



Significant Species Management Plan

Atlas to Reedy Creek Pipeline

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ARCP Significant Species Management Plan

Abbreviations

The abbreviations provided below are used throughout this document.

Abbreviation	Description
AS	Australian Standard
ATW	Access to Work (internal document authorising activities as part of the Land Access process)
ARCP	Atlas to Reedy Creek Pipeline
CCA	Conduct and Compensation Agreements
DCCEEW	Department of Climate Change, Energy, Environment and Water
DES	Department of Environment and Science
EA	Environmental Authority
EMP	Environmental Management Plan
EP Regulation	<i>Environmental Protection Regulation 2008 (Qld)</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)</i>
ES	Ecological (Ground-truthing) Survey
HSEMS	Health, Safety and Environment Management System
MNES	Matter of National Environmental Significance
PDA	Preliminary Desktop Assessment
PPL	Petroleum Pipeline Licence
QLD	Queensland
RE	Regional Ecosystem
Senex	Senex Energy Pty Ltd (ACN 008 942 827)
SEVT	Semi-evergreen vine thickets
SIG 1.1	Significant Impact Guidelines 1.1 – Matters of National Environmental Significance
Significant Species	Species or communities considered to be MNES under the EPBC Act that are known, or have a likely or potential to occur within the Project Area
SPRAT	Species Profile And Threats Database
SSMP	Significant Species Management Plan
TEC	Threatened Ecological Community

1 Introduction

ARC Pipeline Pty Ltd, a subsidiary of Senex Energy Pty Ltd (Senex), has prepared this Significant Species Management Plan (SSMP) to outline the measures to be implemented to manage impacts to Threatened Ecological Communities (TEC), threatened species and migratory species listed under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) as Matters of National Environmental Significance (MNES) during construction and operation of Petroleum Pipeline Licence (PPL) 2075.

Further detail on the Project is provided in the following sub-sections.

1.1 Project Description

PPL 2075 is known as the Atlas to Reedy Creek Pipeline (ARCP) and will be a buried high-pressure gas transmission pipeline. The ARCP will transport natural gas produced from Surat Basin gas tenements southwest of Wandoan to the Reedy Creek to Wallumbilla Pipeline (RCWP) north of Yuleba (which is owned and operated by a third party). From Reedy Creek, transportation will continue under the capacity and services offered by the connecting pipeline's owner.

Tenements proposed to be serviced by this pipeline include:

- Project Atlas Coal Seam Gas (CSG) Project (EPBC 2018/8329)
- Atlas Stage 3 Gas Project (EPBC 2022/09410)
- other potential future Senex projects; and
- other third-party projects.

The ARCP is approximately 57 km long and will be constructed within a 30 m wide right of way (RoW).

The ARCP consists of:

- a RoW with a disturbance area of up to 184.9 ha
- up to 18.4 ha of additional workspaces
- 2 ha of laydown area
- 0.1 ha inlet access track; and
- up to 1.5 ha of cathodic protection beds (including their access tracks).

The total indicative disturbance footprint for the ARCP (as detailed above) 206.9 ha and is referred to as the 'Project Area'.

Project planning for un-sited infrastructure consisting of a 10% allowance for RoW in-field adjustments (15.9 ha) has accounted for disturbance to MNES as described in Table 2. For workspaces (3 ha) and cathodic protection beds (1.5 ha), the Environmental Protocol for Field Development and Constraints Analysis [SENEX-QLDS-EN-PRC-019] will be used to avoid all MNES and preferentially minimise disturbance to other biodiversity values. All other disturbance in the indicative footprint (comprising known and proposed locations) is included in the ARC Pipeline EPBC Act MNES Assessment Report (E2M, May 2023) as unavoidable disturbance/removal. Figure 1 shows the location of the ARCP.

1.1 Purpose and Scope

This Significant Species Management Plan (SSMP) describes how ARC Pipeline Pty Ltd (ARCP P/L) will manage potential impacts to significant species associated with petroleum activities in the

Project Area. It is supplemental to the ARCP Environmental Management Plan [SENEX-ARCP-EN-PLN-001]. This SSMP should also be read in conjunction with the Queensland Fauna and Stock Management Procedure [SENEX-QLDS-EN-PRC-021]; however, if there is a question as to which measures to apply, this project specific SSMP takes precedence.

For the purposes of this plan 'significant species' are those species or communities considered to be MNES under the EPBC Act that are known or likely to occur within the Project Area.

Broadly this SSMP describes:

- significant species known or likely present within the Project Area
- specific requirements for managing potential impacts to significant species during pre-construction, construction and operation phases of the activity
- monitoring and reporting requirements; and
- framework for corrective actions and adaptive management to validate the effectiveness of the mitigation measures in the SSMP, and where the measures are not achieving the performance criteria applied to the matter to protect environmental values, refinement to the management measures to improve predicted outcomes.

Rehabilitation methods and acceptance criteria are addressed in the ARCP Rehabilitation Plan [SENEX-ARCP-EN-PLN-003]. Desktop and field assessments of the biodiversity values across the Project Area identified known and potential presence of listed threatened communities and threatened and migratory species under the EPBC Act. As part of the commitments to avoiding and minimising direct and indirect impacts during construction and operation activities, Senex and its contractors will be required to manage potential impacts to significant species.

The field assessments used to inform the preparation of this SSMP are detailed in the EPBC Act MNES Assessment Report (February 2024) and Ecological Assessment Report (October, 2023) by E2M Consulting (E2M).

1.2 Environmental Management

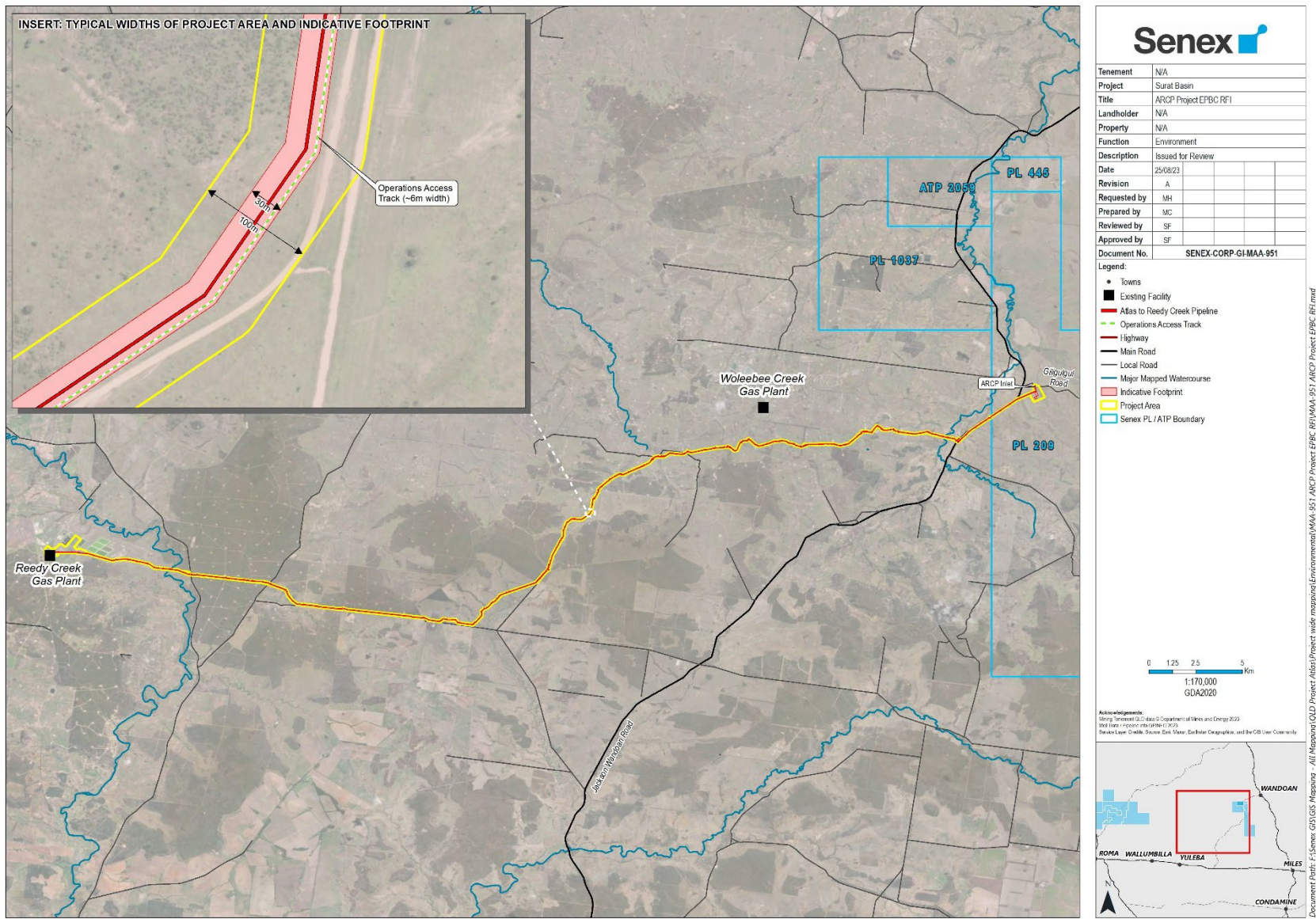
ARCP P/L is committed to conducting its operations and activities in an environmentally sound and responsible manner. Activities are planned to minimise disturbance to the environment as far as practicable.

This SSMP forms part of the environmental management procedures established within the HSEMS. ARCP P/L will incorporate the relevant management actions into procedures and plans for contractors to comply with its contents.

Additionally, the following plans and procedures support the SSMP to manage significant species:

- Environmental Management Plan – ARCP Environmental Management Plan [SENEX-ARCP-EN- PLN-001]
- Environmental Protocol for Field Development and Constraints Analysis [SENEX-QLDS-EN-PRC- 019]
- Queensland Fauna and Stock Management Procedure [SENEX-QLDS-EN-PRC0-21]
- Incident Management Procedure [SENEX-CORP-HS-PRC-004]
- Senex Spill Response Plan [SENEX-CORP-ER-PLN-006]
- ARCP Rehabilitation Plan [SENEX-ARCP-EN-PLN-003]
- Queensland Environmental Monitoring and Rehabilitation Procedure [SENEX-QLDS-EN-PRC-001]
- QLD Reinstatement and Rehabilitation Procedure [SENEX-QLDS-EN-PRC-002]
- Biosecurity Management Plan [SENEX-CORP-EN-PLN-003]

- Weed Hygiene Procedure [SENEX-QLD-EN-PRC-023]
- Queensland Waste Management Procedure [SENEX-QLDS-EN-PRC-022].



Senex	
Tenement	NA
Project	Surat Basin
Title	ARCP Project EPBC RF1
Landholder	NA
Property	NA
Function	Environment
Description	Issued for Review
Date	25/08/23
Revision	A
Requested by	MH
Prepared by	MC
Reviewed by	SF
Approved by	SF
Document No.	SENEX-CORP-GI-MAA-951

Figure 1 Location of ARC Pipeline Project

2 Legislative Requirements

2.1 Environment, Protection and Biodiversity Conservation Act 1999 (EPBC Act)

The EPBC Act provides the legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities, and heritage places – defined as MNES. There is potential for MNES to occur within the Project Area that may be impacted by activities associated with the Project. This Act administers the protection of the environment within Australia – in particular MNES, which include:

- World heritage properties;
- National heritage properties;
- Wetlands of international importance;
- Threatened species and ecological communities;
- Migratory species;
- Commonwealth marine areas;
- The Great Barrier Reef Marine Park;
- Nuclear Actions (includes uranium mines); and
- Water Resources.

MNES relevant to the ARCP are listed threatened species and communities (Section 18 & 18A of the EPBC Act).

The EPBC Act outlines the civil and criminal penalties for breaches of the Act or its regulations. Penalties can include fines, imprisonment, repair of damage or compensation to affected parties.

2.2 State Legislation

The *Nature Conservation Act 1994* (NC Act) and *Environmental Offset Act 2014* (EO Act) are part of the regulatory framework under which ARCP P/L operates. The regulatory requirements of these Acts inform the management of significant species and communities.

3 Roles and Responsibilities

ARCP P/L is responsible for the ongoing management of all activities in the Project Area. All employees and contractors are responsible for conforming to applicable Australian and Queensland laws and regulations and for conducting work in accordance with conditions of approval requirements and this plan. Roles and responsibilities of personnel and contractors in relation to this management plan are summarised in **Table 1**.

Table 1 Roles and Responsibilities

Role	Responsibilities
Environmental Manager	<ul style="list-style-type: none"> • Secure and manage environmental and associated approvals. • Overall responsibility for environmental compliance, including monitoring, data collection and reporting. • Report incidents to the administering authorities (DCCEEW and DES) and other Government agencies / stakeholders as required by the conditions of approval. • Ensure resources are available to manage environmental obligations and responsibilities. • Ensure that all personnel are competent to perform their assigned duties and have received appropriate training and inductions. • Implement an environmental compliance system that includes audits and assurance to help ensure compliance with approval conditions and other regulatory requirements. • Maintain environmental management documentation including this SSMP and associated plans and procedures and update as required.
Land Access Manager	<ul style="list-style-type: none"> • Secure land access for the Project activities including land access agreements/land access rules and Conduct and Compensation Agreements (CCA) with landholders whose properties will be impacted by Project activities. • Engage with landholders and liaise with Site Supervisor(s) to ensure activities are undertaken in accordance with the Queensland Land Access Code 2016 and conditions of any land access agreements/land access rules or CCAs. • Compile and distribute Access to Work documentation (ATW) prior to commencing activities on site.
Site Supervisors	<ul style="list-style-type: none"> • Responsible for ensuring this SSMP and other relevant environmental procedures are implemented on site, including any site-specific requirements identified during the planning phase. • Ensure that staff and contractors comply with regulatory requirements including all relevant Approval conditions and requirements of the ATW. • Induct the Contractor Site Supervisor into relevant requirements of environmental approvals, SSMP and supporting plans and procedures applicable to their activities on site. • Ensure all site visitors are inducted appropriately. • Ensure toolbox and other safety talks adequately address environmental matters to be considered on site as relevant to the work being undertaken including those identified in the ATW (e.g. property-specific weed hygiene requirements). • Ensure that the Contractor Site supervisor is resourced to adequately supervise the work being conducted on site. • Ensure activities do not harm or disturb cultural heritage objects or areas of significance. • Ensure that the requirements under any native title agreement are adhered to.

Role	Responsibilities
	<ul style="list-style-type: none"> • Ensure compliance with landholder agreements or CCA conditions as defined in the ATW. Ensure vehicle and machinery weed washdown requirements are complied with as specified in this SSMP and supporting procedures and plans. • Empower all project staff to stop work when the potential for environmental harm is perceived. • Report to the Environmental Manager on environmental matters and provide all relevant reporting and monitoring documentation. • Report to the Land Access Manager on landholder and property matters.
Contractor Site Supervisor	<ul style="list-style-type: none"> • Adequately identify and address any risks associated with the Contractor's activities prior to commencing and develop a construction methodology that has due regard for identified risks. • Ensure that appropriate training and inductions in the requirements of this SSMP, conditions of approval and other regulatory requirements as relates to their activities have been carried out by Contractor's personnel. • Ensure that Contractor personnel are adequately supervised. • Implement this SSMP on site, including any site specific requirements identified in Site Environmental Requirements documents, the ATW or as directed by the Site Supervisor. • Ensure all activities are carried out in accordance with the requirements set out in the SSMP, approval conditions and as specified in other relevant documents including tender documentation and contract. • Immediately notify the Site Supervisor of any incidents and non-compliances with approval conditions, this SSMP, supporting plans or procedures. • Report to the Site Supervisor as instructed and provide all reporting and monitoring information to the Site Supervisor as required. • Ensure that monitoring records are collected and retained. • Empower all project staff to stop work when the potential for environmental harm is perceived. • Implement a program of internal environmental audit against this SSMP and supporting plans and procedures.
Contractor Personnel	<ul style="list-style-type: none"> • Undertake training and inductions as required to competently undertake activities on the ARCP Project area. • Carry out all activities in compliance with this SSMP identified in planning, the ATW or as directed by the Contractor Site Supervisor and/or Site Supervisor. • Immediately notify the Contractor Site Supervisor of any incidents and non-compliances this SSMP.

Role	Responsibilities
Environment Team &/ or Field Environment Representative	<ul style="list-style-type: none"> • Assist the Site Supervisor as required in ensuring that all petroleum activities including those undertaken by Contractors are conducted in accordance with the SSMP. • Promote environmental awareness amongst the workforce and hold site meetings on environmental matters as required. • Assist the Site Supervisor in providing training in the form of toolbox talks and pre-works meetings on environmental matters. • Notify the Site Supervisor and Environment Manager immediately of any environmental incidents and non-compliances from the conditions of approval, the SSMP and other associated plans and procedures, and liaise with the Construction Site Supervisor to investigate and report on the incident or noncompliance. • Ensure that all records, environmental approvals, and permits are managed, maintained and stored as appropriate and copies of the SSMP are available. • Co-ordinate implementing rehabilitation plans and programs as required for the ARCP Project area. • Undertake monitoring in accordance with this SSMP, supporting plans and procedures and Approval conditions as directed by the Environment Manager. • Complete Environmental Audits as directed by the Environment Manager.
Fauna Spotter/Catcher	<ul style="list-style-type: none"> • Hold a valid Queensland Fauna Spotter/Catcher and Rehabilitation permit issued by DES under the <i>Nature Conservation Act 1992</i>. • Undertake pre-clearance surveys and manage fauna interactions according to permits and this SSMP.

4 Known and Possible Significant Species

Significant species that are known or likely to occur in the Project Area, and their known/preferred habitats are provided below. These include:

- Threatened Ecological Communities (TEC)
 - Brigalow TEC
 - Poplar Box TEC
- Threatened Species
 - Koala (*Phascolarctos cinereus*) – endangered;
 - Dulacca Woodland Snail (*Adclarkia dulacca*) – endangered
 - Glossy Black Cockatoo (*Calyptorhynchus lathami lathami*) – vulnerable
 - Squatter Pigeon (southern) (*Geophaps scripta scripta*) – vulnerable
 - Greater Glider (southern and central) (*Petauroides volans*) – endangered
- Migratory Species
 - White-throated Needletail (*Hirundapus caudacutus*) – vulnerable.

The information contained in this section has been summarised from E2M's ARC Pipeline EPBC Act MNES Ecological Assessment Report (February 2024) and Ecological Assessment Report (October 2023) documenting the outcomes of a detailed ecological desk and field-based impact assessment. Should any other listed species be identified in the Project Area over the course of the ARCP, this SSMP, GIS mapping will be revised and regulatory advices will be made.

4.1 Threatened Ecological Communities

The maximum disturbance limits TECs for the Project are:

- 1.01 ha (noting the inclusion of 10% buffer) of Brigalow (*Acacia harpophylla*) dominant and co-dominant Threatened Ecological Community (**Brigalow TEC**) which represents less than 1% of that which occurs within 10 km of the Project Area; and
- 0.88 ha (noting the inclusion of 10% buffer) of the Poplar Box Grassy Woodland Threatened Ecological Community (**Grassy Box TEC**) which represents approximately (~) 0.00001% of that which occurs within 10 km of the Project Area.

4.1.1 Brigalow (*Acacia harpophylla* dominant and codominant) TEC

Field surveys have confirmed that impact to or disturbance of 1.01 ha of Brigalow (*Acacia harpophylla* dominant and co-dominant) TEC is unavoidable (based on field verified vegetation mapping). This TEC is analogous with remnant and regrowth RE types 11.9.5, 11.9.5a and 11.5.16, in some cases, many smaller areas of retained RE 11.9.5 did not meet TEC size and/or condition criteria. The extent of this TEC is shown in the Figures in Appendix 1.

The community conservation advice (Department of Environment, 2013) cites all patches that meet the key diagnostic characteristics and condition threshold, as well as the buffer zones (particularly where these are native vegetation), are considered areas critical to the survival of the community. The buffer zone is defined as the area that lies immediately outside the edge of a patch but is not part of the ecological community.

The community conservation advice (Department of Environment, 2013) lists threats to the Brigalow TEC to include factors that may reduce extent or cause decline in condition. This includes clearing, fire, invasive flora species (such as buffel grass, Rhodes grass and green panic grass), pest animal

disturbance (such as feral pigs, goats, cane toads, cats, foxes and the noisy miner), inappropriate grazing regimes and climate change.

The community across its distribution provides potential habitat for a number of listed threatened species including Ooline (*Cadellia pentastylis*), Belson's Panic (*Homopholis belsonii*), Squatter Pigeon (*Geophaps scripta scripta*), Painted Honeyeater (*Grantiella picta*), South-eastern Long-eared Bat (*Nyctophilus corbeni*), Southern Greater Glider (*Petauroides volans volans*), Collared Delma (*Delma torquata*), Yakka Skink (*Egernia rugosa*), and Dunmall's Snake (*Furina dunmalli*).

4.1.2 Poplar Box grassy woodlands on alluvial plains TEC

Field surveys have confirmed that impact to or disturbance of 0.88 ha of Poplar Box grassy woodlands on alluvial plains TEC mapped is unavoidable. The community is represented as one patch along the ARCP alignment. Within the Project Area this TEC tends to be analogous with remnant and regrowth RE type 11.3.2. The extent of this TEC is shown in the Figures in Appendix 1.

Conservation Advice (including listing advice) for the Poplar Box Grassy Woodland on Alluvial Plains (Department of the Environment and Energy, 2019) in effect under the EPBC Act from 04 July 2019 lists threats to the TEC to include factors that may reduce extent or cause decline in condition. This includes clearing, fire, invasive flora species (such as gamba grass and escaped garden plants), pest animal disturbance (such as feral pigs, rabbits, goats, cane toads, cats, foxes and the noisy miner), inappropriate grazing regimes and climate change.

The community across its distribution provides habitat for a number of listed threatened species including South-eastern Long-eared Bat (*Nyctophilus corbeni*), Bridled Nailtail Wallaby (*Onychogalea fraenata*) and *Phascolarctos cinereus* (Koala).

4.2 Threatened Species

Table 2 below lists the threatened species that are known to occur or considered likely to occur within the Project Area (see E2M 2024), based on a likelihood of occurrence assessment (which included field verification of potential habitats). Field validated habitat is shown in Appendix 2. However, if species are located in the Project Areas during pre-clearance surveys additional works may be required as outlined in Section 7.2.

The maximum disturbance limits for the Project are:

- 206.9 ha of White-throated Needletail (*Hirundapus caudacutus*) habitat (however, this is a predominantly aerial species and likely to be restricted to the airspace above the Project Area);
- 4.80 ha of Dulacca Woodland Snail (*Adclarkia dulacca*) critical habitat which represents ~0.19% of that which occurs within 10 km of the Project Area;
- 28.31 ha Critical Habitat of Glossy Black-cockatoo (*Calyptorhynchus lathami lathami*) which represents ~0.1% of the habitat which occurs within 10 km of the Project Area;
- 11.18 ha of Squatter Pigeon (southern) (*Geophaps scripta scripta*) breeding habitat and 20.76 ha of foraging and dispersal habitat which together represents ~0.26% of that which occurs within 10 km of the Project Area;
- 29.84 ha of critical habitat of Greater Glider (*Petauroides volans / Petauroides armillatus*) which represents ~0.12% of that which occurs within 10 km of the Project Area; and
- 35.08 ha of critical Habitat of Koala (*Phascolarctos cinereus*) which represents ~0.16% of that which occurs within 10 km of the Project Area.

It is noted that impacts to fauna dispersal and mobility will be largely temporary (during construction) as the pipeline will be buried and no fencing of the RoW will be required. The RoW and additional workspaces will be rehabilitated to a safe and stable landform once construction is completed.

Table 2 Threatened species and habitat likely to occur within the Project Area

ARCP Habitat (ha)*	Vegetation /Habitat Group/s	General Note
<i>Phascolarctos cinereus</i> (Koala) (Department of Agriculture, Water and the Environment, 2022)		
35.08 ha of Critical Habitat (across 64 patches)	<p>Locally Important Koala Tree (LIKT) species commonly occurring within the Study Area, often as a dominant component of woodland communities include:</p> <ul style="list-style-type: none"> • river red gum (<i>Eucalyptus camaldulensis</i>) • Baradine gum (<i>Eucalyptus chloroclada</i>) • narrow-leaved ironbark (<i>Eucalyptus crebra</i>) • Queensland peppermint (<i>Eucalyptus exserta</i>) • broad-leaved red ironbark (<i>Eucalyptus fibrosa</i>) • silver-leaved ironbark (<i>Eucalyptus melanophloia</i>) • poplar box (<i>Eucalyptus populnea</i>); and • blue gum (<i>Eucalyptus tereticornis</i>). <p>Commonly occurring ancillary trees identified within the Study Area include:</p> <ul style="list-style-type: none"> • brigalow (<i>Acacia harpophylla</i>) • willow wattle (<i>Acacia salicina</i>) • spotted gum (<i>Corymbia citriodora</i>) • pink bloodwood (<i>Corymbia intermedia</i>); and • Moreton Bay ash (<i>Corymbia tessellaris</i>). <p>In association with REs 11.3.2, 11.3.25, 11.3.4, 11.3.18, 11.5.1 and 11.5.4.</p>	<p>Inland area koala habitat includes woodlands and forests where food trees have reliable access to soil moisture, box gum or red gum woodlands on heavier soils in remnant or regrowth vegetation patches particularly riparian zones; and small, patchy and sparsely distributed woodlands, shrublands and forest in highly modified, agricultural-grazing landscapes.</p>
	<p>Cleared exotic grasslands and Brigalow woodlands.</p> <p>In association with REs 11.3.19, 11.5.16 and 11.7.2, 11.9.5, 11.9.5a and paddock trees within 100m of a koala habitat patch.</p>	<p>Potential evidence of koala was detected in the Project Area during field surveys in the form of likely scratch marks on one Queensland blue gum (<i>Eucalyptus tereticornis</i>).</p>

ARCP Habitat (ha)	Vegetation /Habitat Group/s	General Note
<i>Adclarkia dulacca</i> (Dulacca Woodland Snail) (DCCEEW, 2023)		
4.80 ha (critical)	Acacia woodlands dominated by Brigalow (<i>Acacia harpophylla</i>). Eucalypt dominated woodlands mainly with <i>Eucalyptus crebra</i> and <i>E. populnea</i> . REs 11.9.5, 11.7.2, 11.5.16, 11.10.8 and 11.5.1.	The species inhabits a variety of remnant and scattered habitats, such as vine thicket and <i>Acacia harpophylla</i> (brigalow) woodland patches on rocky outcrops with clay to loam soils, as well as Eucalyptus (ironbark) species and <i>Acacia shirleyi</i> (lancewood) woodlands on ridges (with and without rock), and <i>Eucalyptus woollsiana</i> (gum-topped box) woodland.
<i>Calyptorhynchus lathami lathami</i> (Glossy Black-cockatoo) (DCCEEW, 2022)		
28.31 ha Critical Habitat (across 59 patches)	All remnant and regrowth vegetation of most broad terrestrial broad habitat types particularly those dominated by Eucalypt species with large hollow bearing trees, along with remnant and regrowth RE with potential feed trees (Casuarinaceae spp.). In association with REs 11.3.2, 11.3.19, 11.3.25, 11.5.1, 11.5.4; and 11.9.5, 11.9.5a and 11.5.16.	South-eastern glossy black-cockatoos are uncommon but widespread. They can be found from Mitchell, Queensland, through eastern New South Wales to East Gippsland, Victoria Their distribution is continuous through the forested parts of the Great Dividing Range but becomes more scattered inland, to as far west as the Riverina in New South Wales
<i>Geophaps scripta scripta</i> (Squatter Pigeon) (Department of the Environment., 2015)		
11.18 ha (Critical) 20.76 ha (General)	In association with a range of REs in proximity to water bodies.	Habitat generally defined as open-forests to sparse, open woodlands and scrub that are mostly dominated in overstorey by Eucalyptus, Corymbia, Acacia or Callitris species; remnant, regrowth or partly modified vegetation communities; and within 3 km of waterbodies or watercourses.

ARCP Habitat (ha)	Vegetation /Habitat Group/s	General Note
<i>Petauroides volans</i> Greater Glider (central and southern) (Department of Agriculture, Water and the Environment (DAWE), 2022)		
29.84 ha of Critical habitat (across 47 patches)	All remnant vegetation of most broad terrestrial broad habitat types particularly those dominated by Eucalypt species wherever large trees with hollows occur in woodland connected with these corridors and also in the extensively wooded in the south of the Project Area. In association with REs 11.3.4, 11.3.18, 11.3.19, 11.3.25, 11.5.1, 11.3.2, 11.5.4, and 11.7.2.	The greater glider is an arboreal nocturnal marsupial, largely restricted to eucalypt forests and woodlands. It is typically found in highest abundance in taller, montane, moist eucalypt forests with relatively old trees and abundant hollows.
<i>Hirundapus caudacutus</i> (White-throated Needle-tail) (Threatened Species Scientific Committee, 2019)		
206.9 ha	No suitable breeding habitat mapped. Predominantly aerial species.	Suitable roosting and foraging habitat occur within the Study Area and adjacent to the Indicative Footprint and the species has been recorded within the desktop search extent. Though not recorded during surveys, the species may utilise habitat within/above the Indicative Footprint and Study Area on an intermittent basis.

Species information sourced from SPRAT profiles, Conservation Listing Advice and Threatened Species listing details found in DCCEE website www.environment.gov.au, unless otherwise cited.

Area calculations based on field verified vegetation mapping and habitat/regional ecosystem associations.

*An additional 10% buffer has been applied to areas within the Indicative Footprint (ha)

4.3 Migratory Species

The desktop assessment undertaken identified ten listed migratory species which were predicted to occur within the Project Area. A likelihood of occurrence assessment determined that only the White-throated Needletail (also threatened and discussed above) was likely to occur. None of the other predicted species were recorded within the Project Area during surveys. The fragmented and often degraded habitat available within the Project Area is not considered ‘important habitat’ for any of these species.

5 Potential Impacts to Significant Species

Although the alignment has been located in disturbed areas adjacent to existing infrastructure and avoid MNES wherever possible, activities associated with the proposed development have the potential to cause both direct and indirect impacts to MNES, with the level of impact depending on the type and location of the activity proposed.

As provided in Section 4.1, two TECs were confirmed to be present in the Project Area: As a result of design and inclusion of avoidance measures, 1.01 ha of Brigalow TEC and 0.88 ha of Poplar Box TEC will be unavoidably cleared however this impact has been assessed as not being significant, based on desktop and field surveys, including habitat quality assessments. .

The main potential impact to ecological values within the Project Area relates to the pipeline construction that includes:

- Vegetation clearing activities and other ground disturbance;
- Spread of pests and weeds;
- Mortality by vehicle or object impact;
- Noise and dust generation;
- Runoff and erosion potential; and
- Fragmentation of connectivity areas.

The impacts of climate change were also considered, however the Project is not predicted to exacerbate these potential impacts of climate change. **Table 3** summarises the potential impacts to the ecological values of the Project Area.

Table 3 Unavoidable and Potential Impacts to Ecological Values

Impact	Relevance to the Project
Unavoidable Impacts	
Clearing remnant and regrowth vegetation and the resultant loss of habitat for native fauna	<p>The area of potential habitat for threatened species with a high likelihood of occurrence within the Project Area and an estimated area within the indicative disturbance footprint for species with a high likelihood of occurrence is described in “Disturbance to MNES” below.</p> <p>ARCP will result in the unavoidable removal of 29.15 ha of remnant vegetation and high value regrowth vegetation.</p>
Disturbance to MNES habitat	<ul style="list-style-type: none"> • Brigalow TEC 1.01 ha within disturbance footprint • Poplar Box TEC 0.88 ha within disturbance footprint • Glossy black-cockatoo –28.31 ha critical habitat within disturbance footprint • Dulacca Woodland Snail – 4.80 ha within the disturbance footprint • Koala – 35.08 ha critical habitat within disturbance footprint • Greater Glider – 29.84 ha critical habitat within the disturbance footprint • Squatter Pigeon (southern) – 11.18 ha breeding habitat and 20.76 ha foraging and dispersal habitat within disturbance footprint • White-throated Needle-tail – 206.9 ha habitat (however, this is a predominantly aerial species and likely to be restricted to the airspace above the Project Area)
Potential Impacts	
Indirect impacts to adjacent habitat areas as a result of an introduction or spread of weed and pest species	<p>The introduction and/or spread of weed and pest species has the potential to negatively impact native flora and fauna communities through competition for resources and/or predation.</p> <p>The majority of the Project Area and surrounds is cleared, pastoral property and introduced flora are common. Two Weeds of National Significance (WoNS) species were recorded: common pest pear and velvety pear and a number of introduced fauna species are considered potentially present.</p>
Direct mortality or injury to native fauna during construction	<p>The operation of vehicles and machinery within the Project Area has the potential to lead to direct mortality or injury of resident fauna.</p> <p>Peak traffic period will be during the construction period with operational vehicle movements likely to be minimal. While many fauna groups are highly mobile (e.g. birds) and are likely to move when machinery and vehicles approach other less mobile groups (e.g. reptile and amphibians) may be more vulnerable to this impact.</p> <p>Similarly, there will be trenches excavated (construction only) which may provide a trapping hazard for some fauna groups (e.g. amphibians, small reptiles, small mammals).</p> <p>Clearing works could lead to fauna injury or mortality (through physical trauma, heightened stress, loss of shelter, and/or increased exposure to predators) as well as disrupt the breeding activity of native fauna (including colonially-breeding and threatened fauna species).</p>

Impact	Relevance to the Project
<p>Indirect impacts to adjacent habitat areas as a result of noise, dust, runoff and erosion, including impacts to downstream environments</p>	<p>Disturbances as a result of construction (and decommissioning) such as noise and dust have the potential to negatively impact adjacent vegetation communities and habitats.</p> <p>Noise disturbances have the potential to influence breeding, roosting or foraging behaviour of native fauna. Studies suggest that the consistency of noise is more important than volume, with irregular and unpredictable noise being more disruptive to wildlife (Jones et al. 2015), as may be emitted during construction. For the general native fauna community, individuals may relocate to adjacent areas during times of noise disturbance.</p> <p>Dust generated by vehicle and machinery movements has the potential to smother vegetation directly adjacent to the works and inhibit plant growth and palatability for native fauna. There are measures available to limit dust generation and dispersion.</p> <p>ARCP construction will include crossings of watercourses and drainage lines. Impacts associated with the Project as a result of excavation and trenching may include changes to flow regimes and changes to water quality resulting from spills or sedimentation.</p>
<p>Fragmentation of connectivity areas</p>	<p>The Project Area is located in a largely cleared landscape with limited tracts of vegetation to facilitate ecosystem connectivity.</p> <p>Fauna dispersal opportunities include part of Combabula SF that is contiguous with a greater area of remnant vegetation outside the Project Area. Dispersal opportunities within the remainder of the Project Area are largely restricted to riparian areas, primarily in association with Woleebee and Yuleba Creeks. The cleared, non-remnant areas are considered likely to impede dispersal for most (less common) reptiles, amphibians, small ground mammals and arboreal mammals.</p> <p>Clearing for linear infrastructure may create edge effects on flora and fauna can alter habitat composition and quality, resulting in a reduction of the effective area of habitat and an increase in competition for resources with aggressive pest or edge species.</p>
<p>Inhibiting the ability of ecological communities or species to adapt and survive predicted climate change effects</p>	<p>The construction and operation of the Project will involve potential impacts to listed species. Climate change is a listed threatening process for many ecological communities and species in the sense that increasing temperatures may cause the risk of warmer temperatures, the potential for bushfires to occur, as well as limiting available habitat at optimal conditions. Potential risks include impeding migration pathways or inhibiting access to refuge areas for listed species or restricting areas for threatened ecological community succession. The Project is not predicted to exacerbate these potential impacts of climate change.</p>

6 Pre-Construction Management Measures

6.1 Relevant Significant Species and Potential Impacts

There are no on-ground activities planned during pre-construction that will result in impacts to significant species, however, design aspects will consider potential impacts to significant species such as the final alignment and placement of un-sited infrastructure.

6.2 Management Measures and Performance Criteria

All planning activities operate under the Environmental Protocol for Field Development and Constraints Analysis [SENEX-CORP-EN-PRC-019]. The document provides guidance for infrastructure siting to consider, among other aspects, the selection of preferential locations aimed at managing potential environmental impacts. This is the primary mechanism to achieving further avoidance and minimisation of impacts to significant species. Broadly, the protocol includes:

1. *Desktop environmental constraints analysis* – involves review of GIS mapping layers relating to the proposed infrastructure locations informed by targeted MNES surveys undertaken to date. Depending on the nature of constraints locations may be revised to avoid or minimise disturbance where possible.
2. *Site surveys* – once the preferred location is identified site surveys are undertaken to confirm suitability of the location. Suitability considerations include firstly, landholder requirements, secondly, constructability, thirdly, environmental features (such as significant species) and cultural heritage clearance. Site surveys are documented in a Survey Report.
3. *Post-survey environmental constraints analysis* – survey results are used to further refine the infrastructure locations and to budget the allowable disturbance to areas of habitat or threatened ecological communities as identified in Section 4.

Similarly, the Queensland Fauna and Stock Management Procedure [SENEX-QLDS-EN-PRC-021] incorporates an 'Identify' phase when likely presence of significant species flora and fauna habitat is determined through Preliminary Desktop Assessment (PDA) and where required an Ecological Ground-truthing Survey (ES). The ES is undertaken by a suitably qualified person to confirm the on-ground biodiversity values and 'no-go' areas prior to final site selection and any site disturbance.

ARCP P/L has also prepared a Characterisation of Habitat Connectivity [OPS-ARCP-EN-REP-002] assessment to demonstrate how the mitigation hierarchy has been applied in the design of the ARCP and confirm which habitat areas and trees are able to be retained (including with particular reference to areas that have been identified as TECs under the *EPBC Act* and potential habitat for Greater Glider (*Petauroides volans*) and Dulacca Woodland Snail (*Adclarkia dulacca*), which are both MNES species for which the Department of Climate Change, Energy, Environment and Water have requested additional information.

