Belisama Gas Project

Visual Impact Assessment

Hancock Energy

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Abbreviations

Abbreviation	Description
CPF	Central Processing Facility
DBNGP	Dampier to Bunbury Natural Gas Pipeline
DME	Digital elevation model
EIA	Environmental impact assessment
ELA	Eco Logical Australia
EPA	Environmental Protection Authority
ERL	Energy Resources Limited
Hancock	Hancock Energy
IBRA	Interim-Biogeographic Regionalisation for Australia
LCT	Landscape Character Type
MinRes	Mineral Resources Limited
VIA	Visual Impact Assessment
WAPC	Western Australian Planning Commission

Executive Summary

Hancock Energy (PBN) Pty Ltd (Hancock Energy; the Proponent) is proposing to develop the Belisama Gas Project (the Proposal) in the Mid West region of Western Australia, approximately 350 km north of Perth and 25 km south-east of Mingenew, at 1906 Yandanooka West Rd.

The Proposal is seeking to bring natural gas from the West Erregulla and Lockyer gas fields (external to the Proposal) via a collection hub(s) into a combined gas network, with the potential to add future gas resources as they are discovered, which will all be piped into the new central processing facility (CPF) where it will be treated and exported for sale through the Dampier to Bunbury Natural Gas Pipeline.

This Visual Impact Assessment (VIA) has been prepared to determine the likely visual impact of the Proposal on the existing views from the surrounding landscape. The assessment process further aims to assist the proponent in best managing any visual impact that may be determined. It is noted that the gas flowlines/pipelines will be buried, and will not contribute to visual impacts of the Proposal, and they will not be considered further in this assessment.

The preparation of the VIA has been undertaken with regard for the method outlined within the Western Australian Planning Commission's (WAPC) *Visual Landscape Planning in Western Australia Manual* (WAPC 2007) with consideration of the state planning framework requirements.

The following objectives have been determined for the Proposal and provide a guide to evaluate the success of the proposed development's ability to meet a reduced visual impact and includes consideration of the provisions in the Shire Mingenew Local Planning Schemes (DPLH 2023b):

- The existing topographic features are maintained; in particular views of the ridgelines and horizon
- The proposed development principally blends into the surrounding rural or natural environment to minimise visual impacts
- Broad views to and from nature reserves are generally maintained to ensure views from key external locations to nature reserves adjacent to the site are managed.

A landscape character assessment was undertaken for the Development Envelope and general surrounds and identified that:

- The Development Envelope and general area are located within the Geraldton Plain subtype of the Wheatbelt Plateau Landscape Character Type (LCT) as identified in the *Reading the Remote: Landscape Characters of Western Australia* (Stuart-Street 1994).
- At a more local level, two landscape character units (LCUs) are identified within the Development Envelope and surrounds, and include a:
    - Rural LCU, including features such as cleared paddocks used for agricultural purposes and existing buildings. This is the dominant LCU intersecting the Development Envelope.
    - Natural LCU, including features such as expansive shrubland and woodland areas, typically present in the large nature reserves to the south of the Development Envelope.
    - The nearest Urban LCU is 25 km away in the township of Mingenew, and is not considered in this assessment.

There are no designated scenic viewpoints or recreational land uses surrounding the CPF site to be impacted by the proposed development. Eight sensitive receptors were identified within 10 km of the

CPF site, plus a 10 km unsealed stretch of Yandanooka West Road that may be used by local motorists. The nearest major road is approximately 12 km away and outside of visible range.

Viewshed analysis revealed that visibility of the CPF is completely obstructed to four of the sensitive receptors by local topography and vegetation, which were excluded from subsequent analysis. According to the viewshed analysis, which provides the worse-case scenario and does not include screening from existing established vegetation, the tallest infrastructure (the flare, 60 m) may be at least partially visible from the remaining four sensitive receptors, the infrastructure from 18-12 m may be at least partially visible from three of the sensitive receptors, and the remaining infrastructure (averaged to 5 m) may be visible to varying degrees from two of the sensitive receptors. It is noted that vegetation has not been considered in the viewshed analysis, and is likely to decrease the 'seen area' from each sensitive receptor.

Viewpoint analysis of the four sensitive receptors and from Yandanooka Road West within the 'seen area' from the viewshed shows that intervening topography and vegetation further reduces visibility of the CPF from these locations, with two of the four sensitive receptors having the view completely obstructed, and that the CPF blends into the landscape with only typically the flare tower protruding into the skyline. Given the above, it is unlikely that the landscape character will be significantly impacted by the proposed development, and the landscape character objectives are likely to be met.

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1. Introduction

1.1. Background

Hancock Energy (PBN) Pty Ltd (Hancock Energy) is currently undertaking an environmental impact assessment (EIA) for the Belisama Gas Development (the Proposal). The Proposal is to be developed in the Mid West region of Western Australia, approximately 350 km north of Perth and 25 km south-east of Mingenew (Figure 1-1). The Proposal will collect natural gas from surrounding upstream gas collection hubs (external to this Proposal) and direct it via an infield gathering system to a Central Processing Facility (CPF) where the gas will be treated and then routed via an export pipeline to the Dampier to Bunbury Natural Gas Pipeline (DBNGP) for sale. Liquid hydrocarbons (condensate) generated as a byproduct will be stored on site prior to being transported by road for sale.

The Proposal is seeking to bring natural gas from the West Erregulla and Lockyer fields via a collection hub(s) into a combined gas network, with the potential to add future gas resources as they are discovered.

The CPF will be located at 1906 Yandanooka West Rd, Milo (Lot 441 on Plan 2981). Due to the height and the bulk of the infrastructure proposed within an otherwise rural landscape, the potential for impacts to visual amenity was recognised. Eco Logical Australia (ELA) has been engaged by Hancock Energy to undertake a Visual Impact Assessment (VIA) of the proposed development on the existing views from the surrounding landscape.

1.2. Purpose and Scope

The aim of this VIA is to determine, review and assess the likely visual impact of the proposed development on the existing views from the surrounding landscape, with particular consideration of sensitive receptors and key viewing locations identified by Hancock Energy through stakeholder consultation and a desktop assessment. Specifically, this report:

- Identifies and maps the proposed development design and layout within the CPF site boundary (Section 1.2)
- Identifies the existing visual landscape characteristics of the site and surrounds (prior to development) (Section 2)
- Assesses the visual impact of the proposed development from identified key locations, through viewshed and viewpoint analyses (Section 4).

This evaluation of landscape and visual impacts associated with the Proposal will inform an assessment of significance of impacts against the Environmental Protection Authority's objective for the Social Surroundings factor 'to protect social surroundings from significant harm' (EPA 2023b).

1.3. Proposed Development

The Proponent is proposing to construct underground flowline infrastructure, a CPF located at 1906 Yandanooka West Rd (Lot 441 on Plan 2981), and an underground gas export pipeline. The raw gas collected from the Lockyer wells within Exploration Permits EP-368 and EP-426, and other surrounding new gas discoveries, will be directed via an infield gathering system to the CPF, where it will be treated, and then routed to the DBNGP for sale. Additionally, the CPF will treat any associated condensate liquids to allow for transport off-site. The Proposal will include a consolidated stabilisation, storage, and offloading system to support road transport of liquid product, and additional on-site

infrastructure to support the operation phase including administration and control rooms, power generation, warehousing, workshops, switch-room infrastructure, sedimentation and evaporation ponds, and accommodation buildings.

Infrastructure proposed to be constructed within the CPF includes the following:

- Amine regeneration system (18.0 m high)
- Amine contractor tower (18.0 m high)
- Still column tank (12.0 m high)
- Thermal oxidiser (17.3 m high)
- HP/LP flare (60.0 m high)
- Other infrastructure (average 5 m high for modelling purposes[1]).

Heights listed above are the heights that have been used for the purpose of modelling visuals impacts. As final engineering design is not yet complete, a worst-case scenario has been assumed for these infrastructure components where the final location or dimensions is not certain.

'Other infrastructure' will include but is not limited to:

- Site security including fencing and gates
- Internal roads and existing road upgrades
- Condensate stabilisation, storage and truck-loading facilities
- Produced water treatment facilities
- Oily water treatment facilities
- Power generation and power distribution
- Buildings (warehouse, workshop, administration offices, central control room)
- Process control and communications infrastructure
- Diesel fuel and chemical storage
- Flare and safety systems including firewater
- Bore water treatment and supply systems including potable water
- Evaporation ponds
- Sewage treatment plant
- Temporary construction utilities and laydown area
- Temporary and permanent accommodation camps.

Figure 1-2 provides a conceptual layout for the CPF and Figure 1-3 shows a 3-dimensional conceptual model of the design. This conceptual layout and 3-D render are based on similarly sized gas processing facilities and are intended to present an approximation of the CPF facility, rather than the actual final layout of the proposed CPF.

[1] Other infrastructure will extend up to 6.4 m high, but will be irregular in height and shape. For the purposes of this analysis, a rectangular block model based on an average height of 5 m has been used. In reality, this infrastructure will not be in a solid block, and therefore the likely visibility has been overestimated in this analysis.

Infrastructure associated with the Proposal to be located outside the CPF (i.e. pipeline infrastructure and hub sites) is either proposed to be buried or is of a small scale relative to the surrounding landscape. The risk of impacts to visual amenity as a result of this infrastructure is anticipated to be low, and therefore is not considered in this VIA.

1.4. Planning Context

The following sections outline key regulatory and guidance documents consulted to inform the scope and methodology of this VIA.

1.4.1. Environmental Factor Guideline: Social Surroundings

Environmental Impact Assessment in Western Australia uses a set of environmental principles, factors, and associated objectives as the basis for assessing a proposal's impact on the environment (EPA 2023b). Grouped under five broad themes, the 14 environmental factors each have an associated set of guidance to allow proponents and the Environmental Protection Authority to assess impacts to that aspect of the environment. The Social Surroundings factor addresses aesthetic, cultural, economic, or other social impacts from a proposed development to the extent to which they directly affect or are affected by physical or biological surroundings (EPA 2023b).

The EPA recognises that natural landscapes and views often contribute to visual amenity, one of the key EIA considerations for the Social Surroundings factor.

1.4.2. Statement of Planning Policy No. 2: Environment and Natural Resource Policy for Western Australia

The *Statement of Planning Policy No. 2: Environment and Natural Resource Policy for Western Australia* (WAPC 2003) defines the principles that represent good and responsible planning in terms of environment and natural resource issues within the framework of the State Planning Strategy. The policy recognises an increasing appreciation and valuing of natural landscapes by the community, which provide recreation and tourism opportunities, and psychological health benefits due to the contrast with urban environments. The policy identifies that decision-making should:

- Identify and safeguard landscapes with high geological, geomorphological or ecological values, as well as those of aesthetic, cultural or historical value to the community, and encourage the restoration of those that are degraded
- In areas identified above, consider the level or capacity of the landscape to absorb new activities and incorporate appropriate planning and building design and siting criteria to ensure that new development is consistent and sensitive to the character and quality of the landscape
- Consider the need for a landscape, cultural or visual impact assessment for land use or development proposals that may have a significant impact on sensitive landscapes.

1.4.3. Visual Landscape Planning in Western Australia

The *Visual Landscape Planning in Western Australia* (Visual Landscape Manual; WAPC 2007) has been developed to guide State agencies, local government, developers and the community on techniques for incorporating visual landscape planning into the planning process. The manual explains fundamental planning tools for visual landscape evaluation and VIA (WAPC 2007). It provides guidelines for siting and design in relation to a range of landscape types and land uses. The methodology of this VIA follows the guidelines set out in the manual.

1.4.4. Shire of Mingenew Local Planning Scheme No. 4

The Shire of Mingenew has adopted Local Planning Scheme No. 4 (DPLH 2023a) to control and guide land use planning and development within the Shire. Under the Scheme, 1906 Yandanooka West Rd is zoned as Rural, and the proposed development is compatible with the general development requirements in accordance with this zoning.

