



Carmichael Coal Mine and Rail Project Supplementary Environmental Impact Statement

Volume 4, Appendix C3d – Vegetation Reports for SP1 Laydown areas

Containing

- SP1 Laydown Area Vegetation Reports:
 - NCA Permit Application
 - NCA Permit Report
 - Permit RVMC Response
 - SP1 RVMC response IDAS Form 11

IDAS form 11—Clearing native vegetation

(Sustainable Planning Act 2009 version 3.0 effective 1 July 2013)

This form must be used for development applications that involve the clearing of native vegetation.

You **MUST** complete **ALL** questions that are stated to be a mandatory requirement unless otherwise identified on this form.

For all development applications, you must:

- complete *IDAS form 1—Application details*
- complete any other forms relevant to your application
- provide any mandatory supporting information identified on the forms as being required to accompany your application
- include the relevant application fee, noting that referral agency fees (where applicable) are to be paid to the referral agency

Attach extra pages if there is insufficient space on this form.

All terms used on this form have the meaning given in the *Sustainable Planning Act 2009* (SPA) or the Sustainable Planning Regulation 2009.

This form can also be completed online using MyDAS at www.dsdip.qld.gov.au/MyDAS

Mandatory requirements

1. What type of development is proposed?

- ☒ Operational work for clearing vegetation made assessable under Schedule 3 of the Sustainable Planning Regulation 2009
- ☐ Material change of use of the premises
- ☐ Reconfiguring a lot

2. What type of approval is being sought?

- ☒ Development permit
- ☐ Preliminary approval
- ☐ Both—provide details below

Mandatory supporting information

3. Confirm that the following mandatory supporting information accompanies this application

For ALL applications	Confirmation of lodgement	Method of lodgement
A property vegetation management plan including as defined under the Vegetation Management Act 1999 schedule. Note: A property vegetation management plan must show the matters prescribed in s.11 of the Vegetation Management Regulation 2012.	<input checked="" type="checkbox"/> Confirmed	
A statement addressing the relevant part(s) of the State Development Assessment Provisions (SDAP).	<input checked="" type="checkbox"/> Confirmed <input type="checkbox"/> Not applicable	

For ALL applications	Confirmation of lodgement	Method of lodgement
For an operational work application for which the assessment manager is the local government		
Written confirmation that the chief executive of the Department of Natural Resources and Mines is satisfied the proposed clearing is for a relevant purpose under the <i>Vegetation Management Act 1999</i> , section 22A.	<input type="checkbox"/> Confirmed <input checked="" type="checkbox"/> Not applicable	
For an operational work application where the assessment manager is the Department of Natural Resources and Mines		
Either of the following: <ul style="list-style-type: none"> written confirmation that the chief executive of the Department of Natural Resources and Mines is satisfied the proposed clearing is for a relevant purpose under the <i>Vegetation Management Act 1999</i>, section 22A; or information identifying the relevant purpose under the <i>Vegetation Management Act 1999</i>, section 22A and demonstrating how the proposed clearing is for that purpose. 	<input checked="" type="checkbox"/> Confirmed <input type="checkbox"/> Not applicable	
For applications for a material change of use or reconfiguring a lot		
The following additional detail to be included in the property vegetation management plan: <ul style="list-style-type: none"> details of the location and extent of: <ul style="list-style-type: none"> infrastructure, including buildings, fences, roads and electrical, telecommunication or sewerage services; and firebreaks and fire management lines; and details of the way the proposed clearing complies with the applicable concurrence agency policy under the <i>Vegetation Management Act 1999</i>. 	<input type="checkbox"/> Confirmed <input checked="" type="checkbox"/> Not applicable	

Notes for completing this form

- The Department of Natural Resource and Mines (DNRM) website contains a comprehensive range of information about the *Vegetation Management Act 1999*, including assessment codes and policies, as well as the *Landholder's guide to vegetation clearing applications*.
- Question 3 for operational work applications —Under the *Vegetation Management Act 1999*, the proposed vegetation clearing is only for a relevant purpose if the applicant satisfies the chief executive of the Department of Natural Resources and Mines (DNRM) that the development applied for is one of the purposes listed in section 22A of that Act. If the assessment manager is the local government, the applicant must obtain confirmation from the chief executive of DNRM that the proposed clearing is for a relevant purpose and provide this with the application. However, if DNRM is the assessment manager, the applicant has the choice of either obtaining this confirmation before making the application, or providing adequate information for DNRM to make the decision on whether the proposed clearing is for a relevant purpose at the time the application is received.

Privacy—Please refer to your assessment manager, referral agency and/or building certifier for further details on the use of information recorded in this form.

OFFICE USE ONLY

Date received

Reference numbers

The *Sustainable Planning Act 2009* is administered by the Department of State Development, Infrastructure and Planning. This form and all other required application materials should be sent to your assessment manager and any referral agency.

environmental management



Carmichael Coal Project (Rail)

SP1

Laydown & Temporary Works Areas



Regional Vegetation
Management Code Response
Brigalow Belt and New England Tablelands Bioregion

6867
10 July 2013
Adani Mining Pty Ltd





Document Control

Title	Carmichael Coal Project (Rail) - SP1 Laydown & Temporary Works Areas - Regional Vegetation Management Code Response - Brigalow Belt and New England Tablelands Bioregion
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Issue	Date	Prepared By	Checked By
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Final			

Disclaimer

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Reports and/or Plans by Others

Reports and/or plans by others may be included within this Environmental Management report to support the document.



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I. Introduction

The *Environmental Management Division* of the **Saunders Havill Group** was engaged by **Adani Mining Pty Ltd** (Adani) to prepare applications for native vegetation clearing permits under the *Vegetation Management Act 1999* for the Carmichael Coal Project (Rail) (laydown and temporary works areas). This includes a response to the relevant Regional Vegetation Management Codes and Property Vegetation Management Plans (PVMP) describing the extent of clearing. The Carmichael Coal Project (Rail) has been declared a 'significant project' under the *State Development and Public Works Organisation Act 1971* and as such, this report addresses Part S of the Regional Vegetation Management Code (Requirements for clearing for significant projects) for the following bioregion: Brigalow Belt and New England Tablelands (refer to **Plan 1**).

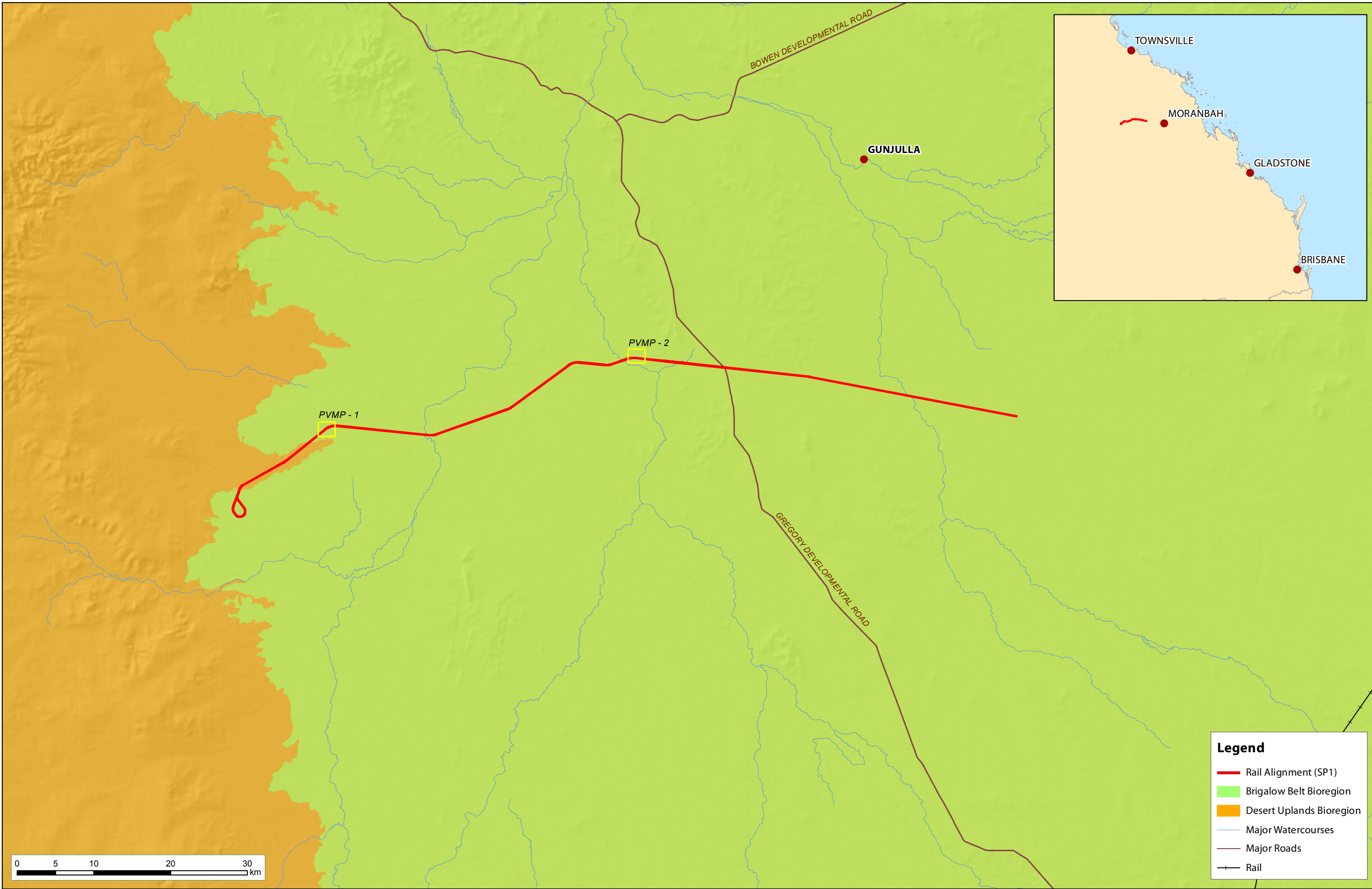
Adani propose a coal mine on their coal tenement (Exploration Permit for Coal (EPC) 1690) in the Galilee Basin, West of Moranbah in central Queensland. The proposed Carmichael Rail links the Mine to the ports of Dudgeon Point and Abbot Point. The rail alignment is located within a nominal 95 metre (m) wide corridor. The Rail (West) portion is designed to accommodate a dual gauge (i.e. narrow gauge and standard gauge) with a capacity up to 100 Mtpa. This will allow for future connections to other existing and/or proposed third party rail infrastructure via standard and/or narrow gauge lines. To facilitate the construction of the rail, a series of temporary facilities and works areas are required. This associated infrastructure includes:

- Construction Camps;
- Track Laydown Area;
- Bridge Laydown Area;
- Construction Depot;
- Maintenance Facility;
- Concrete Batching Plant; and
- Ballast Stockpiles.

Refer to **Appendix A** for a location plan of the laydown and temporary works areas. Property Vegetation Management Plans (PVMPs) for the two locations requiring the clearing of remnant vegetation are presented in **Appendix B**.

Where possible, the temporary works areas and facilities have been orientated outside of mapped remnant vegetation. Due to engineering and logistical criteria and the requirement to limit impacts to existing landholders, there are two locations along SP1 where the construction of temporary facilities and works areas require the clearing of remnant vegetation.

This report has been prepared to support an approval for clearing within proposed laydown and temporary works areas associated with the following properties: Lot 662 on PH1491 (Refer to **PVMP 1 – Appendix B**) and Lot 4 on SP116046 (Refer to **PVMP 2 – Appendix B**). See **Plan 1** for context.





2. Ecological Assessments

The **Saunders Havill Group** was engaged by **Adani Mining Pty Ltd** to prepare Complex Property Maps of Assessable Vegetation (PMAV) to support requested Regional Ecosystem (RE) mapping changes for SP1 of the Carmichael Coal Project (Rail) investigation corridor.

Desktop assessment and field surveys were carried out within the rail investigation corridor to map and define vegetation into categories as defined by the Queensland Herbarium. A significant level of survey effort was completed along the SP1 alignment to describe and characterise the condition of mapped remnant areas. Field surveys noted significant variations in current RE mapping, with the most notable changes associated with mapped composite REs (as typically expected). Single RE codes were assigned to surveyed polygons (where possible). In locations where vegetation communities have mixed, or are not easily discernible, mapping retains a composite RE description.

Responses to relevant RVMC Performance Requirements (PR) are based on the findings of the PMAV survey. The PMAV report should be read in conjunction with this application to clear assessable vegetation. This report includes a summary of PMAV findings and field investigations within proposed clearing areas.

2.1. PVMP I

The site is mapped as a composite vegetation community described as Endangered RE 11.4.11 / 11.4.5 / 11.4.6 / 11.4.9 (see **Figure 1**). This community is described as comprising of approximately 80% Of Concern 11.4.11, 10% Of Concern 11.4.5, 5% Of Concern 11.4.6 and 5% Endangered 11.4.9.

The location is within an existing agricultural land holding. The area's soil and geological formation appears consistent with Land Zone 4 described as Cainozoic clay deposits, usually forming level to gently undulating plains above current alluvial systems.

Species observed within the mapped Endangered polygon predominantly represent Regional Ecosystem 11.4.11 described as *Dichanthium sericeum*, *Astrebla* spp. and patchy *Acacia harpophylla*, *Eucalyptus coolabah* on Cainozoic clay plains.

Transect assessments describe areas of *Dichanthium sericeum* and other native grasses and forbs with patches of *Acacia harpophylla*. *Acacia harpophylla* individuals averaged 5 m in height which is consistent with the height expected within examples of Of Concern RE 11.4.11.

The condition of the grassland areas surveyed showed varying degrees of disturbance with infestation of *Pennisetum ciliare* (Buffel Grass) ranging from 10% - 90% cover. Overall the polygon is not considered to form a remnant example of a grassland community. Refer to Transect 1, 2 and 3 of the SP1 PMAV Report (SHG 2013).

Refer to **Figure 2** for the proposed PMAV.



Photo: Area A - Polygon 1

The area mapped as remnant grassland RE 11.4.11 within the investigation area is consistent with *Dichanthium sericeum* grasslands with patchy *Acacia harpophylla*. *Pennisetum ciliare* (Buffel Grass) and *Parthenium hysterophorus* (Parthenium) were present in variable densities within the polygon.

2.2. PVMP 2

The site is mapped as a composite vegetation community described as Of Concern RE 11.3.5 / 11.3.3 (approximately 70% Least Concern 11.3.5 and 30% Of Concern 11.3.3) (see **Figure 3**). The mapped remnant polygon is located towards the South-West corner of the property within an extensive alluvial plain.

The site is located adjacent to cleared open paddocks managed for cattle and representative of Land Zone 3 described as quaternary alluvial systems, including floodplains, alluvial plains, alluvial fans, terraces, levees, swamps, channels, closed depressions and fine textured palaeo-estuarine deposits.

Species observed throughout the mapped Of Concern polygon represent a composite Regional Ecosystem 11.3.5 / 11.3.3. Recent flood damage is evident throughout the area.

No mapping amendments are proposed within this location.



