



TELLUS

Flora & Vegetation Management Plan Sandy Ridge



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Version 6

Company Proprietary Information

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ABBREVIATIONS

Term	Definition
AQMP	Air Quality Management Plan
AS/NZS 3580	Australian/New Zealand Standard 3580: Methods for Sampling and Analysis of Ambient Air
BMP	Bushfire Management Plan
BC Act	Biodiversity Conservation Act 2016 (WA)
CEO	The Chief Executive Officer of the DWER responsible for the administration the Environmental Protection Act 1986, or their delegate.
DAWE	Department of Agriculture, Water and the Environment (Commonwealth)
DBCA	Department of Biodiversity, Conservation and Attractions (WA)
DCCEEW	Department of Climate Change, Energy, the Environment and Water (formally DAWE) (Commonwealth)
DE	Development envelope
DPIRD	Department of Primary Industries and Regional Development (WA)
DWER	Department of Water and Environmental Regulation (WA)
EP Act	Environmental Protection Act 1986 (WA)
EPA	Environmental Protection Authority (WA)
EPBC 2015/7478	Australian Government Ministerial Approval of the Sandy Ridge Facility
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)
ERD	Environmental Review Document
the Facility	Sandy Ridge Facility as defined in Ministerial Statement No. 1234
FVMP	Flora and Vegetation Management Plan
GL/a	Gigalitres per annum
IBRA	Interim Biogeographic Regionalisation of Australia
ICP	Institutional Control Period
MS 1078	Ministerial Statement 1078, WA Government approval of the Sandy Ridge Facility (superseded)
MS 1234	Ministerial Statement 1234, WA Government approval of the Sandy Ridge Facility
NATA	National Association of Testing Authorities
PEC	Priority Ecological Community
PER	Public Environmental Review
Tellus	Tellus Holdings Ltd
tpa	tonnes per annum
VCP	Vegetation Clearing Procedure

RELEVANT MANAGEMENT PLANS

Additional aspects and impacts related to flora and vegetation management are included in the following management plans.

Document No.	Management Plan	Aspect / Impact Related to Leachate
SR-09-MPL-003	Sandy Ridge - Waste Facility Decommissioning Closure Management Plan	Revegetation and rehabilitation
SR-09-MPL-005	Sandy Ridge - Bushfire Management Plan	Fire
SR-11-MPL-001	Sandy Ridge - Air Quality Management Plan	Dust

DOCUMENT STRUCTURE

The structure of this Flora & Vegetation Management Plan (FVMP) is guided by the template requirements detailed in the 'Instructions on how to prepare *Environmental Protection Act 1986* Part IV Environmental Management Plans' (WA EPA, 2024).

The following table provides a list of the requirements as set out in WA EPA (2024) and shows where these requirements are addressed within this FVMP.

Reference (as per WA EPA 2024)	Template Requirement (as per WA EPA March 2024)	Location in FVMP
1.	Executive Summary	Page 7
2.	Context, scope and rationale	Section 1
2.1	Description of the Proposal	Section 1.1
2.2	Key environmental factors	Section 1.2
2.3	Condition requirements	Section 1.3
2.4	Rationale and approach	Section 1.4
3.	FVMP components	Section 2
4.	Adaptive management and review of the FVMP	Section 3
5.	Stakeholder consultation	Section 4
6.	Changes to FVMP	Section 5

EXECUTIVE SUMMARY

Aspect	Summary
EMP Name	Flora and Vegetation Management Plan
Proponent name	Tellus Holdings Ltd
Ministerial Statement number	MS 1234 (superseding MS 1078 and MS 1152)
Purpose of the FVMP	Provide monitoring actions for flora and vegetation in accordance with the outcomes of condition B2-1 and the objectives of condition B2-2 of Ministerial Statement MS 1234
Key environmental factor/s, outcomes/s and/or objectives	B2-1 (Outcomes) 1. No adverse impact to Banksia arborea shrubland. 2. No disturbance of priority flora above the levels described in Table 1. B2-2 (Objectives) 1. Minimise the introduction or spread of environmental weeds. 2. Prevent fires as a result of implementation of the proposal. 3. Minimise fugitive dust emissions.
Condition clauses	MS 1234 B2-1, B2-2, B2-3, C4
Project status	Construction: Completed October 2020 Operations: Commenced October 2020

1 CONTEXT, SCOPE AND RATIONALE

1.1. Sandy Ridge Facility

Tellus Holdings Ltd (Tellus) owns and operates the Sandy Ridge Facility (the *Facility*, Project or Site), Australia's only commercial-scale near-surface geological repository for Class IV and V wastes. At the Site, kaolin is mined for later use (e.g. as cell capping material or potential export to Asia or the domestic ceramics market), and Class IV and V intractable and low-level radioactive wastes are permanently isolated within the void spaces created by the mining operations. The Facility is located approximately 75 kilometres north-east of Koolyanobbing, within the Shire of Coolgardie (Figure 1-1).

The Sandy Ridge Facility was approved under Ministerial Statement 1078 on 26 June 2018, authorising the development and operation of a near-surface geological repository for the permanent isolation of Class IV and V intractable and low-level radioactive waste. Commonwealth approval under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC 2015/7478) was granted on 7 January 2019.

On 9 July 2021, Tellus referred a Revised Proposal under Section 38 of the Environmental Protection Act 1986 to align the tonnage of waste received at the gate with the quantity approved for disposal (up to 280,000 tpa). The proposal was assessed by the EPA at the Public Environmental Review (PER) level, with the Environmental Review Document published in October 2023 and EPA Report 1767 released in June 2024.

Following completion of the assessment, Ministerial Statement 1234 was issued on 13 December 2024, superseding MS 1078 and MS 1152 (the latter relating to financial assurance requirements). The Facility continues to operate in accordance with the conditions of MS 1234 and other relevant statutory instruments, including Licence L9240/2020/1. The authorised extent of the physical and operational elements of the Facility under MS 1234 is summarised in Table 1-1.

Table 1-1: Authorised Extent of Physical and Operational Elements

Element	Proposed Extent
Physical elements	
Mine pits/waste cells	Clearing up to 202.3 ha of native vegetation within a 1,061 ha development envelope
Associated infrastructure	Clearing up to 73.75 ha of native vegetation within a 1,061 ha development envelope
Waste cap design	2.0 metres (m) capillary break (screened and gap-graded material) 3.0 m thick seal layer beneath the capillary break layer Unless otherwise approved by the CEO as part of licencing decision under Part V of the EP Act
Operational elements	
Wastes permitted	Acceptance of only Class IV & V waste
Class IV and V wastes accepted at gate	Up to 280,000 tonnes tpa
Temporary waste storage on surface	Up to 15,000 t
Waste (including treated waste) disposed to waste cells	Up to 280,000 tpa
Waste origin	Only wastes generated within WA, other Australian States and Territories, and the Australian Exclusive Economic Zone
Water use	Up to 0.18 GL/a
Wastes permitted	Acceptance of only Class IV & V waste
Operational elements	

Element	Proposed Extent
Maximum temporary surface storage time	Up to 12 months, or as agreed by the CEO
Project life	25 years

1.1.1. Purpose of this document

This FVMP has been prepared in accordance with Conditions B2-3 of MS 1234 and has been updated to reflect the change to a fully operational site and incorporate:

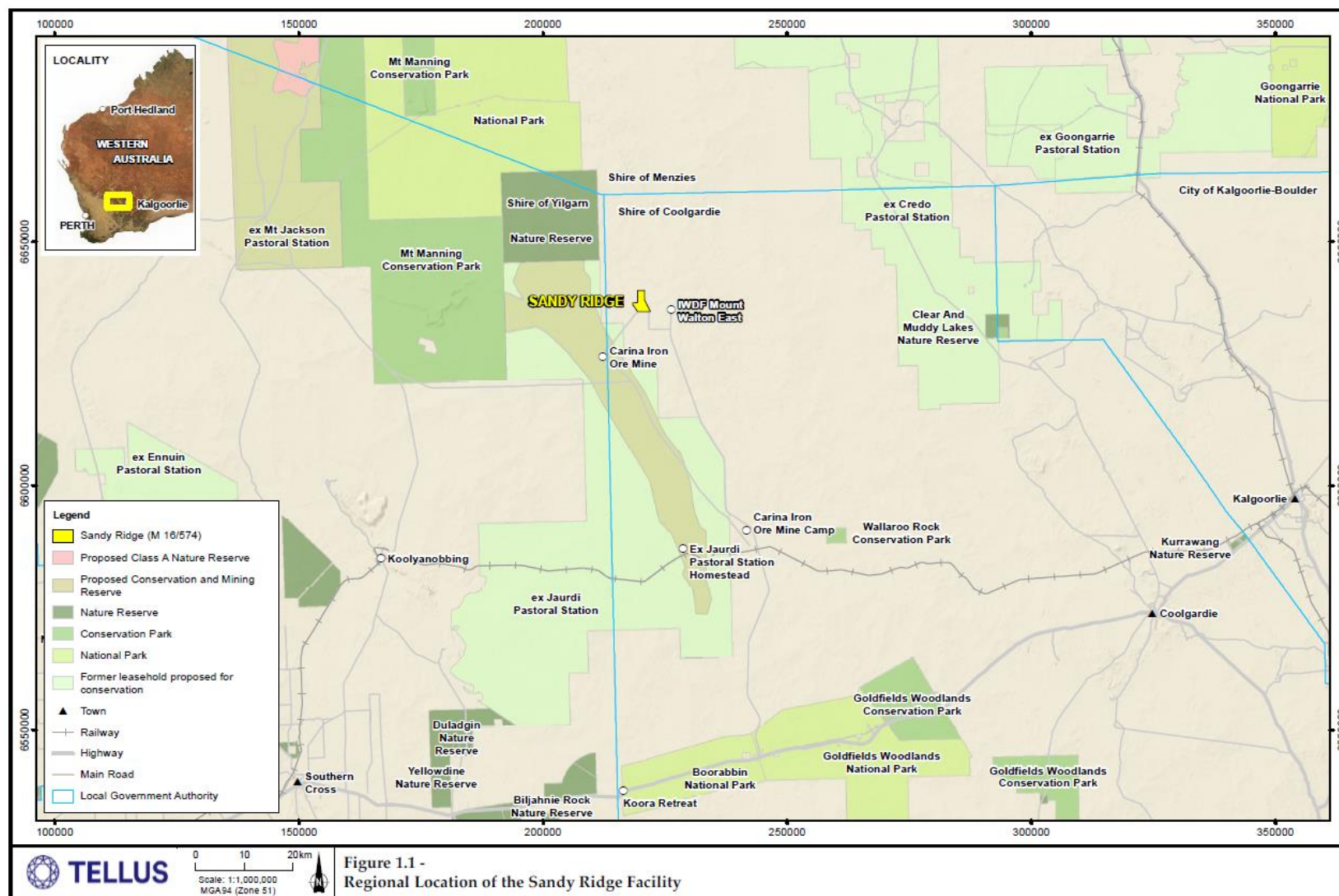
- Findings from recent flora and vegetation surveys
- Updated risk assessments
- Commitments outlined in the 2023 Environmental Review Document (ERD) (GHD, 2023)

This FVMP supersedes the previous *Sandy Ridge Facility – Flora and Vegetation Management Plan (Version 1, 19 June 2019)* which was prepared and approved in accordance with MS1078.