The objective of rural zoning under the scheme is to provide for compatible non-rural land uses while maintaining rural character, protecting agricultural land uses, and maintaining environmental qualities of the landscape (particularly watercourses). Under Schedule 1 of this Scheme, the following conditions apply to developments within the Rural zone and are relevant to this assessment:

- 7.1 – The maximum height limit for buildings and structures above natural ground level irrespective of whether or not development approval is required is 10 m
- 7.2 – Notwithstanding clause 7.1, the local government may, after following the advertising procedures set out at clause 64 of the deemed provisions, permit the construction of buildings or structures in excess of the height limit specified where it is satisfied:
    - Site constraints are such as to prevent the construction of a building or structure within height limits; or
    - Additional height is critical to the function and operation of the proposed building or structure; and
    - The building or structure will be in harmony with the general character of buildings in the locality; and
    - The building or structure will not adversely affect the beauty, character, quality of environment or the townscape generally; and
    - The building or structure will maintain a satisfactory relationship to the boundaries of the lot on which it is to be constructed and relates generally to the siting, design and aspect of buildings on nearby lots;
    - The building or structure will not impair the amenity or development of adjoining lots.

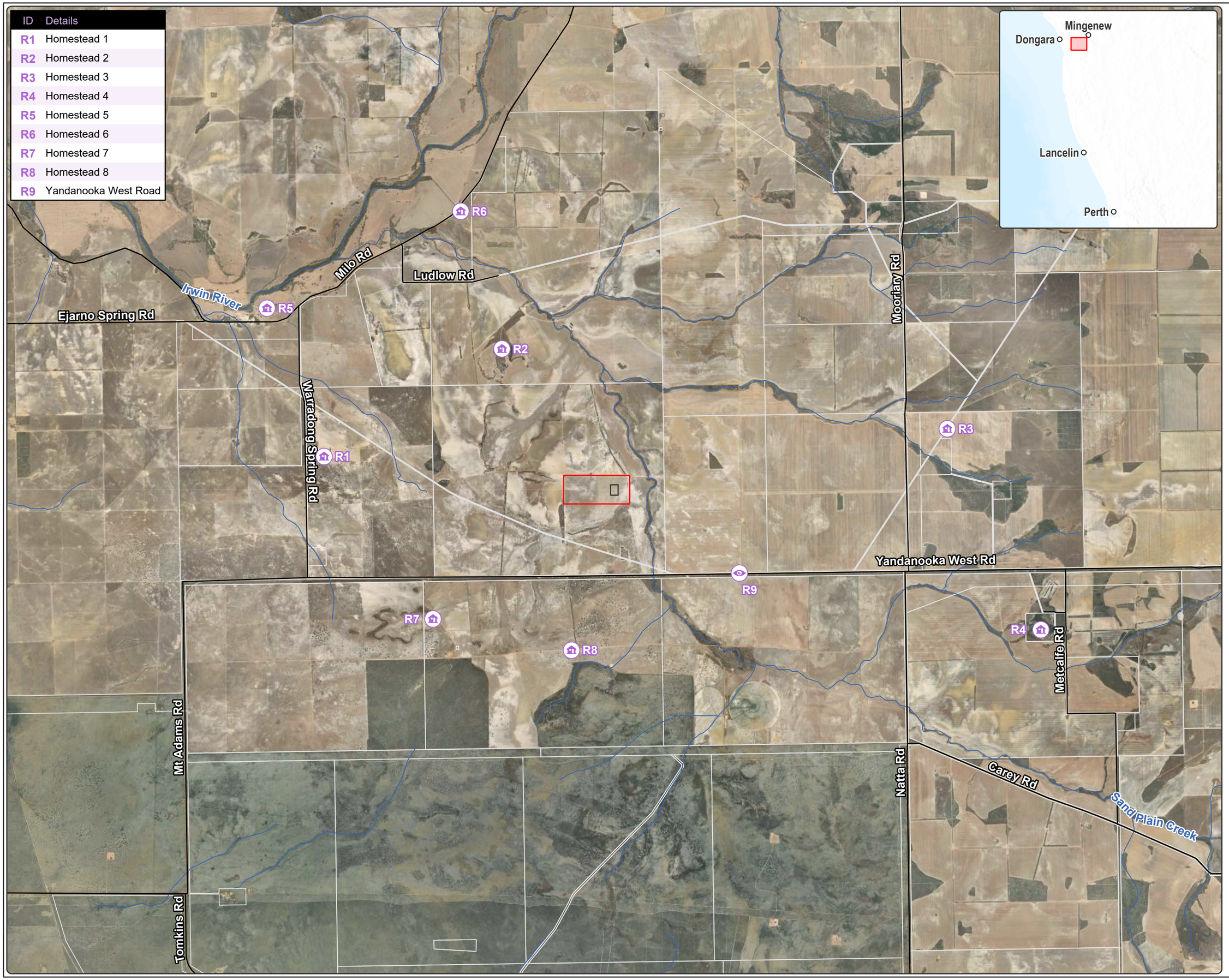
1.5. Stakeholder Consultation

It is understood that Hancock Energy is actively engaging with major stakeholders with regard to the Proposal, including the Shire of Mingenew, the Southern Yamatji people (Traditional Land Owners), affected land holders, and relevant regulatory agencies. Stakeholders will be updated at key points of the project's development and preliminary works, and provided with all publicly available information.

The CPF site is located on a property owned in freehold by Hancock Energy. Hancock Energy is engaging in consultation with other nearby land holders, with the objective to continue open dialogue with property owners and managers.

The figures and information contained in this VIA are likely to be used as a tool for community engagement. Development within the CPF site is currently progressing through a Development Approval through the State Development Assessment Unit (SDAU) (submitted in December 2025). The SDAU considered the Development Application (DA) to be compliant, and it is expected the DA will be advertised early in 2026 for public and stakeholder comments.

ID	Details
R1	Homestead 1
R2	Homestead 2
R3	Homestead 3
R4	Homestead 4
R5	Homestead 5
R6	Homestead 6
R7	Homestead 7
R8	Homestead 8
R9	Yandanooka West Road



Legend

- Homestead
- Public Viewpoint
- CPF plant boundary
- Site boundary
- Cadastre
- Road
- Watercourse

Figure 1-1
Regional Location of the CPF

0 500 1,000 2,000
Metres

Belisama Gas Project

Datum/Projection:
GDA2020 MGA Zone 50

600-25PER11437 Date: 11/12/2025

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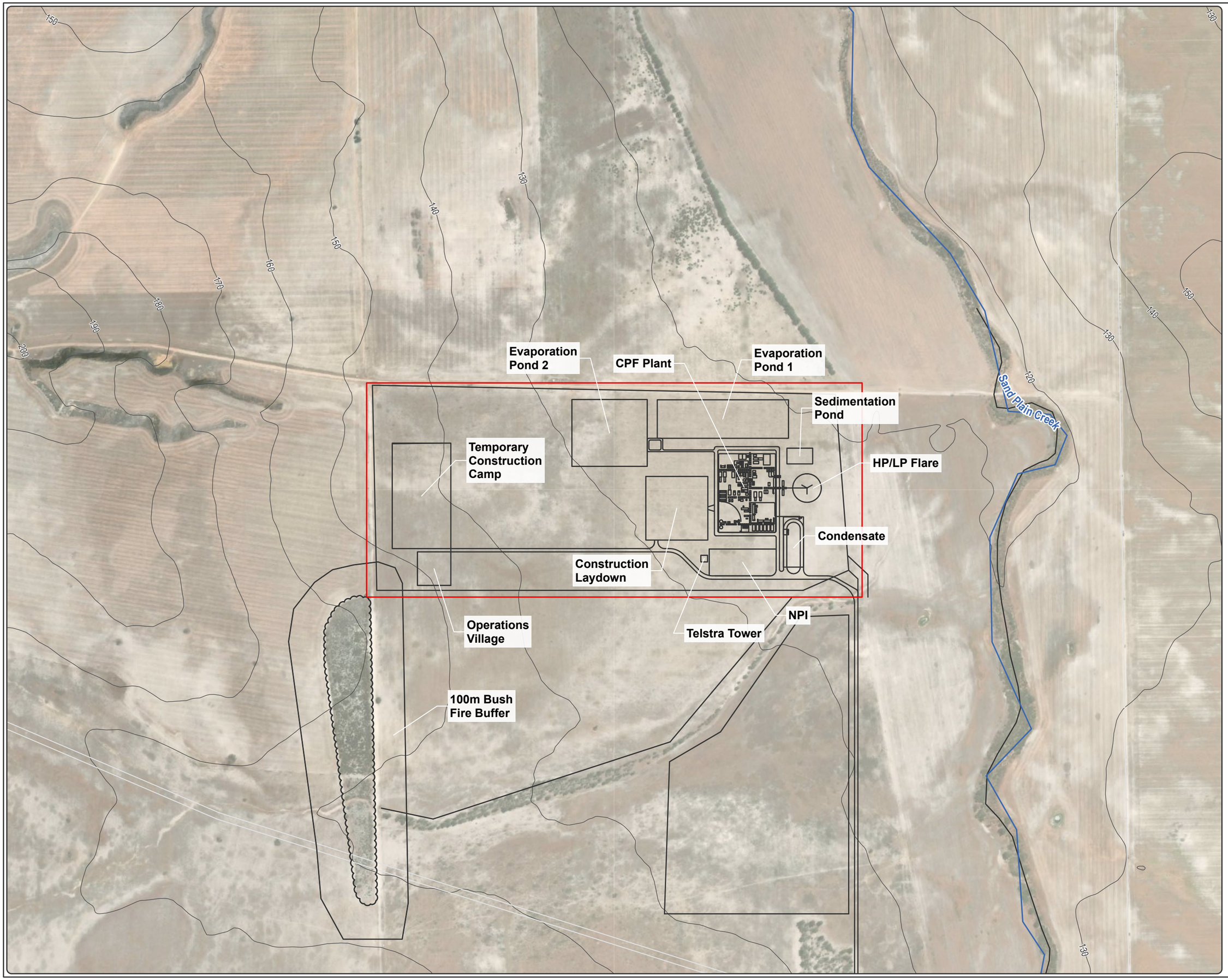

Legend

- Site layout
- Site boundary
- Cadastre
- Contours 10-meter interval (mAHD)
- Watercourse

Figure 1-2
Conceptual Site Layout of the CPF

0 100 200 400
Metres

Belisama Gas Project

Datum/Projection:
GDA2020 MGA Zone 50

600-25PER11437 Date: 4/12/2025

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Figure 1-3
3D Rendering of the Conceptual Site Layout

Belisama Gas Project
600-25PER11437 Date: 4/12/2025

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2. Existing Landscape Character

This section describes the visual landscape character of the CPF site and surrounds, including land use, patterns of vegetation and topography.

2.1. Site Context and Land Use

2.1.1. Local Context

The address of the CPF site is 1906 Yandanooka West Rd, which is owned in freehold by Hancock Energy. The site is located within the Bundi Yamatji Aboriginal Corporation representative area in the Shire of Mingenew, approximately 25 km southwest of the Mingenew township. Surrounding land is typical of the northern wheatbelt, with broadacre agriculture with a mixture of cropping and grazing interspersed with small and generally isolated stands of remnant vegetation (Figure 2-1 and Figure 2-2). These areas are intersected by public roads, private tracks and a freight railway corridor. Residential houses are sparsely distributed within the surrounding landscape. The average size of the lots within 5 km of the proposed development is 187 ha, with the majority of lots greater than 10 ha in size.

The closest major road to the CPF is Midlands Road, approximately 12 km to the north. The closest public road and the primary access point to the CPF is Yandanooka West Road, an unsealed road which runs east-west approximately 2 km to the south of the CPF site. All other roads/tracks in proximity to the CPF are also unsealed minor roads or access tracks. The closest residential homestead is approximately 3.9 km from the CPF site and is owned by Hancock Energy (Homestead 8, see Section 2.6).

2.1.2. Social and economic

The main economic industry within the Shire of Mingenew is broadacre agriculture and the services that support farming in the area. Local farming includes the production of cereal crops (wheat, canola, lupins, oats) and livestock (primarily sheep). Wildflower tourism and oil and gas developments are a small but growing area of the economy, with the recent approval of several production wells in the Northern Perth Basin (MinRes 2024; NARvis 2025; Strike 2022).

2.1.3. Bioregion and environmental setting

The Interim-Biogeographic Regionalisation for Australia (IBRA) divides Australia into 89 biogeographic regions and 419 subregions based on dominant landscape characteristics of climate, lithology, geology, landform and vegetation (DCCEEW 2021). The CPF is located within the Geraldton Hills subregion of the Geraldton Sandplains bioregion. The Geraldton Hills subregion is characterised by sand heaths of Banksia and Cypresses, York Gum on alluvial plains (Desmond and Chant 2001).

The CPF and surroundings are within a landscape that has largely been cleared for agricultural purposes (pastoral and cropping). There are no National Parks, nature reserves or Environmentally Sensitive Areas identified within 15 km of the proposed CPF site.

