Western Renewables Link

CHAPTER 23 Contaminated land

23 Contaminated land

This chapter provides an overview of the potential contaminated land impacts associated with the construction, operation and decommissioning of the Project. This chapter is based on **Technical Report R: Contaminated Land Impact Assessment**.

Contaminated land is defined in the *Environment Protection Act 2017* (Vic) as land where waste, a chemical substance, or a prescribed substance is present in a concentration above the background level and creates a potential to harm human health or the environment. The Project traverses potential sources of contamination including sand and gravel quarries, agricultural land and a historic gold mining site.

Through an overview of existing land contamination conditions, this chapter provides an overview of potential Project impacts and recommendations for mitigation measures to protect human health and the environment.

What does contaminated 'land' include?

The term 'land' includes all subsurface soil and geological structures and groundwater. This also extends to the presence of 'substances' on the surface, and this could include 'substances' within buildings and structures 'permanently affixed' on the surface.

23.1 Evaluation objective

The scoping requirements identify the following evaluation objective relevant to contaminated land:

Evaluation objective

Maintain the functions and values of aquatic environments, surface water and groundwater quality and stream flows and prevent adverse effects on protected beneficial uses.

In response to this evaluation objective, impacts of the Project on contaminated land were assessed and measures to avoid, minimise or manage potential impacts have been identified. These measures are discussed throughout this chapter and have informed the development of Environmental Performance Requirements (EPRs). EPRs set out the environmental outcomes to be achieved through the implementation of mitigation measures during construction, operation and decommissioning to avoid, minimise and manage identified impacts. Cumulative impacts associated with relevant future projects were also assessed.

Further information on how the Project has been designed to avoid and minimise impacts is provided in **Chapter 5: Project development** and **Chapter 6: Project description**.

Other aspects covered in the Environment Effects Statement (EES) evaluation objective and relevant to contaminated land are addressed in the following EES chapters:

- **Chapter 22: Geology and soils**
- **Chapter 24: Groundwater**
- **Chapter 25: Surface water.**

Beneficial uses

"Beneficial uses" in the context of this chapter are defined as "environmental values" under the *Environment Reference Standard 2021*. Protected environmental values include land dependant ecosystems and species and human health. Indicators and objectives are used assess if a particular environmental value is being achieved, maintained or threatened.

23.2 Method

This section summarises the method adopted in **Technical Report R: Contaminated Land Impact Assessment**, which was informed by **Chapter 4: EES assessment framework and approach**. The key steps in assessing the impacts associated with contaminated land included:

- Defining a study area appropriate for contaminated land as presented in Figure 23.1. This included the Project Area, plus an additional 500m buffer to identify potential contaminated land that could impact the Project through contaminant migration.
- Reviewing applicable Commonwealth and Victorian legislation, and relevant local, state and national standards, guidelines and policies.
- Conducting a desktop review to determine the existing contaminated land conditions including:
  - Potential sources of contamination
  - Contaminants of concern
  - Migration pathways
  - Potential receptors.

  The following data sources and reference standards were reviewed:

  - Public databases for data including aerial imagery, current and historic mining, extractive, and landfill activities, Environment Protection Authority (EPA) Victoria priority sites, audit reports, per- and polyfluoroalkyl substances (PFAS) contamination information, Groundwater Quality Restricted Use Zones (GQRUZs), and the probability of occurrence of Acid Sulfate Soil (ASS). A full list of public databases accessed is included in Section 5.9 of **Technical Report R: Contaminated Land Impact Assessment**
  - Contaminated land investigations conducted by AusNet, including:
    - Crowlands Substation Project (2017) - Preliminary soil assessment where soil samples were collected for environmental laboratory analysis at 12 locations
    - Bulgana Terminal Station (2019) - Phase one environmental site assessment where soil samples were collected for environmental laboratory analysis at 27 locations
    - Study area soil investigation and site walkover (2021)- preliminary where soil samples were collected from 21 locations located throughout the study area.

  For further detail on these investigations refer to Section 6.2 of **Technical Report R: Contaminated Land Impact Assessment**.
- Consulting with the relevant regulatory authorities and key stakeholders including EPA Victoria.
- Conducting preliminary field investigations and targeted site inspections/walkovers. Opportunistic soil samples were collected in areas of potential contamination, identified by the desktop review, to understand the variability of soil conditions.
- Conducting a risk screening process to identify the key issues during construction, operation and decommissioning that require investigation in the technical report.

Contaminant migration

Contaminants can move or spread from one location to another though different contamination migration pathways. These can be through soil, water, or air (for example, windblown dust).

