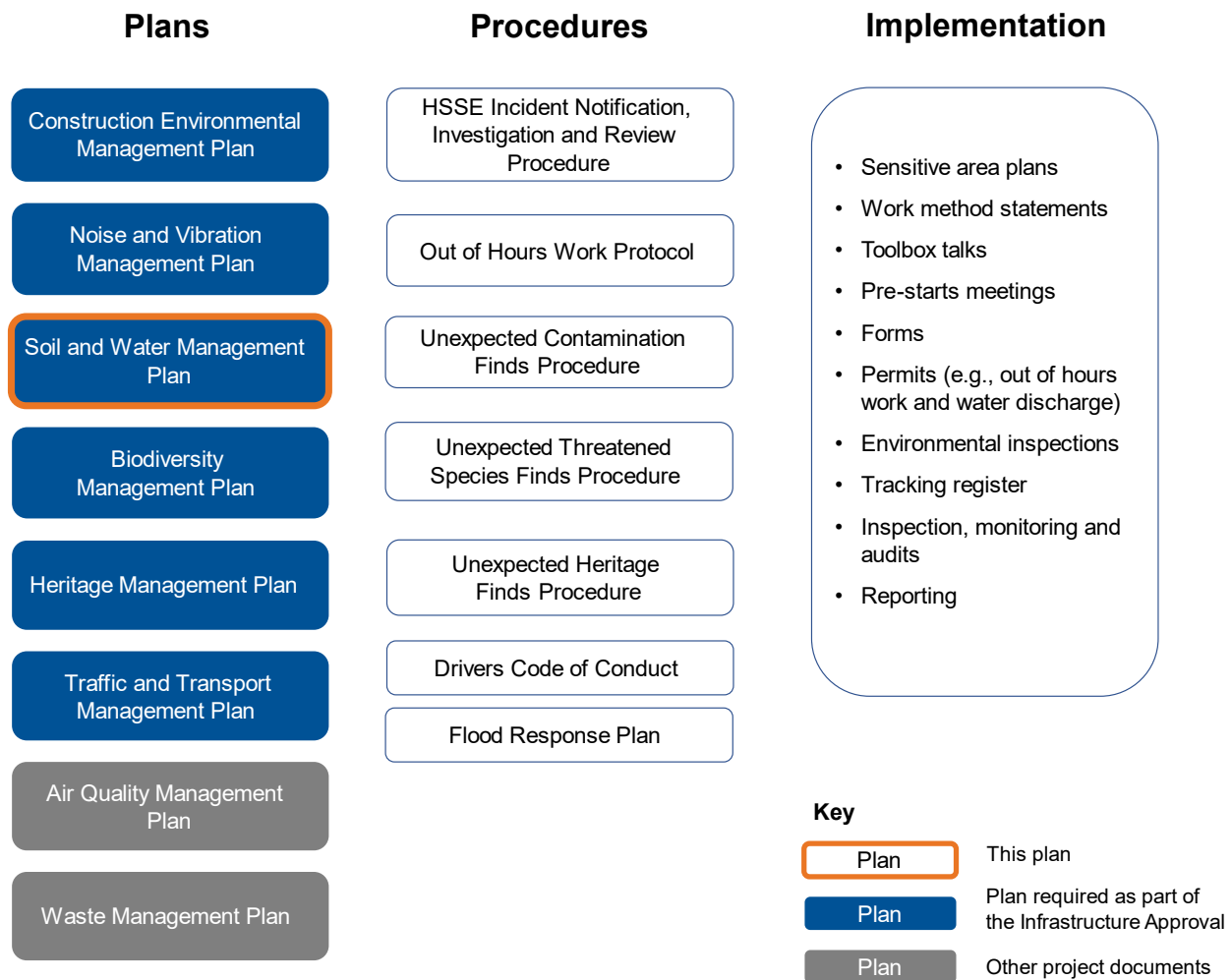


Figure 1.2 - CEMP framework

### 1.5 Purpose and objective

The purpose of this SWMP is to describe the approach to manage soil and water impacts that will be adopted during construction of the project.

The key objective of this plan is to detail management measures and inform site procedures so that soil, water and contamination impacts are minimised and managed within the scope permitted by the Infrastructure Approval. To achieve this, the following will be undertaken:

- implement appropriate measures to address the requirements outlined in the Infrastructure Approval, EIS, Submissions Report and Amendment Report;

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- implement appropriate measures during construction to minimise soil, water and contamination impacts (including minimising erosion and sedimentation impacts); and
- implement appropriate measures to comply with relevant legislative requirements as described in Section 2.1 of this plan.

As a means of assessing environmental performance, environmental objectives (performance measures), targets (criteria) and performance indicators have been established for the project and are provided within Table 4.2 of the CEMP. The performance measures and indicators that are most relevant to soil, water and contamination are detailed in Table 1.2.

**Table 1.2 - Environmental objectives, targets and performance indicators relevant to soil, water and contamination**

Aspect	Objectives (performance measures)	Targets (criteria)	Performance indicators
Compliance	Compliance with legislation, statutory approvals and the Infrastructure Approval	<ul style="list-style-type: none"> <li>• Full compliance with statutory approvals.</li> <li>• No regulatory infringements (PINs or prosecutions).</li> <li>• No formal regulatory warning.</li> </ul>	Number of regulatory infringements (PINs or prosecutions), formal regulatory warning, audits.
	Implement and comply with the CEMP and associated management plans	<ul style="list-style-type: none"> <li>• Zero non-compliances identified during each compliance audit of CEMP and sub-plans.</li> </ul>	Number of non-compliances arising from each audit.
Soil and water	Minimise erosion and sedimentation	<ul style="list-style-type: none"> <li>• Implementation of controls in accordance with the PESCPs.</li> </ul>	Environmental inspections, audits.
	Ensure that the project does not cause water pollution as defined in section 120 of the POEO Act	<ul style="list-style-type: none"> <li>• 100% completion of scheduled inspections.</li> <li>• 100% compliance with the Dewatering Procedure.</li> </ul>	Environmental inspections, audits.
Incident management and response	Ensure timely communication of incidents. Minimise the risk of an incident by identifying risks and developing actions to minimise those risks	<ul style="list-style-type: none"> <li>• All incidents reported in accordance with the CEMP.</li> <li>• Risks reviewed in accordance with the SecureEnergy management system.</li> </ul>	Follow up action of incidents as recorded in incident reports.
Inspections and audits	Completion of weekly inspections and audits	<ul style="list-style-type: none"> <li>• 100% completion of scheduled audits and weekly inspections.</li> </ul>	Environmental inspections, audits.

## 1.6 Preparation of this plan

In accordance with condition B1 of the Infrastructure Approval, this plan has been prepared by suitably qualified and experienced person. This plan was prepared by Martin Lee and Cheryl Cahill (attained certification as a certified professional in erosion and sediment control (CPESC)). Cheryl Cahill’s CPESC certification number is 6086.

## 1.7 Consultation

### 1.7.1 Development of this plan

In accordance with condition B1 of the Infrastructure Approval, this plan has been prepared in consultation with:

- DPE Water; and
- relevant councils.

The plan was issued to relevant stakeholders for review and comment. Comments from the consultation process have been incorporated into this plan where appropriate. DPE Water have

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reviewed the plan and have confirmed that they have no recommendations. The relevant councils have reviewed the plan and comments have been incorporated, as required. Details of all consultation will be submitted to DPE along with the submission of this management plan.

### 1.7.2 Ongoing communication and consultation

SecureEnergy will use a range of tools in accordance with the *Community Communication Strategy* (CCS) (45860-HSE-DOC-D-0024) to facilitate ongoing consultation and communication with the community and stakeholders (including government agencies where necessary) regarding the project. Communication tools include, but are not limited to, stakeholder briefings, project website, community drop-in sessions, door knocks and project factsheets. Notifications will be issued for, but not limited to the following, commencement of construction, significant milestones and changes to the scope of work. Refer to the CCS for further information.

In accordance with condition D12 a) of the Infrastructure Approval, project documents including the EIS, approved strategies, plans or programs required under the conditions of approval and independent reports will be publicly available on the project website. The project website is <https://www.transgrid.com.au/projects-innovation/energyconnect>. A 24-hour toll-free telephone number (1800 490 666) is also available for any project enquiries. In accordance with condition D12 b) the information will be kept up to date.

Project information made available on the project website in accordance with condition D12, includes:

- the EIS;
- current statutory approvals for the development;
- approved strategies, plans, programs or reports required under the conditions of the Infrastructure Approval;
- the proposed staging plans for the development if the construction, decommissioning and/or operation of the development is to be staged;
- a comprehensive summary of the monitoring results of the development, which have been reported in accordance with the various plans and programs approved under the conditions of the Infrastructure Approval;
- a record of complaints, which is to be updated on a monthly basis;
- any independent environmental audit, and the Proponent's response to the recommendations in any audit; and
- any other matter required by the Planning Secretary.

### 1.7.3 Complaints

Complaints will be managed by the Engagement Team with the use of Consultation Manager. Complaints will be received via phone calls, emails and letters. Any complaint received is regarded as a high priority and will be recorded, tracked and responded to in accordance with the CCS. Complaints will be investigated and dealt with impartially. The key principles of the complaint management process include:

- acknowledge - SecureEnergy staff should respect the communities' right to voice their concerns. All complaints received should be acknowledged to the complainant either by telephone or in writing;
- resolve - SecureEnergy staff should aim at first contact, resolution for all community concerns. SecureEnergy staff should investigate community concerns in detail before negotiating a resolution. All SecureEnergy staff should use their relevant discretions to achieve a mutually acceptable resolution to complaints;



- escalate - all SecureEnergy staff should aim to escalate the complaint if the community member remains dissatisfied with the investigation and/or resolution offered by their first point of contact at SecureEnergy. All complaints where a community member requests to speak to a higher-level representative, should also be escalated;
- record – SecureEnergy staff should aim, through the Engagement Team, to record all relevant information, on the community account in Consultation Manager, regarding customer concerns along with details of all discussions had with the community member in the process of investigating and/resolving the complaint. Detailed information on the resolutions offered to address community concerns should also be clearly recorded;
- communicate – SecureEnergy staff should remain in constant touch with the community member while their concerns are being investigated. The community member should be informed of all steps of the investigation and the resulting outcome at appropriate times;
- report – SecureEnergy should report on all complaints received to the SecureEnergy Management Team and Transgrid. The reporting should include information on the number as well as type of complaints being received, the status of these complaints from time to time and the resulting outcomes or resolutions offered to close them;
- feedback – the SecureEnergy Engagement Team should aim at regular and intensive reviews to identify possible trends in the complaints being received. These reviews should be aimed at highlighting improvements required to avoid complaints being repeated;
- action - SecureEnergy should aim to effectively implement improvements suggested directly by the community or highlighted by complaint trends.

Wherever possible, complaints will be resolved directly between SecureEnergy and the stakeholder. If a complaints management process has been followed and the issue cannot be resolved, dispute resolution will be undertaken in accordance with the CCS. As part of this, a Community Complaints Mediator will be engaged to address any complaint where a member of the public is not satisfied by SecureEnergy's response. The escalated review process will include an assessment of the details of the complaint received, any findings of the investigation undertaken in response to the complaint, and any further matters raised by the complainant.

If a complaint requires referral to senior management and Transgrid, the complainant will be informed of this and the outcome of the review process. DPE may also request that the Environmental Representative (ER) assist in dispute resolution of community complaints. A summary of complaints received will be provided to the ER.

## **1.8 Submission and approval**

Prior to submission to DPE, the SWMP will be reviewed by the ER to ensure that the plan is consistent with the requirements of the Infrastructure Approval. A written statement to this effect will be prepared and submitted to DPE. The ER review will be undertaken in accordance with condition A12 of the Infrastructure Approval.

The SWMP will be submitted to DPE for review and approval by the Planning Secretary prior to the commencement of Stage 1 construction.

Stage 1 of construction will not commence until the CEMP and all sub-plans required under condition B1, or where staging is proposed the plans required for that stage, have been approved by the Planning Secretary. The approved SWMP will then be implemented for the duration of the Stage 1 construction activities.

## **1.9 Periodic review**

This SWMP will be reviewed at least annually and updated, if required, in accordance with Section 1.10 of the CEMP – Updating the CEMP. This includes the review and, if necessary, revision of this Soil and Water Management Plan in accordance with condition D2, within three months of the following:

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- submission of an incident report under condition D6 of the Infrastructure Approval;
- submission of an audit report under condition D11 of the Infrastructure Approval; or
- any modifications to the Infrastructure Approval.

Any updates to the SWMP will be approved as described in Section 1.10 of the CEMP.

## 2 Environmental requirements

### 2.1 Legislation

Legislation relevant to this SWMP includes:

- *Environmental Planning and Assessment Act 1979* (EP&A Act);
- *Protection of the Environment Operations Act 1997* (POEO Act);
- *Contaminated Land Management Act 1997* (CLM Act);
- *Water Management Act 2000* (WM Act); and
- *Local Government Act 1993*.

Relevant provisions of the above legislation are detailed within the register of legal and other requirements included in Appendix A1 of the CEMP.

### 2.2 Conditions of Approval

The conditions of the Infrastructure Approval relevant to soil, water, and contamination for Stage 1 of the project are presented in Table 2.1. A cross reference is also included to indicate where the condition is addressed within this plan or other project management documents.

**Table 2.1 - Conditions of Approval relevant to soil, water and contamination**

Condition no.	Requirement	Where addressed	How addressed						
A1	In meeting the specific performance measures and criteria of this approval, all reasonable and feasible measures must be implemented to prevent, and if prevention is not reasonable and feasible, minimise, any material harm to the environment that may result from the construction, operation, rehabilitation, upgrading or decommissioning of the development.	Section 5	Section 5 identifies the management measures to be implemented to prevent, and if prevention is not reasonable and feasible, minimise harm						
B1	<p>Prior to commencing construction, an Environmental Management Plan (EMP) comprising the Sub-plans listed in Table 1 must be prepared by a suitably qualified and experienced persons, to the satisfaction of the Planning Secretary.</p> <p>Following the Planning Secretary’s approval, the Proponent must implement the Environmental Management Plan.</p> <p><b>Table 1: EMP Sub-plans</b></p> <table border="1"> <thead> <tr> <th></th> <th>Required EMP Sub-plan</th> <th>Relevant government agencies and stakeholders to be consulted for each EMP Sub-plan</th> </tr> </thead> <tbody> <tr> <td>(b)</td> <td>Soil and Water</td> <td>DPE Water Relevant Council</td> </tr> </tbody> </table>		Required EMP Sub-plan	Relevant government agencies and stakeholders to be consulted for each EMP Sub-plan	(b)	Soil and Water	DPE Water Relevant Council	Title page Section 1.6 Section 1.7	<p>This SWMP has been prepared by suitably qualified and experienced people and in accordance with relevant guidelines.</p> <p>This SWMP has been provided to DPE Water and the relevant councils for consultation. The outcomes of consultation have been incorporated throughout the SWMP where appropriate.</p>
	Required EMP Sub-plan	Relevant government agencies and stakeholders to be consulted for each EMP Sub-plan							
(b)	Soil and Water	DPE Water Relevant Council							
B2	The EMP Sub-plans must be prepared in accordance with relevant guidelines and in consultation with the relevant government agencies identified for each Sub-plan in Table 1, and include:	Section 2.5 Section 1.7	This SWMP has been prepared in accordance with relevant guidelines and has been provided to DPE Water and the relevant councils for consultation, in accordance with condition B1.						

Condition no.	Requirement	Where addressed	How addressed
	a) a summary of relevant background or baseline data;	Section 3	The existing environment (including topography, soils, water and contamination) within and adjacent to the Stage 1 disturbance area is outlined in Section 3.
	b) details of: (i) the relevant statutory requirements (including any relevant approval, licence or lease conditions);	Section 2 Appendix A1 of the CEMP	The relevant legislation, conditions, RMMs and guidelines applicable to soil, water and contamination are outlined in Section 2. Appendix A1 of the CEMP provides further detail on the relevant legislation applicable to soil, water and contamination.
	(ii) any relevant limits or performance measures and criteria; (iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures; and	Section 1.5 Table 1.2 Section 4.2 of the CEMP – Objectives and targets	The objectives (performance measures), targets (criteria) and performance indicators relevant to soil, water and contamination management are outlined in Section 1.5 of this SWMP. The CEMP also provides project-wide environmental objectives (performance measures) and targets (criteria).
	(iv) any relevant commitments or recommendations identified in the EIS;	Section 2.3	Relevant soil, water and contamination commitments and recommendations identified in the EIS, known as RMMs, have been outlined in Section 2.3. Section 1.5 and Section 5 of this SWMP describes how the commitments of the EIS, relevant to soil and water management, will be implemented.
	c) a description of the management measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;	Section 5	Specific soil, water and contamination related safeguards and management measures to address potential impacts associated with Stage 1 of construction and comply with the relevant statutory requirements, limits and performance measures are outlined in Section 5.
	d) a program to monitor and report on the: (i) impacts and environmental performance of the development (including a table summarising all the monitoring and reporting obligations under the conditions of this approval); and (ii) effectiveness of the management measures set out pursuant to paragraph (c);	Section 6 Section 6.3 Section 6.4 Section 6.5 Section 6.6	The effectiveness of the management measures will be managed through the monitoring, inspections, auditing and reporting system outlined in Sections 6.3 to 6.6 of this SWMP.

Condition no.	Requirement	Where addressed	How addressed
	e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;	Section 6.8 Appendix B Section 8 of the CEMP - Incidents and emergencies Section 10 of the CEMP - Reporting Section 11 of the CEMP - Noncompliance, nonconformance, corrective and preventative action	Section 6.8 outlines a contingency plan in the event that unpredicted impacts are identified.  In the event of the discovery of any unexpected contamination, the <i>Unexpected Contamination Finds Procedure</i> (Appendix B) will be followed.  The CEMP also provides additional detail regarding incidents and emergencies, reporting, non-compliance, nonconformance, corrective and preventative actions.
	f) a program to investigate and implement ways to improve the environmental performance of the development over time;	Section 1.9 Section 6 Section 1.9 of the CEMP – Continuous improvement	Section 6 of this SWMP outlines procedures for compliance management, including details for monitoring, inspections, auditing and reporting.  This SWMP will be reviewed at least annually as described in Section 1.9 of this SWMP and Section 1.9 of the CEMP.  The Plan-Do-Check-Act model will be applied to the continuous improvement process, also outlined in Section 1.9 of the CEMP.
	g) a protocol for managing and reporting any: <ul style="list-style-type: none"> <li>(i) incident, non-compliance or exceedance of any impact assessment criterion or performance criterion;</li> </ul>	Section 6.7 Section 6.8 Section 8 of the CEMP - Incidents and emergencies Section 10 of the CEMP – Reporting Section 11 of the CEMP – Noncompliance, nonconformance, corrective and preventative action	Sections 6.7 and 6.8 describe the procedures for emergencies, incidents and non-compliances, including those related to soil, water and contamination.  Additional detail for managing incidents and emergencies, non-compliances and non-conformances is included in the CEMP.  The protocol for reporting of any incidents, non-compliances or nonconformances is included in Section 10 of the CEMP.
	<ul style="list-style-type: none"> <li>(ii) complaint; or</li> </ul>	Section 1.7.3 Community Communication Strategy	A summary of the complaints management procedure and reporting of complaints is included in Section 1.7.3 of this SWMP.  The procedure for managing and reporting any complaints is described in the <i>Enquiries, Complaint and Dispute Resolution Management Procedure</i> provided in the CCS. The procedure includes a complaints management process which outlines how SecureEnergy will respond to complaints related to the project.