The rural landscape is typified by clearing of native vegetation and its replacement by pasture grasses or crops. Clearing patterns vary, with some areas of regularity reinforced by windbreaks and shelter planting, while the river stream and tracks introduce ‘organic’ forms and lines (Figure 2-1 and Figure 2-2).

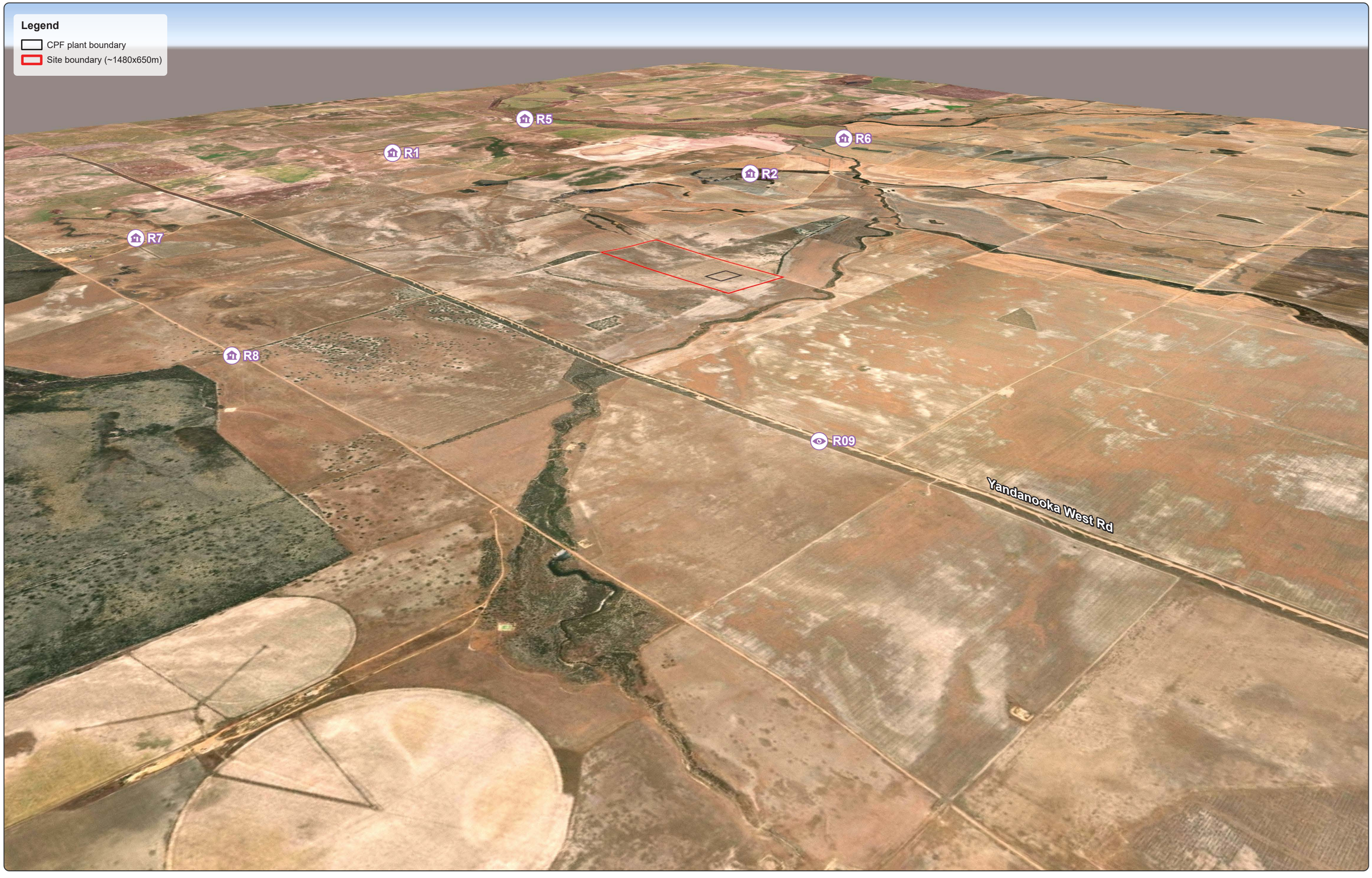

Figure 2-1
Oblique Aerial View of the CPF Site from the South East

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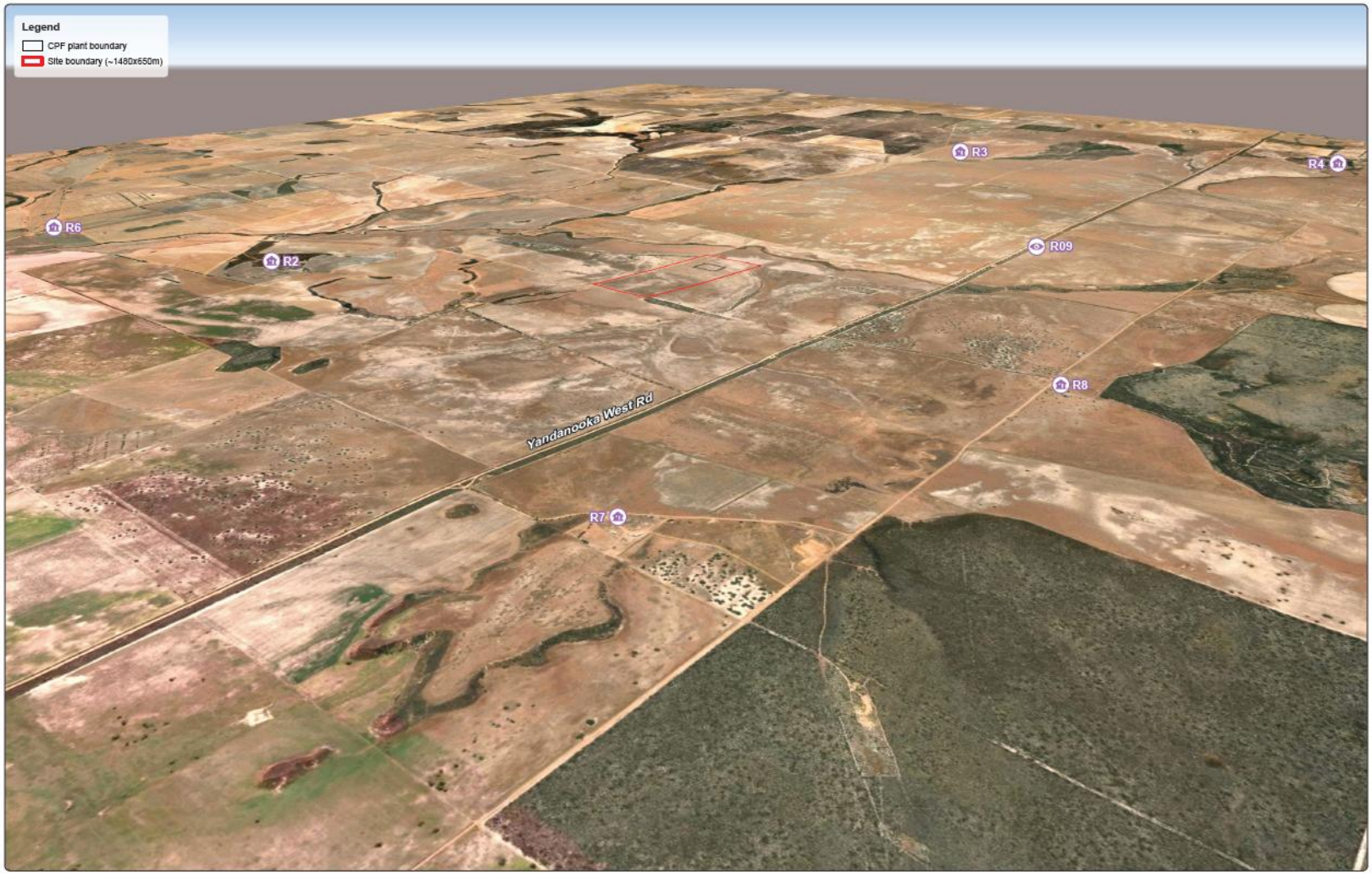


Figure 2-2
Oblique Aerial View of the CPF Site from the South West

Figure 2-2: Oblique Aerial View of the CPF Site from the South-west

2.2. Topography and Soil Landscape Systems

The CPF is located within a small valley, with the site sloping down to the east towards Sand Plain Creek (Figure 2-1, Figure 2-2 and Figure 2-3). A major ridgeline extends along the western side of the site boundary to the south past Yandanooka West Road (Figure 2-3). The landscape is generally undulating, with a number of localised rocky sandstone outcrops to the north-west and west of the CPF site representing distinctive features of the landscape.

The CPF and surrounding area (i.e. within 5 km) is characterised by the following soil landscape systems (DPIRD 2025a, 2025b):

- Mount Adams System: Gently undulating sandplain with low gravel ridges and occasional laterite breakaways
    - Mount Adams 1 Subsystem: Lateritic caps and isolated lateritic mesas and eroded scarp slopes, exposed kaolinized bedrock; sandy gravels, pale and yellow deep sand
    - Mount Adams 2 Subsystem: Basins eroded into hillsides below breakaways; Pale and Yellow deep sands and sandy duplexes
    - Mount Adams 3 Subsystem: Undulating rises to low hills with common minor lateritic outcrops; sandy gravels and pale and yellow deep sands
    - Mount Adams 4 Subsystem: Long gentle hill slopes; Pale, Yellow and Gravelly pale deep sand.
- Mount Horner System: Long gentle slopes broken by low gravel ridges and broad open depressions. Some lateritic breakaways with spillway sands
    - Mount Horner Casuarina Subsystem: Level to gently undulating sandplain; Yellow deep sand and sand over gravel, some pale deep sands, yellow sandy earths and sandy gravels
    - Mount Horner Allanooka Subsystem: Level to very gently inclined drainage depressions at low positions in the landscape; Grey deep sandy duplexes and pale deep sands
    - Mount Horner Munja Subsystem: Dissected margin of sandplain, gently inclined long slopes with low gravel ridges and spillway sands below lateritic breakaways.

2.3. Surface Geology

The CPF and surrounding area intersects six geological formations (Raymond et al. 2012; Table 2-1).

Table 2-1: Surface geology surrounding the CPF

Surface Geology	Description
Alluvium 38485	Channel and flood plain alluvium; gravel, sand, silt, clay, locally calcreted
Colluvium 38491	Colluvium, sheetwash, talus; gravel piedmonts and aprons over and around bedrock; clay-silt-sand with sheet and nodular kankar; alluvial and aeolian sand-silt-gravel in depressions and broad valleys in Canning Basin; local calcrete, reworked laterite
Dunes 38496	Dunes, sandplain with dunes and swales; may include numerous interdune claypans; residual and aeolian sand with minor silt and clay; aeolian red quartz sand, clay and silt, in places gypsiferous; yellow hummocky sand
Sand plain 38499	Sand or gravel plains; quartz sand sheets commonly with ferruginous pisoliths or pebbles, minor clay; local calcrete, laterite, silcrete, silt, clay, alluvium, colluvium, aeolian sand
Parmelia Group	Sandstone, siltstone, shale

Surface Geology	Description
Yarragadee Formation	Variegated sandstone, feldspathic sandstone, siltstone, shale, conglomerate, coal

2.4. Hydrology

The CPF is within the Greenough Drainage Basin, which is drained by the Chapman, Greenough and Irwin rivers. The basin covers an area of about 1.9 million hectares and over 90% is agricultural land (DPIRD 2005). The CPF is located within the Irwin River catchment, which covers a total area of 6,071 km^2. The nearest watercourse to the CPF is Sandy Plain Creek, approximately 400 m to the east. The river channel forms vegetated and organic forms and lines in the landscape.

2.5. Vegetation

Whilst the CPF is located within a heavily cleared and modified agricultural landscape, remnant vegetation stands do remain within paddocks and along roadsides, along with shelter-belts of planted trees.