- Identifying and assessing the potential impacts associated with encountering contamination, spoil excavation and stockpiling, mobilisation of contaminants, and the spill of oils, chemicals and waste during construction, operation and decommissioning. These impacts were evaluated according to the following ratings, in relation to the extent, magnitude and duration of the impacts:
  - Negligible: No observable impact on human health, the environment or existing land-use due to the negligible presence or disturbance of soil or groundwater contamination or ASS.
  - Minor: Potential short-term impact to human health, the environment or existing land-use due to the presence or disturbance of soil or groundwater contamination or ASS.
  - Moderate: Ongoing (for the life of the Project), infrequent impact to human health, the environment or existing land-use due to the presence or disturbance of soil or groundwater contamination or ASS.
  - Major: Human health, the environment or existing land-use significantly compromised by the presence or disturbance of soil or groundwater contamination or ASS.
  - Severe: Irreversible damage to human health, the environment or existing land-use caused by the presence or disturbance of soil or groundwater contamination or ASS.
- Identifying other relevant future projects that could lead to cumulative impacts when considered together with the Project (refer to **Chapter 4: EES assessment framework and approach** for the full cumulative impact assessment method).
- Developing EPRs in response to the impact assessment to define the required environmental outcomes that the Project must achieve through the implementation of mitigation measures during construction, operation and decommissioning. Measures to reduce the potential impacts were proposed in accordance with the mitigation hierarchy (avoid, minimise, manage, rehabilitate and offset) and have informed the development of EPRs. Alternative mitigation measures could be implemented to comply with the EPRs based on the specific site conditions, available resources, and the Principal Contractor's expertise. The EPRs were developed to meet the requirements of the General Environmental Duty (GED) under the *Environment Protection Act 2017* (Vic).
- Following application of mitigation measures that would comply with the EPRs, determining residual impacts associated with the construction, operation and decommissioning of the Project, and evaluating their significance.

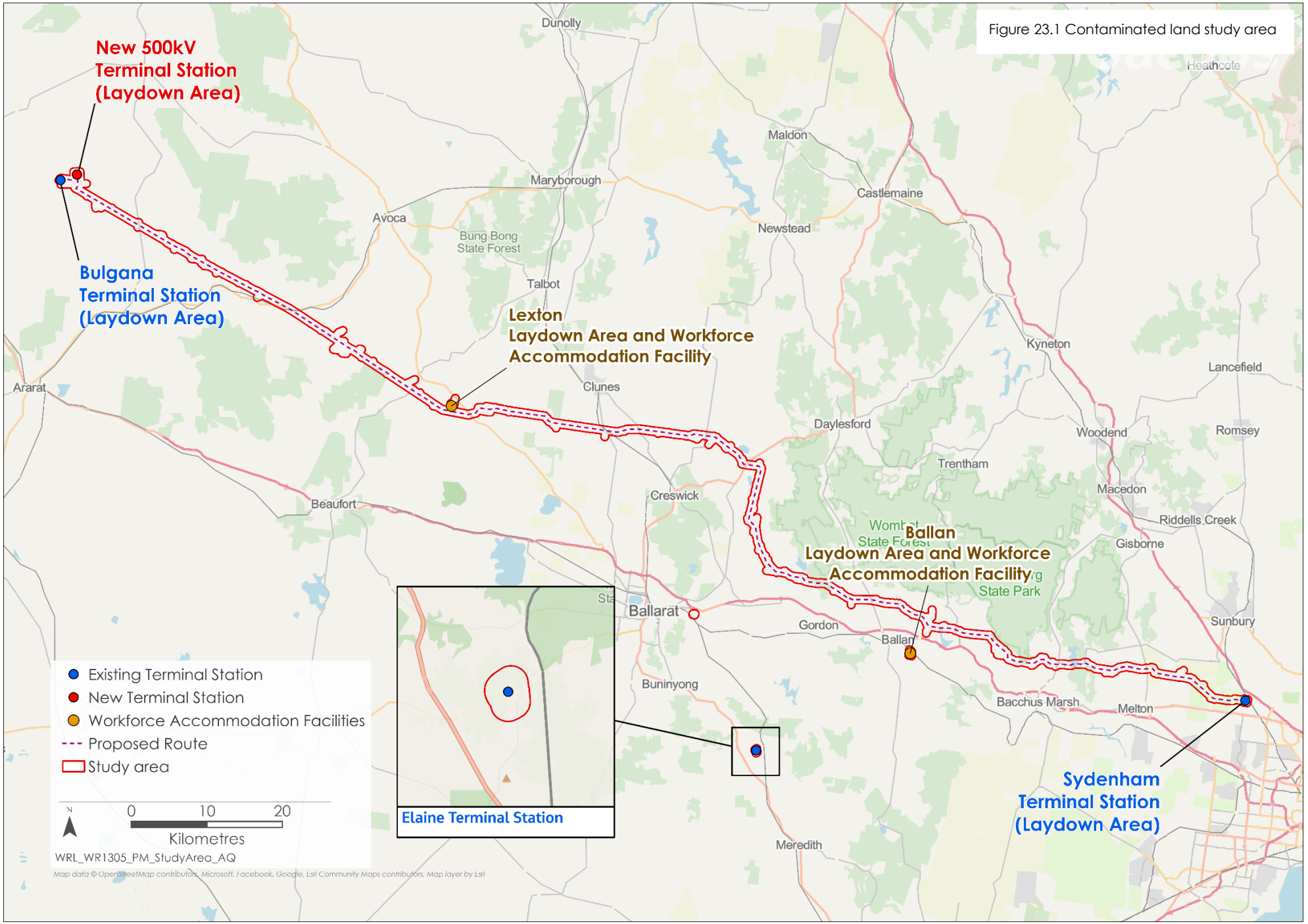

Figure 23.1 Contaminated land study area

23.3 Existing conditions

This section summarises the existing conditions for contaminated land according to the following key themes:

- Contaminated sites
- Environmental values.

Across the study area there are multiple potential sources of contamination that may be encountered by the Project, resulting from historic and current land uses including farming, extractive and industrial activities. However, soil investigations undertaken for the Project did not identify significant contamination and there are no sites identified, from review of publicly available EPA Victoria records, as presenting unacceptable exposure to contamination. Further, soil conditions that could result in contamination when exposed to oxygen are likely to occur in some sections of the study area.

