

Appendix K

Addendum

Contamination assessment



MEMO

TO: Jarryd Barton
FROM: James Robinson
SUBJECT: EnergyConnect (Western Section) – Proposed amendments
OUR REF: PS117658-CLM-MEM-001 RevA
DATE: 6 April 2021

1. INTRODUCTION

TransGrid (electricity transmission operator in New South Wales (NSW)) and ElectraNet (electricity transmission operator in South Australia (SA)) are seeking regulatory and environmental planning approval for the construction and operation of a new High Voltage (HV) interconnector between NSW and SA, with an added connection to north-west Victoria. Collectively, the proposed interconnector is known as EnergyConnect.

The proposal, focusing on the western section of EnergyConnect in NSW, would involve the construction and operation of new 330-kilovolt transmission lines between the SA/NSW border and Buronga, an upgrade and expansion of the existing Buronga substation from an operating voltage of 220 kilovolts to 330 kilovolts and an upgrade of the existing transmission line between Buronga substation and the border of NSW and Victoria.

1.1 PURPOSE OF THIS TECHNICAL REPORT

This technical memo is prepared to be read as an appendix of *Technical Paper 12 – Phase 1 contamination assessment*, one of a number of technical papers that form part of the EIS for the proposal. The purpose of this technical memorandum is to identify and assess the potential impacts of additional areas proposed to be used in the construction of the proposal in relation to contaminated land management.

This addendum technical paper:

- identifies areas of environmental concern (AEC) which have the potential to impact the proposal with respect to contamination
- identifies areas of acid sulfate soils (ASS), saline soil or naturally occurring asbestos that may be disturbed during the project
- outlines mitigation and management measures for potential impacts
- assesses the impacts of constructing and operating the proposal on human health and environmental receivers
- documents how further assessment (if required) should be carried out following current guidelines.

This assessment comprises a preliminary (also referred to as Phase 1) investigation that assesses contamination potential based on a desktop study.

This addendum assessment will follow the same legislative and policy context as relevant to the proposal, as discussed in Section 2 of Technical paper 12. The assessment methodology generally followed the framework for the assessment of site contamination as outlined in the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (as amended) (the NEPM). Further discussion of the methodology can be found in Technical paper 12.

1.2 ADDITIONAL INVESTIGATION SITE DETAILS

This technical memo details the proposed design amendments that have been assessed in this memo, which include the construction compounds/accommodation campsites and water points required during the construction of the proposal. These include:

- Buronga main construction compound and accommodation camp, and adjustments to the Buronga substation upgrade and expansion site. The overall disturbance area at Buronga has been reduced from the area shown in the EIS. Given the assessment considered the transmission line corridor and a worst case disturbance footprint at Buronga, the amended proposal at Buronga is covered within the initial assessment, as discussed in Technical paper 12, and has not been considered further in this assessment.
- Anabran South – located on the Silver City Highway, providing primary support for the construction of the western end of the 330kV transmission line. The accommodation camp is no longer proposed at this location, and the site area has been reduced. The amended proposal at this location is covered within the initial assessment, as discussed in Technical paper 12, and has not been considered further in this assessment .
- Wentworth (and surrounds) – This main construction compound and accommodation camp would provide direct support for constructing the 330kV transmission line’s central section. The EIS identified that this site may be required in the vicinity of Wentworth but that its location would be subject to further investigation. The location for this site has now been confirmed, and would be located off Renmark Road to the west of Wentworth.
- Revised access track strategy, which has included the identification and focus of existing access tracks, access points and similar existing infrastructure to minimise disturbance to the transmission line easement wherever possible. These access tracks are largely contained in the proposal study area (being a one kilometre wide corridor between the SA/NSW border near Chowilla and Buronga and a 200 metre wide corridor between Buronga and the NSW/Victoria border at Monak, near Red Cliffs). In the limited instances where the nominated access tracks extend beyond the proposal study area, these would be following existing tracks and therefore have not been considered further in this assessment.
- A series of water supply points have been identified, providing connection points to existing water supply pipelines to supply water during construction. These water supply points are shown in Figure 1.1 and described in Table 1.1. 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 (no infrastructure amendments needed for them). This may include additional sources of potable water from areas such as Mildura. Should any approvals be required for additional site(s), these would be obtained as part of separate environmental approval processes.

Table 1.1 Proposed construction water source locations

LOCATION	SITE DESCRIPTION
Alcheringa Road, Buronga	This site would be located at the point of the existing Buronga re-lift pump station operated by the Western Murray Irrigation pipeline. The proposed works would include installing a new standpipe and connection to the existing Western Murray Irrigation pipeline. The area is currently cleared and adjacent to Alcheringa Road.
Fletchers Lake Drive, Dareton	The site does not currently provide any existing aboveground water supply infrastructure. The proposed works would include installing a new standpipe and connection to the existing Western Murray Irrigation pipeline. The area is currently not utilised (road reserve/verge) adjacent to Fletchers Lake Drive.
Silver City Highway intersection with Milpara Road, Anabranth South	The site does not currently provide any existing aboveground water supply infrastructure. The proposed works would include installing a new standpipe and connection to the existing Broken Hill pipeline. The area is currently cleared and adjacent to Milpara Road on the Silver City Highway's western side.
River Drive, Buronga	The site currently includes an access road to an existing overhead fill point of River Drive, Buronga. No new infrastructure would be required to allow for access to this water supply point.
Beverly Street, Wentworth	The site currently includes an access road to an existing overhead fill point along Beverly Street, Wentworth. No new infrastructure would be required to allow for access to this water supply point.
690 Pomona Road, Pomona	The site currently includes an access road to an existing water pump out point within the property of 690 Pomona Road, Pomona. No new infrastructure would be required to allow for access to this water supply point.
Wentworth accommodation camp and construction compound	The proposed location does not currently provide any existing aboveground water supply infrastructure. The proposed works would include installing a piped connection between the pump station and the proposed Wentworth construction compound and accommodation camp. The connection would involve installing a pipe inside a backfilled trench to supply to the camp. The pipe would be located within a corridor around six metres wide adjacent to the existing track.