This information has then been utilised by specialist ecologists to further their consideration and assessment of the likely impacts on these species including specifically the degree to which ARCP will affect the pre-existing landscape connectivity for Greater Glider (as detailed in E2M's ARC Pipeline EPBC Act MNES Ecological Assessment Report (February 2024)).

As ARCP P/L has no planned activities during the pre-construction phase that will result in impacts, the driving performance indicator is *no adverse, measured impacts to the environment during pre-construction*.

7 Construction Management Measures

7.1 Relevant Significant Species

Relevant significant species with a likely and known likelihood of occurrence that have the potential to be impacted during construction phases are detailed in Table 2.

7.2 MNES Presence in Pre-clearance Survey

The detection of MNES fauna within or immediately adjacent the areas to be disturbed during pre-clearance surveys, will trigger the following additional actions:

- The location of MNES fauna will be captured using a GPS device.
- Areas of habitat occupied by MNES fauna (including active den/roost trees) will be marked out using spray paint and/or flagging tape.
- Where practicable, the clearing/construction works will be shifted to avoid or minimize disturbance of habitat occupied by MNES fauna (including the retention of den/nest trees at the periphery of the RoW).
- A 'No Go' zone will be established around areas of **retained habitat** (habitat which will be retained as it is outside of the disturbance footprint) occupied by MNES fauna immediately adjacent to work areas. No go zones will be marked by the fauna spotter/catcher (with flagging tape or spray painted to indicate treatment). Suitable buffers (of at least 10 m) around habitat features will also be identified by the spotter/catcher on a case-by-case basis using painted stakes, bunting or flagging tape. Any works in buffer zones will be limited to those which the fauna spotter-catcher has confirmed pose no risk to the MNES fauna and will be supervised by the fauna spotter catcher.
- If Greater Glider or Dulacca Woodland Snail is recorded at any time within retained habitat, that retained habitat will be considered occupied and marked as no go zone throughout construction. Where Dulacca Woodland Snail is found within the disturbance footprint and avoidance is not possible snails will be translocated in accordance with the ARC Pipeline Atlas to Reedy Creek Dulacca Snail Translocation Strategy in Appendix U of the MNES Ecological Assessment Report (E2M 2024, please note E2M (2024) is provided as Attachment C of the ARCP Preliminary Documentation).
- If Glossy Black-cockatoo are recorded in or around a hollow within retained habitat, the retained habitat will be considered occupied, and zoned as 'no go' for the remainder of the breeding season (late January to early June). For Glossy Black-cockatoo outside the breeding season, White-throated Needletail, Squatter Pigeon and Koala detected in retained habitat on any given day, a no go zone and buffer (minimum 10 m) will be established and maintained until the animal(s) have moved on.

Additional mitigation measures will be implemented to mitigate Project impacts on known-to-occur MNES fauna and specific to those fauna, including (but not limited to):

- the installation of salvaged hollows and/or nest boxes immediately adjacent the RoW to replace actively utilised tree hollows for greater glider and glossy black-cockatoo
- the redistribution of coarse woody debris along the RoW to facilitate movement of Dulacca woodland snail between areas of retained habitat (where the RoW intersects areas of known habitat)
- In those identified places, a location-specific rehabilitation plan (including details regarding the design and placement of salvaged hollows and/or nest boxes, for example) will be developed

to mitigate Project impacts on MNES fauna. Location-specific rehabilitation plans will be developed in consultation with a suitably qualified ecologist.

- A monitoring program/plan will be developed to assess the efficacy of additional measures required to address Project impacts on MNES in consultation with a suitably qualified ecologist. The monitoring program/plan will include:
 - performance criteria for assessing the efficacy of additional mitigation measures,
 - triggers for corrective actions (should mitigation measures fail to address Project impacts on MNES),
 - corrective actions to improve the efficacy of mitigation measures, and
 - actions to address the failure of mitigation measures (should proposed mitigation measures fail completely) including the revision of management measures, whether that be timing, frequency or methodology.
- Control measures identified in the construction management measures in the following section will also apply.

The following will also apply where habitat within or immediately adjacent the Indicative Footprint is also identified as a breeding place:

- An application for a Species Management Program (SMP) to address Project impacts on known breeding habitat for MNES species identified during pre-clearance surveys (a requirement under the *Nature Conservation Act 1992*) will be made to the administering authority. This plan will need to demonstrate the proposed impact management measures are appropriate for the applicable MNES species.
- The SMP be prepared by a suitably qualified person and will set monitoring and reporting requirements that demonstrate the management actions of the SMP are effectively implemented and achieve the intended results.
- Interaction with the known MNES breeding places will only proceed once the SMP is approved.

7.3 Construction Impacts to MNES and Controls

The following subsections identify the potential impacts and the management measures to be applied to reduce the impacts on MNES throughout the construction phase. The following tables set out the performance monitoring frequency and process through which management measures delivered, as well as the corrective actions if the performance criteria are not met.

7.3.1 Flora and fauna loss of communities and habitats

Potential Impacts (Risks/Threats):

- Clearing of remnant and regrowth vegetation resulting in the permanent removal of these vegetation types and the habitat values they provide for native flora and fauna.

Performance Criteria:

- Clearing of native vegetation is minimised.
- No unauthorised clearing.
- Clearing of vegetation and protected plants in accordance with relevant permits and approval conditions.
- Monitoring and reporting against clearing limits.

Table 4 Construction management measures and corrective actions for flora and fauna loss of communities and habitats

Management Measures (Controls)	Performance Monitoring	Process delivery	Corrective Actions
Vegetation will not be cleared unless authorised under the Access to Work (ATW) permit. The ATW will be approved prior to any vegetation clearance or disturbance occurring. The ATW will limit clearing to that necessary for safe construction and operational activities. Any permits or exemptions for clearing will be identified in the ATW permit.	Daily during clearing	Toolbox	Rehabilitation of disturbed area and implementation of site monitoring. Reporting to administering authority if location is MNES habitat as required by conditions of approval.
Un-sited infrastructure (laydown and cathodic protection beds) will not be placed in remnant or high value regrowth vegetation.	Pre-clearance	ATW process	Site rejected at design stage and relocated to suitable location.
Clear demarcation of the clearing footprint and the establishment of 'No-Go' zones around areas of retained vegetation (using flagging and signage). No-go areas will be prohibited to enter for construction staff and contractors and will only be accessed by authorised persons for relevant activities, where necessary.	Daily during construction	ATW process	Rehabilitation of disturbed area and implementation of site monitoring. Reporting to administering authority if location is MNES habitat or protected plants as required by conditions of approval.
Recording of clearing and monitoring against the limited disturbance of TECs to 1.01 ha of Brigalow TEC; and 0.88 ha of Poplar Box TEC.	Daily during construction	ATW process	All TEC areas to be reflagged as no-go areas. Rehabilitation of disturbed no-go areas to commence immediately. Notification to administering authority as required by conditions of approval.
Positive visual markings or pegs will be used to identify the extent of proposed pipeline disturbance and vegetation to be removed	ATW process/Pre-clearance	Toolbox	Replace visual markers and create incident report for all non-compliances with flagging. Undertake further education and awareness training with all site supervisors.
Any sensitive areas, such as ESAs or threatened plants/communities adjacent to the work area will be communicated via toolboxes to project staff	Daily during construction	Toolbox	Undertake further education and awareness training with all site supervisors.

Management Measures (Controls)	Performance Monitoring	Process delivery	Corrective Actions
and contractors.			
Cleared vegetation/green waste not used on-site for rehabilitation and/or sediment erosion will be left in windrows unless it has been identified for re-spreading or salvaging for use in rehabilitation/habitat restoration works.	Within 6 months of construction completion	Rehabilitation Plan	Enforce contractual obligations at practical completion until works meet conditions of approval.
Clearing of mature or hollow bearing trees providing denning or nesting habitat for fauna will be avoided.	ATW process/Pre-clearance	ATW	Replace visual markers and create incident report for all non-compliances with flagging. Undertake further education and awareness training with all site supervisors.
Horizontal directional drilling at Woleebee Creek and Yuleba Creek to minimise disturbance of timbered vegetation.	ATW process/Pre-clearance	ATW process	Rehabilitate any impacts to location in event of incident.
All 'No-go' areas will be GPS located, made available through GIS for the Project and clearly marked e.g. bunting, flagging tape. Construction staff and contractors will be prohibited from accessing No-go areas and access will be by authorised persons for relevant activities only.	Daily during clearing	ATW process	Undertake further education and awareness training with all site supervisors.
Rehabilitation of disturbed areas following construction as described in the Rehabilitation Plan [SENEX-ARCP-EN-PLN-003]	Within 6 months of construction completion	Rehabilitation Plan	Enforce contractual obligations at practical completion until works meet conditions of approval.

7.3.2 Fauna injury or mortality

Potential Impacts (Risks/Threats):

- Direct mortality or injury to native fauna during construction.
- Clearing works for pipeline construction could lead to fauna injury or mortality (through physical trauma, heightened stress, loss of shelter, and/or increased exposure to predators) as well as disrupt the breeding activity of native fauna (including colonially-breeding and threatened fauna species).

Performance Criteria:

- All site vehicles equipped, maintained and operated in a safe manner.
- Damage to or destruction of wildlife habitat is avoided or minimised.
- No injury, entrapment or death of wildlife or domestic stock, as a result of ARCP P/L's activities.
- Occupied hollows and habitat recorded during pre-clearance survey for application of rehabilitation management techniques.

Table 5 construction management measures and corrective actions for fauna injury or mortality – general construction

Management Measures (Controls)	Performance Monitoring	Process delivery	Corrective Actions
Site inductions and pre-start meetings will be held for all personnel attending the work site. The information discussed will include flora and fauna management issues at the site and any specific requirements.	Daily during construction	Induction/ Toolbox	Undertake further education and awareness training with all site supervisors.
No firearms, traps, nets or pets permitted on site or in camp. There is an exception of traps that are authorised by the Environment Manager for use in ecological assessments.	Daily during construction	Induction/ Toolbox	Confiscate any items and undertake further education and awareness training with all site supervisors.
Feeding of domestic or native animals is not permitted.	Daily during construction	Induction/ Toolbox	Undertake further education and awareness training with all site supervisors.
During construction works, work areas and excavations (trenches) will be checked for fauna that may have become trapped and if trenches remain open after daily site works have been completed, fauna ramps will be put in place.	Daily during construction	Toolbox	Undertake further education and awareness training with all site supervisors.
Steel piping and spoil will be placed on opposite sides of the	Daily during	Toolbox	Reposition within 24 hours.

Management Measures (Controls)	Performance Monitoring	Process delivery	Corrective Actions
pipeline trench to deter fauna from crossing over/entering the trench during pipeline construction.	construction		
Barrier (shadecloth) fencing will be placed around excavations other than the trench (including pits and sumps).	Daily during construction	Toolbox	Install missing barriers and undertake further education and awareness training with all site supervisors.
The open ends of welded pipes will be capped/covered over to prevent fauna entry during pipeline construction.	Daily during construction	Toolbox	Install caps and undertake further education and awareness training with all site supervisors.
During construction, hessian sacks providing shelter for fauna will be deployed at 100 m intervals along sections of open trench.	Daily during construction	Toolbox	Deploy hessian sacks and undertake further education and awareness training with all site supervisors.
Open sections of the pipeline trench will be inspected for fauna <u>twice</u> daily: once in the morning and once in the late afternoon	Daily during construction	Toolbox	Undertake further education and awareness training with all site supervisors. Report any threatened fauna death, injury and interaction to DES.
Open trenches will be checked for fauna immediately prior to backfilling.	Daily during construction	Toolbox	Undertake further education and awareness training with all site supervisors. Report any threatened fauna death, injury and interaction to DES.
Exit ramps (with a <45 degree incline) will be maintained at either end of the open trench and temporary earth or wooden ramps installed at 1 km intervals to facilitate fauna escape	Daily during construction	Toolbox	Install exit ramps and undertake further education and awareness training with all site supervisors. Decrease interval to ramps.
If significant weather event is forecast, trench will be temporarily backfilled as far as practicable to mitigate flooding and ESC risk.	Daily during construction	Toolbox	Undertake further education and awareness training with all site supervisors. Report any threatened fauna death, injury and interaction to DES.
Vehicle speed limits (maximum 40 km/hr) will apply throughout construction.	Daily during construction	Induction/ Toolbox	Undertake further education and awareness training with all site supervisors. Report any fauna death, injury and interaction to DES.
Personnel will remain within areas approved for operations (cleared work zones) and not drive off approved access tracks or enter exclusion areas or 'no-go' zones.	Daily during construction	ATW process	Undertake further education and awareness training with all site supervisors.

Management Measures (Controls)	Performance Monitoring	Process delivery	Corrective Actions
Limiting storage of equipment and machinery to the Disturbance Footprint, and not within stands of adjacent retained vegetation.	Daily during construction	Toolbox	Move vehicles immediately to within approved disturbance footprint.

Table 6 Construction management measures and corrective actions – Pre-clearance and Fauna Spotter Catchers

Management Measures (Controls)	Performance Monitoring	Process delivery	Corrective Actions
Prior to undertaking activities that result in significant disturbance of land in areas of native vegetation, an ecological survey will be undertaken by a suitably qualified person.	Daily during clearing	Toolbox	Undertake further education and awareness training with all site supervisors. Report any fauna death, injury and interaction to DES.
Preclearance survey will be conducted to identify the likelihood of habitat features to support fauna, particularly threatened species.	ATW Process/Pre-clearance	ATW process	Use visual markers to identify any habitat features, record GPS locations and update GIS data.
Vegetation clearing will be undertaken in a sequential manner to direct fauna towards adjacent habitat and not into other hazardous areas.	Daily during clearing	Toolbox	Undertake further education and awareness training with all site supervisors. Report any fauna death, injury and interaction to DES.
Fauna will be preferentially allowed to move off on their own accord. Where this does not occur and immediate access is required, a Fauna Spotter/Catcher will relocate the animal.	Daily during clearing	Toolbox	Ensure spotter/catcher is on site for all clearing
A suitably qualified and licensed fauna spotter/catcher (including koala spotter experience) will be present during all vegetation clearing works. The Code of Practice - Care of sick, Injured or Orphaned Protected Animals in Queensland (Department of Environment and Science (DES), 2020) will be used as a guide to inform fauna management strategies.	Daily during clearing	Toolbox	Ensure spotter/catcher is on site for all clearing
Management of fauna identified during clearing will include relocating individuals to adjacent habitat or treating injuries.	Daily during clearing	Toolbox	Ensure spotter/catcher is on site for all clearing

Management Measures (Controls)	Performance Monitoring	Process delivery	Corrective Actions
Management measures for koala identified in the Nature Conservation (Koala) Conservation Plan 2017 will be implemented during clearing and construction works.	Daily during clearing	Toolbox	Undertake further education and awareness training with all site supervisors. Report any threatened fauna death, injury and interaction to DES.
The following steps are to be implemented specifically for the Koala, noting they will only apply when the Koala is present:			
Clearing is carried out in a way that complies with the sequential clearing conditions in the Nature Conservation (Koala) Conservation Plan 2017	Daily during clearing	Toolbox	Revise procedure and process. Ensure adequate spotter/catcher resources on site for all clearing
Monitoring to occur of any Koala with a high risk of entering the vicinity of the job front to occur through the construction phase.	Daily during construction	Toolbox	Revise procedure and process. Ensure adequate spotter/catcher resources on site for all clearing
Each morning prior to works the clearing team will meet to discuss and understand the measures needed to be taken in regard to koalas. The fauna spotter catcher will assess if any Koalas are in present danger of clearing works that day and for all stages of clearing.	Daily during clearing	Toolbox	Revise procedure and process. Ensure adequate spotter/catcher resources on site for all clearing
If any Koala is present or have the likelihood of entering the clearing front, restricted work measures will be in place to allow safe movement away from the work area.	Daily during clearing	Toolbox	Revise procedure and process. Ensure adequate spotter/catcher resources on site for all clearing
Clearing of trees will be carried out in stages that allow Koalas in the area being cleared enough time to move out of the clearing site without human intervention.	Daily during clearing	Toolbox	Revise procedure and process. Ensure adequate spotter/catcher resources on site for all clearing
Clearing will be carried out such that not more than the following is cleared in any 1 stage— (A) for a clearing site with an area of 6ha or less—50% of the site's area; (B) for a clearing site with an area of more than 6ha—3ha or 3% of the site's area, whichever is the greater.	Daily during clearing	Toolbox	Revise procedure and process. Ensure adequate spotter/catcher resources on site for all clearing
Ensuring that between each stage and the next there is at least one period of 12 hours that starts at 6pm, on a day and ends at 6am on the following day during which	Daily during clearing	Toolbox	Undertake further education and awareness training with all site supervisors. Report any threatened fauna death, injury and interaction

Management Measures (Controls)	Performance Monitoring	Process delivery	Corrective Actions
no trees are cleared at that site.			to DES.
Clearing of the koala habitat trees is carried out in a way that ensures, while the clearing is carried out, appropriate habitat links are maintained within the clearing site and between the site and its adjacent area, to allow koalas living on the site to move out of the site.	Daily during clearing	Toolbox	Revise procedure and process. Ensure adequate spotter/catcher resources on site for all clearing
No tree in which a Koala is present, and no tree with a crown overlapping a tree in which a Koala is present will be cleared.	Daily during clearing	Toolbox	Undertake further education and awareness training with all site supervisors. Report any threatened fauna death, injury and interaction to DES.
If a koala is not injured or ill but refuses to move from the clearing area on its own accord after two days, the fauna spotter catcher can choose to liaise with ARCP P/L and this may result in contact being made with the Queensland government to negotiate appropriate methods for removal and relocation.	Daily during clearing	Toolbox	Revise procedure and process. Ensure adequate spotter/catcher resources on site for all clearing
If an animal is incapable of moving from the clearing area due to injury or illness and is in direct harm from clearing equipment, it will be captured by a qualified fauna spotter/catcher and either relocated into suitable habitat or taken for medical assistance.	Daily during clearing	Toolbox	Revise procedure and process. Ensure adequate spotter/catcher resources on site for all clearing
The following steps will be undertaken for greater glider and glossy black-cockatoo only (irrespective of whether the species has previously been detected in the disturbance footprint):			
Pre-dawn surveys (conducted 2 hours before sunrise) will be conducted in areas of suitable habitat immediately prior to clearing in order to document the location of any hollows occupied by greater glider along the RoW. These pre-dawn surveys will be in addition to the regular pre-clearance surveys and fauna spotter/catcher supervision of clearing activities.	Daily during clearing	Toolbox	Revise procedure and process. Ensure adequate spotter/catcher resources on site for all clearing
All hollows that are potentially suitable for Greater Glider	Daily during	Toolbox	Revise procedure and process.

Management Measures (Controls)	Performance Monitoring	Process delivery	Corrective Actions
<p>or Glossy Black-cockatoo will be searched in pre-clearance surveys, irrespective of whether these species have previously been detected in the disturbance footprint. An elevated work platform, fibre optic camera, drone or other method will be used to search all such hollows within 24 hrs before clearing commences. Additionally, at the time of clearing, all large hollow-bearing trees will be marked with flagging tape so they are not damaged whilst surrounding vegetation is cleared and the marked trees will be left until late in the day. These trees will then be carefully felled late in the day and all hollows checked once each tree is safely on the ground. This will allow any rescued animals to be released at night.'</p>	clearing		Ensure adequate spotter/catcher resources on site for all clearing
<p>Greater gliders will be removed from active den trees within the clearance footprint immediately prior to clearing and translocated to suitable habitat adjacent the RoW.</p>	Daily during clearing	Toolbox	Revise procedure and process. Ensure adequate spotter/catcher resources on site for all clearing
<p>In instances where greater gliders/glossy black-cockatoo cannot be safely extracted from hollows or where there is uncertainty as to whether a tree harbors an occupied hollow, den trees will be felled slowly (i.e. in sections) in order to minimise the risk of injury/mortality.</p>	Daily during clearing	Toolbox	Revise procedure and process. Ensure adequate spotter/catcher resources on site for all clearing
<p>Where a hollow is found to be occupied by Greater Glider or Glossy Black-cockatoo, the tree will be marked with flagging tape or spray paint and left until the animal has been given time to move offsite. For nocturnally active species, this can require the tree being left overnight. Where an animal is still in the hollow the following day, a means, which may include using an</p>	Daily during clearing	Toolbox	Ensure spotter/catcher is on site for all clearing

Management Measures (Controls)	Performance Monitoring	Process delivery	Corrective Actions
<p>elevated work platform or cherry-picker, will be used in conjunction with a chainsaw operator and the fauna spotter-catcher to attempt to remove the hollow. If safe to do so:</p> <ul style="list-style-type: none"> • the fauna spotter-catcher will inspect the hollow and firmly place a piece of towel or rag in the entrance to prevent the animal(s) from escaping • once the hollow entrance has been secured, the chainsaw operator will then remove the entire hollow limb off below the cavity where the branch remains solid • in circumstances where a hollow continues into the main stem of the tree, the chainsaw operator will carefully cut a small window into the hollow, allowing the fauna spotter-catcher to plug the hollow above and below the window so the hollow limb can be removed and lowered to the ground in sections • when the animal(s) have been safely secured within their hollow, the entire limb will then be lowered to the ground using an elevated work platform or ropes (depending on the size of the limb) • the limb will then be placed in a cool, quiet location until translocation to the recipient habitat site • the hollow limbs shall be erected and secured in appropriate recipient habitat in a similar orientation and slope to their original position • at dusk of the same day the hollow entrance will be re-opened to allow the animal(s) to emerge 			

Management Measures (Controls)	Performance Monitoring	Process delivery	Corrective Actions
of their own accord.			
The following steps will be undertaken for Dulacca Woodland Snail in areas of mapped habitat:			
<p>Pre-clearance surveys targeting Dulacca woodland snail will be conducted by licensed fauna spotter catchers operating under a Wildlife Spotter Catcher Endorsed Rehabilitation Permit (WSCRPE) (issued under S12(e) of the Nature Conservation (Administration) Regulation 2006) under the direction/supervision of a suitably qualified snail expert.</p> <p>In order to maximise the detection of Dulacca woodland snails during pre-clearance surveys, areas of mapped suitable habitat within the RoW will be surveyed at night after rain (when the species is most active and therefore most detectable). During surveys, areas of suitable habitat will be searched for active snails with the aid of a spotlight and/or headlamp, and any animals seen within the RoW will be photographed, marked (with acrylic waterproof paint) and recorded (by GPS) in accordance with the Dulacca Woodland Snail Translocation Strategy (Appendix U of the MNES Ecological Assessment Report (E2M 2024)). As detailed in Appendix U of the MNES Ecological Assessment Report, any areas where animals are recorded at night after rain will be searched a second time no more than 48 hours prior to clearing. Regardless of the findings of the second survey, all suitable shelter microhabitat within the occupied area to be cleared will be relocated to a nearby translocation site no more than 48 hours prior to clearing.</p>	Daily during clearing	Toolbox	<p>Revise procedure and process.</p> <p>Ensure adequate spotter/catcher resources on site for all clearing</p>

Management Measures (Controls)	Performance Monitoring	Process delivery	Corrective Actions
<p>In the absence of rain prior to the commencement of clearing, or if surveys after rain are impractical (due to poor or limited site access under wet conditions), surveys for Dulacca woodland snail within the RoW will be undertaken under drier conditions less suitable for the detection of the species.</p> <p>Under such conditions, all suitable shelter microhabitat within the Indicative Footprint (including coarse woody debris, rocks, exfoliating bark at the base of trees, and loose soil/humus under logs) will be searched for snails during daylight hours. Due to the difficulty of locating animals buried in deep leaf litter, large accumulations of litter will also be gathered in disposable garbage bags for redistribution at translocation sites. Any Dulacca woodland snails located during pre-clearance surveys under drier conditions will be placed in calico bags containing dry leaf litter for relocation to receptor/receiving sites that night.</p>			

7.3.3 Fauna lifecycle

Potential Impacts (Risks/Threats):

- Disturbance to MNES seriously disrupting the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a significant species.

Performance Criteria:

- Damage to or destruction of wildlife habitat is avoided or minimised.
- No injury, entrapment or death of wildlife or domestic stock, as a result of ARCP P/L's activities.

Table 7 Construction management measures and corrective actions for impacts on fauna lifecycle

Management Measures (Controls)	Performance Monitoring	Process delivery	Corrective Actions
Where vegetation clearing is occurring during breeding season for glossy black-cockatoo and greater glider, suitable hollows will be searched during pre-clearance survey.	Daily during clearing	Toolbox	Use visual markers to identify any habitat features, record GPS locations and update GIS data.
If disturbance of an active glossy black-cockatoo nest site cannot be avoided, and if permitted under an approved SMP, sitting birds (if present) will be dispersed from the nest site and chicks or eggs carefully removed from by a qualified spotter catcher. Eggs or chicks extracted from an active nest site will be taken to a suitably qualified wildlife carer for captive-rearing.	Daily during clearing	Toolbox	Revise procedure and process. Ensure adequate spotter/catcher resources on site for all clearing
If disturbance of greater glider denning trees is required during the breeding season, and if permitted under an approved SMP, dependent young will be removed from active den sites by a licensed spotter catcher and taken to a suitably qualified wildlife carer for captive rearing.	Daily during clearing	Toolbox	Revise procedure and process. Ensure adequate spotter/catcher resources on site for all clearing
Where clearing necessitates the removal of occupied hollows, large tree hollows suitable for greater glider and/or glossy black-cockatoo will be salvaged from areas of known/likely habitat subject to clearing along the RoW and installed in areas of suitable woodland/open forest habitat alongside/adjacent the RoW	Within 6 months of construction completion	Rehabilitation Plan	Inspect RoW and retrieve any hollows from windrows for use. Install in adjacent area.

Management Measures (Controls)	Performance Monitoring	Process delivery	Corrective Actions
Where hollow-bearing trees are located at the periphery of the Disturbance Footprint, they will be retained where safe to do so.	Daily during clearing	Toolbox	Use visual markers to identify any habitat features, record GPS locations and update GIS data.
Pre-clearance surveys for Dulacca Woodland Snail (<i>Adclarkia dulacca</i>) will be undertaken prior to vegetation removal. If the species is identified within the indicative footprint, avoidance of the habitat will be implemented where the RoW is able to be narrowed, otherwise individuals and its surrounding micro-habitat (e.g. logs) will be translocated to areas of retained habitat.	ATW process/Pre-clearance	ATW process	Use visual markers to identify any habitat features, record GPS locations and update GIS data. Ensure additional spotter/catcher is on site for all clearing

7.3.4 Erosion and sedimentation

Potential Impacts (Risks/Threats):

- Indirect impacts to adjacent habitat areas as a result of noise, dust, runoff and erosion, including impacts to downstream environments.

Performance Criteria:

- Water quality during construction not exceeding authorised release limits.
- The construction or maintenance of linear infrastructure does not result in land disturbance and clearing of riparian vegetation outside of the minimum area practicable to carry out the works.

Table 8 Construction management measures and corrective actions for erosion and sedimentation

Management Measures (Controls)	Performance Monitoring	Process delivery	Corrective Actions
Sediment and erosion control to be managed in accordance with the Erosion and Sediment Control Procedure [SENEX-QLDS-EN-PRC-003] and the Contractor's erosion and sediment control procedures.	Daily during construction	ESC Procedure	Enforce contractual obligations for the installation of erosion and sediment control measures.
Erosion and sediment control structures will be inspected periodically and after rain events and maintenance carried out.	Daily during construction	ESC Procedure	Repeat inspection of installed measures and create incident report for all non-compliances with ESC procedures.

Management Measures (Controls)	Performance Monitoring	Process delivery	Corrective Actions
Watercourse crossing points will be adequately minimised to prevent erosion.	Daily during construction	ESC Procedure	Repeat inspection of installed measures and create incident report for all non-compliances with ESC procedures.
Construction period in waterways will be minimised and managed in accordance with relevant Queensland Accepted Development requirements for operational work that is constructing or raising waterway barrier works.	Daily during construction	ESC Procedure	Works to resume when forecast weather indicates conditions will allow for continuous construction to completion through waterway.
Construction and maintenance of linear infrastructure near watercourses will be conducted in accordance with the following preference: when no water is present, in times of no flow, in times of flow but in a way that does not impede low flow	Daily during construction	ATW process	Works to resume when forecast weather indicates conditions will not increase rate of flow in watercourse.
Positive visual markings or pegs will be used to identify the extent of any vegetation to be removed in proximity to watercourses.	ATW process/Pre-clearance	Toolbox	Replace visual markers and create incident report for all non-compliances with flagging. Undertake further education and awareness training with all site supervisors.
'No go' areas around watercourses will be GPS located and clearly marked (for example with bunting and/or flagging tape)	ATW process/Pre-clearance	Toolbox	Replace visual markers and create incident report for all non-compliances with flagging. Undertake further education and awareness training with all site supervisors.
Construction activities will not interfere or block natural drainage e.g. disturbing channel contours.	Daily during construction	ESC Procedure	Any blockage will be rectified within 24 hours.

7.3.5 Noise and dust

Potential Impacts (Risks/Threats):

- Indirect disturbances such as noise and dust have the potential to negatively impact adjacent vegetation communities and habitats.
- Dust generated by vehicle and machinery movements has the potential to smother vegetation directly adjacent to the works and inhibit plant growth and palatability for native fauna.

Performance Criteria:

- Vehicles are not outside of approved work zones.
- Dust accumulation on vegetation is not greater than surrounding undisturbed communities.
- No night construction works beyond that required to enable:
 - hydrotesting (which will necessitate the operation of three tower lights throughout the night, 7 days a week for approximately 25 days, focusing primarily on sections KP 0, 29.5, and 56 of the RoW).
 - HDD at Woleebee Creek and Yuleba Creek, with each side of the HDD operation illuminated by up to three tower lights operating continuously throughout the night, 7 days a week for approximately 3 weeks at each HDD site.

Table 9 Construction management measures and corrective actions for noise and dust

Management Measures (Controls)	Performance Monitoring	Process delivery	Corrective Actions
No vehicles or equipment are to move outside the cleared work zone to prevent unnecessary land and vegetation disturbance.	Daily during construction	ATW process	Dust suppression is undertaken throughout construction on access tracks and RoW until rehabilitation works are complete. Undertake further education and awareness training with all site supervisors.
The amount of artificial lighting and the number of hours lights are operational will be minimised.	Daily during construction	ATW process	Works requiring artificial lighting within mapped habitat areas will be rescheduled.
Night RoW clearing works will be avoided.	Daily during construction	ATW process	Noise generated by activities will not continue for more than 12 continuous hours in a location identified as an animal breeding place during the breeding season.

Management Measures (Controls)	Performance Monitoring	Process delivery	Corrective Actions
Vehicle speed limits (maximum 40km/hr) will apply throughout construction.	Daily during construction	Toolbox	Undertake further education and awareness training with all site supervisors.
Disturbed areas and access roads will be watered using a water cart/truck on an as-required basis to minimise the potential for environmental nuisance due to dust.	Daily during construction	Environmental Management Plan	Dust suppression is undertaken throughout construction on access tracks and RoW until rehabilitation works are complete.

7.3.6 Pests and weeds

Potential Impacts (Risks/Threats):

- Indirect impacts to adjacent habitat areas as a result of an introduction or spread of weed and pest species.

Performance Criteria:

- No spread of declared or high priority pest flora or fauna species within or outside of works area.
- Weed species managed in accordance with CCAs, Land Access Code 2016 requirements, *Biosecurity Act 2014* and other regulatory requirements.
- Adherence to weed management and monitoring program.

Table 10 Construction management measures and corrective actions for pests and weeds

Management Measures (Controls)	Performance Monitoring	Process delivery	Corrective Actions
Activities will be planned so that movement of vehicles, plant, machinery and equipment avoid moving between properties, corridors or areas with weed infestations.	Daily during construction	Biosecurity Management Plan	Undertake further education and awareness training with all site supervisors.
A biosecurity plan has been developed by Senex (Biosecurity Management Plan [SENEX-CORP-EN-PLN-003]). Site specific weed management requirements will be defined prior to access to any property or work site and outlined in the ATW, to be followed by all staff and contractors.	ATW process/Pre-clearance	ATW process	Revise control measures in the relevant plans.

Management Measures (Controls)	Performance Monitoring	Process delivery	Corrective Actions
A baseline weed assessment will be undertaken within the indicative footprint prior to construction works either as a specific survey or part of the Pre-clearance survey. Priority Senex weeds will be managed in accordance with the Senex (Biosecurity Management Plan [SENEX-CORP-EN-PLN-003]).	ATW process/Pre-clearance	ATW process	Ensure a weed or Pre-clearance survey is undertaken.
Imported material able to transport weed seed will be assessed to ensure they are free of contamination, disease and invasive weeds. Landowner approval may also be required for imported soils and gravel.	ATW process/Pre-clearance	ATW process	Apply weed controls to affected area and report as incident.
Vehicle hygiene procedures will be implemented where risk of weed introduction or spread is identified.	Daily during construction	Biosecurity Management Plan	Undertake further education and awareness training with all site supervisors.
Pest and weed management (prevention, monitoring and control) activities will be undertaken on work sites, as indicated by inspections to minimise the potential for weed spread into adjacent habitat areas.	Within 6 months of construction completion	Biosecurity Management Plan	Repeat weed control application and increase inspection rate.
Weed management and control methods will depend upon the location, weed species identified, the degree of the infestation, relevant landholder agreement or Conduct and Compensation Agreement (CCA) provisions, and local, state and national regulatory requirements.	ATW process/Pre-clearance	ATW process	Revise control methods in the relevant plans.
Exclude invasive grasses from the seeding mix used in rehabilitation of work areas following construction, instead using native ground cover species where other 'fire promoting' (e.g., buffel grass) do not already occur.	Within 6 months of construction completion	Rehabilitation Plan	Oversow rehabilitation area with suitable seed mix.

7.3.7 Habitat / landscape connectivity

Potential Impacts (Risks/Threats):

- Fragmentation of connectivity areas.
- The cleared areas are considered likely to impede dispersal for most (less common) reptiles, amphibians, small ground mammals and arboreal mammals.

Performance Criteria:

- Damage to or destruction of wildlife habitat is avoided or minimised.
- Isolated trees identified during preclearance survey and recorded for application of rehabilitation management techniques.

Table 11 Construction management measures and corrective actions for habitat / landscape connectivity

Management Measures (Controls)	Performance Monitoring	Process delivery	Corrective Actions
Access track widths will be minimised.	Daily during construction	ATW process	Rehabilitation of disturbed area and implementation of site monitoring. Reporting to administering authority if location is MNES habitat as required by conditions of approval.
Natural vegetation buffers along creeks and rivers shall not be disturbed unless authorised under an ATW and only at the location indicated on the Site Environmental Instruction.	ATW process/Pre-clearance	ATW process	Rehabilitation of disturbed area and implementation of site monitoring. Reporting to administering authority if location is MNES habitat as required by conditions of approval.
<u>Retention of trees and RoW narrowing</u> A Characterisation of Habitat Connectivity Pre- and Post-Development [OPS-ARCP-EN-REP-002] has been undertaken that identifies areas of RoW narrowing and individual trees that are able to be retained for protection of MNES values (TECs, greater glider and Dulacca Woodland Snail habitat) including greater glider landscape connectivity. Trees are to be retained based on Appendix B of this characterization assessment.	Daily during construction	Toolbox	Ensure GIS record of identified habitat area is complete. Ensure marking of all trees for retention.

Management Measures (Controls)	Performance Monitoring	Process delivery	Corrective Actions
<p>For patches of greater glider habitat where the Project potentially impacts on connectivity that is not able to be avoided through HDD, RoW narrowing or tree retention described above glider refuge poles will be installed to facilitate movement across the disturbance area. Glider poles will be installed at the following locations as shown in the maps in Appendix 3:</p> <ul style="list-style-type: none"> • Chainages 20980-21300: 2 x 15m tall poles • Chainages 23200-23300: 2 x 15m tall poles • Chainages 31500-31550: 1 x 20m tall pole • Chainages 32320-32380: 1 x 20m tall pole • Chainages 32830-32950: 1 x 20m tall pole • Chainages 33700-33800: 2 x 15m tall poles • Chainages 44480-44520: 2 x 15m tall poles 	<p>Within 6 months of construction completion</p>	<p>Rehabilitation Plan</p>	<p>Install glider poles where identified in this plan prior to or during reinstatement of the RoW.</p>
<p>If habitat features such as hollows or woody debris are actively utilised during the preclearance survey (occupied by threatened species individuals), replacement features will be installed or located to maintain functional connectivity, such as nesting boxes in adjacent undisturbed vegetation or redistributed cleared timber/rocks.</p>	<p>Within 6 months of construction completion</p>	<p>Rehabilitation Plan</p>	<p>Install salvaged hollows or nesting boxes within 1 month of report.</p>
<p>Where construction activities may impose barriers to the movement of fauna for longer than two weeks, measures (such as providing opportunity for crossing at night) will be implemented to facilitate fauna movement around or through active work areas.</p>	<p>Daily during construction</p>	<p>Toolbox</p>	<p>Remove barrier or make other measure to facilitate fauna movement within 2 weeks of report.</p>
<p>Continuous vegetation windrows will be less than 50 m in length to ensure koala and other wildlife dispersal is not inhibited.</p>	<p>Daily during construction</p>	<p>Toolbox</p>	<p>Create break in windrows within 24 hours of report.</p>

7.3.8 Bushfire

Potential Impacts (Risks/Threats):

- Construction activities result in ignition of vegetation adjacent to the RoW.

Performance Criteria:

- All site vehicles equipped, maintained and operated in a safe manner.
- No injury, entrapment or death of wildlife or domestic stock, as a result of ARCP P/L's activities.