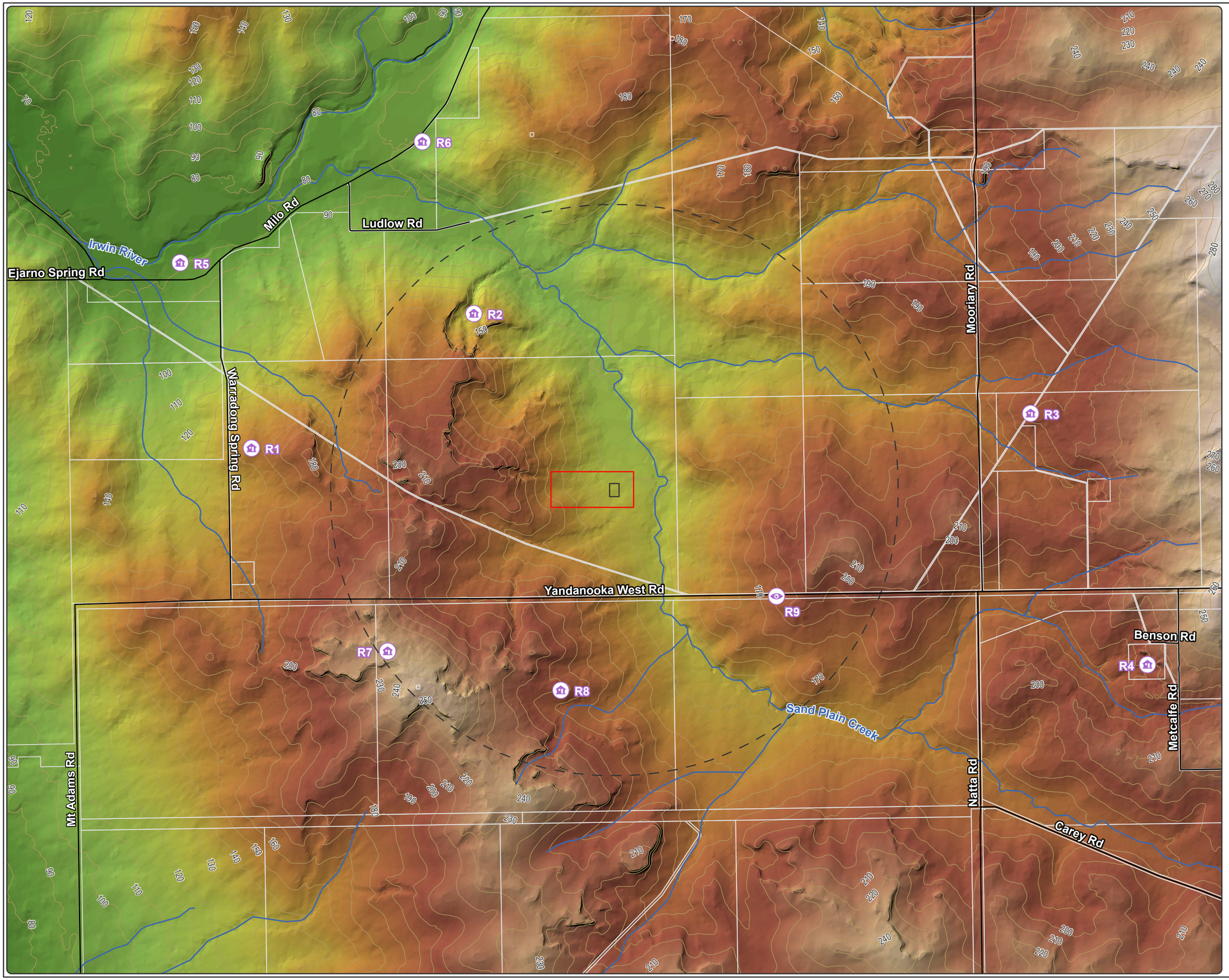
Two broad vegetation units (Beard 1976) are mapped within the area surrounding the CPF site (i.e. within 5 km):

- Tathra 379: Shrublands; scrub-heath on lateritic sandplain in the central Geraldton Sandplain Region: Mixed heath with scattered tall shrubs Acacia spp., Proteaceae and Myrtaceae
- Tathra 49: Shrublands; mixed heath: Low shrubs of mixed composition

Detailed flora and vegetation surveys reports for the Proposal are currently being finalised, however some preliminary results are available.

Generally, remnant vegetation surrounding the CPF, has been heavily impacted by agriculture and is in a degraded to completely degraded condition. However, a small patch of remnant vegetation occurs immediately to the west of the site that resembles a scrub heath. Furthermore, to the east of the site riparian vegetation occurs following Sand Plain Creek through the landscape, comprising reeds and semi-aquatic vegetation spread evenly along the banks, with sporadic trees and some large scattered *Melaleuca* shrubs.

On a regional scale agricultural weeds and grasses are ubiquitous across the landscape, however, large nature reserves are common, particularly to the south and southwest of the CPF site. This vegetation typically comprises low shrublands with small, isolated areas of low woodland, primarily comprising *Allocasuarina campestris* over tussock grasses and weeds. Low woodlands are also known to occur, comprising small to medium trees spread across even carpets of shrubs or weeds, with common species including *Banskia* and *Eucalyptus*.



Legend

- Homestead
- Public Viewpoint
- CPF plant boundary
- Site boundary
- Cadastre
- Road
- Watercourse

Elevation (mAHD)

294

50

Distance from CPF plant boundary

- 5 km
- Contours 10-meter interval (mAHD)

Figure 2-3
CPF Surrounds – Digital Elevation Model (DEM)

0 500 1,000 2,000
Metres

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2.6. Existing Landscape Character Assessment

2.6.1. Landscape Character Type

Reading the Remote: Landscape Characters of Western Australia (Reading the Remote; Stuart-Street 1994) provides a regional assessment of the varied and unique landscapes in Western Australia and is a common means of determining the broad landscape character classifications that may be applicable at a regional level. The Landscape Character Type (LCT) identified for the site is the Geraldton Plain, a sub-type of the Wheatbelt Plateau. The Geraldton Plain is a varied landscape, with defining features including the rocky coastline, shrub covered dunes, undulating low hills, open alluvial flats, and steep flat-topped ranges in the east.

The landscape of the CPF and surroundings is consistent with the Geraldton Plains description, characterised by low, undulating hills and scattered flat-topped ranges (Figure 2-3).

2.6.2. Landscape Character Unit

The Landscape Character Unit (LCU) is a secondary descriptor used to describe the appearance of basic landscape elements in an area, such as landforms, vegetation, human land use and water bodies (Stuart-Street 1994). While LCTs show common characteristics at a regional level, LCUs show more localised variations in the visual landscape. Two LCUs have been identified for the site and broader area based on descriptions provided within the Visual Landscape Manual (WAPC 2007) including:

- Rural landscape
- Natural landscape.

The Rural landscape is the dominant unit in the broader area, with the Natural landscape unit confined to the large nature reserves located to the south of the Proposal and areas along Sand Plain Creek (Figure 2-4).

2.6.2.1. Rural Landscape Character Unit

The Rural LCU is the dominant unit in the broader area (as seen in Figure 2-4 with examples of the LCU shown in Plate 2-1 and Plate 2-2) and can be described as:

- Vast areas of lightly undulating expansive agricultural paddocks
- Predominantly cleared of native vegetation, other than small remnants at some paddock boundaries and isolated paddock trees
- Ephemeral white/yellow wildflowers add colour to otherwise muted greens and browns of the paddocks
- Occasional tree plantations break up the paddocks.

Plate 2-1: CPF, south-east corner – Viewpoint overlooking the proposed location of the CPF, showing paddocks and a tree plantation, with fringing remnant vegetation along the paddock boundaries and one prominent paddock tree

Plate 2-2: Plantation and roadside vegetation – Viewpoint showing tree plantation and several eucalyptus species as replanted roadside vegetation along an unsealed access track and paddock boundaries (Phoenix 2025)

2.6.2.2. Natural Landscape Character Unit

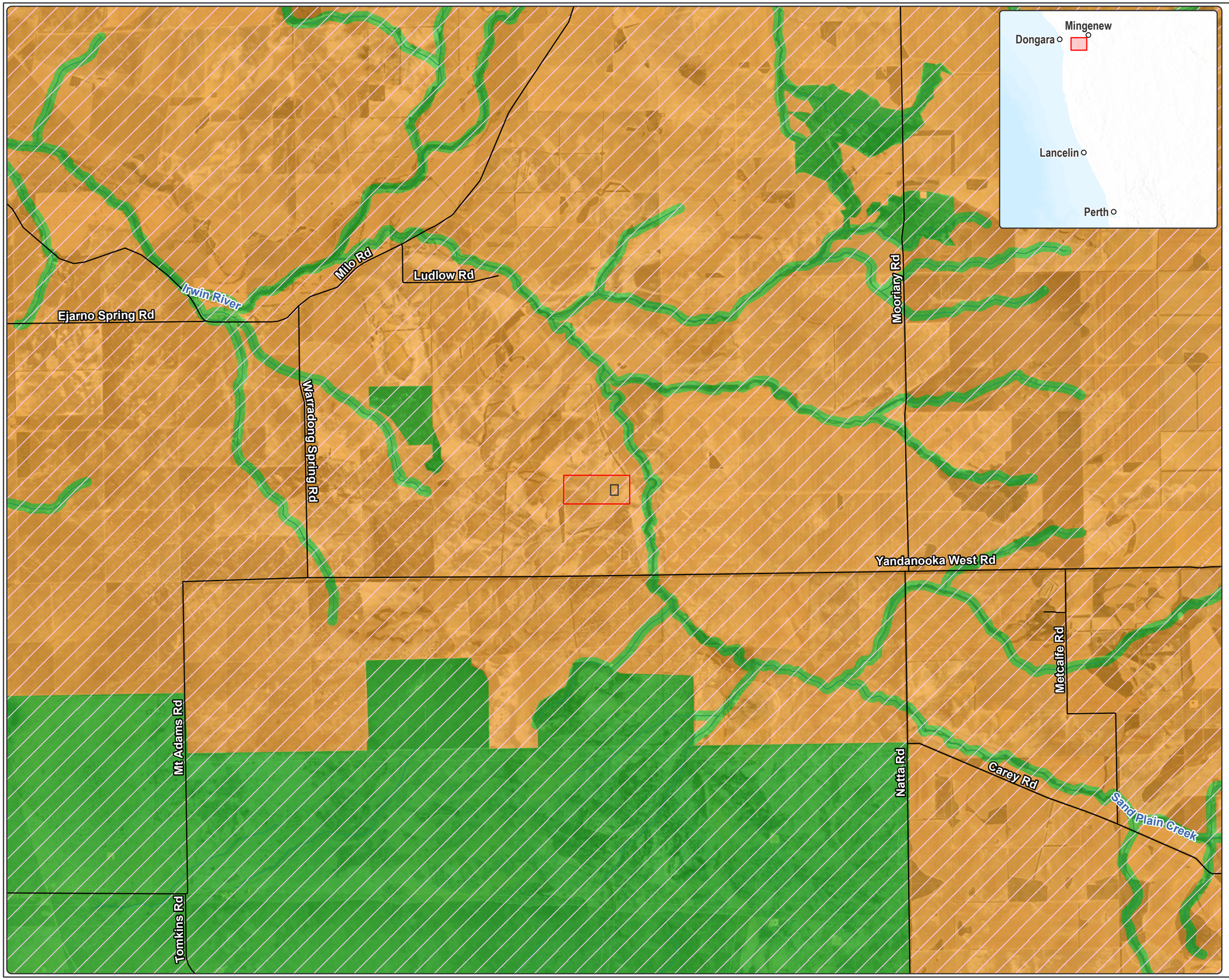
The Natural LCU is present within the surrounding area (10 km radius of the CPF site), where a number of large nature reserves occur and along rivers and creek lines (Figure 2-4). The Natural LCU, (as shown in Plate 2-3, Plate 2-4 and Plate 2-5) and can be described as the following:

- Large areas of low shrubland with small isolated areas of low woodland, adjacent to Rural land use areas
    - Sparse shrublands contain a mix of mid to low shrubs, primarily *Allocasuarina campestris* over tussock grasses and weeds
    - Woodlands contain small to medium trees spread across even carpets of shrubs or weeds, with common species including *Banskia* and *Eucalyptus*
    - Present on primarily flat and gently undulating topography
- Riparian vegetation following Sand Plain Creek through the landscape
    - Reeds and semi-aquatic vegetation spread evenly along the banks, with sporadic trees and large shrubs
    - Water is slow flowing and shallow, being ephemeral in most areas.