This document presents the revised FVMP, to meet the requirements of Condition B2-3, MS 1234.

The FVMP has been prepared in accordance with the Instructions – Preparing *Environmental Protection Act 1986*, Part IV Environmental Management Plans (2024).

Figure 1-1: Regional location of the Sandy Ridge Facility



1.2. Key Environmental Factor – Flora and Vegetation

This FVMP addresses the EPA's objective for the key environmental factor Flora and Vegetation by identifying potential direct and indirect impacts and setting out management measures to mitigate them (Table 1-2).

Table 1-2 Potential impacts on flora and vegetation environmental values

Environmental Factor	EPA Objective	Potential impacts Direct/Indirect
Terrestrial Flora and Vegetation including environmental values associated with the following: - Vegetation Associations - Priority ecological community - Priority flora - Species of interest	<i>To protect flora and vegetation so that biological diversity and ecological integrity are maintained</i>	- Direct loss of flora individuals and vegetation - Loss of vegetation - Decline in health and/or change in flora and vegetation composition - Loss of vegetation from bushfires - Altered hydrology - Increased dust emissions - Uptake of saline water used for dust suppression or from potential pipeline leaks - Introduction and spread of weeds - Radiation exposure - Transpiration of leachate from waste cells

A risk assessment was undertaken to consider the potential impacts of radiation and leachate on flora and vegetation. These risks are considered highly unlikely due to the integrity of the geological repository, and its climatic context. Therefore, these impacts are not addressed in this FVMP.

1.3. Condition Requirements

Table 1-3 summarises the MS 1234 conditions relating to flora and vegetation and identifies where each requirement is addressed in this FVMP.

Table 1-3 Conditions of Approval, MS 1234

Condition	Requirement	Where addressed
B2-1	The proponent must ensure the implementation of the proposal achieves the following environmental outcomes: - No adverse impact to <i>Banksia arborea</i> shrubland - No disturbance of priority flora above the levels stated in Table 1 of MS1234 (Table 2.7 of this document)	Section 2.1 Table 2-1 Table 2-2
B2-2	The proponent must ensure the implementation of the proposal achieves the following environmental objectives: - Prevent the introduction or spread of environmental weeds - Prevent fires as a result of implementation of the proposal - Minimise fugitive dust emissions	Section 2.2 Table 2-4 Table 2-5 Table 2-6
B2-3	The proponent must review and revise the <i>Flora and Vegetation Management Plan (Version 1, 19 June 2019)</i> in order to demonstrate that it satisfied the requirements of condition C4 and demonstrates how the achievement of the flora and vegetation environmental outcomes in condition B2-1 and objectives of B2-2 will be monitored and substantiated and submit to the CEO.	This document

Condition	Requirement	Where addressed
C4-1	The environmental management plan required under conditions B1-3 and B2-3 must contain provisions which enable the substantiation of whether the relevant objective of those conditions are met, and must include: (1) threshold criteria that provide a limit beyond which the environmental outcomes are not achieved; (2) trigger criteria that will provide an early warning that the environmental outcomes are not likely to be met; (3) monitoring parameters, sites, control/reference sites, methodology, timing and frequencies which will be used to measure threshold criteria and trigger criteria. Include methodology for determining alternate monitoring sites as a contingency if proposed sites are not suitable in the future; (4) baseline data; (5) data collection and analysis methodologies; (6) adaptive management methodology; (7) contingency measures which will be implemented if threshold criteria or trigger criteria are not met; and (8) reporting requirements.	Section 2
C4-3	Without limiting conditions C4-1 and C4-2, failure to achieve an environmental outcome, or the exceedance of a threshold criteria, regardless of whether threshold contingency measures have been or are being implemented, represents a non-compliance with these conditions	Section 2

1.4. Rationale and Approach

The rationale and approach adopted in this FVMP reflects the operational context of the Sandy Ridge Facility and the environmental outcomes required under MS 1234. The approach is guided by:

- Activities relevant to flora and vegetation during operations, including disturbance, weed management, fire prevention, and dust control;
- Regulatory obligations applicable to Tellus in maintaining operational compliance and its environmental licence within Western Australia; and
- The requirement to achieve the outcomes (Condition B2-1) and objectives (Condition B2-2) of MS 1234, consistent with the EPA's objectives for the Flora and Vegetation factor.

This FVMP provides monitoring and management provisions to avoid, minimise, and manage potential impacts to flora and vegetation values during operations at the Sandy Ridge Facility.

MS 1234 does not authorise additional clearing of native vegetation; the approved extent of clearing remains as assessed under MS 1078, and the disturbance footprint is unchanged.

The following sections present the survey and study findings (Section 1.4.1), key assumptions and uncertainties (Section 1.4.2), and objective-based risks (Section 1.4.3) that inform the rationale and approach of this FVMP.

1.4.1. Survey and study findings

Flora and Vegetation studies that have been undertaken at Sandy Ridge are listed in Appendix A. A summary of the findings is presented below.

1.4.1.1. Vegetation

Pre-European vegetation

The DE is located in the Southern Cross subregion of the Coolgardie Interim Biogeographic Regionalisation of Australia (IBRA) Bioregion. The Southern Cross subregion comprises the western section of the Yilgarn Craton and is characterised as gently undulating uplands dissected by broad valleys with bands of low greenstone hills (Cowan, Graham, & McKenzie, 2001). The granite strata of the Yilgarn Craton are interrupted by parallel intrusions of Archaean Greenstone.

Diverse *Eucalyptus* woodlands that include species such as *Eucalyptus salmonophloia*, *Eucalyptus salubris*, *Eucalyptus transcontinentalis*, and *Eucalyptus longicornis* are common in the region. Granite basement outcrops occur at mid-levels in the landscape and support grasslands of *Borya constricta*, intermixed with stands of *Acacia acuminata* and *Eucalyptus loxophleba*. Areas with a slightly higher elevation in the landscape include the eroded remnants of yellow sandplains, gravelly sandplains and laterite breakaways. Mallees including *Eucalyptus leptopoda*, *Eucalyptus platycorys* and *Eucalyptus scyphocalyx* and scrub heaths (*Allocasuarina corniculata*, *Callitris preissii*, *Melaleuca uncinata* and *Acacia beauverdiana*) occur on these uplands (Cowan, Graham, & McKenzie, 2001).

Four vegetation associations were recorded within the DE:

- Association 437: Shrublands; mixed *Acacia* thicket on sandplain (dominant)
- Association 141: Medium woodland; York gum, salmon gum, and gimlet
- Association 538: *Eucalyptus* open woodland / *Triodia* open hummock grassland
- Association 435: *Acacia* sparse shrubland / *Cryptandra* mixed sparse heath

All of these vegetation associations are well represented across the Southern Cross IBRA Subregion, with greater than 97% of their pre-European extent remaining. Clearing associated with the proposal represents <1% of the remaining extent of each vegetation association and is therefore not considered to have a significant regional impact.

Vegetation Types

Twenty different vegetation types have been described and mapped within the DE (Figure 1-2). All but one of the vegetation types are considered common and widespread within the wider region. The exception is Ba- S (*Banksia arborea* (Priority 4) Shrubland), which has similarities to a Priority 1 Priority Ecological Community (PEC) Finnerty Range / Mt Dimer/ Yendilberin Hills vegetation complex. Disturbance to this vegetation association was minimised in the design and construction of the water abstraction infrastructure.

There are no Threatened Ecological Communities or Endangered Ecological Communities listed under the *Biodiversity Conservation Act 2016* (BC Act) or *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) that have been recorded or predicted to occur within or near the DE.

Under Ministerial Statement 1078, vegetation clearing was approved for:

- Up to 202.3 ha for mine pits and waste cells
- Up to 73.75 ha for associated infrastructure
- Total approved clearing: 276.05 ha within the 1,061 ha DE

MS 1234 maintains this clearing limit without authorising additional clearing.

Approximately 53.6 ha of native vegetation has been cleared for the construction of Waste Cells 1 and 2. An additional 71.72 ha has been cleared for associated infrastructure. Clearing of vegetation will be periodic now that the Facility is in its operational phase. Tellus has an approved Works Approval (W6700/2022/1) to construct and operate another three waste cells (Cells 2 to 4) at the Facility thereby providing waste storage capacity for the next 2 to 6 years.