Table 12 Construction management measures and corrective actions for bushfire risks / threats

Management Measures (Controls)	Performance Monitoring	Process delivery	Corrective Actions
No fires permitted on site	Daily during construction	Environmental Management Plan	Undertake further education and awareness training with all site supervisors.
Adequate and properly maintained firefighting equipment will be present on site and potential ignition sources controlled.	Daily during construction	Environmental Management Plan	Undertake further education and awareness training with all site supervisors.
Fire prevention training and toolbox meetings to ensure all personnel are fully aware of the potential of fire to start in work areas.	Daily during construction	Induction/Tool box	Undertake further education and awareness training with all site supervisors.
To reduce the risk of fire, hot works (welding) will only be undertaken in areas cleared of vegetation along the RoW.	Daily during construction	Work Method Statement	Cease hot works until vegetation is cleared from RoW or increase firefighting resources.
Welding crews undertaking hot works will be equipped with fire extinguishers and trained to put out spot fires safely.	Daily during construction	Work Method Statement	Undertake further education and awareness training with all site supervisors.

7.3.9 Aquatic values

Potential Impacts (Risks/Threats):

- Impacts associated with the pipeline construction as a result of excavation and trenching through watercourses and drainage lines may include changes to flow regimes and changes to water quality resulting from spills or sedimentation.

Performance Criteria:

- No contaminants directly or indirectly released to water.
- No accidental or uncontrolled release of water to waterways or drainage lines.
- All emergencies on site managed in accordance with the Emergency Response Plan [SENEX-ER-PLN-001_4]
- All incidents reported, notified and investigated in accordance with the Incident Management Procedure [SENEX-CORP-HS-PRC-004]
- All spills managed in accordance with the Spill Response Plan [SENEX-CORP-ER-PLN-006].

Table 13 Construction management measures and corrective actions for aquatic values

Management Measures (Controls)	Performance Monitoring	Process delivery	Corrective Actions
No unauthorised discharges of water to land or surface waters.	Daily during construction	Induction/Tool box	Rehabilitate any impacts to location in event of incident.
Horizontal directional drilling at Woleebee Creek and Yuleba Creek.	ATW process/Pre-clearance	ATW process	Rehabilitate any impacts to location in event of incident.
Installation of erosion and sediment control measures to protect watercourses.	Daily during construction	ESC Procedure	Enforce contractual obligations for the installation of erosion and sediment control measures
Installation of erosion and sediment control measures to ensure stormwater passes through the site in a controlled and at non-erosive flow velocities.	Daily during construction	ESC Procedure	Enforce contractual obligations for the installation of erosion and sediment control measures
Ensuring storage of vehicles, equipment and machinery is excluded from watercourses.	Daily during construction	Induction/Tool box	Remove vehicles and equipment from watercourses before end of workday.
Locating stockpiles in flat areas away from	Daily during	ESC	Relocate stockpiles within 24 hours of report.

Management Measures (Controls)	Performance Monitoring	Process delivery	Corrective Actions
watercourses.	construction	Procedure	
Fuel, oil and chemicals will be stored as per the controls in the Environmental Management Plan [SENEX-ARCP-EN-PLN-001]	Daily during construction	Environmental Management Plan	Rehabilitate any impacts to location in event of incident.
Incident details will be recorded immediately and notified through the Incident reporting systems, reported and investigated.	Daily during construction	Environmental Management Plan	Re-issue incident report and undertake further education and awareness training with all site supervisors.
Incident reports will contain information required by the Contingency Procedures for Emergency Environmental Incidents [SENEX-QLDS-EN-PRC-024] and Incident Reporting and Investigation Procedure [SENEX-CORP-HS-PRC-004].	Daily during construction	Environmental Management Plan	Revise procedure and undertake further education and awareness training with all site supervisors.

7.3.10 Koala Encounter Procedure

Management of any observed koalas will need to follow additional procedures in accordance with current Queensland regulatory guidelines. **Table 14** below correlates to the following legislation in regard to encountering koala on site, treating sick/injured koala and relocation of koala:

- Code of Practice Care of Sick, Injured or Orphaned Protected Animals in Queensland – *Nature Conservation Act 1992* (2020);
- Nature Conservation (Koala) Conservation Plan 2017;
- Koala-sensitive Design Guideline – A guide to Koala-sensitive design measures for planning and development activities (2022);
- Operational policy – Release of rehabilitated koalas and the take and release of Koalas in imminent danger (2019);
- Nature Conservation (Animals) Regulation 2020.

Table 14 Koala Encounter Procedure

Procedure	Guidance Suggestions
Encountering koala	<ul style="list-style-type: none"> • Clearing of koala habitat trees (outside of breeding and foraging habitat areas) is carried out in a way that ensures koalas occupying the area that is being cleared have enough time to move out of the area without human intervention. • The clearing must be carried out in stages. • Between each stage and the next there is at least one period of 12 hours (starting at 6pm on a day and ending at 6am on the following day) during which no trees are cleared on the site. • If a koala is in a tree, that tree is not to be cleared. If the crown of a tree overlaps with a tree that a koala is in, that tree is not to be cleared.
Treating sick/injured koala	<ul style="list-style-type: none"> • DES is the agency responsible for the assessment and licensing of individuals and organisations for the purposes of wildlife rehabilitation. • Contact to be made with DES or a person who holds a permit that specifically provides for the rehabilitation of koalas. • A person who rescues a protected animal, but is not a licensed rehabilitator, must surrender it to a licensed rehabilitator or conservation officer within 72 hours of taking the animal into care as stated in section 56(2) of the <i>Nature Conservation (Animals) Regulation 2020</i>. • The principles surrounding injury/illness of koala include; duty of care, avoiding harm, avoiding risk to human health and safety, relieving suffering and taking fair, reasonable and appropriate measures.
Relocation of koala	<ul style="list-style-type: none"> • An appropriately qualified person may take an apparently health koala from the wild when it is found to be in clear and imminent danger. • The koala should be released back to its prescribed natural habitat. If a koala is to be released outside of its prescribed natural habitat, the appropriately qualified person is to apply for approval. • The release is in accordance with procedures outlined in the Code of Practice Care of Sick, Injured or Orphaned Protected Animals in Queensland – <i>Nature Conservation Act 1992</i>.

8 Operations Management Measures

8.1 Relevant Significant Species

Relevant significant species with likely and known likelihood of occurrence that have the potential to be impacted during operation phase are detailed in **Error! Reference source not found..**

8.2 Operations Impacts to MNES and Controls

The following subsections identify the potential impacts and the management measures to be applied to reduce the impacts on MNES throughout the operations phase. The following tables set out the performance monitoring frequency and process through which the process will be delivered and the corrective actions if the performance criteria are not met.

8.2.1 Fauna injury or mortality

Potential Impacts (Risks/Threats):

- The operation of vehicles and machinery within the Project Area has potential to lead to direct mortality or injury of resident fauna.

Performance Criteria:

- No injury, entrapment or death of wildlife or domestic stock, as a result of ARCP P/L activities.
- All site vehicles equipped, maintained and operated in a safe manner.

Table 15 Operational management measures and corrective actions for fauna injury or mortality

Management Measures (Controls)	Performance Monitoring of Control during Phase	Process delivery	Corrective Actions
Vehicle speed limits (maximum 40km/hr) will apply throughout operations inspections of the pipeline.	Daily during pipeline inspection	Environmental Management Plan	Undertake further education and awareness training with all site supervisors.
Personnel will remain within areas approved for operations (cleared work zones) and not drive off approved access tracks or enter exclusion areas or 'no-go' zones.	Daily during pipeline inspection	Environmental Management Plan	Undertake further education and awareness training with all site supervisors.

8.2.2 Pests and weeds

Potential Impacts (Risks/Threats):

- Indirect impacts to adjacent habitat areas as a result of an introduction or spread of weed and pest species.

Performance Criteria:

- No spread of declared or high priority pest flora or fauna species within or outside of works area due to Operator activities.
- Weed species managed in accordance with CCAs, Land Access Code 2016 requirements, Biosecurity Act 2014 and other regulatory requirements, and relevant Operator supporting procedures and plans.
- Adherence to weed management and monitoring program requirements.

Table 16 Operational management measures and corrective actions for pests and weeds

Management Measures (Controls)	Performance Monitoring of Control during Phase	Process delivery	Corrective Actions
Activities will be planned so that movement of vehicles, plant, machinery and equipment avoid moving between properties, corridors or areas with weed infestations.	Quarterly during pipeline inspection	Biosecurity Management Plan	Apply weed controls to affected area and report as incident.
A biosecurity plan has been developed by Senex (Biosecurity Management Plan [SENEX-CORP-EN-PLN-003]). Site specific weed management	Annually during pipeline inspection	ATW process	Revise control measures.

Management Measures (Controls)	Performance Monitoring of Control during Phase	Process delivery	Corrective Actions
requirements will be defined prior to access to any property or work site and outlined in the ATW, to be followed by all staff and contractors.			
Vehicle hygiene procedures will be implemented where risk of weed introduction or spread is identified.	Quarterly during pipeline inspection	Biosecurity Management Plan	Undertake further education and awareness training with all site supervisors.
Pest and weed management (prevention, monitoring and control) activities will be undertaken on work sites, as required to minimise the potential for weed spread into adjacent habitat areas.	Annually during pipeline inspection	Biosecurity Management Plan	Repeat weed control application and increase inspection rate.
Weed management and control methods will depend upon the location, weed species identified, the degree of the infestation, relevant landholder agreement or Conduct and Compensation Agreement (CCA) provisions, and local, state and national regulatory requirements.	Annually during pipeline inspection	ATW process	Revise control methods.

8.2.3 MNES habitat

Potential Impacts (Risks/Threats):

- Indirect impacts to adjacent habitat areas as a result of noise, dust, runoff and erosion, including impacts to downstream environments.

Performance Criteria:

- After the construction or maintenance works for linear infrastructure in a watercourse are completed, the linear infrastructure will not result in ongoing negative impacts to water quality or bank instability

Table 17 Operational management measures and corrective actions for impacts to MNES habitat

Management Measures (Controls)	Performance Monitoring of Control during Phase	Process delivery	Corrective Actions
Sediment and erosion control to be managed in accordance with the Erosion and Sediment Control Procedure [SENEX-QLDS-EN-PRC-003] and the Contractor's erosion and sediment control procedures.	Quarterly during pipeline inspection	Erosion and Sediment Control Procedure	Replace erosion and sediment controls

9 Monitoring Program

There were no listed species found in the surveys of the indicative footprint, should the preclearance surveys identify the presence of any listed species this plan will be amended.

Monitoring undertaken for the MNES identified in the preclearance surveys and any subsequent adaptive management will support the management of significant species and their habitats, including any requirements that may be identified in Species Management Programs arising from identification of breeding places in preclearance surveys as described in Section 7.2. These actions are in addition to weed monitoring as a requirement of the ARCP Environmental Management Plan [SENEX-ARCP-EN-PLN-001]. Similarly, monitoring of rehabilitation of the Project Area is a requirement of the ARCP Rehabilitation Plan [SENEX-ARCP-EN-PLN-003].

Section 3 of the ARC Pipeline Atlas to Reedy Creek Dulacca Snail Translocation Strategy in Appendix U of the MNES Ecological Assessment Report (E2M 2024) sets out monitoring requirements for translocated snails should any be found to occur in proposed disturbance areas.

10 Corrective Actions

Where performance monitoring of controls undertaken through construction and operations has identified that the nominated performance criteria is not being met or are trending toward not being met, corrective actions will be applied to the matter to protect environmental values and improve predicted outcomes.

In order to provide an adaptive management framework, steps for the resolution of matters raised in performance monitoring include:

- Identify likely cause of issue.
- Review monitoring procedure; frequency and methodology.
- Review any relevant procedures or guidelines.
- Implement relevant corrective actions and/or corrective rehabilitation.
- Undertake further education and awareness training.
- If the matter pertains to a condition of approval, then report to regulatory authority.

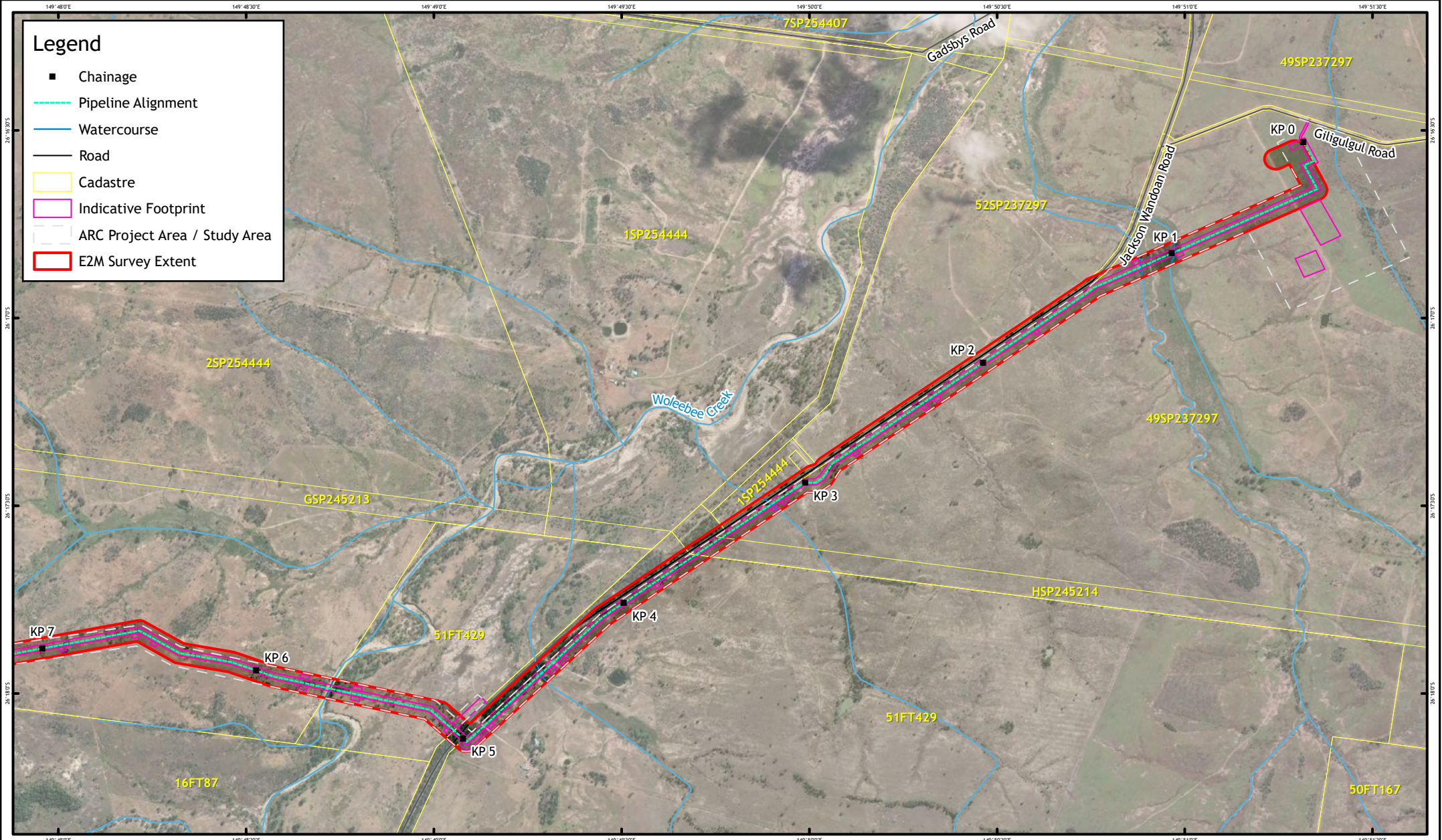
Lessons learnt should be used to inform the development of more effective measures to achieve performance objectives (criteria) over time.

11 References

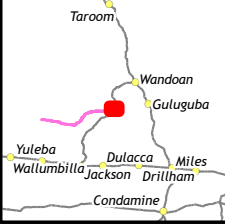
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Appendix 1

Mapping of Threatened Ecological Communities for Atlas to Reedy Creek Pipeline Study Area



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Coordinate System: GCS GDA 1994

Notes:
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 Cadastre: © DoR 2022
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 Road: © DoR 2022

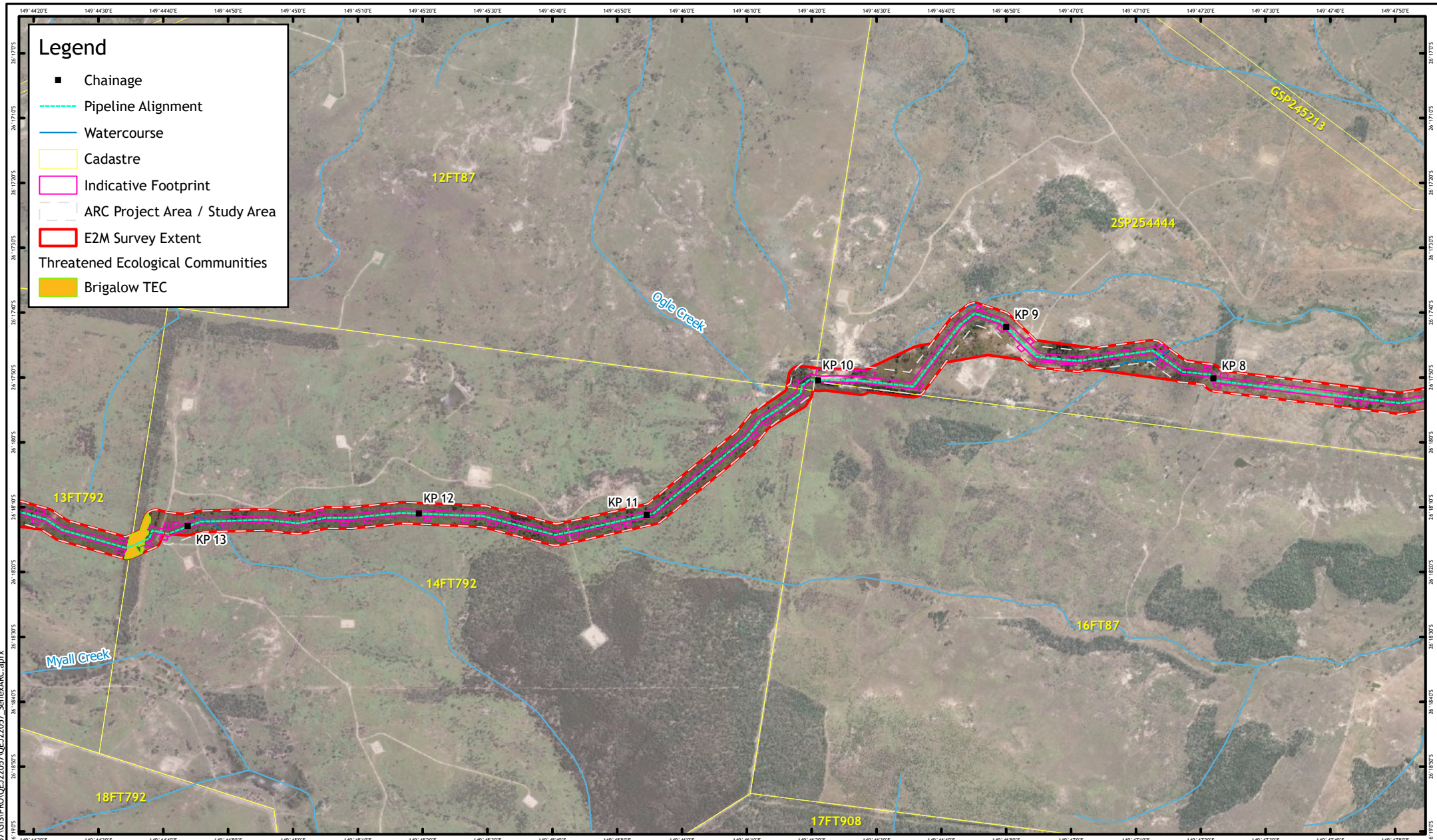
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APPENDIX G: THREATENED ECOLOGICAL COMMUNITIES MAPPING

Ecological Assessment Report
Senex Energy Limited

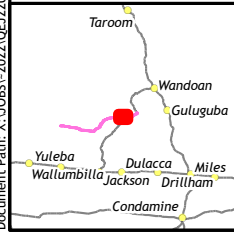
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Legend

- Chainage
- Pipeline Alignment
- Watercourse
- ▭ Cadastre
- ▭ Indicative Footprint
- ▭ ARC Project Area / Study Area
- ▭ E2M Survey Extent
- Threatened Ecological Communities
- ▭ Brigalow TEC

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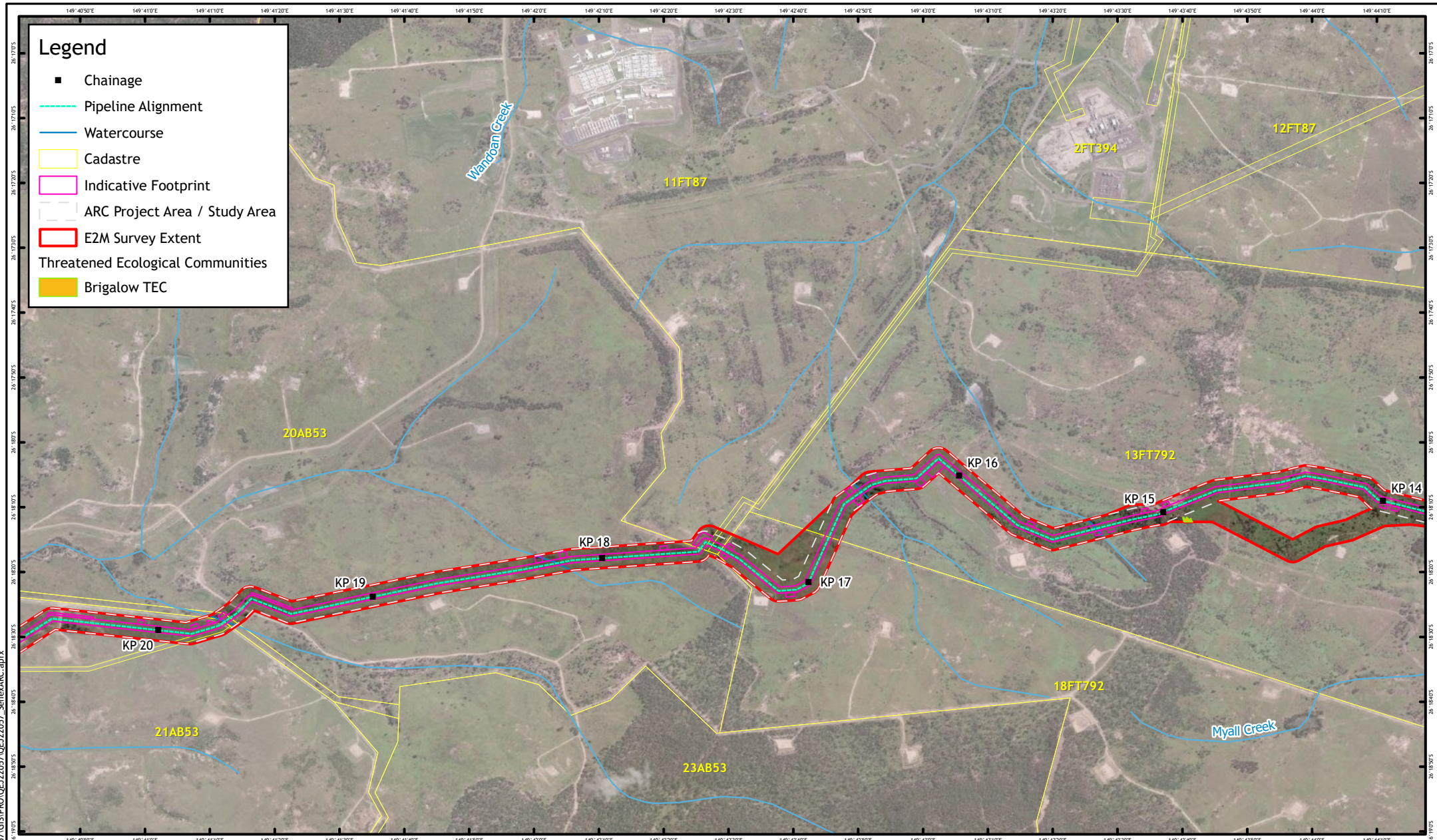
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 Senex Energy Limited

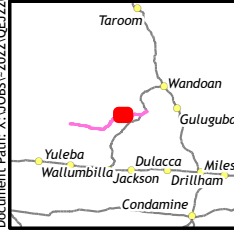
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- ▭ ARC Project Area / Study Area
- ▭ E2M Survey Extent
- Threatened Ecological Communities
- Brigalow TEC

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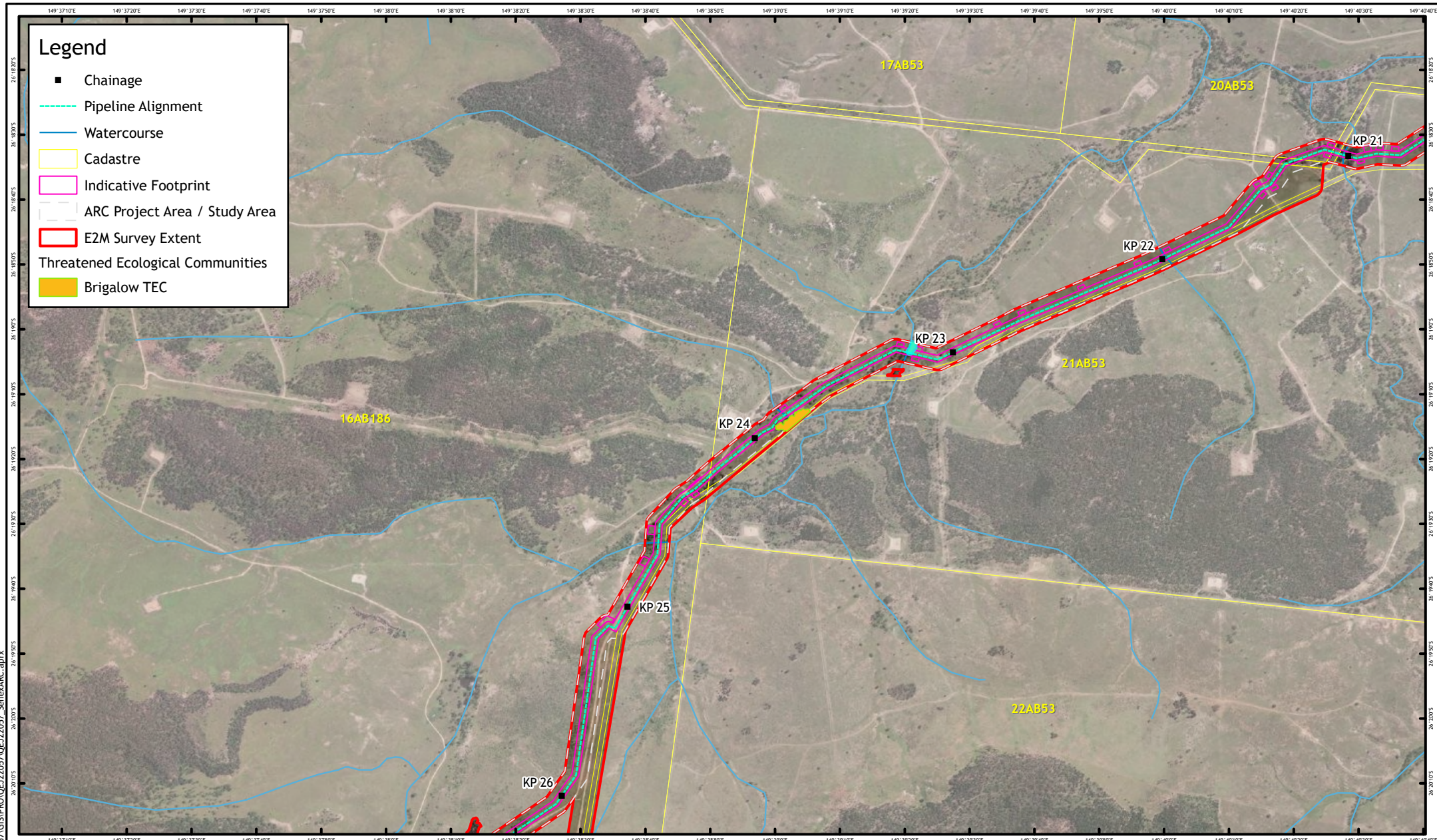
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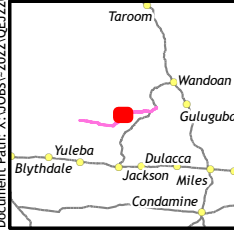
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Ecological Assessment Report Senex Energy Limited		
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Legend

- Chainage
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- Watercourse
- ▭ Cadastre
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- ▭ ARC Project Area / Study Area
- ▭ E2M Survey Extent
- Threatened Ecological Communities
- Brigalow TEC

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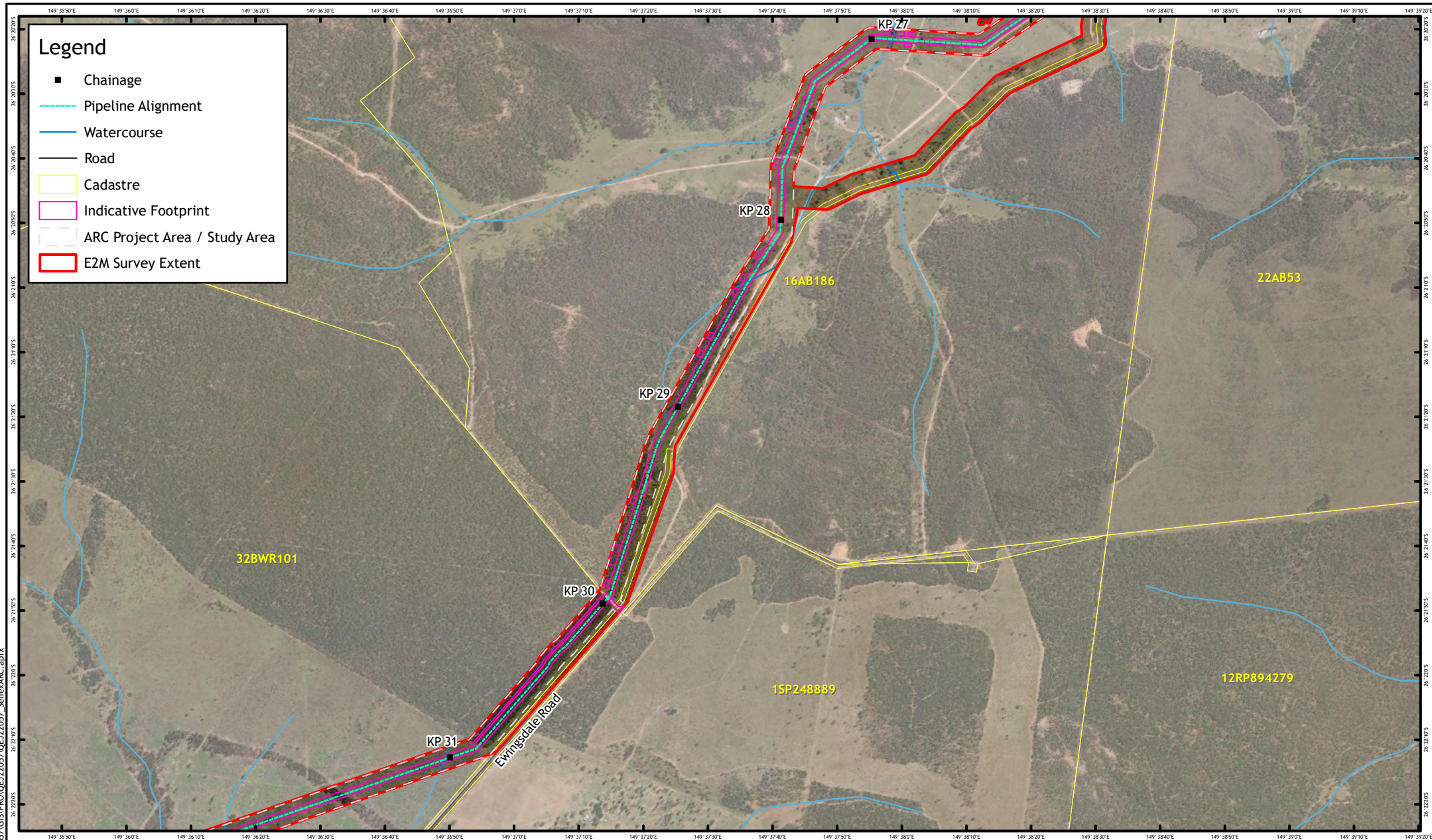
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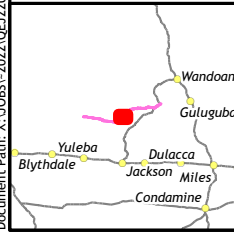
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Legend

- Chainage
- Pipeline Alignment
- Watercourse
- Road
- ▭ Cadastre
- ▭ Indicative Footprint
- ▭ ARC Project Area / Study Area
- ▭ EZM Survey Extent

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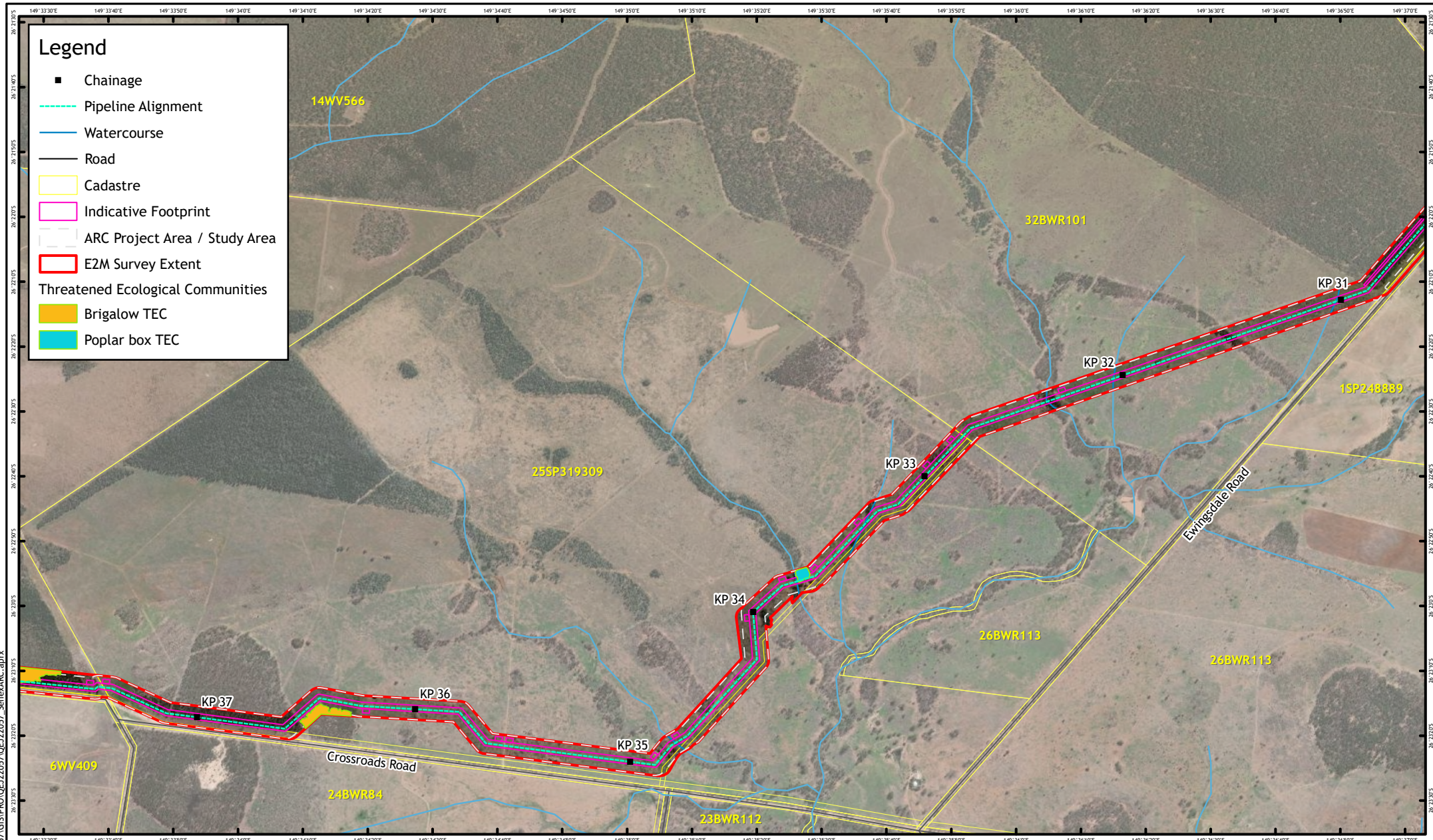
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Ecological Assessment Report
Senex Energy Limited

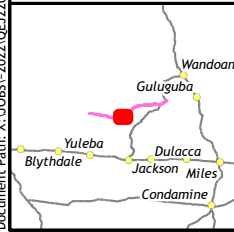
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Legend

- Chainage
- Pipeline Alignment
- Watercourse
- Road
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- ▭ Indicative Footprint
- ▭ ARC Project Area / Study Area
- ▭ E2M Survey Extent
- Threatened Ecological Communities**
- Brigalow TEC
- Poplar box TEC