Figure 1: Regional Ecosystem Mapping – Lot 662 on PH1491

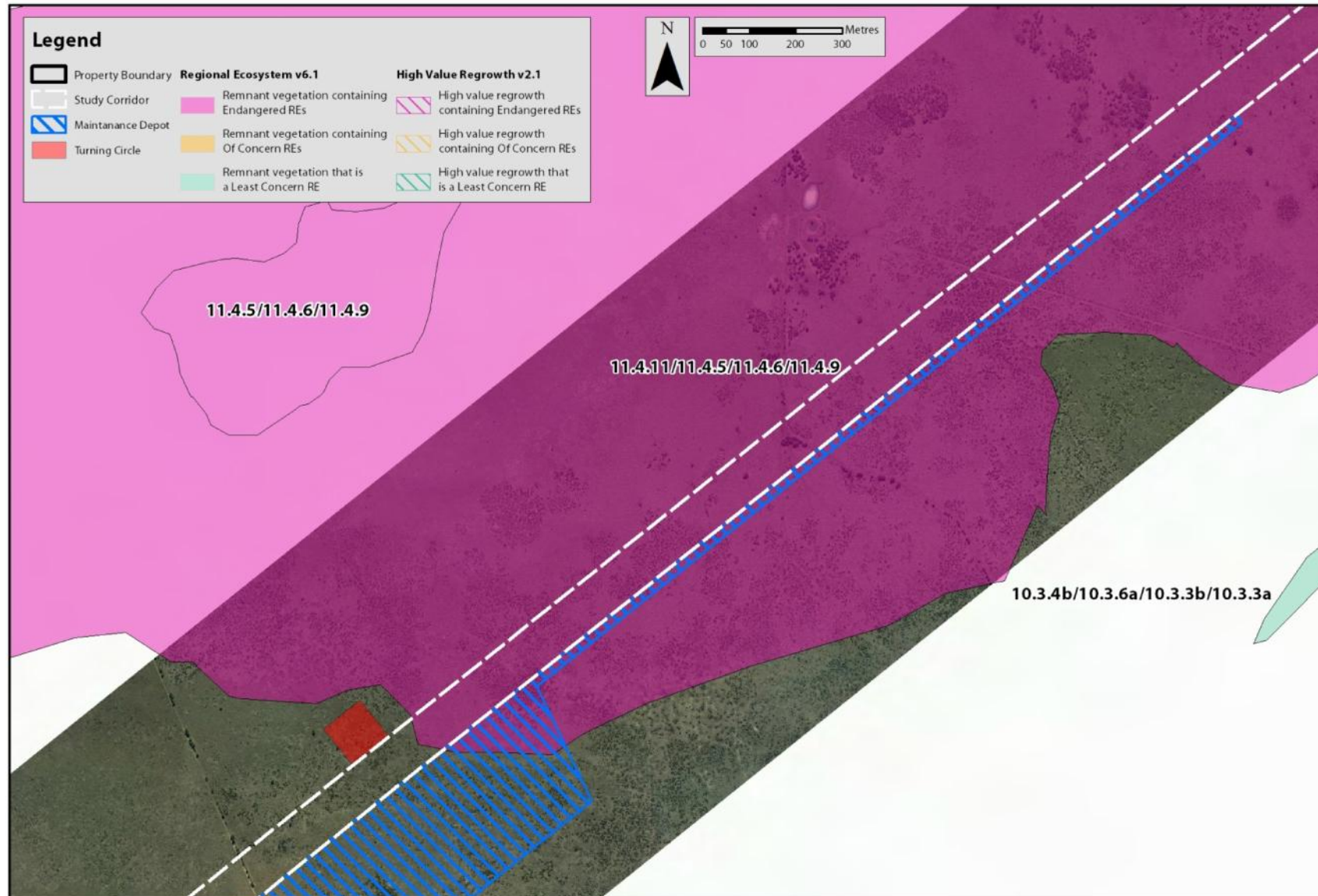




Figure 2: Proposed PMAV - Lot 662 on PH1491

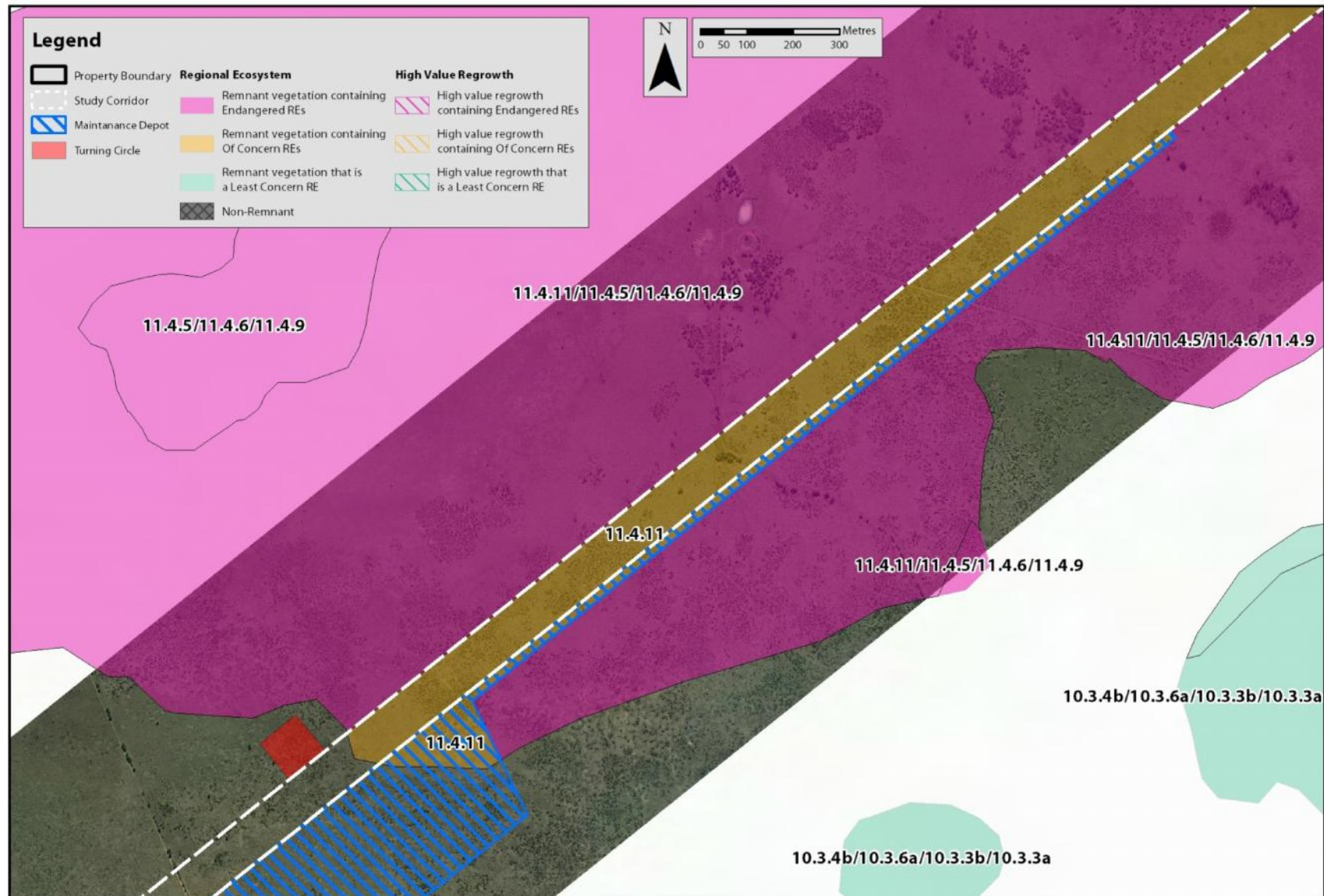
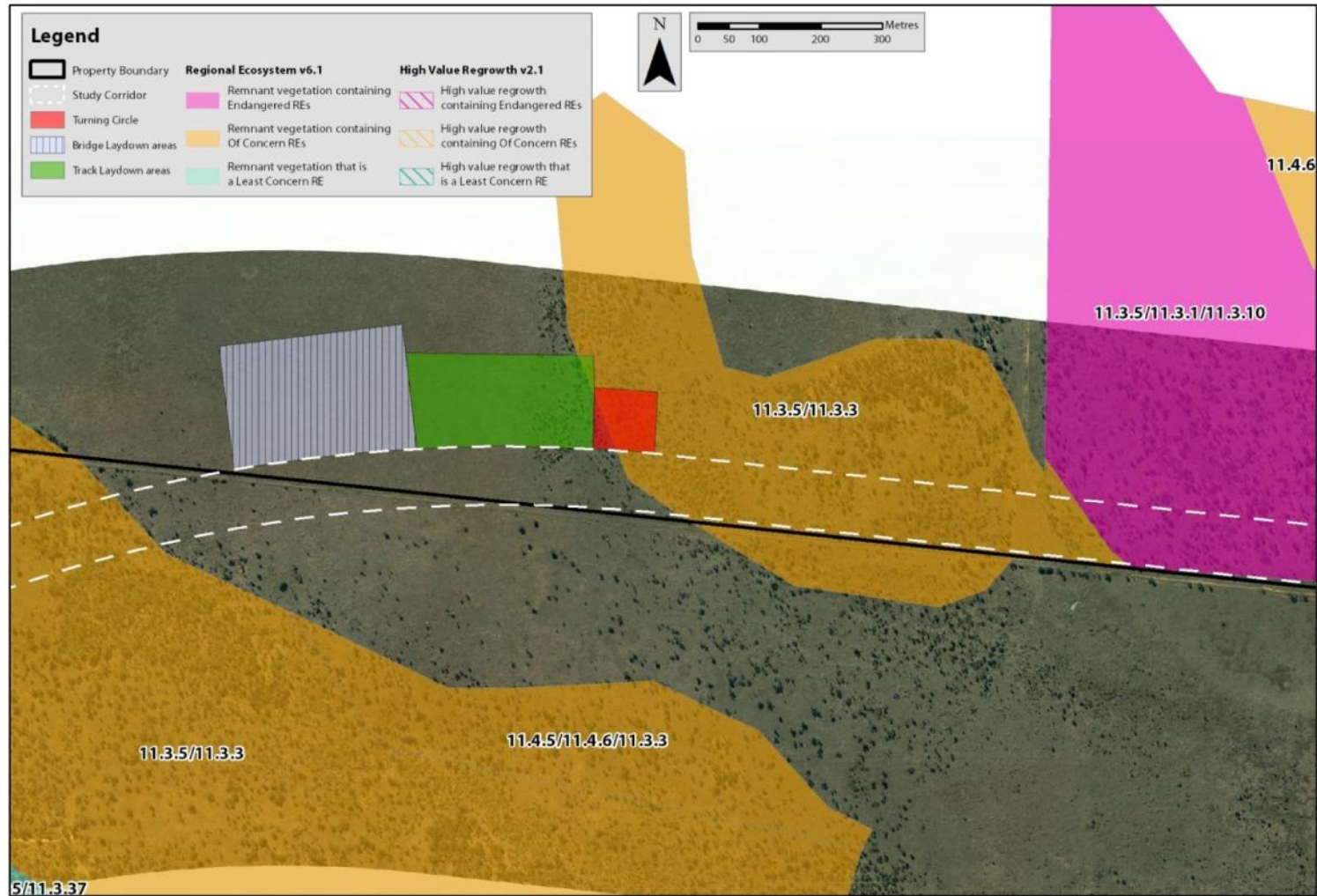




Figure 3: Regional Ecosystem Mapping –Lot 4 on SP116046





3. Response to Regional Vegetation Management Code

Table 1: Part S: Requirements for clearing for significant projects

Performance Requirement	Comment
<p>PR S.1: Limits to clearing</p> <p>To regulate the clearing of vegetation in a way that conserves remnant vegetation that are regional ecosystems, does not cause land degradation, prevents the loss of biodiversity and maintains ecological processes—subject to the limitations required to meet PR S.2 to PR S.10—clearing is limited to the extent that is necessary for the project, any associated ancillary works, and the operation of works that comprise a project declared to be a significant project under the <i>State Development and Public Works Organisation Act 1971</i>, section 26.</p>	<p>The Carmichael Coal Project (Rail) is a declared significant project under the <i>State Development and Public Works Act 1971</i>, section 26. The Project (Rail) alignment was the subject of detailed route analysis which examined environmental and engineering criteria. The Project (Rail) concept design is based on:</p> <ul style="list-style-type: none"> • Minimising environmental impact; • Minimising disturbance to existing infrastructure; • Limiting fragmentation of landholdings; and • Meeting engineering design criteria. <p>A key element of the construction and operation of the rail corridor is the establishment of rail laydown areas, temporary works area, temporary accommodation etc. The location of these facilities and temporary laydown areas requires consideration of a number of factors including regular spacing's along the alignment, proximity to road access and impacts to existing landholders. In the majority of instances these necessary additional infrastructure areas have been located outside of sensitive environmental areas and mapped remnant vegetation. Two locations along the alignment require some minor clearing of remnant vegetation.</p> <p>The first of these (Refer to PVMP 1) is located within an area of mapped Grassland 11.4.11 described as <i>Dichanthium sericeum</i>, <i>Astrebla</i> spp. and patchy <i>Acacia</i></p>



harpophylla, Eucalyptus coolabah on Cainozoic clay plains. Field assessment of this area has identified that the broader grassland polygon is highly disturbed and dominated by pasture grass species. The second area (Refer to PVMP 2) is situated between two areas of mapped Of Concern Regional Ecosystems.

In both instances the practical design requirements and other considerations including location of neighbouring properties mean these areas cannot be altered to avoid the clearing of assessable vegetation.

PR S. 1 is achieved.

Performance Required	Acceptable Solutions	Comments
<p>PR S.2: Wetlands</p> <p>To regulate the clearing of vegetation in a way that prevents the loss of biodiversity and maintains ecological processes—<u>maintain the current extent of assessable vegetation</u> associated with any natural <u>significant wetland</u> and/or natural <u>wetland</u> to provide—</p> <ul style="list-style-type: none"> a) water quality by filtering sediments, nutrients and other pollutants; and b) aquatic habitat; and c) terrestrial habitat. 	<p>AS S.2</p> <p>S.2.1 Clearing does not occur—</p> <ul style="list-style-type: none"> a) in any natural <u>wetland</u>; and b) within 100 metres from any natural <u>wetland</u>; and c) in any natural <u>significant wetland</u>; and d) within 200 metres from any natural <u>significant wetland</u>. 	<p>The RVMC includes a comprehensive definition as to what constitutes a Wetland or a Significant Wetland. These definitions were consulted to identify if the areas require consideration against PR S.2. The sites do not contain a wetland or significant wetland, nor are they in proximity to a wetland.</p> <p>PR S.2 is achieved.</p>



Performance Required	Acceptable Solutions	Comments
<p>PR S.3: Watercourses</p> <p>To regulate the clearing of vegetation in a way that does not cause land degradation, prevents the loss of biodiversity and maintains ecological processes—<u>maintain the current extent of assessable vegetation</u> associated with any <u>watercourse</u> to provide—</p> <ul style="list-style-type: none"> a) bank stability by protecting against bank erosion; and b) water quality by filtering sediments, nutrients and other pollutants; and c) aquatic habitat; and d) terrestrial habitat 	<p>AS S.3</p> <p>S.3.1</p> <p>Clearing does not occur—</p> <ul style="list-style-type: none"> a) in any <u>watercourse</u>; and b) within 200 metres from each high bank of each <u>watercourse</u> with a <u>stream order</u> 5 or greater; and c) within 100 metres from each high bank of each <u>watercourse</u> with a <u>stream order</u> 3 or 4; and d) within 50 metres from each high bank of each <u>watercourse</u> with a <u>stream order</u> 1 or 2. 	<p>Based on the definition of a Watercourse within the RVMC, the sites do not contain a watercourse, nor are they in proximity to a watercourse.</p> <p>PR S.3 is achieved.</p>
<p>PR S.4: Connectivity</p> <p>To regulate the clearing of vegetation in a way that prevents the loss of biodiversity and maintains ecological processes—<u>areas of mapped remnant vegetation</u> are—</p> <ul style="list-style-type: none"> a) of sufficient size and configured in a way to maintain ecosystem functioning; and b) of sufficient size and configured in a way to remain in the landscape in spite of any 	<p>AS.4</p> <p>S.4.1</p> <p>Where clearing is less than —</p> <ul style="list-style-type: none"> a) 10 metres wide in the <u>coastal subregions of the Brigalow Belt Bioregion</u>; or b) 2 hectares in the <u>coastal subregions of the Brigalow Belt Bioregion</u>; or c) 25 metres wide in the <u>non-coastal subregions of the Brigalow Belt</u> and the New England 	<p>Clearing within PVMP 1 is approximately 6 hectares (in the non-coastal subregions of the Brigalow Belt Bioregion) and occurs within a polygon of mapped Of Concern remnant vegetation. Clearing will occur in a thin section of the polygon and does not reduce the area of the contiguous endangered vegetation to less than 50 ha and does not affect the width of the remnant vegetation.</p> <p>Field assessment of this location identified that the mapped grassland is highly disturbed and includes areas infested by an</p>



Performance Required	Acceptable Solutions	Comments
<p>threatening processes; and</p> <p>c) located on the lot(s) that are the subject of the application to maintain connectivity to <u>mapped remnant vegetation</u> on adjacent properties.</p>	<p>Tableland Bioregion; or</p> <p>d) is less than 5 hectares in the <u>non-coastal subregions of the Brigalow Belt</u> and the New England Tableland Bioregion;</p> <p>clearing does not—</p> <ul style="list-style-type: none"> a) reduce the width of <u>mapped remnant vegetation</u> to less than 200 metres; and b) occur where the width of <u>mapped remnant vegetation</u> is less than 200 metres; <p>AND</p> <p>S.4.2</p> <p>Clearing does not—</p> <ul style="list-style-type: none"> a) reduce areas of contiguous <u>mapped remnant vegetation</u> to less than 10 hectares, in the <u>coastal subregions of the Brigalow Belt Bioregion</u>; and b) occur in areas of contiguous <u>mapped remnant vegetation</u> that are less than 10 hectares, in the <u>coastal subregions of the Brigalow Belt Bioregion</u>; and c) reduce areas of contiguous <u>mapped remnant vegetation</u> to less than 50 hectares, in the <u>non-coastal subregions of the Brigalow Belt</u> and the 	<p>exotic perennial grass species (Buffel Grass). Due to this disturbance and on-going agricultural activities, the broader polygon is not considered to provide an example of a remnant grassland community. As such works within this area will not impact on connectivity and they comply with PRS.4.</p> <p>Clearing within PVMP 2 is approximately 1 hectare and within a highly disturbed vegetated polygon which is impacted by historical agricultural practices. The clearing will reduce the width of the remnant polygon to less than 200 m, however this isolated remnant holds limited existing connectivity values and the clearing will not reduce biodiversity values within this already impacted area.</p> <p>PR S.4 is achieved.</p>



Performance Required	Acceptable Solutions	Comments
	<p>New England Tableland Bioregion; and</p> <p>d) occur in areas of contiguous <u>mapped remnant vegetation</u> that are less than 50 hectares, in the <u>non-coastal subregions of the Brigalow Belt</u> and the New England Tableland Bioregion; and</p> <p>e) reduce the width of <u>mapped remnant vegetation</u> to less than 200 metres; and</p> <p>f) occur where the width of <u>mapped remnant vegetation</u> is less than 200 metres; and</p> <p>g) reduce the total extent of <u>mapped remnant vegetation</u> to less than 30%; and</p> <p>h) occur where the total extent of <u>mapped remnant vegetation</u> is less than 30%.</p> <p>AND S.4.3</p> <p>Where clearing is for a <u>significant community project</u>, maintain the current extent of <u>mapped remnant vegetation</u> where the vegetation is—</p> <p>a) of sufficient size and configured in a way to maintain ecosystem functioning; and</p> <p>b) of sufficient size and configured in a way to remain in the landscape in spite of any</p>	



Performance Required	Acceptable Solutions	Comments
	<p>threatening processes; and</p> <p>c) located on the lot(s) that are the subject of the application to maintain connectivity to <u>mapped remnant vegetation</u> on adjacent properties.</p>	
<p>PR S.5 Soil erosion</p> <p>To regulate the clearing of vegetation in a way that does not cause land degradation and maintains ecological processes—the effect of clearing does not result in—</p> <p>a) mass movement, gully erosion, rill erosion, sheet erosion, tunnel erosion, stream bank erosion, wind erosion, or scalding; and</p> <p>b) any associated loss of chemical, physical or biological fertility—including, but not limited to water holding capacity, soil structure, organic matter, soil biology, and nutrients, within and/or outside the lot(s) that are the subject of the application.</p>	<p>AS.5 S.5.1</p> <p><u>Mechanical clearing</u> only occurs on—</p> <p>a) <u>very stable soils</u> on a <u>slope</u> less than 15%; and</p> <p>b) <u>stable soils</u> on a <u>slope</u> less than 12%; and</p> <p>c) <u>unstable soils</u> on a <u>slope</u> less than 8%; and</p> <p>d) <u>very unstable soils</u> on a <u>slope</u> less than 5%.</p>	<p>Erosion and sediment control measures will be undertaken within and adjacent to cleared areas in accordance with an Erosions and Sediment Control Plan and the Construction Environmental Management Plan for the rail alignment. This will include both temporary and permanent measures to limit land degradation, particularly in proximity to waterways, drainage lines and floodplains. Measures will be implemented to reduce sedimentation within these systems and disturbance to watercourse bed and banks. The incorporation of Erosion and Sediment Control measures and the minor linear nature of clearing will not cause land degradation and will maintain the area's ecological processes.</p> <p>Clearing within PVM P1 occurs on Land Zone 4 (Mainly Vertosols with gilgai microrelief, but includes thin sandy or loamy surfaced Sodosols and Chromosols with the same paleo-clay subsoil deposits), and within PVMP 2 on Land Zone 3 (predominantly Vertosols and Sodosols) and within. Vertosols are not listed in Table 15 of the RVMC and therefore must be considered stable soils, however Sodosols could be considered unstable. As clearing will only occur on slopes less than 8% and</p>



Performance Required	Acceptable Solutions	Comments
		the construction process will include the establishment of ESC measures, no impacts as a result of soil erosion are anticipated. PR S.5 is achieved.
<p>PR S.6: Salinity</p> <p>To regulate the clearing of vegetation in a way that does not cause land degradation and maintains ecological processes—clearing does not contribute to—</p> <p>a) waterlogging; or</p> <p>b) the <u>salinisation of groundwater</u>, surface water or soil.</p>	<p>AS S.6</p> <p>S.6.1</p> <p>Where clearing is less than—</p> <p>a) 2 hectares; or</p> <p>b) 10 metres wide;</p> <p>clearing does not occur in any <u>discharge area</u>.</p> <p>AND</p> <p>S.6.2</p> <p>Where clearing is less than—</p> <p>a) 5 hectares; or</p> <p>b) 50 metres wide—</p> <p>clearing does not occur—</p> <p>i. in any <u>discharge area</u>; and</p> <p>ii. within 200 metres of any <u>discharge area</u>.</p>	<p>For PVMP 1, clearing is approximately 6 hectares and does not occur in any discharge area. For PVMP2, clearing is less than 1 hectare in area, and also does not occur in any discharge area or within 200 m of any discharge area.</p> <p>PR S.6 is achieved.</p>



Performance Required	Acceptable Solutions	Comments
	<p>AND</p> <p>S.6.3</p> <p>Clearing does not occur in areas greater than 5 hectares</p>	
<p>PR S.7 Conserving remnant vegetation that are <i>endangered</i> regional ecosystems and of <i>concern</i> regional ecosystems</p> <p>To regulate the clearing of vegetation in a way that conserves remnant vegetation that are <i>endangered</i> regional ecosystems and of <i>concern</i> regional ecosystems—<u>maintain the current extent of <i>endangered</i> regional ecosystems and of <i>concern</i> regional ecosystems.</u></p>	<p>AS S.7</p> <p>S.7.1</p> <p>Clearing—</p> <p>a) does not occur in an <i>endangered</i> regional ecosystem or an <i>of concern</i> regional ecosystem that is listed in Table 4; and</p> <p>b) in an <i>endangered</i> regional ecosystem or an <i>of concern</i> regional ecosystem that is not listed in Table 4 only occurs where the clearing is less than 10 metres wide or 0.5 hectares.</p>	<p><u>PVMP1</u></p> <p>Clearing associated with the proposed rail yard (Refer to PVMP 1) is within an area mapped as a composite RE Described as Endangered RE 11.4.11 / 11.4.5 / 11.4.6 / 11.4.9. This community is described as comprising of approximately 80% Of Concern 11.4.11, 10% Of Concern 11.4.5, 5% Of Concern 11.4.6 and 5% Endangered 11.4.9.</p> <p>Species observed within the mapped Endangered polygon predominantly represent Regional Ecosystem 11.4.11 described as <i>Dichanthium sericeum</i>, <i>Astrebla</i> spp. and patchy <i>Acacia harpophylla</i>, <i>Eucalyptus coolabah</i> on Cainozoic clay plains. The condition of the grassland areas surveyed showed varying degrees of disturbance with infestation of <i>Pennisetum ciliare</i> (Buffel Grass) ranging from 10% - 90% cover.</p> <p>Overall the polygon is not considered to form a remnant example of a grassland community. As such clearing within PVMP 1 complies with PRS.7.</p>