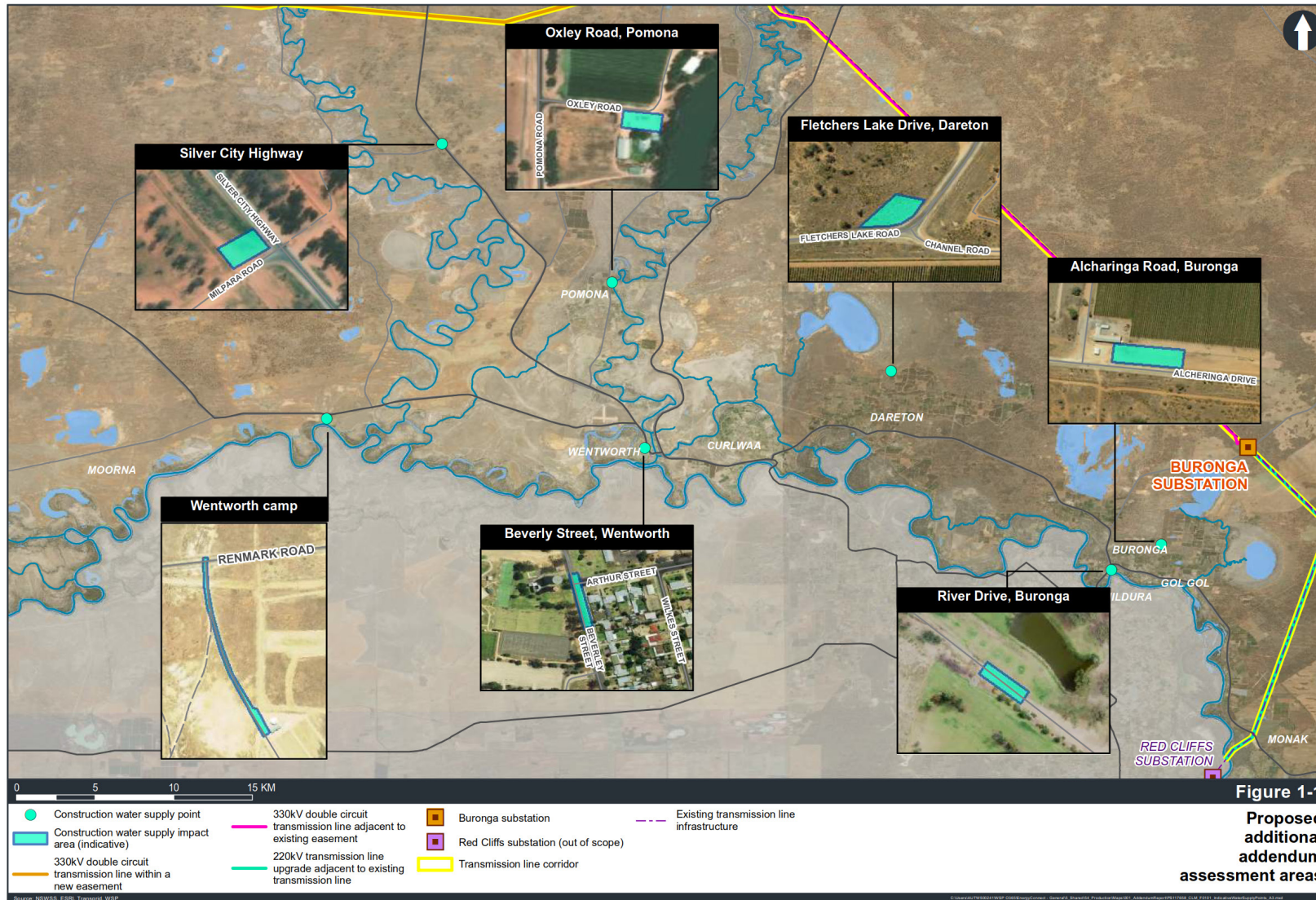


Figure 1.1 Proposed additional addendum assessment areas – water supply points

2. EXISTING ENVIRONMENT

The existing environment section from Technical paper 12 includes discussions surrounding the regional topography, soils and geology (including soil type, soil salinity, acid sulfate soils, and naturally occurring asbestos), hydrogeology, and general site land use. These discussions are still generally applicable to the proposed locations of water points and construction camps. The additional amended study area is outside of the original assessment area. The investigation reports referenced in Technical paper 12 (i.e. Douglas Partners 2020) are not relevant for this addendum assessment.

The proposal study area has been largely used as agricultural land with no significant development modification observed. It is unlikely to undergo significant permanent modification during the construction of the proposal.

Across the amended study areas, minimal potential contamination sources were identified both on-site and in the vicinity of the amended study area. The identified areas are limited to residential properties, cleared land, and developed areas (playing fields and roadways), particularly in Wentworth and Buronga. The majority of these areas of concern have been assessed to pose a low risk during construction. A discussion of the existing environment related explicitly to the amended study areas is provided in the following sections.

2.1 TOPOGRAPHY

The amended study area's topography is largely flat but generally slopes towards the existing large watercourses of the Darling River and the Darling Anabranh and then to the south to the Murray River. Additionally, there are large flat areas around the Anabranh and Wentworth construction compounds and accommodation camps.

2.2 GEOLOGY

Published geological mapping data from NSW Seamless Geology Project (2019) indicates that Quaternary aged transported soils cover most of the proposal. The amended study area comprises the aeolian sediments of the Woorinen Formation transitioning into alluvial sediments surrounding locations adjacent to the river (i.e. 690 Pomona Road, Pomona, and River Drive, Buronga).