23.3.1 Contaminated sites

The main sources of contamination within the study area are from current and past farming activities. Other possible sources nearby include historical gold mining sites near Smeaton, Lawrence, Allendale, and Creswick North, a closed landfill, and industrial areas including airports, the railyards near Sydenham, and sand and gravel quarries between Coimadai and Darley. These activities could potentially pollute the soil and groundwater. Previous soil investigations conducted at Bulgana and Sydenham Terminal Stations, among other locations, did not identify sites with significant contamination.

The EPA Priority Sites Register lists the sites that have received a notice to clean-up or reduce pollution because the contamination on their site presents an unacceptable threat to human health and / or the environment. These sites usually need to be cleaned-up or must implement monitoring and / or controls to prevent the spread of contamination. There are no Priority Sites in the study area; however, there is a closed waste landfill in Brimbank, approximately 40m to the east of the Sydenham Terminal Station. No audits or declared groundwater quality restricted use zones (GQRUZ) sites are present in the study area.

There are also areas around the study area where potential ASS, including Acid Sulfate Rock (ASR), may be encountered, especially near Glendaruel, Dean Reservoir (City of Ballarat), at Moorabool Reservoir, Hepburn Lagoon (Shire of Hepburn), Bolwarrah Weir, Pykes Creek Reservoir and Merrimu Reservoir (Shire of Hepburn and Shire of Moorabool).

Mapping of potentially contaminated areas and ASS within the study area is presented in Figure 23.2 and Figure 23.3.

Acid Sulfate Soil

Acid sulfate soil (ASS) and acid sulfate rock (ASR) are materials that have been exposed to oxygen, producing sulphuric acid. This soil can be disturbed by activities such as earthworks and drilling. If not managed properly, waste acid sulfate soil can impact human health, buildings and structures, and the environment. ASS or ASR contain higher concentrations of metal sulfides or the products of sulfide oxidisation.

Potential acid sulfate soil contains stable iron sulfides in a non-oxidised state. If left undisturbed, these soils pose very little threat of acidification.

23.3.2 Environmental values

Existing contamination, if intercepted by the Project's activities, has the potential to impact land, groundwater and surface water environmental values in the study area. A review of **Technical Report E: Land Use and Planning Impact Assessment, Technical Report S: Groundwater Impact Assessment**, and **Technical Report T: Surface Water Impact Assessment** was undertaken to identify the protected environmental values within the study area. Establishing environmental values that require protection is important as it enables screening criteria for soil, groundwater and surface water data to be developed. Screening criteria is used to identify where an impact to an environmental value may have occurred (such as elevated concentrations of arsenic in soil) and where further assessment or mitigation measures may be required to minimise or eliminate harm to environmental values.

The protected environmental values within the study area that relate to land, surface water and groundwater, as well as other land-related environmental values include:

- Land dependent ecosystems and species:
  - Natural ecosystems, including parks and reserves such as Ben Major Flora Reserve and Mount Beckworth Scenic Reserve.
  - Modified ecosystems, including agriculture areas (prominent across the study area) with industry sectors including wool, broad acre grazing, cereal cropping, viticulture, and olive growing and low-density residential housing and recreational / open space areas.
  - Highly modified ecosystems, including commercial and industrial areas.
- Human health:
  - Agricultural and rural workers, construction workforce personnel, rural residents, and park users.
- Buildings and structures:
  - The protection of groundwater quality is required to prevent damage to buildings and materials (steel and concrete).
- Production of food, flora and fibre:
  - At parks and reserves, agricultural and rural residential areas (home garden produce).