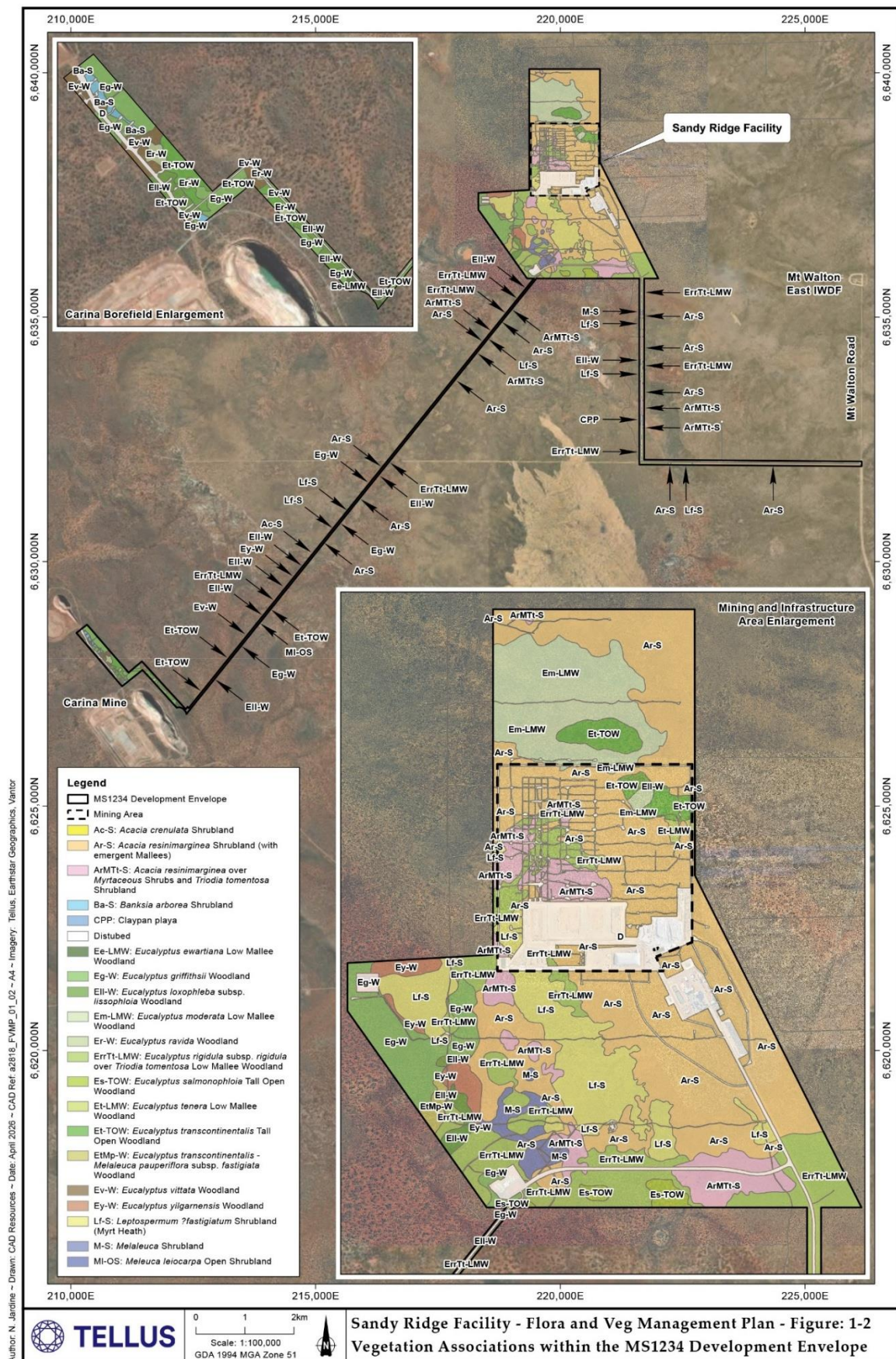


Figure 1-2 - Vegetation associations within the MS1234 development envelope

Vegetation condition

Vegetation within the DE was reported as being in excellent to pristine condition, except for existing cleared areas (exploration access tracks and drill lines) that are in completely degraded to degraded condition.

Significant vegetation

One Priority Ecological Community (PEC) occurs in the vicinity of the Carina Bore groundwater abstraction area, located approximately 13.5 km south-west of the Sandy Ridge Facility infrastructure area (Figure 1-2 and 2-1). This PEC is the Finnerty Range / Mt Dimer / Yendilberin Hills vegetation complexes (banded ironstone formation), listed as Priority 1 by DBCA. Vegetation Association Ba-S is considered part of this PEC.

Approximately 1.43 ha of native vegetation within Ba-S had been previously cleared by mining activities unrelated to Tellus. By limiting additional disturbance to previously disturbed areas, Tellus reduced further impact to 0.13 ha.

1.4.1.2. Conservation significant flora

No threatened species listed under the BC Act and/or the EPBC Act were recorded, or are considered likely to occur, within the Development Envelope (DE). Priority flora and species of interest recorded by Western Botanical (2022) within the DE are shown in Table 1-4. Table 1-4 also identifies those priority flora species listed in Table 1 of MS 1234. The known locations of priority flora species listed in MS1234 Table 1 are shown in Figure 1-3.

Table 1-4 Recorded significant flora (Western Botanical, 2022)

Species	Status	Number in DE	Listed in MS1234 Table 1
<i>Cryptandra exserta</i>	P1	21 plants (2 populations)	No
<i>Phebalium appressum</i>	P1	301 plants (1 population)	Yes
<i>Acacia crenulata</i>	P3	32 plants (3 populations)	Yes
<i>Calytrix creswellii</i>	P3	10,950 plants (6 populations)	Yes
<i>Cryptandra crispula</i>	P3	64 plants (4 populations)	Yes
<i>Drosera eremaea</i>	P3	1 plant (1 population)	Yes
<i>Labichea eremaea</i>	P3	17 plants (1 population)	No
<i>Melichrus</i> sp. Bungalbin Hill (F.H. & M.P. Mollemans 3069)	P3	>14 500 plants (9 populations)	Yes
<i>Banksia arborea</i>	P4	37 plants (2 populations)	No
<i>Eucalyptus formanii</i> subsp. <i>circulate</i>	P4	83 plants (3 populations)	No
<i>Grevillea huegelii</i> (glaucous leaved form)	U	1	No
<i>Hibbertia</i> aff. <i>exasperata</i> (<i>Hibbertia najula</i> MS)	U	607 plants	No
<i>Hibbertia</i> aff. <i>pungens</i>	U	48 plants	No
<i>Lepidosperma</i> sp. lemon scented	U	1	No
<i>Microcorys</i> sp. tangled	U	3	No
<i>Phebalium</i> aff. <i>laevigatum</i> pink flowered form	U	4	No
<i>Pedaliium</i> sp. Helena and Aurora Range V-shaped leaf	U	4	No
<i>Phebalium</i> sp. Parker Range Road	U	8	No

U = Undescribed

Note: PGV Environmental (2016) recorded several plants of the Priority 1 *Lepidosperma lyonii* and an unidentifiable *Lepidosperma* species within the DE. To satisfy MS 1078 Conditions 10-2 and 10-3, Western Botanical and Eubio Consulting (2021) undertook additional targeted surveys and taxonomic assessments. These confirmed that both *Lepidosperma specimens* recorded by PGV represent *Lepidosperma sanguinolentum*, a common and widespread species in south-west WA and not conservation significant.

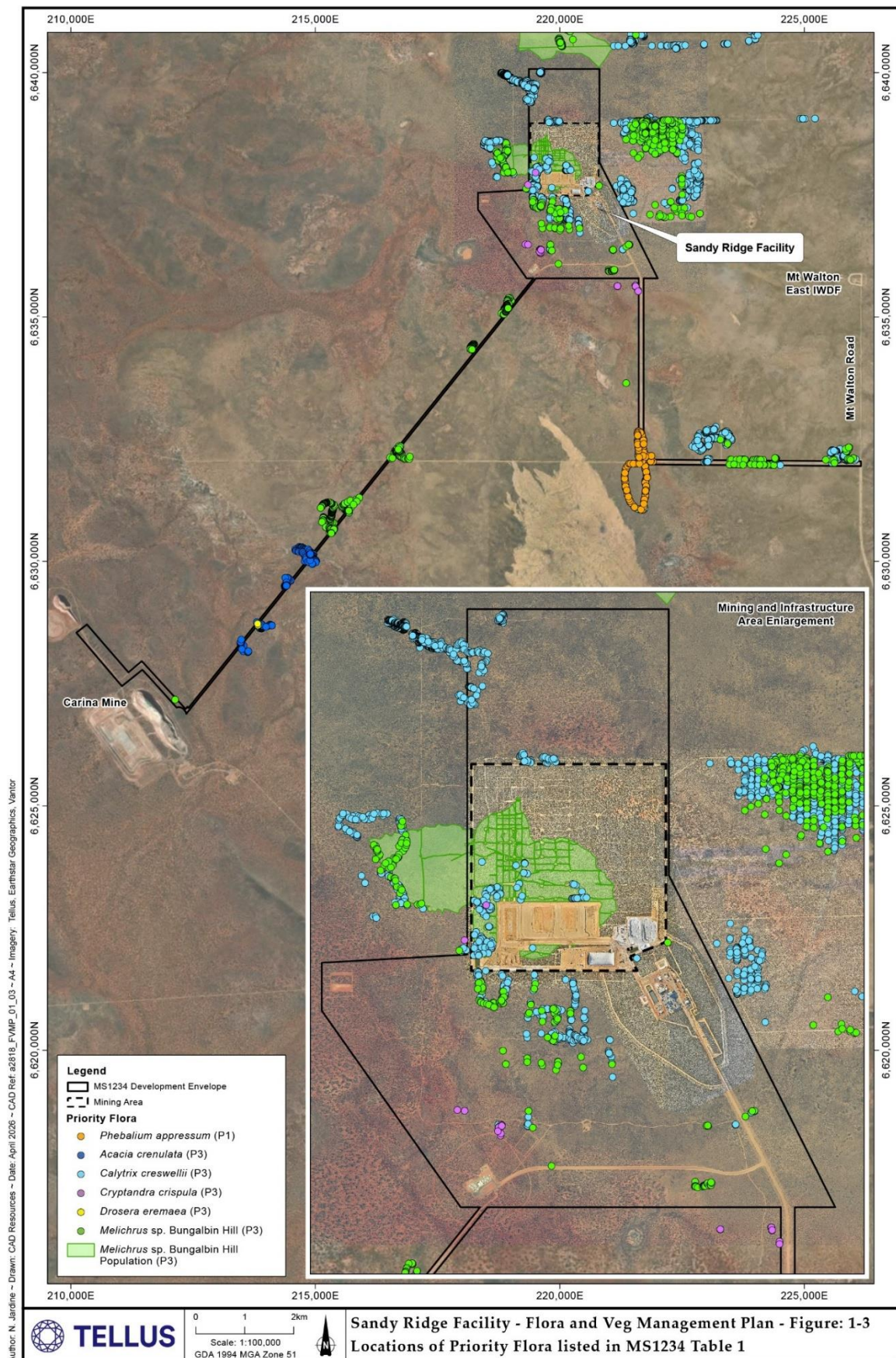


Figure 1-3 - Locations of priority flora listed in MS1234 Table 1

1.4.1.3. Weeds

Four weed species were recorded within the DE during the 2021 and 2022 Western Botanical surveys:

- *Cleretum papulosum*
- *Erodium cicutarium*
- *Rostraria pumila*
- *Sonchus oleraceus*

None of these species are identified as environmental weeds under MS1234, as they are not listed as Declared Pests under the *Biosecurity and Agriculture Management Act 2007*, Weeds of National Significance, or on the DBCA Goldfields Priority Alert Weed list.