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Condition no.	Requirement	Where addressed	How addressed
	(iii) failure to comply with other statutory requirements;	Section 6.7 Section 8 of the CEMP – Incidents and emergencies Section 10 of the CEMP – Reporting Section 11 of the CEMP – Noncompliance, nonconformance, corrective and preventative action	In the event of failure to comply with statutory requirements, the procedures summarised in Section 6.7 of this SWMP, and described in more detail in the CEMP, would be followed.
	h) public sources of information and data to assist stakeholders in understanding environmental impacts of the development; and	Section 1.7.2	The local community and relevant agencies will be kept informed of construction progress and environmental performance through communication tools such as notifications, the project’s mobile van and the project website as summarised in Section 1.7.2 of this SWMP.
	i) a protocol for periodic review of the EMP and EMP Sub-Plans.	Section 1.9 Section 1.10 of the CEMP – Updating the CEMP	This SWMP will be reviewed at least annually in accordance with the CEMP.
	The Planning Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.	Noted	Noted
<b>Soil and Water</b>			
<b>Water supply</b>			
C12	The Proponent must ensure that it has sufficient water for all stages of the development, and if necessary, adjust the scale of the development to match its available water supply.	Section 2.4.2 Section 3.3.7	Discussions with councils and private water owners regarding water supply volumes and access options have commenced and will be ongoing throughout the project where required.  The scale of the development is prescribed by the operational function that the infrastructure must provide, which is not influenced by available water supply. SecureEnergy does not anticipate a situation in which a lack of water availability could result in a change to the scale of the development.

Condition no.	Requirement	Where addressed	How addressed
C13	<p>The Proponent must report on water take at the site during construction (whether direct or indirect and whether licensable or exempt) in the Independent Audit, including water taken under each water licence for the development.</p> <p><i>Note: Under the Water Act 1912 and/or the Water Management Act 2000, the Proponent is required to obtain the necessary water licences for the development.</i></p>	<p>Table 5.1 - SW17 and SW20</p> <p>Table 6.3</p> <p>Appendix D</p>	<p>Volumes of water (whether licensable or exempt) taken during construction will be recorded. The records will be provided during the independent audit when requested.</p> <p>Volumes of water that are dewatered will be recorded in the <i>Dewatering Permit</i> (45860-HSE-FO-G-1006). Records will be provided to the relevant authority upon request.</p>
<b>Erosion and sedimentation</b>			
C14	<p>The Proponent must:</p> <ul style="list-style-type: none"> <li>a) minimise erosion and control sediment generation; and</li> <li>b) ensure all land disturbances have appropriate drainage and erosion and sediment controls designed, installed and maintained in accordance with <i>Managing Urban Stormwater - Soils and Construction Volume 1</i> (Landcom, 2004), <i>Managing Urban Stormwater – Soils and Construction Volume 2A Installation of Services</i> (DECC, 2008) and <i>Managing Urban Stormwater – Soils and Construction Volume 2C Unsealed Roads</i> (DECC, 2008).</li> </ul>	<p>Section 5.1</p> <p>Appendix A</p>	<p>An Erosion and Sediment Control Strategy (Appendix A) has been prepared in line with the erosion and sediment principles and requirements of the listed guidelines.</p> <p>A Certified Professional in Erosion and Sediment Control will prepare the initial ESCP covering a range of erosion hazards for the different receiving environments across the project, which will be used as a basis for the development of the Progressive Erosion and Sediment Control Plans (PESCPs).</p> <p>The PESCPs will outline controls to be implemented to minimise soil erosion and sedimentation of waters.</p>
<b>Pollutions of works</b>			
C15	<p>Unless otherwise authorised by an EPL, the Proponent must ensure the development does not cause any water pollution, as defined under Section 120 of the POEO Act.</p>	<p>Table 5.1 - SW3</p>	<p>No pollution to water, as defined under section 120 of the POEO Act, is to occur, unless authorised by an EPL.</p>
C16	<p>The Proponent must:</p> <ul style="list-style-type: none"> <li>a) ensure that appropriate components of the concrete batching plants and substation are suitably bunded; and</li> <li>b) minimise any spills of hazardous materials or hydrocarbons, and clean up any spills as soon as possible after they occur.</li> </ul>	<p>Table 5.1 - SW13 and SW14</p> <p>Appendix C</p>	<p>Concrete batching works and the construction of substations is not proposed as part of Stage 1 works.</p> <p>Spill kits will be provided in strategic and accessible locations adjacent to chemical storage areas, relevant work area and refuelling area. locations.</p> <p>If a spill occurs during construction of the project, the Spill Response Procedure will be followed.</p>
C17	<p>The Proponent must ensure that any groundwater dewatering activities do not discharge to watercourses.</p>	<p>Not applicable to Stage 1 works.</p>	<p>Not applicable to Stage 1 works. Groundwater dewatering activities are not proposed as part of Stage 1 works.</p>

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Condition no.	Requirement	Where addressed	How addressed
<b>Riparian areas</b>			
C18	<p>The Proponent must ensure:</p> <ul style="list-style-type: none"> <li>a) all activities on waterfront land are constructed in accordance with the <i>Guidelines for Controlled Activities on Waterfront Land (2012), Why do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings</i> (NSW Fisheries 2003) and the <i>Policy and Guidelines for Fish Habitat and Conservation and Management</i> (NSW Fisheries, 2013), unless DPIE Water agrees otherwise; and</li> <li>b) the geomorphic condition of the major rivers and distributary channels crossed by the development is not impacted.</li> </ul>	Table 5.1 – SW21	<p>Waterway crossings are not required as part of Stage 1 works.</p> <p>Stage 1 works are not in the vicinity of major rivers, however the Wagga Wagga construction compound is within 40m of Boiling Down Creek</p>
<b>Flooding</b>			
C19	<p>The Proponent must ensure that the development:</p> <ul style="list-style-type: none"> <li>a) does not materially alter the flood storage capacity, flows or characteristics in the development area or off-site; and</li> <li>b) is designed, constructed and maintained to reduce impacts on surface water, localised flooding and groundwater at the site,</li> </ul> <p>unless otherwise agreed by the relevant Council or BCS.</p>	<p>Section 3.3.4 Table 5.1 - SW8</p>	<p>Most of the Stage 1 construction areas occur in areas not prone to flooding and as such would not materially alter the flood storage capacity, flow or characteristics of the local area.</p> <p>Construction activities within flood prone areas, particular Wagga Wagga substation, including Wagga Wagga construction compound and accommodation camp may temporarily redistribute flood flows and characteristics if a flood was to occur during construction.</p> <p>Design and the implementation of appropriate management measures during construction, particularly in advance of a predicted flood, will reduce the impacts of localised flooding.</p> <p>The project will be designed and constructed to minimise impacts on surface water, localised flooding and groundwater.</p>
<b>Acid sulfate soils</b>			
C20	<p>The Proponent must ensure that any construction activities in identified areas of acid sulfate soil risk are undertaken in accordance with the <i>Acid Sulfate Soil Manual (Acid Sulfate Soil Management Advisory Committee, 1998)</i>.</p>	Section 3.2.2	<p>Not applicable to Stage 1 works.</p> <p>The Stage 1 disturbance area is not identified as an acid sulfate soil risk prone area.</p>



Condition no.	Requirement	Where addressed	How addressed
<b>Salinity</b>			
C21	The Proponent must ensure that any construction activities in identified areas of moderate to high salinity are undertaken in accordance with the <i>Salinity Training Manual</i> (DPI, 2014) and <i>Book 4 Dryland Salinity: Productive use of Saline Land and Water</i> (NSW DECC, 2008).	Section 3.2.3	No soil salinity data for the Stage 1 disturbance area was available at the time of writing this plan. A visual soil salinity inspection will be undertaken prior to ground disturbance. Where saline soil is confirmed, construction activities in areas of moderate to high salinity will be managed in accordance with <i>Book 4 Dryland Salinity: Productive use of Saline Land and Water</i> (NSW DECC 2008) and the <i>Salinity Training Manual</i> (DPI, 2014).
<b>Soil and Water EMP Sub-plan</b>			
C22	The Soil and Water EMP Sub-Plan required under condition B2 must include provisions for:		
	a) ensuring the requirements in conditions C12 to C21 are complied with;	Management of Condition C14 to C22 requirements are outlined in the above rows.	How conditions C14 to C22 are addressed is outlined in the above rows.
	b) managing flood risk during construction;	Section 3.3.4 Section 5.6 <i>Flood Response Plan</i> (45860-HSE-PL-D-0122)	The majority of the Stage 1 construction areas occur in areas not prone to flooding. Areas with flood risk are detailed in Section 3.3.4. Procedures to safely access and egress from affected areas during a flood event is detailed in the Flood Response Plan.
	c) investigating, assessing and managing contaminated land, soils, groundwater and blasting in the development area;	Investigating, assessing and managing contaminated land is addressed in Section 3.4 and Table 5.1. Investigating, assessing and managing soils is addressed in Section 3.2 and Table 5.1. Investigating, assessing and managing groundwater is addressed in Section 3.3.5 and 3.4.2.	Potential contaminants were identified within Stage 1 work areas, however, the EIS evaluated the risk of encountering contamination as low. If any suspected contaminated land, soils and groundwater is discovered during the construction of the project, the Unexpected Contamination Finds Procedure will be followed. Stage 1 works is not anticipated to intercept groundwater or undertaken blasting activities.

Condition no.	Requirement	Where addressed	How addressed
	d) investigating, assessing and managing the potential for asbestos and other hazardous materials in the development area; and	Section 3.2.4 Appendix B	The EIS indicates that the risk of naturally occurring asbestos being present within project area is low. No asbestos containing material has been identified within the Stage 1 disturbance area.  If any suspected asbestos and/or other hazardous material is discovered during the construction of the project, the <i>Unexpected Contamination Finds Procedure</i> will be followed.
	e) managing any unexpected and / or suspected contaminated land, asbestos and unexploded ordinance excavated, disturbed or otherwise discovered during construction.	Table 5.1 – SW10 Section 3.4.3 Appendix B	If any unexpected contaminated land, asbestos and unexploded ordinance is discovered during the construction of the project, the <i>Unexpected Contamination Finds Procedure</i> will be followed.

### 2.3 Revised mitigation measures

The revised mitigation measures (RMMs) for the project are provided in Appendix B of the Submissions Report and Appendix C of the Amendment Report. The RMMs relevant to soil, water, and contamination management for the project are detailed in Table 2.2 below. A cross reference is also included to indicate where the measure is addressed within this plan or other project management documents.

The management measures that will be implemented for the project are provided in Section 5 of this plan.

**Table 2.2 - Revised mitigation measures relevant to soil, water and contamination**

Reference	Revised mitigation measures	Applicable locations	Where addressed	How addressed
HF1	Permanent operational infrastructure and landforms within the transmission line easement would be designed and implemented/formed to minimise any potential scour and erosion risks associated with surface water runoff.  Drainage infrastructure at substations would be designed to not materially worsen flood impacts on property and infrastructure.	All locations	Not applicable to Stage 1 works.	This mitigation measure is not applicable to Stage 1. Stage 1 works does not include works within the transmission line easement.
HF2	Detailed construction planning would consider flood risk at construction areas. This would include: <ul style="list-style-type: none"> <li>identifying measures that would be implemented to not worsen flood impacts downstream and on other property and infrastructure during construction up to and including the five per cent AEP design flood event, and</li> <li>confirming site layouts to avoid or minimise obstruction of overland flow paths and to limit the extent of flow diversion required.</li> </ul>	Transmission line and construction sites within flood prone land	Section 3.3.4 <i>Flood Response Plan</i> (45860-HSE-PL-D-0122)	This revised mitigation measure is addressed through the Flood Response Plan provided in Appendix B of the Traffic and Transport Management Plan.

Reference	Revised mitigation measures	Applicable locations	Where addressed	How addressed
	Practicable measures identified to minimise potential flood risks at construction areas would be implemented.			
HF3	A detailed assessment would be undertaken to confirm that the bench level of the final design of the Dinawan 330kV Substation will be above the 100 year average recurrence interval (ARI) design and that a 200 year ARI design flood would not impede substation function. The assessment would consider spills/overflows from the detention basin on the irrigation channel to the east of the substation location and a potential failure of the basin embankment. The bench level and design of the substation would be adjusted to ensure compliance with Transgrid’s design standards.	Dinawan 330kV Substation	Detailed design phase	This mitigation measure is not applicable to construction and will be considered during the detailed design phase.
HF4	<p>A water quality monitoring program would be implemented to establish baseline water quality conditions at perennial watercourses that the transmission lines would cross, and to facilitate monitoring of any changes in water quality that may be attributable to the proposal during construction. The frequency, location and duration of sampling would be detailed in the monitoring program, but would include:</p> <ul style="list-style-type: none"> <li>at a minimum two monitoring locations (one located upstream and one downstream of the transmission line crossing) of the proposal on Colombo Creek</li> <li>downstream monitoring on the Murrumbidgee River with consideration of existing upstream WaterNSW gauges (including gauge 410130)</li> <li>monitoring for total dissolved solids, total suspended solids, total nitrogen and total phosphorus.</li> </ul> <p>Sampling in the Murrumbidgee River and Colombo Creek would commence at least six months prior to the commencement of ground disturbing activities within the riparian zone at each respective location and then monthly during construction until completion of rehabilitation works in the respective areas.</p> <p>If there are exceedances of water quality criteria, then measures adopted as part of HF6 would be reviewed and revised.</p> <p>Monitoring would continue monthly during construction at each respective location until completion of rehabilitation works in the respective areas.</p>	Upstream and downstream of the crossing transmission line crossing for Murrumbidgee River, Colombo Creek, Irrigation channel near Dinawan 330kV substation site (between Coleambally Irrigation Area and Yanco Creek)	Not applicable to Stage 1 works.	<p>This mitigation measure is not applicable to Stage 1. The Murrumbidgee River and Colombo Creek are located more than 5km from Stage 1 works.</p> <p>The irrigation channel near the Dinawan 330kV substation site is located more than 1km from Stage 1 works.</p> <p>The Stage 1 works area is not anticipated to directly impact the water quality of the Murrumbidgee River, Colombo Creek, or the irrigation channel near Dinawan 330kV substation site.</p>

Reference	Revised mitigation measures	Applicable locations	Where addressed	How addressed
HF5	Water supply options and management would occur in accordance with agreements between the construction contractor and relevant suppliers.	All locations	Section 2.4.2 Section 3.3.7	Discussions with councils and private water owners regarding water supply volumes and access options have commenced and will be ongoing throughout the project where required.
HF6	<p>A Soil and Water CEMP sub-plan would be developed in consultation with a Certified Professional in Erosion and Sediment Control and implemented during construction. The plan would detail the processes, responsibilities and measures to manage potential soil and water quality impacts in accordance with the principles and requirements in:</p> <ul style="list-style-type: none"> <li>• <i>Managing Urban Stormwater – Soils and Construction, Volume 1</i> (Landcom 2004), and <i>Volumes 2A and 2C</i> (DECCW, 2008), commonly referred to as the 'Blue Book'</li> <li>• <i>Best Practice Erosion and Sediment Control</i> (IESCA – 2008)</li> <li>• Transgrid's Environmental Guidance Notes</li> <li>• <i>Guidelines for Controlled Activities on Waterfront Land</i> (DPI, 2012a NRAR, 2018).</li> </ul> <p>The Soil and Water CEMP Sub-plan would contain appropriate measures (as a minimum) to:</p> <ul style="list-style-type: none"> <li>• minimise the extent of ground disturbance</li> <li>• divert surface water runoff around construction locations</li> <li>• install erosion controls within construction locations</li> <li>• collect and filter sediment from surface water runoff within construction locations</li> <li>• manage stockpiles to minimise erosion and sediment transport</li> <li>• manage saline and ASS (if present)</li> <li>• minimise the potential of soil and water quality impacts during storage of project wastes and potentially polluting substances</li> <li>• minimise the duration of soil exposure and progressively rehabilitate and stabilised disturbed areas</li> <li>• manage unexpected finds of contaminated materials</li> <li>• manage spills to reduce and address soil and water contamination</li> </ul>	All locations	This Plan Section 5 Section 5.7 <i>Erosion and Sediment Control Strategy</i> (45860-HSE-PR-D-0016)	<p>This SWMP has been prepared for the Stage 1 works areas. This SWMP has been developed in consultation with a CPESC and will be implemented during Stage 1 of construction.</p> <p>The management measures which are to be implemented are provided in detail in Section 5 and Table 5.1.</p>

Reference	Revised mitigation measures	Applicable locations	Where addressed	How addressed
SCG1	Construction materials would be selected to withstand high saline soil and groundwater environment (where applicable).	Locations mapped as moderate to high-risk salinity.	Table 5.1	Interaction between construction materials and high saline soil and groundwater environment will be considered during detailed design, where applicable.
SCG2	Disturbance to areas of medium risk of contamination would be avoided or minimised where practicable during construction. Disturbance to these areas refers to intrusive work, such as excavation. Where disturbance cannot be avoided, potential impacts would be minimised during finalisation of the design and construction methodology where practicable. Areas of medium risk of contamination that would be disturbed by construction activities would be further investigated including completion of a site inspection. Based on the outcome of the site inspection, where considered to be required, a Phase 2 investigation would be completed in accordance with National Environmental Protection Measure 2013. Additional mitigation measures identified through further investigation would also be implemented.	Cleared agricultural land, potential quarry and PFAS sites.	Not applicable to Stage 1 works.	This mitigation measure is not applicable to Stage 1. Areas of potential contamination have been assigned a preliminary risk evaluation of low in Table 21-6 of the EIS.
SCG3	Direct impacts to registered bores would be avoided, where possible. If the bores are: <ul style="list-style-type: none"> <li>not required to be impacted during construction, then they would be clearly demarcated with a 5 by 5 metre construction exclusion zone</li> <li>are to be impacted during construction or unavoidably damaged, then make good provisions would apply in consultation with the registered bore owner</li> </ul>	Registered bores (Refer to Table 3.5)	Table 5.1 – SW22 and SW23	The management measure related to registered groundwater bores is provided in management measure SW20 and SW21 of Table 5.1.
SCG4	Prior to carrying out any blasting, a desktop assessment would be carried out to identify any high potential GDEs and registered bores in the vicinity that might be affected. Potential impacts to the GDEs and bores would be assessed using the latest available location data. The assessment would: <ul style="list-style-type: none"> <li>assess any high potential GDEs and registered bores within 50 metres of a blasting site against the minimum impact criteria of the Aquifer Interference Policy (2012)</li> <li>identify any necessary measures to monitor blasting and mitigate any potential significant impacts. The measures would be implemented prior to and during the blasting (as relevant).</li> </ul> Where the assessment identifies potentially significant impacts to high potential GDEs	Finalised blasting locations if within 50 metres of high potential GDEs	Not applicable to Stage 1 works.	Blasting is not proposed as part of Stage 1 works.