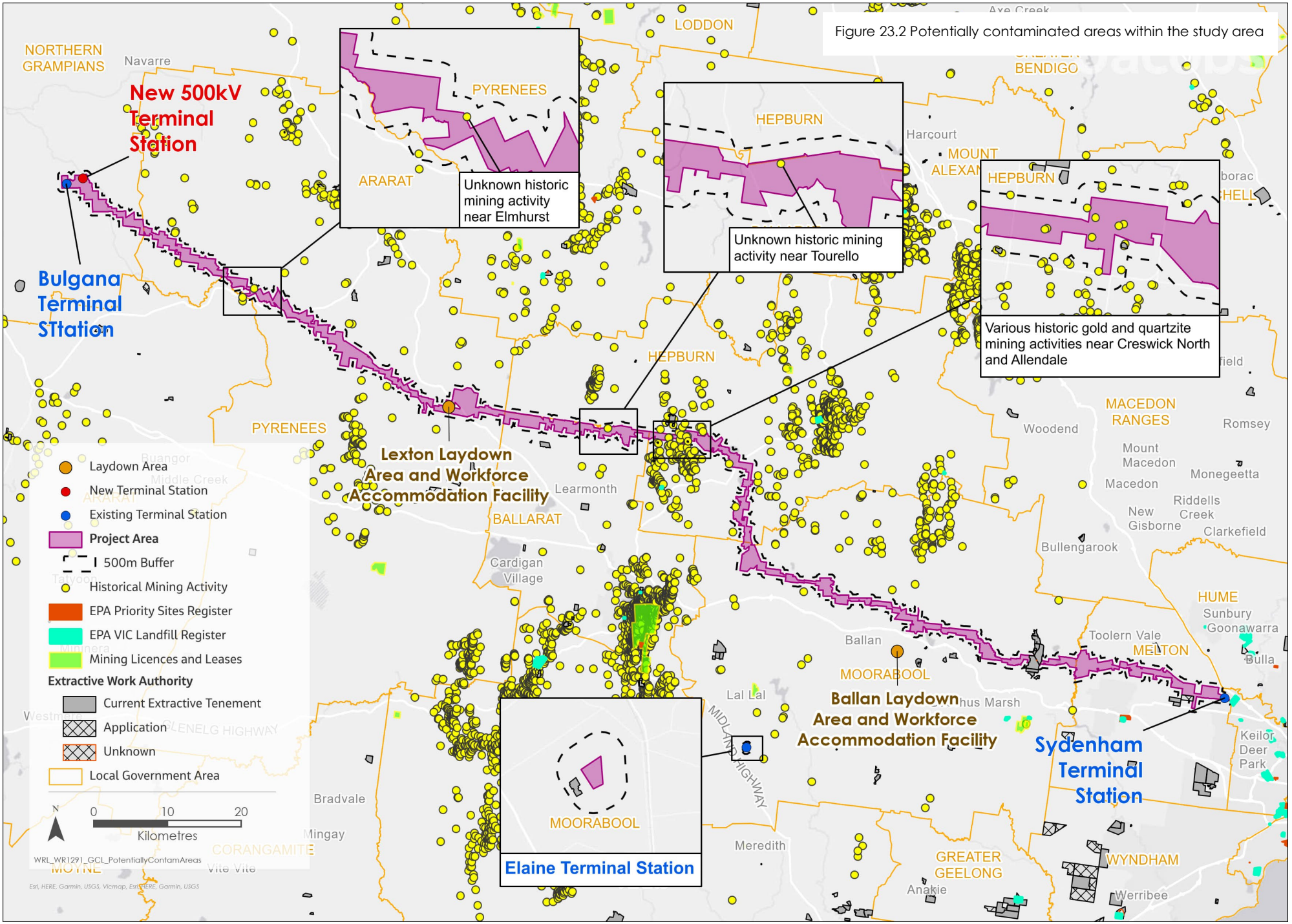

Figure 23.2 Potentially contaminated areas within the study area

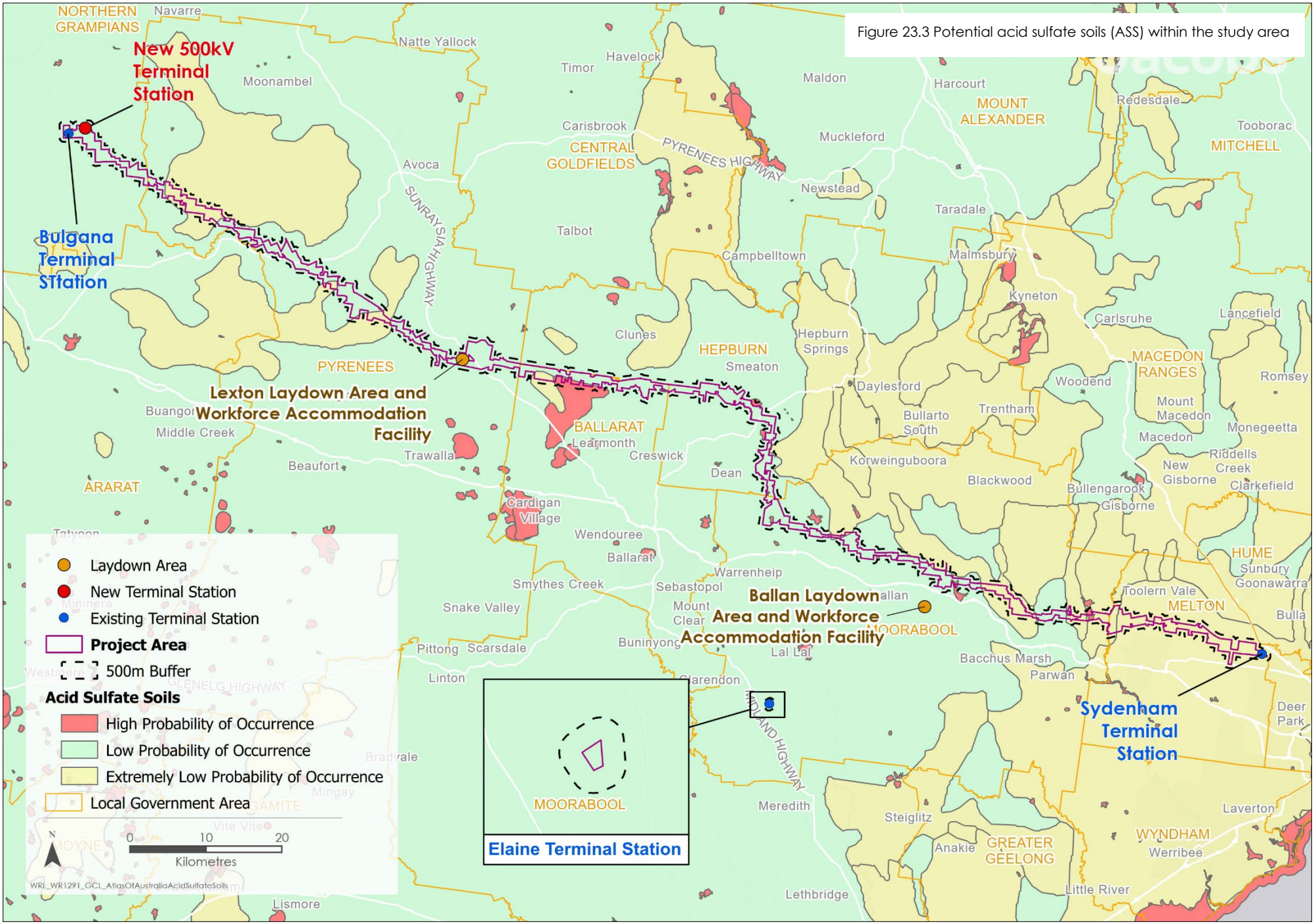

Figure 23.3 Potential acid sulfate soils (ASS) within the study area

23.4 Construction impacts

This section outlines the key issues identified through the risk screening process and associated impacts during the construction of the Project. The key issues and impacts identified for contaminated land are discussed according to the following themes:

- Potential to encounter contamination during construction: contaminated soil, groundwater, or ASS could be encountered during ground disturbing works such as excavation, piling, and dewatering (if required), resulting in impacts to human health, the environment, existing land uses or assets.
- Mobilisation of contaminants: new pathways for contaminant migration may be created, enabling existing areas of contamination to travel or spread.
- Spoil excavation and stockpiling: uncontrolled excavation and stockpiling of contaminated spoil could result in the generation of contaminated surface water run-off or contaminated dust or result in contaminants seeping into the underlying soil.
- Potential spill of oils, chemicals, and solid and liquid waste: inappropriate storage and handling of potential contaminants could result in land or groundwater contamination and impact human health.

23.4.1 Potential to encounter contamination during construction

The Project has the potential to encounter contamination in soil, rock and groundwater.

As indicated in Section 23.3, several potentially contaminating land uses have been identified within the study area, including farming, gold mining, sand and gravel quarries, existing terminal stations and illegal dumping. The Sydenham end of the study area is also located within a recommended 200 m buffer distance of an inert waste landfill according to EPA guidelines for the placement of buildings and structures. In addition, the construction of the laydown areas and workforce accommodation facilities at Lexton and Ballan has the potential to cause land and groundwater contamination because of ground disturbance activities.

The majority of the study area has a low to extremely low potential for ASS; however, ASS may be encountered in isolated locations. As such, there is a likely chance that contaminated soil, groundwater or ASS may be encountered during construction within the study area. If construction workforce personnel are exposed to contaminated material or ASS during construction of the Project, it is expected to have minor, localised impacts to human health, the environment or land use because the exposure would be short-term.

The Project has been developed to avoid areas with high potential for contamination such as historic gold mines, quarries and landfills, where possible. Impacts associated with encountering potential contamination will be further mitigated by undertaking contaminated land investigations prior to earthworks to inform the detailed design of the Project (EPR CL1). These investigations will be consistent with Schedule A – Recommended general process for assessment of site contamination of the National Environment Protection (Assessment of Site Contamination) Measure (NEPM) 2013 in areas of planned ground disturbance prior to any earthworks to inform detailed design and preparation of the Construction Environmental Management Plan.