These species are common disturbance-associated weeds of low abundance and are not considered to pose a significant risk to native vegetation. The distribution of recorded weed species within the Study Area is shown in Figure 2-3, confirming that occurrences are localised and associated with disturbed areas such as access tracks and the Carina bore-field, and are not observed within intact native vegetation areas.

1.4.1.4. Fire

Bushfires in this region are primarily sparked by lightning. Although infrequent, they can become large and intense under extreme weather conditions. The operation of the Facility may alter the natural fire regime through activities that increase ignition risk, including:

- Traffic movement
- Transport and handling of flammable liquids
- Storage of combustible materials
- Hot works

These activities represent potential contributors to increased fire frequency or intensity within the DE if unmanaged (Tellus, 2022).

1.4.1.5. Hydrology

The Facility occurs in a semi-arid climate where surface water flows are rare, occurring only during significant storm events. Rainfall is typically intercepted by vegetation, infiltrates into the soil profile, or rapidly evaporates.

Large storm events that generate runoff are infrequent, and the potential for impacts on flora and vegetation is therefore low. Vegetation within the DE is adapted to the 'semi-desert Mediterranean' bioclimatic category (Beard, 1990) and does not depend on surface water runoff for survival. Accordingly, the risk of vegetation impacts from reduced surface water availability is considered low.

1.4.1.6. Dust

Dust emissions from vegetation and topsoil removal, excavation, traffic, and stockpiles are a potential indirect impact on vegetation. Elevated dust levels may coat leaf surfaces and, in sufficient quantities, reduce plant health.

A component of dust at Sandy Ridge is kaolin from mined stockpiles. In agriculture, kaolin is applied as a foliar spray to reduce UV and heat stress, forming a reflective coating that does not block stomata (Brito et al., 2019). While kaolin itself may not be inherently harmful to plant health, site dust also contains non-kaolin particles, and uncontrolled deposition of either can affect native vegetation through smothering or altered leaf surface conditions.

1.4.2. Key assumptions and uncertainties

The key assumptions informing this FVMP are:

- The extent to which climatic factors outside of Tellus’s control (e.g. temperature extremes, wind patterns, rainfall variability) will affect the spread of dust, weeds, and fire
- The quantity of dust deposition that has the potential to indirectly vegetation and flora within the DE
- The potential for long-term climatic changes (i.e. climate change) to impact on the health and extent of populations of significant flora and vegetation values
- The accuracy of site survey results concerning the locations of significant flora and the boundaries of vegetation associations and communities
- The extent to which local hydrological changes to water flows will directly or indirectly impact on the health and extent of populations of flora and vegetation values
- The influence of seasonal variability on the detectability of significant flora species during surveys.

1.4.3. Objective-based risk EMP – Risk - based approach

This FVMP has been prepared using a risk-based approach that outlines management provisions to minimise risks. A risk assessment was conducted in accordance with the principles and methodology of AS/NZS ISO 31000:2018.

Risk significance is rated on a continuum of ‘eliminated’, ‘low’, ‘medium’, ‘high’ and ‘extreme’. The flora and vegetation risk assessment is presented in Appendix B. No extreme risks were identified.

1.4.3.1. Raw risks

Raw risk levels represent the level of risk that would exist in the absence of any management or mitigation measures. The risk assessment indicated the following high and medium-level raw risks associated with flora and vegetation:

High risks:

- Unauthorised removal of vegetation (i.e. beyond approved disturbance footprint)
- Unauthorised removal of vegetation with conservation significance
- Unauthorised removal of flora species of conservation significance

Medium risks:

- Impacts on lands managed by DBCA (through fires, weeds etc)
- Uptake of saline water used for dust suppression
- Uptake of saline water from potential water pipeline leaks
- Introduction and spread of weeds
- Dust emissions affecting vegetation health
- Transpiration of leachate from waste cell
- Cumulative impacts on vegetation associations
- Loss of regional habitat
- Loss of local habitat
- Bush tucker consumption

1.4.3.2. Residual risks

Residual risk levels are those remaining after implementation of management and mitigation measures, as described in Section 2 of this FVMP. The following residual risks remain:

Medium risks:

- Unauthorised removal of vegetation

- Removal of flora species of conservation significance
- Impacts on lands managed by DBCA
- Introduction and spread of weeds
- Loss of local habitat

1.4.4. Rationale for choice of indicators

For outcome-based environmental conditions, Tellus has utilised a trigger and threshold system for monitoring and reporting. If a trigger is reported, Tellus will conduct early response investigations to determine the cause of change in environmental condition/quality. Triggers and thresholds are discussed in Sections 2.1 and 2.2. Trigger levels related to environmental outcomes of MS 1234 have been chosen conservatively to provide sufficient early warning and allow for investigations before a threshold level is approached.

Tellus aims for the environmental criteria and performance indicators established for flora and vegetation at the Facility to be:

- Measurable
- Effective for tracking potential changes to recorded background/baseline conditions
- Scientifically credible through rigorous sampling procedures, laboratory analysis and QA/QC linked to ISO 9001 and ISO 14001
- Unambiguous and easily understood
- Consistent with techniques used in Australia
- Repeatable and easily monitored over the operational licence and Institutional Control Period (ICP).

1.4.5. Rationale for choice of management actions

The mitigation hierarchy of avoid, minimise, and rehabilitate has been followed to manage impacts.

1.4.5.1. Avoidance

Avoidance of direct impacts to native vegetation and conservation-significant flora was a key consideration during the site design phase. The project layout was developed to minimise the disturbance footprint as far as practicable. As such, the avoidance measure has already been implemented through project design, and all areas approved for disturbance under the Ministerial Statement are considered acceptable for clearing, notwithstanding limits on priority flora disturbances (Table 2.7) and clearing hectare limits (Table 1.1).

Direct impacts to native vegetation and conservation-significant flora will continue to be avoided wherever practicable. Vegetation clearing has been minimised through site design and planning to reduce the overall disturbance footprint.

Tellus applies internal vegetation clearing procedures to ensure clearing remains strictly controlled and confined to approved areas. Significant flora and vegetation features will be delineated to prevent unauthorised access. Foot and vehicle access is restricted to existing cleared tracks to further avoid disturbance.

1.4.5.2. Minimisation

Although avoidance is the primary objective, indirect impacts (e.g. dust, weeds, fire, and pathogens) must also be addressed to meet the environmental outcomes of MS 1234. These risks will be mitigated through the implementation of best practice risk management strategies, including:

- Dust suppression measures
- Biosecurity measures such as inspection of incoming containers and earthmoving machinery to limit the introduction of weeds and pathogens
- Fire risk management

These actions aim to limit the spatial extent, intensity, and duration of any indirect effects on vegetation values.

1.4.5.3. Rehabilitation

Where direct impacts cannot be avoided, every effort will be undertaken to remediate these areas through rehabilitation activities. Rehabilitation management actions and indicators are provided in the Waste Facility Decommissioning and Closure Management Plan.

2 FVMP COMPONENTS

2.1. Outcome-Based Conditions and Management - MS 1234 Condition B2-1

This section outlines the provisions Tellus will implement to meet the outcome-based requirements of MS 1234 Condition B2-1. These provisions include monitoring, trigger and threshold criteria, and associated management actions to ensure compliance with the required environmental outcomes.

Condition B2-1 has two components:

1. Protect the *Banksia arborea* Shrubland PEC from adverse impact; and
2. Limit disturbance of priority flora species to the thresholds set out in MS 1234 Table 1 (Table 2.9 in this FVMP).

The first requirement addresses community-level protection of the *Banksia arborea* shrubland PEC, while the second establishes species-specific disturbance limits within the MS1234 development envelope. A risk-based monitoring framework underpins this FVMP, with trigger and threshold criteria, defined response actions, monitoring programs, and reporting requirements to demonstrate compliance with MS 1234.

2.1.1. Condition B2-1(1): No Adverse Impact to *Banksia arborea* Shrubland PEC

This outcome-based condition requires protection of the *Banksia arborea* Shrubland PEC. Tellus must ensure that no adverse impacts result from implementation of the Proposal, including both direct (e.g. clearing) and indirect (e.g. dust, edge effects) impacts from construction or operations.

The PEC occurs in the southwestern corner of the Development Envelope, approximately 13.5 km from the Sandy Ridge infrastructure area (Figure 2-1).

Direct access into the PEC itself is limited annual pedestrian access for the photo-point monitoring described in Section 2.1.2. For operational requirements, travel to the vicinity of the PEC by Tellus staff is infrequent and limited to mostly Carina bore water level monitoring and periodic refuelling of the associated bore pump, typically undertaken on a weekly to fortnightly basis.

Vehicle access to Carina Bore is restricted to established tracks only, with no requirement for new disturbance anticipated. Given the low frequency and controlled nature of access, the risk of adverse impacts to vegetation condition is considered low. Potential indirect impacts associated with access (e.g. dust generation, weed introduction, and fire risk) are managed through standard operational controls, including minimising vehicle speeds, restricting off-track movement, maintaining vehicle hygiene, and implementing site fire management procedures.

A framework of trigger and threshold criteria, monitoring, and response actions has been developed to detect and manage any potential changes in PEC condition. Management measures are outlined in Table 2-1.