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Reference	Revised mitigation measures	Applicable locations	Where addressed	How addressed
	and bores due to blasting that cannot be mitigated, alternative lesser impact construction methodologies or engineering solutions would be investigated and implemented.			
SCG5	Construction materials, spoil and waste would be suitably stored to minimise the potential for soil, groundwater or water quality impacts.	All locations	Table 5.1 – SW11	Material will be appropriately stored within the construction site compounds and accommodation camps.
SCG6	Prior to ground disturbance in areas of potential acid sulfate soils (ASS) occurrence (e.g. in low lying areas surrounding former or current lakes and river beds), testing would be carried out to determine the presence of actual and/or potential ASS. If ASS are encountered, they would be managed in accordance with the <i>Acid Sulfate Soil Manual</i> (ASSMAC, 1998) and Transgrid's HSE Guideline.	All areas identified as potential ASS.	Not applicable to Stage 1 works.	Areas of disturbance subject to Stage 1 of the project were identified as low risk of acid sulfate soils as per Section 3.2.2.
SCG7	Prior to ground disturbance, a visual inspection would be undertaken for the presence of saline soils. Areas of known or suspected salinity would be subject to further testing as required.  If salinity is confirmed, excavated soils would be managed in accordance with <i>Book 4 Dryland Salinity: Productive use of Saline Land and Water</i> (NSW Department of Environment and Climate Change, 2008b) and the <i>Salinity Training Manual</i> (DPI, 2014) to manage salinity impacts.  Erosion controls would be implemented in accordance with <i>The Blue Book</i> (Landcom, 2004).	All locations	Table 5.1 – SW9	No soil salinity data for the Stage 1 disturbance area was available at the time of writing this plan.  A visual soil salinity inspection will be undertaken prior to ground disturbance.
SCG8	All chemicals, fuels or other hazardous substances would be stored in accordance with the supplier's instructions and relevant legislation, Australian Standards and applicable guidelines. The capacity of any bunded area shall be at least 130 per cent of the largest chemical volume contained within the bunded area. The location of the bunded enclosure/s shall be shown on the site plans.	All locations (during construction)  Dinawan and Wagga substations (operation)	Table 5.1 – SW12	All chemicals, fuels or other hazardous substances will be stored in accordance with the supplier's instructions and relevant legislation, Australian Standards and applicable guidelines. The capacity of any bunded area will be sized at 130% of the largest chemical volume contained within the bunded area.

Reference	Revised mitigation measures	Applicable locations	Where addressed	How addressed
SCG9	The discovery of previously unidentified contaminated material would be managed in accordance with an unexpected contamination finds procedure.	All locations	Table 5.1 – SW10 <i>Unexpected Contamination Finds Procedure</i> (45860-HSE-PR-D-0014)	If any unexpected suspected contaminated land, asbestos and unexploded ordinance is discovered, the <i>Unexpected Contamination Finds Procedure</i> will be followed.
SCG10	<p>A site-specific risk assessment would occur for locations where there is a risk of encountering Unexploded Ordnance (UXO). The risk assessment would be carried out prior to any activities that could interact with UXO. This would include field verification to validate the historical assessment of UXO contamination and identify appropriate mitigation practices. The risk assessment would occur with input from an appropriate UXO specialist and would identify if and when an explosives engineer is required during site activities.</p> <p>An unexpected finds procedure would be implemented. The procedure would specify the actions that site personnel must take to minimise the risk to and from any UXO encountered.</p> <p>The management actions identified in the risk assessment would be implemented prior to and during all relevant site activities. All personnel conducting intrusive works within an identified UXO area would be provided with appropriate safety and awareness briefing(s) prior to the participating in the intrusive works.</p>	All locations	Not applicable to Stage 1 works.	Not applicable to Stage 1 works. Identified UXO prone areas are not in the immediate vicinity of the Stage 1 disturbance area.
SCG11	If groundwater is encountered during piling or excavations, and dewatering is required, any dewatering volumes would be recorded by the contractor and reported annually for each groundwater source by the water calendar year (July to June). Records would be made available to the relevant authority – such as DPIE or DPI – upon request.	All locations	Table 5.1 – SW20 <i>Dewatering Procedure</i> (45860-HSE-PR-D-0018)	Volumes of water that are dewatered will be recorded in the Dewatering Permit (45860-HSE-FO-G-1006). Records will be provided to the relevant authority upon request.

Reference	Revised mitigation measures	Applicable locations	Where addressed	How addressed
HR11	All chemicals, fuels or other hazardous substances would be stored in accordance with the supplier's instructions and relevant legislation, Australian Standards and applicable guidelines. The capacity of any bunded area shall be at least 130 per cent of the largest chemical volume contained within the bunded area. The location of the bunded enclosure/s shall be shown on the site plans.	All locations	Table 5.1 – SW12	All chemicals, fuels or other hazardous substances will be stored in accordance with the supplier's instructions and relevant legislation, Australian Standards and applicable guidelines. The capacity of any bunded area will be sized at 130% of the largest chemical volume contained within the bunded area.
HR14	Appropriate spill containment equipment would be provided and located at strategic, accessible locations	All locations	Table 5.1 – SW14 <i>Spill Response Procedure</i> (45860-HSE-PR-D-0017)	Spill kits will be provided in strategic and accessible locations adjacent to chemical storage areas, relevant work areas and refuelling areas.  If spills occur during construction of the project, the <i>Spill Response Procedure</i> will be followed.
AH9	Construction planning and management would make sure that indirect impacts that could potentially result in a loss of known heritage values due to harm would not occur. Indirect harm could result from physical disturbance from surface water drainage or construction workers driving over sites that are to be protected.	All locations	Table 5.1 – SW7	Location of known heritage items will be identified in the site hazard analysis plan
CI2	Consultation with relevant local councils and other water supply operators would occur in relation to the proposal's water supply strategy to ensure there is effective management of these demands during construction and operation.	All locations	Section 2.4.2 Section 3.3.7	Discussions with councils and private water owners regarding water supply volumes and access options have commenced and will be ongoing throughout the project where required.

## 2.4 Licences and permits

### 2.4.1 Environment protection licence

Subject to the outcomes of geotechnical investigations, crushing and screening may be required. If necessary, an Environment Protection Licence (EPL) will be obtained in accordance with POEO Act for the scheduled activity of crushing and screening. The EPL will detail conditions which must be complied with when undertaking the crushing and screening activities.



## 2.4.2 Water licensing and approvals

### Water use approval

Under Section 89 of the WM Act, water use approval grants the right for its holder to use water for a particular purpose at a particular location. However, under section 5.23 of the EP&A Act, the project is exempt from requiring a water use approval.

### Water access licence

Section 60A of the WM Act requires that a water access licence (WAL) to be obtained in order to extract water from a water source, such as a river, lake or surface water runoff, or an aquifer, in water-sharing plan areas. It is an offence to take water from a water source without a water access licence.

The project will purchase water from the existing water market within the region or from local council facilities under existing WAL arrangements. Water will be purchased under standard supply/purchase agreement with various water suppliers/landholders who holds existing WAL agreements. As part of the ongoing discussions with potential water suppliers, water supply locations would be confirmed during final negotiations with the water supplier. Ongoing consultation with water suppliers may also identify other water sources that may be used for the construction of the proposal which would be secured under standard supply/purchase agreement from existing facilities. Proposed water supply points are listed in Section 3.3.7.

As part of the ongoing discussions, the project will ensure that the existing WAL arrangements have adequate water entitlement and allocation such that there is sufficient water for the applicable stages of construction. Where necessary, the amount of water used will be allocated depending on the project activity at the time, or additional water supply will be sought in consultation with Transgrid.

SecureEnergy will request for a copy of the existing WAL agreements held by the water suppliers/landholders. The details of the licences will be checked to confirm the water to be purchased is regulated and eligible for project use. Copies of licences will be saved on to the project document management and storage system.

### Water management works approval

As all water will be purchased under existing licence agreements with the various water suppliers/landholders, water will be extracted from existing water supply points. The water supply points will be identified once ongoing discussions with potential water suppliers are finalised. It is anticipated that existing water supply points will provide connection points to existing water supply pipelines. Proposed water supply points are listed in Section 3.3.7.

No new extraction infrastructure is proposed for the project. However installation of connection points such as piped connections or standpipes to the existing water supply points are required for certain water supply points. Further details on installation or connection to water supply points are provided in Section 3.3.7.

It should also be noted that under section 5.23 of the EP&A Act the project is exempt from requiring a water management works approval.

## 2.4.3 Section 68 approval

Section 68 of the *Local Government Act 1993* specifies a range of activities which require approvals to be obtained from the relevant council. This includes the operation of an on-site sewage system. The project will obtain an approval under section 68 of the *Local Government Act 1993* for the operation of the wastewater treatment plants where required.

## 2.5 Guidelines

The guidelines, specifications and policy documents referenced in this plan includes:

- *Managing Urban Stormwater: Soils and Construction Volume 1* (Landcom, 4<sup>th</sup> Edition March 2004) and *Volume 2D Main Roads Construction* (DECC 2008) – commonly referred to as the ‘Blue Book’;
- *Managing Urban Stormwater – Soils and Construction, Volumes 2A and 2C* (NSW Department of Environment, Climate Change and Water 2008) – commonly referred to as the ‘Blue Book’;
- Best Practice Erosion and Sediment Control (IESCA – 2008); and
- Guidelines for Controlled Activities on Waterfront Land (NRAR, 2018).

### 3 Existing environment

This section summaries the existing environmental setting relating to aspects of soil, water and existing contamination within and adjacent to Stage 1 of the project. The information below is from Chapter 16 and 21 of the EIS, Technical Paper 8 (Hydrology, flooding and water quality), Technical Paper 14 (Phase 1 contamination assessment), Technical Paper 14 (Groundwater impact assessment), and the Amendment Report.

#### 3.1 Topography

At a macro level, the topography of the project corridor is largely flat with topography rising to the east. The topography ranges from approximately 50m Australian Height Datum (AHD) at the western end of the alignment to around 250m at the eastern extent of the alignment. Refer to Table 3.1 below for description of the local topography of key project components.

**Table 3.1 - Topography of key project components**

Stage 1 project component	mAHD (indicative only)	Description of topography
Balranald construction compound	65m	Largely flat with none to minimal change in topography. AHD appears to be constantly 65m AHD across the whole site.
Cobb Highway construction compound and accommodation camp	88m	Largely flat with none to minimal change in topography. AHD appears to be constantly 88m AHD across the whole site.
Dinawan substation	116m	Largely flat with none to minimal change in topography. AHD varying from 115m to 116m across the site.
Dinawan construction compound and accommodation camp	116m	Largely flat with none to minimal change in topography. AHD varying from 115m to 116m across the site.
County Boundary Road construction compound and accommodation camp	214m	Largely flat with a gentle upwards slope from the south towards the north corner of the site. The intersection of County Boundary Road and Lockhart Collingullie Road is the local high point of approximately 225m AHD.
Wagga Wagga substation upgrade and expansion site	232m	Largely flat with a gentle upwards slope towards the south-eastern corner of the site.
Wagga Wagga construction compound	224m	Largely flat with a gentle upwards slope from the north-eastern corner towards the south-western corner of the site.

#### 3.2 Soils

##### 3.2.1 Geology and soils

At a macro level, the geology underlying project corridor includes the Woorinen Formation, Shepparton Formation, Mount Flankey Granite and Wagga Group. Around 70% of the project corridor is situated on aeolian sediments of the Shepparton Formation.

Published soil mapping along the project corridor indicates that the regional soil type are expected to be predominantly transported Quaternary-aged sediments deposited in alluvial flood plains, and dune and are typically comprised of sand and clay or a mixture of the two. While primarily vertosols soil is found along the main watercourses, sand and alluvial plains are in proximity to the Murrumbidgee, Darling, and Darling – Anabranh Rivers.

Technical Paper 14 (Phase 1 contamination assessment) indicated the presence of dispersive and erodible soils at the Dinawan substation. The EIS and the associated technical papers has limited detailed description of the localised geology and soil type for the other Stage 1 areas.

### 3.2.2 Acid sulfate soils

Acid sulfate soils (ASS) and potential acid sulfate soils (PASS) are naturally occurring soils containing iron sulfides. The EIS concluded there is an extremely low to low probability of acid sulfate soils occurring across the project corridor, with the potential exception of low lying areas surrounding lakes and river beds.

Figures provided in the Technical Paper 8 (Hydrology, flooding and water quality) indicates the following:

- Wagga Wagga substation upgrade and expansion site and Wagga Wagga construction compound are located in areas identified as low probability of ASS occurrence;
- County Boundary Road construction compound and accommodation camp is located in area identified as extremely low probability of ASS occurrence;
- Dinawan substation and Dinawan construction compound and accommodation camp are located in areas identified as low probability of ASS occurrence;
- Cobb Highway construction compound and accommodation camp is located in area identified as extremely low probability of ASS occurrence; and
- Balranald construction compound is located in area identified as extremely low probability of ASS occurrence.

Hence, no ASS or PASS are anticipated to be encountered during Stage 1 of the project.

### 3.2.3 Soil salinity

Dryland salinity is the accumulation of salts in the soil surface and groundwater in non-irrigated areas. The majority of the project corridor is mapped as having low salinity potential, with no mapped areas of high salinity soils.

Technical Paper 14 (Phase 1 contamination assessment) indicates low salinity potential based on broad scale state mapping. However, Technical Paper 14 does note that soil conductivity testing has been undertaken and indicated the presence of variable salinity across the transmission corridor with results indicating moderately saline and very saline soil conditions.

Prior to the commencement of ground disturbance associated with the Stage 1, a visual assessment will occur in the areas subject to ground disturbance to confirm the presence of saline soils. Refer to Table 5.1 for further details.

### 3.2.4 Naturally occurring asbestos

Naturally occurring asbestos refers to the mineral component found as a natural component of soils or rocks. Technical Paper 14 (Phase 1 contamination assessment) concluded that the published digital GIS data by the NSW government's Heads of Asbestos Coordination Authorities (HACA) does not show any occurrences of expected naturally occurring asbestos minerals or serpentine and amphibole occurrence within the project area. Therefore, no naturally occurring asbestos impacts are expected during Stage 1 of the project.

## 3.3 Water

### 3.3.1 Rainfall

The region has a semi-arid climate with hot summers and cool winters. The average temperature range is around 16 to 33°C in summer and around 4 to 15°C in winter.

The average annual rainfall across the project corridor varies, however generally the average rainfall values are higher at the eastern end and lower at the western end.

The closest weather station to the western end of the project corridor is Irymple (station number: 076015), which records an average annual rainfall of 271mm between 1908–2020. Rainfall is typically fairly evenly spread across the year, with higher rainfall values from November to April.

The Urana Post Office weather station (station number: 074110) located approximately 100km west of the eastern end of the project corridor recorded an annual average rainfall of 442.2mm between 1871–2020. The average monthly rainfall is slightly higher in May and June.

The Wagga Wagga Gurwood Street station (station number: 074127) located on the eastern end of the project corridor recorded an average annual rainfall of 528.1mm from 2001 to 2020. While Wagga Wagga AMO station (station number: 072150) recorded an annual average rainfall of 568mm from 1941 to 2020.

Generally limited surface water run-off is expected to be generated from the western end of the project corridor compared to the eastern end due to the low average rainfall values and relatively lower gradient of the topography.

### 3.3.2 Waterbodies and watercourses

The project is located in the Murray-Darling Basin. There are a number of sub-catchments within the Murray-Darling Basin with the project corridor including the Murrumbidgee River Basin, Peacock Creek Basin, and Murray River Basin. The project also intersects numerous waterbodies and watercourses. Table 3.2 provides the catchment and nearby watercourses and/or waterbodies for Stage 1.

**Table 3.2 - Catchment and watercourses near key project components.**

Stage 1 project components	Catchment	Watercourse/waterbodies
Balranald construction compound	Murrumbidgee River Basin	Yanga Lake located approximately 7km northwest.
Cobb Highway construction compound and accommodation camp	Murrumbidgee River Basin	<ul style="list-style-type: none"> <li>• Curtains Creek located approximately 2.2km south.</li> <li>• Nyangay Creek located approximately 3.2km south.</li> </ul>
Dinawan substation	Murrumbidgee River Basin	Yanco Creek located approximately 9km south.
Dinawan construction compound and accommodation camp	Murrumbidgee River Basin	Yanco Creek located approximately 9km south.
County Boundary Road construction compound and accommodation camp	Murrumbidgee River Basin	<ul style="list-style-type: none"> <li>• Brookong Creek located approximately 3.2km west.</li> <li>• Bullenbong Creek located approximately 8.2km east.</li> </ul>
Wagga Wagga substation upgrade and expansion site	Murrumbidgee River Basin	<ul style="list-style-type: none"> <li>• Boiling Down Creek located approximately 400m west.</li> <li>• Cox’s Creek located approximately 500m north east.</li> <li>• Crooked Creek located approximately 2.1km west.</li> <li>• Lake Albert Creek located approximately 3.7km northwest.</li> </ul>
Wagga Wagga construction compound	Murrumbidgee River Basin	<ul style="list-style-type: none"> <li>• Boiling Down Creek located approximately 35m north.</li> <li>• Cox’s Creek located approximately 300m north east.</li> <li>• Crooked Creek located approximately 2.5km west.</li> <li>• Lake Albert Creek located approximately 3.7km northwest.</li> </ul>

### 3.3.3 Water quality

Generally, water quality on the major rivers of the Murrumbidgee and Murray Rivers is better than in associated tributaries. Section 16.3.5 of the EIS states that the Murrumbidgee and Murray Rivers commonly achieve the existing water quality targets provided in Table 3.3. Where exceedances are

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identified, these have been in relation to nutrients, particularly phosphorus and turbidity in tributaries to the major rivers.

Given the high proportion of agricultural land within the project corridor, it is likely that some waterways near the project would not achieve the water quality criteria as laid out in the Murray Darling Basin Plan 2012 (refer to Table 3.3), particularly for nutrients. The sources of the high nutrient levels are likely to be diffuse and related to current and historical agricultural activities within the study area.

**Table 3.3 - Basin Plan 2012 water quality targets (Table 16-3 of the EIS)**

Water quality zone	Turbidity (NTU) (annual median)	pH	Total nitrogen (ug/L)	Total phosphorus (ug/L)	Dissolved oxygen (mg/L; or % saturation) (Annual median)	Pesticides, heavy metals and other toxic contaminants <sup>1</sup>
Darling Valley, Middle lower	50	6.5-8	500	50	85-110%	The protection of 95% of species
Lower Central Murray	35	6.5-8	700	80	>8 mg/L or 90-110%	The protection of 95% of species
Castlereagh, Lachlan, Macquarie and Murrumbidgee	35	6.5-8	600	50	>7 mg/L or 60-110%	The protection of 95% of species
Upper and Middle Central Murray	15	6.5-7.5	500	40	>7.7 mg/L or 90-110%	The protection of 95% of species
Lowland Castlereagh, Lachlan, Macquarie and Murrumbidgee	20	7.0-8.0	600	35	>8 mg/L or 90-110%	The protection of 95% of species

<sup>1</sup> Refer to values in table 3.4.1 of the ANZECC Guidelines (Must not be exceeded)

### 3.3.4 Flood prone land

A high level flood risk assessment is detailed in Section 4.4.2 of Technical paper 8 (Hydrology, flooding and water quality). The assessment found flood affected features are largely near existing waterways. The assessment estimated the flood depth and extent for the 1% AEP event and figures are provided in Figure 4-8 of the Technical paper 8. Based on Figure 4-8, the indicative flood depth for the key project components of Stage 1 is provided in Table 3.4.