2.3 SOIL SALINITY

As shown in Figure 2.1, a number of areas across the region are mapped as having high salinity potential. The amended study areas are mapped as having low salinity potential. Technical paper 12 described the results from soil conductivity testing undertaken by DP 2020a across the initial proposal site. The results indicated variable salinity across the initial proposal study area, with some soil results indicating moderately saline and very saline soil conditions. An assessment of soil aggressivity undertaken by (DP, 2020a) with reference to AS2159-2009, indicated that the soils are highly alkaline, with high levels of sodicity. While the amended study areas were not investigated in the Douglas Partners (2020a) report, these locations are expected to have similar soil conditions stemming from similar lithology and climatic conditions.

2.4 ACID SULFATE SOILS

The published digital GIS and The CSIRO Australian Soil Resource Information System indicates that there is an extremely low probability of acid sulfate soils within most of the initial study area, except for low lying areas surrounding former lakes and river beds, which are mapped as having a high probability of acid sulfate soil occurrence. Acid sulfate soil risk mapping is shown in Figure 2-2, which shows acid sulfate risk classifications for land within and in the vicinity of the proposed study area (including the amended study areas) to be in areas of a low probability of acid sulfate soil occurrence.

2.5 NATURALLY OCCURRING ASBESTOS

The published digital GIS data does not show any occurrences of expected naturally occurring asbestos minerals or serpentine and amphibole occurrence within the proposal study area (including the amended study areas). NSW naturally occurring Asbestos mapping is shown in Figure 2.3.