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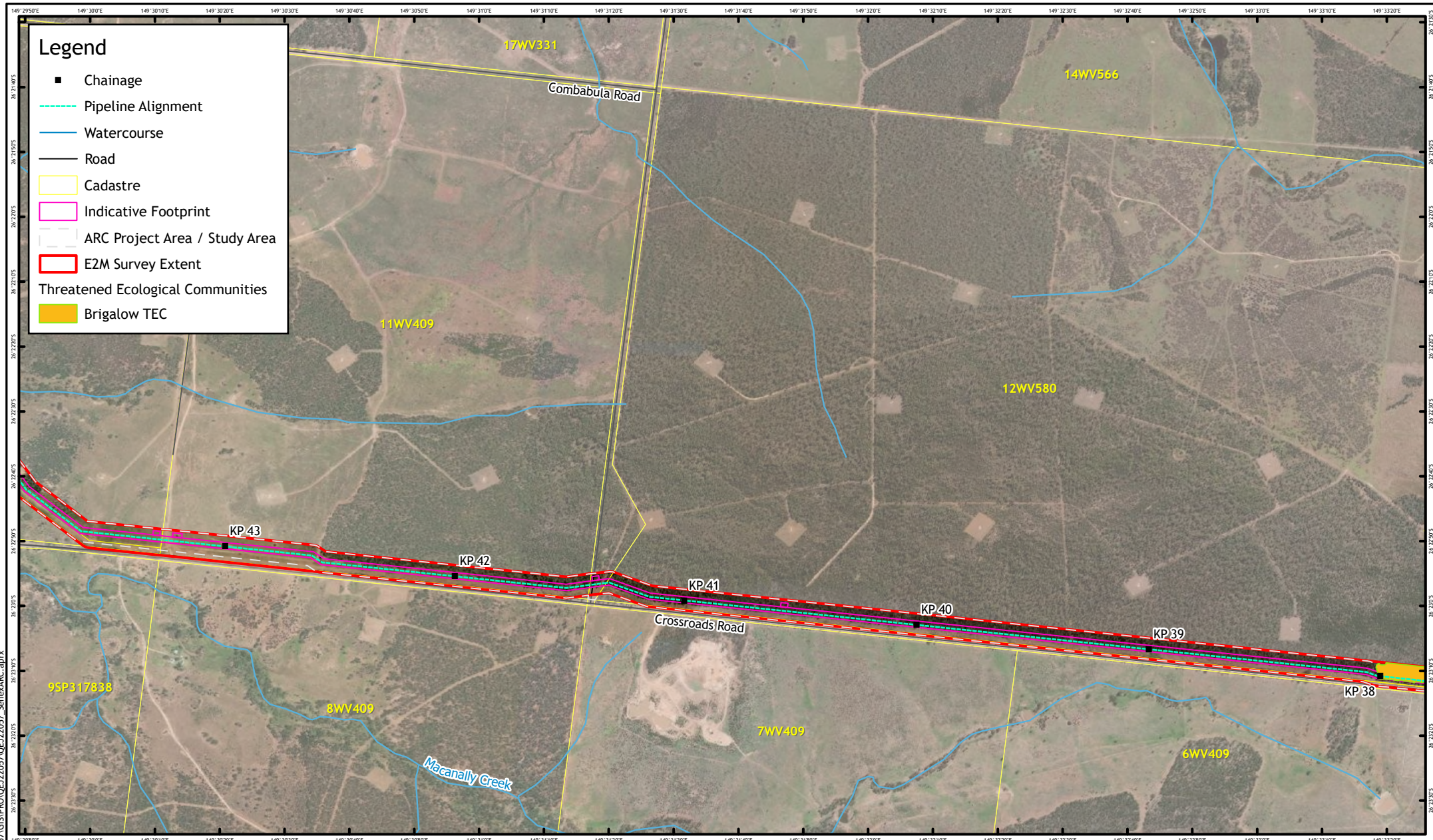
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APPENDIX G: THREATENED ECOLOGICAL COMMUNITIES MAPPING

Ecological Assessment Report
 Senex Energy Limited

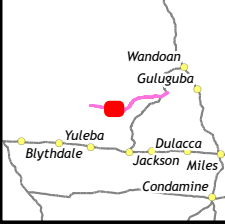
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Legend

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- Road
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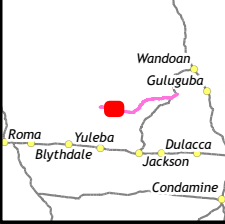
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Ecological Assessment Report
Senex Energy Limited

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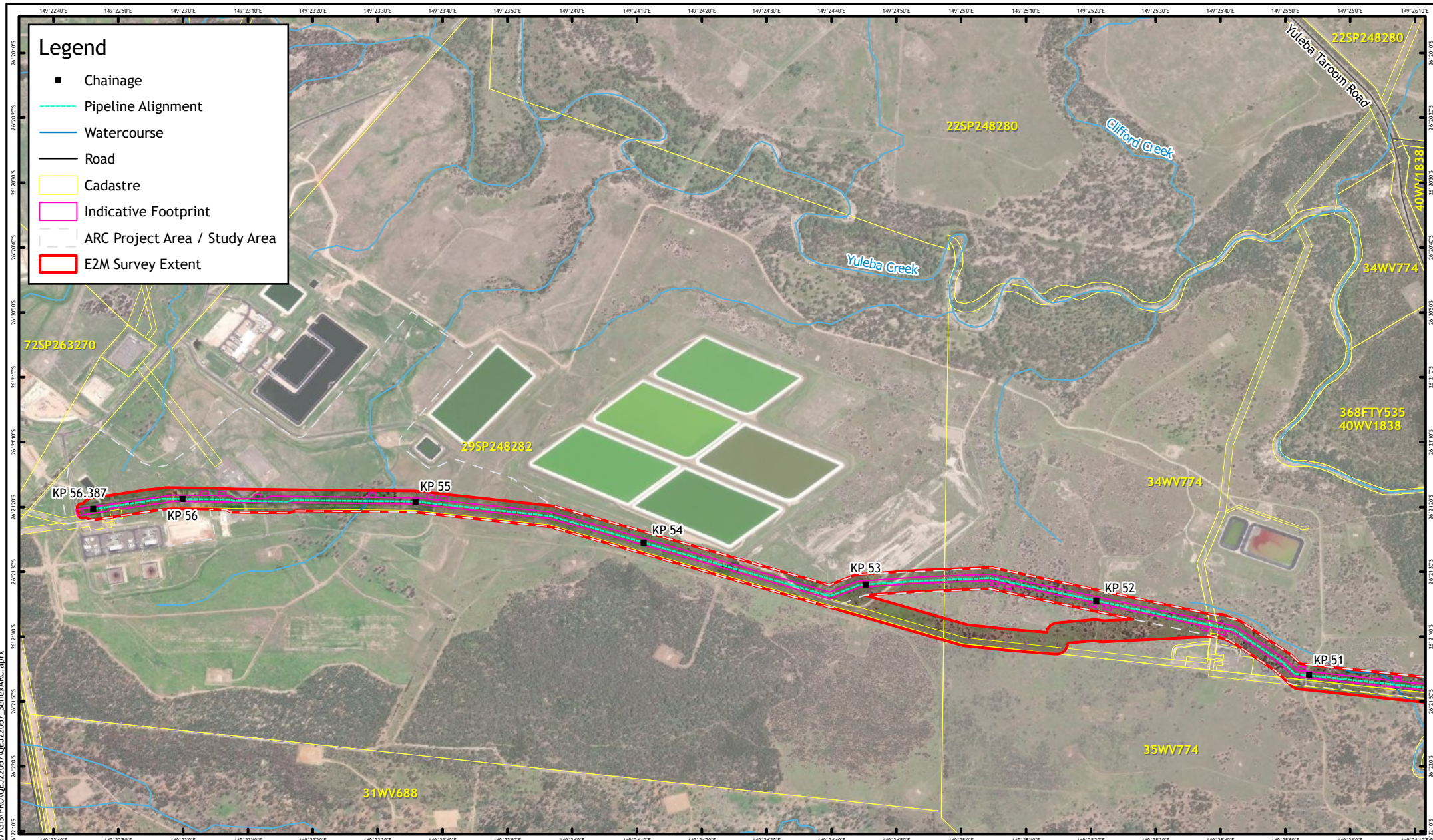
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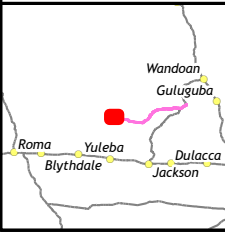
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Ecological Assessment Report
Senex Energy Limited

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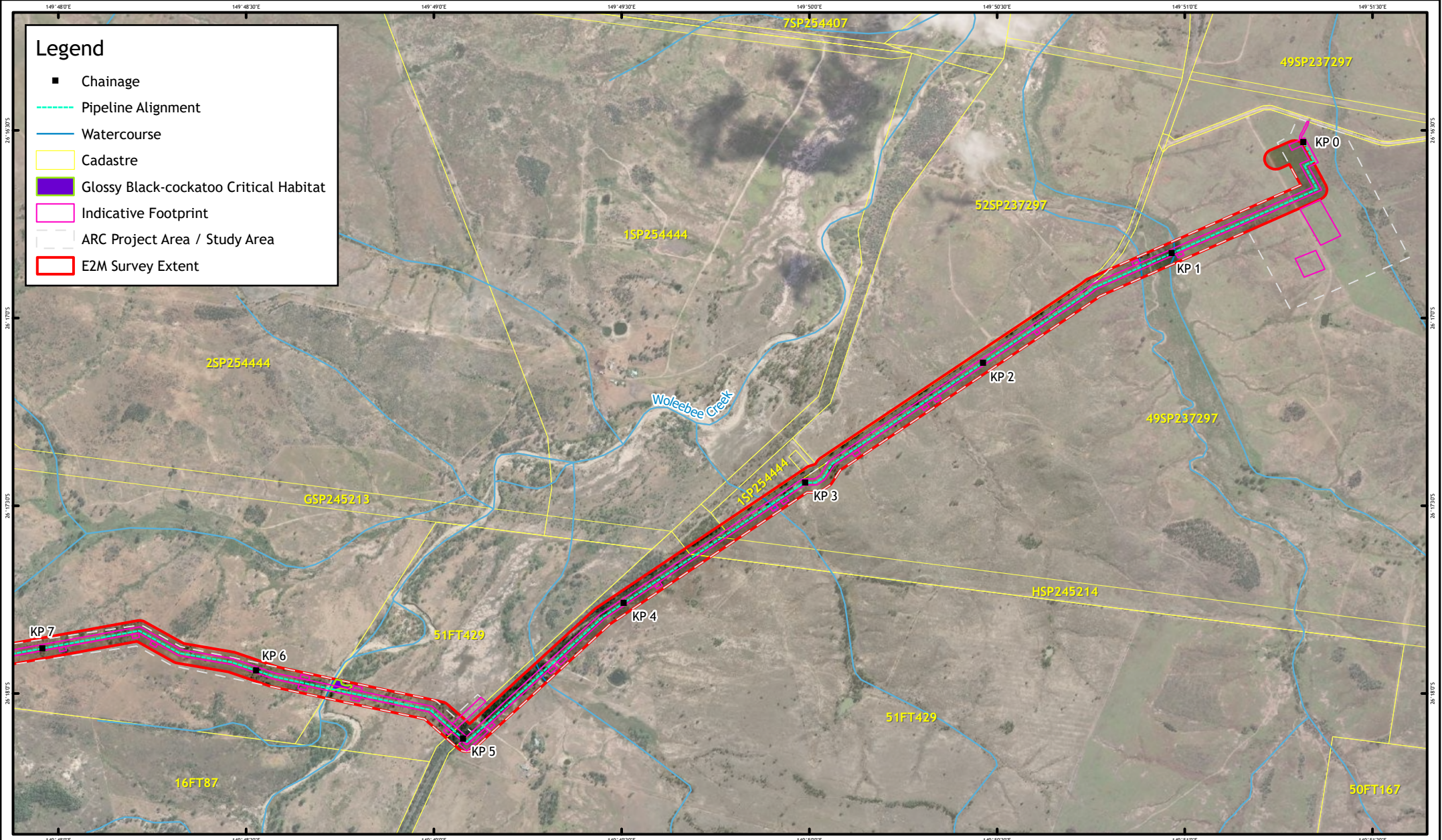
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Ecological Assessment Report
Senex Energy Limited

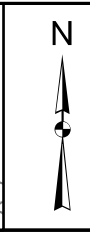
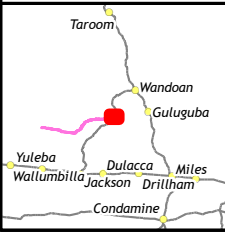
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Appendix 2

Field Validated Mapping of Listed Species Habitat for Atlas to Reedy Creek Pipeline Study Area



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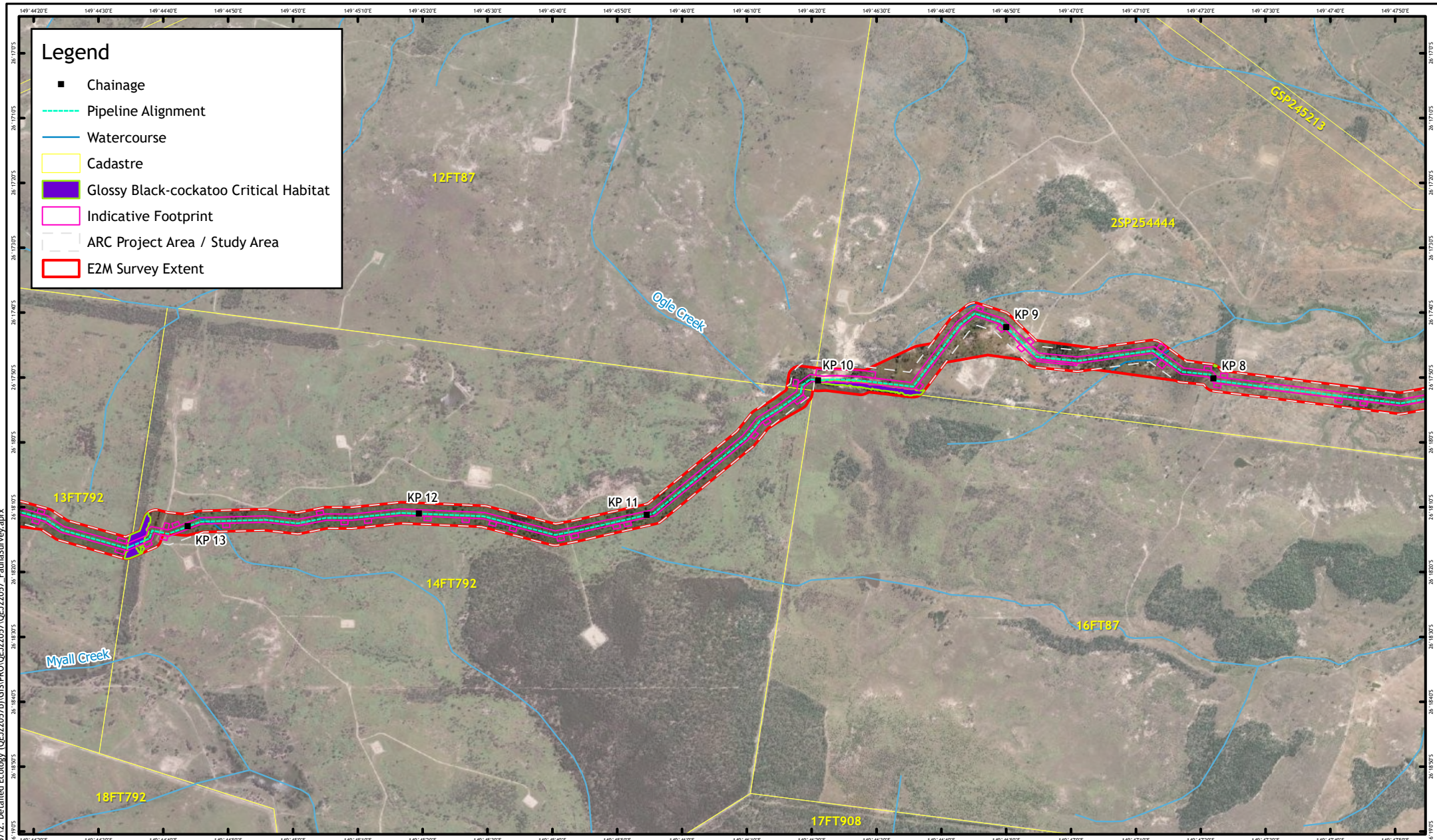
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APPENDIX I: GLOSSY BLACK-COCKATOO HABITAT MAPPING

Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

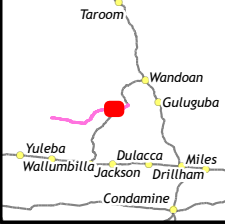
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Legend

- Chainage
- Pipeline Alignment
- Watercourse
- ▭ Cadastre
- █ Glossy Black-cockatoo Critical Habitat
- ▭ Indicative Footprint
- ARC Project Area / Study Area
- ▭ E2M Survey Extent

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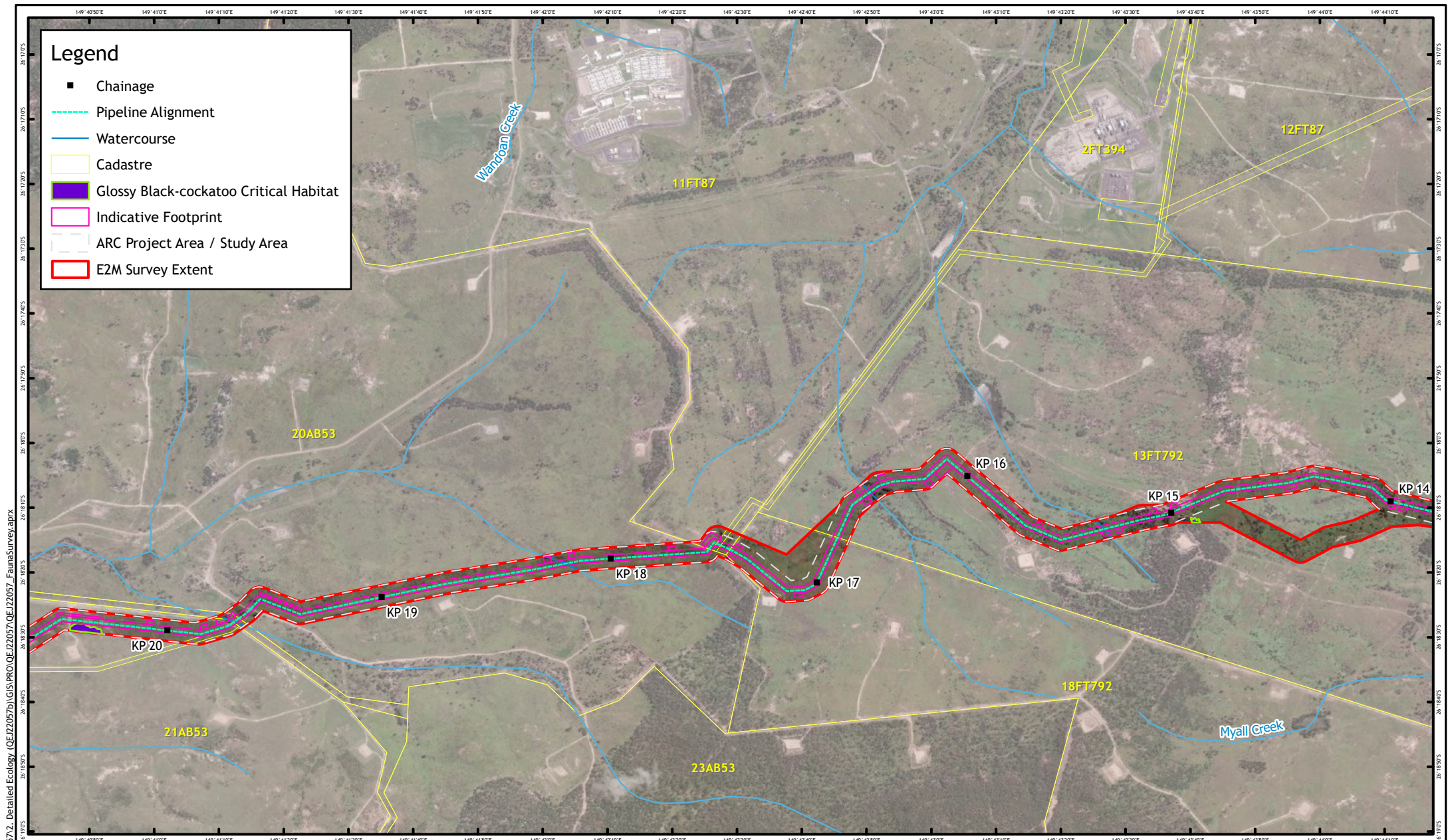
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APPENDIX I: GLOSSY BLACK-COCKATOO HABITAT MAPPING

Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

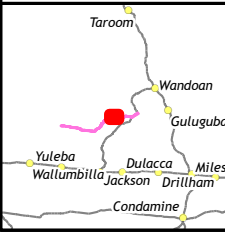
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Legend

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- ▭ Indicative Footprint
- ARC Project Area / Study Area
- ▭ E2M Survey Extent

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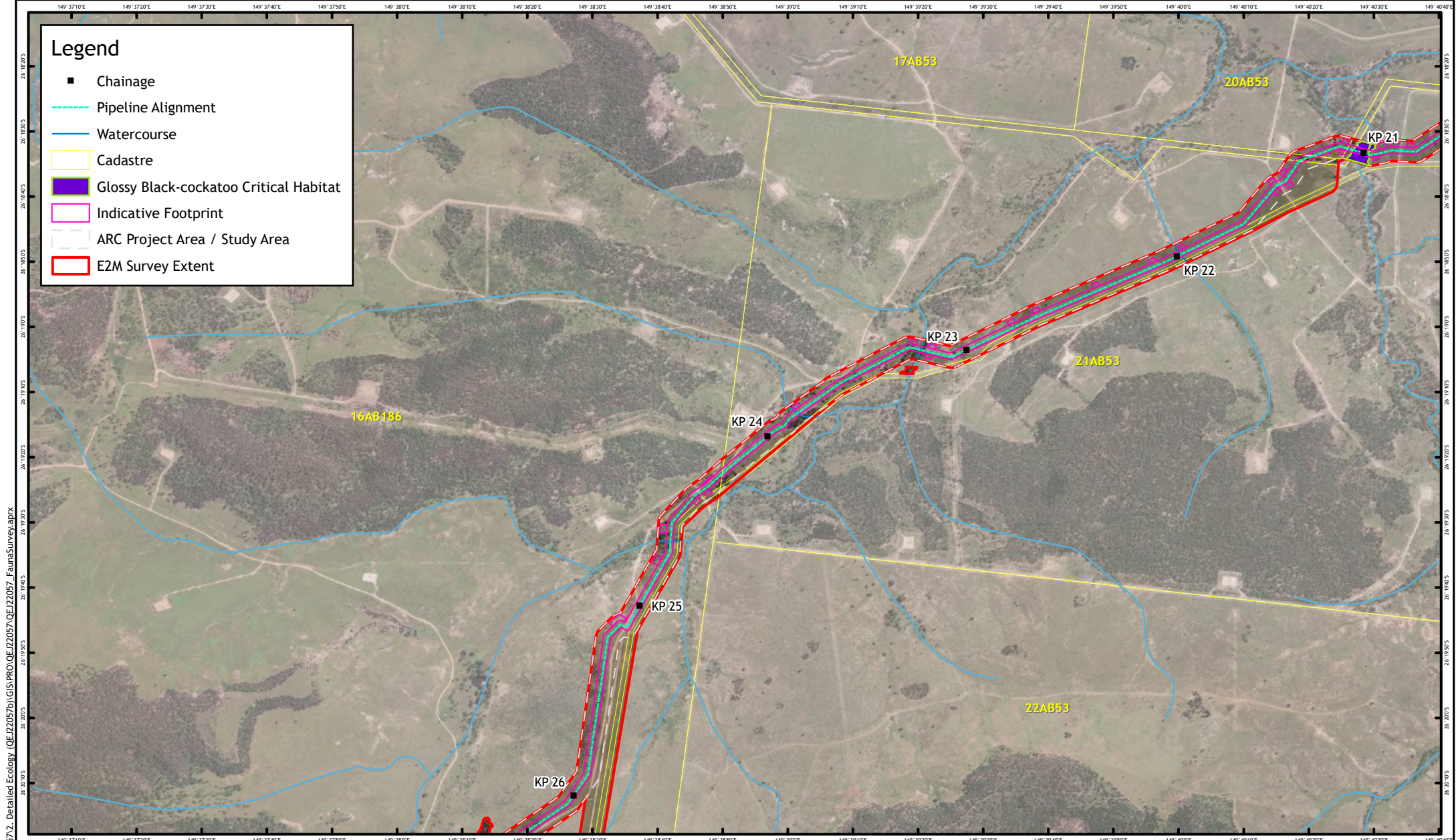
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APPENDIX I: GLOSSY BLACK-COCKATOO HABITAT MAPPING

Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

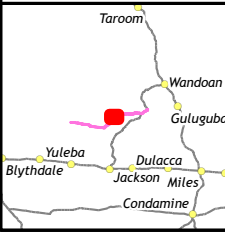
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Legend

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- ▭ Indicative Footprint
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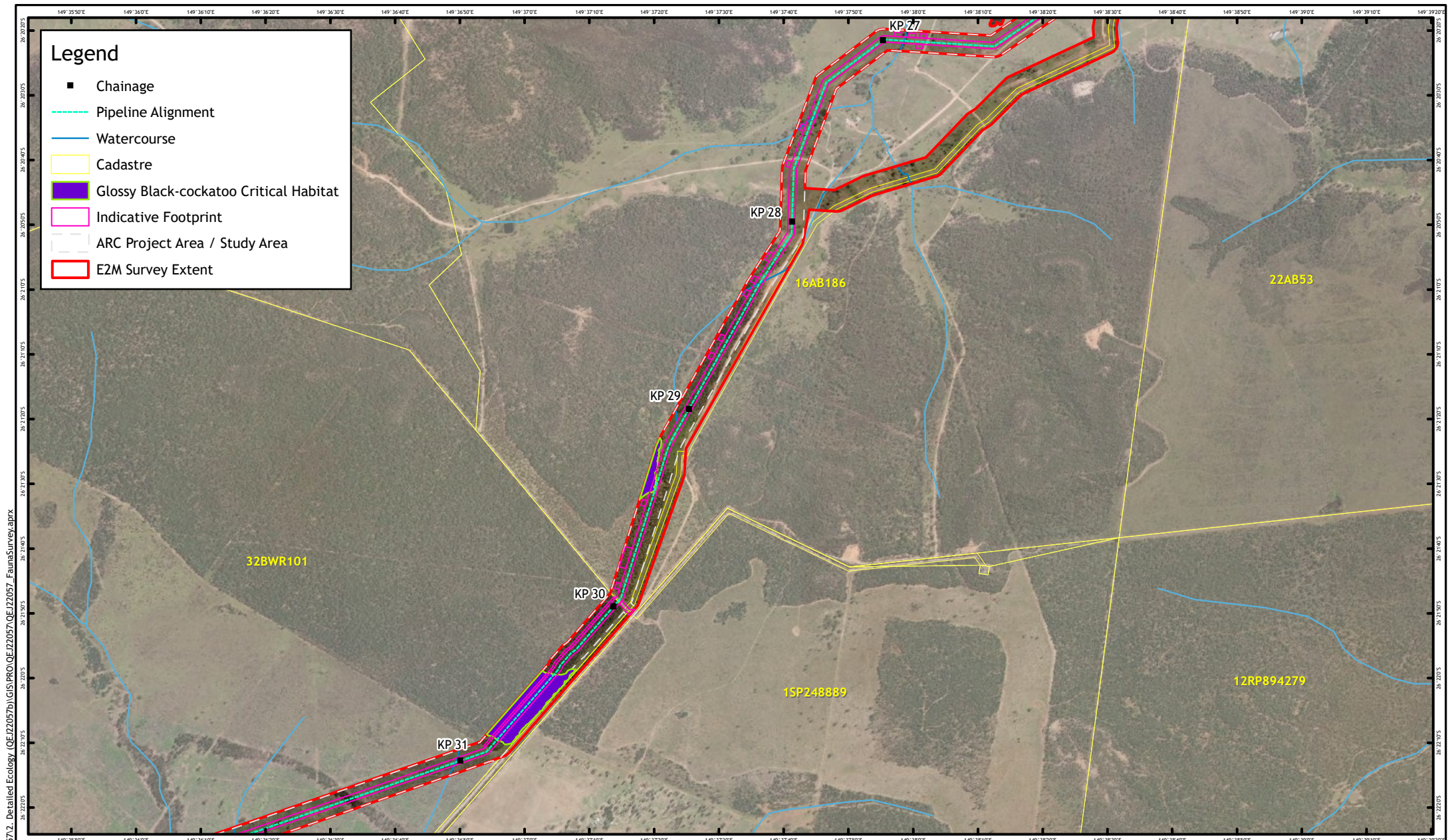
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Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

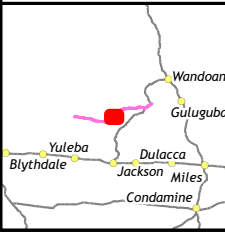
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N

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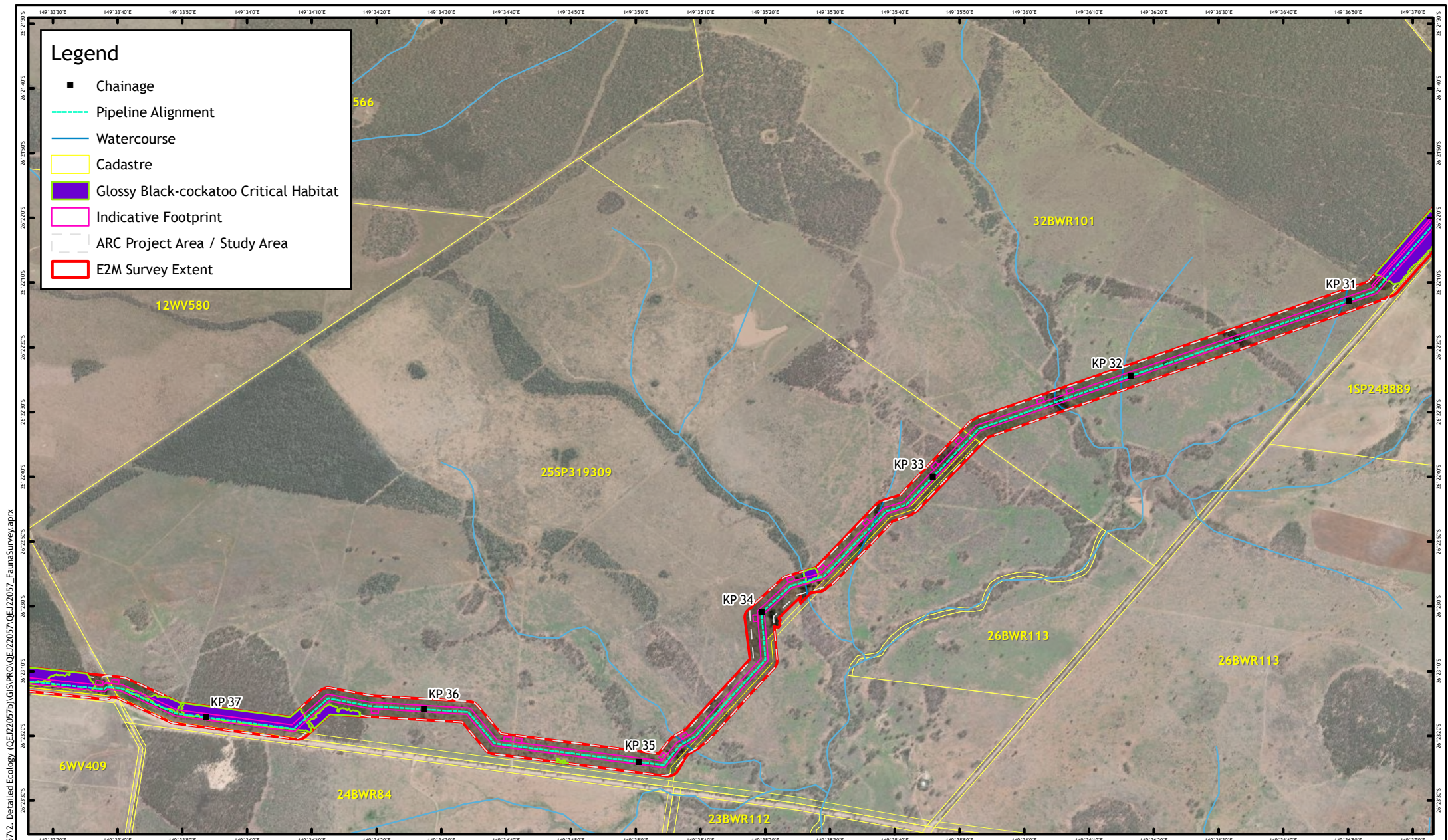
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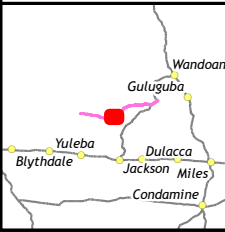
APPENDIX I: GLOSSY BLACK-COCKATOO HABITAT MAPPING

Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

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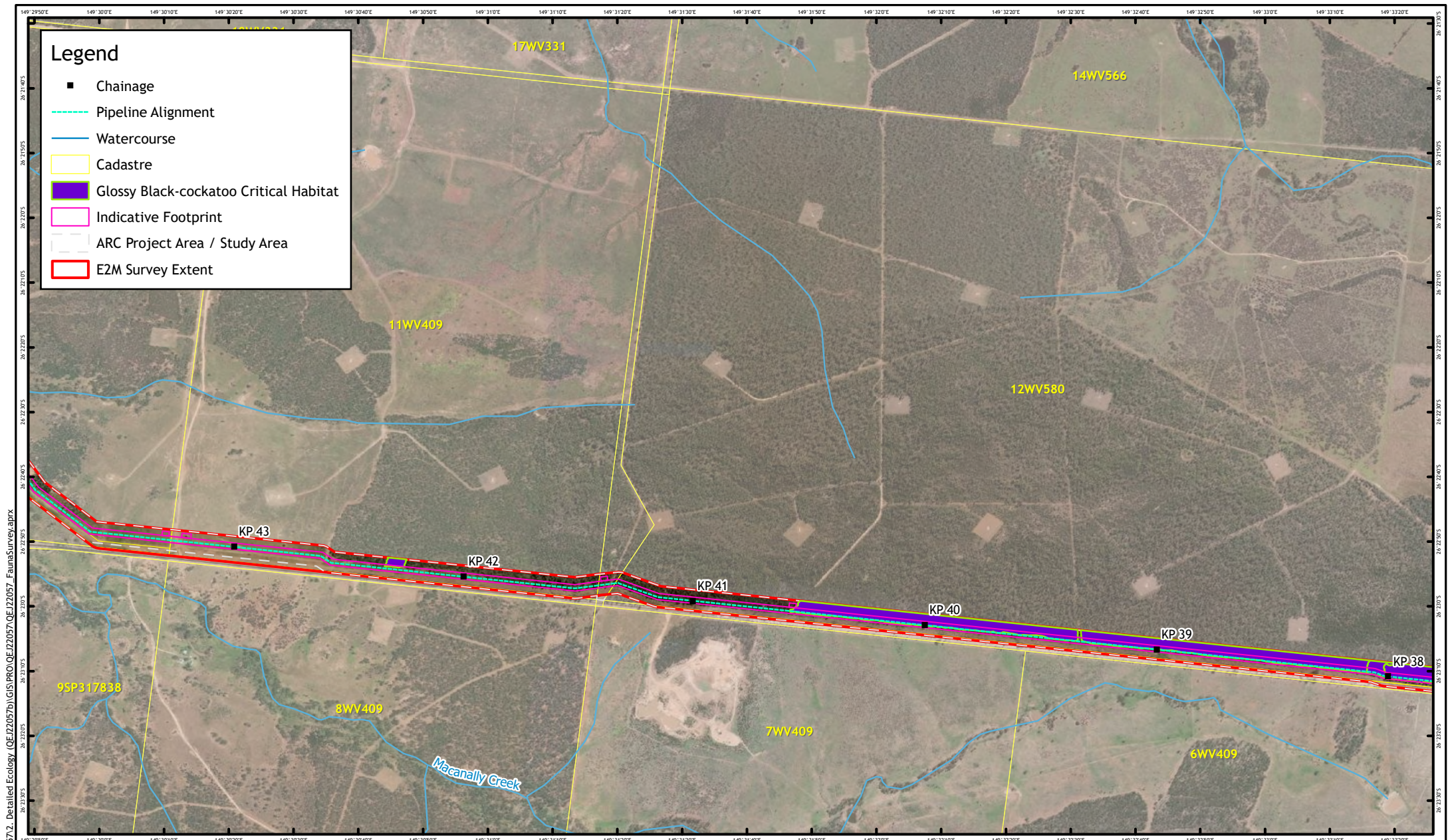
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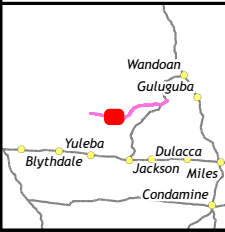
APPENDIX I: GLOSSY BLACK-COCKATOO HABITAT MAPPING

Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

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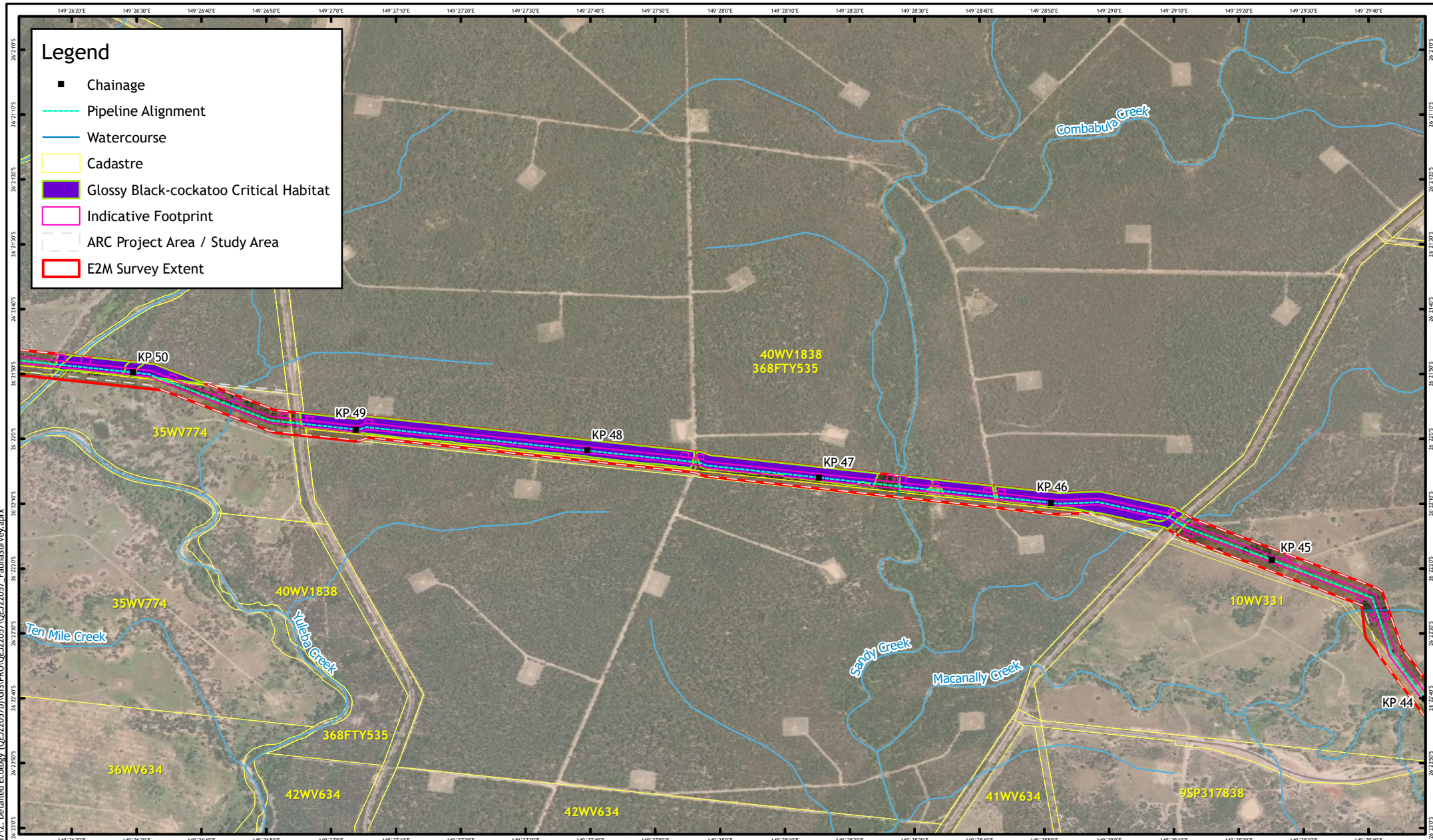
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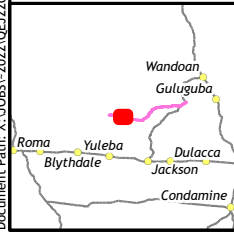
APPENDIX I: GLOSSY BLACK-COCKATOO HABITAT MAPPING

Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

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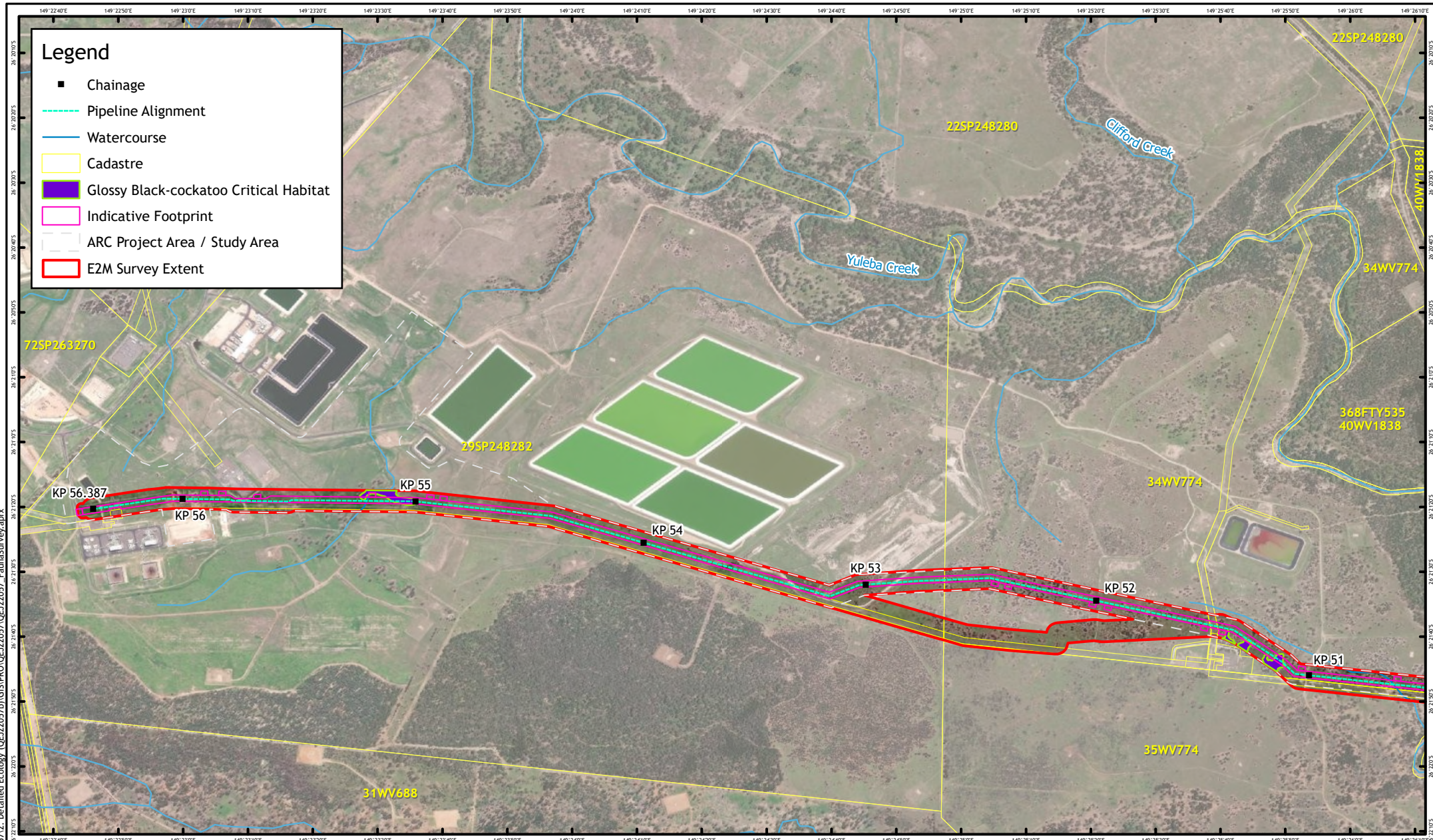
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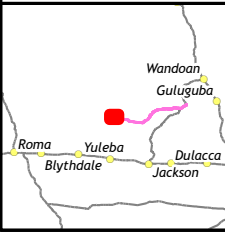
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- █ Glossy Black-cockatoo Critical Habitat
- ▭ Indicative Footprint
- ARC Project Area / Study Area
- ▭ E2M Survey Extent

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Kilometres

Coordinate System: GCS GDA 1994

Notes:
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 Road: © DoR 2022
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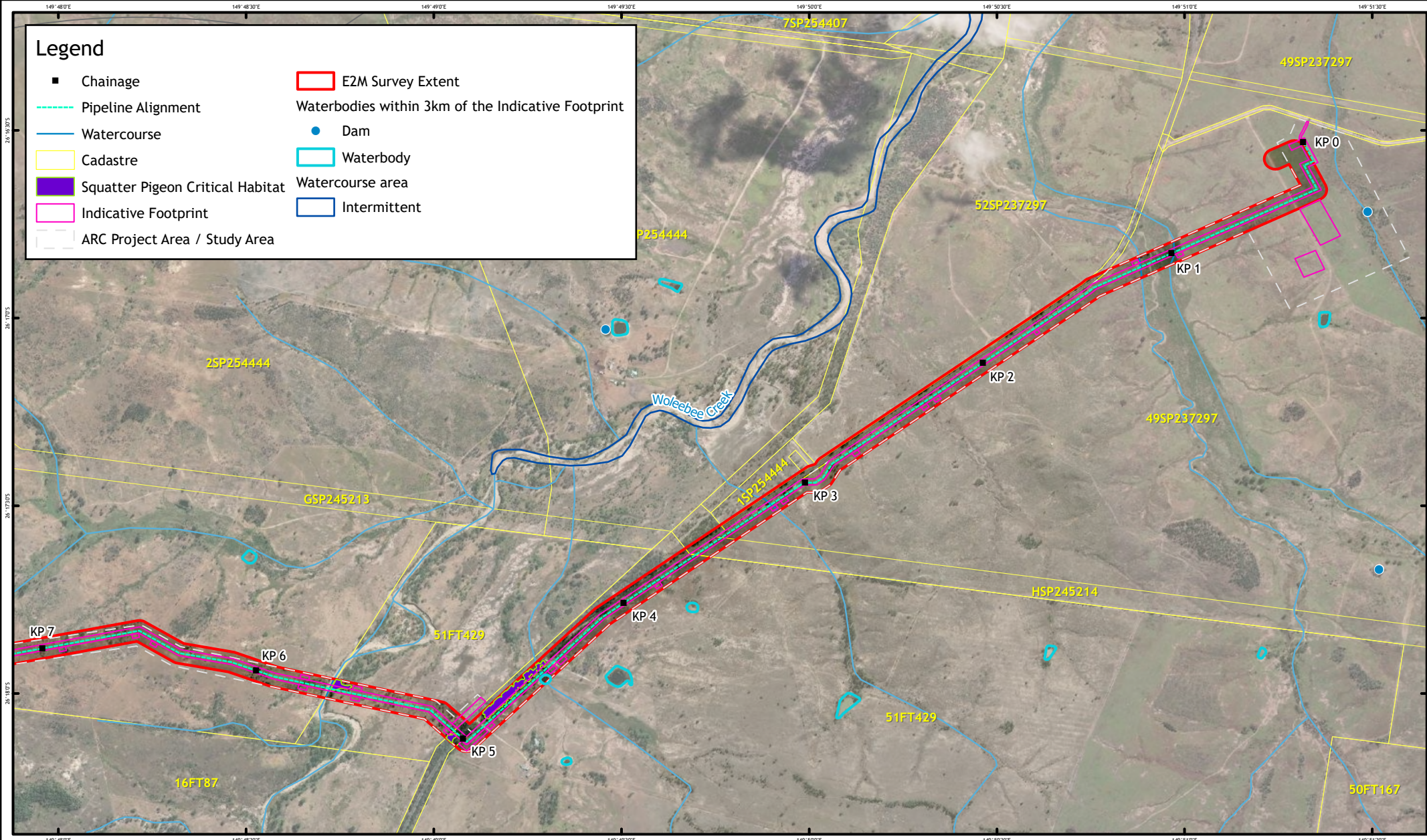
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APPENDIX I: GLOSSY BLACK-COCKATOO HABITAT MAPPING

Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

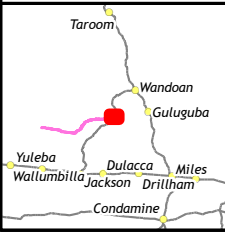
Map Number	Job Number	Rev
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Legend

- Chainage
- Pipeline Alignment
- Watercourse
- ▭ Cadastre
- Squatter Pigeon Critical Habitat
- ▭ Indicative Footprint
- ARC Project Area / Study Area
- ▭ E2M Survey Extent
- Waterbodies within 3km of the Indicative Footprint
- Dam
- ▭ Waterbody
- Watercourse area
- ▭ Intermittent

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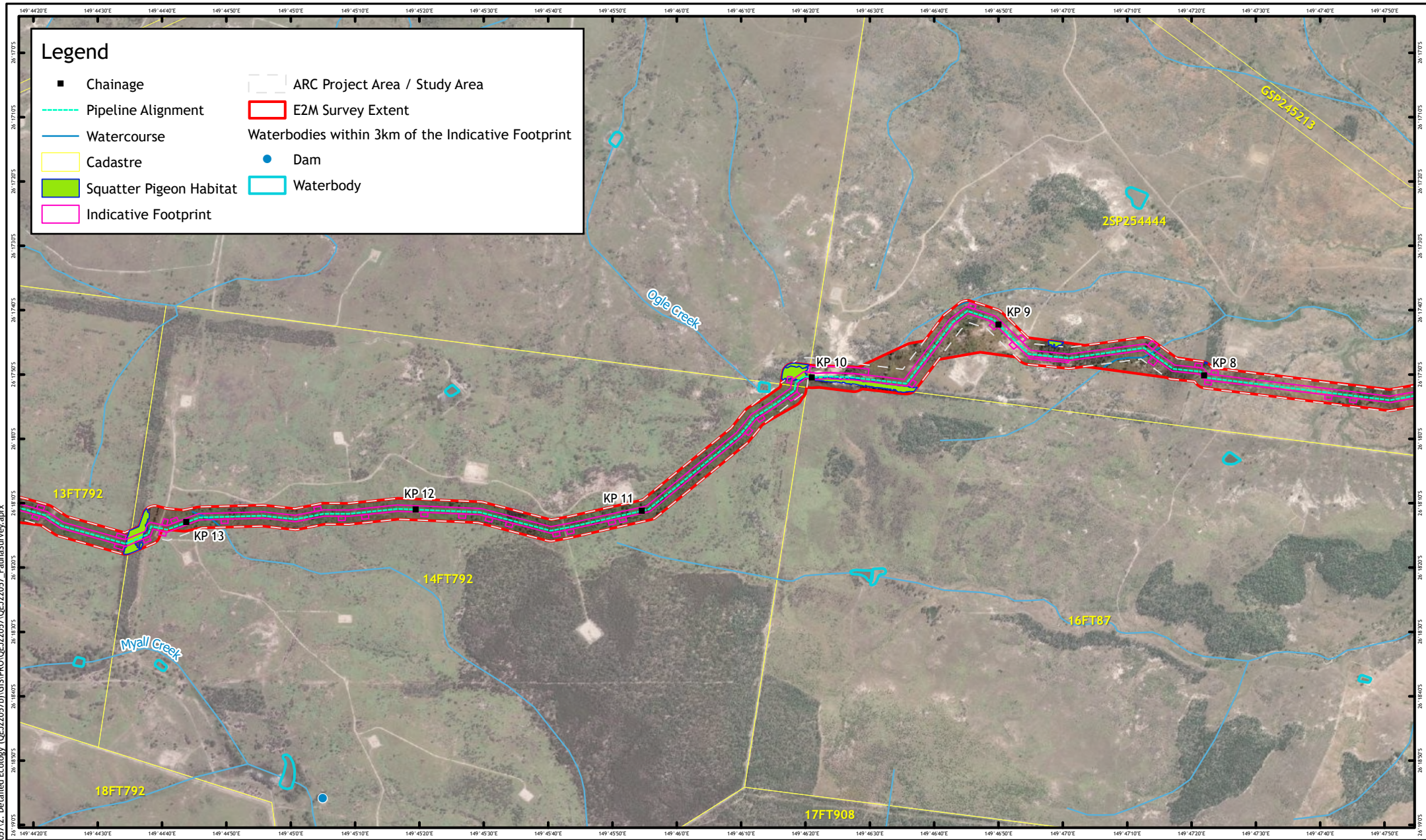
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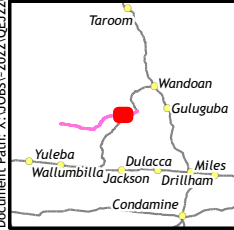
APPENDIX J: SQUATTER PIGEON HABITAT MAPPING

Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

Map Number	Job Number	Rev
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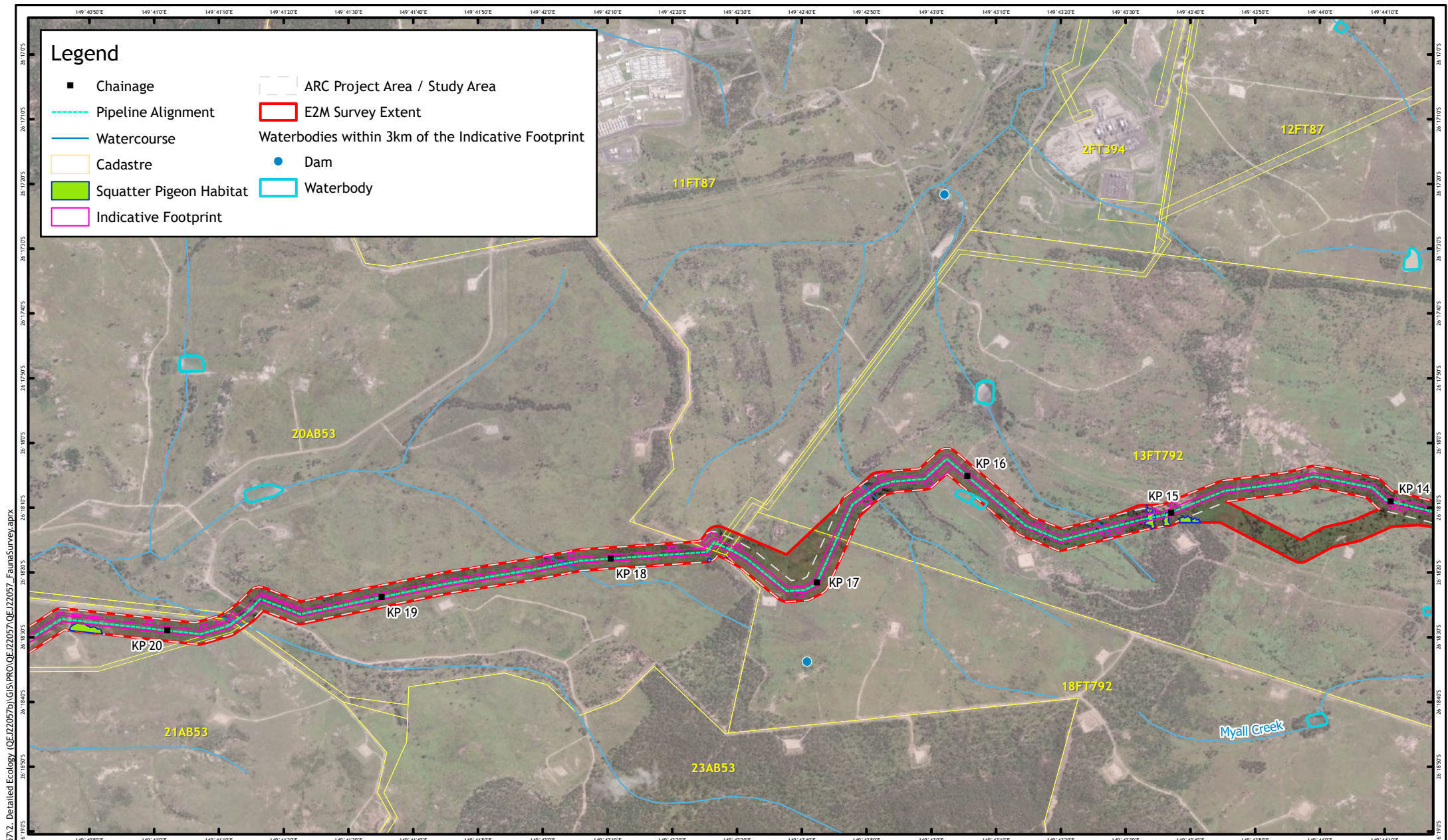
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APPENDIX J: SQUATTER PIGEON HABITAT MAPPING

Atlas to Reedy Creek Pipeline Ecology Survey
 Senex Energy Limited

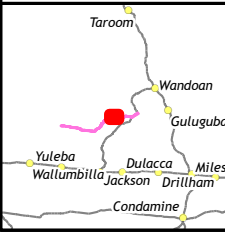
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Legend

- Chainage
- Pipeline Alignment
- Watercourse
- ▭ Cadastre
- Squatter Pigeon Habitat
- ▭ Indicative Footprint
- ▭ ARC Project Area / Study Area
- ▭ E2M Survey Extent
- Waterbodies within 3km of the Indicative Footprint
- Dam
- ▭ Waterbody

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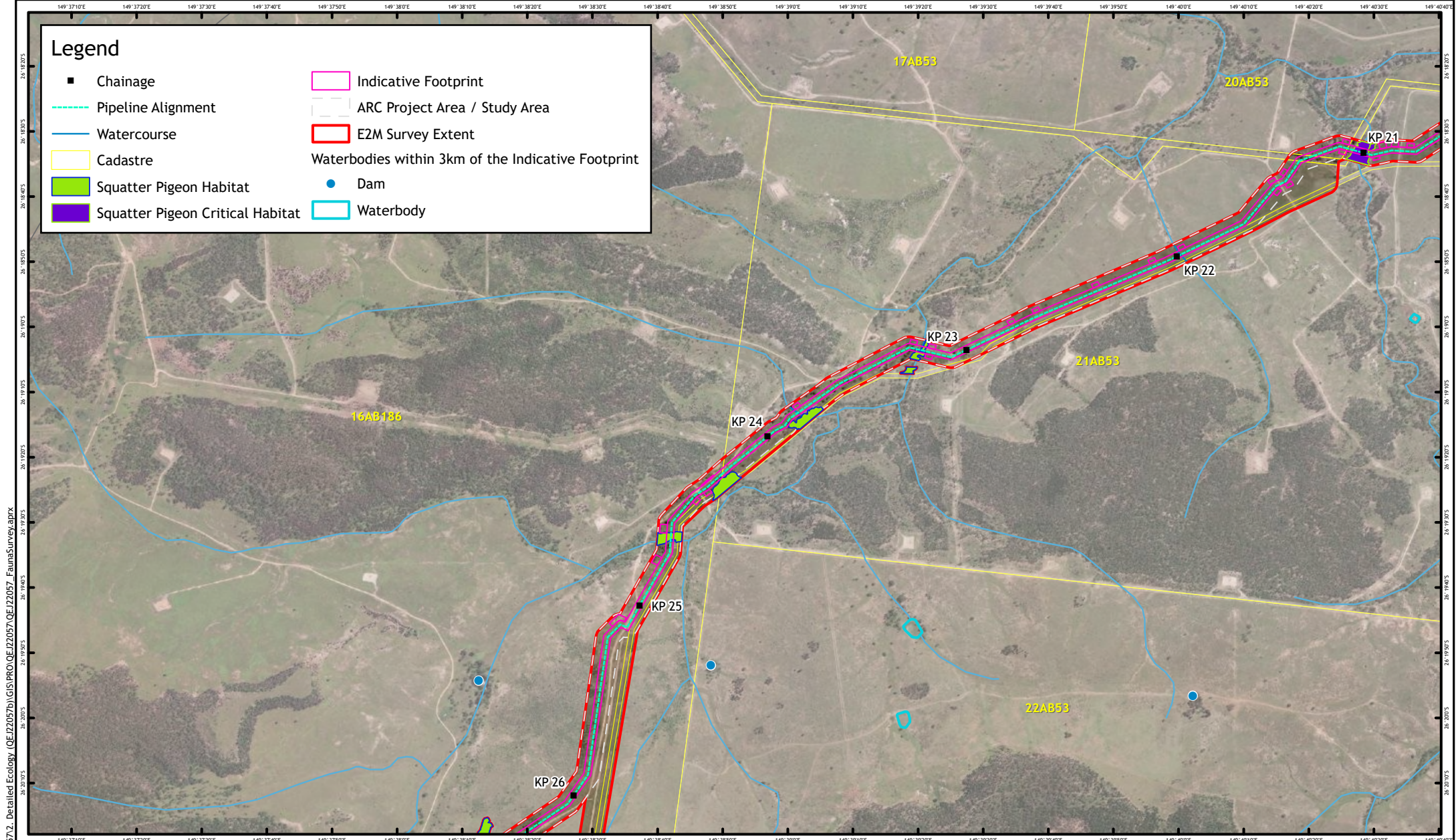
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Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

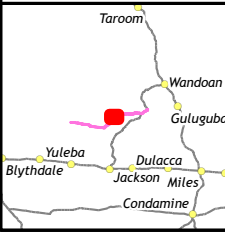
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Legend

- Chainage
- Pipeline Alignment
- Watercourse
- ▭ Cadastre
- Squatter Pigeon Habitat
- Squatter Pigeon Critical Habitat
- ▭ Indicative Footprint
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- ▭ Waterbody

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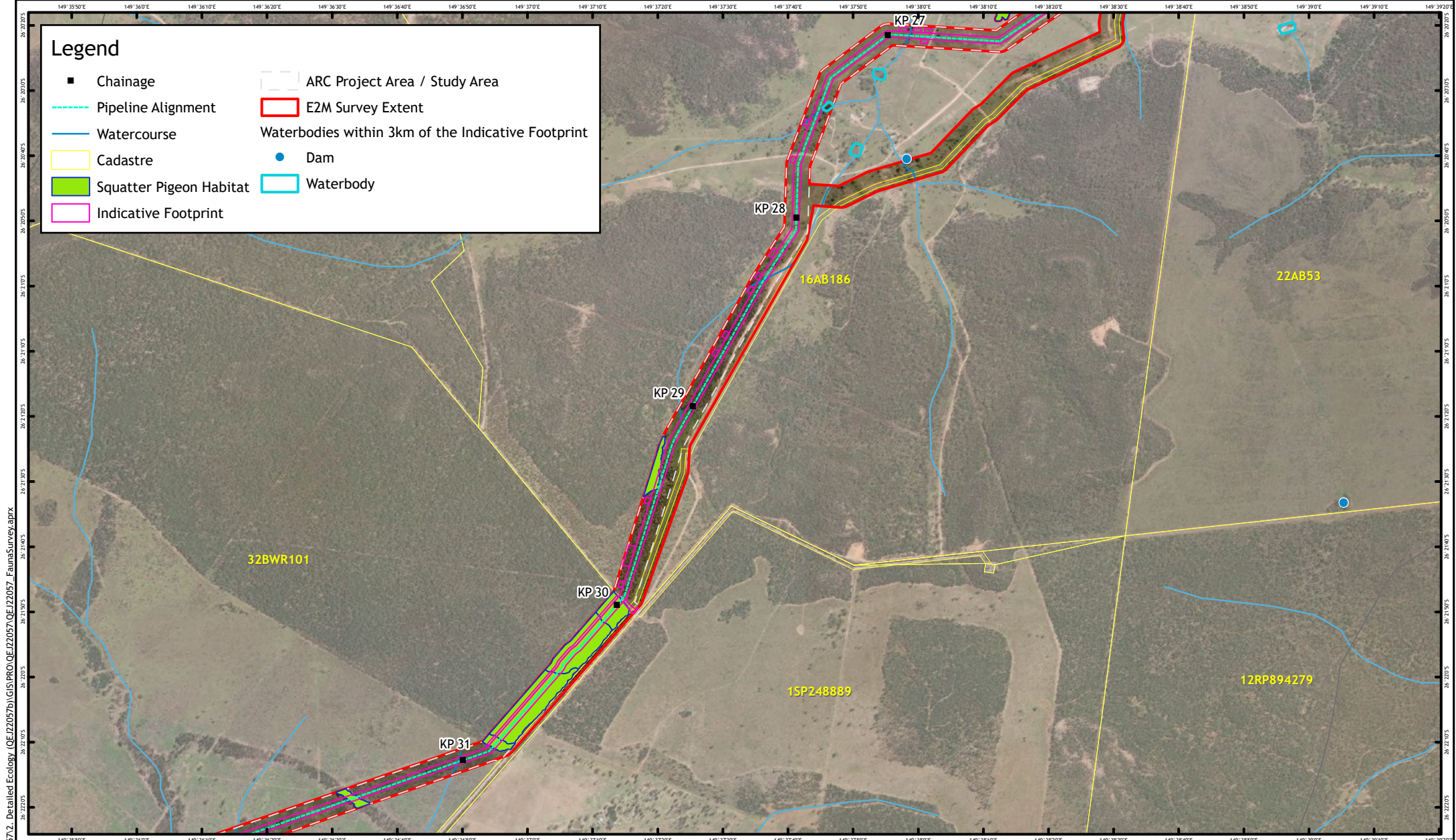
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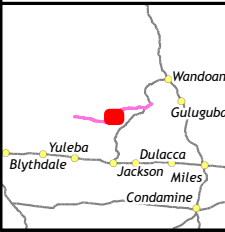
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Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

Map Number	Job Number	Rev
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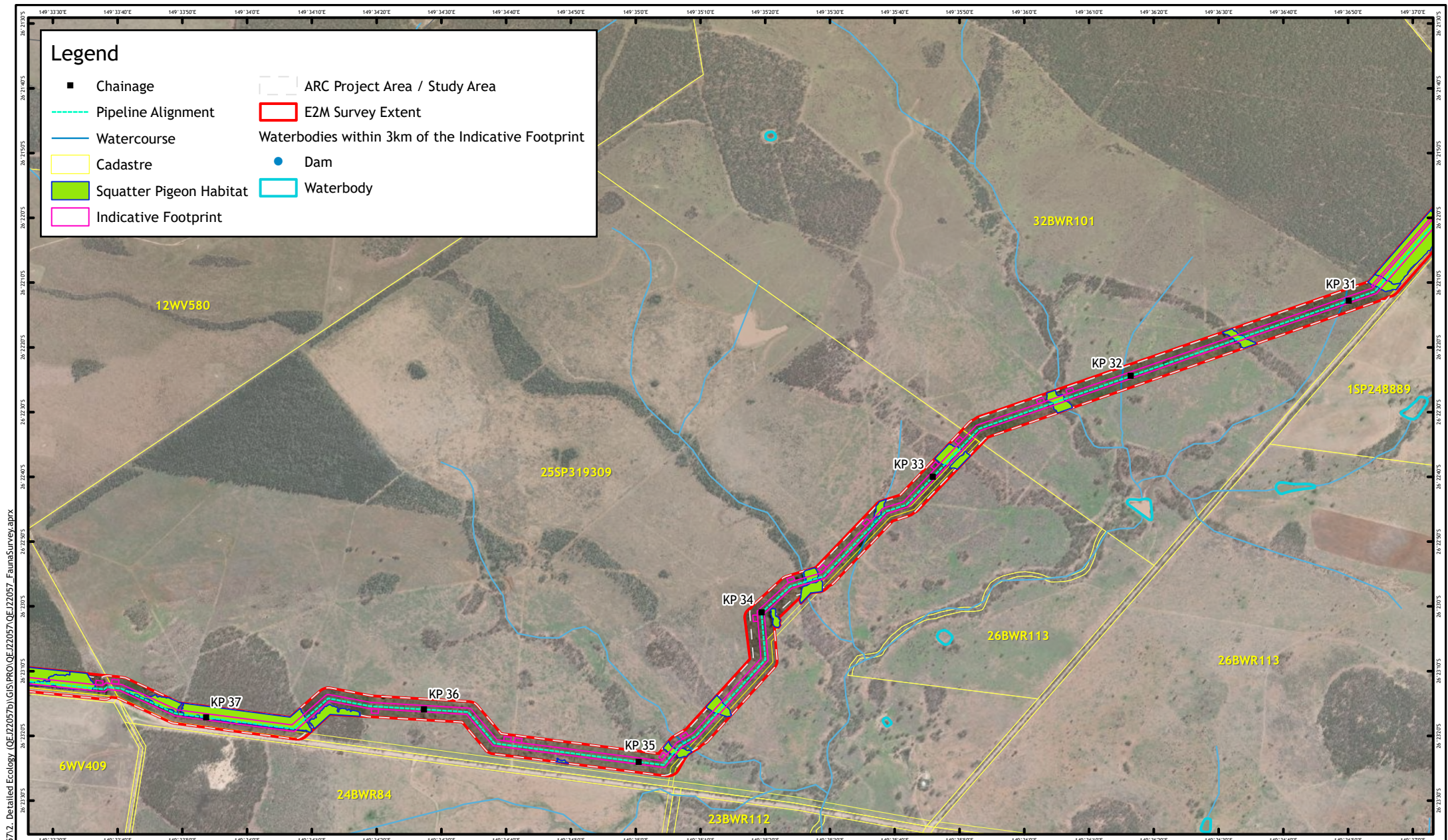
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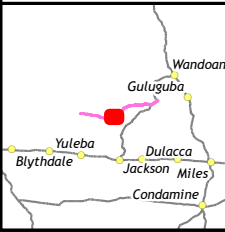
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Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

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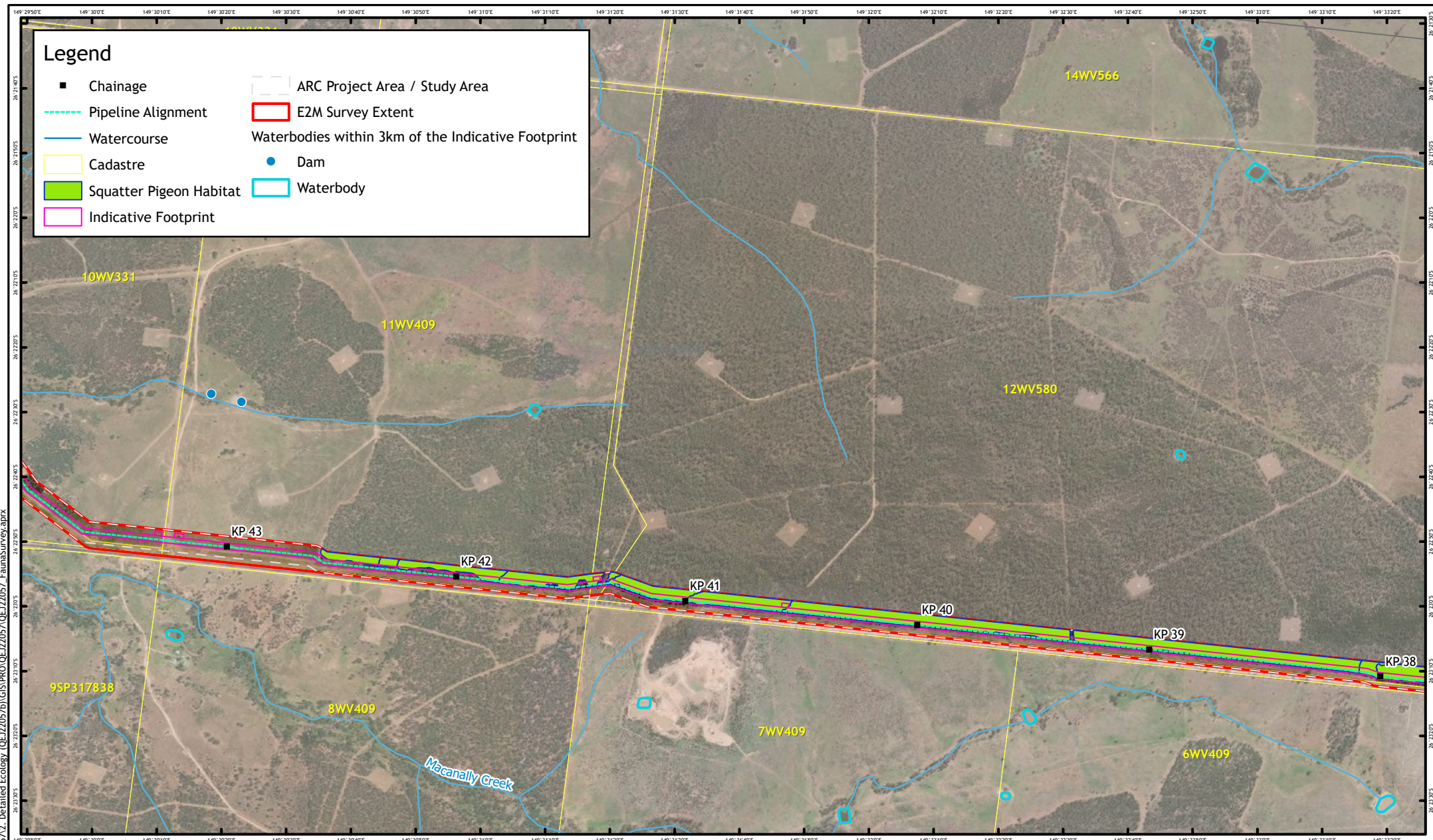
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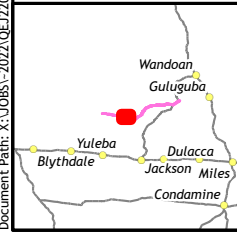
APPENDIX J: SQUATTER PIGEON HABITAT MAPPING

Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

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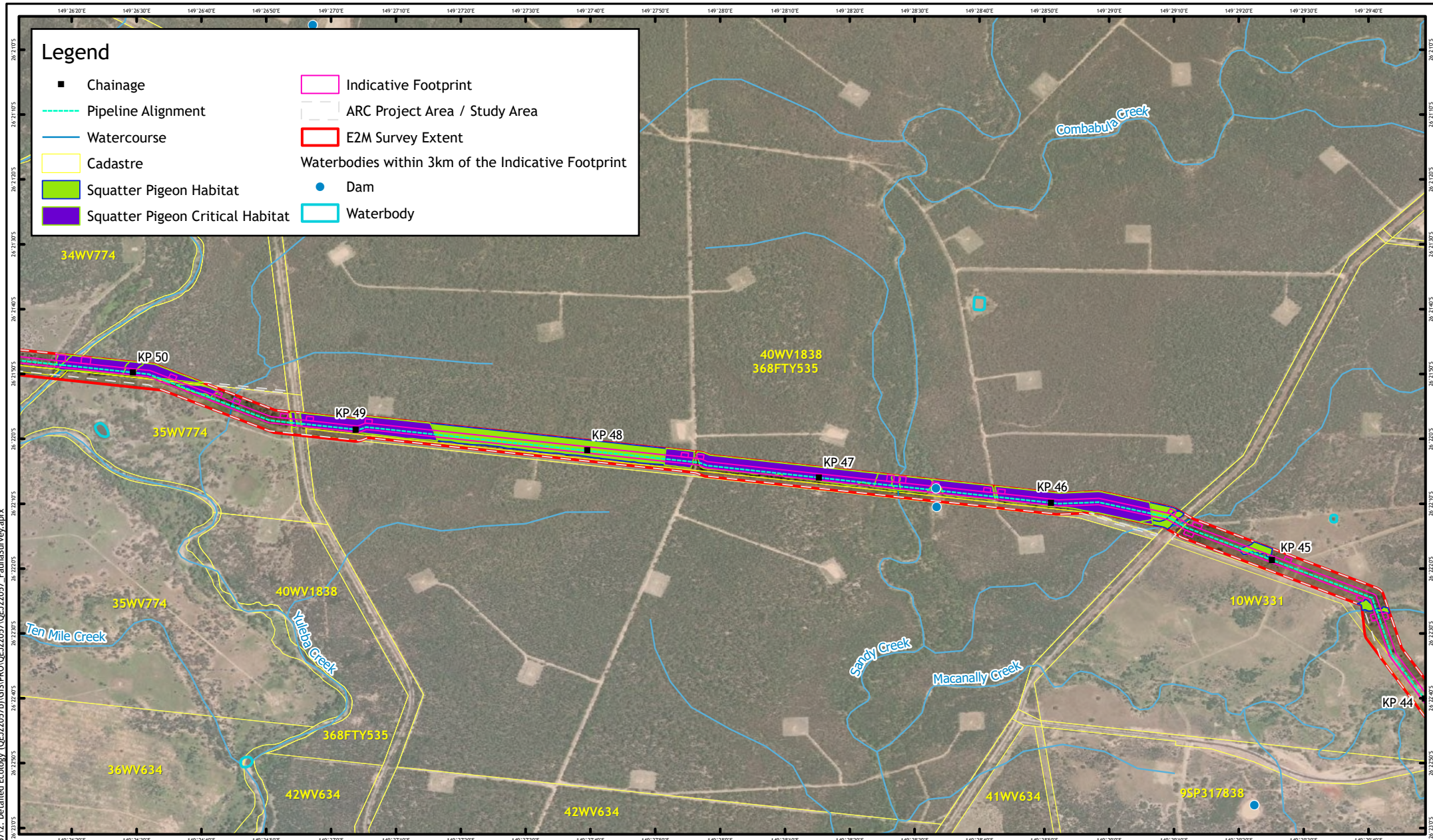
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APPENDIX J: SQUATTER PIGEON HABITAT MAPPING