Table 2-1 Condition B2-1(1) rationale

Condition B2-1(1)). No adverse impact to <i>Banksia arborea</i> shrubland.	EPA factor: Flora and Vegetation. Objective: To protect flora and vegetation so that biological diversity and ecological integrity are maintained. Outcome: Condition B2-1(1) – No adverse impact to <i>Banksia arborea</i> shrubland Key environmental values: <i>Banksia arborea</i> shrubland Key impacts and risks: Clearing of vegetation within the site			
Outcome-based				
Trigger and threshold criteria	Response actions	Monitoring	Timing/frequency	Reporting
Trigger: Photo-point monitoring indicates a ≥ 1-class decline in condition scores relative to controls. Threshold: An average decline of two or more condition classes (relative to control sites) attributable to operational impacts (e.g. dust deposition, hydrological change, clearing activity).	Refer to Table 2-8	Annual health monitoring inspection	Annual	Vegetation Health Report Annual Compliance Assessment Report required by MS 1234.

2.1.2. Condition B2-1(2): No Disturbance of Priority Flora above levels described in MS1234 Table 1.

This outcome-based condition requires that disturbance of priority flora species is limited to the maximum numbers of individuals approved under Table 1 of MS1234. These thresholds relate to populations of priority flora within the Development Envelope mapped by Western Botanical (2022).

Unlike the *Banksia arborea* Shrubland PEC, where no further disturbance is permitted, MS 1234 authorises limited disturbance of specified priority flora species, provided it remains within the approved thresholds. Compliance therefore depends on strict adherence to these disturbance limits and on verification that disturbance is confined to approved areas.

This condition is managed through measures such as pre-clearing surveys, delineation of disturbance boundaries, and fire prevention controls. Monitoring of known populations is undertaken through annual aerial imagery analysis, photo-point monitoring and where applicable, in campaign-based surveys prior to and during clearing, confirming that disturbance remains below the authorised thresholds.

Management measures are summarised in Table 2-2. In this Plan, references to “priority flora” refer specifically to the species and thresholds listed in Table 1 of MS 1234.

Table 2-2 Condition B2-1(2) rationale

Condition B2-1(2) No disturbance of priority flora above the levels described in MS1234 Table 1	EPA factor: Flora and Vegetation			
	Objective: To protect flora and vegetation so that biological diversity and ecological integrity are maintained.			
	Outcome: Condition B2-1(2) – No disturbance of priority flora above the levels described in MS1234 Table 1			
	Key environmental values: Priority flora species			
	Key impacts and risks: Clearing of vegetation within the site			
Outcome-based				
Trigger and threshold criteria	Response actions	Monitoring	Timing/frequency	Reporting
Threshold: Disturbance of priority flora exceeds the limits specified in MS1234 Table 1 (Table 2-9 in this FVMP)	Refer to Table 2-8	Annual imagery analysis of mapped populations Pre- and -post clearing inspection and weekly inspections of clearing permit boundaries during active clearing (per VCP)	Annual (imagery analysis) Campaign basis when clearing activity occurs (inspections)	Annual Vegetation Health Report. Annual Compliance Assessment Report (MS 1234). Report any exceedance within 7 days in accordance with Condition D2-1(1)
Trigger: Photo-point monitoring indicates a ≥ 1-class decline in condition scores at sites near infrastructure relative to controls. Threshold: An average decline of two or more condition classes (relative to control sites) attributable to operational impacts (e.g. dust deposition, hydrological change, clearing activity).	Refer to Table 2-8	Annual Spring Vegetation Health Survey	Annually in Spring	

2.2. Objective-Based Conditions and Management (MS1234 Condition B2-2)

Condition B2-2 requires the Proposal to achieve three environmental objectives that manage indirect risks to flora and vegetation values. These objectives are summarised in Table 2-3. Each is addressed in Sections 2.2.1 to 2.2.3, with management targets, monitoring, and reporting requirements set out in the relevant tables.

Table 2-3 Condition B2-2 Objective-based conditions

Objective Based Conditions
Condition B2-2 The proponent must ensure the implementation of the proposal achieves the following environmental objectives: (1) Prevent the introduction or spread of environmental weeds (2) Prevent fires as a result of implementation of the proposal (3) Minimise fugitive dust emission

2.2.1. Condition B2-2(1) – Prevent introduction or spread of environmental weeds

This objective-based condition requires Tellus to prevent the introduction of new weed species and to avoid any significant increase in the cover of existing weeds within the Development Envelope. This condition is achieved through implementing weed hygiene protocols, restricting movement to designated access routes,

and conducting routine inspections. If weeds are detected, corrective actions including targeted control and consultation with regulators will be initiated. Management measures are outlined in Table 2-4.

Table 2-4 Condition B2-2(1) rationale

Condition B2-2(1) Prevent the introduction or spread of environmental weeds	EPA factor: Flora and Vegetation. Objective: To protect flora and vegetation so that biological diversity and ecological integrity are maintained. Outcome: Condition B2-2(1) – Prevent the introduction or spread of environmental weeds Key environmental values: Flora and vegetation quality Key impacts and risks: Weed introduction and proliferation from activities associated with the project			
	Objective-based			
Management targets	Management actions	Monitoring	Timing/frequency	Reporting
• No significant increase in the baseline area of weed cover as a result of Tellus’ activities. • No introduction of new weed species within the site as a result of Tellus’ activities.	• Operational personnel trained in weed management requirements • Vehicle and equipment access restricted to designated routes. • Heavy earthwork and mobile equipment inspected for soil/seed material prior to site entry and washed down at designated facilities where required. • Incoming container inspections include biosecurity checks for weed and seeds	Weed inspections outlined in Section 2.3.3. Additional inspections triggered if new weed species or spread are observed.	Annual inspection in weed season Aug-Oct Weed and seed inspections of earth moving machinery upon arrival to site. Biosecurity checks are performed on incoming waste containers	MS1234 Compliance Assessment Report Vegetation Health Report

2.2.2. Condition B2-2(2): Prevent Fires

This condition requires Tellus to ensure that implementation of the Proposal does not increase fire risk within the Development Envelope. Fire prevention is addressed through the Bushfire Management Plan, which provides for fuel load assessment, controls on hot works and storage of flammable materials, and emergency preparedness. Key measures are summarised in Table 2-5.

Table 2-5 Condition B2-2(2) rationale

Condition B2-2(2) Prevent fires attributable to the implementation of the Proposal	EPA factor: Flora and Vegetation Objective: To protect flora and vegetation so that biological diversity and ecological integrity are maintained. Outcome: Condition B2-2(2) – Prevent fires attributable to the implementation of the Proposal Key environmental values: Flora and Vegetation Key impacts and risks: Bushfires that might occur as a result of activities on the site.			
Objective-based				
Management targets	Management actions	Monitoring	Timing/frequency	Reporting
No bushfires attributable to site activities.	Implement BMP controls including: Maintaining firebreaks, fuel load assessments, maintaining firefighting equipment, restricting ignition sources, and fire response training.	Fuel load surveys & firebreak inspections (in accordance with BMP)	Annual (pre-fire season)	Annual Bushfire Management Report MS1234 Compliance Assessment Report

2.2.3. Condition B2-2(3): Minimise Fugitive Dust Emissions

This objective-based condition requires Tellus to minimise fugitive dust emissions that could impact nearby vegetation. Dust management is guided by the Air Quality Management Plan (AQMP), which establishes site controls, monitoring locations, and reporting requirements. In this FVMP, the management targets, monitoring, and reporting arrangements have been summarised in Table 2-6, with detailed methodologies contained in the AQMP.

Table 2-6 Condition B2-2(3) rationale

Condition B2-2(3) Minimise fugitive dust emissions	EPA factor: Flora and Vegetation Objective: to protect flora and vegetation so that biological diversity and ecological integrity are maintained. Outcome: Condition B2-2(3) – Minimise fugitive dust emissions Key environmental values: Flora and Vegetation Key impacts and risks: Dust emissions resulting from activities on the site could potentially impact the health of nearby vegetation.			
	Objective-based			
Management targets	Management actions	Monitoring	Timing/ frequency	Reporting
Fugitive dust emissions are minimised as far as practicable and monitored in accordance with the AQMP. A target exceedance is defined where: - Dust deposition > 4 g/m²/month, and - Levels are > 2 g/m²/month above the control site	Investigate cause of dust level exceedance. Inspect vegetation in proximity of dust exceedance for signs of dust-related impacts If dust-related vegetation health decline is detected, implement additional controls in accordance with AQMP	Dust gauge monitoring at 6 locations in accordance with AQMP	Quarterly	Monthly Environment Report Vegetation Health Report MS1234 Compliance Assessment Report

2.3. Monitoring

Ongoing monitoring will be undertaken to verify compliance with the outcome- and objective-based conditions of MS 1234 and to assess the effectiveness of management actions in maintaining vegetation health. The monitoring program encompasses:

- Annual aerial imagery and photo-point assessment of priority flora and Banksia arborea shrubland
- Environmental dust-deposition monitoring
- Weed inspections
- Bushfire-preparedness inspections.

The objectives of this program are to:

- Detect any changes in the condition, extent, or health of flora and vegetation within and adjacent to operational areas; and
- Determine whether any observed changes are attributable to project activities or to external/natural factors such as seasonal variability, fire, or drought.
- Each monitoring component described in Sections 2.3.1 to 2.3.5 corresponds to a specific management condition under MS 1234 (Conditions B2-1 and B2-2) and includes defined methods, performance criteria, and response actions.

2.3.1. Banksia arborea shrubland

Vegetation condition of *Banksia arborea* shrubland will be assessed annually using fixed photo-point monitoring described below and supported by annual imagery analysis (refer to Section 2.3.2.1). Monitoring is

designed to detect changes in vegetation condition over time and identify any potential impacts associated with operations.

Banksia arborea shrubland occurs as nine discrete polygons within the MS1234 Development Envelope, as mapped by Western Botanical (2022).

Permanent monitoring sites have been established within each of these polygons in the vicinity of Carina Bore (Figure 2.1). A total of nine monitoring sites have been established, comprising:

- 5 reference sites; and
- 4 control sites.