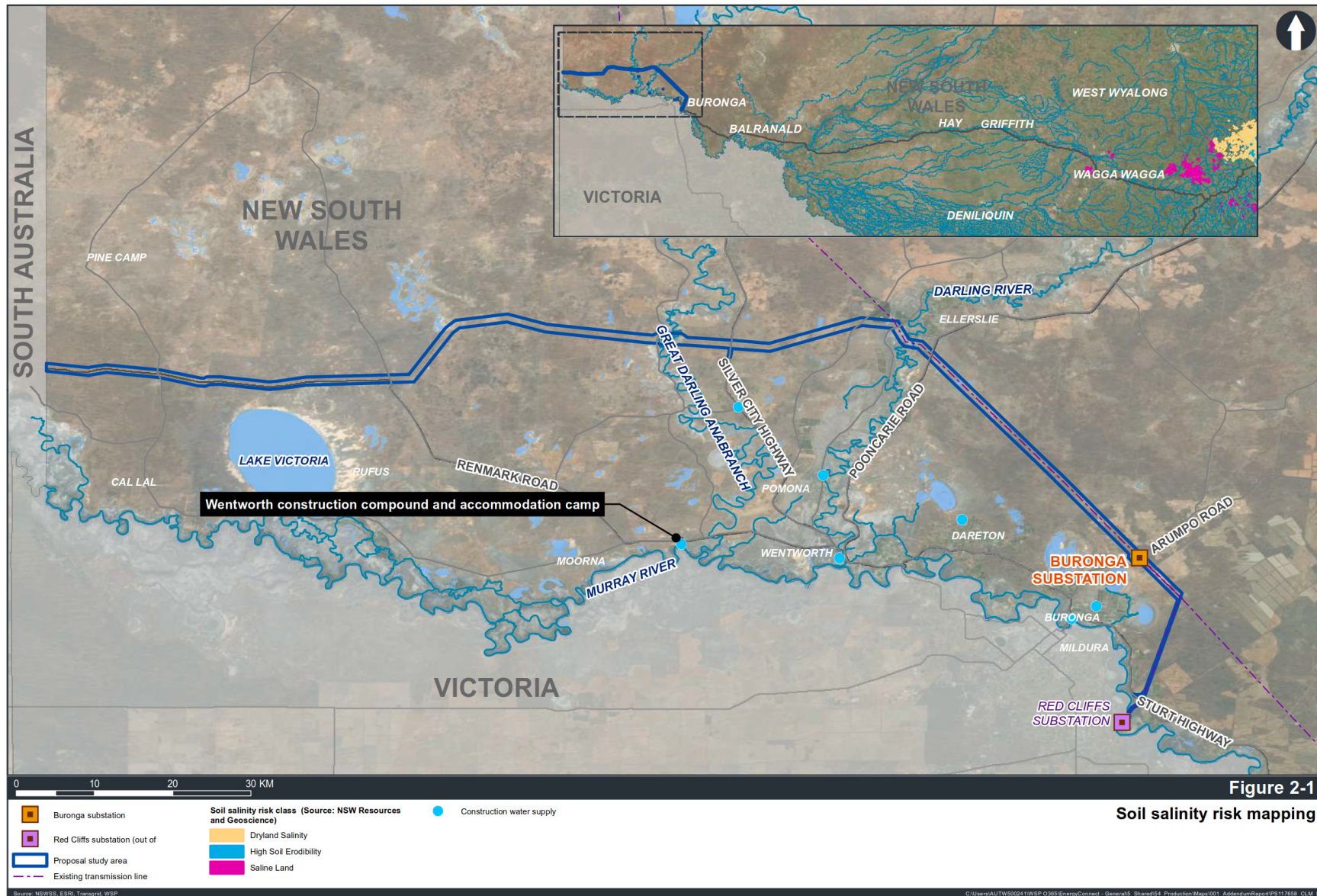


Figure 2.1 Soil salinity risk map

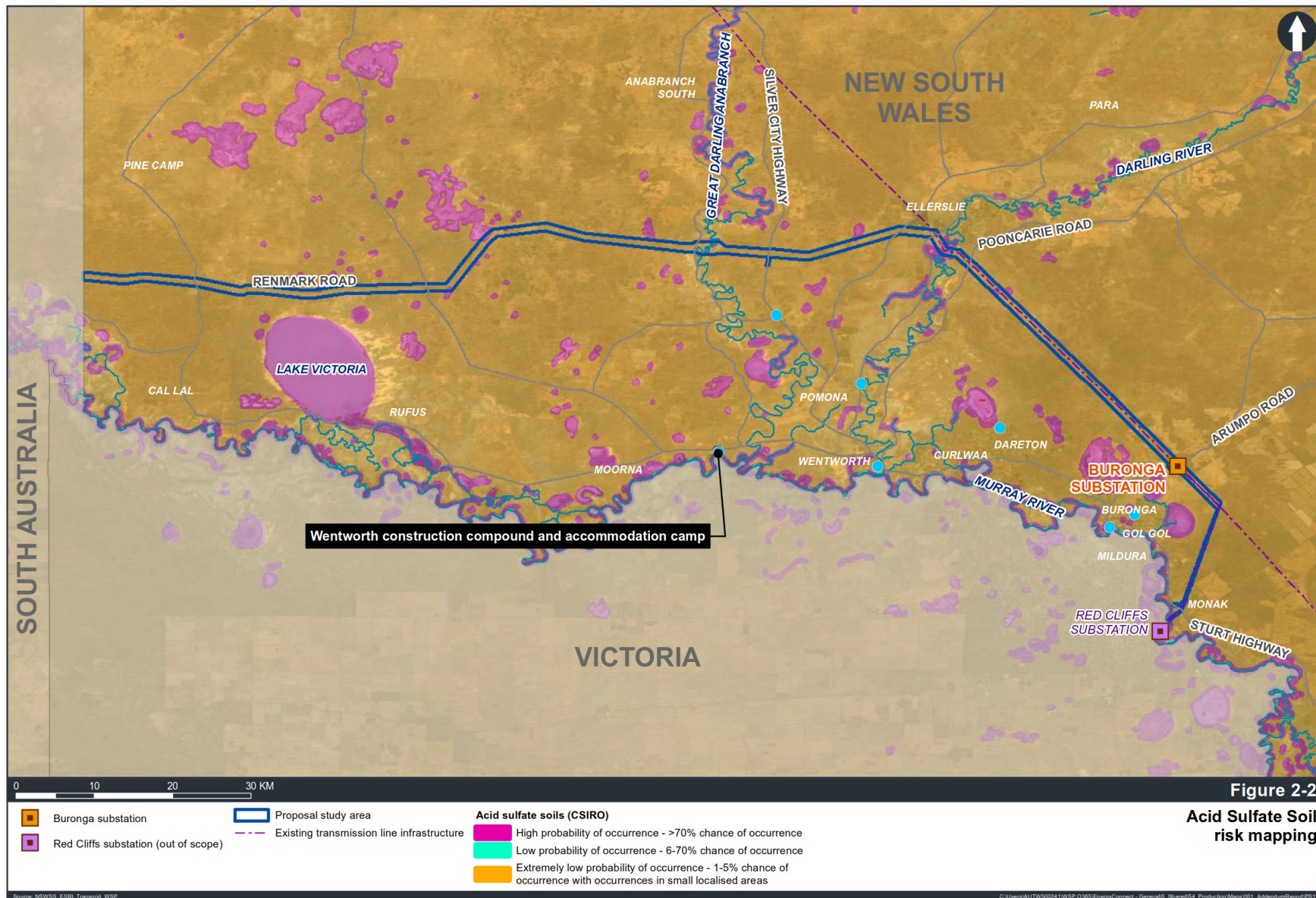


Figure 2.2 Acid sulfate soil risk map

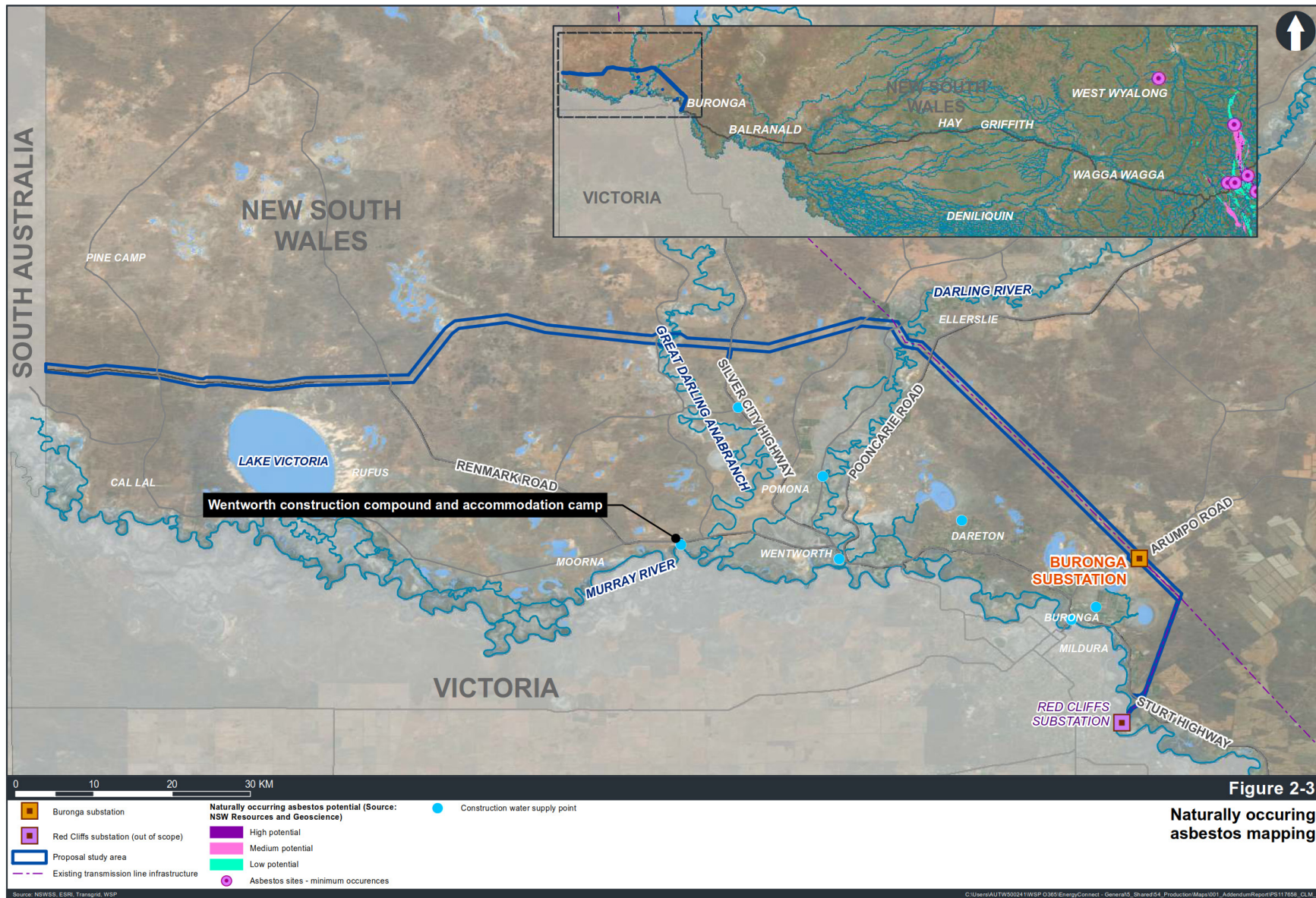


Figure 2.3 Naturally occurring asbestos risk map

2.6 DATABASE SEARCH OF POTENTIAL CURRENT AND FORMER CONTAMINANT SOURCES

A review of a database search of potential current and former contaminant sources in the vicinity of the site is presented in Table 2.1 below.

Table 2.1 DATABASE SEARCH OF POTENTIAL CURRENT AND FORMER CONTAMINANT SOURCES

AREA OF AMENDMENT	NSW CONTAMINATED SITES NOTIFIED TO EPA ¹	CURRENT OR FORMER NSW EPA LICENSED ACTIVITIES ²	CLEAN UP NOTICES ³	NATIONAL WASTE MANAGEMENT SITE DATABASE ⁴	UXO DATABASE REVIEW ⁵
Wentworth main construction compound and accommodation camp plus water supply point	No sites within 2km identified	One site in vicinity undertaking current NSW EPA licensed activities Feedlot located 200m south of site and water point.	No sites within 2km identified	No sites within 5km identified	No sites within 2km identified
Alcheringa Road, Buronga	No sites within 2km identified	No sites within 2km identified	No sites within 2km identified	Buronga Landfill. 258 Arumpo Road – located 3.8km NNW of site	No sites within 2km identified
Fletchers Lake Drive, Dareton	No sites within 2km identified	No sites within 2km identified	No sites within 2km identified	No sites within 5km identified	No sites within 2km identified
Silver City Highway intersection with Milpara Road, Anabran South	No sites within 2km identified	No sites within 2km identified	No sites within 2km identified	No sites within 5km identified	No sites within 2km identified

¹ Source: List of NSW contaminated sites notified to EPA, New South Wales Environment Protection Authority <https://www.epa.nsw.gov.au/your-environment/contaminated-land/notification-policy/contaminated-sites-list> - Accessed February 2021

² Source: POEO Public Register: Search for Licenses, New South Wales Environment Protection Authority <https://apps.epa.nsw.gov.au/prpocoapp/Detail.aspx> – Accessed February 2021.

³ Source: Contaminated Land: Records of Notice, New South Wales Environment Protection Authority <http://app.epa.nsw.gov.au/prclmapp/searchregister.aspx> - Accessed February 2021.