Plate 2-3: Low shrubland on sandy soils – Viewpoint showing *Allocasuarina campestris* tall sparse shrubland, a fire appears to have burnt the landscape within three years

Plate 2-4: Low shrubland on gravelly soils – Viewpoint showing *Allocasuarina campestris* tall sparse shrubland over low open sedgeland

Plate 2-5: Creekline and riparian vegetation – Viewpoint showing a section of Sand Plain Creek and low riparian vegetation, interspersed with the occasional small tree (Phoenix 2025)



Legend

- CPF plant boundary
- Site boundary
- Road
- Watercourse

Landscape Character Type

- Geraldton Sand Plain

Landscape Character Unit

- Natural
- Rural

Figure 2-4
CPF Surrounds – Landscape Character

0 500 1,000 2,000
Metres

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3. Visual Access and Viewing Experience

An important aspect in assessing the visual impact of a Proposal is to consider how the landscape is viewed and valued (WAPC 2007). The CPF site occurs in a rural area, with limited public access and no major roads in proximity. Midlands Road, approximately 12 km from the CPF site, is the closest major road. Given the distance from this road, and the topography in which the CPF lies, the CPF is not likely to be visible from Midlands Road.

According to locally based Hancock Energy representatives, there are no designated scenic viewpoints surrounding the CPF site which may be used by travellers in the area, nor are there any recreational land uses in the vicinity. The 'Exploring Wildflower Country - Midlands Route': a triangular, self-guided wildflower route bound by Coorow, Mullewa and Geraldton (Wildflower Country 2020), is 12 km away from the CPF at its closest point, which will not be visible from the tourist route.

The remaining roads surrounding the CPF, including Yandanooka West Road, are local, unsealed roads, with use predominantly restricted to people accessing the surrounding residences/farming properties.

Local residents are assumed to be the most concerned about the visual amenity of the area, given their daily interaction with the landscape. Eight local residences/farming properties (sensitive receptors) have been identified within approximately 10 km of the CPF (Table 3-1; Figure 1-1). An approximately 10 km stretch of Yandanooka West Road is also considered as a sensitive receptor, due to the fact that motorists will be able to see elements of the CPF along this section.

Table 3-1: Sensitive Receptors Identified in Proximity to the CPF Site

Sensitive Receptor Number	Details	Description	Distance from CPF
R1	Homestead 1	Occupied residence at 296 Warradong Spring Road, Milo 6525	6.8 km W
R2	Homestead 2	Occupied residence at 226 Ludlow Road, Milo 6525	4.2 km NW
R3	Homestead 3	Occupied residence at 1245 Mooriary Road, Mooriary 6522	7.6 km E
R4	Homestead 4	Occupied residence at 1833 Yandanooka West Rd, Arrowsmith East 6519	9.6 km E
R5	Homestead 5	Occupied residence at 1146 Milo Road, Milo 6525	9.0 km NW
R6	Homestead 6	Occupied residence at 226 Ludlow Road, Mooriary 6522	7.2 km NW
R7	Homestead 7	Occupied residence at 1906 Yandanooka West Road, Milo 6525 Owned in freehold by Hancock Energy	5.3 km SW
R8	Homestead 8	Occupied residence at 2951 Yandanooka West Road, Mooriary 6522 Owned in freehold by Hancock Energy	3.9 km S
R9	Yandanooka West Road	Unsealed local road. Primary access route to the CPF and several sensitive receptors Approximately 10 km stretch	~2.0 km S (at closest point)

4. Visual Impact Assessment

This section assesses the visual impact of the Proposal against management objectives that aim to ensure that existing landscape values and viewing experiences are protected from significant harm, in line with the EPA's objective for Social Surroundings.

Two methods for modelling and depicting visual impacts at a landscape scale have been used to inform the assessment of impacts to visual amenity likely to result from development within the CPF.

Firstly, the viewshed has been mapped from the point of view of the CPF development itself to assess all locations from which the CPF may be viewed. The methodology and results of this viewshed analysis are presented in Section 4.2.

Secondly, a viewpoint analysis has been undertaken from selected viewing locations corresponding to sensitive receptors and public roads to model the potential views of the CPF development. The methodology and results of this viewpoint analysis are presented in Section 4.3.

4.1. Landscape Management Objectives

The overall management objective is to ensure that the Proposal is designed and implemented in such a way that the existing landscape character at both the regional level (i.e. LCT in accordance with *Reading the Remote* [Stuart-Street 1994]) and local level (i.e.. LCU in accordance with the *Visual Landscape Manual* [WAPC 2007]) is protected and maintained.

Specific management objectives relevant to each LCU are provided in Table 4-1. These have been developed in consideration of the Shire of Mingenew Local Planning Scheme No. 4, which identifies objectives for Rural zoned areas, including 'to provide for the maintenance or enhancement of specific local character'(DPLH 2023a).

Table 4-1: Landscape character management objectives

Landscape Character Unit	Management Objectives
Rural	• Existing topographic features are maintained; in particular, views of the ridgelines and horizon • The proposed development principally blends into the surrounding rural environment to minimise visual impact
Natural	• Existing topographic features are maintained; in particular, views of the ridgeline and horizon • Broad views to and from nature reserves are generally maintained to ensure views from key external locations to nature reserves adjacent to the site are managed • The proposed development principally blends into the surrounding natural environment to minimise visual impact

This document aims to identify the appropriateness, need for, and likely workability of visual mitigation measures to ensure that these management objectives can be met.

4.2. Viewshed Analysis

A viewshed analysis was performed using a 3-dimensional digital elevation model (DEM) for the site and visualisation software (ArcGIS Pro, Photoshop, and 3DS Max) to determine which locations within the vicinity of the CPF site would have potential views of the site and to determine the viewshed or 'seen area' of key infrastructure to be located within the CFP, based on proposed maximum heights. A viewshed or 'seen area' is defined as '*a portion of the landscape that can be seen from one or more*

observer positions. The extent of the area that can be viewed is normally limited by landform, vegetation and distance' (WAPC 2007).

Sensitive receptors were overlaid with the viewshed to determine whether these locations would have a view of the proposed development. The outcomes of the viewshed analysis for key infrastructure components are shown in Figure 4-1 to Figure 4-4.

Notably, local topography obstructs potential views of even the tallest infrastructure elements at four of the nine identified sensitive receptors (R1, R3, R4, and R5). As such, these four receptors were not included in subsequent analysis. In summary:

- The tallest infrastructure (HP/LP flare; height 60.0 m) will be at least partly visible from five of the nine identified sensitive receptors. (R2, R6, R7, R8, and R9; Figure 4-1)
- The thermal oxidiser (height 17.3 m), amine systems (height 18.0 m), gas gensets (height 13.2) and still column tank (12.0 m) will be at least partly visible from four of the nine identified sensitive receptors (R2, R7, R8, and R9; Figure 4-2 and Figure 4-3).
- Other CPF infrastructure (average height 5 m for modelling purposes) will be visible to varying degrees from three of the nine sensitive receptors (R7, R8, and R9; Figure 4-4).

It is noted that vegetation has not been considered in the viewshed analysis and is likely to play a role at a local scale in decreasing the 'seen area.'

ID	Details
R1	Homestead 1
R2	Homestead 2
R3	Homestead 3
R4	Homestead 4
R5	Homestead 5
R6	Homestead 6
R7	Homestead 7
R8	Homestead 8
R9	Yandanooka West Road

Viewpoint ID	Description
VP-01	R2, Homestead 2
VP-02	R6, Homestead 6
VP-03	R7, Homestead 7
VP-04	R8, Homestead 8
VP-05	Yandanooka West Road (West)
VP-06	Yandanooka West Road (Central)
VP-07	Yandanooka West Road (East)

Ejarno Spring Rd
Irwin River
Milo Rd
Ludlow Rd
Warradong Spring Rd
Moorlary Rd
Yandanooka West Rd
Mt Adams Rd
Tomkins Rd
Natta Rd
Metcalfe Rd
Carey Rd
Sand Plain Creek

Legend

- Homestead
- Public Viewpoint
- Photo Viewpoint
- HP/LP Flare visible
- CPF plant boundary
- Site boundary
- Cadastre
- Road
- Watercourse

Distance from CPF plant boundary

- 5 km
- 10 km

Figure 4-1
Viewshed analysis: HP/LP Flare (height 60m)

0 500 1,000 2,000
Metres

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ID	Details
R1	Homestead 1
R2	Homestead 2
R3	Homestead 3
R4	Homestead 4
R5	Homestead 5
R6	Homestead 6
R7	Homestead 7
R8	Homestead 8
R9	Yandanooka West Road

Viewpoint ID	Description
VP-01	R2, Homestead 2
VP-02	R6, Homestead 6
VP-03	R7, Homestead 7
VP-04	R8, Homestead 8
VP-05	Yandanooka West Road (West)
VP-06	Yandanooka West Road (Central)
VP-07	Yandanooka West Road (East)

Milo Rd
Ludlow Rd
Irwin River
Ejarno Spring Rd
Warradong Spring Rd
Moorlary Rd
Yandanooka West Rd
Mt Adams Rd
Tomkins Rd
Natta Rd
Carey Rd
Sand Plain Creek
Metcalfe Rd

Legend

- Homestead
- Public Viewpoint
- Photo Viewpoint
- Amine systems and Thermal Oxidiser visible
- CPF plant boundary
- Site boundary
- Cadastre
- Road
- Watercourse

Distance from CPF plant boundary

- 5 km
- 10 km

Figure 4-2
Viewshed analysis: Amine systems (height 18m) and Thermal Oxidiser (height 17.8m)

0 500 1,000 2,000
Metres

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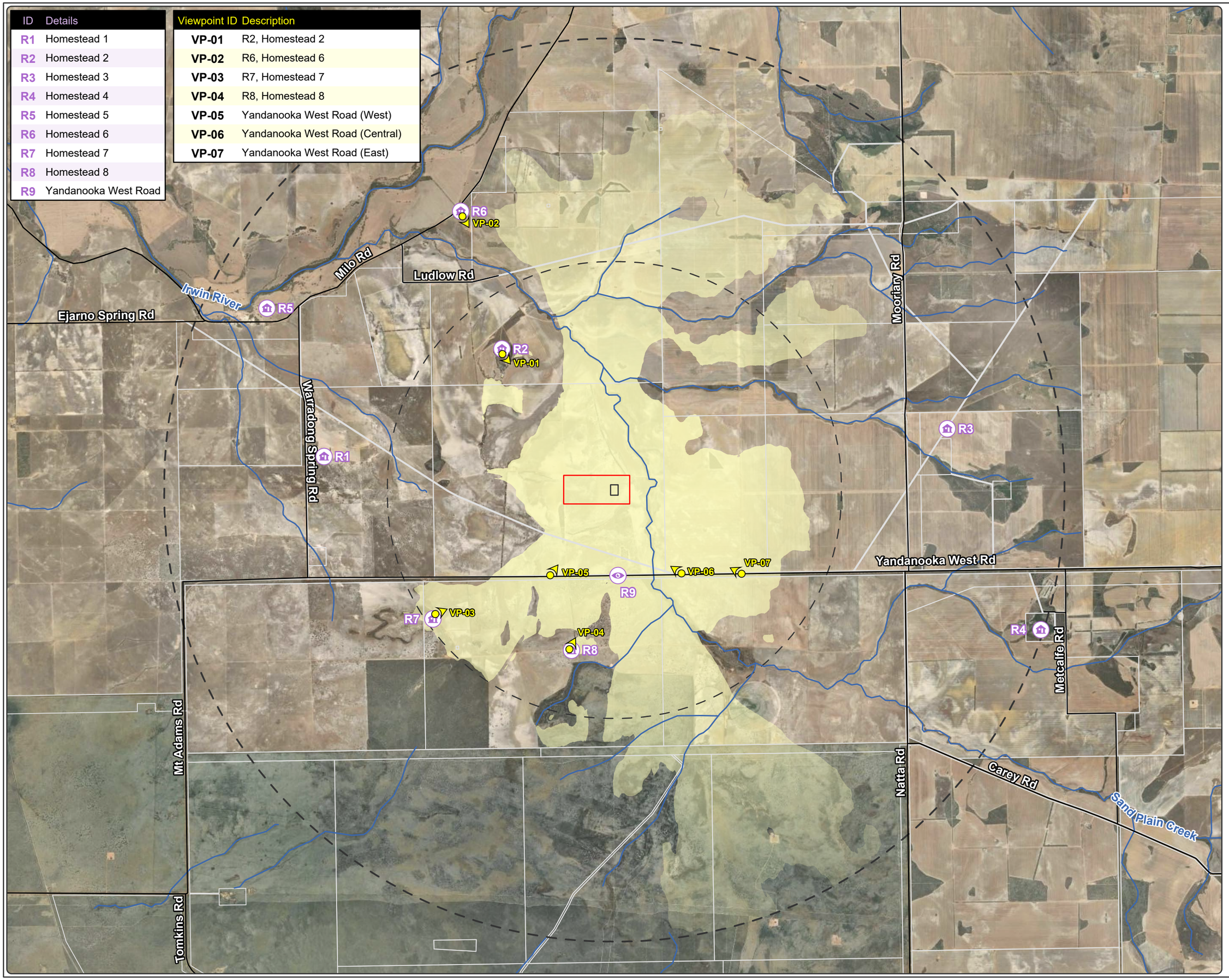
ID	Details
R1	Homestead 1
R2	Homestead 2
R3	Homestead 3
R4	Homestead 4
R5	Homestead 5
R6	Homestead 6
R7	Homestead 7
R8	Homestead 8
R9	Yandanooka West Road