Performance Required	Acceptable Solutions	Comments
		<p><u>PVMP 2</u></p> <p>The site is mapped as a composite vegetation community described as Of Concern RE 11.3.5 / 11.3.3 described as approximately 70% Least Concern 11.3.5 and 30% Of Concern 11.3.3. The mapped remnant polygon is located towards the South-West corner of the property within an extensive alluvial plain.</p> <p>The site is located adjacent to cleared open paddocks managed for cattle and representative of Land Zone 3 described as quaternary alluvial systems, including floodplains, alluvial plains, alluvial fans, terraces, levees, swamps, channels, closed depressions and fine textured palaeo-estuarine deposits.</p> <p>Species observed throughout the mapped Of Concern polygon represent the composite Regional Ecosystem 11.3.5 / 11.3.3. Recent flood damage is evident throughout the area.</p> <p>Offsets for clearing associated with PVMP 2 will be provided in accordance within the Carmichael Coal Project (Rail) Offset Strategy thereby maintaining the current extent of Of Concern Regional Ecosystems.</p>
<p>PR S.8: Essential habitat</p> <p>To regulate the clearing of vegetation in a way</p>	<p>AS S.8 S.8.1</p>	<p>These sites are not mapped as essential habitat.</p> <p>PR S.8 is achieved.</p>



Performance Required	Acceptable Solutions	Comments
that prevents the loss of biodiversity— <u>maintain the current extent of essential habitat</u> .	Clearing does not occur in an area shown as essential habitat on the essential habitat map.	
<p>PR S.9: Conservation status thresholds</p> <p>To regulate the clearing of vegetation in a way that prevents the loss of biodiversity and conserves remnant vegetation that are regional ecosystems—<u>maintain the current extent of regional ecosystems listed in Table 5</u>.</p>	<p>AS S.9</p> <p>S.9.1</p> <p>Clearing in a regional ecosystem listed in Table 5 does not occur unless the clearing is less than—</p> <p>10 metres wide; or</p> <p>2 hectares.</p>	<p>PVMP 1: RE 11.4.11 is identified as a conservation threshold community as listed in Table 5 of RVMC. Field survey of this area highlighted that the mapped grassland is highly disturbed containing significant areas of Buffel Grass. The current PMAV process does not provide the ability to accurately challenge the remnant status of grassland areas. However it should be noted that this grassland RE is not intact and therefore proposed clearing will not result in the loss of biodiversity values.</p> <p>PVMP 2: RE 11.3.5 is identified as a conservation threshold community as listed in Table 5 of RVMC. However, clearing within this ecosystem is less than 2 hectares and therefore the proposed clearing complies with acceptable solution S.9.</p> <p>PR S.9 is achieved.</p>
<p>PR S.10: Acid sulfate soils</p> <p>To regulate the clearing of vegetation in a way that does not cause land degradation and maintains ecological processes in the <u>coastal subregions of the Brigalow Belt Bioregion</u>, and the Marlborough Plains subregion (11.14)—clearing activities do not result in disturbance of</p>	<p>AS S.10</p> <p>S.10.1</p> <p>In the <u>coastal subregions of the Brigalow Belt Bioregion</u>, and the Marlborough Plains subregion (11.14), clearing <u>in land zone 1, land zone 2 or land zone 3</u> in areas below 5 metre Australian Height</p>	<p>These sites are not within the coastal subregions of the Brigalow Belt Bioregion and therefore clearing will not result in the disturbance of acid sulfate soils.</p> <p>PR S.10 is achieved.</p>



Performance Required	Acceptable Solutions	Comments
<p>acid sulfate soils or changes to the hydrology of the location that will either—</p> <p>a) aerate horizons containing iron sulfides; or</p> <p>b) mobilise acid and/or metals.</p>	<p>Datum—</p> <p>a) is carried out in accordance with an acid sulfate soils environmental management plan as outlined in the <i>State Planning Policy 2/02 Guideline: Planning and Managing Development involving Acid Sulfate Soils</i>; and</p> <p>b) follows management principles in accordance with the Soil Management Guidelines in the <i>Queensland Acid Sulfate Soil Technical Manual</i>.</p>	



Appendices

Appendix A

Property overview of laydown and temporary works area

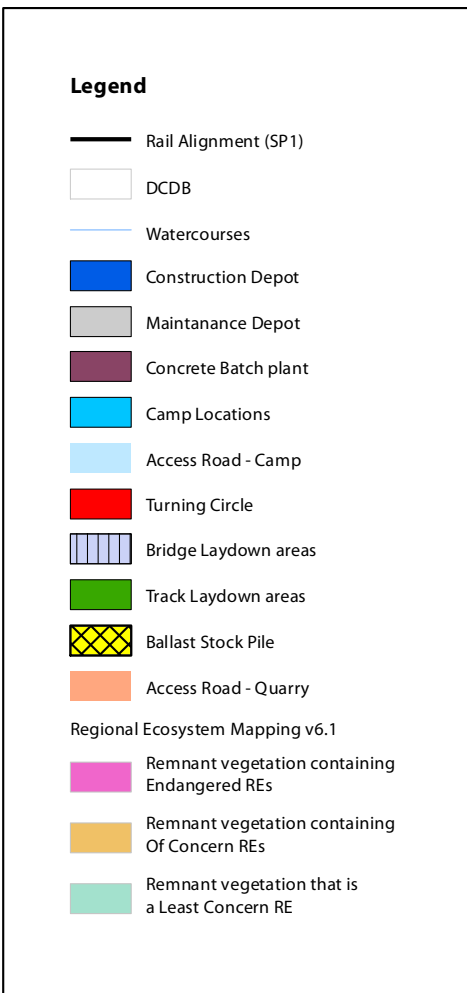
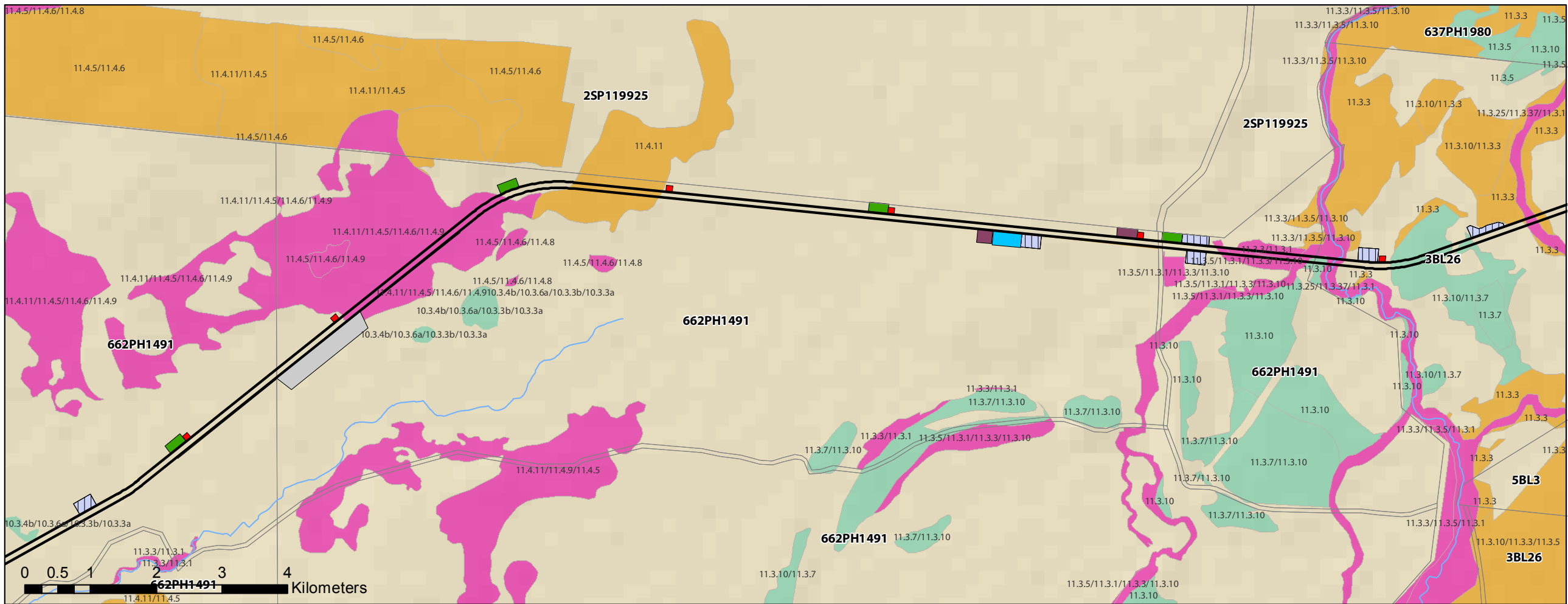
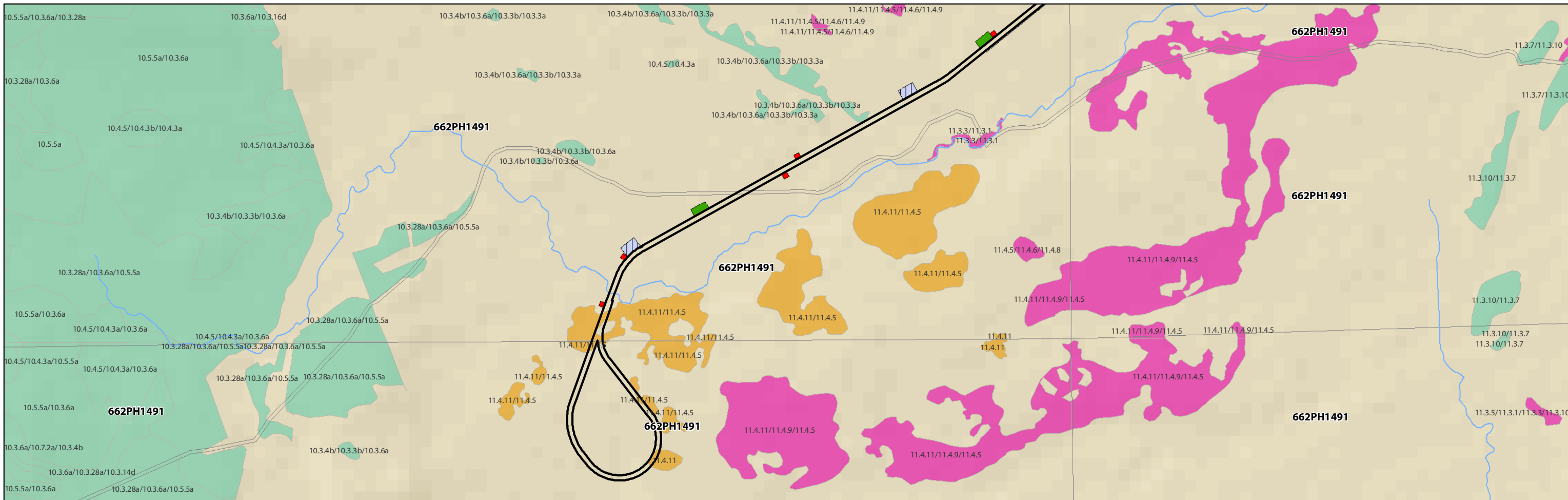
Appendix B

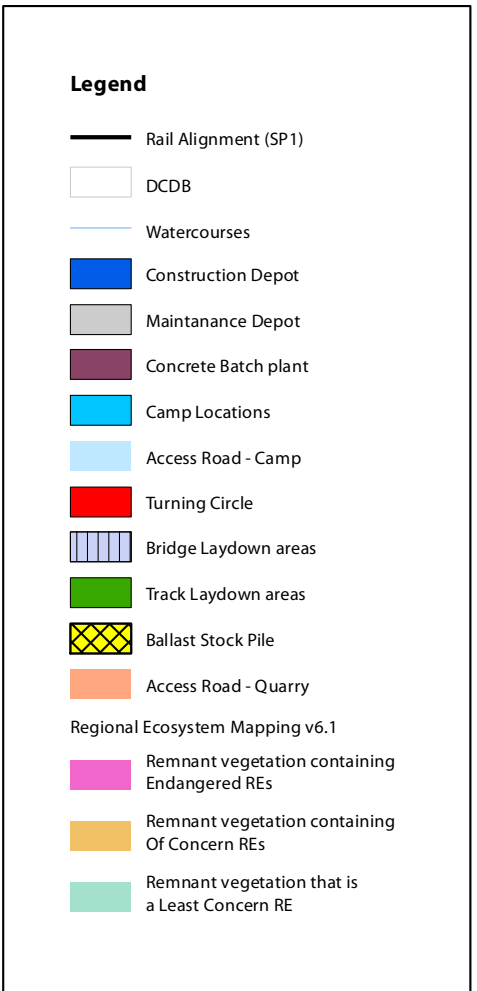
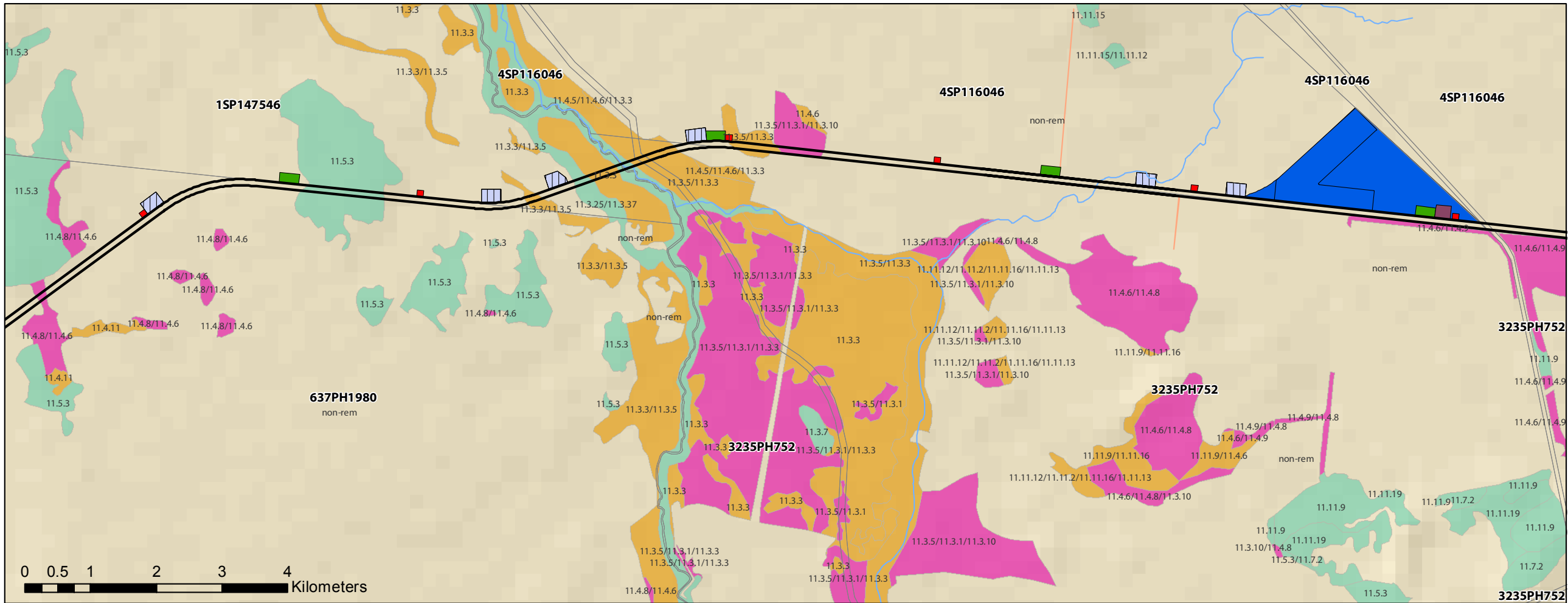
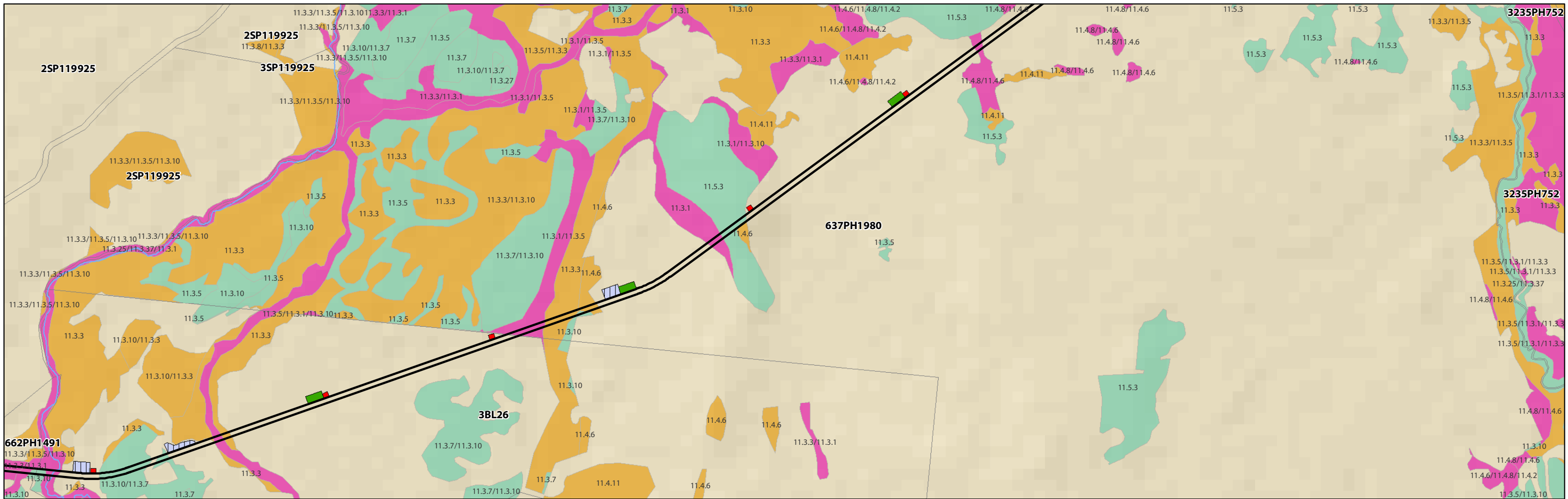
Property Vegetation Management Plans