Geotechnical investigations are being undertaken by AusNet to inform the detailed design of the Proposed Route. For the purpose of spoil management, soil sampling is proposed to be undertaken concurrently with the geotechnical investigations to target areas of potential contamination identified by the existing conditions identified in Section 6 of **Technical Report T: Contaminated Land Impact Assessment**. Undertaking contaminated land investigations (e.g., opportunistically collecting and analysing soil samples) prior to earthworks (EPR CL1), is expected to mitigate this impact by reducing the potential to encounter unexpected contamination. Based on this, residual impacts are negligible.

23.4.2 Mobilisation of contaminants

Mobilisation of contaminants (from both known and unknown sources of contamination) can impact human health, the environment and other environmental values.

Common potentially contaminating activities in the study area include agricultural practices, typically involving the use of bulk fertilisers, herbicides, and / or pesticide use, as well as the operation and maintenance of heavy machinery. A full list of potential contaminants of concern associated with these activities are presented in Section 6.10.2 of **Technical Report R: Contaminated Land Impact Assessment**.

Contaminants can be mobilised through excavation, piling, and dewatering works, which can create pathways for contaminant migration that currently do not exist. The resultant contamination may degrade the protected environmental values of land, surface water and groundwater and be difficult to mitigate or remediate.

Impacts to human health, the environment or existing land-use could be major, if contamination or ASS is disturbed and mobilised to a broader area or enters waterways or groundwater. In particular, the disturbance and mobilisation of mining waste in waterways - which are present within the study area - has the potential to cause moderate to major impacts to the surrounding environment and land use if inappropriately managed. Impacts associated with the mobilisation of contaminants will be mitigated by:

- Prior to excavation, contaminated land investigations will be undertaken prior to earthworks to inform the detailed design of the Project to avoid, where possible, areas of known or suspected contamination (EPR CL1).
- Requiring the Principal Contractor to implement measures associated with excavation of impacted soils, extraction of impacted groundwater, open excavations and stockpiles that reduce the spread of contamination (EPR CL2).
- The Spoil Management Plan, developed as part of the Construction Environmental Management Plan will include a Contingency and Unexpected Finds Plan (EPR CL3, EPR EM2). Developing and implementing a Dewatering Plan to manage potential dewatering impact during construction. The Dewatering Plan should include identification of disposal options for groundwater extracted during construction (EPR GW2).