⁴ Source: Waste Management Facilities, Australian Government Geoscience Australia <https://ecat.ga.gov.au/geonetwork/srv/eng/catalog.search?node=srv#/metadata/a66ac3ca-5830-594b-c044-00144fdd4fa6> - Accessed February 2021.

⁵ Source: Department of Defence Unexploded Ordnance database, <http://52.65.9.125/> - Accessed February 2021.

AREA OF AMENDMENT	NSW CONTAMINATED SITES NOTIFIED TO EPA ¹	CURRENT OR FORMER NSW EPA LICENSED ACTIVITIES ²	CLEAN UP NOTICES ³	NATIONAL WASTE MANAGEMENT SITE DATABASE ⁴	UXO DATABASE REVIEW ⁵
River Drive, Buronga	No sites within 2km identified	Two sites undertaking current NSW EPA licensed activities 100m to the north of the site is “Paddlesteamers Melbourne and Rothbury”, a slipway used for the repair of riverboats 1.9 km to the north of the river drive site (Alcheringa Road, Buronga) - Mawson’s concrete	1.8km to the north - Pickering Transport Pty Ltd (PTG). A fire involving a parked and unattended b-double heavy vehicle understood by the EPA to be owned and operated by PTG and located on an open-air concrete and bitumen hardstand freight loading area managed by PTG	Buronga Landfill. 258 Arumpo Road Buronga– located 5.3km N of the site	The amended study area comes within 300m of the Sunset Country 2 UXO area (This site was used for Defence Training, Slight occurrence)
Beverley Street, Wentworth	No sites within 2km identified	One site in vicinity undertaking current NSW EPA licensed activities 1.7 km to the west of the proposed site - Wentworth sewage treatment plant (sewage treatment processing by small plants)	No sites within 2km identified	No sites within 5km identified	No sites within 2km identified
690 Pomona Road, Pomona	No sites within 2km identified	No sites within 2km identified	No sites within 2km identified	No sites within 5km identified	No sites within 2km identified

2.7 HISTORICAL AERIAL PHOTOGRAPHY REVIEW

Available historical aerial photographs (Spatial Collaboration Portal, 2020) were reviewed for the amended study areas. Land uses in the study areas have not significantly changed since the development of each site. The review did not identify any potential historical filling or stockpiling areas as would be indicated by large embankments or scaring.