Viewpoint ID	Description
VP-01	R2, Homestead 2
VP-02	R6, Homestead 6
VP-03	R7, Homestead 7
VP-04	R8, Homestead 8
VP-05	Yandanooka West Road (West)
VP-06	Yandanooka West Road (Central)
VP-07	Yandanooka West Road (East)



Legend

- Homestead
- Public Viewpoint
- Photo Viewpoint
- Gas Gensets and Still Column Tank visible
- CPF plant boundary
- Site boundary
- Cadastre
- Road
- Watercourse

Distance from CPF plant boundary

- 5 km
- 10 km

Figure 4-3
Viewshed analysis: Gas Gensets (height 13.2m) and Still Column Tank (height 12m)

0 500 1,000 2,000
Metres

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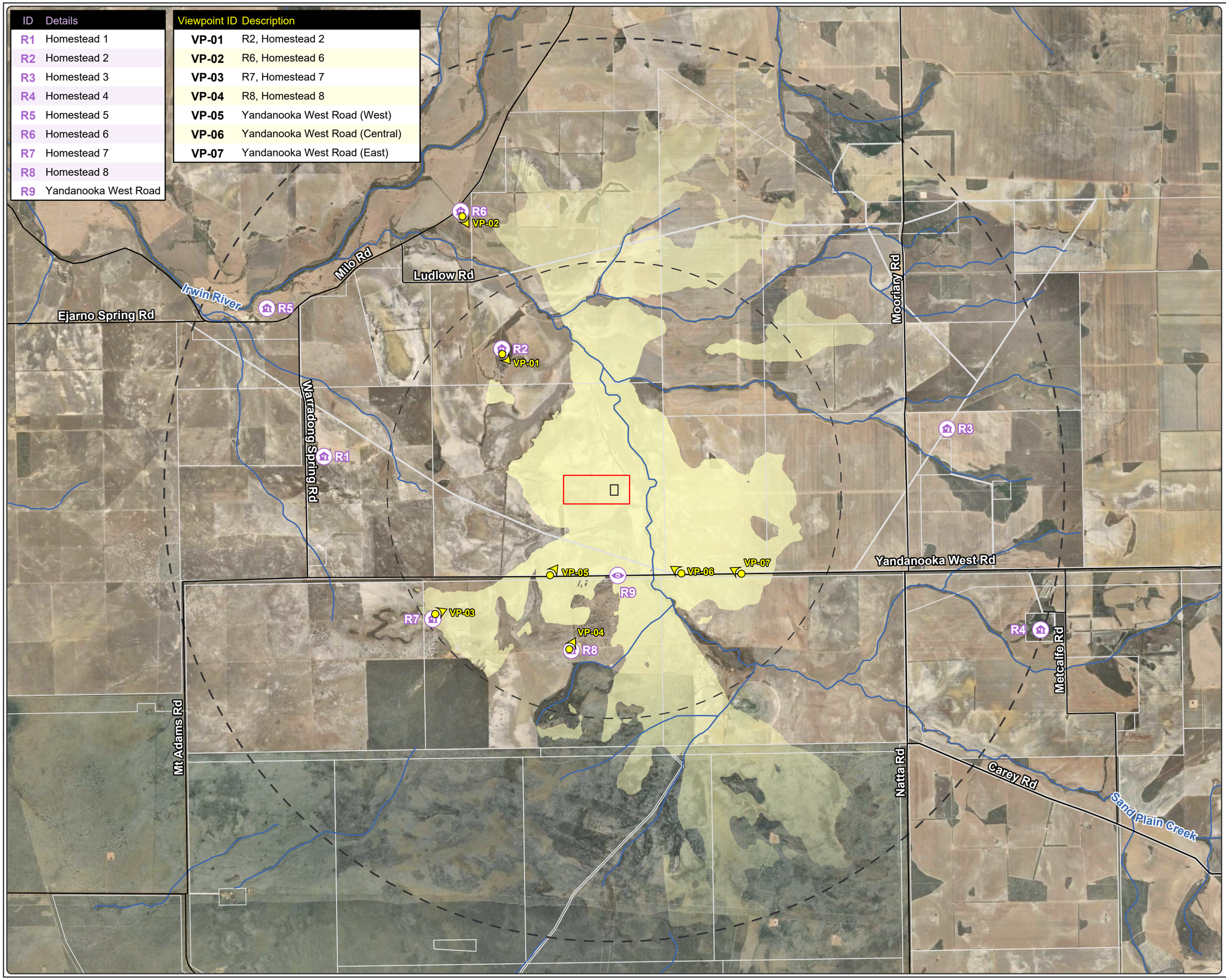
ID	Details
R1	Homestead 1
R2	Homestead 2
R3	Homestead 3
R4	Homestead 4
R5	Homestead 5
R6	Homestead 6
R7	Homestead 7
R8	Homestead 8
R9	Yandanooka West Road

Viewpoint ID	Description
VP-01	R2, Homestead 2
VP-02	R6, Homestead 6
VP-03	R7, Homestead 7
VP-04	R8, Homestead 8
VP-05	Yandanooka West Road (West)
VP-06	Yandanooka West Road (Central)
VP-07	Yandanooka West Road (East)



Legend

- Homestead
- Public Viewpoint
- Photo Viewpoint
- CPF plant boundary visibile
- CPF plant boundary
- Site boundary
- Cadastre
- Road
- Watercourse

Distance from CPF plant boundary

- 5 km
- 10 km

Figure 4-4
Viewshed analysis: CPF plant boundary (average height 5m for modelling purposes)

0 500 1,000 2,000
Metres

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4.3. Viewpoint Analysis

Given the fact that infrastructure is likely to be viewed to varying degrees from a number of sensitive receptors and surrounding public roads within approximately 10 km of the site, further analysis has been completed to assess the extent and nature of visual impacts at these locations within the landscape.

To best capture potential views from the sensitive receptors, photos were taken from the nearest public road to the residences. At a local scale, viewpoints have generally been selected to coincide with worst case scenarios including hillcrests or gaps in roadside vegetation. Photos were taken by a Hancock Energy representative at each of the viewpoint locations in the direction of the proposed CPF. Using 3-dimensional terrain modelling and visualisation software (3DS Max), these photos were overlayed with the location and indicative maximum height of the CPF infrastructure to demonstrate infrastructure visibility from the various viewpoints.

Each viewpoint location and montages of CPF infrastructure are shown in Figure 4-9 to Figure 4-6.

It is noted that apart from key infrastructure at heights of 60.0 m (flare), 17.8 m (thermal oxidiser) 18.0 m (amine contractor tower, amine regeneration system), 13.2 m (gas gensets), and 12.0 m (still column tank), other CPF infrastructure has been modelled and displayed in the viewpoint analysis figures as a 5 m high rectangular block. This provides an average of the height of the majority of the facility (not including the tall towers shown separately). In reality, this infrastructure will not be a solid block, and therefore likely visibility has been conservatively overestimated in this analysis.

Table 4-2 provides a summary of the likely visibility of the proposed development from each of the viewpoints. Further detail on the viewpoints impacted by the Proposal are provided in Sections 4.3.1 to 4.3.3.

Table 4-2: Likely visibility of the CPF infrastructure at selected locations

Viewpoint Location	Viewpoint Distance from CPF	Summary of Likely Impacts
Homestead 2 VP-01 (R2)	4.2 km	Surrounding vegetation and raised ridge completely obscures all CPF infrastructure, and will not be discussed further.
Homestead 6 VP-02 (R6)	7.2 km	Surrounding vegetation and raised ridge completely obscures CPF infrastructure, except flare tower which slightly breaches horizon line.
Homestead 7 VP-03 (R7)	4.9 km	The flare and majority of the plant and amine systems are visible from this location. No infrastructure breaches the horizon line.
Homestead 8 VP-04 (R8)	3.9 km	Surrounding vegetation and raised ridge completely obscures all CPF infrastructure, and will not be discussed further.
Yandanooka West Road (West) VP-05 (R9)	2.4 km	All infrastructure is visible from this location below the horizon line, but partially obscured by vegetation in the intervening paddocks. The flare is separated from the remainder of the infrastructure which reduces uniformity.
Yandanooka West Road (Central) VP-06 (R9)	2.3 km	The majority of the plant and amine systems are visible from this location below the horizon line, but partially obscured by vegetation in the intervening paddocks. The flare is visible from this location above the horizon line, but separated from the remainder of the infrastructure which reduces uniformity. This is the closest modelled viewpoint to the CPF.
Yandanooka West Road (East) VP-07 (R9)	3.1 km	All infrastructure is visible from this location below the horizon line, but partially obscured by vegetation in the intervening paddocks. The flare is visible from this location slightly above the horizon line, but partially obscured by roadside vegetation.

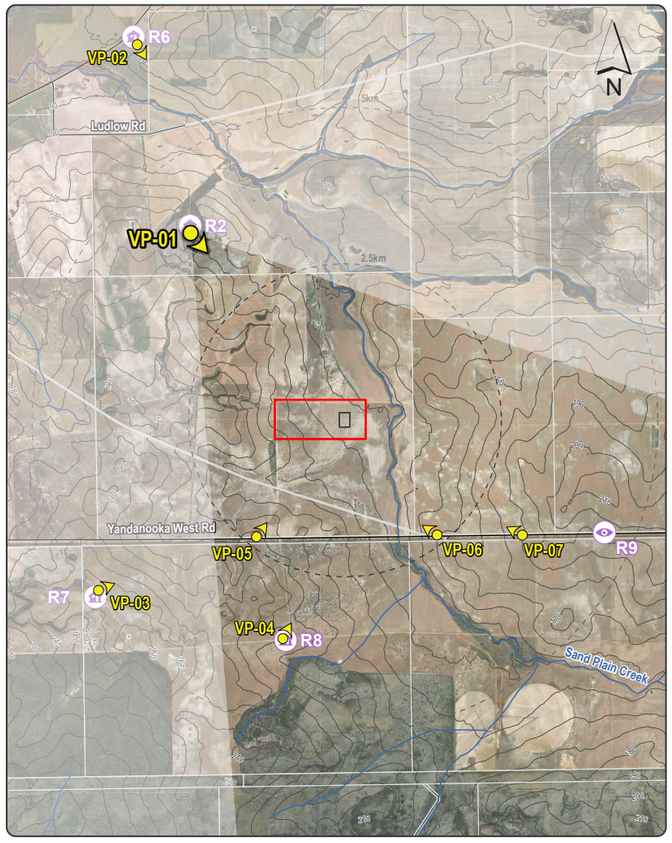

Figure 4-5
Indicative CPF Plant Visibility from VP-01
Homestead 2, view from SW (4.2 km from CPF)