With the implementation of these measures through the EPRs to mitigate and manage mobilisation of contaminants, the extent, magnitude and duration of impacts associated with contaminants being mobilised through excavation, piling, and dewatering works would be reduced. Following application of the EPRs, the residual impacts are negligible.

23.4.3 Spoil excavation and stockpiling

The Project will generate excavated material (spoil). Spoil can present adverse human health impact to both the construction workforce personnel through direct contact or to the general public through dust carried from exposed or stockpiled spoil.

As detailed in **Chapter 6: Project description**, approximately 40,000 to 50,000 cubic meters of spoil are expected to be generated during construction. The spoil will require classification and management in accordance with EPA's regulatory waste disposal requirements and the GED. This includes identifying if the spoil is contaminated, and if so, how much there is, and its condition. It also involves setting up measures to protect spread of contamination during excavation, temporary storage and transport of spoil, and identification of appropriate management options including obtaining relevant permits and approvals.

Prior to mitigation, potential impacts to human health and the environment due to spoil excavation and stockpiling are expected to be moderate to major. However, the potential impacts will be mitigated by:

- Developing and implementing management and mitigation measures as part of the Construction Environmental Management Plan for contaminated land consistent with the EPA WorkSafe Victoria, and other relevant regulatory requirements (EPR EM2, EPR CL2).

- Preparing a Contingency and Unexpected Finds Plan in relation to contaminated land including the identification of responsibilities, training, staff induction, typical unexpected finds and responses, notification(s), and reporting requirements (EPR CL2).
- Developing and implementing a Spoil Management Plan as part of the Construction Environmental Management Plan prior to commencing construction (EPR CL3).
- As part of the Spoil Management Plan, preparing an ASS and ASR Management Sub-Plan in general accordance with EPA Publications, including identification of locations and extent of potential contamination (EPR CL3).

The key objective for the Project's spoil management strategy would be to maximise reuse of construction spoil within the Project Area. The proposed approach to achieve this objective is in-situ characterisation of soils within the proposed excavation areas as much as practicable before it is excavated and to identify practical reuse or management outcomes.

Should the spoil be proposed to be reused outside the Project Area, the spoil would require classification and transport to a lawful place in accordance with EPA Victoria waste management regulations.

In some instances, imported fill may be required for earthworks. The Construction Environmental Management Plan (EPR EM2) will include a process to assess the suitability of imported materials, to limit the potential for contaminated material to be imported into the Project Area (EPR CL2).

With the implementation of the management and mitigation measures in accordance with the EPRs, spoil excavation and stockpiling during construction will be aligned with the requirements of the EPA, WorkSafe Victoria and other relevant stakeholders. This will reduce the extent, magnitude and duration of potential impacts to human health and the environment, and the residual impacts are negligible.

23.4.4 Potential spill of oils, chemicals, and solid and liquid waste

Inappropriate handling or an accidental spill of oil, chemicals or wastes (solid or liquid) during construction has the potential to impact human health including the health of the general public, construction workforce personnel, and / or cause contamination to waterways or land.

Oils, chemicals and wastes may be stored and used within the Project Area during construction. Inappropriate storage and handling could result in spills and leaks, potentially contaminating the land and groundwater and causing minor, localised impacts to human health and the environment. A list of hazardous substances planned for use and storage during the construction stage are presented in Appendix E of **Technical Report R: Contaminated Land Impact Assessment**.

With adherence to the waste handling, storage and disposal management and mitigation measures required as part of the Construction Environmental Management Plan (EPR CL2), there are negligible residual impacts related to the potential for new land or groundwater contamination associated with spills of oil, chemicals or wastes (solid or liquid) during construction.

23.5 Operation impacts

This section outlines the key issues identified through the risk screening process and associated impacts during operation of the Project. The key issues and impacts identified for contaminated land are summarised according to the following themes:

- Potential to encounter reused contaminated spoil: spoil with low levels of contamination may be reused within the Project Area, which may impact human health, the environment, land-use or assets in the future if ground disturbing works are undertaken.
- Potential spill of oils, chemicals, and solid and liquid waste: inappropriate storage and handling of potential contaminants could result in land or groundwater contamination and impact human health.

23.5.1 Potential to encounter reused contaminated spoil

Personnel undertaking ground-disturbing activities within the Project Area may be exposed to reused contaminated soil. This spoil is expected to be assessed during construction to confirm acceptably low levels of contamination. As such, the potential impact to human health, the environment or land-use is considered to be minor. However, the potential impact can be further reduced through the implementation of AusNet existing operational procedures, which include:

- Processes for soil contamination management through investigation, assessment and control of contaminated soil.
- Key steps, activities and responsibilities for managing contaminated soil, including the circumstances when a contaminated land specialist should be consulted.
- Objectives and measures to minimise, so far as reasonably practical, the hazards associated with asbestos-containing buildings and structures, battery rooms, chemical and fuel storage areas, oil containing equipment, spoil and waste materials.

With the implementation of measures included in AusNet's existing operational procedures for managing contaminated soil and processes for spills, residual impacts to human health and the environment associated with the potential to encounter reused contaminated spoil during operation is negligible.