Atlas to Reedy Creek Pipeline Ecology Survey
 Senex Energy Limited

Map Number	Job Number	Rev
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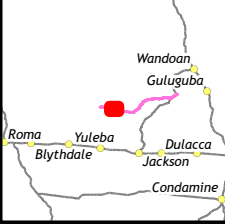


Legend

- Chainage
- Pipeline Alignment
- Watercourse
- ▭ Cadastre
- Squatter Pigeon Habitat
- Squatter Pigeon Critical Habitat
- ▭ Indicative Footprint
- ▭ ARC Project Area / Study Area
- ▭ E2M Survey Extent
- Dam
- ▭ Waterbody

Waterbodies within 3km of the Indicative Footprint

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Kilometres

Coordinate System: GCS GDA 1994

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 Cadastre: © DoR 2022
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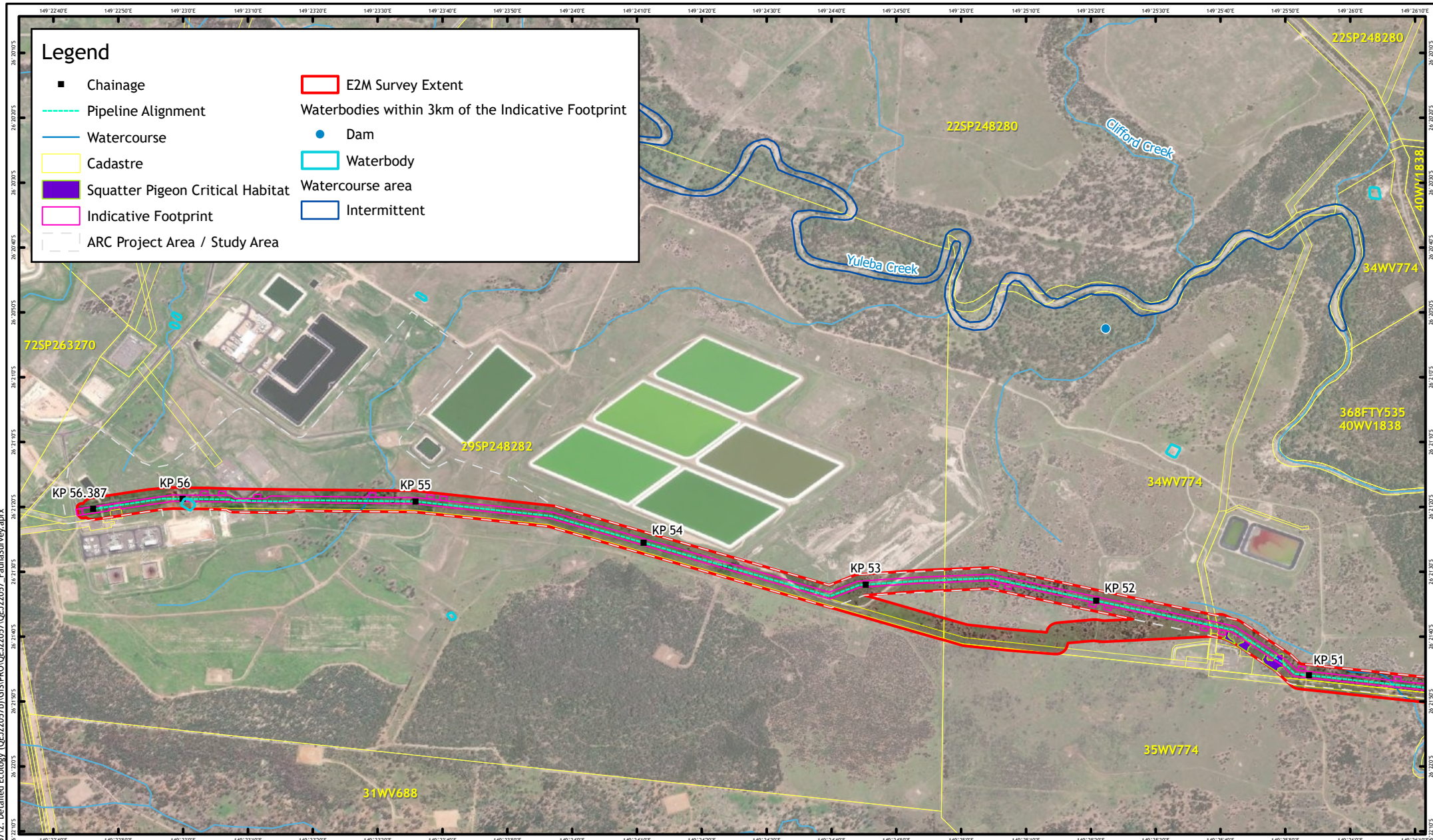
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APPENDIX J: SQUATTER PIGEON HABITAT MAPPING

Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

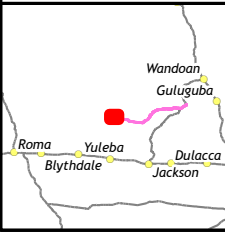
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Legend

- Chainage
- Pipeline Alignment
- Watercourse
- ▭ Cadastre
- Squatter Pigeon Critical Habitat
- ▭ Indicative Footprint
- ▭ ARC Project Area / Study Area
- ▭ E2M Survey Extent
- Waterbodies within 3km of the Indicative Footprint
- Dam
- ▭ Waterbody
- Watercourse area
- ▭ Intermittent

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Coordinate System: GCS GDA 1994

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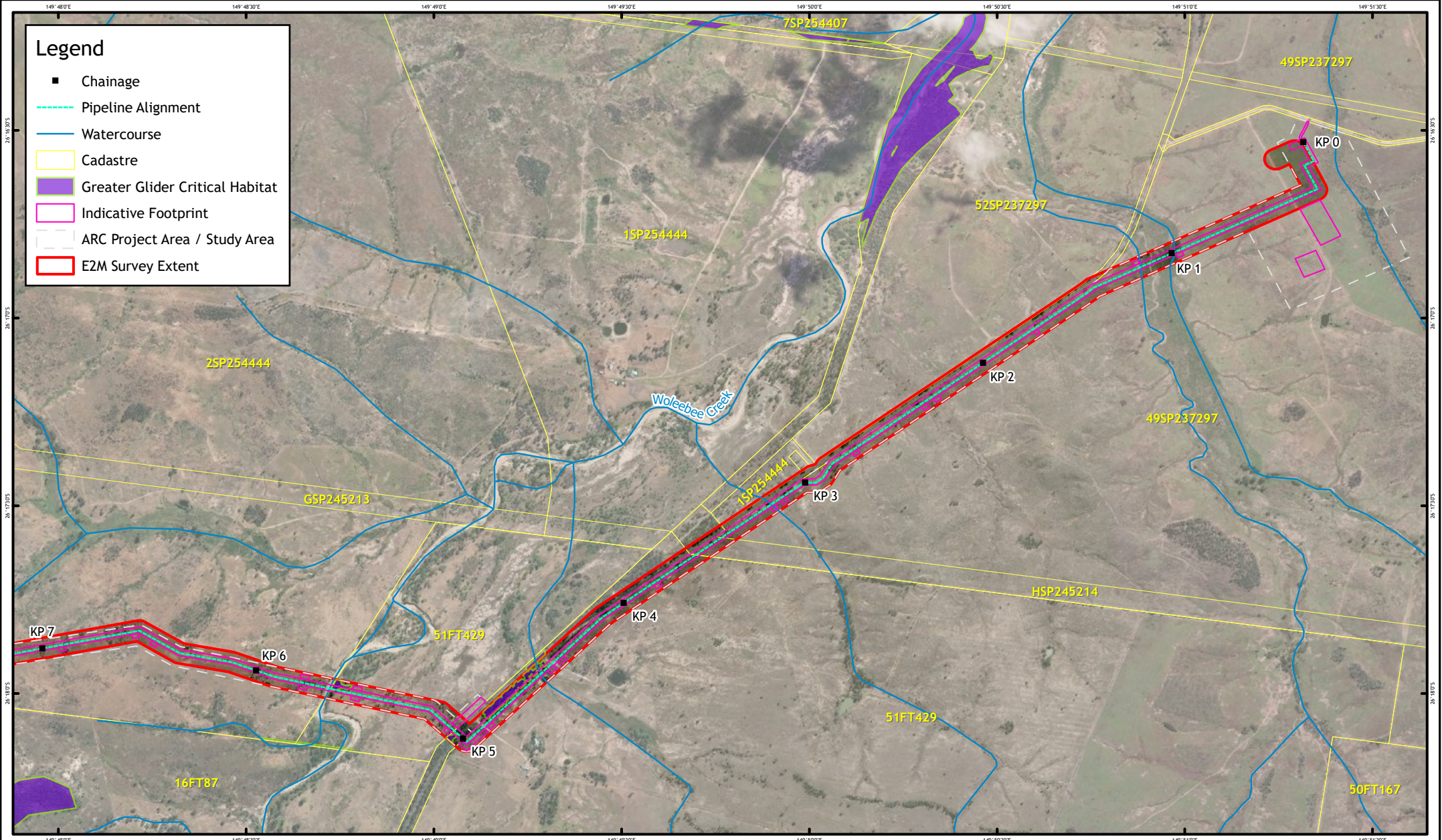
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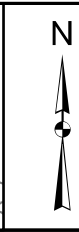
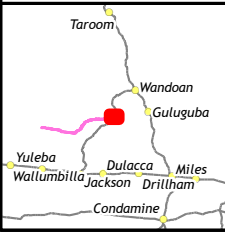
APPENDIX J: SQUATTER PIGEON HABITAT MAPPING

Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

Map Number	Job Number	Rev
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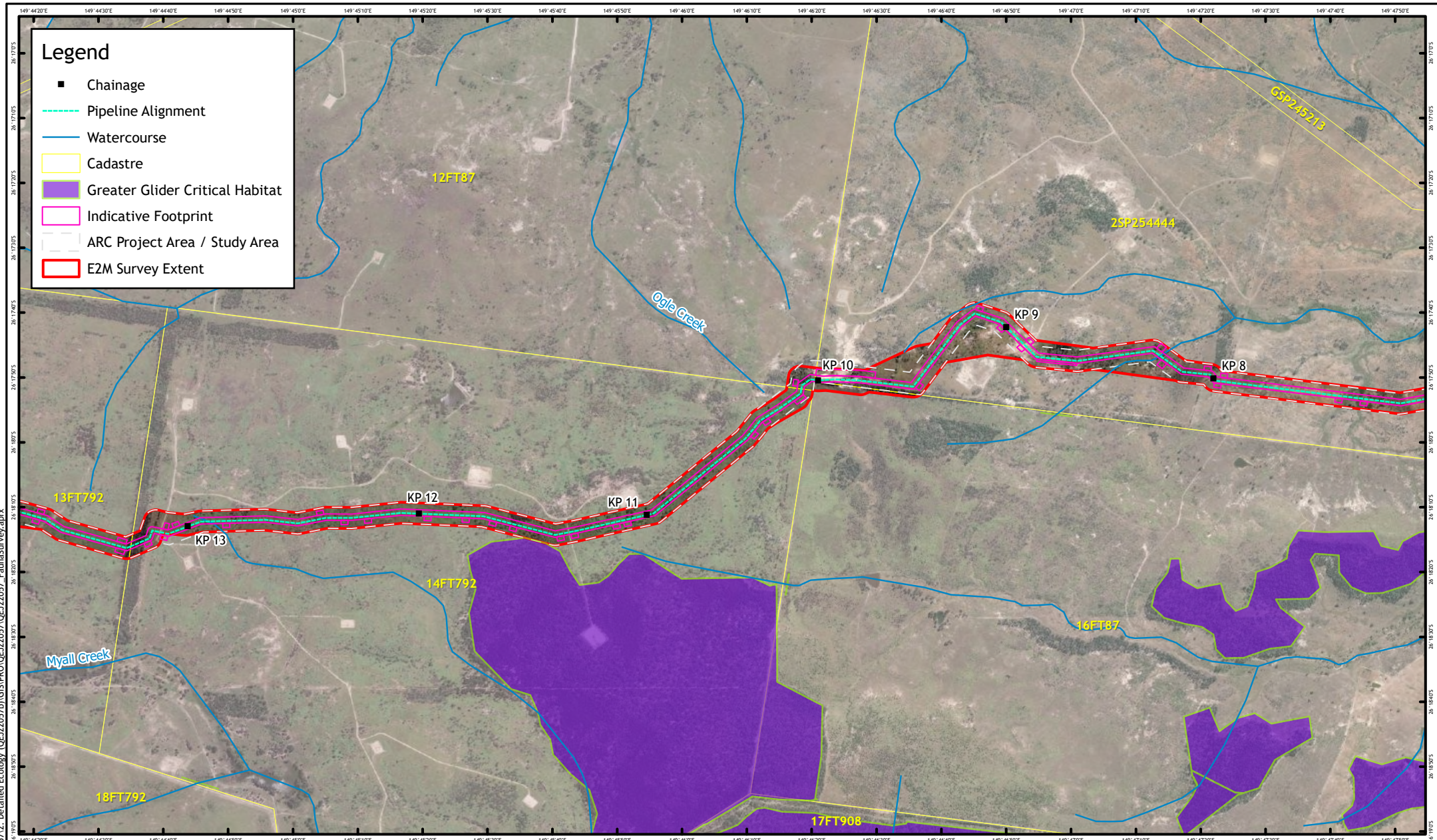
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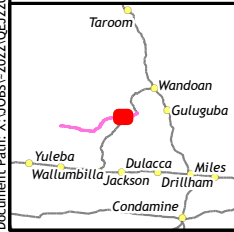
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APPENDIX K: GREATER GLIDER HABITAT MAPPING		
Atlas to Reedy Creek Pipeline Ecology Survey Senex Energy Limited		
Map Number	Job Number	Rev
1 of 9	QEJ22057	0



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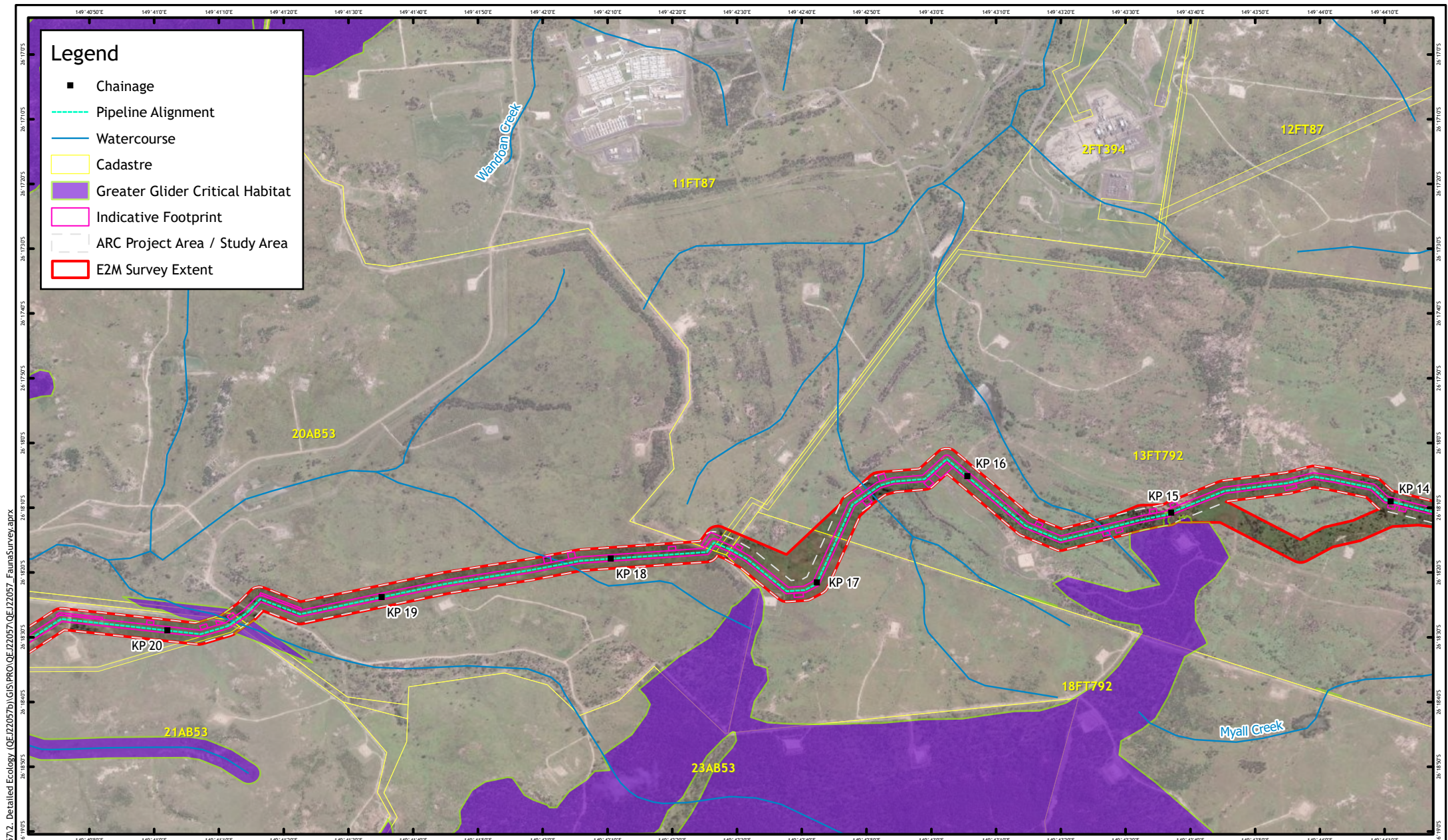
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Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

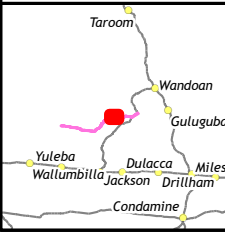
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Legend

- Chainage
- Pipeline Alignment
- Watercourse
- ▭ Cadastre
- ▭ Greater Glider Critical Habitat
- ▭ Indicative Footprint
- ARC Project Area / Study Area
- ▭ E2M Survey Extent

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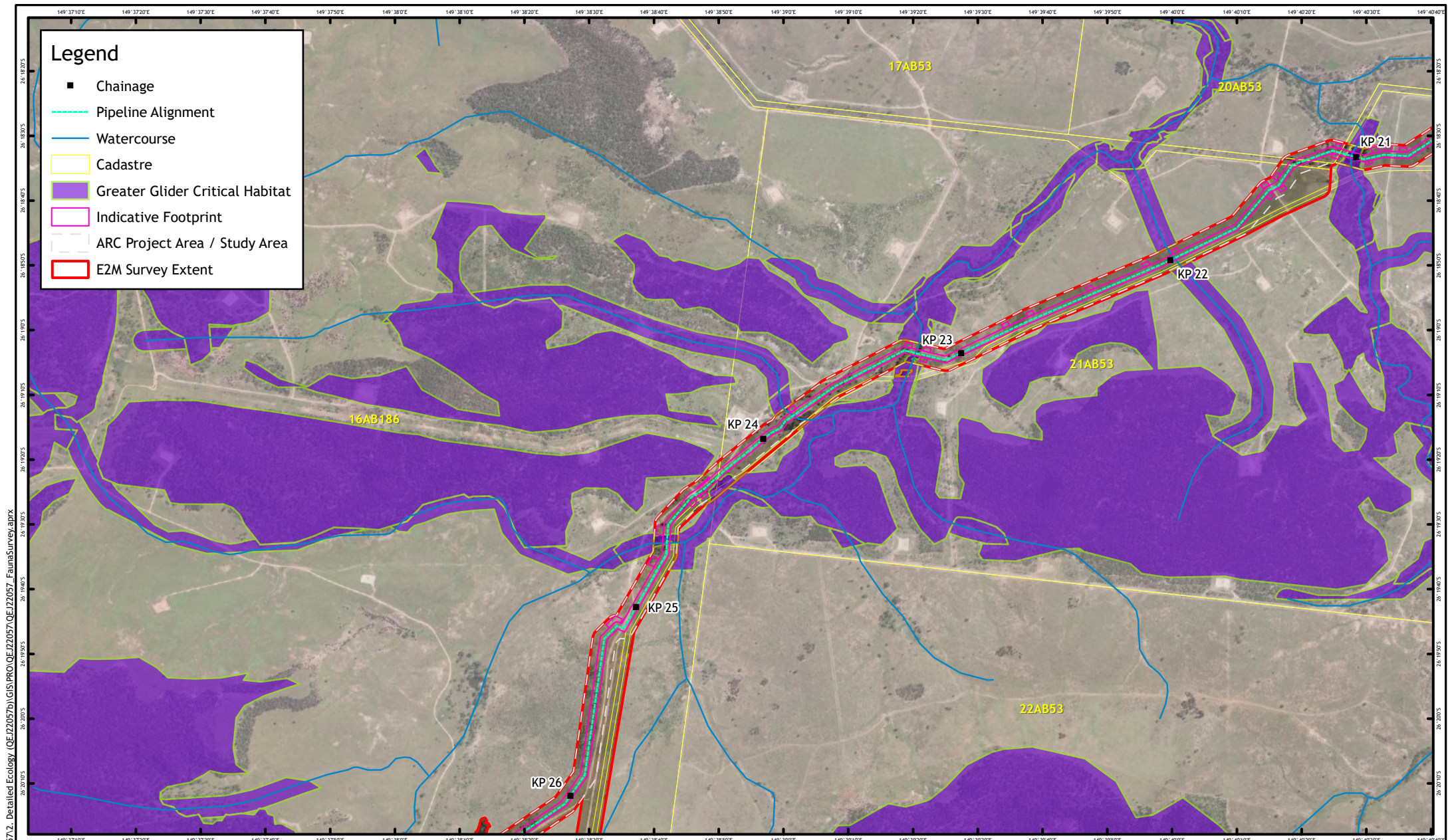
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Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

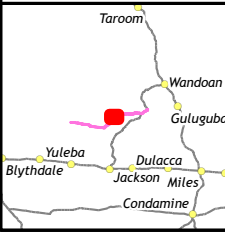
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Legend

- Chainage
- Pipeline Alignment
- Watercourse
- ▭ Cadastre
- ▭ Greater Glider Critical Habitat
- ▭ Indicative Footprint
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**APPENDIX K: GREATER GLIDER
HABITAT MAPPING**

Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

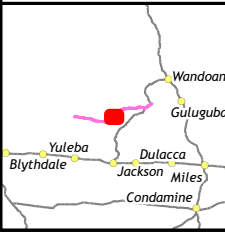
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Legend

- Chainage
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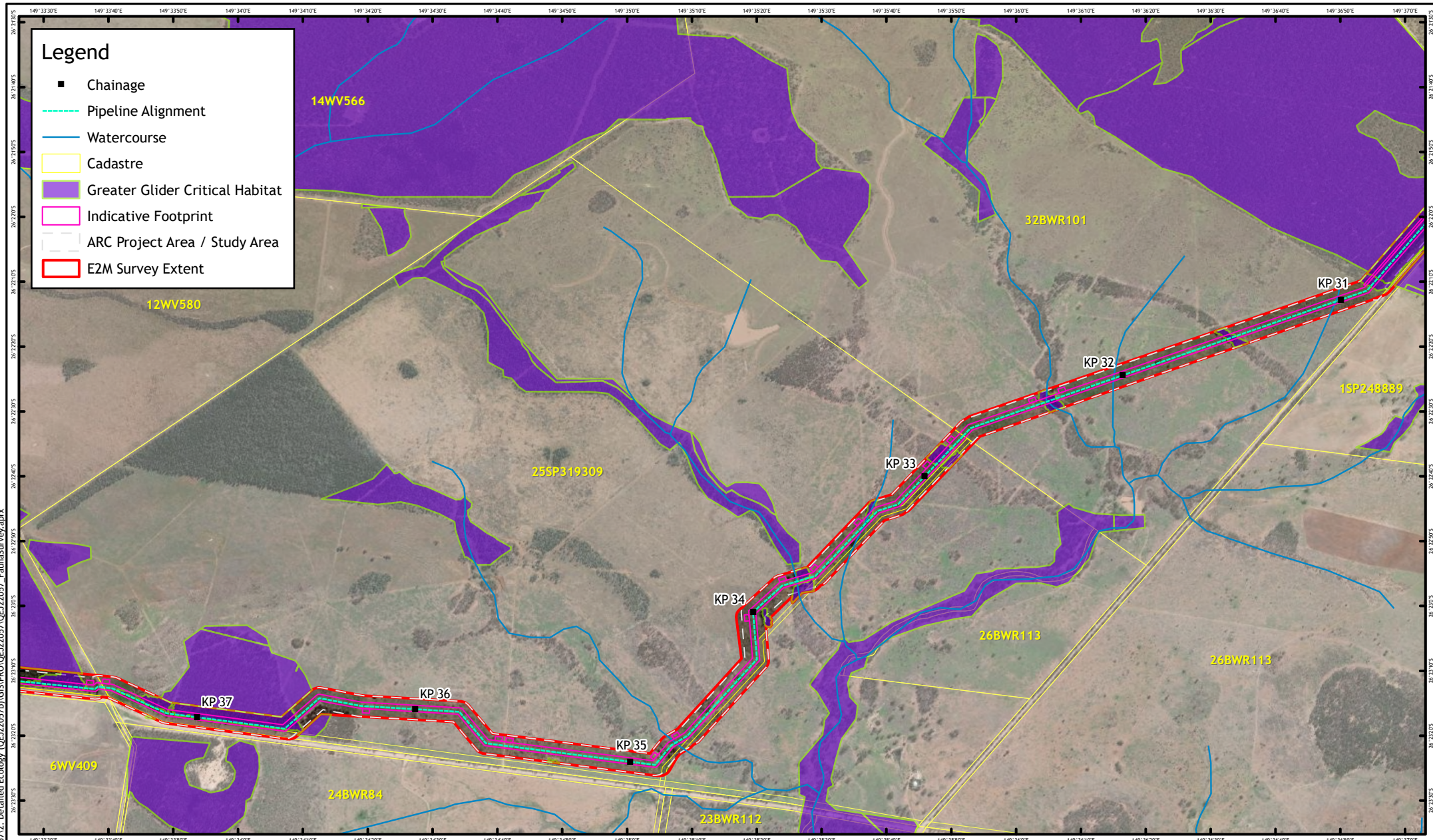
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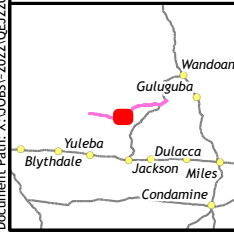
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Legend

- Chainage
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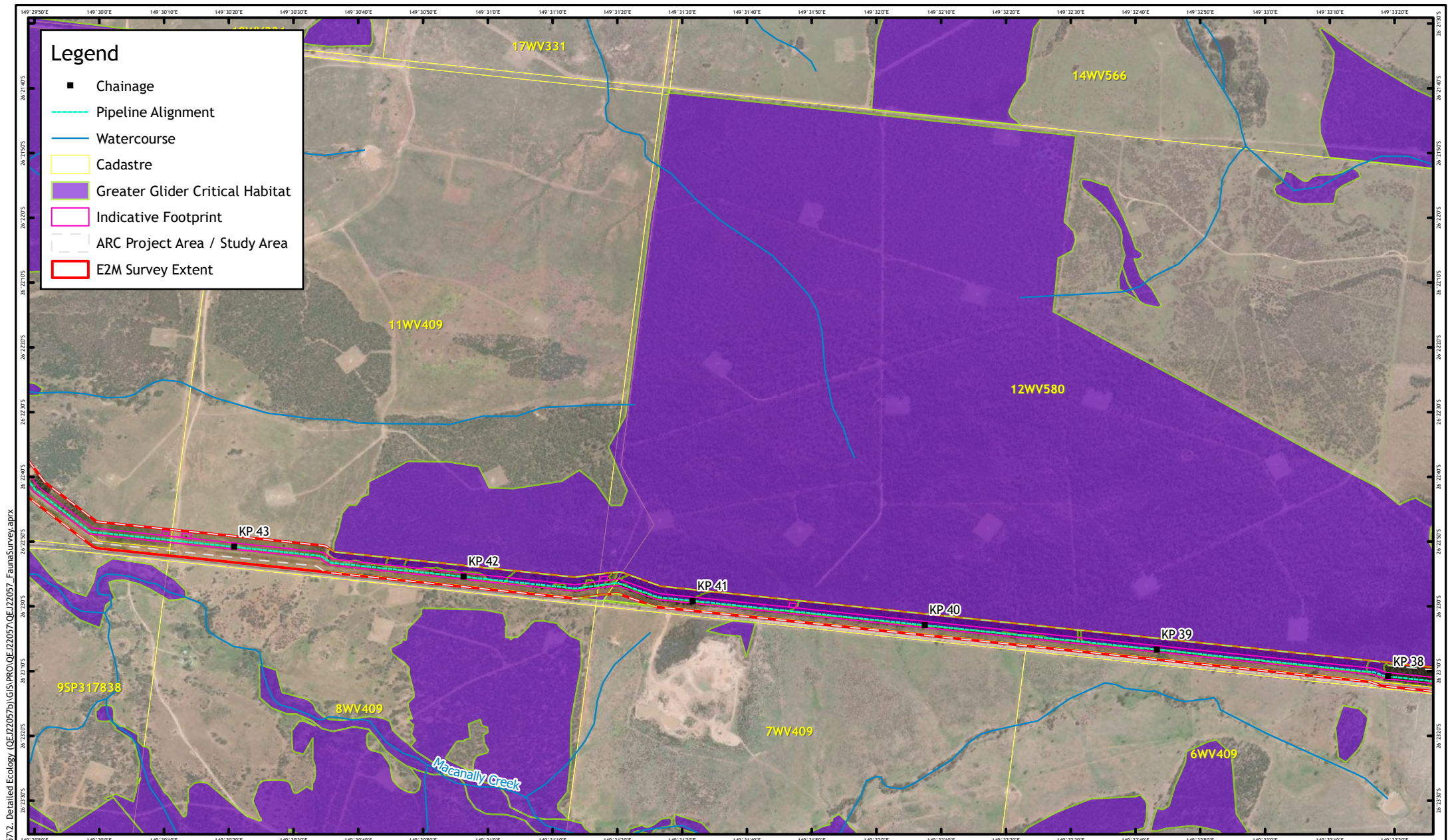
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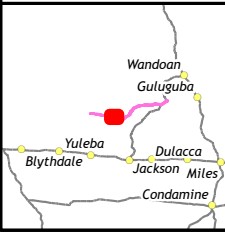
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Legend

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- ▭ Cadastre
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- ▭ Indicative Footprint
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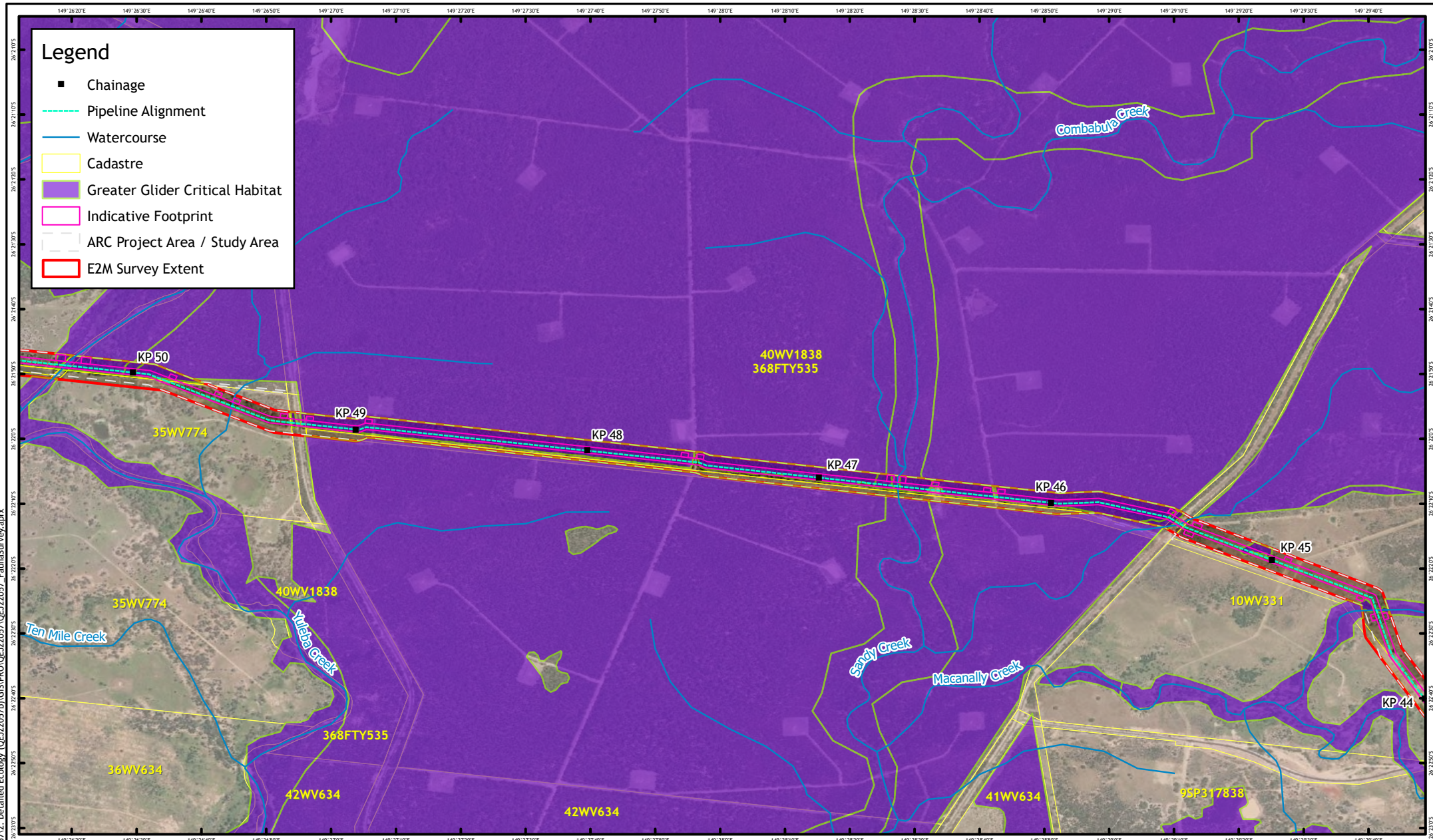
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Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

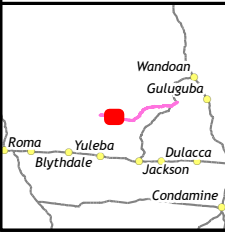
Map Number	Job Number	Rev
7 of 9	QEJ22057	0



Legend

- Chainage
- Pipeline Alignment
- Watercourse
- ▭ Cadastre
- Greater Glider Critical Habitat
- ▭ Indicative Footprint
- ▭ ARC Project Area / Study Area
- ▭ E2M Survey Extent

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Scale 1:24,000 (A4)