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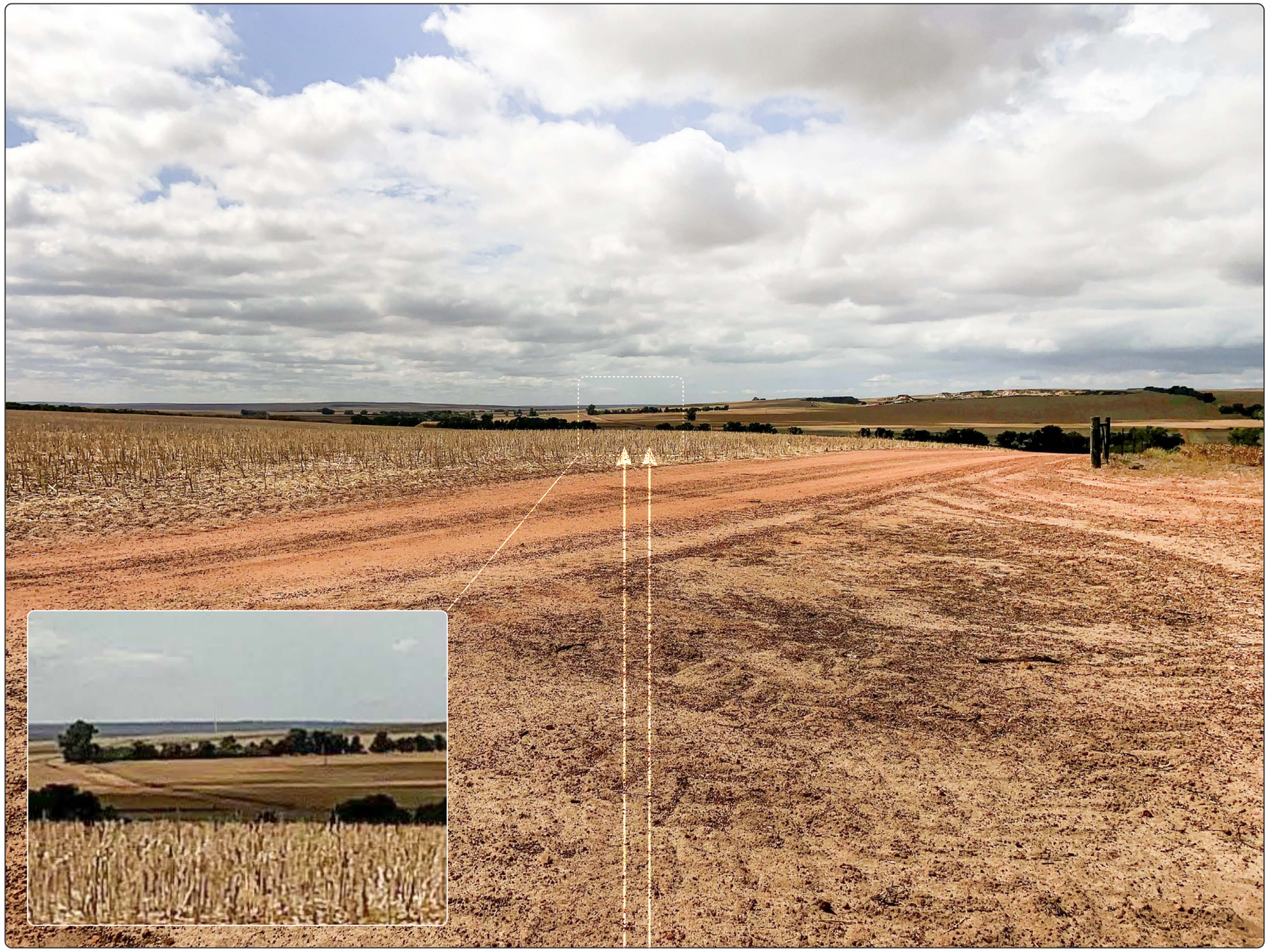

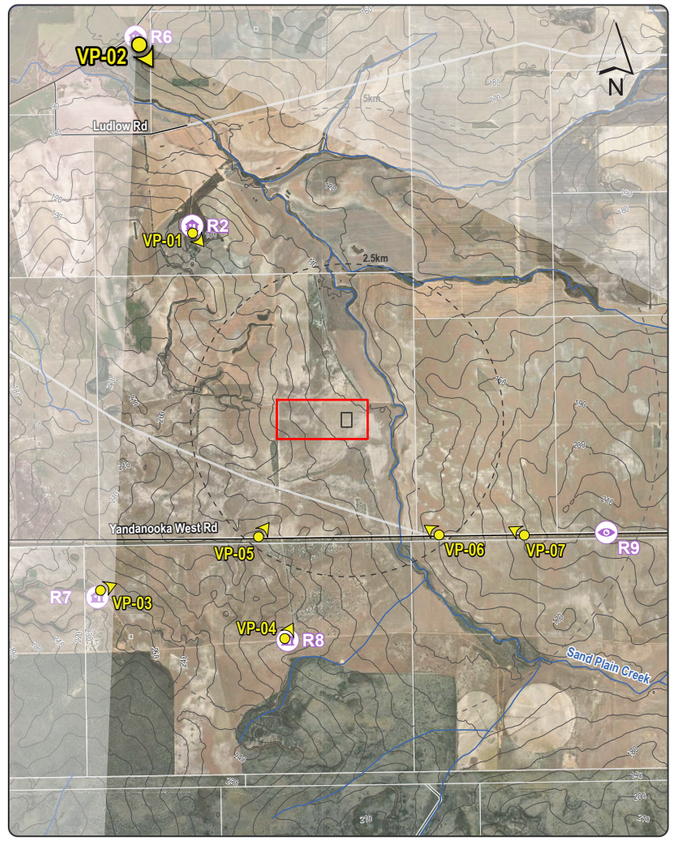

Figure 4-6
Indicative CPF Plant Visibility from VP-02 Homestead 6, view from SW (7.2 km from CPF)

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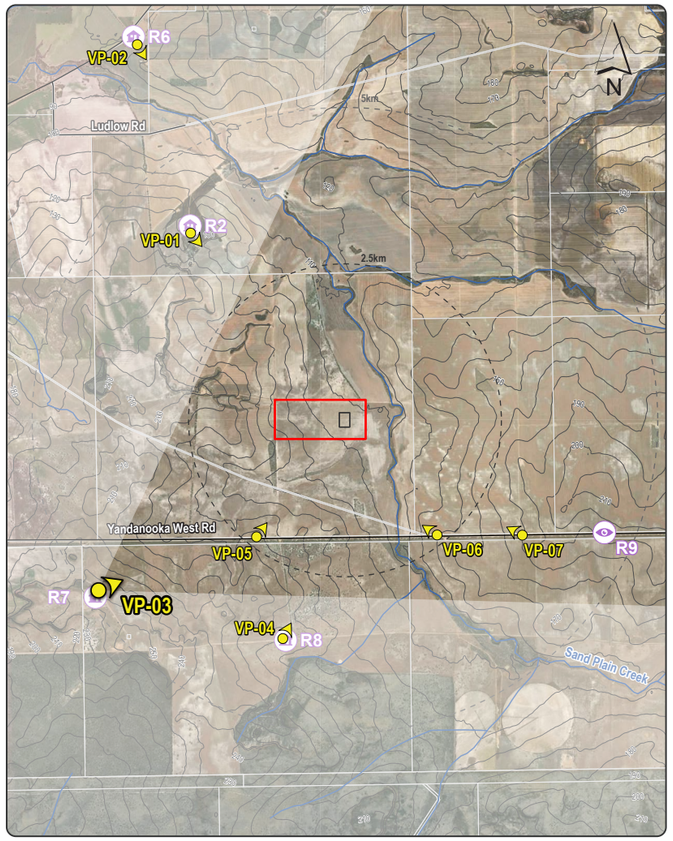

Figure 4-7
Indicative CPF Plant Visibility from VP-03
Homestead 7, view from SW (4.9 km from CPF)

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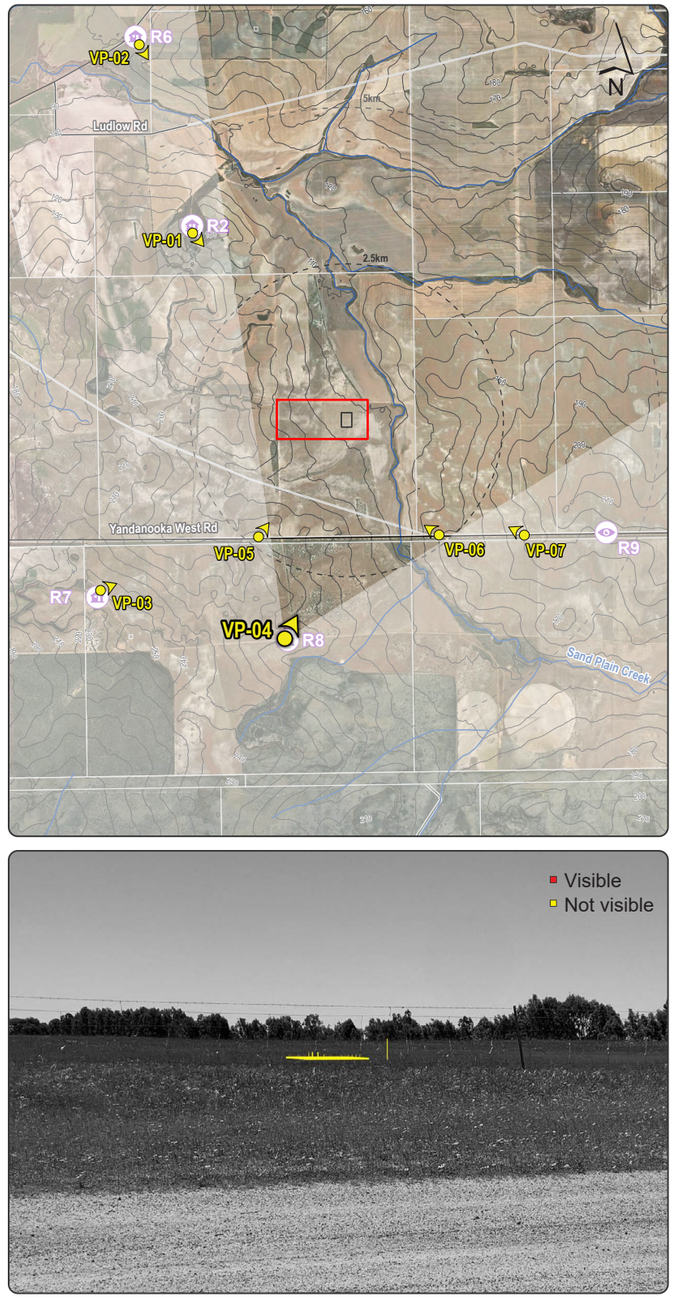

Figure 4-8
Indicative CPF Plant Visibility from VP-04
Homestead 8, view from SW (3.9 km from CPF)

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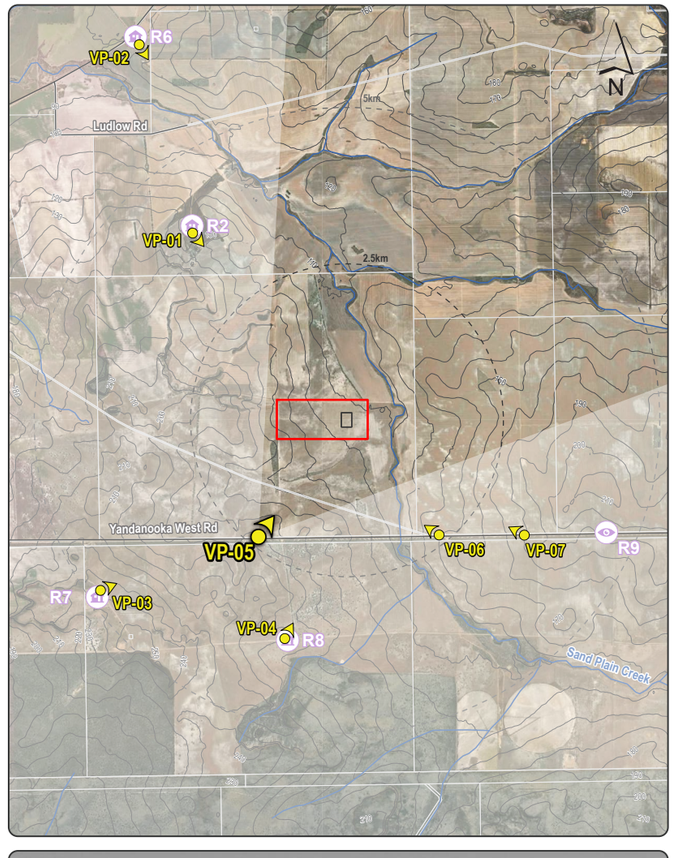