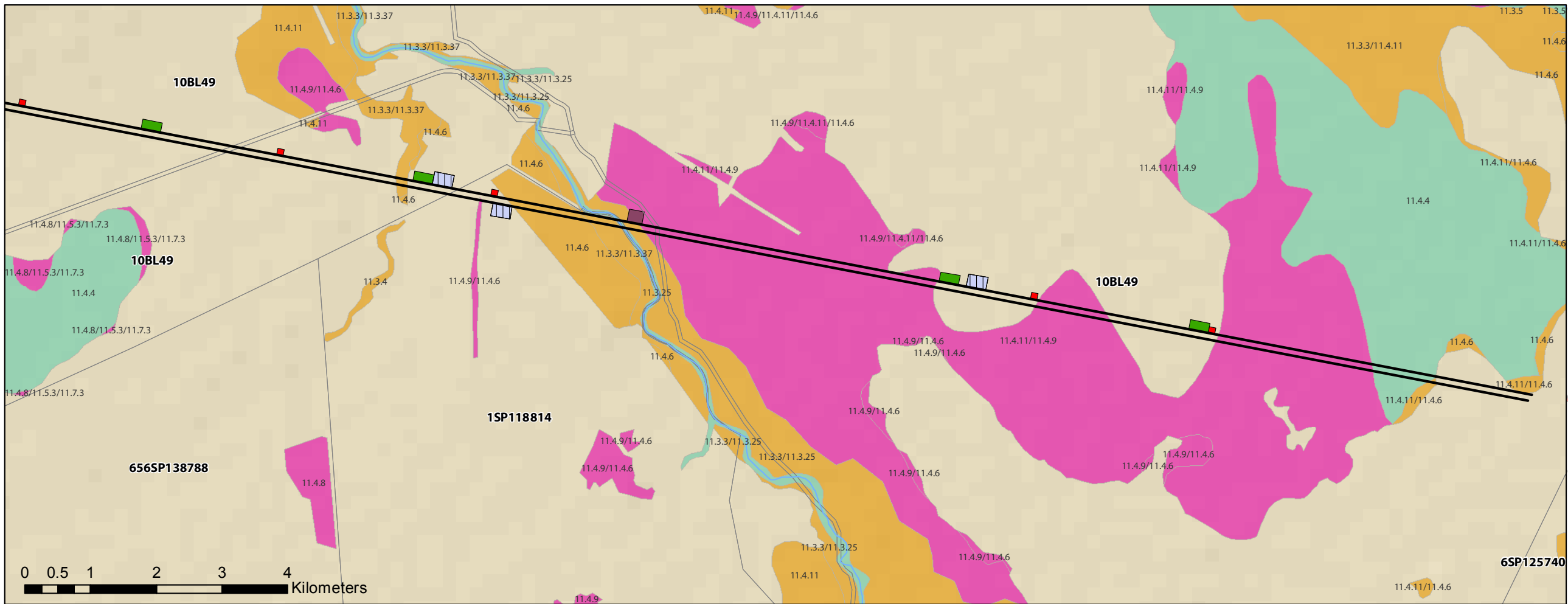
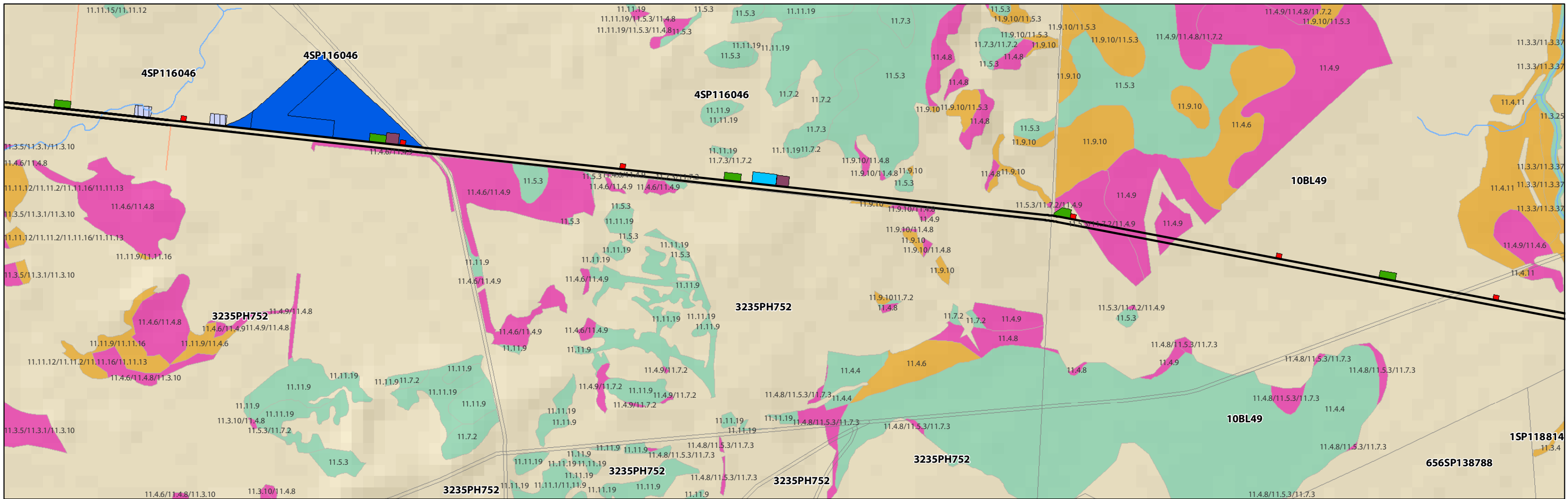


Appendix A

Property overview of laydown and temporary works areas







Legend

- Rail Alignment (SP1)
- DCDB
- Watercourses
- Construction Depot
- Maintanance Depot
- Concrete Batch plant
- Camp Locations
- Access Road - Camp
- Turning Circle
- Bridge Laydown areas
- Track Laydown areas
- Ballast Stock Pile
- Access Road - Quarry

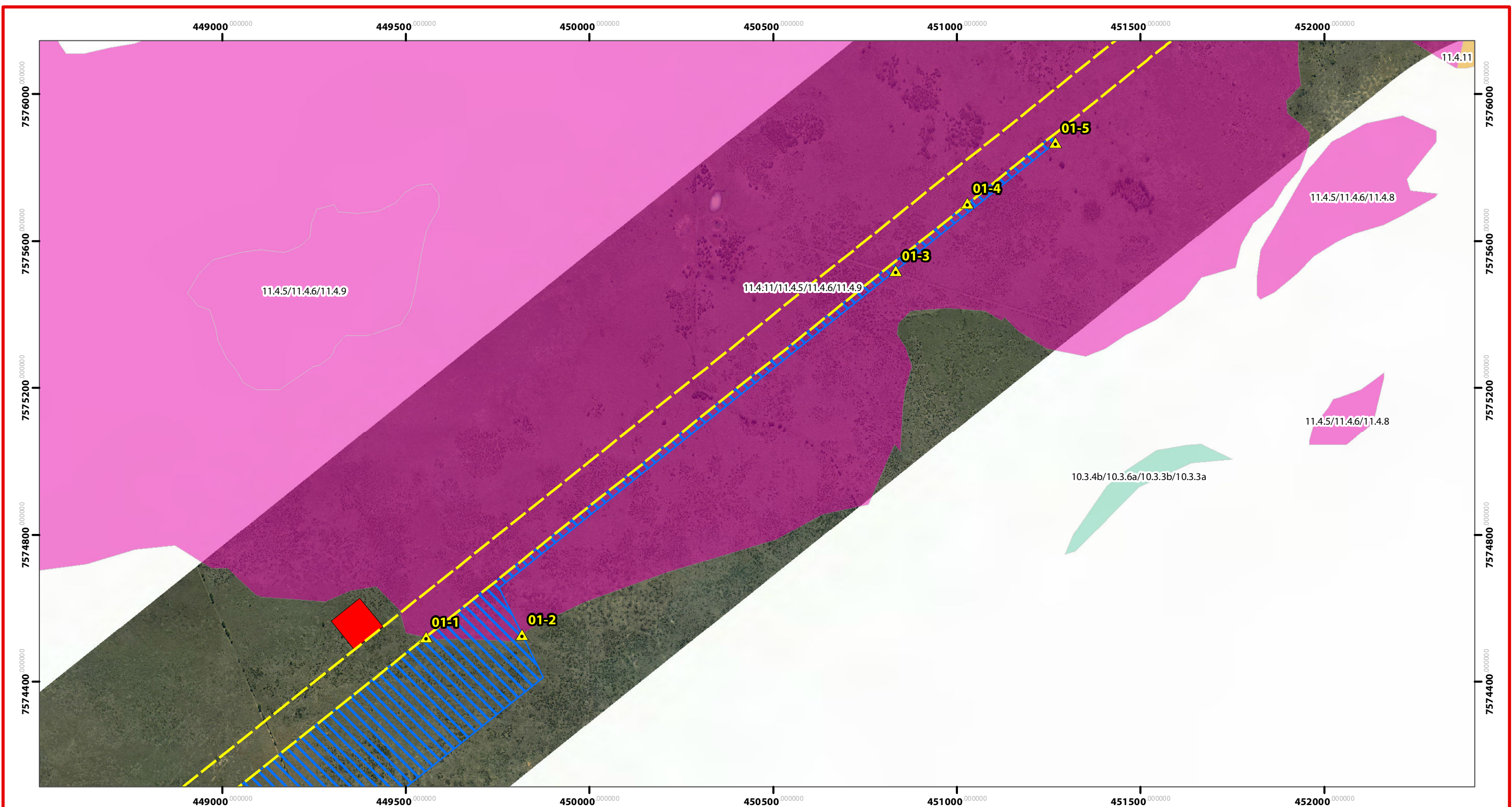
Regional Ecosystem Mapping v6.1

- Remnant vegetation containing Endangered REs
- Remnant vegetation containing Of Concern REs
- Remnant vegetation that is a Least Concern RE



Appendix B

Property Vegetation Management Plans



0 50 100 200 300 400 500 600 700 800 Metres

N

SP1 Corridor - Vekta (2012)
Regional Ecosystem v6.1 - DERM (2011)
DCDB - QLD Gov (2012)
Datum & Map Grid - GDA94 MGA Zone 55
Scale @ A3 1:10,000

Scale 1:10,000@A3
Data Information:
Universal Transverse Mercator
GDA 1994 MGA Zone 55

**saunders
havill
group**

web www.saundershavill.com
phone (07) 3251 9444 fax (07) 3251 9455
address 9 Thompson St Bowen Hills Q 4006

■ surveying ■ town planning ■ urban design ■ environmental management ■ landscape architecture

PVMP Coordinate Table:

ID	Description	Easting (m)	Northing (m)
4-1	Clearing Boundary	449554.376855	7574521.24783
4-2	Clearing Boundary	449816.124428	7574528.93052
4-3	Access Track	450834.146526	7575519.95253
4-4	Clearing Boundary	451027.946045	7575702.46744
4-5	Clearing Boundary	451269.072884	7575868.06572

Turning Circle

Maintenance Depot

AMENDMENTS:

Issue	Date	Description	Checked
A	10/07/2013	PVMP	RM

CLIENT: Adani Mining Pty Ltd
PROJECT: Charmichael Coal Rail Project

DATE: July 2013
CLIENT REF: 6396

CHECKED: RM
DRAWN: TC

adani™

Legend

PMAS Coordinates

DCDB

Adani Mine EPC

Alignment Corridor

Watercourses

Regional Ecosystem v6.1

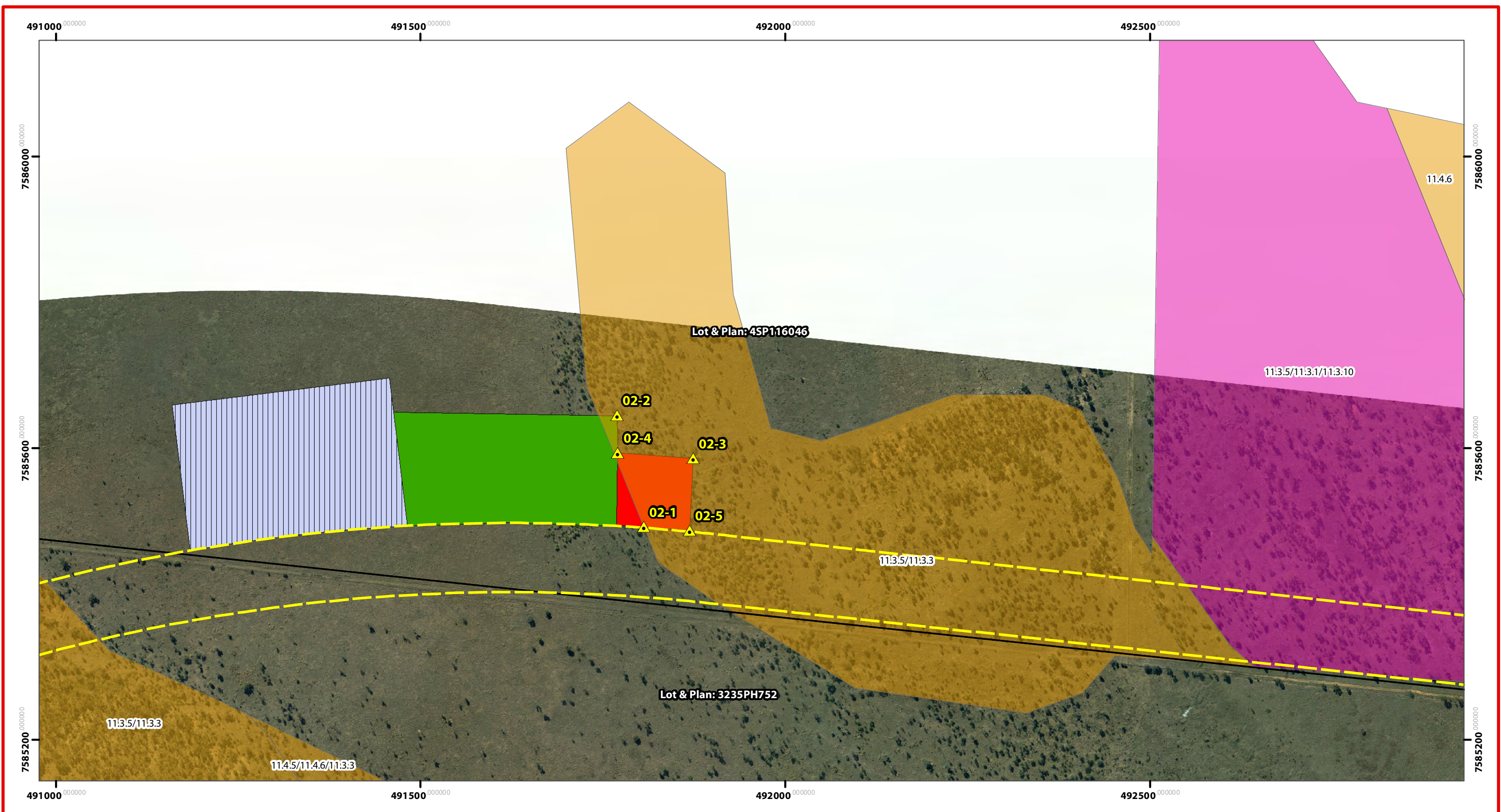
Remnant vegetation containing Endangered REs

Remnant vegetation containing Of Concern REs

Remnant vegetation that is a Least Concern RE

PLAN OF: **Property Vegetation Management Plan**

PLAN No.: **6396 E 05 PVMP A**



050100200300400

Metres

N

SP1 Corridor - Vekta (2012)
Regional Ecosystem v6.1 - DERM (2011)
DCDB - QLD Gov (2012)
Datum & Map Grid - GDA94 MGA Zone 55
Scale @ A3 1:10,000

Scale 1:5,000 @ A3
Data Information:
Universal Transverse Mercator
GDA 1994 MGA Zone 55

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fax

(07) 3251 9455

address

9 Thompson St Bowen Hills Q 4006

PVMP Coordinate Table:

ID	Description	Easting (m)	Northing (m)
02-1	Clearing Boundary	491805.873966	7585492.17071
02-2	Clearing Boundary	491769.173473	7585645.42883
02-3	Clearing Boundary	491873.43292	7585585.98516
02-5	Clearing Boundary	491868.599998	7585487.3286
02-4	Clearing Boundary	491770.312945	7585593.6758

AMENDMENTS:

Issue	Date	Description	Checked
A	10/07/2013	PVMP	RM

CLIENT:

Adani Mining Pty Ltd

PROJECT:

Charmichael Coal Rail Project

DATE:

July 2013

CHECKED:

RM

CLIENT REF:

6396

DRAWN:

TC

Legend

PMAV Coordinates

DCDB

Adani Mine EPC

Alignment Corridor

Watercourses

Regional Ecosystem v6.1

Remnant vegetation containing Endangered REs

Remnant vegetation containing Of Concern REs

Remnant vegetation that is a Least Concern RE

PLAN OF:

Property Vegetation Management Plan

PLAN No.:

6396 E 06 PVMP A

Application form

Threatened Species

Section 15(a) – Nature Conservation (Administration) Regulation 2006

Clearing permit (protected plants)

OFFICIAL USE ONLY

DATE RECEIVED

FILE REF

PROJECT REF

COMPLETE FORM

☐

CORRECT AA

☐

COMPLETE FEE

☐

ADMINISTERING DISTRICT

ENTERED BY [SIGNATURE]

DATE

Important information for applicants

This form is to be used to apply for a clearing permit. You need a clearing permit if your proposed activity involves the legitimate taking or destruction of protected plants in the wild, except where an exemption applies. Information requested will enable your application to be processed as prescribed by the *Nature Conservation Act 1992*. Your application must be assessed and a permit granted by the chief executive before you can proceed with the proposed activity. Your application may take up to 40 days to process.

Before completing your application please read the information materials included with your application kit. Before lodging this application you should be familiar with the requirements of the Nature Conservation Act available on the Office of the Queensland Parliamentary Counsel website <http://www.legislation.qld.gov.au>. If you have queries about how to complete this form correctly or need guidance contact Permit and Licence Management on **1300 130 372**.

Applicant information

A permit may only be granted to an individual or corporation. Please tick the appropriate box:

- ☐ **AN INDIVIDUAL** → **Complete Section 1 applicant details — then complete sections 3 to 9**
- ☒ **A CORPORATION** → **Complete Section 2 applicant details — then complete sections 3 to 9**

1. Applicant details for an individual

APPLICANT'S FAMILY NAME		TITLE
APPLICANT'S GIVEN NAME/S		DATE OF BIRTH
RESIDENTIAL ADDRESS (NOT A POST OFFICE BOX)		POST CODE
TELEPHONE (BUSINESS HOURS)	MOBILE	FACSIMILE

Application form – Part B (if applicable)
Clearing permit (protected plants)

TELEPHONE (AFTER HOURS)	EMAIL
POSTAL ADDRESS (WRITE 'AS ABOVE' IF SAME AS RESIDENTIAL ADDRESS)	POST CODE

2. Application details for corporations

REGISTERED LEGAL ENTITY NAME (NOT A BUSINESS TRADING NAME) Adani Mining Pty Ltd	
TRADING NAME/S (IF APPLICABLE)	
REGISTERED BUSINESS ADDRESS (NOT A POST OFFICE BOX) Level 25, 10 Eagle Street, Queensland	POST CODE 4000
TELEPHONE (BUSINESS HOURS) (07) 3223 4800	FACSIMILE (07) 3223 4850
EMAIL	WEBSITE www.adanimining.com
POSTAL ADDRESS (WRITE 'AS ABOVE' IF SAME AS BUSINESS ADDRESS) GPO Box 2569, Brisbane, Queensland	POST CODE 4001
ABN / ACN / AN, OR TITLE AND SECTION OF LEGISLATION UNDER WHICH CORPORATION HAS LEGAL STATUS ACN 145 455 205	
NAME OF PRINCIPAL OF CORPORATION Harsh Mishra	
SIGNATURE OF PRINCIPAL OF CORPORATION (or person authorised to sign on their behalf)	DATE

Details of nominated person in charge where the authorised activity is to be undertaken

NOMINATED CONTACT PERSON'S FAMILY NAME To be provided		TITLE
NOMINATED CONTACT PERSON'S GIVEN NAME/S		DATE OF BIRTH
RESIDENTIAL ADDRESS (NOT A POST OFFICE BOX)		POSTCODE
TELEPHONE (BUSINESS HOURS)	MOBILE	FACSIMILE
TELEPHONE (AFTER HOURS)	EMAIL	
POSTAL ADDRESS (WRITE "AS ABOVE" IF SAME AS RESIDENTIAL ADDRESS)		POSTCODE

3. Have you previously held this type of permit?

This may include permits in other States.

Yes ☒ No ☐ If yes, state the permit number (if known)

4. Protected plant details

What species of protected plant does the application refer to?