Monitoring sites are classified based on proximity to access roads and infrastructure:

- Reference sites: located within *Banksia arborea* shrubland occurring less than 25 m from access roads or infrastructure
- Control sites: located within *Banksia arborea* shrubland occurring greater than 80 m from access roads or infrastructure

At each monitoring site, vegetation condition is assessed using the Vegetation Condition Scale presented in Table 2.7, based on the overall condition observed within the fixed photo monitoring field and supported by field observations at the time of monitoring.

Condition scores are assigned independently at each reference and control site. Reference sites are located in closer proximity to access roads and infrastructure and are therefore more likely to be exposed to potential operational impact pathways, including dust deposition, weed introduction, and disturbance. Control sites are located further from these features and are intended to represent background vegetation condition under comparable environmental and seasonal influences.

Monitoring results are compared between reference and control sites to distinguish natural variability from changes potentially attributable to operational activities. Differences in condition between site types, where not explained by seasonal factors, may indicate the presence of operational impacts.

In addition to annual photo-point monitoring and aerial imagery analysis, monthly environmental inspections are undertaken at the Carina Bore. These inspections include visual checks for potential impact pathways relevant to the *Banksia arborea* shrubland, including pipeline leaks, weed presence, dust-related vegetation impacts and evidence of off-track vehicle movement. Outcomes of these inspections provide supplementary information to the *Banksia arborea* PEC closest to Tellus infrastructure to enable early identification of potential impacts.



Figure 2-1 - *Banksia arborea* shrubland PEC photo-monitoring locations

Table 2-7 - Vegetation Condition Scale

Score	Interpretation
0	Most vegetation within the photo-point monitoring field of view is dead. Cause of vegetation death to be identified if possible.
1	Vegetation is stressed as indicated by one or more of the following: - noticeable overall decline in canopy density - leaf browning or chlorosis in the majority of plants - visible dust deposition on foliage - evidence of weed presence
2	Vegetation is healthy and in a vegetative state, as indicated by: - foliage density and colour consistent with prevailing seasonal conditions - no significant stress indicators
3	Vegetation flowering and fruiting and normal for prevailing seasonal conditions.

Trigger

An average decline of one or more condition classes of Banksia arborea shrubland at reference sites (relative to control sites) will trigger an internal investigation, the results of which will be reported in the Vegetation Health Report.

Threshold

An average decline of two or more condition classes (relative to control sites) that are attributable to operational impacts such as dust, clearing, or disturbance, will trigger a threshold response.

Response actions

If a trigger or threshold is exceeded, response actions outlined in Table 2.8 will apply.

Table 2-8 Vegetation condition response actions

Assessment criteria	Response Action/s
Trigger	- Investigation into the factors contributing to the reduced condition - Identify whether changes are attributable to operational or natural causes - Document findings in Vegetation Health Report
Threshold	- Investigate impacts contributing to reduction in condition, health, or population of vegetation or conservation species (within 7 days) - Specialist consultant/botanist engaged to advise on possible rectification/rehabilitation options - Consultation with DWER and DBCA regarding impacted vegetation and proposed rectification works/rehabilitation - A survey protocol will be developed, informed by the above consultation, to monitor relevant conservation species over time - Report to DWER via the MS1234 Compliance Assessment Report

2.3.2. Conservation Priority Species

Known populations of conservation priority species have been mapped in detail by Western Botanical (2023). The locations of these species are shown in Figure 1.2. Tellus is authorised to disturb conservation priority species within the MS1234 development envelope up to the limit in Table 1 of MS1234, which is reproduced below as Table 2.9. Monitoring of priority populations listed in Table 2.9 will be undertaken through three complementary programs designed to verify compliance with approved disturbance limits and detect any indirect impacts:

- Annual high resolution imagery analysis (2.3.2.1)
- Monitoring during vegetation clearing campaigns (2.3.1.2).
- Spring Vegetation Health Photo-point Monitoring (2.3.1.3)

Table 2-9 Clearing limits for conservation species (Table 1 of MS1234)

Species	Clearing limit
<i>Phebalium appressum</i>	10
<i>Acacia crenulata</i>	5
<i>Calytrix creswellii</i>	4,716
<i>Cryptandra crispula</i>	23
<i>Drosera eremaea</i>	1
<i>Melichrus sp.</i> Bungalbin Hill (F.H. & M.P. Mollemans 3069)	14,000

2.3.2.1. Annual imagery analysis

High-resolution aerial imagery of known populations of conservation priority species shown in Table 2.9, as mapped by Western Botanical (2023) will be reviewed annually to confirm that the extent of each mapped population remains within approved disturbance limits and that population persistence is maintained over time.

The imagery analysis provides a broad-scale, repeatable, and objective means of assessing vegetation cover, detecting new disturbance, and verifying that no additional clearing has occurred outside approved areas.

Comparative analysis will be undertaken using the previous year's dataset to detect any measurable change in:

- The aerial extent of mapped priority flora populations
- The disturbance footprint relative to infrastructure or construction zones

All results will be documented in the Annual Vegetation Health Report, with any apparent changes validated through on-ground inspections where required.

Threshold

If disturbance to mapped conservation priority species exceeds the approved population limits specified in Table 2-9, a threshold exceedance will be recorded and the response actions outlined in Table 2-8 will be implemented in accordance with Condition B2-1(2).

2.3.2.2. Vegetation Clearing Monitoring

In accordance with the Vegetation Clearing Procedure, additional monitoring is undertaken on a campaign basis whenever vegetation clearing activities occur. Future clearing is expected to relate primarily to the development of new waste cells and is therefore not anticipated to occur each year.

When clearing does occur, monitoring focuses on both compliance with approved boundaries and the protection of surrounding vegetation values. Key requirements outlined in the Vegetation Clearing Procedure (SR-11-PRO-007) include:

- Clearing footprint compliance – All clearing areas are delineated with pegs/flagging by a surveyor. Cleared areas are checked by GPS to confirm no disturbance outside the Tellus Clearing Permit boundary.
- Conservation species checks – Pre-clearance inspections to ensure that disturbance of conservation priority species is minimised wherever possible and remains within the limits set out in Table 2.9 (MS1234 Table 1).

- Weed and hygiene monitoring – Machinery is inspected for soil/seed contamination before entry, and active clearing areas and stockpiles are inspected for weed incursions during and after clearing.
- Adjacent vegetation checks – Monitoring includes observations of vegetation surrounding the clearance site to detect indirect impacts such as dust deposition or disturbance.

This campaign-based monitoring ensures that clearing is tightly controlled within approved limits, supports the protection of conservation priority species where relevant, and complements the broader-scale annual imagery analysis program.

Threshold

Disturbance of mapped conservation priority species populations within the MS1234 Development Envelope that exceeds the approved clearing limits specified in Table 2-9.

Response actions

If a threshold exceedance of priority species disturbance figures (Table 2-9) is detected through vegetation clearing monitoring, response actions listed in Table 2-8 will be enacted.

2.3.2.3. Spring Vegetation Health Photo-Point Monitoring

Twenty permanent vegetation monitoring points were established by Western Botanical (2024) in 2022, comprising 14 experimental sites adjacent to infrastructure and 6 control sites (Figure 2.2). Experimental sites are positioned within intact vegetation on the southern and eastern boundaries of the disturbance footprint, where vegetation is most susceptible to potential operational impacts. Control sites are located 200-500 m from the experimental sites within comparable vegetation associations.

The photo-points provide representative coverage of vegetation types within and adjacent to operational areas. Several of these sites contain mapped populations of conservation priority species, while others occur in comparable vegetation without priority flora and serve as reference or control sites.

This monitoring network supports achievement of Condition B2-1(2) by providing evidence that vegetation health near operational areas remains consistent with baseline conditions. This demonstrates that no indirect or cumulative impacts are occurring to priority flora beyond the approved disturbance limits defined in MS 1234 Table 1 (Table 2-9). Targeted monitoring of priority flora populations is undertaken in parallel through annual aerial imagery analysis (Section 2.3.1.1) and pre- and post-clearing inspections (Section 2.3.1.3) as required under the Vegetation Clearing Procedure (SR-11-PRO-007). Together, these programs provide both broad-scale (imagery) and site-specific (photo-point) verification that disturbance to priority flora remains within approved limits and that surrounding vegetation continues to maintain ecological integrity.

The locations of the twenty monitoring points established by Western Botanical are shown in Figure 2-2. These sites will continue to serve as permanent photo-points to assess vegetation condition and detect long-term trends in vegetation health. Each site is photographed and scored annually using the Vegetation Condition Scale shown in Table 2.7.

Trigger

If surveyed vegetation near infrastructure is, on average, one or more condition scores below the average control condition of similar vegetation, the reasons for this difference will be investigated.

Threshold

An average decline of two or more condition classes (relative to control sites) that can be attributed to operational impacts such as dust, clearing, or disturbance will trigger a threshold response.

Response actions

Trigger and threshold exceedance responses are outlined in Table 2-9.