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Kilometres

Coordinate System: GCS GDA 1994

Notes:
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 Cadastre: © DoR 2022
 Ordered Drainage: © DoR 2022
 Road: © DoR 2022
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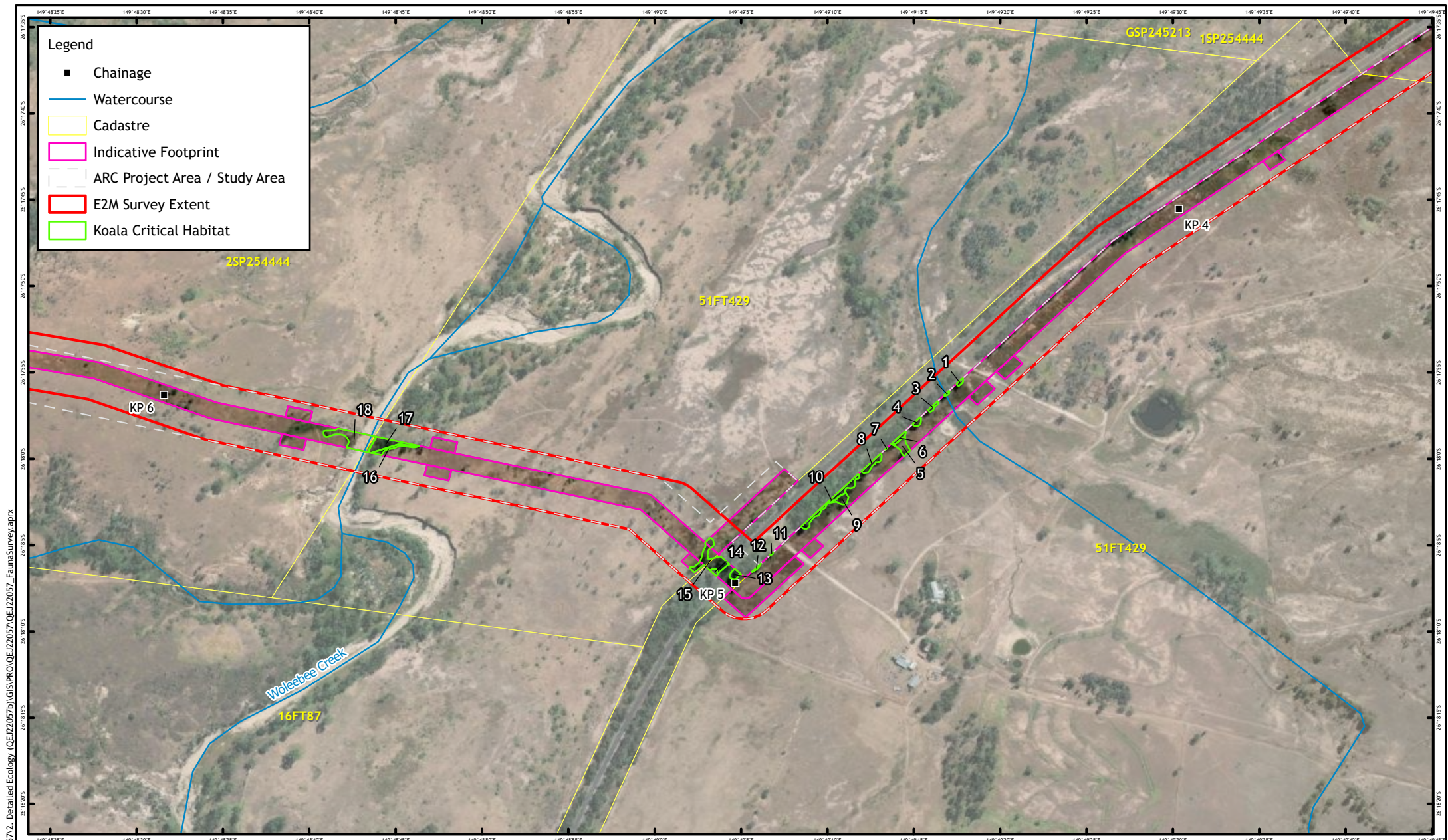
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A	Issued for Review	GO	HR	14/11/2022



APPENDIX K: GREATER GLIDER HABITAT MAPPING

Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

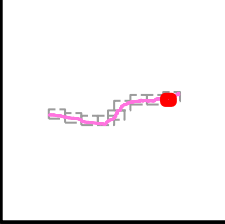
Map Number	Job Number	Rev
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Legend

- Chainage
- Watercourse
- ▭ Cadastre
- ▭ Indicative Footprint
- ▭ ARC Project Area / Study Area
- ▭ E2M Survey Extent
- ▭ Koala Critical Habitat

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Meters

Coordinate System: GCS GDA 1994

Notes:
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 Cadastre: © DoR 2022
 Ordered Drainage: © DoR 2022
 Road: © DoR 2022

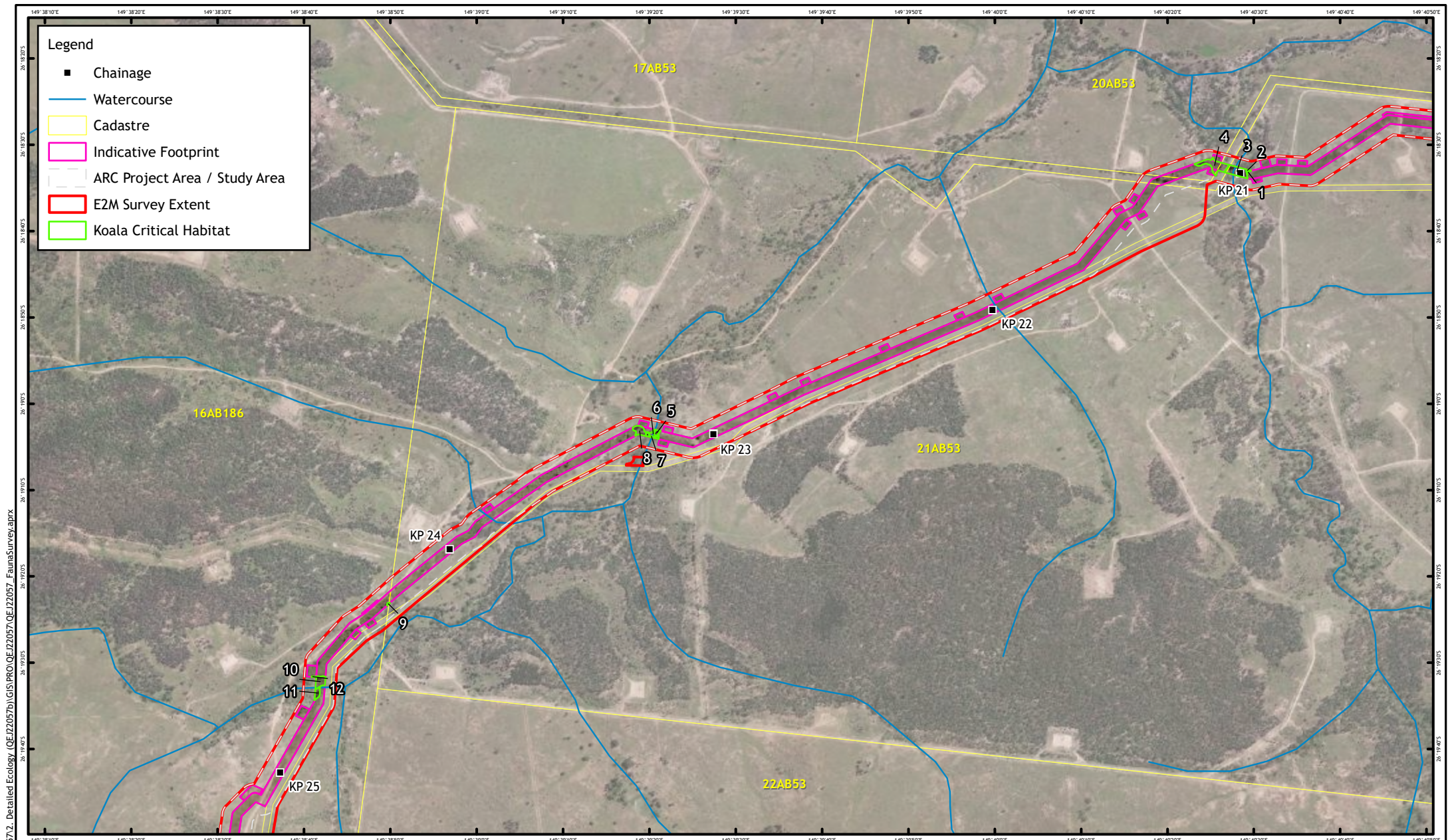
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A	Issued for Review	GO	HR	05/12/2022



APPENDIX L: KOALA HABITAT MAPPING AND HABITAT PATCH ANALYSIS

Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

Map Number	Job Number	Rev
1 of 5	QEJ22057	0



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Legend

- Chainage
- Watercourse
- ▭ Cadastre
- ▭ Indicative Footprint
- ▭ ARC Project Area / Study Area
- ▭ E2M Survey Extent
- ▭ Koala Critical Habitat

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Scale 1:18,000 (A4)

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Meters

Coordinate System: GCS GDA 1994

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 Ordered Drainage: © DoR 2022
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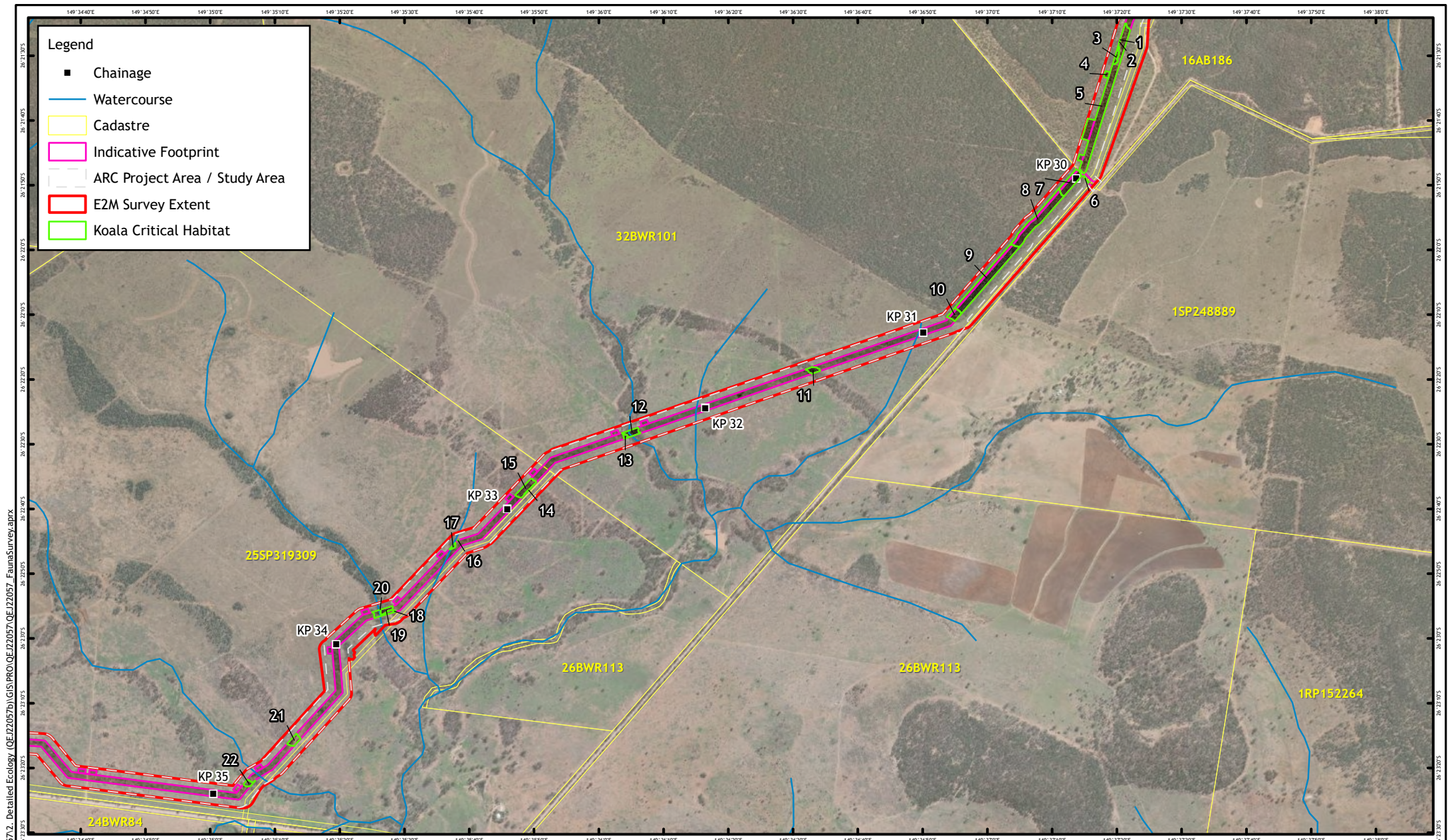
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APPENDIX L: KOALA HABITAT MAPPING AND HABITAT PATCH ANALYSIS

Atlas to Reedy Creek Pipeline Ecology Survey
 Senex Energy Limited

Map Number	Job Number	Rev
2 of 5	QEJ22057	0



Legend

- Chainage
- Watercourse
- Cadastre
- - - Indicative Footprint
- - - ARC Project Area / Study Area
- - - E2M Survey Extent
- Koala Critical Habitat

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Meters

Coordinate System: GCS GDA 1994

Notes:
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 Cadastre: © DoR 2022
 Ordered Drainage: © DoR 2022
 Road: © DoR 2022

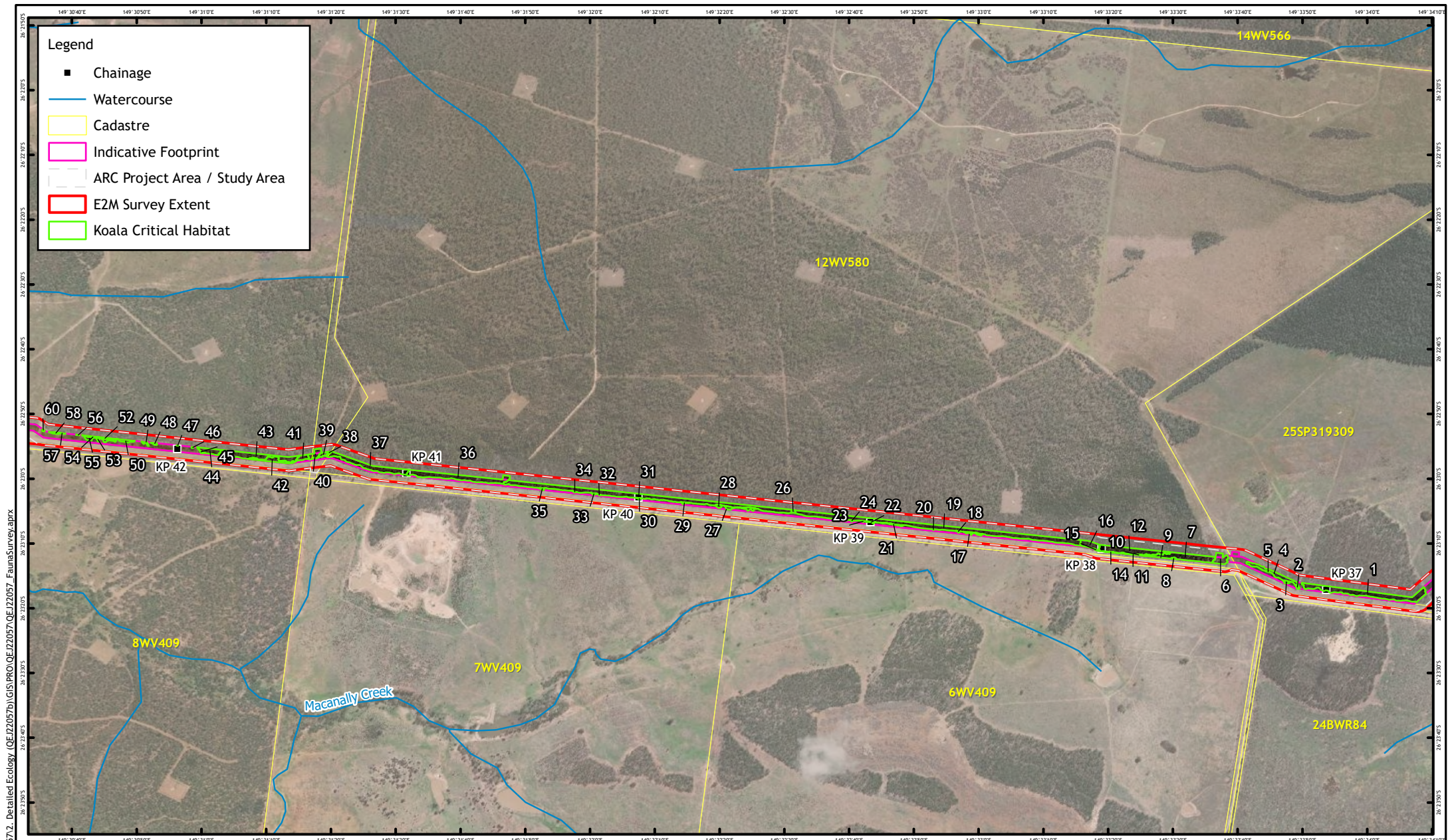
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A	Issued for Review	GO	HR	05/12/2022



APPENDIX L: KOALA HABITAT MAPPING AND HABITAT PATCH ANALYSIS

Atlas to Reedy Creek Pipeline Ecology Survey
 Senex Energy Limited

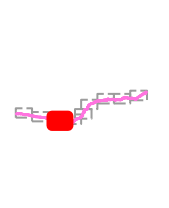
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Legend

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- ▭ E2M Survey Extent
- ▭ Koala Critical Habitat

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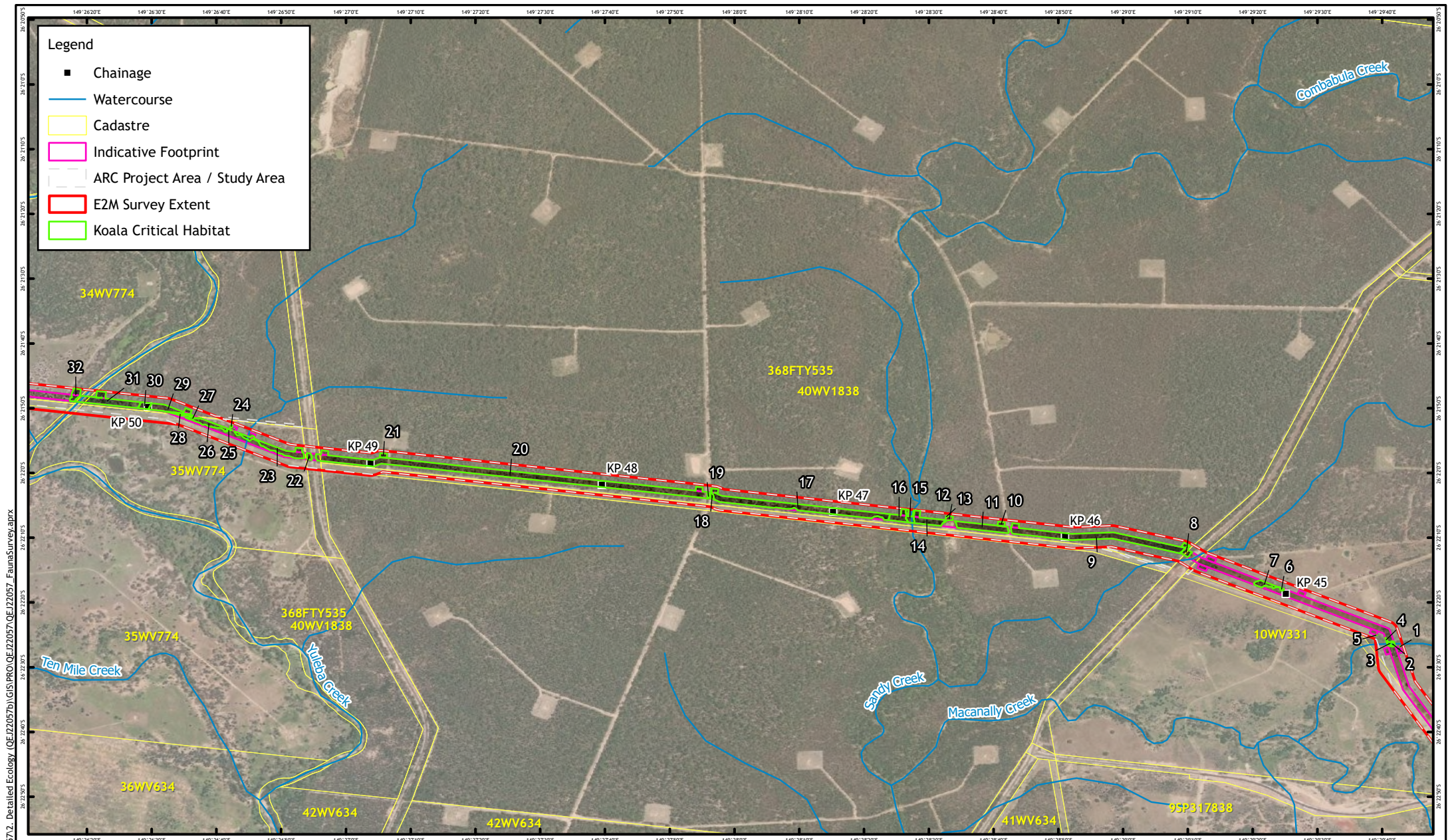
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A	Issued for Review	GO	HR	05/12/2022



APPENDIX L: KOALA HABITAT MAPPING AND HABITAT PATCH ANALYSIS

Atlas to Reedy Creek Pipeline Ecology Survey
 Senex Energy Limited

Map Number	Job Number	Rev
4 of 5	QEJ22057	0



Legend

- Chainage
- Watercourse
- ▭ Cadastre
- ▭ Indicative Footprint
- ▭ ARC Project Area / Study Area
- ▭ E2M Survey Extent
- ▭ Koala Critical Habitat

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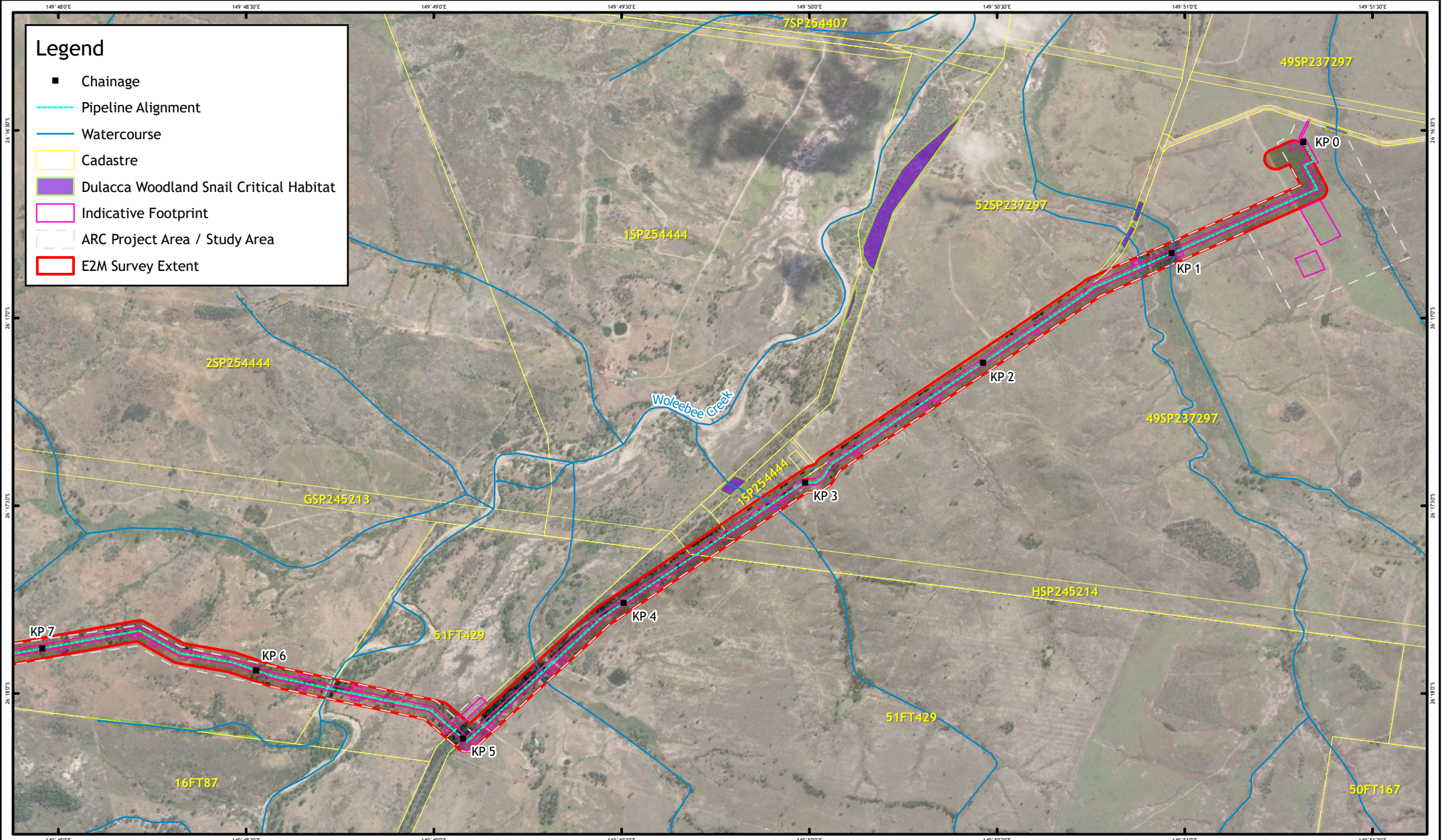
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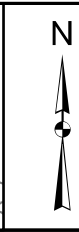
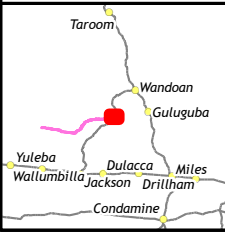
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Atlas to Reedy Creek Pipeline Ecology Survey
 Senex Energy Limited

Map Number	Job Number	Rev
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Document Path: X:\JOBS\2022\QEJ22057_2_Detailed Ecology (QEJ22057D)\GIS\PRO\QEJ22057_QEJ22057_FaunaSurvey.aprx



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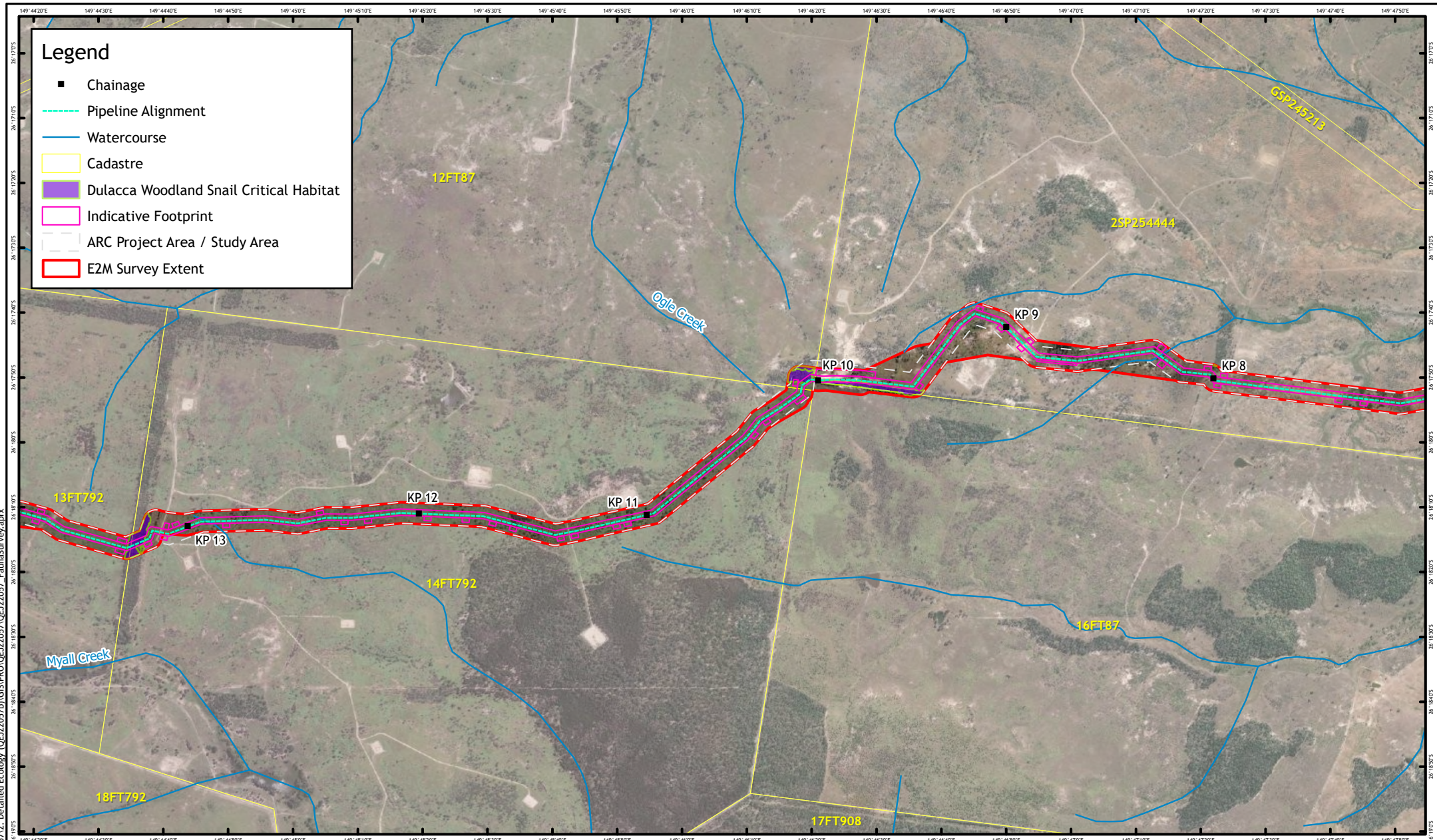
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Notes:
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 Road: © DoR 2022
 Hydrographic features: © DoR 2023

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0	Issued for Use	GO	ED	12/10/2023
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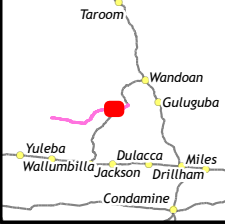
APPENDIX M: DULACCA WOODLAND SNAIL HABITAT MAPPING		
Atlas to Reedy Creek Pipeline Ecology Survey Senex Energy Limited		
Map Number	Job Number	Rev
1 of 9	QEJ22057	0



Legend

- Chainage
- Pipeline Alignment
- Watercourse
- ▭ Cadastre
- ▭ Dulacca Woodland Snail Critical Habitat
- ▭ Indicative Footprint
- ▭ ARC Project Area / Study Area
- ▭ E2M Survey Extent

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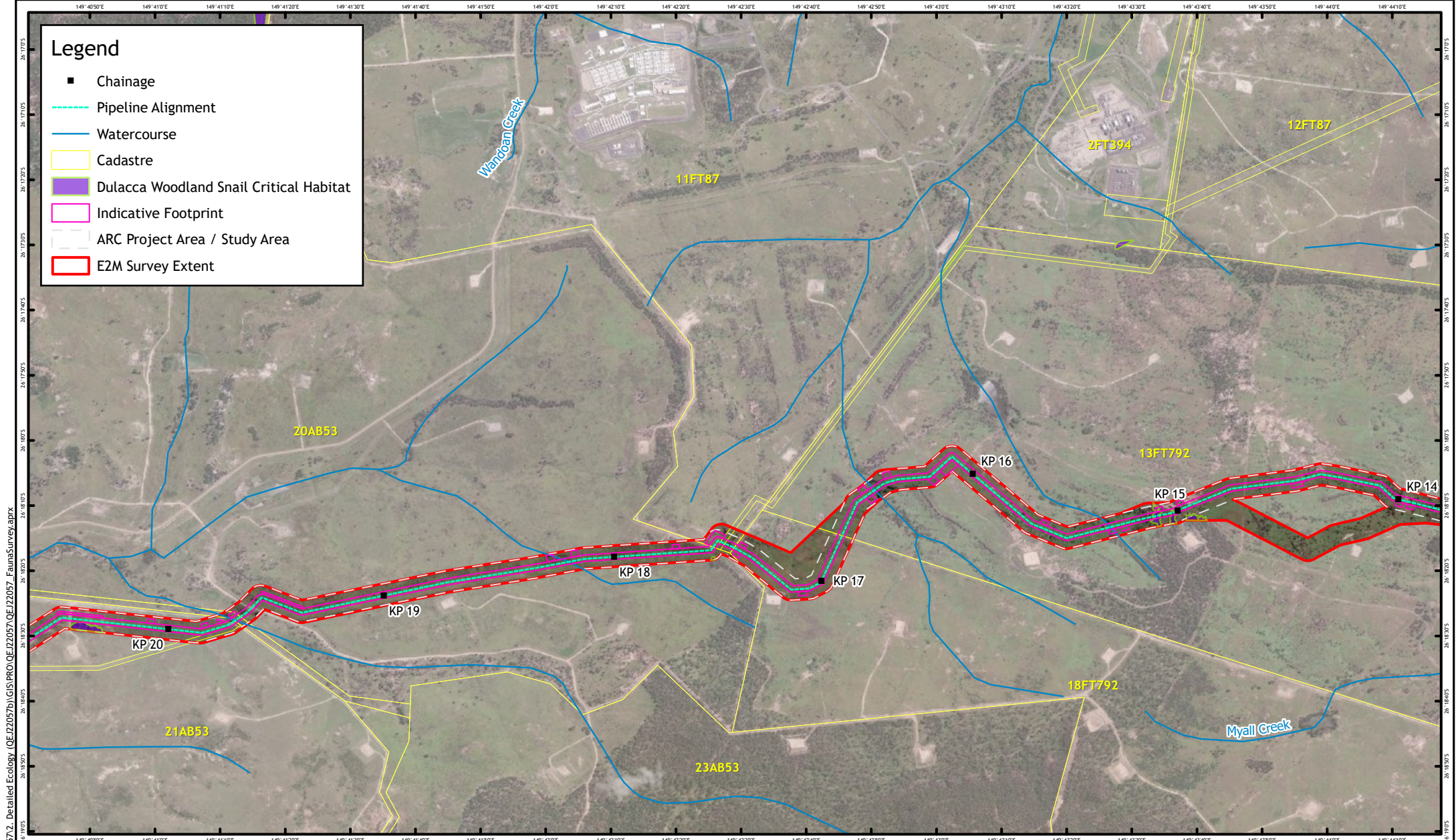
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APPENDIX M: DULACCA WOODLAND SNAIL HABITAT MAPPING

Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

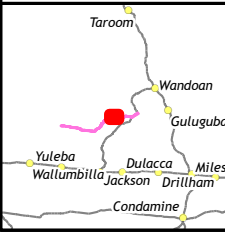
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Legend

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Coordinate System: GCS GDA 1994

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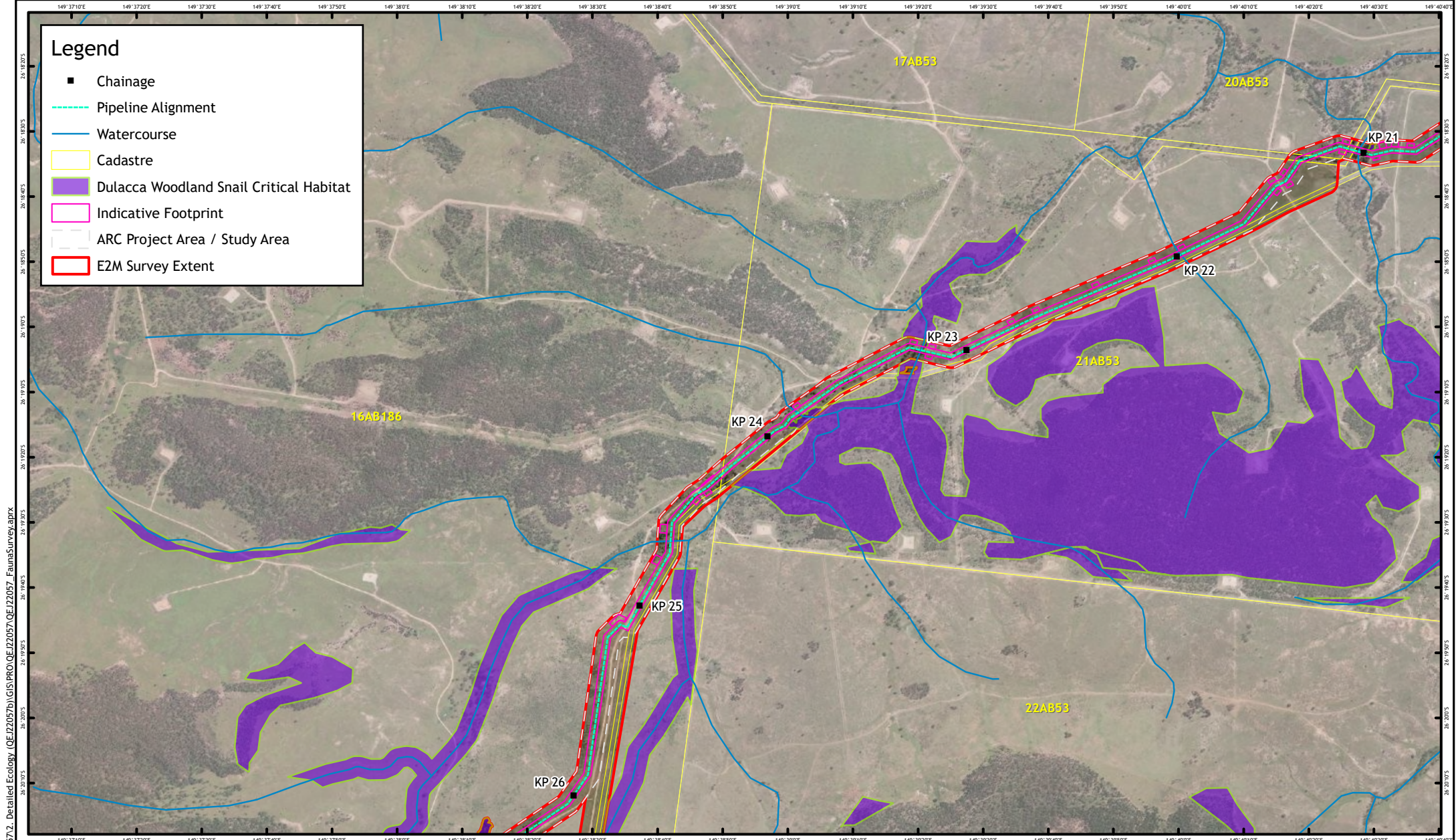
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APPENDIX M: DULACCA WOODLAND SNAIL HABITAT MAPPING

Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

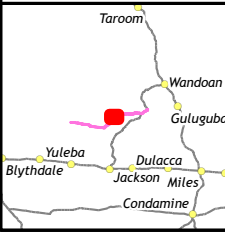
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Legend

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- Watercourse
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- ▭ Indicative Footprint
- ▭ ARC Project Area / Study Area
- ▭ E2M Survey Extent