(If you require more space, please attach a separate sheet)

SCIENTIFIC NAME	COMMON NAME	SCHEDULE NUMBER (IF KNOWN)	QUANTITY
Please refer to attached Carmichael Coal Project (Rail) - NCA Vegetation Clearing Permit - SP1 Laydown & Temporary Works Areas			

5. What property or properties do you intend to take protected plants from?

PROPERTY NAME OR LOT ON PLAN DESCRIPTION LOT 662 ON PH1491; LOT 3 ON BL26; LOT 637 ON PH1980; LOT 1 ON SP147546; LOT 4 ON SP116046; LOT 3235 ON PH752; LOT 10 ON BL49; LOT 1 ON SP118814	
LOCAL GOVERNMENT NAME ISAAC REGIONAL COUNCIL	PARISH NAME TALKI
PROPERTY OWNER'S OR OCCUPIER'S FAMILY NAME	PROPERTY OWNER'S OR OCCUPIER'S GIVEN NAME/S
PROPERTY OWNER'S OR OCCUPIER'S SIGNATURE (OWNER'S SIGNATURE MAY NOT BE REQUIRED, CHECK WITH DEPARTMENT REPRESENTATIVES)	IF A SIGNATURE IS NOT OBTAINABLE, DO YOU HAVE THE PROPERTY OWNER'S OR OCCUPIER'S PERMISSION? <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <input type="checkbox"/> YES <input type="checkbox"/> NO </div>

6. Where is the clearing to be conducted?

Provide the street address, real property description(s) of the land(s) in which the project is located and local government area. If you require more space, attach a separate sheet.

STREET ADDRESS PLEASE REFER TO ATTACHED CARMICHAEL COAL PROJECT (RAIL) - NCA VEGETATION CLEARING PERMIT - SP1 LAYDOWN & TEMPORARY WORKS AREAS	
LOT	PLAN
LOCAL GOVERNMENT AREA	

If possible, provide a specific location within the property, a property name or attach a map with the project area clearly delineated. Also include the map name/details.

SPECIFIC LOCATION/PROPERTY NAME PLEASE REFER TO ATTACHED CARMICHAEL COAL PROJECT (RAIL) - NCA VEGETATION CLEARING PERMIT - SP1 LAYDOWN & TEMPORARY WORKS AREAS
GEOGRAPHICAL COORDINATES PLEASE REFER TO ATTACHED CARMICHAEL COAL PROJECT (RAIL) - NCA VEGETATION CLEARING PERMIT - SP1 LAYDOWN & TEMPORARY WORKS AREAS

7. Reason for clearing

Provide details of the clearing activity including the reason for the clearing and alternatives investigated, and any planned mitigation measures.

(If you require more space, attach a separate sheet)

DETAILS OF THE CLEARING ACTIVITY PLEASE REFER TO ATTACHED CARMICHAEL COAL PROJECT (RAIL) - NCA VEGETATION CLEARING PERMIT - SP1 LAYDOWN & TEMPORARY WORKS AREAS
--

8. What are the approximate start and completion dates for the project?

START DATE APRIL 2014 (TO BE CONFIRMED)	END DATE OCTOBER 2014 (TO BE CONFIRMED)
--	--

9. Provide the name(s) of the person(s) operating under this permit

FAMILY NAME TO BE PROVIDED	GIVEN NAME
FAMILY NAME	GIVEN NAME

Application form – Part B (if applicable)
Clearing permit (protected plants)

FAMILY NAME	GIVEN NAME
FAMILY NAME	GIVEN NAME
FAMILY NAME	GIVEN NAME
FAMILY NAME	GIVEN NAME
FAMILY NAME	GIVEN NAME

10 Attachments

List all attached documents, including maps containing information supporting this application in the space below. If there are no attachments mark 'N/A'.

ATTACHMENTS (LABEL ALL ATTACHMENTS ALPHABETICALLY E.G. "ATTACHMENT A")

Please refer to attached Carmichael Coal Project (Rail) - NCA Vegetation Clearing Permit - SP1 Laydown & Temporary Works Areas

11. Applicant suitability

The permit may be granted if the applicant is an appropriate person to hold the permit, that is, if the applicant has the ability to carry out the activity under the authority in a competent and ethical way.

QUESTIONS	DETAILS	
1. During the past 10 years have you ever (in Queensland or elsewhere) been found guilty of any criminal offence or entered a plea of guilty in a Court? (Note: does not include simple traffic offences such as parking, speeding.) If yes, provide details of the offence/s.	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
2. Have you ever had an equivalent permit from another State or country that was suspended and/or cancelled? If yes, provide details about the permit, the date it was suspended and/or cancelled and reasons for suspension/cancellation.	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	

12. Declaration

Note: If you have not told the truth in this application you may be liable for prosecution under the relevant Acts or Regulations.

- I do solemnly and sincerely declare that the information provided is true and correct to the best of my knowledge and I make this solemn declaration conscientiously believing the same to be true.

Application form – Part B (if applicable)
Clearing permit (protected plants)

- I understand that all information supplied on or with this application form may be disclosed publicly in accordance with the *Right to Information Act 2009* and the *Evidence Act 1977*.

APPLICANT'S NAME	
APPLICANT'S SIGNATURE	DATE
IF APPLICANT IS A CORPORATION, WHAT IS YOUR POSITION IN THE CORPORATION?	

13. Applicant checklist

- ☐ Application form completed and signed
- ☐ Supporting information attached
- ☐ Landholder statement completed and signed

Please return your completed application to:

Permit and Licence Management
Department of Environment and Heritage Protection
GPO Box 2454
Brisbane Qld 4001
Enquiries: **1300 130 372**
Facsimile: (07) 3896 3342
E-mail: palm@ehp.qld.gov.au

Code of Practice or guidelines may be obtained from the EHP website <http://www.ehp.qld.gov.au> or by contacting the EHP Referral Centre on 1300 130 372.

environmental management



Carmichael Coal Project (Rail) NCA Vegetation Clearing Permit

SP1
Laydown & Temporary Works Areas

6867
9 July 2012
Adani Mining Pty Ltd





Document Control

Title	Carmichael Coal Project (Rail) – NCA Vegetation Clearing Permit – SP1 Laydown and Temporary Works Areas
Job Number	6867
Client	Adani Mining Pty Ltd

Document Issue

Issue	Date	Prepared By	Checked By
Draft	26.10.2012	Nick Christofis	Ross Marshall
Final V1	26.10.2012	Nick Christofis	Stevie Armstrong
Final V2	09.07.2013	David Havill	Dr Andrew Davies

Disclaimer

This report has been prepared for **Adani Mining Pty Ltd**. **Saunders Havill Group** cannot accept responsibility for any use of or reliance upon the contents of this report by any third party.

Reports and/or Plans by Others

Reports and/or plans by others may be included within this Environmental Management report to support the document.



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I. Introduction

The *Environmental Management Division* of the **Saunders Havill Group** was engaged by **Adani Mining Pty Ltd** to prepare this *Nature Conservation Act, 1992* (NCA) vegetation clearing permit application to enable clearing for the Carmichael Coal Project (Rail) laydown and temporary works areas within the SP1 section.

The Carmichael Coal Project (Rail) involves the construction of a rail line connecting the Carmichael Mine site to the existing Goonyella and Newlands rail systems (refer to **Plan 1**) to provide for the export of coal via the Hay Point and Abbot Point coal terminals. The proposed Mine is projected to have a total output capacity of 60 million tonnes per annum.

The Project has been declared a 'significant project' under the *State Development and Public Works Organisation Act 1971* (SDPWO Act) and as such, an Environmental Impact Statement (EIS) is required for the Project. The rail line is divided into two (2) components as follows:

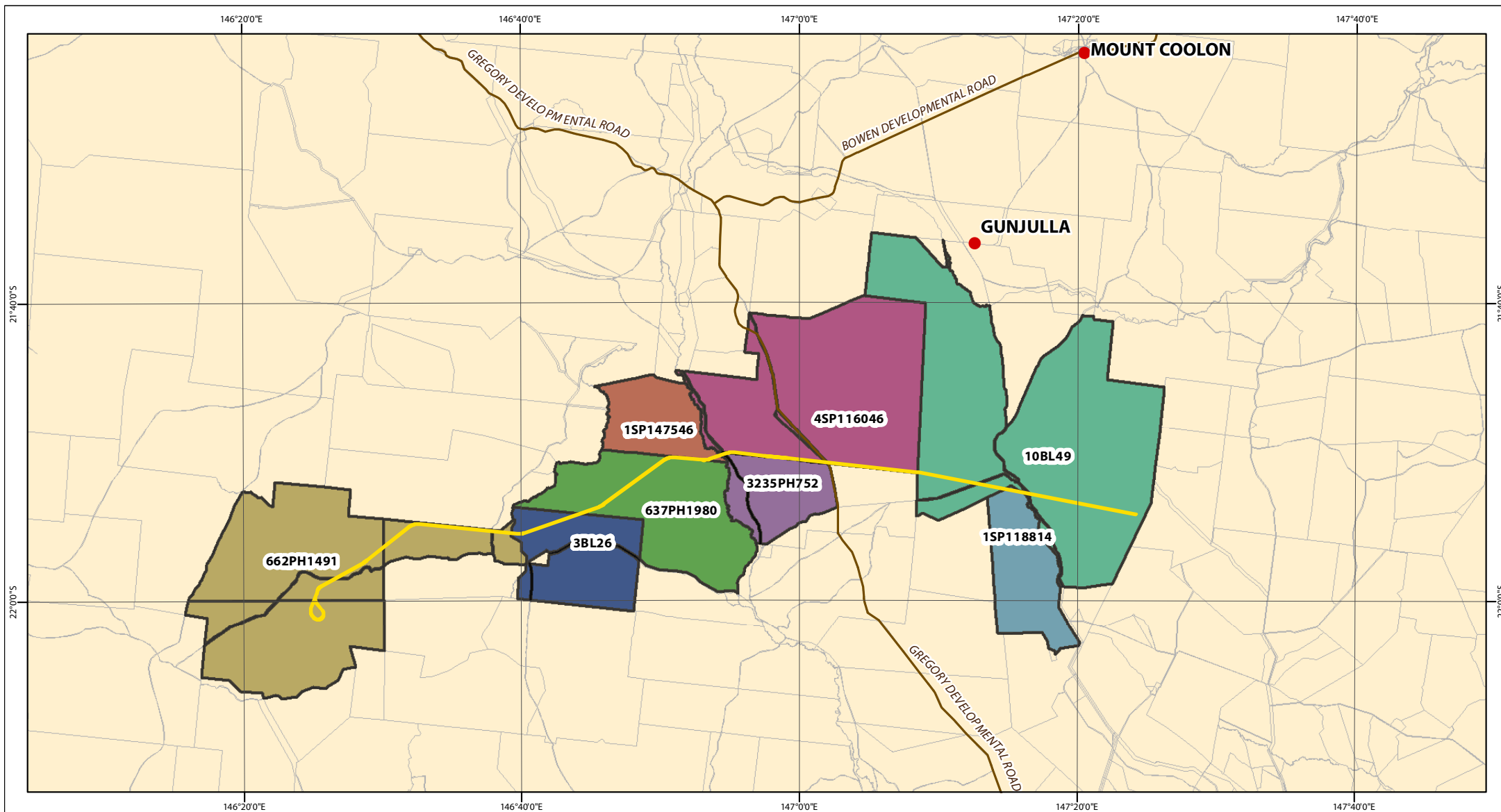
- **Separable Portion 1 (SP1)** – known as 'west rail' which traverses approximately 120 km from the Mine site East towards Moranbah; and
- **Separable Portion 2 (SP2)** – known as 'east rail' which connects 'west rail' with the existing Goonyella rail system and provides access to Dalrymple Bay and Hay Point coal terminals.

This report was prepared to accompany the EIS and seek approval to clear 'Least Concern' plants within the laydown and temporary work areas located along the rail corridor. This document applies to the laydown and temporary works areas only within SP1 of the rail alignment, with separate documents provided for clearing associated with the SP2 alignment.

Adani Mining Pty Ltd is aware of processes and exemptions under the *Nature Conservation Act 1992* which may lead to the ability to clear 'Least Concern' plants for the Carmichael Coal Project (Rail). These processes and exemptions are discussed in further detail within this report, and include:

- Various exemptions listed under S41(1) of the *Nature Conservation (Protected Plants) Conservation Plan 2000*;
- Receipt of a clearing permit for the clearing of Least Concern Plants

In support of this clearing application, detailed information regarding the type and approximate numbers of Least Concern plants present within the proposed laydown and temporary works areas is provided.



Legend

- Place Name
- Major Roads
- Rail Alignment Corridor (SP-1)
- QLD DCBD

Plan 1 Rail Project Overview (SP-1)

File ref. 6396 E 01 Rail Project Overview A

Date 9/07/2013

Project Carmichael Coal Rail Project

0 2 4 6 8 10 20 km
Scale (A4): 1:650,000 [GDA 1994 MGA Z55]



adani **SH** **saunders havill group**

THESE PLANS HAVE BEEN PREPARED FOR THE EXCLUSIVE USE OF THE CLIENT. SAUNDERS HAVILL GROUP CANNOT ACCEPT RESPONSIBILITY FOR ANY USE OF OR RELIANCE UPON THE CONTENTS OF THESE DRAWING BY ANY THIRD PARTY.



2. Nature Conservation Act, 1992

The *Nature Conservation Act 1992* (NCA) provides for the conservation of nature including important natural areas such as national parks and conservation parks or resource reserves as well as flora and fauna considered to be 'extinct in the wild', 'endangered', 'vulnerable', 'near threatened' and 'least concern wildlife'.

The Carmichael Coal Project (Rail) requires the clearing of 'Least Concern' Plants within the laydown and temporary works areas associated with the SP1 section of the rail corridor. Clearing for these areas can be facilitated in two ways under the NCA:

1. The receipt of a clearing permit for the clearing of 'Least Concern' Plants; and/or
2. Agreement to a process under S41 of the *Nature Conservation (Protected Plants) Conservation Plan 2000* (NC Plan).

S41 of the NC Plan provides a number of exemptions that may be applicable to the Carmichael Coal Project (Rail), including:

- 1) *'A clearing permit is not needed for taking a protected plant if –*
 - a) *The taking happens in the course of an activity under an authority, other than a mining lease or petroleum lease, made, granted or given under another Act by—*
 - i. *the Governor in Council; or*
 - ii. *someone else and the chief executive approves the taking in the course of the activity; or*
 - b) *the taking happens in the course of an activity under a mining lease; or*
 - c) *the taking happens in the course of an activity under a petroleum lease; or*
 - d) *for a least concern plant on private land—the person taking the plant is the landholder of the land.*
- 2) *For subsection (1)(a)(ii), the chief executive's approval may be given –*
 - a) *for a particular activity or class of activity; and*
 - b) *with or without conditions; and*
 - c) *only if the chief executive is satisfied the taking will not adversely affect the survival in the wild of the plant.*

Under S41 of the NC Plan an exemption for the project could be facilitated in a number of ways, subject to the final tenure / lease arrangement for the rail corridor. It is requested that the clearing of 'Least Concern' Plants for the Carmichael Coal Project (Rail) corridor is either facilitated through an exemption under S41 described above, or through the issue of a 'Clearing Permit'.

This document provides information to support the issuing of a clearing permit and to demonstrate that the clearing will not adversely impact the continued survival of those species affected.



3. Application Details

The Carmichael Coal Project (Rail) is located within a nominal 95 metre (m) wide corridor that runs from the Mine approximately 189 km eastwards to connect with existing QR National Goonyella Coal Rail System (**Plan 1**).

Separable Portion 1 is designed to accommodate a dual gauge (i.e. narrow gauge and standard gauge) line with a capacity of up to 100 Mtpa. This will allow for future connections to other existing and/or proposed third party rail infrastructure via standard and/or narrow gauge lines. Separable Portion 2 will be a narrow gauge track with capacity assessed at 60 Mtpa.

Laydown and temporary works areas are required to facilitate the construction of SP1. This associated infrastructure includes:

- Construction camps;
- Laydown areas turning circle;
- Laydown areas track;
- Laydown area facility area;
- Laydown areas bridge;
- Batch plants; and
- Ballast stockpiles.

Refer to **Attachment A** for a location plan of the laydown and temporary works areas.

Table 1: Application Summary

Applicant	Adani Mining Pty Ltd
Location	SP1 Rail Corridor and associated infrastructure, including laydown areas, batching plants and construction camps
RPD	Lot 662 on PH1491 Lot 3 on BL26 Lot 637 on PH1980 Lot 1 on SP147546 Lot 4 on SP116046 Lot 3235 on PH752 Lot 10 on BL49 Lot 1 on SP118814
Local Government	Isaac Regional Council
Clearing Purpose	Establishment of Carmichael Coal Project (Rail) infrastructure



3.1. Land Tenure

Adani Mining Pty Ltd own Lot 662 on PH1491 (Moray Downs) and, as a result, clearing of Least Concern Native species on Moray Downs will be undertaken by the landowner and does not require a Nature Conservation Permit. The remainder of SP1 is located within either freehold, leasehold, unallocated State or road reserve land and is not currently controlled by **Adani Mining Pty Ltd**. It is not yet known what the final tenure arrangement for the rail line will be, therefore, this report addresses clearing associated with all properties along the SP1 alignment except for Lot 662 on PH1491. Refer to **Attachment B** – Tenure Plan for further information.



4. Clearing Extent & Methodology

4.1. Clearing extent

Clearing for construction of the rail corridor is required along the length of SP1 within the following properties:

- Lot 3 on BL26
- Lot 637 on PH1980
- Lot 1 on SP147546
- Lot 4 on SP116046
- Lot 3235 on PH752
- Lot 10 on BL49
- Lot 1 on SP118814

The proposed clearing encompasses the various laydown and temporary works areas along the length of the SP1 rail alignment.

4.2. Construction & Clearing Methodology

It is expected that construction of the Project (Rail) will commence in the third quarter of 2013 for a period of approximately two years. The schedule currently indicates that construction activities in the first year are largely concerned with the undertaking of civil works (earthworks and structures), such as the establishment of watercourse crossings. Yard works are also scheduled during this period. Earthworks are planned to commence in 2013 and continue through 2014. Track laying, followed by ballasting and tamping, will commence in 2014 and are scheduled for completion in 2015.

The Construction Environmental Management Plan will detail the various requirements for the clearing, earthworks and construction phase aspects of the project. Specific to the requirements for clearing activities are:

- Planning and sequencing of clearing activities;
- Requirements for site stabilization and erosion and sediment control; and
- Specific management strategies within sensitive areas (e.g. watercourse and wetland areas).

4.3. Fauna Spotter

A fauna spotter will be present throughout the clearing process. The fauna spotter will check proposed clearing areas for fallen logs, nests and other potential animal breeding places and as per any conditions required under the NCA and *Nature Conservation (Wildlife) Regulation 2006*.

It is intended that the proponent will operate under a Species Management Program (whether specifically prepared or generic), which allows for the tampering of animal breeding places and can be obtained under Section 88 of the NCA and Section 332 of the *Nature Conservation (Wildlife Management) Regulation 2006*.



4.4. Threatened Flora

This NCA Permit report does not seek approval to clear Listed Endangered, Vulnerable or Near Threatened (EVNT) species. Prior to the commencement of clearing activities, additional field investigations will be conducted within potential habitat areas to confirm the absence of listed species. Should any EVNT species be encountered, approval to clear relevant species will be sought.



5. Audit of proposed clearing

The following provides an audit of Least Concern Plants within the proposed clearing footprints. The density and number of plants have been determined using standard assessment methods which detail the numbers of individuals per hectare. This information correlates to detailed vegetation mapping to determine numbers of each species requiring removal within various vegetation community types. It is noted that in a number of instances, the estimates of individual plants to be removed by the clearing exercise is likely to be less than that identified within the schedules.

Reporting is on a property basis with species schedules coinciding with mapped vegetation polygons. The following properties are included within the audit:

- Lot 3 on BL26
- Lot 637 on PH1980
- Lot 1 on SP147546
- Lot 4 on SP116046
- Lot 3235 on PH752
- Lot 10 on BL49
- Lot 1 on SP118814

The plant audit information provided within this document demonstrates that the clearing will not adversely affect the ongoing survival of identified plant species in the wild. This is evident when comparing the minor clearing required for the laydown and temporary works areas in comparison to the vast areas of similar mapped vegetation that will remain within the local and regional landscape. This information may also provide confidence that appropriate exemptions under S41 of the NC Plan are relevant to the project.