23.5.2 Potential spill of oils, chemicals, and solid and liquid waste

Storing oils, chemicals and wastes (solid or liquid) improperly can lead to spills and leaks, which might contaminate the land and groundwater, posing a threat to human health and the environment. Small spills usually have a minor impact, but ongoing or large spills can have a moderate impact depending on the amount and type of substance spilled.

Prior to mitigation, the potential spills of oils, chemicals and waste during operation is considered to result in moderate impacts. However, the potential for impacts associated with improper storage and handling of potential contaminants is expected to be reduced by applying Ausnet's existing operational procedures as described in Section 23.5.1. Following application of AusNet's existing operational procedures, the residual impacts are negligible.

23.6 Decommissioning impacts

As decommissioning activities will be similar to those that occur during construction, the impacts relating to land, surface water and groundwater contamination are assessed to be largely similar to the construction stage. During both construction and decommissioning of the Project, contamination issues are largely related to the disturbance of soil and rock.

Accordingly, the EPRs developed to manage impacts during construction would also be applicable for decommissioning in accordance with the conditions of the time. This would also be managed by a Decommissioning Management Plan (EPR EM11) which would include mitigation measures to avoid and minimise impacts to human health and the environment from leaks and spills, site runoff, disturbance of potentially contaminated soils and waste soil.

Based on this, residual impacts are expected to be negligible for land and / or groundwater contamination.

23.7 Cumulative impacts

Cumulative impacts were assessed by identifying relevant future projects that could contribute to cumulative impacts on contaminated land, considering their spatial and temporal relationships to the Western Renewables Link Project. The projects considered to be potentially relevant to contaminated land include:

- Coimadai Sand Quarry
- Elaine (Akaysha) Battery Energy Storage System
- Nyaninyuk Wind Farm
- Victoria to New South Wales Interconnector West.

The potential contaminated land impacts from each project are typically localised (due to spills or leaks of oils, chemicals, or waste materials), and therefore can be considered and managed incrementally on a case-by-case basis. Further, construction related potential impacts from these relevant future projects can be primarily controlled with the proposed EPRs for the Western Renewables Link Project – that is, the EPRs will control WRL impacts sufficiently to prevent cumulative impacts with other projects occurring.

Post-mitigation contaminated land impacts due to the Project are expected to be both localised and negligible, and therefore cumulative impacts can be managed incrementally on a case-by-case basis. Based on the limited spatial relationship, the predicted negligible residual impacts are not expected to result in cumulative impacts with other proposed projects or proposed relevant future project expansions.

23.8 Environmental Performance Requirements

Potential impacts identified through **Technical Report R: Contaminated Land Impact Assessment** have informed the formation of EPRs for the Project. EPRs set out the environmental outcomes to be achieved through the implementation of mitigation measures during construction, operation and decommissioning. While some EPRs are performance based to allow flexibility in how they will be achieved, others include more prescriptive measures that must be implemented. Compliance with the EPRs will be required as a condition of the Project's approval.

Table 23.1 details the proposed EPRs developed for contaminated land.

The cornerstone of the *Environment Protection Act 2017* (Vic) is the GED. The GED requires anyone conducting an activity that poses risks of harm to human health and the environment from pollution or waste to minimise those risks, so far as reasonably practicable. To meet the requirements of the GED, the Project is required to manage contaminated land to minimise the risk of harm from contamination, so far as reasonably practicable, and notify the Environment Protection Authority (EPA) of contamination as required. The recommended EPRs were developed to meet the GED using reasonably practicable avoidance, management and mitigation measures for contaminated land impacts.

Table 23.1 Environmental Performance Requirements

EPR code	Requirement
EPR CL1	**Minimise contaminated land impacts through investigation and design** 1. Prior to the commencement of construction, undertake assessments consistent with Schedule A – Recommended general process for assessment of site contamination of the NEPM 2013 in areas of planned ground disturbance prior to any earthworks to inform detailed design and preparation of the Construction Environmental Management Plan (CEMP) (EPR EM2).- As part of the General Environmental Duty, these assessments must include but not be limited to consideration of the following: a. Potential mobilisation of groundwater contamination towards the Proposed Route should dewatering be required as part of the construction. b. Potential implications of chemically aggressive ground conditions, Acid Sulfate Soils (ASS) and Acid Sulfate Rock (ASR) on the selection of construction materials and durability. c. Characterisation of all excavated soil in accordance with waste management requirements in EPA Publication 702.2 Soil sampling for waste soils.
EPR CL2	**Develop and implement contaminated land management and mitigation measures for construction** 1. Prior to the commencement of construction and as part of the Construction Environmental Management Plan (CEMP) (EPR EM2), develop and implement management and mitigation measures for contaminated land consistent with the EPA, WorkSafe Victoria, and any other relevant regulatory requirements. The contaminated land section of the CEMP must include (but is not limited to) the following: a. Summary of applicable regulatory requirements. b. Description of roles and responsibilities. c. Management measures to address potential risks associated with excavation of impacted soils, extraction of impacted groundwater, open excavations and stockpiles. d. Odour management measures (in accordance with EPA Victoria requirements) during the excavation, stockpiling and transportation of contaminated material. e. Management measures for storage and use of chemicals, fuels and hazardous materials during construction. f. A process for the assessment of suitability of any imported material. g. Procedures for the identification of issues and appropriate management measures for residual risks of construction spoil that will become a waste and require management through construction (EPA Publication 1834.1: Civil Construction, Building and Demolition Guide). h. Processes for preparation of a Remedial Options Assessment (if unacceptable residual risks are identified or as required for re-use of Project spoil (EPR CL3)) and further, if required, prepare a Remedial Action Plan and remedial designs. i. Measures to prevent contamination of areas used for temporary construction works and to remediate any contamination caused by temporary construction activities in consultation with the relevant land manager. j. Contingency and Unexpected Finds Plan should unexpected, contaminated soil or groundwater be identified during earthworks.
EPR CL3	**Develop and implement a Spoil Management Plan** 1. Prior to commencement of construction, and as part of the Construction Environmental Management Plan (CEMP) (EPR EM2), develop and implement a Spoil Management Plan (SMP) in consultation with EPA to manage the environmental impacts associated with construction spoil. The SMP must include (but not limited to) the following: a. Summary of applicable regulatory requirements. b. Description of roles and responsibilities. c. Characterisation approach for the spoil for off-site disposal or re-use, if required. d. Consideration of major projects in the region to minimise cumulative impacts associated with spoil management. e. Identification of suitable sites for disposal of any waste in consultation with local councils. f. Identification of reuse options for all categories of spoil expected to be generated through construction. g. Management of hazardous substances. h. Monitoring and reporting requirements.