**Table 3.4 - Indicative flood depth (1% AEP event)**

Stage 1 project components	Flooding depth (as indicated in Figure 4-8 of the Technical paper 8)
Balranald construction compound	0m
Cobb Highway construction compound and accommodation camp	0m
Dinawan substation	0m
Dinawan construction compound and accommodation camp	0m
County Boundary Road construction compound and accommodation camp	0m
Wagga Wagga substation upgrade and expansion site	5-10m
Wagga Wagga construction compound	5-10m

The locations where works are proposed around the Balranald construction compound, Cobb Highway construction compound and accommodation camp, Dinawan substation, Dinawan construction compound and accommodation camp, and County Boundary Road construction compound and accommodation camp are unlikely to experience flooding.

Section 4.4.2 of Technical paper 8 (Hydrology, flooding and water quality) has noted that the flood risk assessment has identified dispersed flooding at Crooked Creek and Boiling Down Creek. These

two creeks are located in close proximity to the Wagga Wagga substation upgrade and expansion site and the Wagga Wagga construction compound.

### 3.3.5 Groundwater

Groundwater sources within the project corridor are regulated by three water sharing plans, including:

- Murrumbidgee Alluvial Groundwater Sources 2020;
- NSW Murray-Darling Basin Porous Rock Groundwater Sources 2020; and
- NSW Murray-Darling Basin Fractured Rock Groundwater Sources 2020.

Groundwater regulated by the NSW Murray Darling Basin Porous Rock Groundwater Sources 2020 is located at significant depth, is not anticipated to be intersected by the project and therefore has not been discussed further in Section 21.3.5. of the EIS.

Local groundwater levels vary due to influences from surface water features, climatic conditions and localised geological controls, such as topography and the presence of perched shallow aquitards.

Geotechnical investigations completed as part of the EIS identified water levels ranging from 4.5m to 18.1m below ground level. This water level is inferred to be associated with upper aquifers that are either unconfined perched aquifers or unconfined alluvial aquifers if within a few kilometres of major surface water bodies.

### 3.3.6 Registered groundwater bores

Section 21.4.3.3 of the EIS identified 243 registered bores of which 11 registered bores are located within or near construction activities and are at an increased risk of being accidentally damaged during construction. Refer to Table 3.5 for the 11 registered bores. These registered groundwater bores are subject to environmental management measures detailed in Table 5.1.

**Table 3.5 - Registered groundwater bores**

Bore ID	Latitude	Longitude	Status	Purpose	Bore depth (mbtoc)
GW415977	-35.204749	147.392907	Functioning	Monitoring	25.0
GW415978	-35.204749	147.392907	Functioning	Monitoring	10.6
GW415979	-35.204343	147.39006	Functioning	Monitoring	19.0
GW415980	-35.202956	147.381078	Functioning	Monitoring	7.0
GW415982	-35.202938	147.3811	Functioning	Monitoring	22.0
GW049852	-35.218185	146.33014	Proposed	Exploration	152.4
GW084098	-35.131281	146.126213	Functioning	Monitoring	7.0
GW012872	-35.093188	145.889591	Functioning	Monitoring	29.9
GW403762	-34.8175	144.932271	Unknown	Household supply	76.0
GW032607	-34.883479	144.519611	In use	Stock and domestic	51.8
GW087095	-34.508766	142.765505	Unknown	Monitoring	23.0

Note: mbtoc – meter below top of casing.

Registered bores GW415979 and GW415977 are located within 500m of Stage 1 works, as depicted in Figure 3.1.



Figure 3.1 - Location of bores within close proximity to Stage 1 areas

### 3.3.7 Water supply points

Water would be supplied for the proposal from existing regulated sources. A number of indicative water supply points have been identified in Table 6-5 of the EIS as potential locations for the supply of either potable or non-potable water for the project.

The water supply points nominated for use during Stage 1 of the project are provided in Table 3.6. Access to these sources would occur through the use of existing, licensed water supply infrastructure only. However, minor adjustment works may be required at the water supply location to ensure compatibility and enable the required flow rates for the project.

Water will be purchased under licensing agreements with the various water suppliers/landholders or local council facilities as required. These agreements are part of ongoing discussions and final locations will be determined during final negotiations. Additional water supply points may also be identified as the detailed design stage is progressed in order to reduce the distance and number of vehicle movements associated with water supply.

It is estimated that, during peak construction, each water supply point would accommodate up to 20 loads per day (indicatively using water trucks with capacity between 15,000L and 40,000L). Visual assessment will be undertaken to assess the access point and the existing water supply infrastructure. Any subsequent minor adjustment works required to ensure compatibility and enable the required flow rates will be determined during detailed design.

Table 3.6 - Water supply points for Stage 1

Location	Owner	Local government area	Type	Considered in Amendment Report	Name in Amendment Report	Description of location
Church Street, Balranald	Balranald Shire Council	Balranald Shire Council	Potable	Yes	Church Street, Balranald	This water supply point uses existing infrastructure located in the south of Balranald township at the intersection between Church



Location	Owner	Local government area	Type	Considered in Amendment Report	Name in Amendment Report	Description of location
						Street and Bank Street.
111 Jerilderie Street, Murrumbidgee	Murrumbidgee Council	Murrumbidgee Council	Potable	Yes	111 Jerilderie Street, Jerilderie	This water supply point uses existing infrastructure located in the centre of Jerilderie township on Jerilderie Street.
Dinawan Stock & Domestic	Private	Murrumbidgee Council	Non-potable	Yes	Red Swamp / Dinawan Station	This water supply point is located approximately 16km west of Bundure at the intersection between Bundure Road and Kidman Way.
Bulgary (Rohan Road), Lockhart	Riverina Water	Lockhart Shire Council	Potable	Yes	Bulgary	This water supply point is located approximately 11km south of Bulgary on Rohans Road.
Lockhart - the Rock Road, Lockhart	Riverina Water	Lockhart Shire Council	Potable	Yes	Lockhart	This water supply point is located in the east of Lockhart township adjacent to Lockhart the Rock Road.
Ashfords Road, Wagga Wagga	Riverina Water	Wagga Wagga City Council	Potable	Yes	Ashfords Road	This water supply point is located southeast of Wagga Wagga township on Ashfords Road.
Lake Albert (Plumpton Road), Wagga Wagga	Riverina Water	Wagga Wagga City Council	Potable	Yes	Lake Albert	This water supply point is located in the south of Wagga Wagga township adjacent to Plumpton Road.
Dinawan Camp and Laydown	Private	Murrumbidgee Council	Non-potable	Yes	Red Swamp / Dinawan Station	This water supply point is located east of Dinawan construction compound and accommodation camp.
137 Cadell Road, Jerilderie	TBC	Murrumbidgee Council	TBC	No	-	This water supply point is located on 137 Cadell Road.
6204 Yanga Way, Yanga	TBC	Murray River Council	TBC	No	-	This water supply point is located on 6204 Yanga Way and the access track off Balranald Road.
812 Windomal Road, Balranald	Private	Balranald Shire Council	Non-potable	Yes	Lucerne at Balranald	This water supply point is located on 812 Windomal Road, Balranald.

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Location	Owner	Local government area	Type	Considered in Amendment Report	Name in Amendment Report	Description of location
394 Hay Rd, Deniliquin	Edward River Council	Edward River Council	Potable	Yes	394 Hay Road, Deniliquin	This water supply point is located on 394 Hay Rd, Deniliquin.
9 Lang Street, Wanganella	Edward River Council	Edward River Council	Potable (TBC)	Yes	Wanganella	This water supply point is located on 9 Lang Street, Wanganella.
50 Elizabeth Avenue, Forest Hill	TBC	Wagga Wagga City Council	TBC	No	-	This water supply point is located on 50 Elizabeth Avenue, Forest Hill.
39 Urana Street, The Rock	TBC	Lockhart Shire Council	TBC	Yes	The Rock	This water supply point is located on 39 Urana Street, The Rock.
2850 Lockhart the Rock Road, Tootool	Riverina Water	Lockhart Shire Council	Potable	Yes	Tootool	This water supply point is located on 2850 Lockhart the Rock Road, Tootool.
Old French Park-Bullenbong Road, French Park	Riverina Water	Lockhart Shire Council	Potable	Yes	French Park	This water supply point is located on Old French Park-Bullenbong Road, French Park.
Richmond Street, Boree Creek	Riverina Water	Federation Council	Potable	Yes	Boree Creek	This water supply point is located on intersection of Richmond Road & Lachlan Street, Boree Creek.
Alcheringa Drive, Buronga <sup>1</sup>	Western Murray Irrigation	Wentworth Shire Council	Non-potable	Yes	Alcheringa Road	This water supply point is located on Alcheringa Drive, Buronga
Modica Crescent, Buronga <sup>1</sup>	Wentworth Shire Council	Wentworth Shire Council	Potable	Yes	Modica Crescent, Wentworth	This water supply point is located on Modica Crescent, Buronga
Fletchers Lake Road, Dareton <sup>1</sup>	Western Murray Irrigation	Wentworth Shire Council	Non-potable	No	-	This water supply point is located on Fletchers Lake Road, Dareton.

<sup>1</sup> These water supply points have been included in the Project EnergyConnect (NSW – Western Section) Construction Environmental Management Plan and the associated CEMP Sub-plans and will continue to be used for Project EnergyConnect (NSW – Eastern Section).

Section 6.9.2 of Appendix B of the Amendment Report identifies potential sources of water for the project and notes that the final water sources, including any additions, would be confirmed in consultation with the water suppliers. Consultation with potential water suppliers has progressed and the list of proposed water supply points above has been amended accordingly. Prior to the use of each additional water supply point, the project would:

- confirm that the water supply point could be accessed using the approved access routes identified in Appendix 3 to the Infrastructure Approval, or otherwise obtain the Planning Secretary's agreement in accordance with condition C32;
- reach agreement with the water supplier regarding the use of the water supply point for the project; and
- carry out any additional assessments which may be required.

Treated wastewater from the wastewater treatment plants that are installed at each accommodation camp would also be collected, treated to appropriate standards, and transported via water carts for reuse. Potential uses of the treated wastewater and grey water may include for use in dust suppression, compaction of materials or other construction activities which may require and can utilise grey water.

### **3.4 Contamination**

#### **3.4.1 Site history**

A desktop contamination assessment was undertaken as part of the EIS. The majority of the proposal study area is utilised for agriculture, including land for livestock grazing and cropping. These broad areas are sparsely intersected by infrastructure including roads and electrical easements.

A search of the NSW EPA contaminated land database was undertaken as part of the EIS. No records were identified within the project corridor or within 1km of the construction compound, accommodation camps or water supply points.

A review of previous investigations was completed as part of the EIS for the study area nominated in the EIS, and this indicated that there was no evidence of any areas with significant contamination. However, the EIS did identify a number of areas of potential contamination. These sites are provided in Table 21-6 of the EIS and have all be assigned a preliminary risk evaluation as low. Construction activities potentially impacting these low risk sites includes vegetation removal, excavation of soils and piling activities.

Any unexpected contamination find encountered during construction would be managed through the *Unexpected Contamination Finds Procedure* (45860-HSE-PR-D-0014). Refer to Section 5.4.

#### **3.4.2 Groundwater**

As per Section 21.3.5.4 of the EIS, no potentially contaminated groundwater was identified within the project corridor.

The salinity of aquifers within the project corridor varies depending on the hydrogeological unit the aquifer is contained within. In general salinity levels are as follows:

- unconfined aquifers within 500m from fresh surface water – water quality ranges from fresh to brackish in salinity (up to 3,000 $\mu$ S/cm);
- perched aquifers – salinity levels vary, but are generally expected to be high; and
- unconfined aquifers – generally saline to hypersaline with salinity levels between 30,000 and 150,000 $\mu$ S/cm.

#### **3.4.3 Unexploded ordnance**

The project corridor crosses the Oaks Plain unexploded ordnance (UXO) area which has been assigned a substantial risk category by the Department of Defence.

The key components of Stage 1 are located more than 100km from the Oaks Plain UXO area and does not directly interact with the UXO area. Refer to Table 5.1 for the management measures in relation to UXO.

## 4 Environmental aspects and impacts

### 4.1 Construction activities

An environmental aspect is an element of an organisation's activities, products, or services that has or may have an impact on the environment (ISO 14001 Environmental Management Systems). The relationship of aspects and impacts is one of cause and effect.

Key aspects of Stage 1 that could result in adverse impacts to soil and water quality or contamination include:

- surface and/or ground disturbance as a result of vegetation clearing and grubbing;
- surface and/or ground disturbance as a result of ground excavation and earthworks;
- surface and/or ground disturbance as a result of vehicular and machinery movements;
- encountering unexpected existing contaminated/hazardous material as a result of surface and/or ground disturbance; and
- spills and leaks during the operation of plant and machinery, chemical handling or refuelling activities.

### 4.2 Impacts

The potential for impacts on soil and water will depend on a number of factors. Primarily impacts will be dependent on the nature, extent and magnitude of construction activities and their interaction with the natural environment.

The potential impacts to soil, water and contamination attributable to Stage 1 works might include:

- erosion and sedimentation due to surface and/or ground disturbance;
- reduction of soil and/or water quality from spills or leaks;
- soil contamination; and
- health and safety impacts when encountering unexpected contamination finds.

## 5 Management measures

### 5.1 Erosion and sediment control

An *Erosion and Sediment Control Strategy* (ESCS) (45860-HSE-PR-D-0016) has been prepared and provided in Appendix A. The ESCS describes the project's approach to minimising erosion and managing sediment generation for the project. The ESCS outlines the overarching principles to be considered and integrated into the development of the Erosion And Sediment Control Plan (ESCP) and any Progressive Erosion and Sediment Control Plans (PESCPs) required for specific work areas.

A Certified Professional in Erosion and Sediment Control (CPESC) will prepare the initial ESCP to detail the erosion control measures to be utilised across a range of different receiving environments and landforms on the project. Environmental staff will then typically use the ESCP as a basis to develop PESCPs in consultation with Project Engineers, Superintendents and Supervisors. For high risk environments, such as works near major watercourses or in steep or highly erodible terrain, the progressive ESCPs will be reviewed by the CPESC. This will ensure that erosion and sediment control management is incorporated into the planning stage of construction activities and is coordinated in its approach. PESCPs will be updated as required as sites and associated erosion and sediment control requirements change as the works progress.

The Environmental Manager will approve PESCPs in the first instance. Minor changes thereafter will be approved by environment staff in consultation with the Environmental Manager and CPESC for high risk environments, as required. PESCPs are designed for use as a practical guide and may be produced in conjunction with Work Packs or WMSs.

### 5.2 Stockpile management

The project will utilise temporary stockpiles to store excess topsoil and subsoil material from topsoil stripping and earthworks activities. The following techniques will be applied to the management of stockpiles:

- the location of stockpiles will be planned in advance of topsoil stripping and bulk earthworks. Stockpile locations will be selected such that they are:
  - where practicable, located on slopes less than 10%;
  - positioned such that erosion of the stockpile and the surrounding area is minimised;
- stripped topsoil will be stockpiled separately from woody material and vegetation and subsoil layers;
- as required by the PESCP, clean water diversions will be installed upslope of stockpiles and sediment controls will be installed downslope; and
- stockpiles will be appropriately stabilised to minimise the risk of erosion. The PESCP will detail requirements in relation to stabilisation based on the size of the stockpile, the duration that the stockpile will remain in place and the proximity to watercourses and other sensitive environments.

### 5.3 Reuse of treated wastewater

As water is a valuable resource particularly in Western NSW, the project will reuse the wastewater produced from the wastewater treatment plants as part of the construction processes to minimise the volume taken from other local sources.

Wastewater treatment plants (WWTPs) would be established at each of the accommodation camp sites to manage wastewater generated from construction compounds and accommodation camps (including but not limited to showers, kitchens, laundries, toilets, and other facilities). Refer to Section 7.4 and Section 7.5 of the relevant Accommodation Camp Management Plan for further information on the management and operation of the WWTPs at each of the accommodation camps.

The project will obtain the relevant Section 68 approval (refer Section 2.4.3) from the relevant councils for the operation of the WWTPs where required.

Generally, the treated wastewater will be discharged to a basin type structure lined with high density polyethylene/geosynthetic clay liner. The wastewater will then be collected and transported via water carts or similar devices for reuse in the following, but not limited to, opportunities:

- use in dust suppression on roads;
- use in compaction of soils;
- use in the emplacement areas;
- wheel wash sites; and
- general washdown of equipment.

Wastewater will not be discharged directly to watercourses. Wastewater is not to be applied directly to food crops or used in a manner which may result in overspray onto food crops.

A *Dewatering Procedure* (45860-HSE-PR-D-0018) has been developed and is provided in Appendix D. The *Dewatering Procedure* addresses the following:

- reinforces the project need for wastewater reuse;
- provides detail on the treated wastewater quality objectives;
- outlines the water quality testing process; and
- outlines the process to manage the application of the treated wastewater.

Prior to the application of any treated wastewater to land, the following factors will be considered to ensure the environment has the capacity to receive the projected water loading:

- the existing soil conditions;
- existing environmental aspects such as salinity or flood prone areas;
- the likelihood of potential runoff at the application areas;
- distance from sensitive receivers and aquatic environments; and
- previous and upcoming climatic and weather conditions.

The consideration of these aspects is further detailed within the *Dewatering Procedure*.

#### **5.4 Unexpected contamination finds**

Contamination means the presence in, on or under land or any other aspect of the environment of a substance, gas, chemical, liquid or other matter, whether occurring naturally or otherwise, which is:

- a) at a concentration above the concentration at which the substance, gas, chemical, liquid or other matter, whether occurring naturally or otherwise, is normally present in, on or under land or any other aspect of the environment in the same locality, being a presence that presents a risk of harm to human health or any other aspect of the environment; or
- b) toxic, flammable or otherwise capable of causing harm to humans or damage to the environment including asbestos (man-made or naturally occurring), toluene, polychlorinated biphenyls, lead based paints, glues, solvents, cleaning agents, paints, water treatment chemicals and acid producing spoil.

Contamination that may not have been detected during previous investigations may be discovered during Stage 1 of the project, particularly during earthworks activities. Such contamination may be discovered due to observations such as:

- odour;
- unusual discolouration or staining of soil or rock;

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- seepage of unusual liquids from soil or rock;
- unusual colour, odours, or sheens on groundwater and/or surface water;
- unusual metal objects or other foreign debris;
- presence of oil;
- presence of waste or rubbish above or below ground; and
- actual or potential asbestos or asbestos containing material.

In such instances, action is required to manage the potential contaminated soil/material encountered during excavation or construction activities. If potentially contaminated material is encountered, the *Unexpected Contamination Finds Procedure* (45860-HSE-PR-D-0014) will be followed.

## 5.5 Disposal of contaminated material

Where contaminated material requires removal from site, the classification, transport and disposal will be carried out in accordance with the *Waste Management Plan* (45860-HSE-PL-D-0121). Key actions from the *Waste Management Plan* include:

- all waste material that is to be disposed of off the project will be dealt with in accordance with the POEO Act and *Waste Classification Guidelines Part 1: Classifying Waste* (EPA, 2014);
- wastes that are unable to be reused or recycled will be disposed of at a licensed waste management facility, or a place lawfully permitted to accept such waste;
- hazardous waste and wastes regulated under a Chemical Control Order will be managed by appropriately qualified and licensed contractors, in accordance with the requirements of the *Environmentally Hazardous Chemicals Act 1985*;
- a waste register will be maintained, detailing types of waste, amounts, date, and details of disposal; and
- a section 143 notice under the POEO Act will be obtained (from the landowner) should waste be transported to a site which is not licensed under the POEO Act to accept such waste. Sites and/or facilities licensed for receipt of waste under the POEO Act will not require a section 143 notice.