2.8 AREAS OF CONTAMINATION CONCERN

Table 2.2 provides an overview of contamination concern areas and the associated contaminants of concern at these sites. Identifying areas of contamination concern is based on existing land uses and the potential for contamination to occur.

Table 2.2 Identified areas of contamination concern within the amended additional study area

AREAS OF CONTAMINATION CONCERN AND RATIONALE FOR CONCERN		CONFIRMED LOCATION (BASED ON AERIAL IMAGERY)	SENSITIVE RECEIVER	POTENTIAL CONTAMINANTS OF CONCERN
Cleared improved agricultural land (including cropping and irrigated land)	Historical use of pesticides, and foliants, large scale land use and the use of heavy machinery	Alcheringa Road, Buronga 690 Pomona Road, Pomona		Heavy metals, Organochlorine pesticides (OCP) Organophosphorus pesticides (OPP)
Built-up areas and residences	Historical uncontrolled earthworks and building structures previously demolished/ degraded	River Drive, Buronga Beverley Street, Wentworth (adjacent to residential property)	Buronga Wetlands	Heavy metals BTEX Asbestos PAH Pesticides TRH

3. ASSESSMENT OF CONSTRUCTION IMPACTS

The risk of disturbing or encountering contaminated material during construction varies depending on the work undertaken and is discussed in Section 3.1 (below).

3.1 POTENTIAL TO ENCOUNTER CONTAMINATION

During the additional desktop assessment, information reviewed has identified that much of the amended proposal's additional areas are undisturbed native vegetation with minimal areas of contamination concern identified.

A number of potentially contaminating activities that have been identified within the amended additional study area are presented in Table 2.2, with the associated area of contamination concern illustrated in Figure 2.1.

If inadequately managed, disturbance of contaminated areas has the potential to:

- mobilise contaminants, affecting nearby soils, surface water and groundwater
- increase the migration of contaminants into surrounding areas via leaching, overland flow or subsurface flow (water or vapour) or dust, with the potential to impact on receiving environments, the Great Darling Anabranch and the Murray River, and the surrounding community
- increase the risk of exposure to contaminants (direct contact or inhalation) by site workers, visitors and the local community.

Soil contamination could also be encountered during construction work at locations where infrastructure is to be installed, not previously identified as areas of potential concern – it is expected this would be managed through the unexpected contamination finds procedure and the CEMP as discussed in Technical paper 12. Where infrastructure already exists, the risk of disturbing or encountering contaminated is considered negligible.

Consistent with the exhibited proposal, the additional areas would have the potential to create contamination and other soil impacts on the surrounding environment if not managed appropriately. The construction environmental management plan (CEMP) would specify measures to minimise these potential impacts. Measures would relate to minimising the potential for spills and leaks from materials, plant and equipment, protocols for responding to incidents, erosion and sediment controls, and unexpected contamination finds procedure.

The risk of disturbing or encountering contaminated material during construction varies depending on the work undertaken. Based on available information and experience, a risk rating has been assigned to each land use and activity based on the potential for that use or activity to cause contamination; this information is presented in Table 3.1.



Table 3.1 Preliminary risk ranking

AREA OF INTEREST	CONSTRUCTION IMPACT	LIKELIHOOD	CONSEQUENCE	PRELIMINARY RISK EVALUATION
<p>Construction compounds, accommodation camps, and waterpoints without existing infrastructure</p> <p>Excavation activities, vegetation clearing, vehicle movement, temporary stockpiling and utility works</p>	<p>Potential contaminants of concern associated with the agricultural activity (identified at Alcheringa Road, Buronga) include pesticides, herbicides, nutrients and heavy metals. If not managed appropriately, the disturbance of contaminated soil could result in the following exposure scenarios, which have the potential to impact human health and the environment:</p> <p>direct contact, ingestion and inhalation by construction workers</p> <p>direct contact, ingestion and inhalation by users</p> <p>off-site transport of contaminants via vehicle/plant movements</p> <p>risk of dust exposure to construction workers/residential users of the site surface water run-off and discharge into receiving environment.</p>	<p>Low potential for widespread contaminants to be present.</p>	<p>Exposure pathway complete during construction (without the implementation of appropriate controls).</p>	<p>Low</p>



AREA OF INTEREST	CONSTRUCTION IMPACT	LIKELIHOOD	CONSEQUENCE	PRELIMINARY RISK EVALUATION
<p>Waterpoints with existing infrastructure (where excavation is not required)</p> <p>vegetation clearing, vehicle movement, and utility works</p>	<p>Potential contaminants of concern associated with the agricultural activity (identified at 690 Pomona Road, Buronga) include pesticides, herbicides, nutrients and heavy metals. Potential contaminants of concern associated with residential areas and areas surrounding dwellings/homesteads (identified at River Road, Buronga and Beverley Street, Wentworth include hydrocarbons, heavy metals, pesticides and asbestos impacted fill material. No significant filling is evident from aerial photographs.</p> <p>If not managed appropriately, the disturbance of contaminated soil could result in the following exposure scenarios, which have the potential to impact human health and the environment:</p> <p>direct contact, ingestion and inhalation by users</p> <p>off-site transport of contaminants via vehicle/plant movements</p> <p>risk of dust exposure to construction workers/residential users of the site surface water run-off and discharge into receiving environment.</p>	<p>Low potential for widespread contaminants to be present. No below ground disturbance of site soils is required.</p>	<p>Exposure pathway complete during construction (without the implementation of appropriate controls).</p>	<p>Negligible</p>

3.2 IMPACTS TO THE SOIL ENVIRONMENT FROM CONSTRUCTION ACTIVITIES

Storage and laydown areas would be used to store construction materials, plant and equipment and recovered waste and recycling materials. Hazardous and dangerous goods storage would include petroleum, diesel, liquefied natural gas (LPG), herbicide, pesticide and mineral oils that would be secured in purpose-built bunded and secure areas. The potential impact resulting from construction storage and waste management would be the exposure of the surrounding soil and water environments to contamination from spills and leaks from plant and equipment during standard operations or incidents.