6. Temporary Works – Clearing for Laydown Areas, Batching Plants and Construction Camps

6.1. Lot 3 BL26 Laydown Area Bridge (2) @ 6 Ha = 12Ha

Ground layer in non-remnant areas is dominated by *Pennisetum ciliare* (Buffel Grass) (70%) with bare ground (10%). These areas are heavily grazed and disturbed and have historically been cleared for cattle pastures or cropping. Small patches of regrowth were recorded throughout the laydown areas.

Table 2: Species Audit of the Laydown Areas (Bridges) within Lot 3 on BL26

Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
Tree and Shrubs	CD	<i>Acacia harpophylla</i>	Brigalow	Least Concern	Not Listed	1920
	A	<i>Acacia cambagei</i>	Stinky Wattle	Least Concern	Not Listed	240
	A	<i>Capparis lasiantha</i>	Wait-A-While	Least Concern	Not Listed	180
	A	<i>Carissa ovata</i>	Currant Bush	Least Concern	Not Listed	180
	A	<i>Eremophila mitchellii</i>	False Sandalwood	Least Concern	Not Listed	180
	A	<i>Eucalyptus camaldulensis</i>	River Red Gum	Least Concern	Not Listed	420
	A	<i>Eucalyptus coolabah</i>	Coolabah	Least Concern	Not Listed	480
	A	<i>Geijera parviflora</i>	Wilga	Least Concern	Not Listed	180
	CD	<i>Terminalia oblongata</i>	Yellow-wood	Least Concern	Not Listed	1740
	D	<i>Melaleuca bracteata</i>	Black Tea Tree	Least Concern	Not Listed	3960
	A	<i>Lysiphyllum carronii</i>	Native Bauhinia	Least Concern	Not Listed	180



Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
Forbs and grasses	A	<i>Panicum decompositum</i>	Native Millet	Least Concern	Not Listed	7800m ²
	A	<i>Chloris truncata</i>	Windmill Grass	Least Concern	Not Listed	6000m ²
	A	<i>Muehlenbeckia florulenta</i>	Tangled Lignum	Least Concern	Not Listed	6000m ²
	A	<i>Sporobolus caroli</i>	Fairy Grass	Least Concern	Not Listed	3480m ²

Plant Species (D – Dominant; CD – codominant; A – associated; S – Suppressed)



6.2. Lot 3 BL26 Laydown Area Track (I) @ 4.5 Ha = 4.5Ha

Ground layer in non-remnant areas is dominated by *Pennisetum ciliare* (Buffel Grass) (79%). These areas are heavily grazed and disturbed and have historically been cleared for cattle pastures or cropping.

Table 3: Species Audit of the Laydown Areas (Tracks) within Lot 3 on BL26

Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
Tree and Shrubs	CD	<i>Acacia cambagei</i>	Stinky Wattle	Least Concern	Not Listed	270
	CD	<i>Acacia harpophylla</i>	Brigalow	Least Concern	Not Listed	810
	A	<i>Apophyllum anomalum</i>	Warrior Bush	Least Concern	Not Listed	45
	A	<i>Carissa ovata</i>	Currant Bush	Least Concern	Not Listed	90
	A	<i>Citrus glauca</i>	Desert Lime	Least Concern	Not Listed	45
	A	<i>Eremophila mitchellii</i>	False Sandalwood	Least Concern	Not Listed	45
	D	<i>Geijera parviflora</i>	Wilga	Least Concern	Not Listed	1170
	A	<i>Terminalia oblongata</i>	Yellow-wood	Least Concern	Not Listed	180
Forbs and grasses	A	<i>Panicum decompositum</i>	Native Millet	Least Concern	Not Listed	9450m ²
	A	<i>Chloris truncata</i>	Windmill Grass	Least Concern	Not Listed	2250m ²
	A	<i>Aristida latifolia</i>	Feathertop Wire Grass	Least Concern	Not Listed	2250m ²

Plant Species (D – Dominant; CD – codominant; A – associated; S – Suppressed)



6.3. Lot 3 BL26 Laydown Area Turning Circle (3) @ 1 Ha = 3Ha

Ground layer in non-remnant areas is dominated by *Pennisetum ciliare* (Buffel Grass) (42%) with bare ground (14%). These areas are heavily grazed and disturbed and have historically been cleared for cattle pastures or cropping.

Table 4: Species Audit of the Laydown Areas (Turning Circle) within Lot 3 on BL26

Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
Tree and Shrubs	CD	<i>Acacia cambagei</i>	Stinky Wattle	Least Concern	Not Listed	360
	A	<i>Acacia harpophylla</i>	Brigalow	Least Concern	Not Listed	30
	A	<i>Acacia salicina</i>	Sally Wattle	Least Concern	Not Listed	240
	A	<i>Capparis lasiantha</i>	Wait-A-While	Least Concern	Not Listed	30
	A	<i>Apophyllum anomalum</i>	Warrior Bush	Least Concern	Not Listed	10
	CD	<i>Carissa ovata</i>	Currant Bush	Least Concern	Not Listed	380
	A	<i>Citrus glauca</i>	Desert Lime	Least Concern	Not Listed	10
	D	<i>Eremophila mitchellii</i>	False Sandalwood	Least Concern	Not Listed	450
	A	<i>Eucalyptus brownii</i>	Reid River Box	Least Concern	Not Listed	20
	A	<i>Eucalyptus camaldulensis</i>	River Red Gum	Least Concern	Not Listed	10
	A	<i>Geijera parviflora</i>	Wilga	Least Concern	Not Listed	170
	A	<i>Lysiphyllum carronii</i>	Native Bauhinia	Least Concern	Not Listed	110
	A	<i>Melaleuca leucadendra</i>	Weeping Melaleuca	Least Concern	Not Listed	10
	A	<i>Terminalia oblongata</i>	Yellow-wood	Least Concern	Not Listed	70



Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
Forbs and grasses	A	<i>Panicum decompositum</i>	Native Millet	Least Concern	Not Listed	8480m ²
	A	<i>Chloris truncata</i>	Windmill Grass	Least Concern	Not Listed	2900m ²
	A	<i>Sporobolus caroli</i>	Fairy Grass	Least Concern	Not Listed	1600m ²

Plant Species (D – Dominant; CD – codominant; A – associated; S – Suppressed)



6.4. Lot 637 PH1980 Laydown Area Bridge (2) @ 6 Ha = 12Ha

Ground layer in non-remnant areas is dominated by *Pennisetum ciliare* (Buffel Grass) (56.2%) with bare ground (15.56%). These areas are heavily grazed and disturbed and have historically been cleared for cattle pastures or cropping.

Table 5: Species Audit of the Laydown Areas (Bridges) within Lot 637 on PH1980

Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
Tree and Shrubs	D	<i>Acacia harpophylla</i>	Brigalow	Least Concern	Not Listed	450
	CD	<i>Carissa ovata</i>	Currant Bush	Least Concern	Not Listed	300
	A	<i>Capparis lasiantha</i>	Wait-A-While	Least Concern	Not Listed	60
	A	<i>Eremophila mitchellii</i>	False Sandalwood	Least Concern	Not Listed	300
	A	<i>Eremophila bigoniiflora</i>	Dogwood	Least Concern	Not Listed	150
	A	<i>Flindersia dissosperma</i>	Scrub Leopardwood	Least Concern	Not Listed	200
Forbs and grasses	A	<i>Panicum decompositum</i>	Native Millet	Least Concern	Not Listed	660m2
	A	<i>Chloris gayana</i>	Rhodes Grass	Least Concern	Not Listed	2676m2
	A	<i>Heteropogon contortus</i>	Black Speargrass	Least Concern	Not Listed	3336m2
	A	<i>Aristida latifolia</i>	Feathertop Wiregrass	Least Concern	Not Listed	15996m2
	A	<i>Themeda triandra</i>	Kangaroo Grass	Least Concern	Not Listed	2004m2
	A	<i>Sporobolus caroli</i>	Fairy Grass	Least Concern	Not Listed	2004m2

Plant Species (D – Dominant; CD – codominant; A – associated; S – Suppressed)



6.5. Lot 637 PH1980 Laydown Area Track (2) @ 4.5 Ha = 9.0Ha

Ground layer in non-remnant areas is dominated by *Pennisetum ciliare* (Buffel Grass) (56.2%) with bare ground (15.56%). These areas are heavily grazed and disturbed and have historically been cleared for cattle pastures or cropping.

Table 6: Species Audit of the Laydown Areas (Tracks) within Lot 637 on PH1980

Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
Tree and Shrubs	D	<i>Acacia harpophylla</i>	Brigalow	Least Concern	Not Listed	225
	CD	<i>Carissa ovata</i>	Currant Bush	Least Concern	Not Listed	169
	A	<i>Capparis lasiantha</i>	Wait-A-While	Least Concern	Not Listed	35
	A	<i>Eremophila mitchellii</i>	False Sandalwood	Least Concern	Not Listed	225
	A	<i>Eremophila bigoniiflora</i>	Dogwood	Least Concern	Not Listed	495m2
	A	<i>Flindersia dissosperma</i>	Scrub Leopardwood	Least Concern	Not Listed	2007m2
Forbs and grasses	A	<i>Heteropogon contortus</i>	Black Speargrass	Least Concern	Not Listed	2502m2
	A	<i>Aristida latifolia</i>	Feathertop Wiregrass	Least Concern	Not Listed	11998m2
	A	<i>Themeda triandra</i>	Kangaroo Grass	Least Concern	Not Listed	1503m2
	A	<i>Sporobolus caroli</i>	Fairy Grass	Least Concern	Not Listed	1503m2

Plant Species (D – Dominant; CD – codominant; A – associated; S – Suppressed)



6.6. Lot 637 PH1980 Laydown Area Turning Circle (3) @ 1 Ha = 3 Ha

Ground layer in non-remnant areas is dominated by *Pennisetum ciliare* (Buffel Grass) (56.2%) with bare ground (15.56%). These areas are heavily grazed and disturbed and have historically been cleared for cattle pastures or cropping.

Table 7: Species Audit of the Laydown Areas (Turning Circles) within Lot 637 on PH1980

Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
Tree and Shrubs	A	<i>Acacia harpophylla</i>	Brigalow	Least Concern	Not Listed	75
	D	<i>Carissa ovata</i>	Currant Bush	Least Concern	Not Listed	56
	A	<i>Capparis lasiantha</i>	Wait-A-While	Least Concern	Not Listed	15
	A	<i>Eremophila mitchellii</i>	False Sandalwood	Least Concern	Not Listed	38
Forbs and grasses	A	<i>Panicum decompositum</i>	Native Millet	Least Concern	Not Listed	165m2
	A	<i>Chloris gayana</i>	Rhodes Grass	Least Concern	Not Listed	669m2
	A	<i>Heteropogon contortus</i>	Black Speargrass	Least Concern	Not Listed	834m2
	A	<i>Aristida latifolia</i>	Feathertop Wiregrass	Least Concern	Not Listed	3999m2
	A	<i>Themeda triandra</i>	Kangaroo Grass	Least Concern	Not Listed	501m2
	A	<i>Sporobolus caroli</i>	Fairy Grass	Least Concern	Not Listed	501m2

Plant Species (D – Dominant; CD – codominant; A – associated; S – Suppressed)



6.7. Lot 1 SPI47546 Laydown Area Track (I) @ 4.5 Ha = 4.5Ha

Ground layer in non-remnant areas is dominated by *Pennisetum ciliare* (Buffel Grass) (56.2%) with bare ground (15.56%). These areas are heavily grazed and disturbed and have historically been cleared for cattle pastures or cropping.

Table 8: Species Audit of the Laydown Areas (Tracks) within Lot 1 SP147546

Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
Tree and Shrubs	D	<i>Acacia harpophylla</i>	Brigalow	Least Concern	Not Listed	112
	CD	<i>Carissa ovata</i>	Currant Bush	Least Concern	Not Listed	84.5
	A	<i>Capparis lasiantha</i>	Wait-A-While	Least Concern	Not Listed	17
	A	<i>Eremophila mitchellii</i>	False Sandalwood	Least Concern	Not Listed	56
Forbs and grasses	A	<i>Panicum decompositum</i>	Native Millet	Least Concern	Not Listed	248m2
	A	<i>Chloris gayana</i>	Rhodes Grass	Least Concern	Not Listed	1004m2
	A	<i>Heteropogon contortus</i>	Black Speargrass	Least Concern	Not Listed	1251m2
	A	<i>Aristida latifolia</i>	Feathertop Wiregrass	Least Concern	Not Listed	5999m2
	A	<i>Themeda triandra</i>	Kangaroo Grass	Least Concern	Not Listed	752m2
	A	<i>Sporobolus caroli</i>	Fairy Grass	Least Concern	Not Listed	752m2

Plant Species (D – Dominant; CD – codominant; A – associated; S – Suppressed)



6.8. Lot 1 SPI47546 Laydown Area Turning Circle (I) @ 1 Ha = 1 Ha

Ground layer in non-remnant areas is dominated by *Pennisetum ciliare* (Buffel Grass) (56.2%) with bare ground (15.56%). These areas are heavily grazed and disturbed and have historically been cleared for cattle pastures or cropping.

Table 9: Species Audit of the Laydown Areas (Turning Circles) within Lot 1 on SP147546

Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
Tree and Shrubs	D	<i>Acacia harpophylla</i>	Brigalow	Least Concern	Not Listed	35
	A	<i>Carissa ovata</i>	Currant Bush	Least Concern	Not Listed	18
	A	<i>Capparis lasiantha</i>	Wait-A-While	Least Concern	Not Listed	5
	A	<i>Eremophila mitchellii</i>	False Sandalwood	Least Concern	Not Listed	16
Forbs and grasses	A	<i>Panicum decompositum</i>	Native Millet	Least Concern	Not Listed	55m2
	A	<i>Chloris gayana</i>	Rhodes Grass	Least Concern	Not Listed	223m2
	A	<i>Heteropogon contortus</i>	Black Speargrass	Least Concern	Not Listed	278m2
	A	<i>Aristida latifolia</i>	Feathertop Wiregrass	Least Concern	Not Listed	1333m2
	A	<i>Themeda triandra</i>	Kangaroo Grass	Least Concern	Not Listed	167m2
	A	<i>Sporobolus caroli</i>	Fairy Grass	Least Concern	Not Listed	167m2

Plant Species (D – Dominant; CD – codominant; A – associated; S – Suppressed)



6.9. Lot 1 SPI47546 Laydown Area Bridge (2) @ 6 Ha =12 Ha

Ground layer in non-remnant areas is dominated by *Pennisetum ciliare* (Buffel Grass) (56.2%) with bare ground (15.56%). These areas are heavily grazed and disturbed and have historically been cleared for cattle pastures or cropping.

Table 10: Species Audit of the Laydown Areas (Bridges) within Lot 1 on SP147546

Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
Tree and Shrubs	D	<i>Acacia harpophylla</i>	Brigalow	Least Concern	Not Listed	300
	CD	<i>Carissa ovata</i>	Currant Bush	Least Concern	Not Listed	225
	A	<i>Capparis lasiantha</i>	Wait-A-While	Least Concern	Not Listed	47
	CD	<i>Eremophila mitchellii</i>	False Sandalwood	Least Concern	Not Listed	300
Forbs and grasses	A	<i>Panicum decompositum</i>	Native Millet	Least Concern	Not Listed	660m2
	A	<i>Chloris gayana</i>	Rhodes Grass	Least Concern	Not Listed	2676m2
	A	<i>Heteropogon contortus</i>	Black Speargrass	Least Concern	Not Listed	3336m2
	A	<i>Aristida latifolia</i>	Feathertop Wiregrass	Least Concern	Not Listed	15996m2
	A	<i>Themeda triandra</i>	Kangaroo Grass	Least Concern	Not Listed	2004m2
	A	<i>Sporobolus caroli</i>	Fairy Grass	Least Concern	Not Listed	2004m2

Plant Species (D – Dominant; CD – codominant; A – associated; S – Suppressed)



6.10. Lot 4 SP116046 Batch Plant (2) @ 4.6 Ha = 9.2Ha

Ground layer in non-remnant areas is dominated by *Pennisetum ciliare* (Buffel Grass) (59.6%) with bare areas (25.4%). These areas are heavily grazed and disturbed and have historically been cleared for cattle pastures or cropping.

Table 11: Species Audit of Batch Plants within Lot 1 on SP147546

Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
Tree and Shrubs	D	<i>Acacia harpophylla</i>	Brigalow	Least Concern	Not Listed	225
	A	<i>Carissa ovata</i>	Currant Bush	Least Concern	Not Listed	169
	A	<i>Capparis lasiantha</i>	Wait-A-While	Least Concern	Not Listed	35
	CD	<i>Eremophila mitchellii</i>	False Sandalwood	Least Concern	Not Listed	225
Forbs and grasses	A	<i>Dichanthium sericeum</i>	Queensland Bluegrass	Least Concern	Not Listed	4416m ²
	A	<i>Aristida latifolia</i>	Feathertop Wiregrass	Least Concern	Not Listed	4784m ²
	A	<i>Sporobolus caroli</i>	Fairy Grass	Least Concern	Not Listed	460m ²
	A	<i>Bothriochloa bladhii</i>	Forest Bluegrass	Least Concern	Not Listed	1564m ²
	A	<i>Heteropogon contortus</i>	Black Speargrass	Least Concern	Not Listed	2024m ²
	A	<i>Themeda triandra</i>	Kangaroo Grass	Least Concern	Not Listed	2024m ²
	A	<i>Panicum decompositum</i>	Native Millet	Least Concern	Not Listed	2024m ²

Plant Species (D – Dominant; CD – codominant; A – associated; S – Suppressed)



6.II. Lot 4 SP116046 Laydown Area Bridge (3) @ 6 Ha = 18Ha

Ground layer in non-remnant areas is dominated by *Pennisetum ciliare* (Buffel Grass) with bare areas. These areas are heavily grazed and disturbed and have historically been cleared for cattle pastures or cropping. Random quadrats and transects were used to determine stem densities and percentages for understory species.

Table 12: Species Audit of the Laydown Areas (Bridges) within Lot 4 on SP116046

Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
Tree and Shrubs	S	<i>Carissa ovata</i>	Currant Bush	Least Concern	Not Listed	240
	S	<i>Atalaya hemiglauca</i>	Whitewood	Least Concern	Not Listed	2418
	S	<i>Acacia harpophylla</i>	Brigalow	Least Concern	Not Listed	1308
	S	<i>Acacia cambagei</i>	Gidgee	Least Concern	Not Listed	530
	S	<i>Capparis lasiantha</i>	Wait-A-While	Least Concern	Not Listed	618
	A	<i>Citrus glauca</i>	Native lemon	Least Concern	Not Listed	300
	A	<i>Eremophila mitchellii</i>	False Sandalwood	Least Concern	Not Listed	300
	A	<i>Apophyllum anomalum</i>	Warrior Bush	Least Concern	Not Listed	240
Forbs and grasses	A	<i>Aristida latifolia</i>	Feathertop Wiregrass	Least Concern	Not Listed	3000m2
	A	<i>Sporobolus creber</i>	Western Rats Tail	Least Concern	Not Listed	19980m2
	A	<i>Leptochloa digitata</i>	Umbrella Cane Grass	Least Concern	Not Listed	4020m2
	A	<i>Eriochloa parviflora</i>	Love Grass	Least Concern	Not Listed	4980m2
	A	<i>Astrebala squarrosa</i>	Bull Mitchell	Least Concern	Not Listed	24000m2
	A	<i>Panicum decompositum</i>	Native Millet	Least Concern	Not Listed	4020m2



Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
	A	<i>Paspalum caespitosum</i>	Brigalow Grass	Least Concern	Not Listed	1020m2

Plant Species (D – Dominant; CD – codominant; A – associated; S – Suppressed)



6.12. Lot 4 SP116046 Rail Precinct Area (I) @ 254.4 Ha = 254.4Ha

Ground layer in non-remnant areas is dominated by *Pennisetum ciliare* (Buffel Grass). These areas total approximately 75%, are heavily grazed and disturbed and have historically been cleared for cattle pastures or cropping.