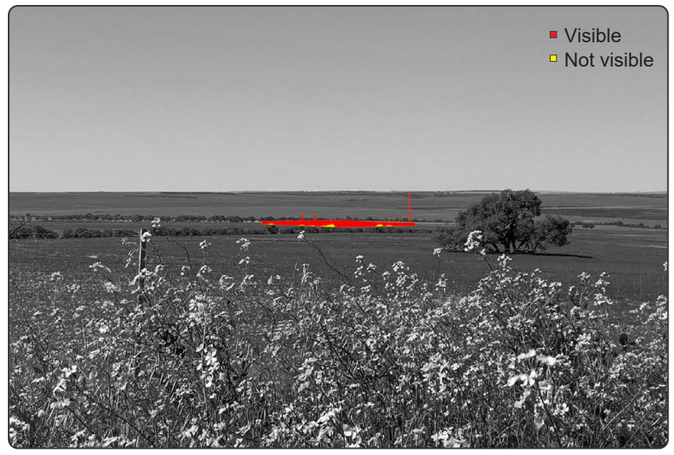

Figure 4-9
Indicative CPF Plant Visibility from VP-05
Yandanooka West Road (West), view from SW (2.4 km from CPF)

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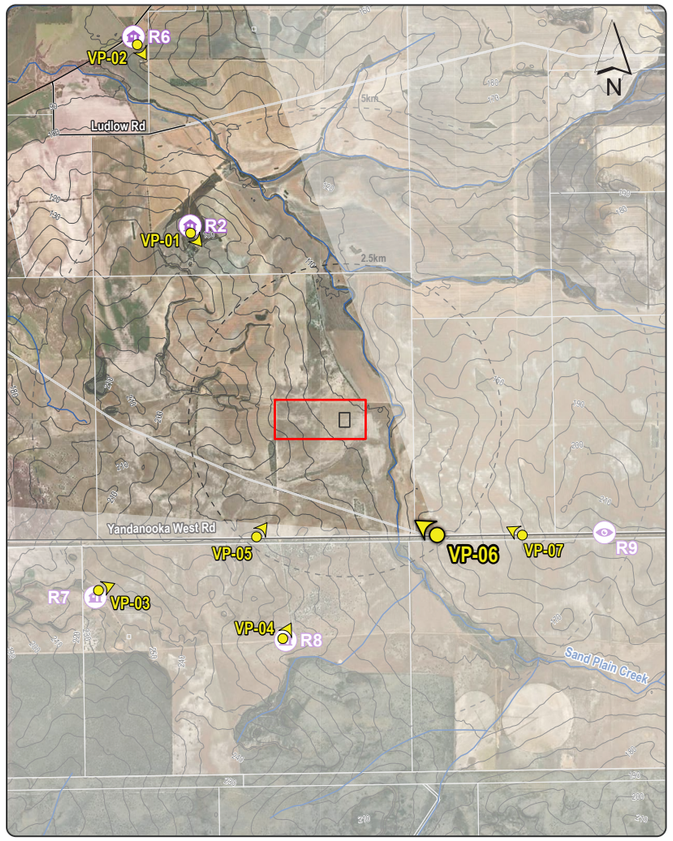

Figure 4-10
Indicative CPF Plant Visibility from VP-06
Yandanooka West Road (Central), view from SE (2.3 km from CPF)

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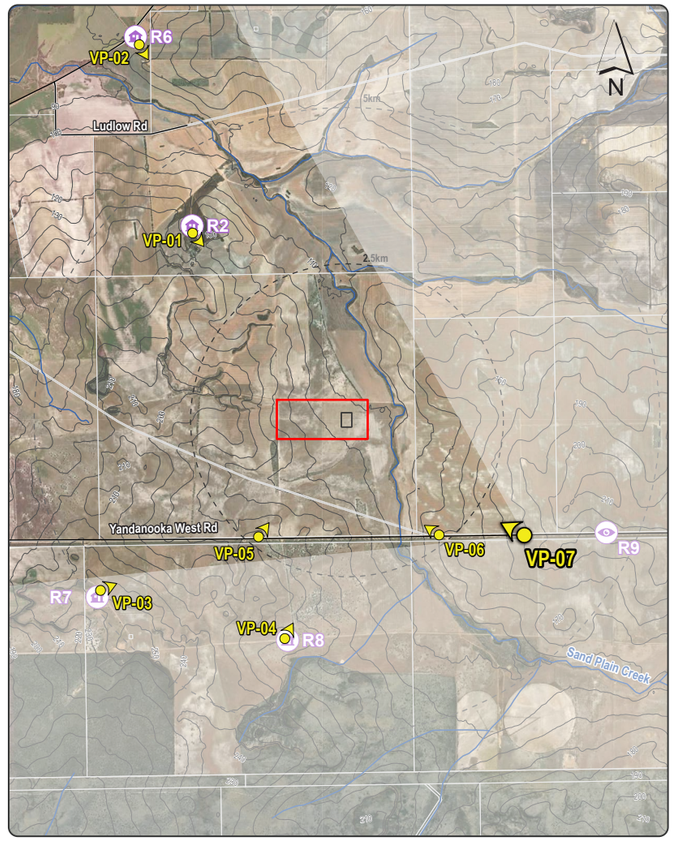

Amine systems (18m)

HP/LP Flare (60m)

CPF Plant extent
(Average 5m height of infrastructure)

CPF Plant extent
(Average 5m height of infrastructure)

Figure 4-11
Indicative CPF Plant Visibility from VP-07
Yandanooka West Road (East), view from ESE (3.1 km from CPF)

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4.3.1. Homestead 6 (VP-02)

The viewpoint for Homestead 6 is located 7.2 km north-west of the CPF. Due to a slight rise in the intervening topography, and a belt of intervening trees along the length of the site, the majority of the CPF infrastructure is likely to be completely obstructed from view (Figure 4-6). Only the flare tower is visible above the tree line and slightly breaches the horizon line, but due to the high viewing distance and the proximity of trees, any disruption to the horizon is not obvious to the human eye.

For this viewpoint, the Rural LCU objectives would apply. Given that the visual impact from this viewpoint is negligible, the Rural LCU objectives can be considered to be achieved.

4.3.2. Homestead 7 (VP-03)

The viewpoint for Homestead 7, owned by Hancock Energy, is located approximately 4.9 km south-west of the CPF, and due to the raised elevation of the viewing position and lack of intervening vegetation the majority of the CPF would be visible from this location (Figure 4-7). The design montage shows:

- Infrastructure at all heights, though far in the distance, is visible and unobstructed, except a small section of 5 m Other Infrastructure to the west of the development obscured by intervening paddock boundary trees
- Taller infrastructure, such as the amine systems (18 m) and flare tower (60 m) are distinguishable from the rest of the infrastructure, but do not breach the horizon line due to the site being positioned at a lower elevation than the surrounding landscape
- Distance from the site (4.9 km), size and form makes the infrastructure difficult to distinguish from other landscape elements, such as unsealed roads and access tracks also evident in the design montage below the horizon
- Visibility of the CPF may be obstructed entirely if crops were to extend closer to the foreground fence.

For this viewpoint, the Rural LCU objectives would apply. While the development is larger than other buildings in the area, its location far in the distance and below the horizon reduces its impact on the landscape to a similar scale currently shown by the several unsealed roads and access tracks present in the same viewpoint, allowing the Rural LCU objectives to be achieved.

4.3.3. Yandanooka West Road (VP-05, 06, and 07)

Yandanooka West Road runs east-west approximately 2 km south of the CPF at its closest point, with the CPF potentially visible to motorists for an approximately 10 km stretch of the road between patches of roadside vegetation as they pass through the area. This receptor is represented in the following design montages (Figure 4-9, Figure 4-10, and Figure 4-11). These design montages show:

- The topography of the surrounding area means that visual impact is greater when viewed travelling westward along the road, due to the lower horizon line.
- Infrastructure at all heights is visible, though in the distance. The modelled 5 m tall infrastructure is often partially obscured by intervening paddock trees
- The flare tower (60 m) is distinguishable from the rest of the infrastructure, and breach the horizon line when viewed from the central section of the road
- The flare tower is separated from the remainder of the infrastructure when viewed from the central position, reducing the uniformity of the CPF as a solid block

- Amine systems (18 m) are distinguishable from the remaining infrastructure, but do not breach the horizon line
- Distance from the site (2.3 km) and lower elevation of the site reduces the CPF's prominence.

For these viewpoints, the rural LCU objectives would apply. The prominence of the development's infrastructure in the landscape is greatly reduced by distance, intervening vegetation, and its lower elevation compared to the viewpoint. The most stark visual impact is the flare tower breaking the horizon line when viewed from the east along the road. However, users of the road will typically be traveling at high speed, and the CPF's position in the far distance prevents it from dominating the surrounding view. This impact is further reduced when travelling eastward due to the low siting of the CPF and the surrounding topography and vegetation. This obscures the majority of infrastructure when traveling eastward, until a vehicle is almost in line with the CPF site. Given that this visual impact is minimal and transitory in nature, the Rural LCU objectives are considered to have been achieved.

5. Significance of Likely Impacts

Visual impact assessment is used as a tool for understanding the impact of a proposal on visual amenity and its likely acceptability. In Western Australia, amenity is considered by the EPA in environmental impact assessment as a component of the Social Surroundings factor and is described as 'a broad term that generally means the qualities, attributes and characteristics of a place that make a positive contribution to quality of life'. The EPA's objective for Social Surroundings is: 'To protect social surroundings from significant harm' (EPA 2023b). The purpose of this VIA is to assess the impact of development within the CPF, proposed in association with the Belisama Gas Project, with regards to visual amenity, and to determine the potential significance of these impacts.

The EPA notes that areas of high cultural, heritage or social significance due to scenic quality or natural features may contribute to a place's visual amenity (EPA 2023b). The landscape surrounding the CPF does not include particular scenic or natural features. The proposed development is located in a rural area, surrounded by agricultural properties. Roads are utilised mainly by local traffic, and sensitive receptors in proximity to the proposed development are limited to highly dispersed rural residences and a 10 km stretch of Yandanooka West Road. There are limited natural features remaining in the landscape that provide aesthetic value. However, it is recognised that Western Australian community attitudes towards rural landscapes are changing, with greater priority being placed on maintaining rural character (WAPC 2007; DPLH 2023b, 2023a). In addition, amenity values are highly subjective, as levels of perception, value or tolerance may differ. Consideration of visual impacts of the Proposal is therefore warranted.

The CPF is proposed to be located within a depression of the surrounding low undulating hills, minimising its height in the landscape and ensuring the infrastructure is largely blocked from view by the surrounding ridgelines and vegetation. Furthermore, as the area is zoned as Rural/General farming land, the development of the CPF is not expected to cause significant impacts to any future sensitive receptors not currently present. The majority of roads surrounding the site are unsealed local roads, with limited public use. The nearest main road is Midlands Road, located approximately 12 km to the north of the site and out of visual range of the CPF.

Viewshed and viewpoint analysis were utilised to model and depict the impact of the proposed CPF development on the local rural landscape and outcomes of the analysis were compared with management objectives for the relevant LCU. While the viewshed analysis indicates that the proposed development may be visible at locations throughout the surrounding landscape, including local roads and sensitive receptor locations based on topography alone, the viewpoint analysis demonstrates that existing vegetation and topography largely shields views of the bulk of the proposed development.

At three sensitive receptor locations (Homestead 6, Homestead 7, and Yandanooka West Road), the tallest infrastructure (flare) will be noticeable above the existing landscape and tree lines, but are modelled breaching the horizon line in a noticeable manner at one viewpoint along Yandanooka West Road only (Section 4.3.3). From Homestead 6 and Homestead 7, the low elevation of the CPF site and large viewing distances (i.e. ≥2 km) result in the development generally not being an overwhelming feature of the view, blending in with the topographical features of the landscape such as hills, paddock boundaries, and tree lines. Even in the event that the flare tower does breach the horizon line, as can be seen from Homestead 6 (Section 4.3.1), it is small enough and at a large enough distance to not be considered an overwhelming feature in the visual landscape.

Given the above, preliminary rural and natural landscape character management objectives are likely to be met and it is unlikely that landscape character will be significantly impacted. It is expected that existing topographic features can be maintained, broad views to and from nature reserves are

maintained, and the proposed development will principally blend into the rural landscape when viewed from sensitive receptors and public roads. On this basis, it is anticipated that, although prominent at close range, the Proposal will blend with the landscape setting at both the regional level and local level, and that visual amenity is unlikely to be significantly impacted.

Overall, with respect to visual amenity, the construction of the CPF is expected to be consistent with the EPA's objective for Social Surroundings to protect social surroundings from significant harm. Given the subjective nature of visual amenity, ongoing engagement with the community and consideration of options to address any key issues arising through consultation is recommended.

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