The water points' operation during the construction phase should not result in exposure to the surrounding environment and users (e.g. maintenance workers or farmers) to potentially contaminated soil or groundwater. Below ground soil disturbance activities would not be part of the general maintenance activities as the infrastructure components would all be above ground. The potential for hydrocarbon (fuels, diesel, oils) contamination of soil, surface water and groundwater arising from incidents involving vehicle accidents, leaks and spills from vehicles moving through the sites or infrastructure at the accommodation camps cannot be overlooked. Spill volumes from such incidents would be expected to be minor; however, the potential for hydrocarbon fuel or black/grey waters to migrate off-site cannot be discounted. Spill containment facilities would be used on maintenance worksites and at all water treatment plants, and incident response procedures developed to manage the risk from these occurrences.

Following the EIS exhibition, and in consultation with the construction contractor, wastewater treatment plants have been proposed to reduce the need to dispose of generated wastewater off-site at approved disposal locations and reduce the need to source water for construction from other sources. Effluent and greywater from the wastewater treatment facilities would be discharged to a constructed turkey's nests (or a similar small basin type structure) at each accommodation camp, following which treated wastewater would be collected and re-used in construction, including dust suppression (via water carts). If not properly managed, the potential impacts from this activity includes:

- for on-site wastewater treatment, contamination of soil, surface water and groundwater associated with leaks and spills from infrastructure at the accommodation camps
- at application areas, the potential for impacts to soil and water due to nutrients, saline water, untreated (insufficiently), and/or potentially direct hydrocarbons and heavy metals.

There is also a risk to public health if the system is not sufficiently designed and maintained, and application methods adapted to reflect such risks (such as risk to construction workers).

As provided in Chapter 2 of the Amendment Report, to mitigate and manage the potential impacts of the wastewater treatment plant and re-use of treated wastewater:

- The wastewater treatment system would be designed, maintained and monitored in accordance with AS/NZS 1547 On-site domestic wastewater management, Designing and Installing On-Site Wastewater Systems (WaterNSW, 2019) and the Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 1) (National Resource Management Ministerial Council, Environment Protection and Heritage Council and Australian Health Minister's Conference, 2006).
- The turkey's nest would be HDPE/GCL lined to avoid potential interaction with groundwater.
- The treated wastewater quality would be treated to comply with ANZECC and ARMCANZ (2000) guidelines for irrigation water and subject to disinfection prior to use.

To further manage risks during the application of the treated wastewater, the following would be implemented:

- Application rates would account for soil conditions and the protection of water quality (including groundwater). This includes salinity conditions and the prevention of runoff from application areas.
- The application of treated wastewater would comply with buffer distances to sensitive receivers (such as waterways and farm dams) as set out in *Designing and Installing On-Site Wastewater Systems* (WaterNSW, 2019), consider climatic condition (such as wind) and equipment used would reflect human, livestock and environmental risks.
- Incident response procedures, such as spill response.

During construction, groundwater levels may be impacted by changing the natural pervious land surface into impermeable layers such as concrete pavement or asphalt, reducing infiltration of rainfall and surface water recharge underlying aquifer. The proposed impervious areas are small relative to the local catchment area, and the net impact on regional recharge and groundwater levels is low.

No groundwater take is required during the construction of the proposal for water supply— water is supplied from existing infrastructure.

Consistent with the assessment presented in Technical paper 12, the potential impacts from the construction activities would be accounted for in the CEMP. These would include requirements for the implementation of appropriate measures to minimise impacts to the soil environment from construction.

4. ASSESSMENT OF OPERATIONAL IMPACTS

The amended proposal would not introduce any additional risks to either the exposure of contaminated soil and groundwater due to the operation of the proposal or risks of contamination by proposal activities.

Any water supply infrastructure would be operated and managed by the asset owner.

5. CUMULATIVE IMPACT

With appropriate measures in place for all developments during construction, no substantial cumulative impacts would be expected. No cumulative operational impacts above what was identified in Technical paper 12 would be expected.

6. CLARIFICATIONS AND REFINEMENTS

Following exhibition of the EIS, it was identified a potential unexploded ordinance (UXO) site that was not covered in the Phase 1 Site contamination assessment as part of the exhibited EIS. The assessment as presented identified that the proposal study area would cross the Til Til (NSW) UXO area east of Pooncarie Road in which there is a slight occurrence of UXO reported. While the report noted that there were no other mapped UXO areas within the study area, the report omitted the Oak Plains UXO area to the east of the Til Til area.

The Oak Plains UXO area is located to the south east of Arumpo Road and the existing Buronga substation in which there is a substantial occurrence of UXO reported. The existing 220kV transmission line currently passes through the Oak Plains UXO area. The Oak Plains UXO area, in relation to the proposed transmission line corridor, is shown in Figure 6.1.

A revised mitigation measures, measure SCG16, has been identified to manage this potential risk (refer to Section 7).