## 5.6 Flood management

### 5.6.1 Flood response

A *Flood Response Plan* (45860-HSE-PL-D-0122) has been prepared and as required by condition C35 of the Infrastructure Approval, forms part of the *Traffic and Transport Management Plan* (45860-HSE-PL-D-0109).

The work areas for Stage 1 of the project are highly unlikely to experience flooding as the area is located outside of the floodplains at 1% AEP with the exception of Wagga Wagga substation upgrade and expansion site and Wagga Wagga construction compound.

The Flood Response Plan details the procedures and options for safe access to and from the site if an extreme flood event occurred within or in close proximity to the project works. Section 4 of the Flood Response Plan outlines the actions to be undertaken in preparation for a potential flood as well as the appropriate flood response and evacuation routes to take in the event of a flood.

## 5.7 Soil and water management measures

A range of environmental requirements and mitigation measures are identified in the EIS, Submissions Report and Infrastructure Approval. Safeguards and management measures will be implemented to minimise or manage soil, water and contamination impacts.

Specific soil, water and contamination related safeguards and management measures to address impacts associated with Stage 1 of the project are outlined in Table 5.1.

Table 5.1 - Soil, water and contamination management measures

ID	Measurement/Requirement	When to implement	Responsibility	Source document
<b>General</b>				
SW1	Training will be provided to all project personnel, including relevant sub-contractors on soil and water management measures and the requirements from this plan through inductions, toolboxes and targeted training.	Pre-construction and construction	Environmental Manager, HSSE team	Good practice
SW2	The interaction between construction materials and high saline soil and groundwater environment will be considered during detailed design, where applicable.	Pre-construction and construction	Design Manager	RMM SCG1
SW3	No pollution to water, as defined under section 120 of the POEO Act, is to occur, unless authorised by an EPL.	Pre-construction and construction	Environmental Manager	Condition C15
<b>Erosion and sediment control</b>				
SW4	<p>An <i>Erosion and Sediment Control Strategy</i> (ESCS) (45860-HSE-DOC-D-0016) provided in Appendix A has been prepared in line with the principles and requirements in:</p> <ul style="list-style-type: none"> <li>• <i>Managing Urban Stormwater – Soils and Construction, Volume 1</i> (Landcom 2004), commonly referred to as the 'Blue Book';</li> <li>• <i>Managing Urban Stormwater – Soils and Construction, Volumes 2A and 2C</i> (NSW Department of Environment, Climate Change and Water 2008);</li> <li>• <i>Best Practice Erosion and Sediment Control</i> (IESCA – 2008);</li> <li>• Transgrid's Environmental Guidance Notes; and</li> <li>• <i>Guidelines for Controlled Activities on Waterfront Land</i> (NRAR 2018).</li> </ul> <p>The ESCS will guide the development of the ESCP and PESCPs for the project.</p>	Construction	Environmental Manager	Condition C14 RMM HF6
SW5	<p>A Certified Professional in Erosion and Sediment Control (CPESC) will prepare the initial Erosion and Sediment Control Plan (ESCP), which will be used as a basis for the development of Progressive Erosion and Sediment Control Plans (PESCPs) .</p> <p>Where required, PESCPs will be prepared and implemented for the location where soil disturbance will occur. The PESCPs will outline controls and strategies to be implemented to manage and minimise soil erosion and the movement of sediment and other pollutants to land and/or waters. PESCPs for high risk environments, such as near major watercourses, steep or highly erodible terrain, will be reviewed by the CPESC and Environmental Manager.</p> <p>The PESCPs will be progressively updated throughout the project to reflect the current construction activities occurring on site and to allow the removal of any measures that are ineffective or no longer needed.</p>	Pre-construction and Construction	Certified Professional in Erosion and Sediment Control Environmental Manager	Condition C14 RMM HF6
SW6	Measures will be implemented to minimise mud tracking onto public roads.	Construction	Supervisor	Condition C14

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**EnergyConnect (NSW – Eastern Section) Stage 1 Soil and Water Management Plan**

ID	Measurement/Requirement	When to implement	Responsibility	Source document
SW7	Location of known heritage items will be identified in the site hazard analysis plan and considered during the preparation of PESCPs, where required. This will ensure that any potential harm due to surface water runoff from site is avoided or minimised.	Construction	Environmental Manager, Supervisor	RMM AH9
SW8	Construction materials and spoil will be appropriately stored on site and within the construction site compounds with the aim to minimise erosion, dust generation and sediment-related impacts in adjacent areas.	Construction	Supervisor, Environmental Manager	RMM SCG5
<b>Additional soil assessment and management</b>				
SW9	A visual inspection will be undertaken for the presence of saline soils prior to ground disturbance to areas. Areas of known or suspected salinity will be subject to further testing as required. Where saline soil is excavated, the soils will be reinstated at the same depth that they were excavated from. Exposure of saline soil to water during activities such as dust suppression and water discharge will be limited in these identified area to reduce evaporation and salinisation. Works in areas of saline soils will be managed with reference to <i>Book 4 Dryland Salinity: Productive use of Saline Land and Water</i> (NSW DECC 2008) and the <i>Salinity Training Manual</i> (DPI, 2014).	Construction	Environmental Coordinator, Environmental Manager, Supervisor	RMM SCG7 Condition C21 Condition C22 c)
<b>Unexpected contamination find</b>				
SW10	Promptly notify the Site Supervisor or Environmental Manager of any suspected or actual contamination (including any suspected or potential unexploded ordnance) are exposed during construction activities. Cease all work activities within the vicinity of actual or suspected contaminated land. The <i>Unexpected Contamination Finds Procedure</i> (45860-HSE-PR-D-0014) provided in Appendix B is to be followed.	Construction	All personnel	Condition C22 c) and e) RMM SCG9 and SCG12 CLM Act
<b>Chemicals, fuels or other hazardous substances</b>				
SW11	Construction materials such as fuels, chemicals, vehicles and equipment will be appropriately stored to minimise the introduction of contaminants to the existing soil, groundwater and surface water runoff.	Construction	Supervisor, Engineer, Environmental Coordinator	RMM SCG5
SW12	All chemicals, fuels or other hazardous substances will be stored in accordance with the supplier's instructions, any relevant legislations or Australian Standards or the applicable guidelines. The capacity of any bunded area will be 130% of the largest chemical volume contained within the bunded area. The location of the bunded areas or enclosures will be shown on relevant PESCPs.	Pre-construction and construction	Supervisor, Environmental Manager	RMM SCG8 and HR11
SW13	In the event of a spill incident of chemicals, fuels or other hazardous substances, the <i>Spill Response Procedure</i> (45860-HSE-PR-D-0017) provided in Appendix C will be followed.	Pre-construction and construction	Supervisor, Environmental Manager	RMM HF6
SW14	Appropriate spill containment equipment (i.e. spill kits) will be provided and placed at strategic and accessible locations within the site such as adjacent to chemical storage areas, relevant work areas and refuelling areas.	Construction	Supervisor, Environmental Manager	RMM HR14

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**EnergyConnect (NSW – Eastern Section) Stage 1 Soil and Water Management Plan**

ID	Measurement/Requirement	When to implement	Responsibility	Source document
<b>Water supply</b>				
SW15	Copies of existing water access licence agreements from the applicable water suppliers/ landholders will be requested and saved on to the project document SharePoint site.	Pre-construction and construction	Environmental Manager, HSSE team	Good practice
SW16	Water supply options and management will be undertaken in accordance with agreements with the relevant private water owners or relevant council.	Construction	Environmental Manager	RMM HF5 and CI2
SW17	Volumes of water taken (including water taken under a licence or under an exemption provision) during construction is to be recorded. The records will be provided during the independent audit when requested.	Construction	Environmental Manager	Condition C13
<b>Dewatering</b>				
SW18	The <i>Dewatering Procedure</i> (45860-HSE-PR-D-0018) provided in Appendix D will be implemented for the discharge of any runoff or stormwater which collects within construction areas (such as sediment basins, trenches, sumps) to minimise the potential for soil and water impacts.	Construction	Supervisor, Environmental Manager	RMM HF6
SW19	Dewatering of groundwater will not be discharged directly into watercourses, but is to be managed in accordance with the methods included in the <i>Dewatering Procedure</i> (45860-HSE-PR-D-0018).	Construction	Supervisor, Environmental Manager	Condition C17
SW20	Volumes of water that has dewatered will be recorded in the <i>Dewatering Permit</i> (45860-HSE-PR-D-0018). Records will be provided to the relevant authority upon request.	Construction	Supervisor, Environmental Manager	RMM SCG11
<b>Works near watercourses</b>				
SW21	All activities on waterfront lands will be guided by the principles from the <i>Guidelines for Controlled Activities on Waterfront Land</i> (2012), unless DPE Water agrees otherwise. Measures to control and manage erosion and minimise sedimentation on waterfront lands are further detailed in the ESCS and will be documented for specific areas and activities in the initial ESCP and PESCPs to be developed prior to the works commencing in near waterways. Works will not be undertaken on floodplains during periods of flooding, where flooding would impact the construction area.	Pre-construction and construction	Environmental Manager, Supervisor	Condition C18
<b>Registered bores</b>				
SW22	Registered groundwater bores that are located within or in the immediate vicinity of the construction area and does not require removal during the project will be clearly demarcated by exclusion zones.	Pre-construction and construction	Supervisor, Environmental Manager	RMM SCG3
SW23	If registered groundwater bores are damaged during project activities, works will be undertaken to repair or replace the bore in consultation with the registered owner.	Pre-construction and construction	Environmental Manager	RMM SCG3

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ID	Measurement/Requirement	When to implement	Responsibility	Source document
<b>Monitoring and inspections</b>				
SW24	Monitoring of weather forecasts (including rainfall radar) to determine when adverse weather conditions are predicted to affect work locations. When significant rainfall is predicted (greater than 15mm at 80% chance of occurring), a pre-rainfall inspection will be carried out as detailed in Table 6.2 to check the condition of existing sediment and erosion controls, and ensure repairs are carried out and additional controls installed if necessary.	Pre-construction and construction	Environmental Manager, HSSE team	Good practice
SW25	If safe to do, a post rainfall inspections will occur within the next working day after a rainfall event has occurred (greater than 5mm of rain has been received and runoff occurred). The post rainfall inspection is to evaluate the effectiveness of erosion and sediment controls measures and issue the appropriate action to repair or maintain any controls and/or install additional controls where required.	Pre-construction and construction	Environmental Manager, HSSE team	Good practice
SW26	Weekly environmental inspections are to be undertaken, which will include an inspection of erosion and sediment controls present on-site, spill response equipment, stockpiles and the site access point(s).	Construction	Environmental Manager	Good practice
SW27	If groundwater is intercepted during excavation activities, the interception of such groundwater will be monitored by site personnel and the geotechnical specialist and reported to NRAR in accordance with Clause 21(6) of the <i>Water Management (General) Regulation 2018</i> . Where there is the potential for water take to exceed the 3ML exemption provision, additional approvals and sufficient entitlement will be obtained.	Construction	Environmental Manager	<i>Water Management (General) Regulation 2018</i>

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## 6 Compliance management

### 6.1 Training and awareness

All site personnel will undergo the SecureEnergy site induction. The induction training addresses elements related to soil, water and contamination management including, but not limited to:

- relevant legislation;
- complying with the conditions of the Infrastructure Approval;
- the environmental management system;
- the CEMP;
- land disturbance and clearing requirements and procedures; and
- spill response requirements and procedures.

Targeted training in the form of toolbox talks or specific training will also be delivered to personnel with a key role in soil, water and contamination management. Examples of training topics may include:

- specific erosion and sediment controls, including installation methods, maintenance requirements and the requirements of site-specific PESCPs;
- no-go zones;
- UXO within the project area;
- unexpected finds procedure for contaminated land finds; and
- spill response and dewatering procedures.

Further details regarding the staff induction and training are in Section 6 of the CEMP.

### 6.2 Roles and responsibilities

SecureEnergy's organisational structure and overall roles and responsibilities are outlined in Section 4 of the CEMP.

The project environmental management structure incorporates the following site personnel:

- Environmental Manager responsible for overall management of the CEMP and CEMP sub-plans; and
- Environmental Advisors to assist in implementing and monitoring measures in the CEMP and CEMP sub-plans.

SecureEnergy's Project Director, in consultation with functional managers, will ensure that appropriate resources are available to effectively manage the implementation of the CEMP and CEMP sub-plans during delivery of the project. All SecureEnergy staff, subcontractors and visitors are required to operate in accordance with this SWMP and related environmental management plans during construction.

Specialist consultants and subcontractors will be engaged for environmental support roles, as required, such as Certified Professional in Erosion and Sediment Control for the preparation of an initial ESCP for the project and the review of high-risk PESCPs, as required.

Specific responsibilities for the implementation of mitigation measures are detailed in Section 5 of this SWMP.

### 6.3 Monitoring

The proposed monitoring program for Stage 1 works relevant to the water is identified in Table 6.1.

**Table 6.1 - Monitoring program**

Item	Scope	Frequency	Responsibility	Records/ reporting
Weather forecasts and observations	Monitoring of weather forecasts (including rainfall radar) to determine when adverse weather conditions are predicted.	Weekly weather forecast; and Daily when adverse weather is predicted.	Supervisors	BOM website Pre-starts
Water quality discharge	Water that requires discharge (other than wastewater) will be tested (as required) prior to reuse/discharge and managed in accordance with the <i>Dewatering Procedure</i> (45860-HSE-PR-D-0018).	Prior to water discharge	Supervisors Environmental Manager or delegate	<i>Dewatering permit</i> (45860-HSE-FO-G-1006)

## 6.4 Inspections

The proposed inspections timing for Stage 1 works relevant to the soil and water management are identified in Table 6.2.

**Table 6.2 - Inspection timing**

Item	Scope	Frequency	Responsibility	Records/reporting
Weekly inspections	Inspection of the site erosion and sediment controls, spill response equipment, stockpiles and the site access point(s).	Weekly	Environmental Manager or delegate	<i>Environmental Inspection Checklist</i> (45860-HSE-CHK-G-1008)
Saline soil inspection	Visual inspection of works areas for indicators of saline soil prior to ground disturbances.	Prior to ground disturbances	Supervisors	Report by exception in Daily Diary
Pre-rainfall inspection	Inspection of the environmental controls across the site to assess site preparedness for upcoming predicted rainfall event. Inspection to be undertaken on working days, if safe to do so.  Issue actions to repair/maintain any damaged controls, or install additional controls if necessary.	Prior to predicted rainfall greater than 15mm at 80% chance of occurring.	Environmental Manager or delegate Supervisors	<i>Pre-rainfall inspection checklist</i> (45860-HSE-CHK-G-1009)
Post rainfall inspection	Post rainfall inspections to evaluate the effectiveness of erosion and sediment controls measures and issue appropriate actions to repair or maintain any controls and/or install additional controls where required.  Post rainfall inspections will occur after a rainfall event. For the purpose of this inspection, a rainfall event occurs when more than 5mm of rain has been received and runoff occurs.	Within the next working day, if safe to do.	Environmental Manager or delegate Supervisors	<i>Post rainfall inspection checklist</i> (45860-HSE-CHK-G-1010)

## 6.5 Auditing

Audits will be undertaken to assess the effectiveness of the management measures and overall compliance, including with this plan, and other relevant approvals, licences and guidelines. Audit requirements are detailed in Section 9.3 of the CEMP.

## 6.6 Reporting

Reporting which will be undertaken in accordance with the SWMP is summarised within Table 6.3.

**Table 6.3 - Reporting program**

Item	Scope	Frequency	Responsibility	Recipient
Unexpected finds report	Report findings associated with unexpected contamination finds will be undertaken in accordance with the <i>EnergyConnect (NSW – Eastern Section) Unexpected Contamination Finds Procedure</i> (45860-HSE-PR-D-0014).	As required	Environmental Manager	Transgrid EPA
Water take	Volumes of water taken (including water taken under a licence or under an exemption provision) during construction will be provided during the independent audit when requested.	As required	Environmental Manager	Independent Auditor, upon request
Audit reports	Independent audits will be undertaken in accordance with the Infrastructure Approval. The audit will include soil and water management measures (based on the Independent Auditor’s program). Audit reports will be prepared. Further detail in relation to auditing is provided within Section 9.3 of the CEMP.	Audits will occur within 12 weeks of the commencement of construction and then at intervals no greater than 26 weeks from the date of the initial Independent Audit or as otherwise agreed by the Secretary.	Environmental Manager/ Independent Auditor	Transgrid DPE
Groundwater intercepted during aquifer interference activities	An exemption within the <i>Water Management (General) Regulation 2018</i> allows for 3ML per project per year to be intercepted during aquifer interference activities without the need for a water access licence.  If groundwater is intercepted during excavation activities, the interception of such groundwater will be monitored by site personnel and geotechnical specialist and reported to NRAR in accordance with Clause 21(6) of the <i>Water Management (General) Regulation 2018</i> .  Where there is the potential for water take to exceed the 3ML provision, additional approvals and sufficient entitlement will be obtained.	As required	Environmental Manager	Transgrid NRAR

**6.7 Emergencies, incidents and non-compliances**

**6.7.1 Emergencies**

Emergency management and planning including emergencies related to soil, water and contamination will be undertaken in accordance with the Clough management system and relevant procedures. Emergencies will be managed through Clough three-tiered management system approach. Depending on the severity of the emergency, emergencies will be managed in accordance with the following:

- Level 1 – on-site emergencies will be in accordance with the Project Specific Emergency Preparedness and Response Plan (45860-HSE-PL-G-1015);
- Level 2 – emergency situations where response exceeds the capacity of site resources incidents will be coordinated by the Incident Coordination Team; and
- Level 3 – an emergency situation where the incident has the potential to, or has impacted, the business in terms of, reputation, and commercial liability. Incidents will be supported by the Major Incident Management Team.

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Emergencies will be responded to in accordance with the level of the emergency (listed above). For each level of emergency, the situation will be assessed, the site support requirements will be established and notification will occur. A Level 1 emergency will result in activation of the *Project Specific Emergency Preparedness and Response Plan* (45860-HSE-PL-G-1015). A Level 2 emergency will result in activation of the Incident Coordination Team, and a Level 3 emergency will result in activation of the Incident Management Team.

Refer to Section 8.1 of the CEMP – Emergency preparedness and emergency response for further details.

### **6.7.2 Environmental incidents**

Environmental incidents, including incidents related to soil, water and contamination (e.g. unauthorised/unapproved discharge of water, contamination of water quality, chemical and hazardous material spills) will be managed as described in Section 8.2 of the CEMP – Environmental incidents and the Incident, Notification and Investigation Procedure Flowchart provided in Appendix A4 of the CEMP. All site personnel are authorised to suspend a work activity that is likely to cause, or is actually causing or contributing to an incident. A supervisor/manager may request additional staff be deployed to the site to provide additional capacity or capability to manage the incident.

Incident reporting is described in Section 8.3 of the CEMP – Incident notification and reporting.

All environmental incidents that occur on the project, regardless of how minor, must be reported to a supervisor by personnel involved or witnesses to the incident immediately after the incident occurs. The Environmental Manager will be notified immediately of any environmental incident. Transgrid will be notified of incidents and near misses immediately. Formal, documented reporting of incidents will be completed, and will be submitted to Transgrid in accordance with requirements under the Contract. The Environmental Representative will also be included on all incident notifications.