EPR code	Requirement
	i. Sub-plans as appropriate, including but not limited to an ASS and ASR Management Sub-Plan. The Acid Sulfate Soils (ASS) and Acid Sulfate Rock (ASR) Management Sub-Plan will include but not be limited to: i. Undertaking ASS and ASR investigations prior to commencement of construction. ii. Identification of locations and extent of any potential ASS/ASR. iii. Stockpile management including lining, covering and runoff collection to prevent oxidation and release of acid to the environment, and impact to human health. iv. Identification of suitable sites for re-use management or disposal of ASS and ASR. j. The ASS and ASR Management Sub-Plan will be prepared in accordance with General Environmental Duty, *Environment Protection Act 2017* and subordinate legislation, EPA Publication 655.1: Acid Sulfate Soil and Rock, and the Victorian Best Practice Guidelines for Assessing and Managing Coastal Acid Sulfate Soils k. Management measures for sustainable handling and transport of spoil for the protection of human health and the environment. l. Environmental management plans for temporary stockpile areas and stockpile activities. m. Details of appropriate lawful places for the receipt of waste and permit requirements.

Other EPRs contribute to a reduction in the magnitude, extent and duration of impacts related to land, surface water and groundwater contamination, these include:

- EPR EM2 – Develop and implement a Construction Environmental Management Plan
- EPR EM11 – Develop and implement a Decommissioning Management Plan
- EPR GW2 – Develop and implement a Groundwater Management Plan.

Refer to the relevant technical chapters and **Chapter 29: Environmental Management Framework** for full detail of these EPRs.

An ongoing inspection and maintenance schedule will be developed as part of the Construction Environmental Management Plan (EPR EM2) and AusNet's operational procedures to identify and remediate contaminated land issues. This schedule will set the minimum ongoing monitoring requirements, including timing, frequency and locations. The monitoring and reporting requirements for contaminated land will be determined by the Principal Contractor as part of developing the Spoil Management Plan (EPR CL3).

The objectives of the proposed monitoring programs for the Project required by the EPRs are outlined in **Chapter 29: Environmental Management Framework.**

23.9 Summary of residual impacts

With the application of the EPRs, residual impacts associated with contaminated land are negligible:

- Residual impacts from encountering known or unknown contamination, including ASS and ASR, and mobilising contaminants and mobilising contaminants during construction are negligible. The Project has been designed to avoid areas with high contamination potential, where practicable (EPR CL1). Encountered contamination is expected to have minor, localised impacts to human health, the environment or land use.
- Residual impacts due to the mobilisation of contaminants during construction are negligible. Excavation, piling, and dewatering works will be undertaken following contamination land investigations, in accordance with relevant management plans (EPR EM2, EPR GW2, EPR CL3).
- Residual impacts due to the generation, storage and disposal of spoil during construction are negligible, as spoil will be sampled and assigned an appropriate waste classification, and if required treated on site prior to transport (EPR CL3).

- Residual impacts due to potential spills of oils, chemicals, and solid and liquid waste during construction are negligible. Requirements for the appropriate storage, handling, and disposal of these potential contaminants will be included in the Construction Environmental Management Plan (EPR CL2).
- Residual impacts from encountering reused contaminated spoil during operation are negligible, due to requirements for contamination levels to be assessed as suitably low for the proposed reuse opportunity during construction, and through compliance with AusNet's existing operational procedures.
- Residual impacts due to potential spills of oils, chemicals, and solid and liquid waste during operation are negligible as requirements for the appropriate storage, handling, and disposal of these potential contaminants are included in the AusNet's existing operational procedures.
- Residual impacts to contaminated land during decommissioning are considered to be the same as for the construction stage. As such, EPRs developed to manage impacts during construction will also be applicable for decommissioning and will be incorporated into the Decommissioning Management Plan (EPR EM11).

With the implementation of measures to comply with EPRs, it is considered that the Project meets the contaminated land aspects of the evaluation objective: "*Maintain the functions and values of aquatic environments, surface water and groundwater quality and stream flows and prevent adverse effects on protected beneficial uses.*"

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