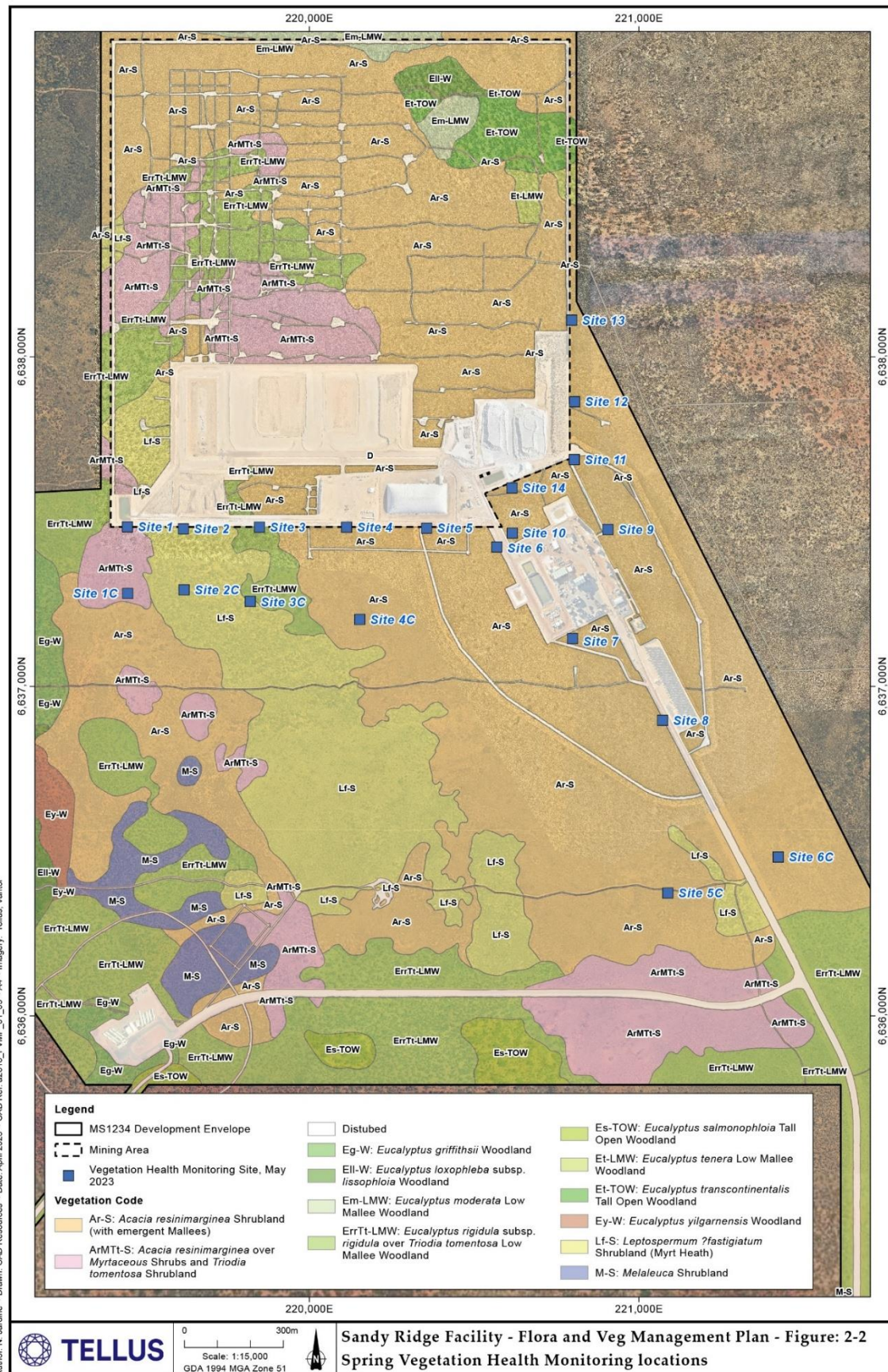


Figure 2-2 - Spring vegetation health monitoring locations

2.3.3. Weeds

Condition B2-2 requires Tellus to minimise the introduction and spread of environmental weeds.

Environmental weeds are defined in MS1234 as plants declared under section 22(2) of the Biosecurity and Agriculture Management Act 2007, species listed as Weeds of National Significance (WoNS), and relevant weeds identified by the Department of Biodiversity, Conservation and Attractions (DBCA).

Environmental weed species relevant to the Sandy Ridge Facility are presented in Appendix B. The consolidated weed register comprises 60 priority and regionally relevant species and supports a practical, risk-based monitoring approach.

Baseline weed conditions within the Study Area are described in Section 1.4.1.3, and mapped locations of weed occurrences are shown in Figure 2.3.

The monitoring and management framework described below is designed to minimise the introduction and spread of environmental weeds, consistent with Condition B2-2.

Monitoring Areas and Method

A drive-over weed survey of high-risk disturbance areas is undertaken annually in late winter to early spring when annual weeds are most prevalent in the Goldfields region. At a minimum, the survey will cover disturbance areas such as access roads and firebreaks shown in Figure 2.3 that occur within the MS 1234 Development Envelope boundary.

Potential weed species identified during monitoring are recorded and, where necessary, identified using available reference materials or specialist advice. Resources to support weed identification include field guides and the WeedScan mobile application, developed by CSIRO and the Centre for Invasive Species Solutions.

Occurrences are GPS-tagged and photographed in the field, with records captured in the Sandy Ridge Weed Register. Where field identification is not possible, photographs and/or specimens may be submitted to a qualified botanist for formal identification.

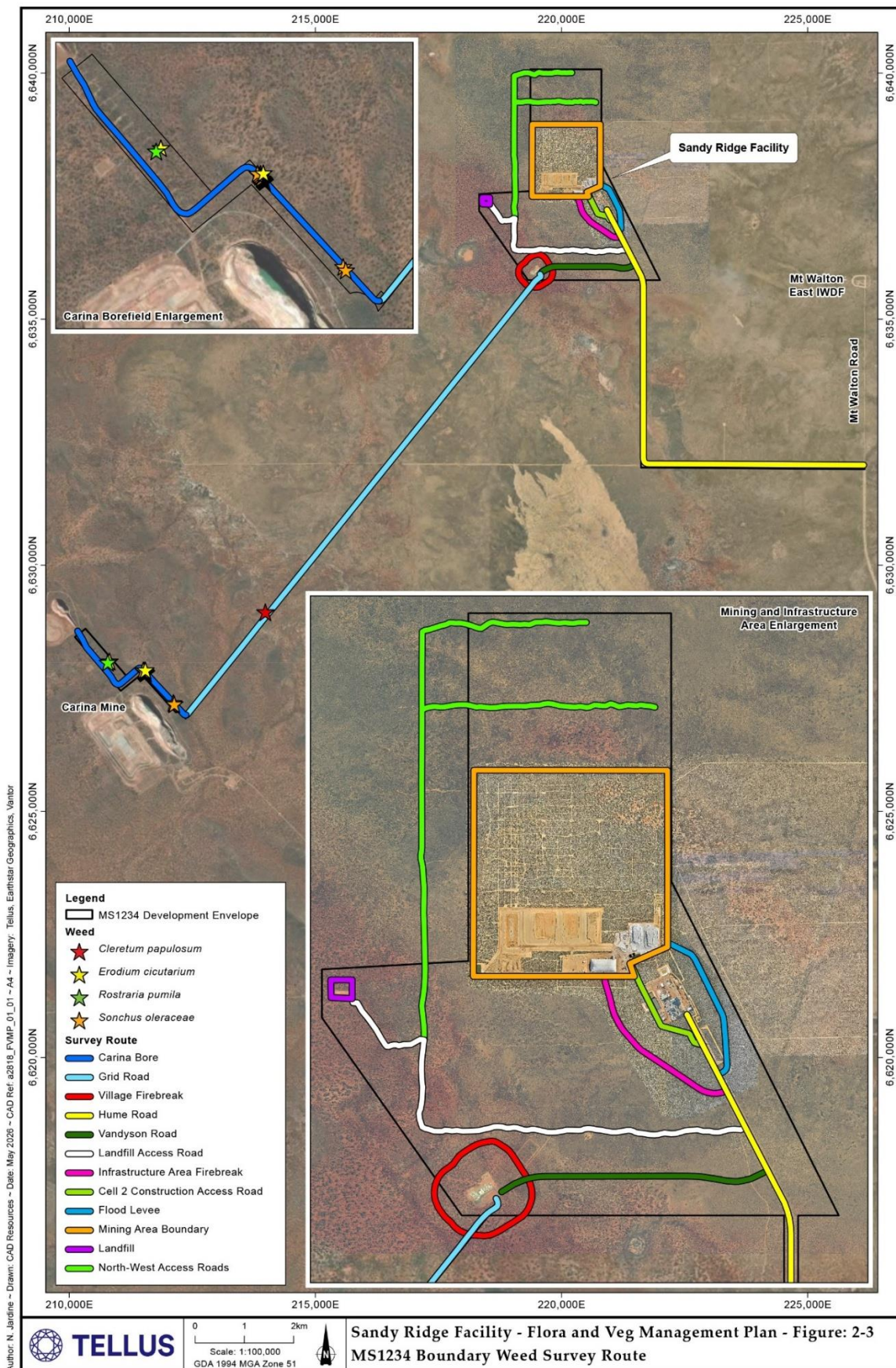


Figure 2-3 - MS1234 boundary weed survey route

In addition to the annual survey, weed observations are recorded during routine environmental inspections and vegetation monitoring activities, including:

- Spring vegetation monitoring
- Banksia arborea shrubland photo-point monitoring
- Monthly environmental inspections (e.g. Carina Bore, putrescible landfill, mining area boundary and stockpiles)
- Weekly infrastructure area environmental inspections
- Rehabilitation area vegetation monitoring
- Irrigation area vegetation monitoring
- Annual topsoil stockpile monitoring

These activities provide multiple opportunities for early detection of weeds across disturbance areas. Weed observations are recorded in MyOSH, including photographic records and GPS coordinates.

Biosecurity checks

In addition to on-ground weed surveys, biosecurity checks are undertaken to minimise the introduction of weeds and other biological contaminants to the site:

- All heavy earth-moving machinery is inspected for soil and seed material prior to site entry and washed down at designated facilities where required.
- Incoming cargo containers are inspected for biological contamination, including weeds, seeds, and plant or animal material, in accordance with the Container Inspection Procedure (TEL-09-PRO-027). Where contamination is detected, specimens are collected for identification and, where applicable, reported to DPIRD via the MyPestGuide Reporter application.

Management Targets

- No introduction of new environmental weed species into the Development Envelope as a result of Tellus' activities.
- No significant increase in the extent or density of weeds within native vegetation areas.

These management targets do not apply to weed occurrences within irrigated village areas (e.g. lawns and landscaped areas), which are managed separately as part of routine site maintenance and are not considered representative of weed risk to native vegetation.

Definition of Significant Increase

A significant increase in weed presence is defined as:

- the establishment of new weed species within native vegetation areas; or
- an observable increase in the extent or density of existing weed populations beyond baseline conditions described by Western Botanical (2021).

Weed Management Approach

Weed management measures implemented to minimise the introduction and spread of environmental weeds include:

- early detection and removal of isolated weed occurrences;
- minimising disturbance outside designated access tracks; and
- maintaining vehicle and equipment hygiene to reduce the risk of introduction and spread.