For incidents which are reportable to DPE, notification will occur to DPE via the Major Projects website immediately after becoming aware that an incident has occurred. A written notification will then be provided to DPE via the Major Projects website within seven days after becoming aware of the incident. Refer to Section 8.3.1 of the CEMP - Incident notification and reporting in accordance with the Infrastructure Approval for further details requirements of the notification.

### **6.7.3 Non-compliances**

Where a non-compliance with the Infrastructure Approval has been identified, including those relevant to soil, water and contamination (e.g. not following the notification or reporting requirements in the Unexpected Contamination Finds Procedure), corrective actions will be developed as required and implemented to address the non-compliance that occurred.

Reporting of non-compliances will be undertaken as described in Section 10.1 of the CEMP – Reporting non-compliances. The Planning Secretary will be notified in writing via the Major Projects website within seven days after Transgrid becomes aware of any non-compliance. The written non-compliance notifications will contain the requirements set out in condition D8 of the Infrastructure Approval and will include details such as:

- the non-compliance;
- the reasons for the non-compliance (if known); and
- what actions have been taken, or will be taken, to address the non-compliance.

Refer to Section 10.1.1 of the CEMP - Reporting non-compliances in accordance with the Infrastructure Approval for further details requirements of the notification.

A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

Failure to comply with other statutory requirements such as the EPBC Act Approval will be reported in accordance with Section 10.1.2 of the CEMP. Any other reporting will occur in accordance with Section 10.1.3 of the CEMP.

Where a non-compliance has been identified, the non-compliance will be reviewed by the Environmental Manager to determine the reason for the non-compliance, and what corrective actions have, or will be taken, to address the non-compliance. Preventative actions will be developed as required and implemented to minimise the potential for recurrence.

Section 11 of the CEMP – Non-compliance, non-conformance, corrective and preventative action describes the process for non-compliance management.

## 6.8 Contingency plan

Although the project has been assessed through the environmental impact assessment process and potential impacts identified, unpredicted impacts may occur as the project progresses. In the event that unexpected impacts are identified, the action or cause will be categorised and as required will be managed as:

- an emergency or environmental incident in accordance with Section 8 of the CEMP – Incidents and emergencies; and/or
- a non-compliance or non-conformance in accordance with Section 11 of the CEMP – Non-compliance, non-conformance, corrective and preventative action.

Reporting of the unpredicted impacts would be in line with the above processes and as described in Section 10 of the CEMP – Reporting.

Corrective and preventative actions may be generated from a number of sources, including but not limited to incidents, audits and management reviews. The actions will be managed in accordance with the Clough management system to ensure that the required actions are tracked and closed out in a timely manner. The completion of the required actions will be recorded, and will include details on the source of the action (e.g. audit, inspection or other), the action required, target close out date, actual close out date and the person responsible.

Through the identification of corrective and/or preventative actions through the above processes, the following steps will occur as relevant:

- a) determine the relevant impact assessment criterion/criteria, below which the impact should be reduced, consistent with the requirements of this SWMP;
- b) identify options to reduce the unexpected impacts to below the relevant criterion/criteria and appropriate timeframe for implementation;
- c) implement the selected measure(s) to reduce the unexpected impacts; and
- d) identify and implement an appropriate monitoring program to determine the effectiveness of the selected measure(s) to reduce the unexpected impact.

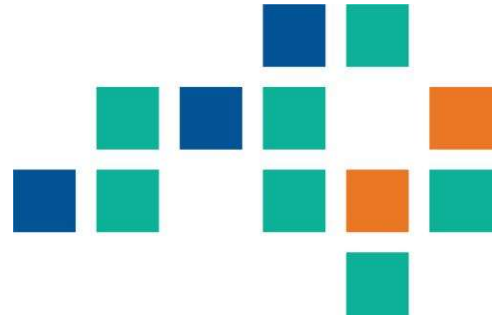
If the above monitoring program identifies that the unexpected impacts have not been reduced to below the nominated criterion/criteria, items b) to d) of the contingency process will be repeated.

This section does not apply to unexpected contaminations finds. These will be managed in accordance with the *Unexpected Contamination Finds Procedure* included in Appendix B of this SWMP.


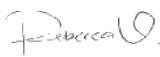





## Appendix A - Erosion and Sediment Control Strategy

INTERNAL



# Erosion and Sediment Control Strategy EnergyConnect (NSW - Eastern Section) 45860-HSE-PR-D-0016

REV	DATE	GENERAL DESCRIPTION	PREPARED	REVIEWED	VERIFIED	VERIFIED	APPROVED
A	10/05/2022	Issued for internal review	M.Lee	R.Walker-Edwards	A.Boyd	JL.Barrenechea	D.Whatmough
B	24/05/2022	Issued for Transgrid's review	M.Lee	R.Walker-Edwards	A.Boyd	JL.Barrenechea	D.Whatmough
C	15/08/2022	Issued for agency consultation	 M.Lee / C.Cahill	 R.Walker-Edwards	 A.Boyd <small>A.Boyd (Aug 18, 2022 12:05 GMT+10)</small>	 B.Calligeros <small>B.Calligeros (Aug 15, 2022 GMT+10)</small>	 S.Basanta

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Revision History	
Rev.	Detailed Description
A	Issued for internal review
B	Issued for Transgrid's review
C	Updated to address Transgrid's comments. Issued for agency consultation.

Key Document Stakeholders
To be communicated with during reviews and revisions of this document

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## 1 Introduction

This Erosion and Sediment Control Strategy (ESCS or this strategy) is part of the Soil and Water Management Plan (SWMP) for EnergyConnect (NSW – Eastern Section) and forms part of the overall environmental management framework for the project.

This strategy has been prepared by suitably qualified and experienced person. This strategy was prepared by Martin Lee and Cheryl Cahill (attained certification as a certified professional in erosion and sediment control (CPESC)).

### 1.1 Purpose

The purpose of this ESCS is to outline the overarching principles to be considered and integrated into the development of the progressive erosion and sediment control plans (PESCPs). The PESCPs will be prepared and implemented progressively during construction of EnergyConnect (NSW – Eastern Section).

This strategy has been prepared to address the relevant requirements of the Infrastructure Approval, the *Environmental Impact Statement EnergyConnect (NSW – Eastern Section)* (EIS) and the *Amendment Report EnergyConnect (NSW – Eastern Section)* (Amendment Report).

## 2 Environmental requirements

The project's approach to erosion and sediment control will be in accordance with the principles identified in:

- *Managing Urban Stormwater – Soils and Construction, Volume 1* (Landcom 2004), and *Volumes 2A and 2C* (NSW Department of Environment, Climate Change and Water 2008), commonly referred to as the 'Blue Book';
- *Best Practice Erosion and Sediment Control* (IECA – 2008);
- TransGrid's HSE Guidelines and;
- *Guidelines for Controlled Activities on Waterfront Land* (NRAR 2018).

### 2.1 Hierarchy of erosion and sediment control principles

The guidelines listed above generally describes the hierarchy for erosion and sediment management principles in the following order:

1. integrate erosion and sediment management measures with construction planning;
2. minimise area of disturbance / area of soil exposure to erosion;
3. promptly stabilise / rehabilitate disturbed areas;
4. manage water flow through the site through drainage controls;
5. design and install appropriate erosion control;
6. design and install appropriate sediment control to maximise sediment retention on site;  
and
7. monitor controls and adjust control measures to maintain the required standard.

## 3 Existing environment

The existing environmental setting relating to the aspects of soil and water quality within and adjacent to the project is identified in Section 3 of the relevant *Soil and Water Management Plan*. Additional information is available in Chapter 16 and 21 of the EIS Main volume, Technical Paper 8 (Hydrology, flooding and water quality) of the EIS and Section 6.5 of the *Amendment Report EnergyConnect (NSW – Eastern Section)*.

### 3.1 Soils

Soils are mapped as primarily vertosols according to Australian Soil Classification (CSIRO, 2016a) and are found along the main watercourses while alluvial plains are found in proximity to the Murrumbidgee, Darling, and Darling – Anabranh Rivers.

Published soil mapping along the alignment indicates that the regional geology and soils are expected to be predominantly transported Quaternary-aged sediments deposited in alluvial flood plains, and dune. The predominant soil types are typically sand and clay or a mixture of the two.

Based on broadscale state mapping, almost all of the project area is mapped as having low salinity potential. Soil conductivity testing undertaken in 2020 did however indicate variable salinity conditions across the project area with some soil results indicating moderately saline and very saline soil conditions.

Published acid sulfate soil mapping indicates there is an extremely low probability of acid sulfate soils occurring across the project area, with the exception of low lying areas surrounding lakes and river beds, which are mapped as high probability of containing ASS.

There are no mapped areas indicating naturally occurring asbestos minerals may be present within the project area

### 3.2 Watercourses

Numerous natural watercourses and man-made waterways intersect the project area, ranging from unnamed drainage lines, dry rivers, perennial rivers, canals and drains. The project intersect 19 named waterways.

Lakes and waterbodies located along the length of the project include Dry Lake, Lake Benee, Lake Caringay, Waldaira Lake, Condoulpe Lake, Dusty Lake, Five Tree Dam, Lake Urana, Lake Cullivel and Lake Albert.

### 3.3 Rainfall intensity

The average annual rainfall across the project area is variable, however generally average rainfall is higher at the eastern end of the project and lower at the western end.

The Urana Post Office weather station (station number: 074110) near the eastern end of the project area recorded an annual average rainfall of 442.2mm between 1871 to 2020. The average monthly rainfall is slightly higher in May and June.

The closest weather station (Irymple, station number: 076015) to the western end of the project area recorded an average annual rainfall of 271mm between 1908 to 2020. Rainfall is fairly evenly spread across the year, with higher peak rainfall values from November to April.

## 4 Induction/training

Training and awareness of the principles of erosion and sedimentation will be provided through either site inductions, pre-start meetings and/or toolbox talks.

## 5 Key management strategies

### 5.1 Context

It is important to note that the principal objective for managing erosion and sediment on a construction site is to take all reasonable and practicable measures to minimise the short and long-term soil erosion and the adverse effects of sediment transportation.

Generally, the context of the term 'reasonable' means an action based on sound judgement and affordable cost while the contextual meaning of the term 'practicable' is an action capable of being implemented with available means, with reason or with prudence.

It is also important to acknowledge the fact that each construction site demands a unique set of erosion and sediment control measures. Thus, a control measure that is observed to work well in one location does not mean it will work well in another location. Implementation of erosion and sediment controls measures should represent an appropriate balance between the recommended implementation of the control and common sense. There may be situations/locations where erosion and/or sediment control measures are not required or become obsolete depending on the current activities occurring on site at the time.

SecureEnergy is conscious that EnergyConnect is a long linear infrastructure where the environmental setting and climate may vary spatially. Hence, the suitability of erosion and sediment control measures will depend on both the location in which the controls are being applied, and the construction activities which are to occur.

## 5.2 Preparation of erosion and sediment control plans

A Certified Professional in Erosion and Sediment Control (CPESC) will prepare the initial ESCP to detail the erosion control measures to be utilised across a range of different receiving environments and landforms on the project. Environmental staff will then typically use the ESCP as a basis to develop progressive erosion sediment control plans (PESCPs) in consultation with Project Engineers, Superintendents and Supervisors. For high risk environments, such as works near major watercourses or in steep or highly erodible terrain, the progressive ESCPs will be reviewed by the CPESC.

PESCPs will provide more detailed and up-to-date information relating to specific areas and control measures. The PESCPs will be implemented concurrently with the relevant site activities and updated as required to reflect the evolution of site conditions as the project progresses.

## 5.3 SecureEnergy's erosion and sediment control principles

The hierarchy of principles identified in Section 2.1 has provided guidance for the development of erosion and sediment control principles for the project. These eight principles are listed below.

A compliance matrix is also presented in Annexure A, with this compliance matrix detailing how SecureEnergy's principles address the guidelines listed within Section 2.

### SecureEnergy Principle 1 – Appropriate planning and documentation

Prior to disturbance of the area and soil exposure, erosion and sediment control issues will be considered and integrated into construction planning, programming and site documentation, which will include the following:

- consider the existing landscape environment and identify areas of key risks to erosion and sediment issues;
- consider sensitive areas and features including, but not limited to, location of known heritage features both within and adjacent to the construction area, biodiversity flora and fauna, watercourses and riparian land;
- develop the site layout and construction process to prevent or minimise environmental harm due to erosion and sediment control issues (e.g. material stockpiles to be located away from surface water flow paths);
- construction planning to minimise extent/duration of soil disturbance; and
- prepare effective and flexible PESCPs that are adjusted and adapted to changing site conditions. The initial PESCP will be prepared prior to soil disturbance activities and implemented concurrently with relevant site activities where required.

### SecureEnergy Principle 2 – Minimise the extent and duration of disturbance

To minimise erosion of disturbed areas, aim to complete work and stabilise disturbed areas progressively.

### **SecureEnergy Principle 3 – Control stormwater flows onto, through and from the site**

To reduce erosion and surface water runoff volumes that will eventually require treatment, and to maximise the efficiency of sediment control measures, aim to:

- separate ‘clean’ run-on water from ‘dirty’ water run-off;
- manage areas susceptible to concentrated water flow; and
- break up slope lengths and minimise catchment areas within the work area where possible, to reduce run-off volume and velocities to manageable levels.

### **SecureEnergy Principle 4 – Use erosion control measures to prevent on-site damage**

To minimise erosion of disturbed areas and unlined drains, aim to:

- protect the soil surface from raindrop impact;
- protect the soil surface to minimise erosion; and
- convey run-off in a non-erosive manner.

### **SecureEnergy Principle 5 – Use sediment control measures to prevent off-site damage**

To minimise the off-site transport of eroded sediment, aim to:

- intercept and capture ‘dirty’ sediment laden run-off water prior to leave the site boundary;
- slow the velocity of ‘dirty’ water so that soil particles can settle out by gravity;
- chemically treat sediment laden water to remove very fine suspended soil particles (where required); and
- locate control measures as close to the sediment source as possible, while not impeding construction activities.

### **SecureEnergy Principle 6 – Minimise impacts on waterfront land**

To minimise impacts to waterfront land, aim to:

- protect ground stratum native vegetation within vegetated riparian zones of rivers to the greatest extent practicable, with vegetation clearing ideally limited to the tree stratum only, with trunk bases being retained in-situ;
- minimise the extent of vegetation clearing generally within vegetated riparian corridors wherever practicable in constructing the transmission line structures; and

### **SecureEnergy Principle 7 – Stabilise disturbed areas quickly**

To minimise erosion of disturbed areas, aim to:

- strip and stockpile site topsoil material for reuse in the restoration / stabilisation phase; and
- stabilise disturbed surfaces progressively following completion of works at each location to minimise erosion.

### **SecureEnergy Principle 8 – Inspect and maintain control measures**

The effectiveness of erosion and sediment controls is related to both the selection of appropriate techniques and the maintenance of these measures. SecureEnergy will:

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- inspect control measures regularly (e.g. before/after rainfall and during weekly environmental inspections) ;
- maintain, modify and/or implement new control measures as identified and required by the inspection; and
- remove temporary control measures once an area has been stabilised.

#### **5.4 Sediment basins**

Sediment basins are stormwater management devices and are not proposed in all construction areas. Generally, sediment basins will only be required in areas where soil disturbance occurs over an area greater than 2,500m<sup>2</sup> per sub-catchment. However and more accurately, the requirement of a sediment basin can be determined when there is an annual soil loss greater than 150m<sup>3</sup>/year calculated in accordance with the Blue Book. As such, key areas such as borrow pits, laydown areas or earthworks activities at substations will be assessed to determine if a sediment basin is required. Generally, sediment basins will be constructed where the soil loss calculations indicate they are required. Sediment basins will be constructed and operated in accordance with the Blue Book and the location will be reflected in the relevant PESCP.



## Annexure A – Compliance matrix

No.	Principle / objective	SecureEnergy ESC principles								
		1	2	3	4	5	6	7	8	N/A
<b>Principles of Construction Site Erosion and Sediment Control (IECA 2008)</b>										
1	Appropriately integrate the development into the site									✓*
2	Integrate erosion and sediment control issues into site and construction planning	✓								
3	Develop effective and flexible erosion and sediment control plans based on the anticipated soil, weather and construction conditions	✓								
4	Minimise the extent and duration of soil disturbance		✓				✓			
5	Control water movement through the site			✓			✓			
6	Minimise soil erosion				✓		✓			
7	Promptly stabilise disturbed areas							✓		
8	Maximise sediment retention on the site					✓				
9	Maintain all erosion and sediment control measures in proper working order at all times								✓	
10	Monitor the site and adjust erosion and sediment control practices to maintain the required performance standard								✓	
<b>Blue Book management principles (Landcom 2004)</b>										
1	Assess the soil and water implications of development at the subdivision or site planning stage, including those relating to ecologically sustainable development. Investigate the salinity and the acid sulfate potentials of the soil where their disturbance is likely to expose and/or exacerbate this problem	✓								
2	Plan for erosion and sediment control concurrently with engineering design and before earthworks begin, ensuring proper assessment of site constraints and integration of the various components	✓								
3	Minimise the area of soil disturbed and exposed to erosion		✓							
4	Conserve topsoil for later site rehabilitation / revegetation							✓		
5	Control water flow from the top of, and through the development area			✓						
6	Rehabilitate disturbed lands quickly							✓		
7	Maintain soil and water management measures appropriately during the construction phase								✓	
<b>TransGrid’s HSE Guideline</b>										
1	Minimising disturbance		✓							
2	Stabilise high traffic areas	✓								
3	Slow down or redirect water flow through the site			✓						
4	Protect disturbed areas with gravel, mulches, erosion matting or blankets				✓					
5	Stabilise disturbed areas as soon as possible once work is complete							✓		
6	Avoid allowing sediment to leave the worksite or enter drainage					✓				
<b>Guidelines for Controlled Activities on Waterfront Land (NRAR 2018)</b>										
1	Establish and preserve the integrity of riparian corridors						✓			

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No.	Principle / objective	SecureEnergy ESC principles								
		1	2	3	4	5	6	7	8	N/A
2	Seek to minimise disturbance and harm of riparian corridors		✓							
3	Minimise the number of creek crossings of riparian corridors						✓			
4	Treat stormwater run-off before discharging into riparian corridors			✓						


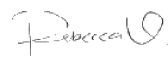



\* To be managed through the permanent design process

## Appendix B - Unexpected Contamination Finds Procedure

INTERNAL



## Unexpected Contamination Finds Procedure EnergyConnect (NSW – Eastern Section) 45860-HSE-PR-D-0014

REV	DATE	GENERAL DESCRIPTION	PREPARED	REVIEWED	VERIFIED	VERIFIED	APPROVED
A	17/05/2022	Issued for internal review	M.Lee	R.Walker-Edwards	A.Boyd	JL.Barrenechea	D.Whatmough
B	25/05/2022	Issued for Transgrid's review	M.Lee	R.Walker-Edwards	A.Boyd	JL.Barrenechea	D.Whatmough
C	19/10/2022	Issued for Transgrid's review	 M.Lee	 R.Walker-Edwards	 A.Boyd	 B.Calligeros	 S.Basanta

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Revision History	
Rev.	Detailed Description
A	Issued for internal review
B	Issued for Transgrid's review
C	Issued for Transgrid's review

Key Document Stakeholders
To be communicated with during reviews and revisions of this document

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## 1 Introduction

This Unexpected Contamination Finds Procedure (procedure) is part of the Soil and Water Management Plan (SWMP) for EnergyConnect (NSW – Eastern Section) and forms part of the overall environmental management framework for the project.