Table 13: Species Audit of the Laydown Area (Facility Area) within Lot 4 on SP116046

Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
Shrubs	D	<i>Acacia harpophylla</i>	Brigalow	Least Concern	Not Listed	66125
	CD	<i>Carissa ovata</i>	Currant Bush	Least Concern	Not Listed	66125
	A	<i>Capparis lasiantha</i>	Wait-A-While	Least Concern	Not Listed	39675
	A	<i>Eremophila mitchellii</i>	False Sandalwood	Least Concern	Not Listed	13225
	A	<i>Atalaya hemiglauc</i>	Whitewood	Least Concern	Not Listed	13225
	A	<i>Citrus glauca</i>	Limebush	Least Concern	Not Listed	6612
Forbs and grasses	A	<i>Aristida latifolia</i>	Feathertop Wiregrass	Least Concern	Not Listed	132250m ²
	A	<i>Sporobolus caroli</i>	Fairy Grass	Least Concern	Not Listed	13225m ²
	A	<i>Heteropogon contortus</i>	Black Speargrass	Least Concern	Not Listed	132250m ²
	A	<i>Themeda triandra</i>	Kangaroo Grass	Least Concern	Not Listed	79350m ²
	A	<i>Panicum decompositum</i>	Native Millet	Least Concern	Not Listed	264500m ²
	A	<i>Sida cordifolia</i>	Flannel Weed	Least Concern	Not Listed	13225m ²

Plant Species (D – Dominant; CD – codominant; A – associated; S – Suppressed)



6.13. Lot 4 SP116046 Laydown Area Track (4) @ 4.5 Ha = 18 Ha

Ground layer in non-remnant areas dominated by *Pennisetum ciliare* (Buffel Grass) (59.6%) and bare areas (25.4%). These areas are heavily grazed and disturbed and have historically been cleared for cattle pastures or cropping. Calculations based on 23 4mx5m quadrats plus additional random quadrats and transects within the laydown and temporary work areas.

Table 14: Species Audit of the Laydown Areas (Tracks) within Lot 4 on SP116046

Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
Tree and Shrubs	D	<i>Acacia harpophylla</i>	Brigalow	Least Concern	Not Listed	2355
	A	<i>Carissa ovata</i>	Currant Bush	Least Concern	Not Listed	217
	A	<i>Capparis lasiantha</i>	Wait-A-While	Least Concern	Not Listed	91
	CD	<i>Atalaya hemiglauc</i>	Whitewood	Least Concern	Not Listed	1589
	A	<i>Archidendropsis basaltica</i>	Dead Finish	Least Concern	Not Listed	91
	A	<i>Citrus glauca</i>	Native Lime	Least Concern	Not Listed	310
	A	<i>Acacia cambagei</i>	Gidgee	Least Concern	Not Listed	23
	A	<i>Apophyllum anomalum</i>	Warrior Bush	Least Concern	Not Listed	361
	A	<i>Terminalia oblongata</i>	Yellowwood	Least Concern	Not Listed	225
	A	<i>Dichanthium sericeum</i>	Queensland Bluegrass	Least Concern	Not Listed	1250m2
Forbs and grasses	A	<i>Aristida latifolia</i>	Feathertop Wiregrass	Least Concern	Not Listed	4500m2
	A	<i>Sporobolus caroli</i>	Fairy Grass	Least Concern	Not Listed	2250m2
	A	<i>Bothriochloa bladhii</i>	Forest Bluegrass	Least Concern	Not Listed	160m2
	A	<i>Astrebula squarrosa</i>	Bull Mitchell	Least Concern	Not Listed	12015m2



Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
	A	<i>Themeda triandra</i>	Kangaroo Grass	Least Concern	Not Listed	1125m ²
	A	<i>Leptochloa digitata</i>	Umbrella Cane Grass	Least Concern	Not Listed	7110m ²
	A	<i>Eriochloa parviflora</i>	Love Grass	Least Concern	Not Listed	4500m ²
	A	<i>Cyperus gracilis</i>	Nutgrass	Least Concern	Not Listed	1125m ²

Plant Species (D – Dominant; CD – codominant; A – associated; S – Suppressed)



6.14. Lot 4 SP116046 Laydown Area Turning Circle (5) @ 1 Ha = 5Ha

One turning circle towards the western property boundary is located within mapped Of Concern Regional Ecosystem 11.3.3 / 11.3.5. Vegetation assessment and transects confirmed species consistent with Of Concern RE 11.3.3 within this proposed turning circle area.

Table 15: Species Audit of the Laydown Areas (Turning Circle 1 - Western Property Boundary) within Lot 4 on SP116046

Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
Tree and Shrubs	D	<i>Eucalyptus coolabah</i>	Coolabah	Least Concern	Not Listed	5
	A	<i>Eucalyptus brownii</i>	Reid River Gum	Least Concern	Not Listed	2
	A	<i>Terminalia oblongata</i>	Yellowwood	Least Concern	Not Listed	15
	A	<i>Eremophila mitchellii</i>	False Sandalwood	Least Concern	Not Listed	18
	S	<i>Carissa ovata</i>	Currant Bush	Least Concern	Not Listed	21
	S	<i>Capparis lasiantha</i>	Wait-A-While	Least Concern	Not Listed	3
	S	<i>Terminalia oblongata</i>	Yellow Wood	Least Concern	Not Listed	6
	S	<i>Atalaya hemiglauc</i>	White Wood	Least Concern	Not Listed	2
Forbs and grasses	A	<i>Leptochloa digitata</i>	Umbrella Cane Grass	Least Concern	Not Listed	285m ²
	A	<i>Astrelba squarrosa</i>	Bull Mitchell	Least Concern	Not Listed	785m ²
	A	<i>Aristida latifolia</i>	Feathertop Wiregrass	Least Concern	Not Listed	930m ²

Plant Species (D – Dominant; CD – codominant; A – associated; S – Suppressed)



Ground layer in non-remnant areas is dominated by *Pennisetum ciliare* (Buffel Grass) with bare areas. These areas are heavily grazed and disturbed and have historically been cleared for cattle pastures or cropping. Random quadrats and transects were conducted throughout the laydown and temporary works areas to determine stem densities.

Table 16: Species Audit of the Laydown Areas (Turning Circles 2 - 5) within Lot 4 on SP116046

Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
Tree and Shrubs	S	<i>Acacia harpophylla</i>	Brigalow	Least Concern	Not Listed	286
	S	<i>Carissa ovata</i>	Currant Bush	Least Concern	Not Listed	36
	S	<i>Capparis lasiantha</i>	Wait-A-While	Least Concern	Not Listed	121
	S	<i>Terminalia oblongata</i>	Yellow Wood	Least Concern	Not Listed	71
	S	<i>Atalaya hemiglauca</i>	White Wood	Least Concern	Not Listed	443
	S	<i>Citrus glauca</i>	Native Lime	Least Concern	Not Listed	300
	S	<i>Eremophila mitchellii</i>	False Sandalwood	Least Concern	Not Listed	43
Forbs and grasses	A	<i>Leptochloa digitata</i>	Umbrella Cane Grass	Least Concern	Not Listed	1429m ²
	D	<i>Astrelba squarrosa</i>	Bull Mitchell	Least Concern	Not Listed	3929m ²
	A	<i>Eriochloa parviflora</i>	Love Grass	Least Concern	Not Listed	1786m ²

Plant Species (D – Dominant; CD – codominant; A – associated; S – Suppressed)



6.15. Lot 4 SP116046 Camp Location (I) @ 9.3 Ha = 9.3Ha

Ground layer in non-remnant areas is dominated by *Pennisetum ciliare* (Buffel Grass) with bare areas. These areas are heavily grazed and disturbed and have historically been cleared for cattle pastures or cropping. Stem densities were determined using random quadrats and transects within the laydown and temporary works areas.

Table 17: Species Audit of the Camp Location within Lot 4 on SP116046

Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
Tree and Shrubs	S	<i>Acacia harpophylla</i>	Brigalow	Least Concern	Not Listed	667
	S	<i>Atalaya hemiglauca</i>	White Wood	Least Concern	Not Listed	852
	S	<i>Apophyllum anomalum</i>	Warrior Bush	Least Concern	Not Listed	254
	S	<i>Carissa ovata</i>	Currant Bush	Least Concern	Not Listed	398
	S	<i>Capparis lasiantha</i>	Wait-A-While	Least Concern	Not Listed	65
	S	<i>Terminalia oblongata</i>	Yellowwood	Least Concern	Not Listed	185
Forbs and grasses	A	<i>Leptochloa digitata</i>	Umbrella Cane Grass	Least Concern	Not Listed	4600m ²
	A	<i>Aristida latifolia</i>	Feathertop Wiregrass	Least Concern	Not Listed	7200m ²

Plant Species (D – Dominant; CD – codominant; A – associated; S – Suppressed)



6.16. Lot 10 BL49 Batch Plant (I) @ 4.6Ha = 4.6Ha

Ground layer in non-remnant areas is dominated by *Pennisetum ciliare* (Buffel Grass), is heavily grazed and disturbed and has historically been cleared for cattle pastures or cropping. Species and densities were determined from random quadrats and transects established within the laydown and temporary works areas.

Table 18: Species Audit of the Batch Plant within Lot 10 on BL49

Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
Tree and Shrubs	S	<i>Acacia harpophylla</i>	Brigalow	Least Concern	Not Listed	334
	S	<i>Carissa ovata</i>	Currant Bush	Least Concern	Not Listed	199
	S	<i>Capparis lasiantha</i>	Wait-A-While	Least Concern	Not Listed	33
	S	<i>Terminalia oblongata</i>	Yellowwood	Least Concern	Not Listed	93
	S	<i>Atalaya hemiglauca</i>	Whitewood	Least Concern	Not Listed	426
	S	<i>Apophyllum anomalum</i>	Warrior Bush	Least Concern	Not Listed	127
Forbs and grasses	A	<i>Aristida latifolia</i>	Feathertop Wiregrass	Least Concern	Not Listed	2300m2
	A	<i>Leptochloa digitata</i>	Umbrella Cane Grass	Least Concern	Not Listed	3600m2

Plant Species (D – Dominant; CD – codominant; A – associated; S – Suppressed)



6.17. Lot 10 BL49 Laydown Area Bridge (2) @ 6Ha = 12 Ha

Ground layer in non-remnant areas is dominated by *Pennisetum ciliare* (Buffel Grass), is heavily grazed and disturbed and has historically been cleared for cattle pastures or cropping. Stem and grass layer densities were determined by establishing random transects and quadrats within the laydown and temporary works areas.

Table 19: Species Audit of the Laydown Areas (Bridges) within Lot 10 on BL49

Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
Tree and Shrubs	S	<i>Acacia harpophylla</i>	Brigalow	Least Concern	Not Listed	3240
	S	<i>Carissa ovata</i>	Currant Bush	Least Concern	Not Listed	520
	S	<i>Santalum lanceolatum</i>	Sandalwood	Least Concern	Not Listed	760
	S	<i>Terminalia oblongata</i>	Yellowwood	Least Concern	Not Listed	804
	S	<i>Acacia cambagei</i>	Gidgee	Least Concern	Not Listed	300
	S	<i>Apophyllum anomalum</i>	Warrior Bush	Least Concern	Not Listed	200
	S	<i>Eremophila mitchellii</i>	False Sandalwood	Least Concern	Not Listed	28
Forbs and grasses	A	<i>Aristida latifolia</i>	Feathertop Wiregrass	Least Concern	Not Listed	6400m ²
	A	<i>Bothriochloa bladhii</i>	Forest Bluegrass	Least Concern	Not Listed	6000m ²
	A	<i>Astrelba squarrosa</i>	Bull Mitchell Grass	Least Concern	Not Listed	21528m ²

Plant Species (D – Dominant; CD – codominant; A – associated; S – Suppressed)



6.18. Lot 10 BL49 Laydown Area Track (5) @ 4.5 Ha = 22.5 Ha

Ground layer in non-remnant areas is dominated by *Pennisetum ciliare* (Buffel Grass), is heavily grazed and disturbed and has historically been cleared for cattle pastures or cropping. Stem densities and ground cover were determined from random quadrats and transects within the laydown and temporary works areas.

Table 20: Species Audit of the Laydown Areas (Tracks) within Lot 10 on BL49

Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
Tree and Shrubs	S	<i>Acacia harpophylla</i>	Brigalow	Least Concern	Not Listed	4425
	S	<i>Carissa ovata</i>	Currant Bush	Least Concern	Not Listed	450
	S	<i>Capparis lasiantha</i>	Wait-A-While	Least Concern	Not Listed	750
	S	<i>Eremophila deserti</i>	Turkey Bush	Least Concern	Not Listed	150
	S	<i>Apophyllum anomalum</i>	Warrior Bush	Least Concern	Not Listed	206
	S	<i>Lysiphyllum carronii</i>	Native Bauhinia	Least Concern	Not Listed	225
	S	<i>Eucalyptus cambageana</i>	Dawson's Gum	Least Concern	Not Listed	113
	S	<i>Owenia acidula</i>	Emu Apple	Least Concern	Not Listed	38
	S	<i>Acacia cambagei</i>	Gidgee	Least Concern	Not Listed	113
	S	<i>Citrus glauca</i>	Native Lime	Least Concern	Not Listed	75
	S	<i>Enchylaena tomentose</i>	Ruby saltbush	Least Concern	Not Listed	500
	S	<i>Eremophila bigoniiflora</i>	Dogwood	Least Concern	Not Listed	94
	S	<i>Terminalia oblongata</i>	Yellowwood	Least Concern	Not Listed	1275
	S	<i>Eremophila mitchellii</i>	False Sandalwood	Least Concern	Not Listed	244



Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
Forbs and grasses	A	<i>Dichanthium sericeum</i>	Queensland Bluegrass	Least Concern	Not Listed	41,875m ²
	A	<i>Enteropogon acicularis</i>	Curly Windmill Grass	Least Concern	Not Listed	1875m ²
	A	<i>Leptochloa digitata</i>	Umbrella Cane Grass	Least Concern	Not Listed	46,406m ²
	A	<i>Panicum decompositum</i>	Native Millet	Least Concern	Not Listed	23,968m ²
	A	<i>Paspalum caespitosum</i>	Brigalow Grass	Least Concern	Not Listed	938m ²
	A	<i>Astrebula squarrosa</i>	Bull Mitchell Grass	Least Concern	Not Listed	16,484m ²
	A	<i>Eriochloa parviflora</i>	Love Grass	Least Concern	Not Listed	5094m ²

Plant Species (D – Dominant; CD – codominant; A – associated; S – Suppressed)



6.19. Lot 10 BL49 Laydown Area Turning Circle (6) @ 1Ha = 6 Ha

Ground layer in non-remnant areas is dominated by *Pennisetum ciliare* (Buffel Grass) and *Parthenium hysterophorus* (Parthenium) with bare areas that are heavily grazed and disturbed. These areas have historically been cleared for cattle pastures or cropping. Stem densities and ground layer cover were determined using random quadrats and transects established within the laydown and temporary works areas.

Table 21: Species Audit of the Laydown Areas (Turning Circle) within Lot 10 on BL49

Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
Tree and Shrubs	S	<i>Acacia harpophylla</i>	Brigalow	Least Concern	Not Listed	420
	S	<i>Carissa ovata</i>	Currant Bush	Least Concern	Not Listed	90
	S	<i>Capparis lasiantha</i>	Wait-A-While	Least Concern	Not Listed	150
	S	<i>Eucalyptus coolabah</i>	Coolabah	Least Concern	Not Listed	20
	S	<i>Atalaya hemiglauc</i>	Whitewood	Least Concern	Not Listed	30
	S	<i>Eremophila mitchellii</i>	False Sandalwood	Least Concern	Not Listed	130
	S	<i>Apophyllum anomalum</i>	Warrior Bush	Least Concern	Not Listed	160
	S	<i>Terminalia oblongata</i>	Yellowwood	Least Concern	Not Listed	160
	S	<i>Archidendropsis basaltica</i>	Dead Finish	Least Concern	Not Listed	20
	S	<i>Acacia argyrodendron</i>	Blackwood	Least Concern	Not Listed	60
	S	<i>Lysiphyllum carronii</i>	Native Bauhinia	Least Concern	Not Listed	60
	A	<i>Aristida latifolia</i>	Feathertop Wiregrass	Least Concern	Not Listed	2500m ²
Forbs and grasses	A	<i>Dichanthium sericeum</i>	Queensland Bluegrass	Least Concern	Not Listed	5625m ²
	A	<i>Enteropogon acicularis</i>	Curly Windmill Grass	Least Concern	Not Listed	1125m ²



Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
	A	<i>Sporobolus caroli</i>	Fairy Grass	Least Concern	Not Listed	688m2
	A	<i>Panicum decompositum</i>	Native Millet	Least Concern	Not Listed	6820m2
	A	<i>Bothriochloa bladhii</i>	Forest Bluegrass	Least Concern	Not Listed	2500m2
	A	<i>Astrebula squarrosa</i>	Bull Mitchell Grass	Least Concern	Not Listed	7625m2
	A	<i>Leptochloa digitata</i>	Umbrella Cane Grass	Least concern	Not Listed	4000m2
	A	<i>Paspalidium caespitosum</i>	Brigalow Grass	Least concern	Not Listed	500m2
	A	<i>Paspalum globoideum</i>	Shot Grass	Least concern	Not Listed	750m2

Plant Species (D – Dominant; CD – codominant; A – associated; S – Suppressed)



6.20. Lot 1 SP118814 Laydown Area Bridge (I) @ 6Ha = 6 Ha

Ground layer in non-remnant areas is dominated by *Pennisetum ciliare* (Buffel Grass). These areas are heavily grazed and disturbed and have historically been cleared for cattle pastures or cropping. Stem densities and ground layer percentages were determined using random quadrats and transects established in the laydown and temporary works areas.

Table 22: Species Audit of the Laydown Areas (Bridge) within Lot 1 on SP118814

Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
Tree and Shrubs	S	<i>Acacia harpophylla</i>	Brigalow	Least Concern	Not Listed	1200
	S	<i>Carissa ovata</i>	Currant Bush	Least Concern	Not Listed	120
	S	<i>Capparis lasiantha</i>	Wait-A-While	Least Concern	Not Listed	127
	S	<i>Apophyllum anomalum</i>	Warrior Bush	Least Concern	Not Listed	43
	S	<i>Flindersia dissosperma</i>	Leopardwood	Least Concern	Not Listed	26
	S	<i>Atalaya hemiglauc</i>	White Wood	Least Concern	Not Listed	9
	S	<i>Acacia cambagei</i>	Gidgee	Least Concern	Not Listed	9
	S	<i>Citrus glauca</i>	Native Lime	Least Concern	Not Listed	9
	S	<i>Terminalia oblongata</i>	Yellowwood	Least Concern	Not Listed	78
	S	<i>Terminalia oblongata</i>	Yellowwood	Least Concern	Not Listed	78
Forbs and grasses	A	<i>Aristida latifolia</i>	Feathertop Wiregrass	Least Concern	Not Listed	3000m ²
	D	<i>Dichanthium sericeum</i>	Queensland Blue Grass	Least Concern	Not Listed	6858m ²
	A	<i>Sporobolus creber</i>	Western Rats Tail	Least Concern	Not Listed	1716m ²
	A	<i>Astrelba squarrosa</i>	Bull Mitchell	Least Concern	Not Listed	3000m ²
	A	<i>Panicum decompositum</i>	Native millet	Least Concern	Not Listed	1284m ²



Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
	A	<i>Atriplex muelleri</i>	Saltbush	Least Concern	Not Listed	2574m ²
	A	<i>Bothriochloa bladhii</i>	Forest Bluegrass	Least Concern	Not Listed	426m ²

Plant Species (D – Dominant; CD – codominant; A – associated; S – Suppressed)



6.21. Lot 1 SP118814 Laydown Area Turning circle (I) @ 1 Ha = 1 Ha

Ground layer in non-remnant areas is dominated by *Pennisetum ciliare* (Buffel Grass). These areas are heavily grazed and disturbed and have historically been cleared for cattle pastures or cropping. Stem densities and ground layer percentages were determined using random quadrats and transects established in the laydown and temporary works areas.