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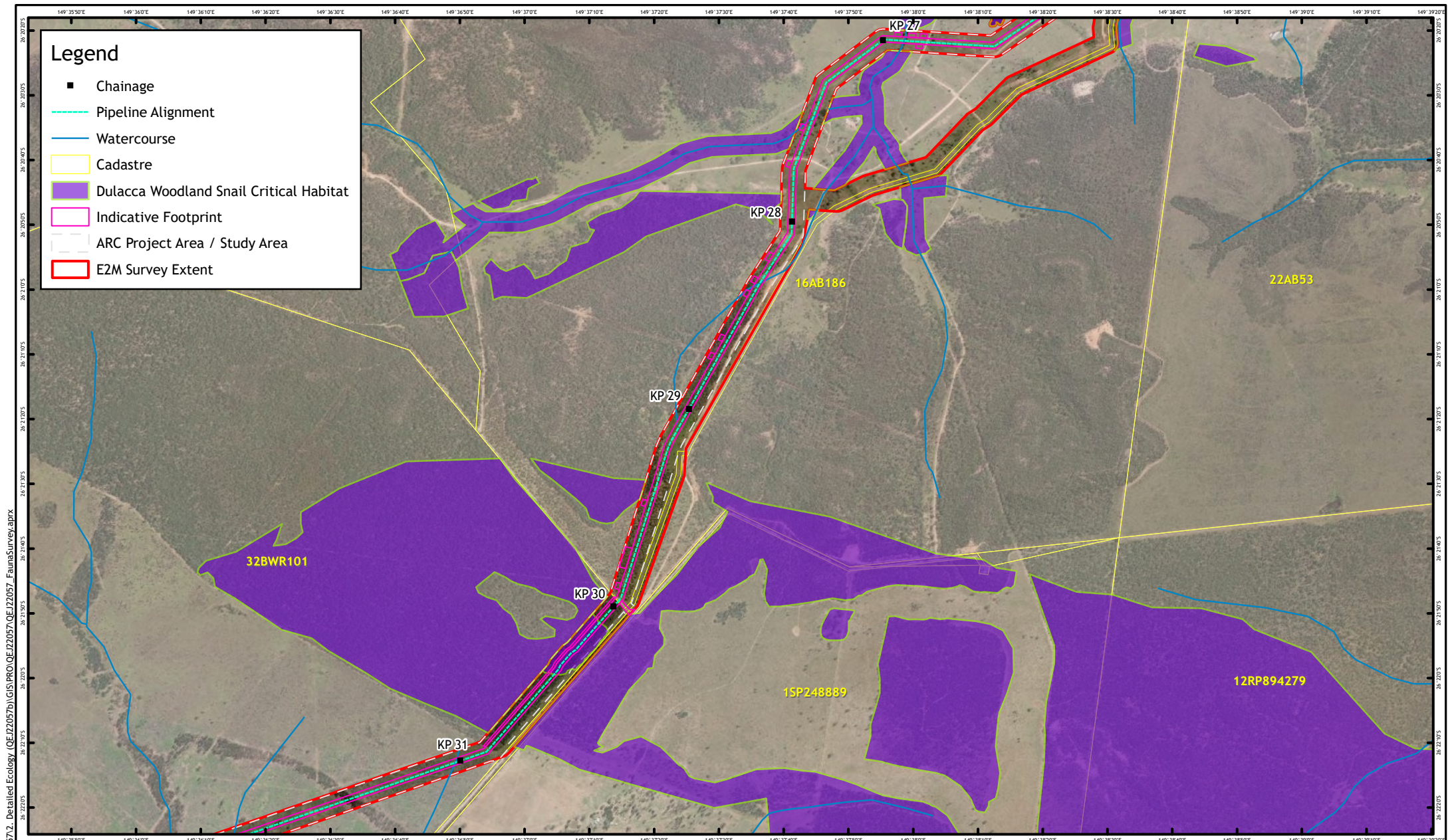
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APPENDIX M: DULACCA WOODLAND SNAIL HABITAT MAPPING

Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

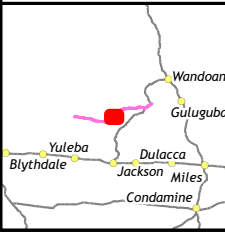
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Legend

- Chainage
- Pipeline Alignment
- Watercourse
- Cadastre
- Dulacca Woodland Snail Critical Habitat
- Indicative Footprint
- ARC Project Area / Study Area
- E2M Survey Extent



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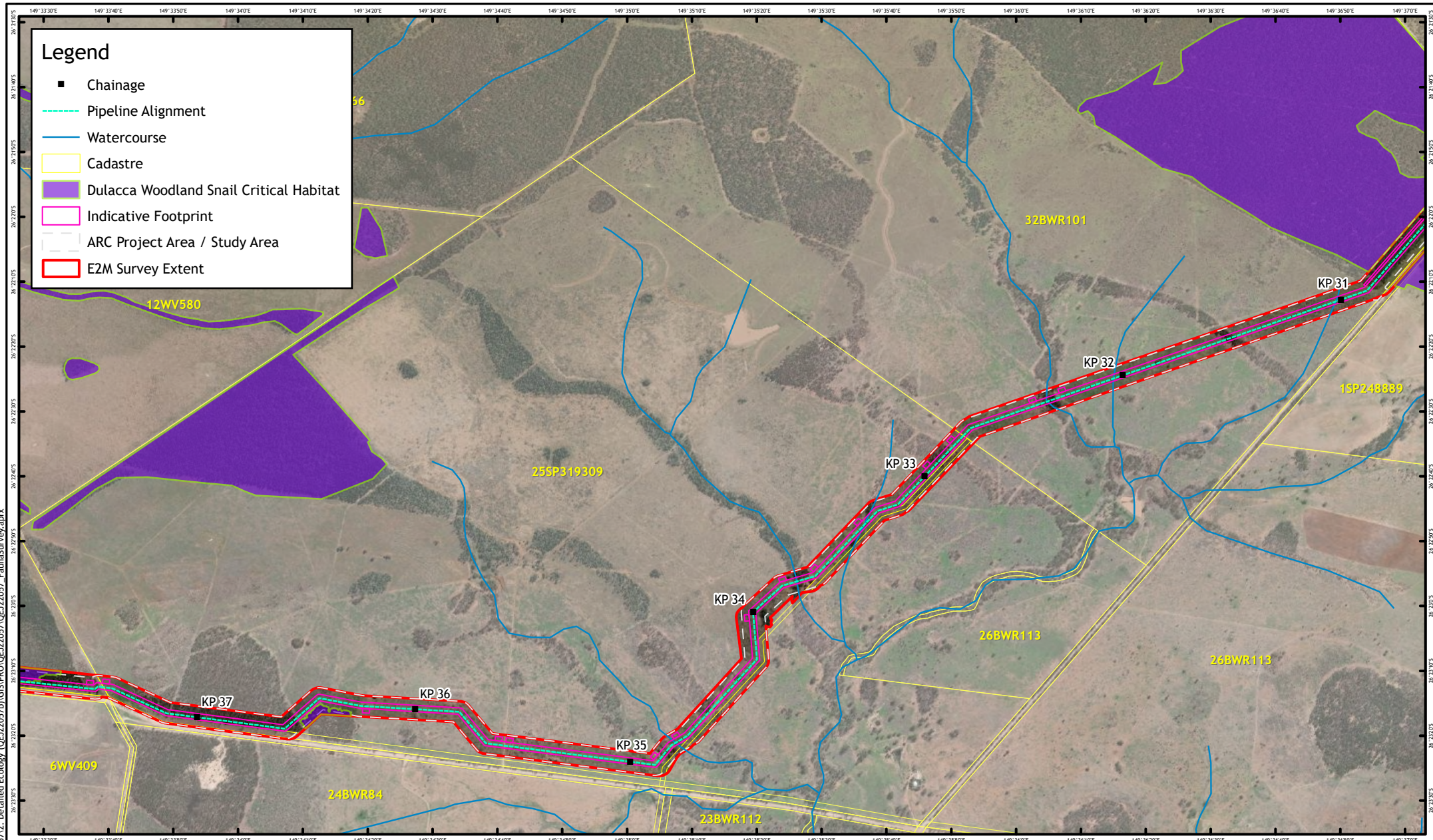
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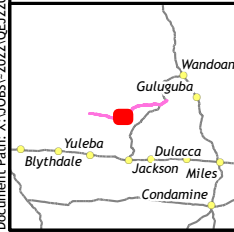
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Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

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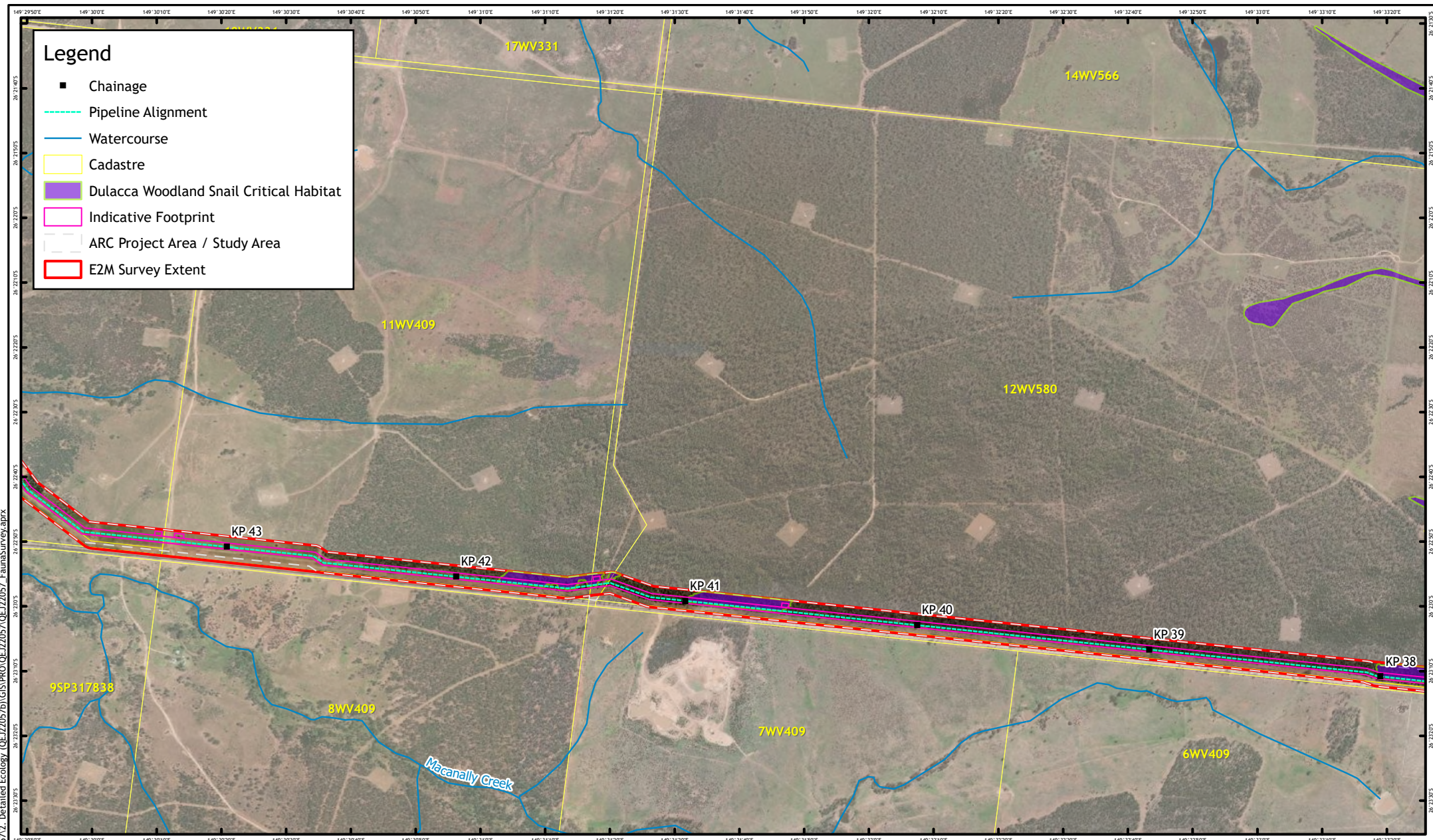
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APPENDIX M: DULACCA WOODLAND SNAIL HABITAT MAPPING

Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

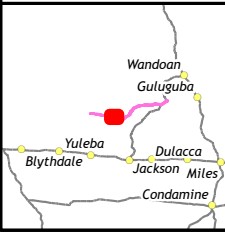
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Legend

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- ▭ Dulacca Woodland Snail Critical Habitat
- ▭ Indicative Footprint
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- ▭ E2M Survey Extent

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APPENDIX M: DULACCA WOODLAND SNAIL HABITAT MAPPING

Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

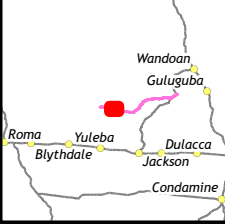
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Legend

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- ▭ Cadastre
- Dulacca Woodland Snail Critical Habitat
- Indicative Footprint
- ARC Project Area / Study Area
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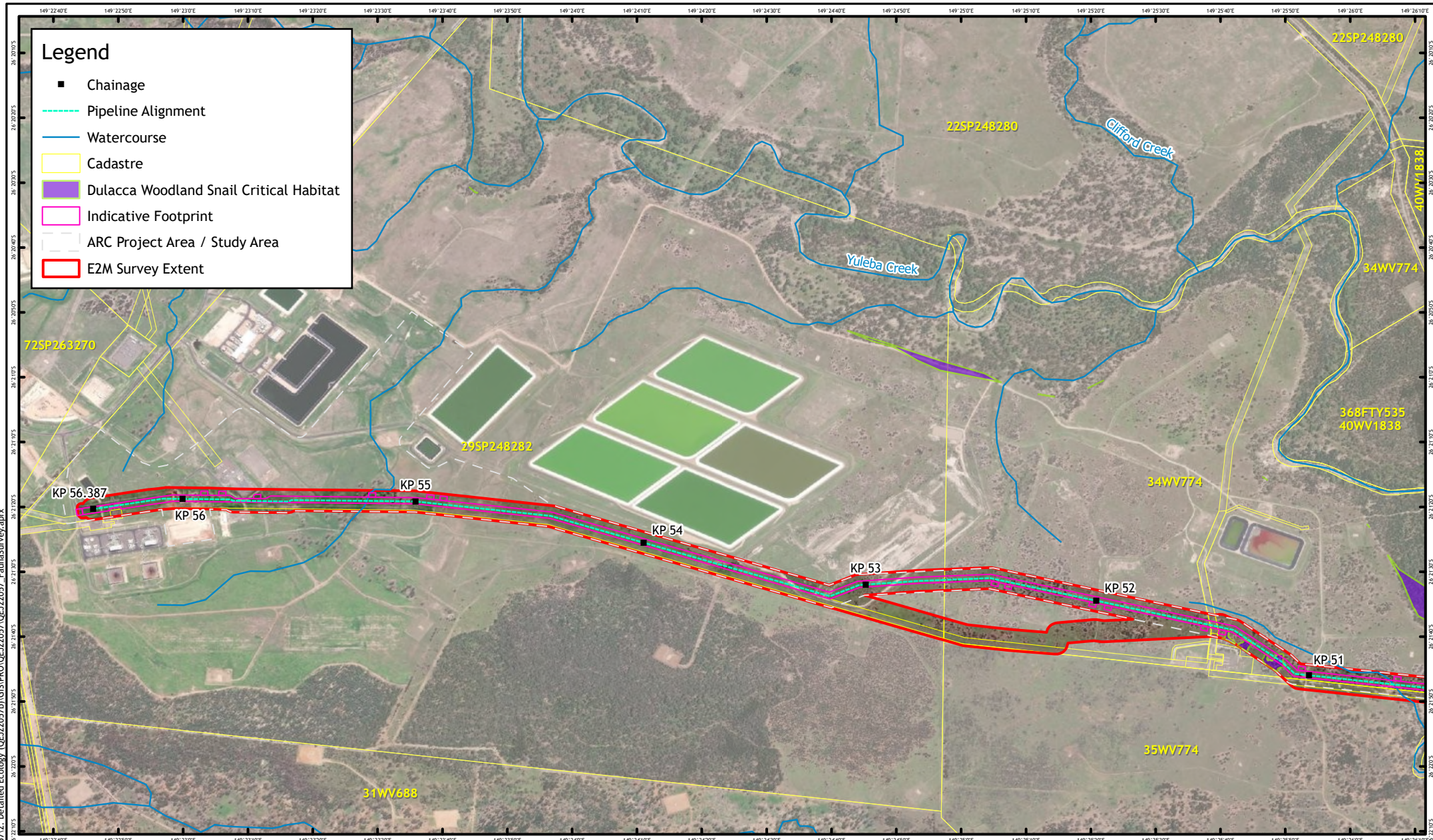
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Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

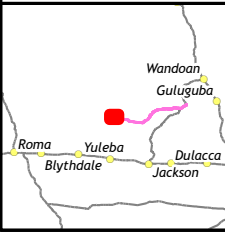
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APPENDIX M: DULACCA WOODLAND SNAIL HABITAT MAPPING

Atlas to Reedy Creek Pipeline Ecology Survey
Senex Energy Limited

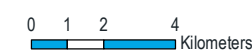
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Appendix 3

ARCP Greater Glider Pole Location Maps

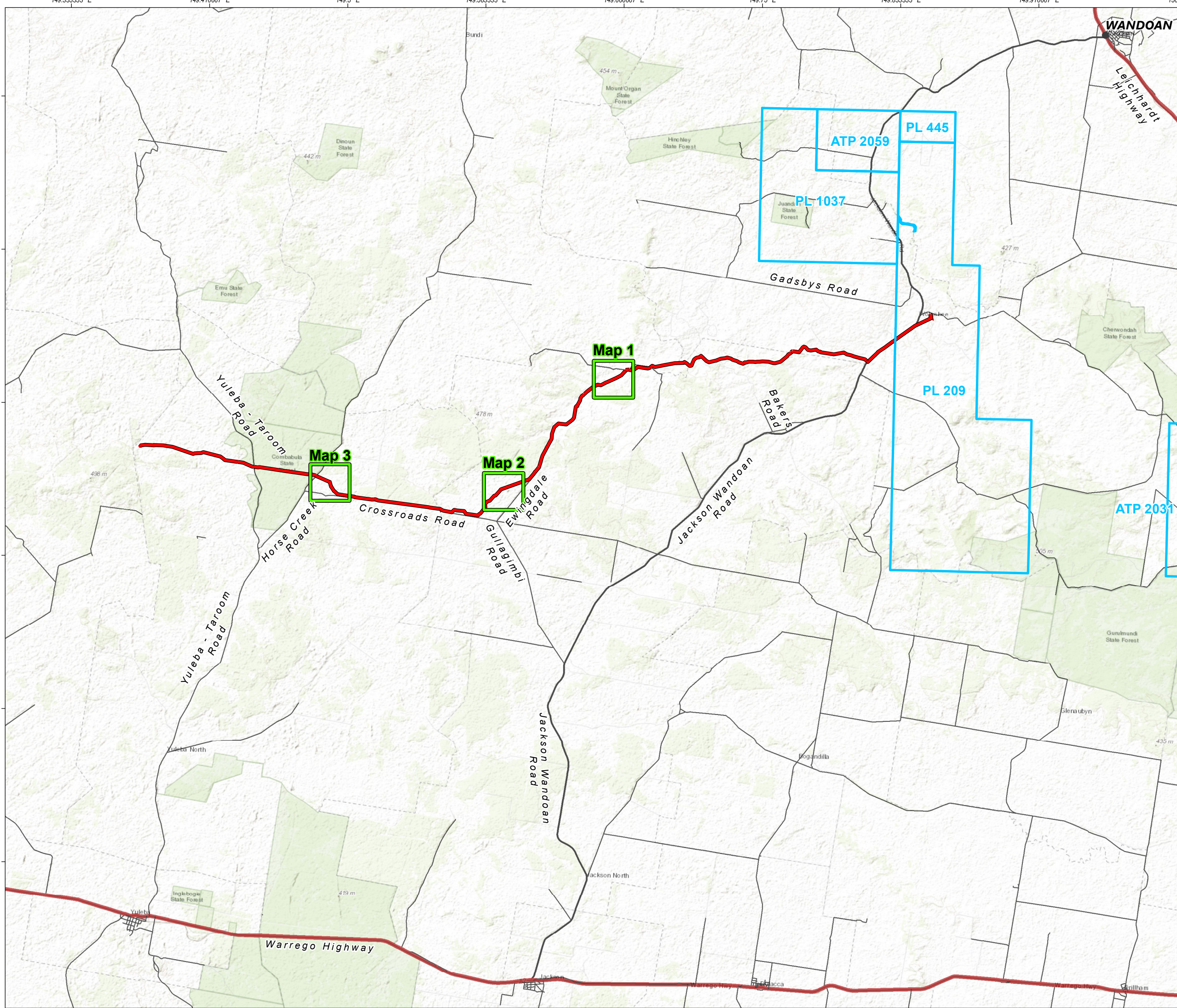
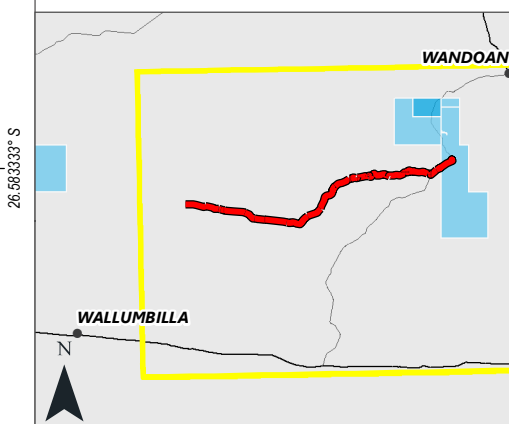
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Project	Surat Basin			
Title	ARCP Greater Glider Pole Location Index			
Landholder	As Shown			
Property	As Shown			
Function	Environmental			
Description	Issued for Review			
Date	16/02/24			
Revision	A			
Requested by	SF			
Prepared by	MC			
Reviewed by	SF			
Approved by	SF			
Document No.	SENEX-CORP-GI-MAA-1083-0			

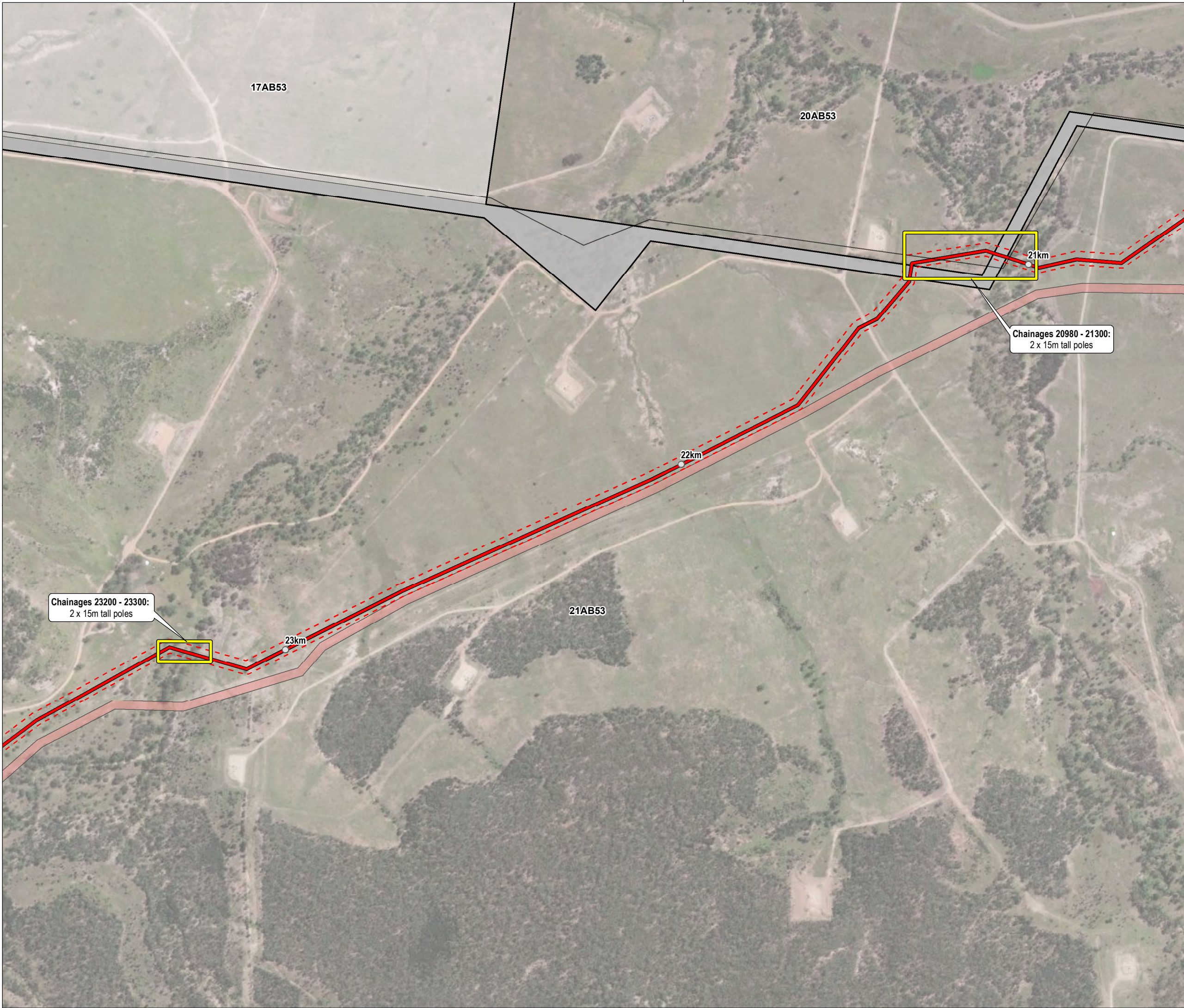
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- Towns
 - Highway
 - Main Road
 - Local Road
 - Atlas to Reedy Creek Pipeline
 - - - Proposed Easement
 - Mapbook Frame
 - PL Boundary



1:210,000
GDA2020 MGA Zone 55

Acknowledgements:
Mining Tenement QLD data © Department of Mines and Energy 2024
Well Data / Pipeline info GPINFO 2024
Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO.





Tenement	N/A			
Project	Surat Basin			
Title	ARCP Greater Glider Pole Location Map 1			
Landholder	N/A			
Property	N/A			
Function	Environmental			
Description	Issued for Review			
Date	16/02/24	15/03/24		
Revision	A	B		
Requested by	SF	SF		
Prepared by	MC	MC		
Reviewed by	SF	SF		
Approved by	SF	SF		
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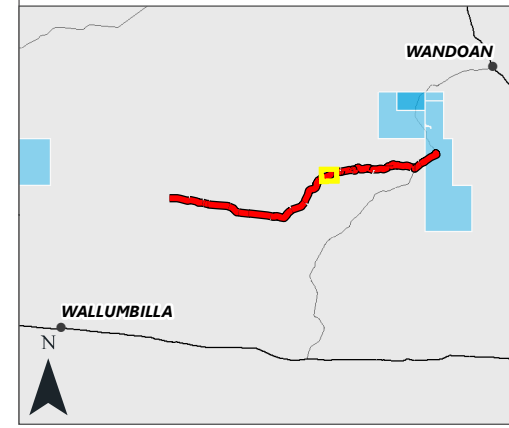
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- KP Marker
 - Local Road
 - Atlas to Reedy Creek Pipeline
 - ▭ Glider Pole Location
 - - - Proposed Easement
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 - ▭ Road Reserve
 - ▭ Property Boundary
 - ▭ PL Boundary

Map 1



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GDA2020 MGA Zone 55

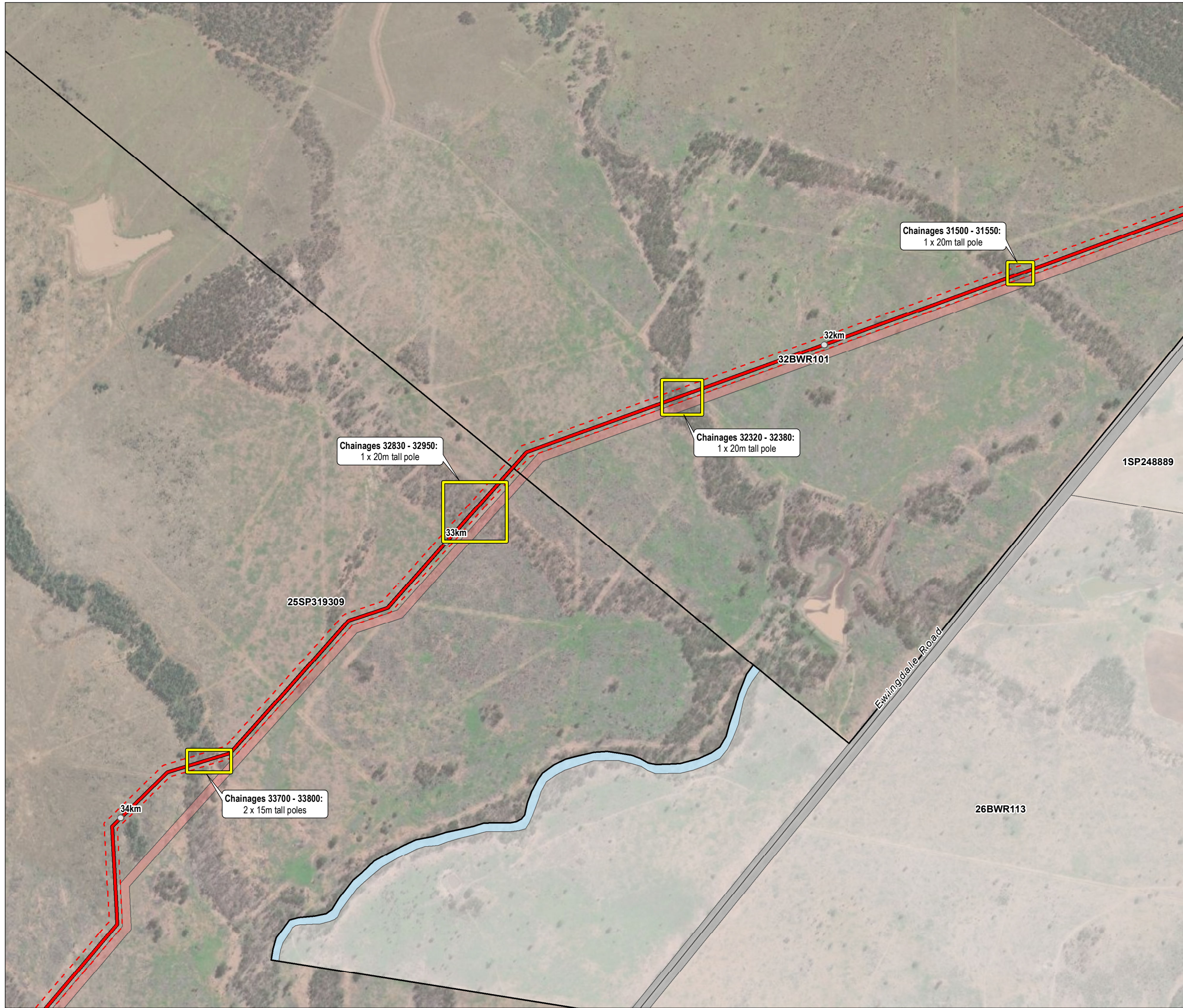
Acknowledgements:
Mining Tenement QLD data © Department of Mines and Energy 2024
Well Data / Pipeline info GPINFO 2024
Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



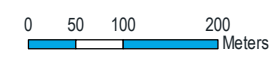
Tenement	N/A			
Project	Surat Basin			
Title	ARCP Greater Glider Pole Location Map 2			
Landholder	N/A			
Property	N/A			
Function	Environmental			
Description	Issued for Review			
Date	16/02/24	15/03/24		
Revision	A	B		
Requested by	SF	SF		
Prepared by	MC	MC		
Reviewed by	SF	SF		
Approved by	SF	SF		
Document No.	SENEX-CORP-GI-MAA-1083			

Legend:

- KP Marker
- Local Road
- Atlas to Reedy Creek Pipeline
- Glider Pole Location
- Proposed Easement
- Existing Third Party Easement
- Road Reserve
- Watercourse Parcel
- Property Boundary
- PL Boundary

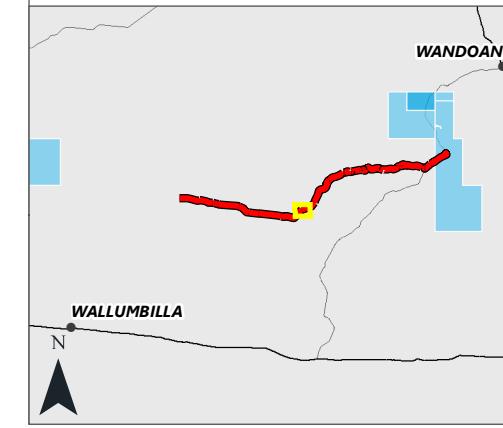


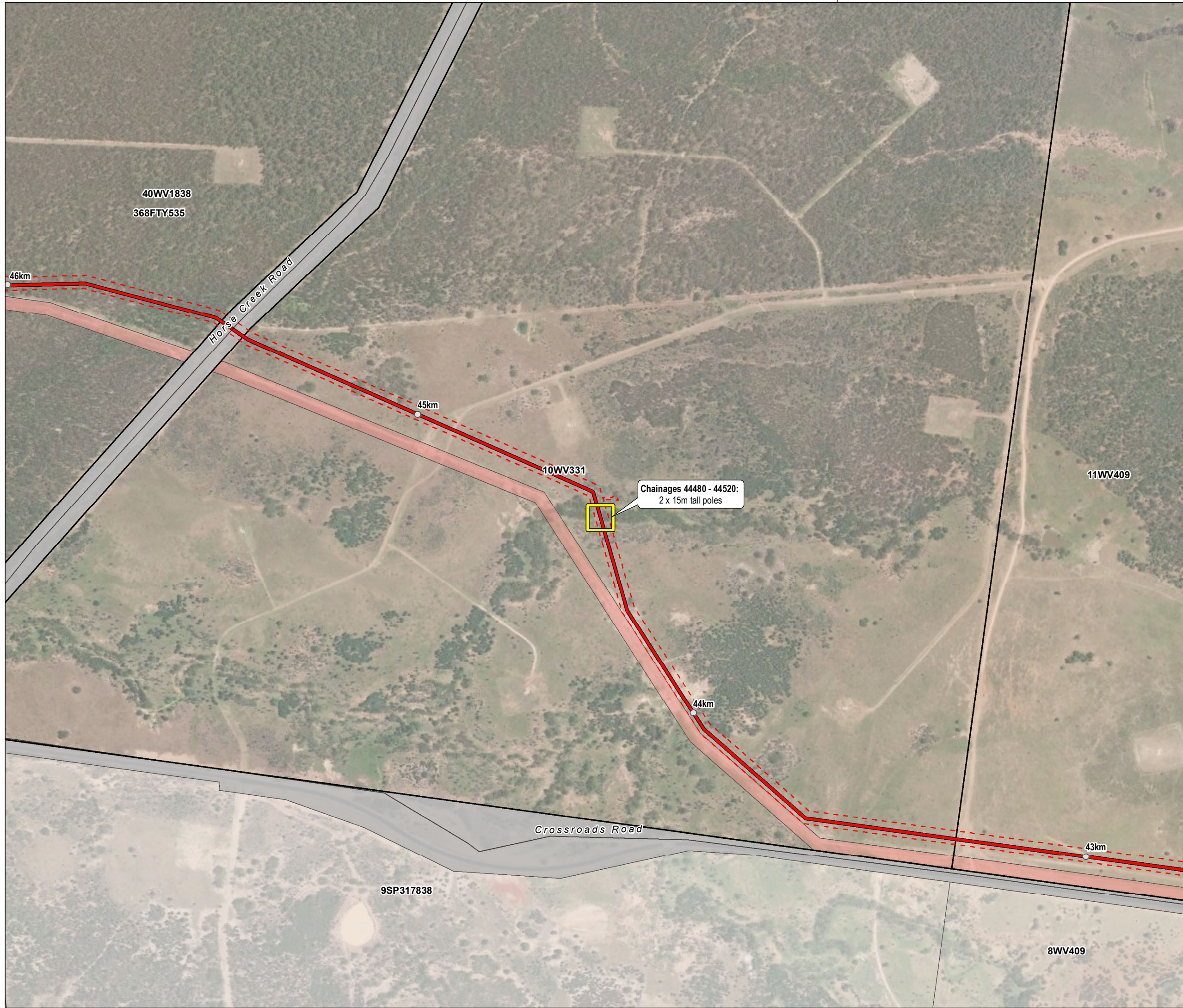
Map 2



1:8,000
GDA2020 MGA Zone 55

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Tenement	N/A			
Project	Surat Basin			
Title	ARCP Greater Glider Pole Location Map 3			
Landholder	N/A			
Property	N/A			
Function	Environmental			
Description	Issued for Review			
Date	16/02/24	15/03/24		
Revision	A	B		
Requested by	SF	SF		
Prepared by	MC	MC		
Reviewed by	SF	SF		
Approved by	SF	SF		
Document No.	SENEX-CORP-GI-MAA-1083			

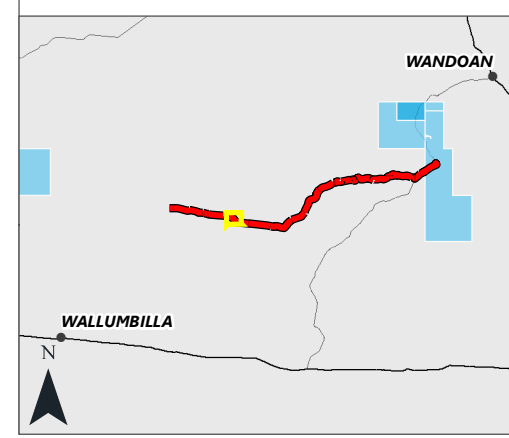
- Legend:**
- KP Marker
 - Local Road
 - Atlas to Reedy Creek Pipeline
 - ▭ Glider Pole Location
 - - - Proposed Easement
 - Existing Third Party Easement
 - ▭ Road Reserve
 - ▭ Property Boundary
 - ▭ PL Boundary

Map 3



1:8,000
GDA2020 MGA Zone 55

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