### 1.1 Purpose

The purpose of this procedure is to detail the actions to be taken in the event that an unexpected actual or potential contamination find is encountered during project works.

This procedure has been prepared to address the relevant requirements of the *Submissions Report EnergyConnect (NSW – Eastern Section)* and the Infrastructure Approval (SSI-9172452) granted by the Minister for Planning.

## 2 Induction/Training

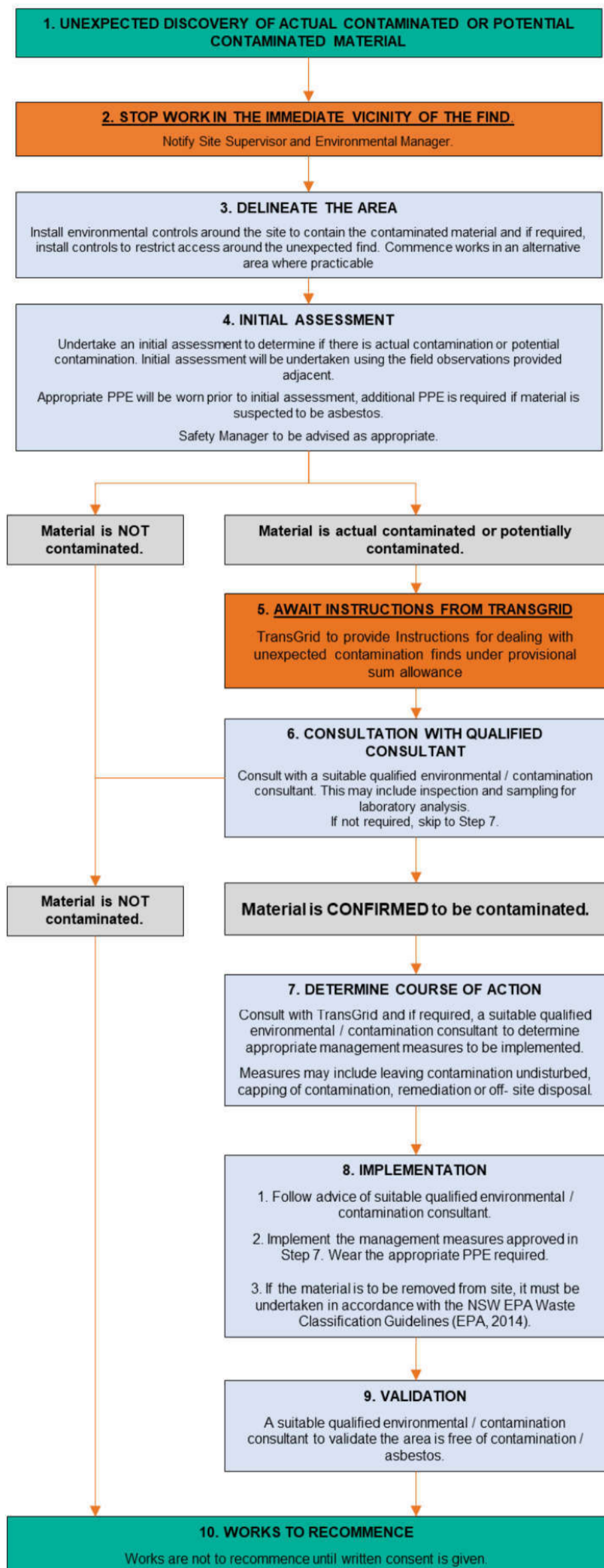
All site personnel (including sub-contractors) will undertake an induction which will include details relating to this procedure. Training may also occur through toolbox talks, pre-starts and targeted training as required.

## 3 Scope

This procedure is applicable for the following:

- all activities conducted by site personnel (including sub-contractors) for the project that have the potential to uncover / encounter contaminated finds (usually during construction);
- where the project does not have approval to disturb the contaminated material; and
- where safeguards for managing the disturbance (apart from this procedure) are not contained in the environmental impact assessment.

## Contaminated Land Procedure Unexpected Contamination Finds Procedure



### Purpose

The purpose of this procedure is to detail the actions to be taken in the event that an unexpected actual or potential contaminated material is encountered during construction works associated with EnergyConnect (NSW – Eastern Section).

### Definition

Contamination means the presence in, on or under land or any other aspect of the environment of a substance (i.e. gas, chemical, liquid or other matter) whether occurring naturally or otherwise, which is:

- (a) at a concentration above the concentration at which the substance, gas, chemical, liquid or other matter, whether occurring naturally or otherwise, is normally present in, on or under land or any other aspect of the environment in the same locality, being a presence that presents a risk of harm to human health or any other aspect of the environment; or
- (b) toxic, flammable or otherwise capable of causing harm to humans or damage to the environment including asbestos (man-made or naturally occurring), toluene, polychlorine biphenyls, lead based paints, glues, solvents, cleaning agents, paints, water treatment chemicals and acid producing spoil.

### Field observations

Contamination that may not have been detected during previous investigation works may be discovered during the course of the project. Such contamination may be discovered due to the following field observations :

- odour;
- unusual discolouration or staining of soil or rock;
- seepage of unusual liquids from soil or rock;
- unusual colour, odours or sheens on groundwater and/or surface water;
- unusual metal objects;
- presence of oil;
- presence of waste or rubbish above or below ground; and
- actual or potential asbestos or asbestos containing material (ACM).

### Actions

If unexpected contamination is discovered, the following procedure will be implemented:

- **STOP ALL WORKS** in the immediate vicinity of the discovery. Do not remove or unnecessarily disturb the area of the find;
- follow the adjacent flowchart;
- notify the Site Supervisor and the Environmental Manager; and
- Do not recommence work until advised to do so in writing.

### Personal Protective Equipment (PPE)

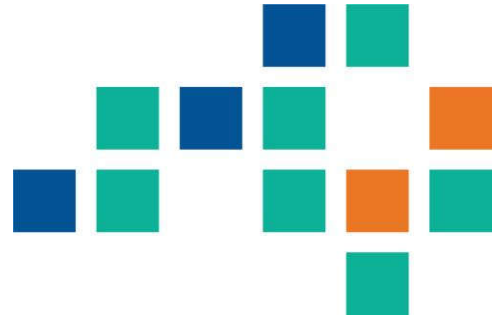
The appropriate Personal Protective Equipment (PPE) will be worn prior to any contamination investigation/management. This may include, but not be limited, to:

- eye goggles;
- face mask;
- rubber boots;
- rubber gloves;
- disposal work clothes; and
- full face respirator with vapour cartridge.






## Appendix C - Spill Response Procedure



INTERNAL



# Spill Response Procedure EnergyConnect (NSW – Eastern Section) 45860-HSE-PR-D-0017

REV	DATE	GENERAL DESCRIPTION	PREPARED	REVIEWED	VERIFIED	VERIFIED	APPROVED
A	10/05/2022	Issued for internal review	M.Lee	R.Walker-Edwards	A.Boyd	JL.Barrenechea	D.Whatmough
B	16/06/2022	Issued for Transgrid's review	M.Lee	R.Walker-Edwards	A.Boyd	JL.Barrenechea	D.Whatmough
C	18/10/2022	Issued to Environmental Representative	 M.Lee	 R.Walker-Edwards	 A.Boyd <small>Alistair Boyd (Oct 18, 2022 10:25:07 GMT+11)</small>	 B.Calligeros <small>Vassily Calligeros (Oct 18, 2022 10:25:07 GMT+11)</small>	 S.Basanta

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Revision History	
Rev.	Detailed Description
A	Issued for internal review
B	Issued for Transgrid's review
C	Updated to address Environmental Representative review.

Key Document Stakeholders	
To be communicated with during reviews and revisions of this document	

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## 1 Introduction

This Spill Response Procedure (SRP or procedure) forms part of the *Soil and Water Management Plan* (SWMP) for EnergyConnect (NSW – Eastern Section).

### 1.1 Purpose

The purpose of this procedure is to describe the emergency spill response approach that will be employed by SecureEnergy personnel and subcontractors during construction of the EnergyConnect (NSW – Eastern Section) project.

## 2 Induction/training

All site personnel (including sub-contractors) will undertake an induction which will include information in relation to spill response. Training may also occur through toolbox talks, pre-start briefings and targeted training as required.

## 3 Scope

This procedure is to be applied in the event of a chemical, fuel or oil spill that arises due to the project activities.

## 4 Control measures

### 4.1 Preventative spill measures

In order to minimise the potential for environmental impacts to water and soil from spills the following will be undertaken:

- training in use of spill containment materials, their locations and spill response will be undertaken proactively as required particularly for personnel who are working within or near to aquatic environments and are involved in regularly handling and using potentially contaminating substances (e.g. personnel who are carrying out refuelling activities);
- unless unavoidable, refuelling, washing and maintenance of vehicles and mechanical plant will occur at least 50m from waterbodies;
- plant and equipment will undergo regular checks and subsequent repair for potential leakages or worn hydraulic hoses;
- all chemicals including fuels and oils will be stored when not in use in bunded areas; and
- all chemicals and hydrocarbons will be stored and handled as per manufacturer's instructions.

Regular inspection of chemical storage areas will be undertaken to assess compliance of the above measures.

### 4.2 Reactive spill measures

All spills are to be managed in accordance with the steps detailed within Annexure A. This includes the following steps:

1. Assess the situation;
2. Cease work and if safe to do so, control the spill;
3. Report the incident;
4. Clean up the spill;
5. Dispose of contaminated materials; and
6. Investigation and reporting.

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### 4.3 Spill containment

Spill containment materials such as those listed in Table 4.1 referred to as 'spill kits' will be kept and stocked on site at any location where there is significant risk/potential impact of a spill. Examples of potential locations include refuelling areas, chemical storage or where works are within the vicinity of waterways. Spill kits could be stored in a fixed location or be mobile. Spill kits will be placed in dedicated, visible and accessible locations.

The spill kits will be appropriately sized according to the volume of chemicals and fuels being stored or used and the activities which are being undertaken. All staff would be made aware of the location of the spill kit and trained in its use. Spill kits would be restocked as soon as possible after each use, with used material replaced.

Table 4.1 provides examples of appropriate application of material types. Spill kit inspections are to be undertaken on regular intervals such as during the weekly environmental site inspections detailed within Section 9.1 of the Construction Environmental Management Plan. The inspections would check that spill kits are present at the required locations, are accessible and appropriately stocked.

**Table 4.1 - Spill containment materials**

Product	Description/Application
Pads, pillows and socks	<ul style="list-style-type: none"> <li>Used to clean-up (absorb) small to medium liquid spills on land rather than containing.</li> <li>Thin absorbent mats placed over spills.</li> <li>Cushion shaped products containing absorbent fibres, used directly under a leak or drip.</li> <li>Absorbent socks placed at the low point of a spill.</li> <li>Consider the need to have a spill kit containing these at the source of the activity and extras in-stock on site.</li> <li>If these materials are not enough to clean-up the spill, consider using absorbent granular materials or equivalent.</li> </ul>
Sorbents	<ul style="list-style-type: none"> <li>Used during clean-up, sorbents are materials that soak up the spill such as saw dust, granules or peat mixture.</li> <li>Spread the sorbent over the contaminant after control materials have been applied.</li> <li>Recover the contaminant/sorbent mixture using shovels/excavator bucket or similar.</li> <li>Sorbents can be used from small to large spills.</li> </ul>
Drip trays and washout bunds	<ul style="list-style-type: none"> <li>Used to contain incidental leaks during plant and equipment maintenance.</li> <li>Containers should be maintained and liquids/sludge collected.</li> <li>Consider if these containers are not sufficient to contain leaks/washout then construction of permanent bunding may be suitable.</li> </ul>
Manual recovery	<ul style="list-style-type: none"> <li>Used to physically remove the contaminant either by excavating the contaminant and adjacent soil on land or pump / vacuum truck removal for contaminant and adjacent liquid/sludge in waterbodies.</li> <li>Control materials should be installed prior to manual recovery to prevent spread during recovery task.</li> </ul>

## 5 Incident management

Environmental incidents will be managed (including notifications and investigations) in accordance with Section 6.7.2 of the *Soil and Water Management Plan*.

## Annexure A

## SPILL RESPONSE PROCEDURE

### IN THE EVENT OF A SPILL

#### 1. ASSESS THE SITUATION

- Is it safe to take action?
- What is the source of spill and can it be stopped, controlled or shutdown?
- Consult the Safety Data Sheet - What PPE and emergency equipment is required?
- Are there any other hazards that need to be controlled? E.g. ignition sources?
- Do I need further assistance?



#### 2. CEASE WORK AND IF SAFE TO DO SO, CONTROL THE SPILL

- Stop work that has resulted in the spill
- Stop the flow immediately
- Contain the spill
- Divert the spill away from waterways if needed
- Use bunds, sand etc. to limit the spread of the spill
- If spill enters the drainage system stop the spill at the low point (or it's furthest extent) if possible



#### 3. REPORT THE INCIDENT

- Report the event to the Site Supervisor
- Site Supervisor to evaluate area and make area safe if possible and assess if further assistance needed
- Site Supervisor to notify the environment and safety teams
- Environment team to notify TransGrid. Environment team to determine if any further reporting is required in accordance with Section 8 of the CEMP.
- HSE senior representative on site to call emergency services as required for large spills beyond the capacity of the work crew to contain or contains hazardous substances, call 000 and request Fire and Rescue HAZMAT



#### 4. CLEAN UP THE SPILL

- Do not hose away spills into the drains or waterways
- If necessary, cover spills during rain events and divert upstream waters through use of a bund to avoid spread and further contamination
- Clean up all contaminated material, soils and water as soon as possible



#### 5. DISPOSE OF CONTAMINATED MATERIALS

- Contaminated materials will be disposed of offsite at a facility authorised to accept the waste. This includes the absorbent material used for clean up



#### 6. INVESTIGATION AND REPORTING

- Re-stock spill kits as soon as possible after the incident
- The Environment team will investigate and report the spill as required within Section 8 of the CEMP

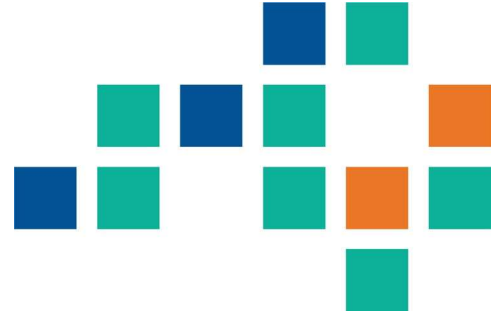
#### Notes

- Ensure the safety of yourself and others whilst implementing this procedure
- Use appropriate personal protective equipment prior to making contact with any spilt material
- Responsible persons includes personnel involved in the cause of the event, witness to the event, Supervisors, Secure Energy HSE Team, construction personnel and emergency response personnel
- Major incidents should refer to SecureEnergy's *Emergency Preparedness and Response Plan* (458060-HSE-PL-G-1015)

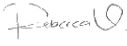




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## Appendix D - Dewatering Procedure

PUBLIC



# Dewatering Procedure EnergyConnect (NSW – Eastern Section) Stage 1 45860-HSE-PR-D-0018

REV	DATE	GENERAL DESCRIPTION	PREPARED	REVIEWED	VERIFIED	VERIFIED	APPROVED
A	11/05/2022	Issued for internal review	M.Lee	R.Walker-Edwards	A.Boyd	JL.Barrenechea	D.Whatmough
B	25/05/2022	Issued for Transgrid's review	M.Lee	R.Walker-Edwards	A.Boyd	JL.Barrenechea	D.Whatmough
C	15/08/2022	Issued for agency consultation	M.Lee	R.Walker-Edwards	A.Boyd	B.Calligeros	S.Basanta
D	3/11/2022	For issue to DPE	 R.Walker-Edwards	 C. Curlewis	 <small>Alexander Boyd (Nov 3, 2022 15:27 GMT+11)</small> A.Boyd	 <small>Vassily Calligeros (Nov 3, 2022 17:20 GMT+11)</small> B.Calligeros	 <small>Samuel Basanta Lopez (Nov 3, 2022 17:27 GMT+11)</small> S.Basanta

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## 1 Introduction

This *Dewatering Procedure* (45860-HSE-PR-D-0018) is part of the *Soil and Water Management Plan* (SWMP) for EnergyConnect (NSW – Eastern Section) and forms part of the overall environmental management framework for the project.

### 1.1 Purpose

The purpose of this Dewatering Procedure is to describe how SecureEnergy propose to manage dewatering activities during construction of EnergyConnect (NSW – Eastern Section).

In particular, this procedure describes the process for the management of water that requires discharging, including water within sediment basins and water captured in other construction areas including trenches, excavations and sumps.

The Dewatering Procedure is applicable for Stage 1 of construction.

## 2 Induction/training

All personnel taking part in construction activities shall be informed through site inductions, pre-start meetings, or toolbox talks of the significance of the surrounding environment and potential dewatering impacts.

All staff involved in dewatering activities will undergo site induction and/or specific training relating to this dewatering procedure. This will include (but not be limited to):

- relevant legislation;
- the existence of this procedure;
- sediment basin management; and
- Dewatering Permits.

## 3 Scope

This procedure is applicable for the following:

- dewatering activities conducted by site personnel (including sub-contractors) for the project from erosion and sediment controls points such as sediment basins, sumps and excavations; and
- dewatering of wheel washes/vehicle washdown areas.

## 4 Management of sediment basin water and water from other construction areas

It is important to note that dewatering from sediment basins or other construction areas for the project is not to be confused with the dewatering requirements of the wastewater from the turkey's nests that are outlined in the relevant *Accommodation Camp Management Plan*.

Sediment basins are stormwater management devices to capture sediment laden runoff water. The need for a sediment basin is governed by the volume of soil loss that may occur rather than solely on the location and environmental setting of the project.

Sediment basins are not proposed in all construction areas. Section 6.3.2 of the *Managing Urban Stormwater: Soils and Construction Volume 1 4th Edition* (Landcom, 2004) (also known as the Blue Book) states that sediment basins will generally will only be required in areas where soil disturbance occurs over an area greater than 2,500m<sup>2</sup> per sub-catchment. However and more accurately, the requirement for a sediment basin can be determined when there is an annual soil loss is greater than 150m<sup>3</sup>/year calculated in accordance with the Blue Book. Where the calculated soil loss is less than 150m<sup>3</sup>/year, other erosion and sediment control devices can be installed instead.

Key areas such as borrow pits, laydown areas or the substations during earthworks activities will be assessed to determine if a sediment basin is required or if other suitable erosion and sediment controls could be implemented. Generally, sediment basins will not be required along the transmission alignment due to limited earthworks activities supplemented by the low potential for soil erosion due to the flat topography.

### 4.1 Sediment basin type design

The EIS describes large proportions of clay and sand or a mixture of the two within the soil profile of the project area. All sediment basins are likely to be batch-treatment Type F or D sediment basins. Generally, the sediment basins will be designed in accordance with the Blue Book and *Best Practice Erosion and Sediment Control* (IECA, 2008). The advice of a soil conservation specialist will be followed during the design of the sediment basin.