Table 23: Species Audit of the Laydown Area (Turning Circle) within Lot 1 on SP118814

Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
Tree and Shrubs	S	<i>Acacia harpophylla</i>	Brigalow	Least Concern	Not Listed	200
	S	<i>Carissa ovata</i>	Currant Bush	Least Concern	Not Listed	20
	S	<i>Capparis lasiantha</i>	Wait-A-While	Least Concern	Not Listed	22
	S	<i>Apophyllum anomalum</i>	Warrior Bush	Least Concern	Not Listed	8
	S	<i>Flindersia dissosperma</i>	Leopardwood	Least Concern	Not Listed	5
	S	<i>Atalaya hemiglauc</i>	White Wood	Least Concern	Not Listed	2
	S	<i>Acacia cambagei</i>	Gidgee	Least Concern	Not Listed	2
	S	<i>Citrus glauca</i>	Native Lime	Least Concern	Not Listed	2
	S	<i>Terminalia oblongata</i>	Yellowwood	Least Concern	Not Listed	13
Forbs and grasses	A	<i>Aristida latifolia</i>	Feathertop Wiregrass	Least Concern	Not Listed	500m ²
	D	<i>Dichanthium sericeum</i>	Queensland Blue Grass	Least Concern	Not Listed	1143m ²
	A	<i>Sporobolus creber</i>	Western Rats Tail	Least Concern	Not Listed	286m ²
	A	<i>Astrebula squarrosa</i>	Bull Mitchell	Least Concern	Not Listed	500m ²
	A	<i>Panicum decompositum</i>	Native millet	Least Concern	Not Listed	214m ²



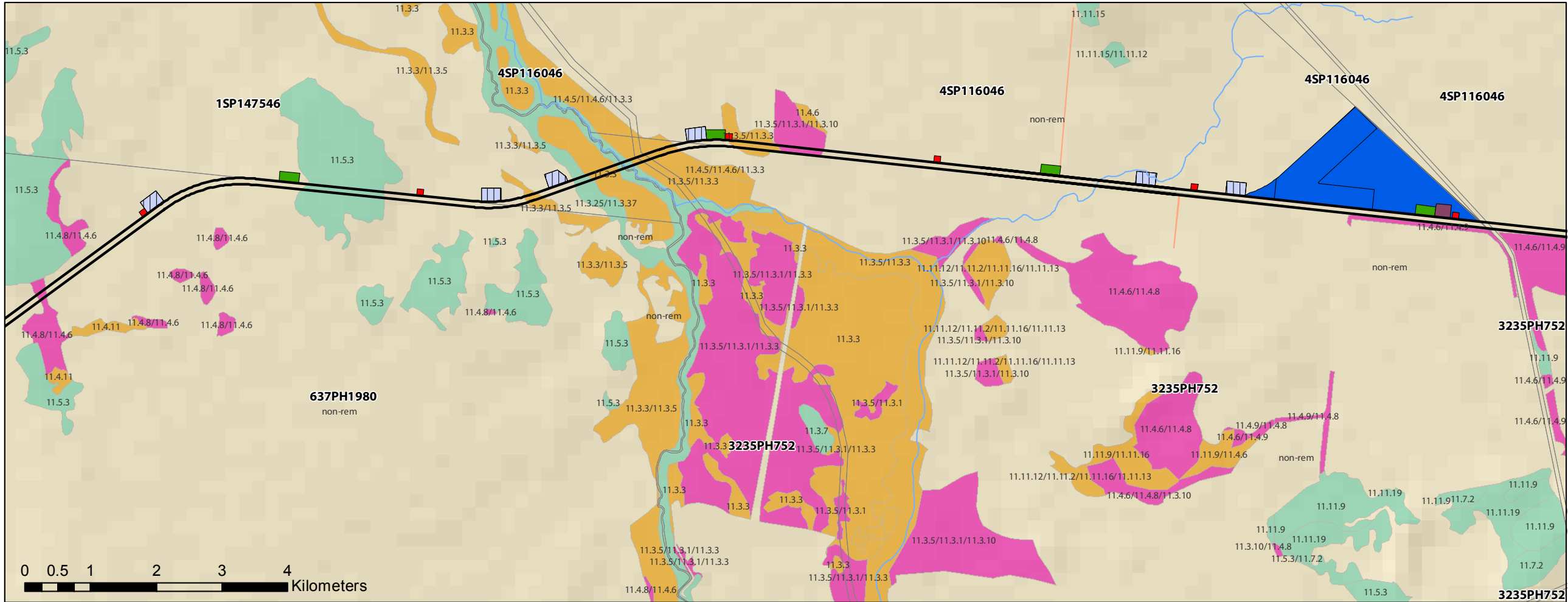
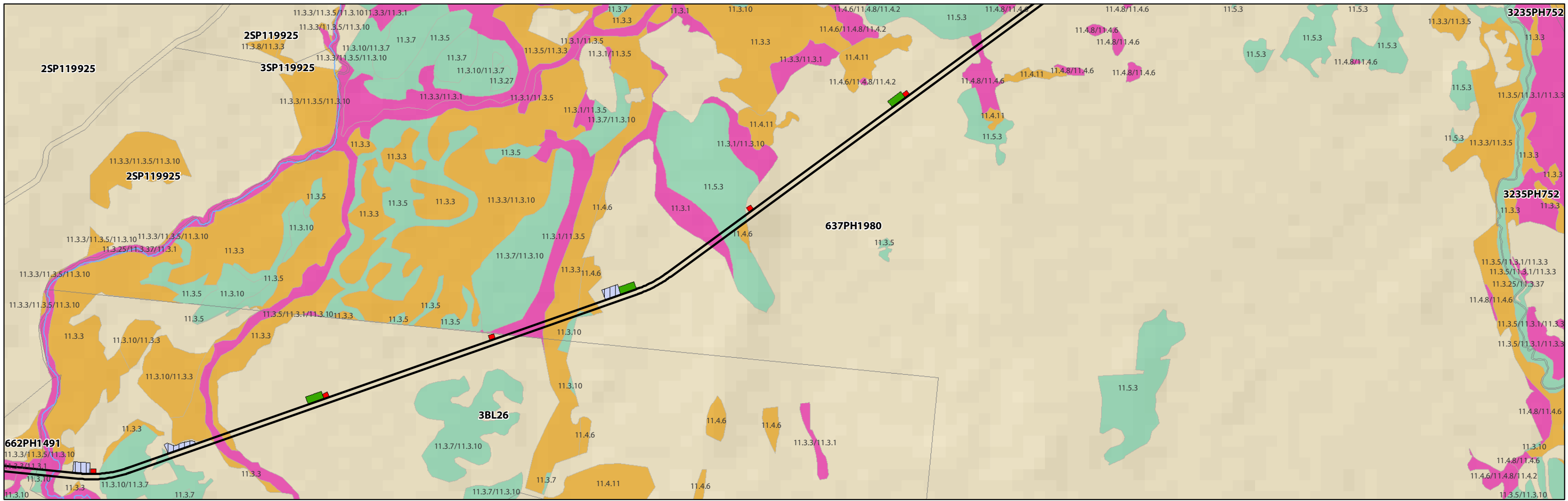
Str.	Rel. dom.	Scientific Name	Common Name	Conservation Status (NCA92)	EPBC Status	Number or M ² of vegetation
	A	<i>Atriplex muelleri</i>	Saltbush	Least Concern	Not Listed	429m2
	A	<i>Bothriochloa bladhii</i>	Forest Bluegrass	Least Concern	Not Listed	71m2

Plant Species (D – Dominant; CD – codominant; A – associated; S – Suppressed)



Attachment A

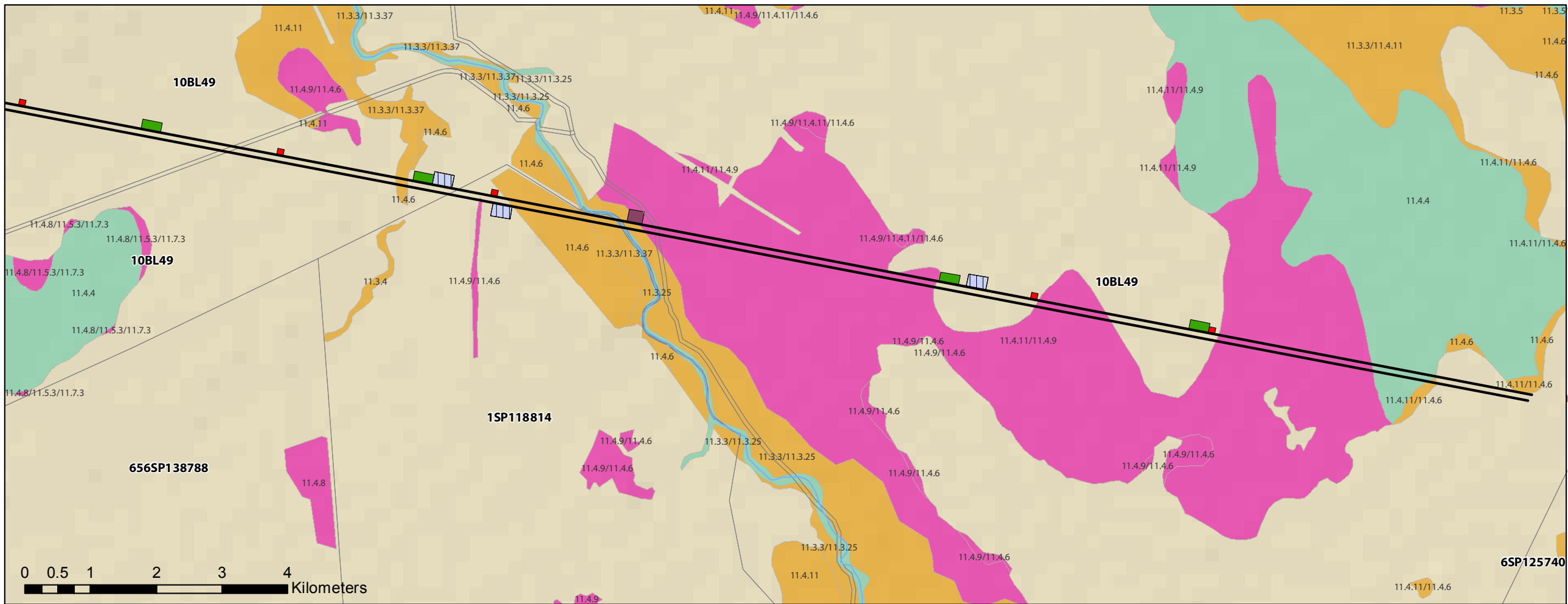
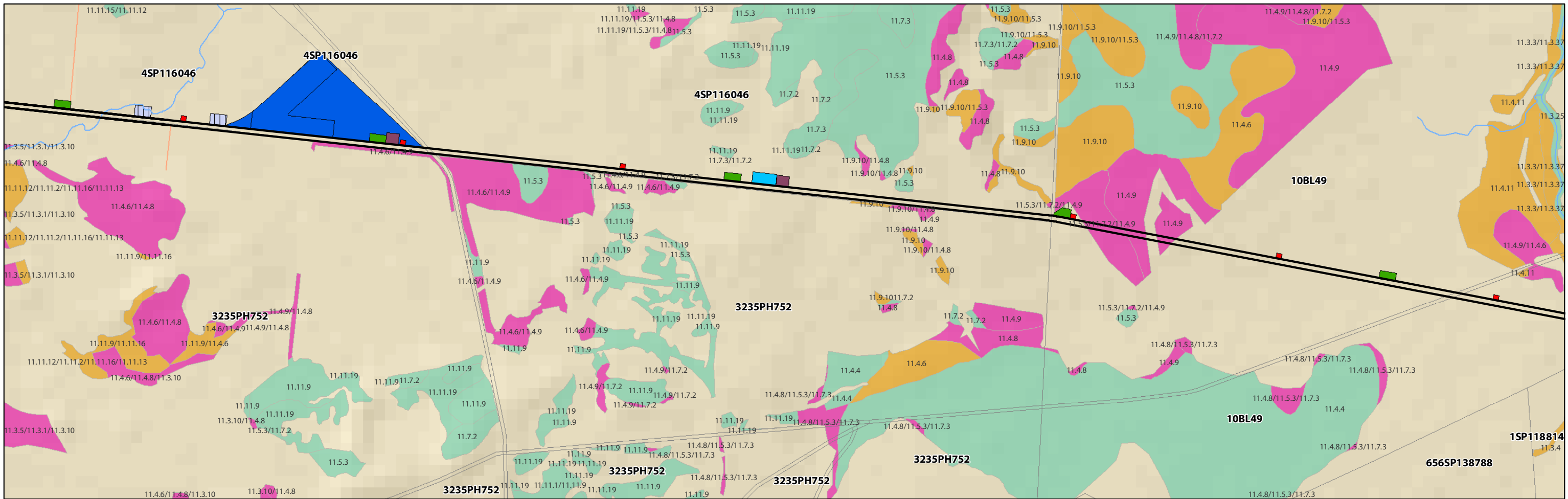
Laydown and temporary works location plans



Legend

- Rail Alignment (SP1)
- DCDB
- Watercourses
- Construction Depot
- Maintanance Depot
- Concrete Batch plant
- Camp Locations
- Access Road - Camp
- Turning Circle
- Bridge Laydown areas
- Track Laydown areas
- Ballast Stock Pile
- Access Road - Quarry
- Regional Ecosystem Mapping v6.1
- Remnant vegetation containing Endangered REs
- Remnant vegetation containing Of Concern REs
- Remnant vegetation that is a Least Concern RE





Legend

- Rail Alignment (SP1)
- DCDB
- Watercourses
- Construction Depot
- Maintanance Depot
- Concrete Batch plant
- Camp Locations
- Access Road - Camp
- Turning Circle
- Bridge Laydown areas
- Track Laydown areas
- Ballast Stock Pile
- Access Road - Quarry

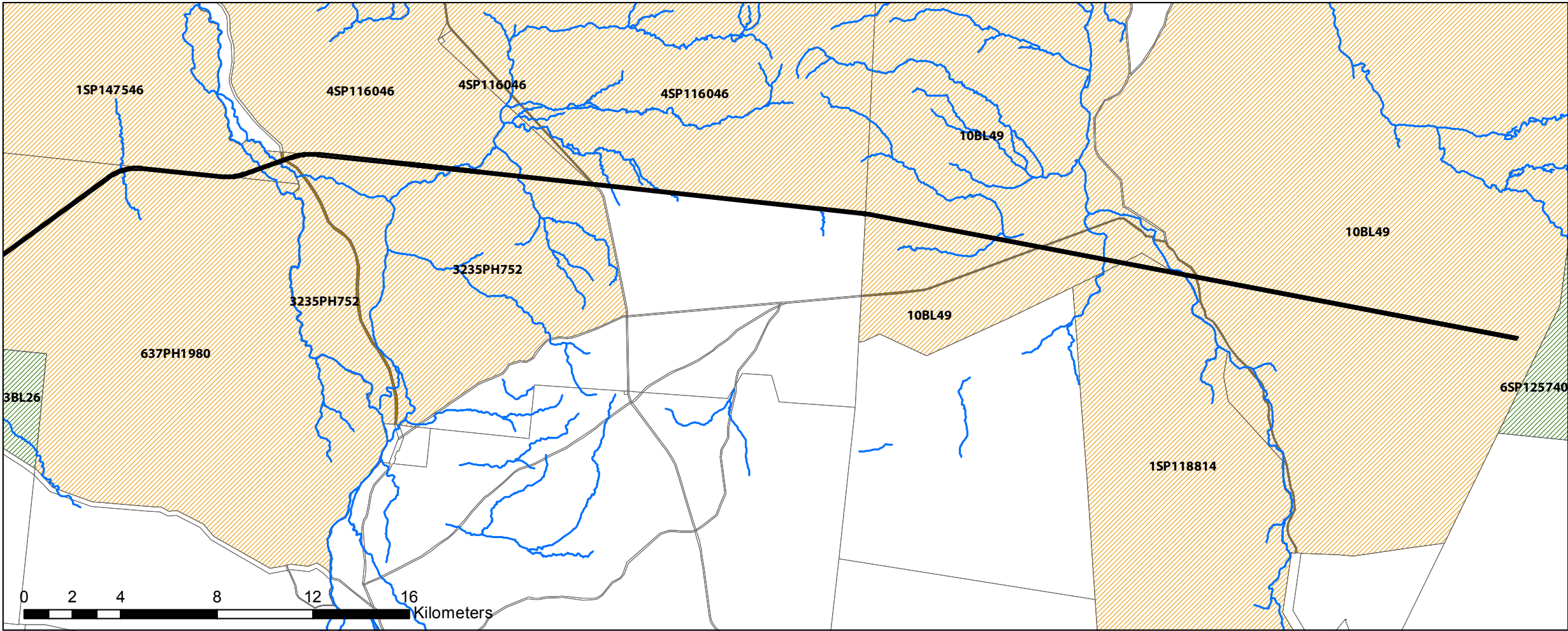
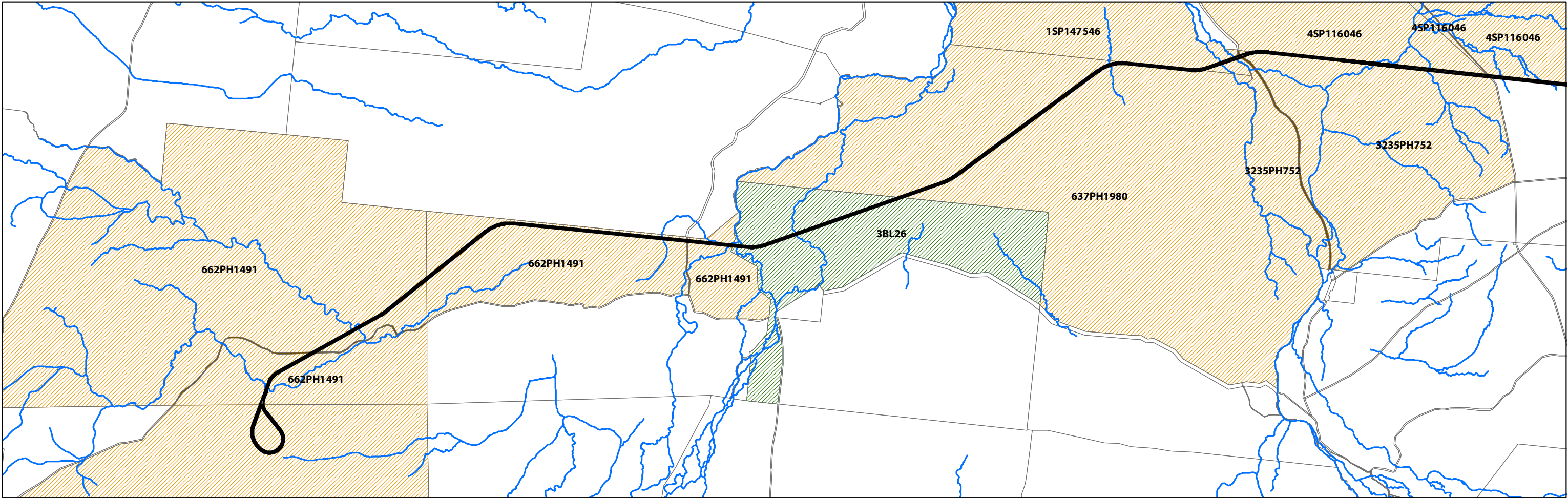
Regional Ecosystem Mapping v6.1

- Remnant vegetation containing Endangered REs
- Remnant vegetation containing Of Concern REs
- Remnant vegetation that is a Least Concern RE



Attachment B

Tenure Plan



Legend

- Watercourses
- Isaac Regional Council DCDB
- TENURE
 - Other (incl Road Reserves, Watercourses)
 - Freehold
 - Leasehold

0 2 4 8 12 16 Kilometers