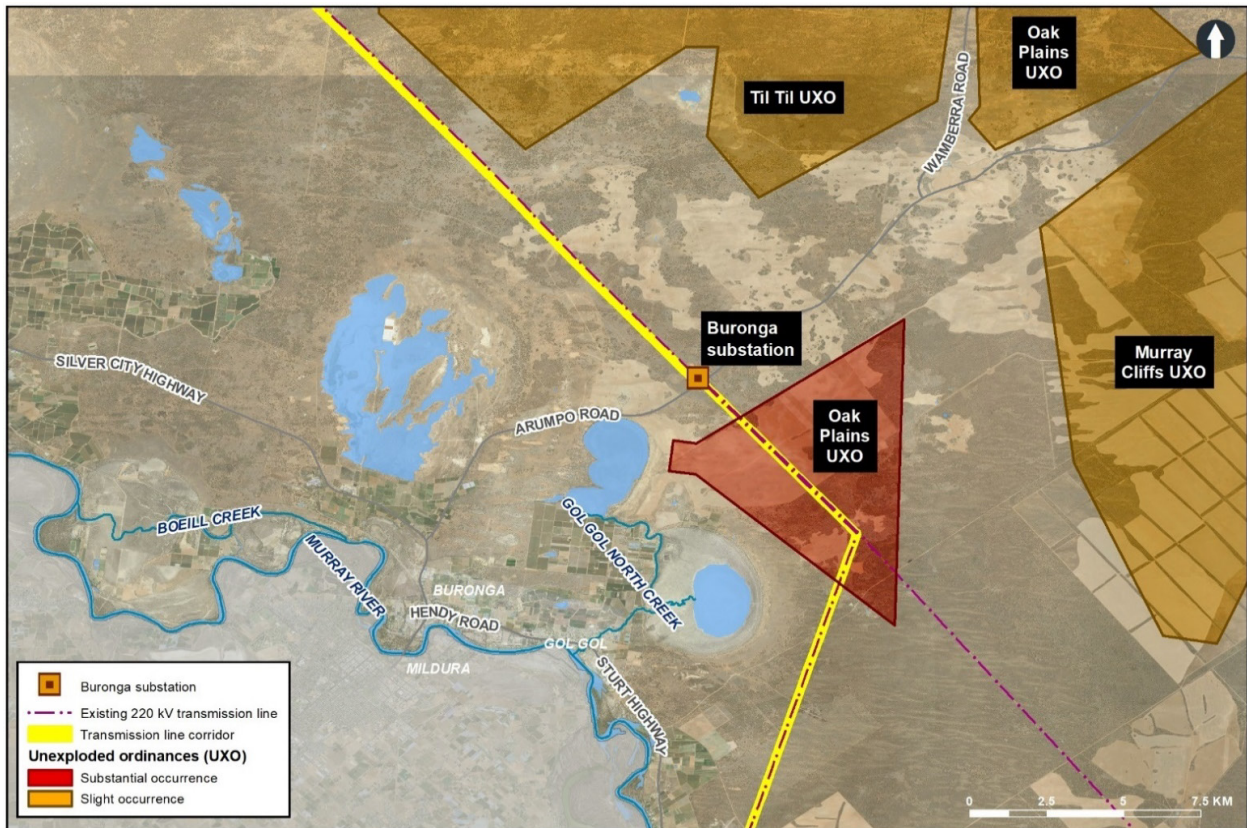


Figure 6.1 Oak Plains UXO area in relation to the proposal study area

7. MITIGATION MEASURES

Mitigation and management measures were previously identified for both construction and operation phases of the proposal in Section 8 of Technical paper 12. These would be documented in the proposal Construction Environmental Plan and the soil and water management sub-plan.

The following mitigation measures would be implemented to manage risks associated with the wastewater treatment plan and use of treated wastewater.

Table 7.1 Additional mitigation measures

ID	IDENTIFIED MITIGATION MEASURE	TIMING	APPLICABLE LOCATION(S)
SCG14	<p>The application of treated wastewater will be managed so that:</p> <ul style="list-style-type: none"> application rates account for soil conditions and the protection of water quality (including groundwater). This includes salinity conditions and the prevention of runoff from application areas buffer distances to sensitive receivers (such as waterways and farm dams) as set out in <i>Designing and Installing On-Site Wastewater Systems</i> (WaterNSW, 2019) are met climatic conditions are considered during application to ensure treated wastewater is applied to intended areas equipment used will reflect the management of human, livestock and environmental risks. 	Construction	All

ID	IDENTIFIED MITIGATION MEASURE	TIMING	APPLICABLE LOCATION(S)
SCG15	Incident response procedures for wastewater treatment plants (and use of treated wastewater) will be implemented to avoid, minimise and manage accidental spills or other incidents that impact the function of the wastewater treatment plants.	Construction	Accommodation camps
SCG16	<p>A site-specific risk assessment will occur for locations where there is a risk of encountering UXO. The risk assessment will be carried out prior to any activities that could interact with UXO. This will include field verification to validate the historical assessment of UXO contamination and identify appropriate mitigation practices. The risk assessment will occur with input from an appropriate UXO specialist and will identify if and when an explosives engineer is required during site activities.</p> <p>An unexpected finds procedure will be implemented. The procedure will 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 will be implemented prior to and during all relevant site activities. All personnel conducting intrusive works within an identified UXO area will be provided with appropriate safety and awareness briefing(s) prior to the participating in the intrusive works.</p>	Construction	Til Til UXO area Oak Plains UXO area

8. CONCLUSIONS

This memorandum assesses the impacts of potential contamination during the construction and operation of the additional areas. The assessment has included a desktop review of available information and databases and consolidation of the data to identify potential areas of interest and concern. This assessment is adequate to assess typical environmental impacts and provide recommendations for mitigation measures. No additional mitigation measures are required above those already mentioned in Technical paper 12.

Based on the additional desktop review results, the additional amended study area does not appear to be affected by broad-scale contamination. The risk of soil contamination is generally low. As detailed in Technical paper 12, mitigation measures and measures, as detailed in the CEMP, would ameliorate potential impacts to manageable levels. Should unexpected contamination be identified during the site works appropriate management, and remediation options would need to be identified through the unexpected contamination finds protocol (Technical paper 12, Appendix A).

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Contaminated Land Management

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9. LIMITATIONS

This Report is provided by WSP Australia Pty Limited (WSP) for TransGrid (Client) in response to specific instructions from the Client and in accordance with WSP's proposal dated September 2019 and agreement with the Client dated 31 October 2020 (Agreement) and as agreed under variations up to March 2021.

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