A peg or other marker will be installed for each sediment basin to clearly show the upper limit of the sediment storage zone. Refer to Section 4.5 if stored sediment has accumulated above the sediment storage zone.

A summary of how Type D sediment basins are generally designed and operated is outlined in Table 4.1 and an example cross-section diagram for the sediment basin is provided in Figure 4.1.

**Table 4.1 - Sediment basin type (Source: IECA, 2008)**

Parameter	Type D Sediment Basin
Sizing determined by	The ability to catch all runoff from a nominated rain event (5-day, 80th percentile rainfall event) (based on <i>Best Practice Erosion and Sediment Control</i> (IECA, 2008) <i>Appendix B - Sediment Basin Design and Operation Version 2</i> and rainfall data taken from the nearest BoM weather station or from Table 6.3a of the Blue Book). Note: design parameters to be refined in consultation with soil conservation specialist prior to finalising basin design.
Design features	Single chamber only.
Method of discharge	Passive overflow during rainfall when capacity is overwhelmed. Once treated, detained water is pumped or piped out.
Chemical treatment	Yes. Can use slow-acting coagulants and flocculants such as gypsum if required.
Flocculant delivery method	Flocculant typically applied by hand or via recirculation pumps where required.
Relative effectiveness	Only effective for the water detained in the basin (i.e. up to the design rainfall event/intensity). If rainfall events exceed the design criteria levels, basins will overflow and the water will not receive treatment.

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Parameter	Type D Sediment Basin
Potential to detain water for construction use	Yes. Detained water available for onsite re-use.

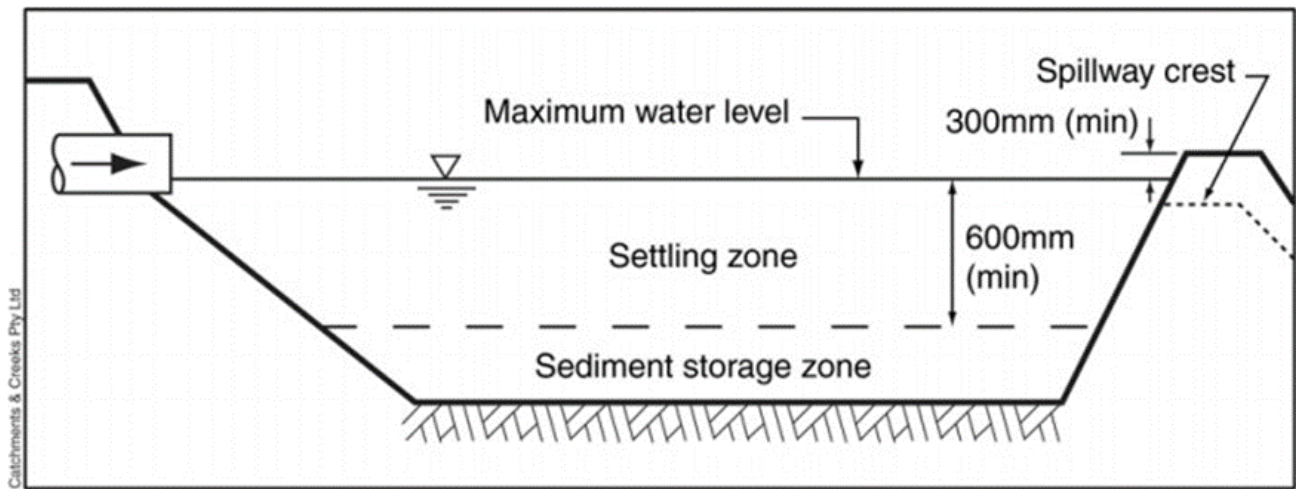


Figure 4.1 - Typical section through Type D sediment basin (Source: IECA, 2008)

#### 4.2 Commissioning

As sediment basins are constructed and commissioned, the construction team will ensure they have followed the Inspection and Test Plan (ITP) and basin design.

#### 4.3 Discharge timing

Sediment basins will not be discharged without a *Dewatering Permit* (45860-HSE-FO-G-1006) in place which has been approved by a member of the Environment Team. Generally, water detained within a sediment basin will be dewatered onsite within five calendar days following the cessation of the rain event, so that the basin and sediment storage capacity is reinstated. If rain occurs again during the five-day period, the five-day requirement resets.

However, any constructed sediment basins will also serve a secondary purpose to capture and store water for beneficial reuse during the project. As the project is located in a region that can experience prolonged periods without significant rainfall, the need to reinstate the basin storage capacity five days after a rainfall event can be diminished.

The Environment Team will monitor the forthcoming weather forecasts and the captured water in the sediment basins, and an assessment will be made on whether dewatering is required based on upcoming forecast weather, local climate, topography and proximity/connection to sensitive environments down gradient. The assessment will include consultation with the Construction Team to determine the upcoming construction activities and the volume of water that may be required.

As such, captured water in the sediment basins might be retained for periods greater than five days to enable beneficial reuse of the water for construction activities and dust suppression purposes.

#### 4.4 Sediment basin treatment

Prior to discharge of water from the sediment basin, the water will meet the water quality criteria provided in Table 4.2.

**Table 4.2 - Water quality criteria for discharge from a sediment basin**

Parameter	Units	Water quality criteria
pH	pH units	6.5 to 8.5
Total suspended solids (TSS)*	mg/L	50
Oil and grease	Visible	Nil

\*A correlation analysis for suspended solids and turbidity may be carried out to compare Total Suspended Solids (TSS) values against Nephelometric Turbidity Units (NTU). Where a correlation is identified, the appropriate NTU value may be used to determine if the discharge criteria has been met.

Where water from the sediment basin is being reused on-site, it will be managed in accordance with Section 6 of this procedure.

#### 4.5 Sediment basin maintenance

The following will be carried out to in relation to maintenance of sediment basins:

- all sediment basins are to be inspected for capacity following the cessation of a rainfall event that results in surface water runoff;
- if possible, water detained in a sediment basin will be reused for construction purposes, such as dust suppression or compaction, or applied to native/existing vegetated areas as described in Section 6.2. If water is to be discharged from the sediment basin, the water quality provided in Table 4.2 applies;
- once acceptable water quality has been achieved, water will generally be discharged from the sediment basin to ensure adequate storage capacity for the next rain event;
- after water is discharged from the sediment basin, a visual inspection will be made to determine if sediment has accumulated above the sediment storage zone. If sediment has accumulated above the sediment storage zone, de-silting of the basin will be scheduled;
- sediment extracted from the sediment basin will be incorporated into earthworks where suitable;
- where basins are dewatered using pumps, the inlets are to have a float or other suitable device attached to minimise the risk of drawing sediment from the bottom of the basin; and
- all discharges from sediment basins and other ponded water from excavation will be directed in a manner that does not cause scour.

#### 4.6 Sediment basin overtopping event

Rainfall data will be taken from the nearest BoM weather station or from Table 6.3a of the Blue Book during the design of the sediment basin. Basin design requirements will, however, be confirmed in consultation with a soil conservation specialist prior to basin installation.

If the amount of rainfall exceeds the design capacity, the basin will overflow. As such, design of the sediment basin will include a spillway to direct the water during overtopping. Overtopping events will be recorded in the post rainfall inspections.

## 5 Other types of dewatering

### 5.1 Biosecurity wheel wash management

Wheel wash bays will be installed at designated locations to minimise the transmission of weeds or pathogens. As such, the water at the wheel wash bay will need to be managed so it does not impact the surrounding environment which it is meant to protect.

As water from these wheel washes may contain biocides, antifungals or other disinfectants, the management of water from wheel wash bays will be determined on a case-by-case basis. If the wastewater treatment plants (WWTPs) are capable of treating the contaminants present, the water

from the wheel wash bays will be collected, transported and treated by the WWTPs for reuse on the project. This will be further discussed with the plant operator where required.

If the WWTPs is unable to treat the water from the wheel wash bays, the water which contain biocides, antifungals or other disinfectants will generally be drained to a containment sump that is lined with geofabric or other suitable material to avoid percolation. The water will be left to evaporate so that the residue is left behind. Prior to the decommissioning of the washdown bay and containment sump or as required, any residue material will be tested and removed offsite as waste in accordance with the *Waste Management Plan* (45860-HSE-PL-D-0013) for the project.

In the event the water from the washdown bay is at risk of overtopping within the containment sump, the project will dewater the sumps into intermediary bulk containers (IBCs). This water would then be removed offsite as waste in accordance with the *Waste Management Plan*.

## 5.2 Vehicle washdown in ancillary yards

Vehicle washdown bays will be set up along the construction corridor and/or at the construction compound. Wheel washdown bays proposed at the accommodation camps are detailed within the relevant *Accommodation Camp Management Plan*. These vehicle washdown bays are generally for vehicle and plant maintenance and cleaning, however, the cleaning process will also potentially remove weeds and pathogens that remain attached to the vehicles. The general preference is to utilise a pressure washer to minimise the volume of water used and runoff generated.

Washdown bays will be positioned to avoid any low points and stormwater drainage lines and will consider the direction of water runoff. Water from the washdown bays will be diverted to a designated sump which would capture silts, mud and soapy water. If de-silting is required at these washdown bays, the accumulated silts and sediments will be visually inspected for any contamination (including oil, grease, detergents, weeds and seeds), tested (as required for classification purposes) and disposed of in accordance with the *Waste Management Plan*. If the residue is deemed to be uncontaminated and suitable for reuse, it would be mixed into other dry material and reused on the project.

## 5.3 Chemical bunds and secondary containment

Chemical bunds that are used for secondary containment on the project may occasionally fill with rainwater. If the chemical bund has no visible signs of contamination the water will be collected and re-used or discharged in accordance with this procedure. If the bund has signs of oils/grease or hydrocarbons, the water will be collected and transported to a facility authorised to accept the liquid waste as per the *Waste Management Plan*.

## 6 Water reuse and discharge options

Water is a valuable resource within Western NSW and the project aims to reuse water where possible. During construction, the project will reuse water on-site from a range of sources such as treated wastewater released from the WWTPs into turkey's nests, sediment basins, trenches, piles, sumps and open excavations. Generally, water will be taken via a standpipe arrangement into a watercart and transported to the intended usage site.

Refer to the relevant *Accommodation Camp Management Plan* for the reuse and discharge options of water from the WWTPs and turkey's nest.

Water will be reused on-site in various construction activities such as, but not limited to, dust suppression throughout the project corridor (including at transmission tower construction areas, onto and adjacent to access tracks, unsealed roads, and unsealed areas in construction compounds and accommodation camps), soil compaction, wheel wash, vehicle washdown areas. Where water is reused within the project site, it will only be required to meet the water quality criterion detailed within Section 4.4 for oil and grease. **Water is not to be applied to food crops or used in a manner which may result in overspray onto food crops.**

Refer to Figure 6.1 below for a breakdown of the water reuse sources and the reuse options. Further details of the water reuse options are provided in the sections below.

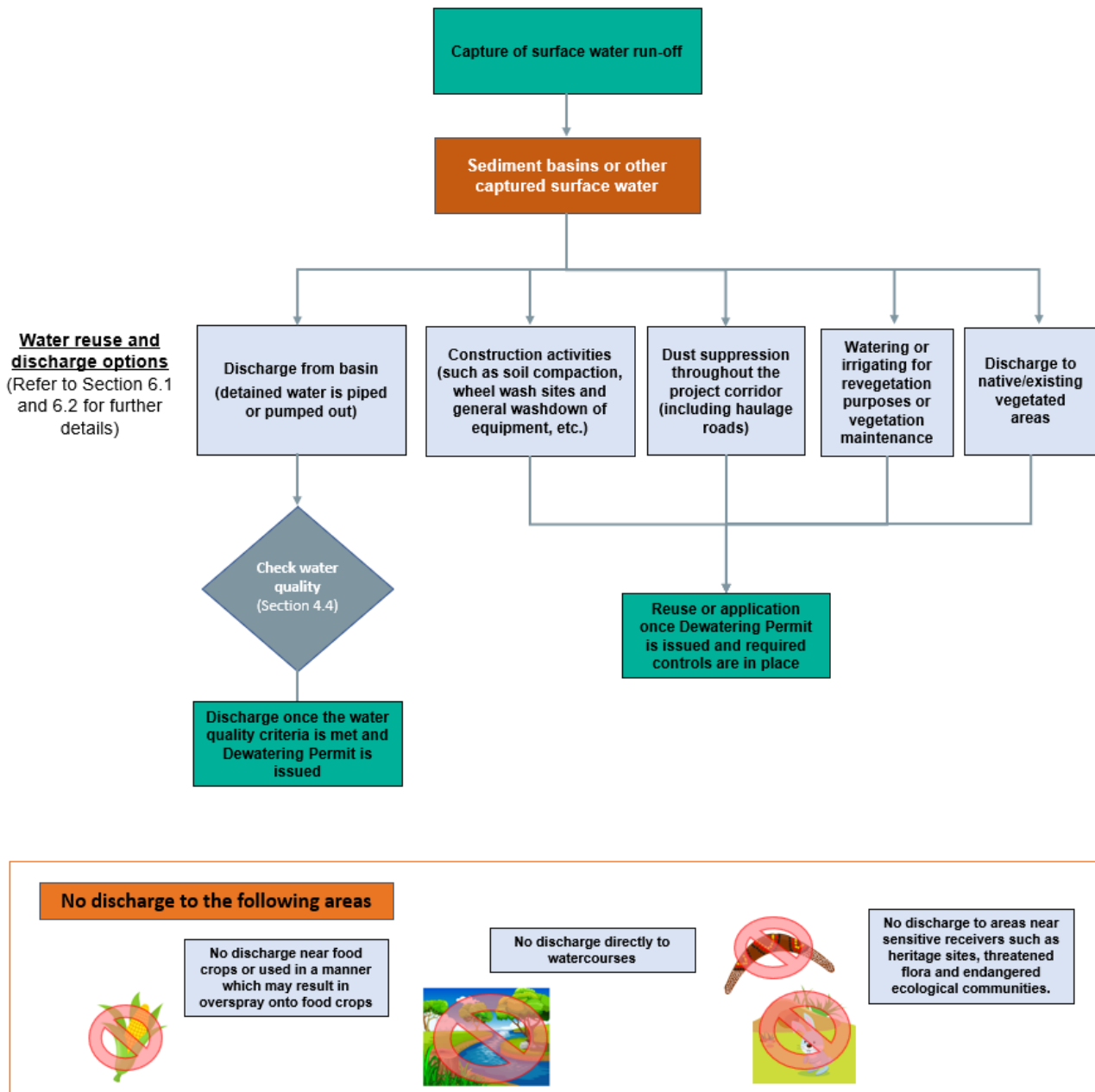


Figure 6.1 - Summary of the water source, reuse and discharge options

### 6.1 Dust suppression and for other construction activities

During construction, the project will reuse water for dust suppression throughout the project corridor (including transmission tower pad areas, onto and adjacent to access tracks, unsealed roads, and unsealed areas within construction compounds and accommodation camps (during establishment)) as well as for other construction activities such as soil compaction, wheel wash and vehicle washdown areas and for site restoration activities. The following will be considered when reusing water for dust suppression and construction activities purposes:

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- water is not to be discharged near food crops or used in a manner which may result in overspray onto food crops;
- the upcoming weather forecast, particularly in relation to rainfall; and
- the reuse area is clear of sensitive receiving environments such as waterways, farm dams, threatened flora and endangered ecological communities or areas of contamination. Refer to the text below for further details.

Although generally water is not to be used in close proximity to sensitive areas, there may be some instances where this is unavoidable. For example, the use of water may be required for construction activities (such as the compaction of soils) that are located in areas that are within close proximity to sensitive areas, such as in-situ heritage features.

In the event that water is required to be used in sensitive areas, the Environmental Manager or delegate is to undertake an assessment prior to water use. The assessment will consider the following:

- no application of water to areas where there is potential to impact threatened flora and endangered ecological communities; and
- no application of water to areas outside the construction disturbance areas which has the potential to impact in-situ Aboriginal heritage features.

Where the application of water is essential for construction activities, such as soil compaction within an area that contains or might contain Aboriginal heritage features (i.e. a PAD site, heritage site or heritage item), the management measures of the *Heritage Management Plan* (45860-HSE-PL-D-0113) are to be followed. Indirect impacts to heritage features adjacent to the construction activities should be considered by the Environmental Manager or their delegate (for example for a hearth located adjacent to the work area) with management measures to be applied as required.

## 6.2 Discharge to native/existing vegetated areas

In the event discharge to native/existing vegetated areas is required, it would be controlled such that it is discharged within and adjacent the project areas and does not cause over saturation, localised erosion or additional uncontrolled runoff. Dewatering to areas of existing vegetation will be undertaken so that it would infiltrate into the ground. The water quality criteria within Section 4.4 would not apply, however any such discharge must not result in pollution as defined under the *Protection of the Environment Operations Act 1997*. To assist in achieving this, any required controls should be installed.

Any discharge to vegetation will consider the following:

- the volume of water which requires discharge and the proposed discharge location;
- the ability for the vegetation / area to receive the proposed discharge;
- ensuring that the discharge itself and any runoff is retained on-site and does not enter adjoining properties where the receiving environment is unknown;
- that a visual inspection has occurred to determine an appropriate discharge location;
- no discharge of areas which may directly or indirectly impact sensitive receiving environments (heritage features, threatened flora, endangered ecological communities) or areas of contamination;
- the receiving area is 40m clear of sensitive receptors such as waterways and farm dams; and
- a Dewatering Permit must be approved by Environment Team prior to discharge.

Prior to discharge, the factors that will be considered by the Environment Team in deciding whether to issue a Dewatering Permit include forecast weather conditions (no rainfall imminent), soil surface conditions (infiltration capacity), climatic factors (e.g., drought, prevailing winds direction and wind speed), proximity to sensitive areas and a visual assessment of the proposed discharge area.

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If erosion or scouring is observed during discharge, the pump will be shut off immediately and the discharge point moved to an alternative location before recommencement of dewatering operations. Relevant details will be recorded on the Dewatering Permit.

## 7 Monitoring

### 7.1 Pre-rainfall

Sediment basins will be inspected as part of pre-rainfall inspection to determine if adequate design capacity is available for the upcoming predicted rainfall event and if water extraction from the sediment basin is required. The inspection to be undertaken on working days.

### 7.2 During rainfall

Where access is permitted, and it is safe to do so, sediment basins and secondary containment will be inspected during rainfall events occurring on working days to look for signs of overtopping/spilling.

### 7.3 Post-rainfall

Sediment basins will be inspected as part of the post-rainfall inspections to assess if there is any evidence of overtopping. The inspections will occur within the next working day, if safe to do.

### 7.4 During dewatering

Prior to dewatering of sediment basins, the water quality will be checked as stipulated in Section 4.4. The Supervisor (or suitable delegate) undertaking the dewatering activity will conduct a visual inspection to verify that runoff from the discharge area(s) does not extend beyond the nominated easement/project area, and check that discharge does not cause erosion or localised scouring of the soil.

## 8 Record keeping

Dewatering activities will generally be recorded in the *Dewatering Permit* (45860-HSE-FO-G-1006).

The Dewatering Permit will include the following information:

- a summary information section which includes the permit ID number, date and location of proposed discharge;
- the water quality values including the sampling time, date and the name of the person who obtained the sample; and
- quantities of additives, if required, including type of additive, time and date added.

Residue waste from washdown bays and biosecurity washdowns would be reported and tracked in accordance with the project *Waste Management Plan*.