Where weeds are identified within native vegetation areas, targeted control measures (e.g. manual removal or herbicide application) are implemented as required.

Where environmental weeds or regional priority species are identified, relevant authorities (DBCA and/or DPIRD) will be notified as appropriate (refer to Appendix B).

Response Actions

If monitoring identifies:

- new weed species; or
- a significant increase in weed extent or density,

response actions outlined in Table 2.10 will be implemented.

Table 2-10 Weed exceedance response actions

Table 2.10 Response actions Assessment criteria	Response Action/s
• Significant increase in weed cover • Significant presence of new weed species detected during boundary inspections	• Confirm species and extent through targeted survey • Report to DBCA and/or DPIRD (as required, refer to Appendix B) • Implement control measures (manual removal and/or herbicide) • Record in MyOSH, Sandy Ridge Weed Register, Monthly Environment Report and Annual Vegetation Health Report • Report to DWER via the MS1234 Compliance Assessment Report

2.3.4. Bushfire Risk

Bushfire risk and preparedness are monitored in accordance with the Sandy Ridge Bushfire Management Plan (BMP) to verify compliance with Condition B2-2(2).

Monitoring activities focus on maintaining fire prevention and response readiness, including:

- Fuel-load assessments to ensure vegetation around operational areas remains within acceptable limits;
- Inspection and maintenance of firebreaks and firefighting equipment;
- Verification of training and emergency preparedness records; and
- Review of ignition-source controls such as hot-works permits and flammable-materials storage.

Inspections are conducted annually prior to the fire season, with additional checks following significant maintenance or construction works. Monitoring outcomes are reported in the Annual Bushfire Management Report and summarised in the MS1234 Compliance Assessment Report.

2.3.5. Dust

Environmental dust deposition is monitored at six locations within the development envelope in accordance with the Sandy Ridge Air Quality Management Plan (AQMP). Monitoring locations include the Control site (located approximately 2.1 km southeast of Cell 1), the Village, and the four corners of the mining area: Southwest, Southeast, Northwest, and Northeast.

Sampling is conducted quarterly using dust deposition gauges in accordance with AS/NZS 3580. Samples are analysed by an external NATA-accredited laboratory, and results are presented in the Monthly Environment Reports.

Management Target

Dust deposition targets are defined in the Sandy Ridge AQMP and are consistent with the EPA Victoria Protocol for Environmental Management and the DWER Draft Guideline: Dust Emissions.

An exceedance is considered to have occurred only if both of the following conditions are met at a monitoring location:

- Total insoluble solids exceed 4 g/m²/month, and
- Dust levels are more than 2 g/m²/month above the background (Control site) value.

These targets are intended to safeguard local vegetation health and amenity.

Response actions

Response actions relating to exceedance of dust management targets are presented in Table 2-11.

Table 2-11 Excessive dust response actions

Assessment criteria	Response Action/s
Exceedance of target dust levels	• Inspect vegetation in the area of exceedance for signs of dust-related impacts • Investigation into the likely cause of the exceedance, with findings documented in the Monthly Environment Report.
Excessive dust has caused environmental harm to vegetation	If it is determined that excessive dust has caused environmental harm to vegetation the following actions will be implemented: • Implement dust contingency program as described in AQMP, with corrective actions logged. • Report to DWER via the MS1234 Compliance Assessment Report

2.4. Reporting

A summary of reporting requirements under this FVMP is provided in Table 2-12. The Tellus Environmental Manager is responsible for the completion of these reports.

Table 2-12 FVMP reporting requirements

Requirements	Timing
Significant environmental works/monitoring completed each month are reported in the internal monthly Environmental Report	Monthly
Annual Vegetation Health Report that will include the following: - Results of annual aerial imagery analysis showing remaining numbers of priority species listed in Table 1 of MS1234 within the DE - Results of Annual Spring Vegetation Health Survey - Results of Annual <i>Banksia arborea</i> shrubland Survey - Results of annual late winter-early spring weed inspections - Results or quarterly environmental dust monitoring - Results of monitoring during vegetation clearing campaigns	Annual
Compliance with the FVMP will be reported in the Compliance Assessment Report required by MS 1234	Annually
Any non-compliance reported within seven days of being known as per condition D2-1(1)	Within 7 days
Report sightings of Environmental Weeds within to DPIRD or DBCA in accordance with Appendix B	As required
Pollution incidents resulting in offsite impacts reported to the appropriate agency within the WA Government	As required
Complaints and stakeholder interactions recorded	As required

3 ADAPTIVE MANAGEMENT AND REVIEW OF THE FVMP

Tellus recognises the dynamic nature of ecosystems and supports adaptive management under this FVMP. Adaptive management involves:

- implementing mitigation measures
- monitoring and evaluation against management targets
- systematically adapting management and mitigation measures, and
- monitoring to meet the environmental objectives.

Any changes to management practices will instigate a review and consideration of management actions. Assumptions and uncertainties will be evaluated against collected monitoring data on a recurrent basis in a process of continual improvement and establishing early response indicators/criteria.

Management and mitigation measures will be adjusted through what is learned from:

- evaluation of monitoring data
- review of assumptions and uncertainties
- re-evaluation of Project-related risks
- increased understanding of the ecological regime
- external changes during the life of the Project

Tellus will update this FVMP as required to include any adaptive management updates based on information gathered from monitoring results.

Continuous improvement of this FVMP will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets to identify opportunities for improvement. The continuous improvement process will be designed to:

- identify areas of opportunity for improvement of environmental management and performance
- determine the cause of causes of non-compliance and deficiencies
- develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies
- verify the effectiveness of the corrective and preventative actions
- document any changes in procedures resulting from process improvement
- draw comparisons between objectives and targets

Further refinements to this FVMP may result from changes identified during future works and operations. Any changes will be managed per Tellus' Change Management procedure.

4 STAKEHOLDER CONSULTATION

A summary of the stakeholder and government authority consultation completed to date, which has informed the FVMP, is presented in Table 4-1. Consultation will continue with the relevant stakeholders and government agencies to inform adaptive management.

Table 4-1 Stakeholder consultation summary

Stakeholder / Government Authority	Date	Summary
EPA Services	1 November 2017	Tellus submitted the proposed Targeted Flora Survey Plan to EPA Services
Public Environmental Review	5 October 2023	Public Environmental Review was approved for release by the Western Australian Office of the Environmental Protection Authority (OEPA). This involved a 6-week public consultation and feedback process that finished on 17 March 2023.
DPIRD	November 2023 – February 2024	DPIRD provided comments during EPA assessment 2309 regarding biosecurity risks associated with incoming cargo containers crossing state borders. In response, Tellus updated the Container Inspection Procedure (TEL-09-PRO-027) to include inspection for biological contamination.
DWER EPA Services	8 October 2024	DWER EPA Services provide Draft Conditions to Tellus. Conditions include a requirement to align the FVMP with 'Instructions on how to prepare EP Act Part IV Environmental Management Plans' WA EPA 2024.
EPA Services	13 December 2024	Ministerial Statement 1234 is issued to Tellus.
DWER EPA Services	07 November 2025	Tellus submitted the revised FVMP (v5) to DWER.
DWER EPA Services	18 March 2026	DWER provided feedback on FVMP (v5): Procedures referenced in the FVMP but not submitted making it difficult to assess appropriateness. No information provided regarding operational access around the <i>Banksia arborea</i> shrubland and potential impacts on vegetation condition, dust deposition, weeds and fire. Vegetation condition classes are considered subjective. Weed monitoring section lacks sufficient detail.
DWER EPA Services	08 May 2026	FVMP (v6) submitted following a revision to address the above comments.
DWER EPA Services	tba	DWER approved FVMP (v6)

5 CHANGES TO AN EMP

As per Condition C2-2 of MS 1234, this FVMP will be reviewed and revised as required to demonstrate that it satisfies the requirements of MS 1234.

Table 5-1 Changes to an EMP

Complexity of changes	Minor revisions ☐		Moderate revisions ☐	Major revisions ☒
Number of key environmental factors:	One ☐		2-3 ☐	>3 ☒
Date revision submitted to EPA				
Proponent's operational requirement timeframe for approval of revision	< One Month ☐	< Six Months ☐	> Six Months ☐	None ☒
Reason for timeframe				
Item no.	FVMP section no.	FVMP page no.	Summary of change	Reason for change
1.	throughout	throughout	Alignment with the EPA EMP template; clear linkages to the Flora and Vegetation outcomes (B2-1) and objectives (B2-2); strengthened focus on <i>Banksia arborea</i> shrubland (PEC) condition monitoring and conservation priority species disturbance limits; incorporation of outcome-based monitoring design with defined triggers, thresholds, and response actions; restructured tables and terminology for consistency and clarity. Additional updates submitted 08 May 2026 to address DWER comments from 18 March 2026 (Table 4.1)	Requirement of MS 1234

6 REFERENCES

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APPENDIX A: FLORA AND VEGETATION STUDIES

Year	Author	Title	Reference
2016	PGV Environmental	Sandy Ridge Project, Exploration Tenement E16/440 Level 1 Flora and Vegetation Survey	(PGV Environmental, 2016)
2016	PGV Environmental	Sandy Ridge Project, Exploration Tenement E16/440 Level 2 Flora and Vegetation Survey	(PGV Environmental, 2016)
2017	PGV Environmental	Sandy Ridge Project, Exploration Tenement E16/440 Targeted Significant Flora Survey	(PGV Environmental, 2017)
2018	Western Botanical	Sandy Ridge Facility – Borefield Flora and Vegetation Survey 2018	(Western Botanical, 2018)
2019	Western Botanical	Sandy Ridge Facility – Flora and Vegetation Survey 2018 (Communication Towers & Borrow Pits)	(Western Botanical, 2019)
2021	Western Botanical	Regional Priority Flora Search	(Western Botanical, 2021)
2021	Western Botanical	Condition Assessment. <i>Lepidosperma spp.</i> , Sandy Ridge, June 2021	(Western Botanical, 2021)
2021	Eubio Consulting	<i>Lepidosperma lyonsii</i> R.L. Barrett at Sandy Ridge – A report prepared for Western Botanical	(Eubio Consulting, 2021)
2022	Western Botanical	Detailed Flora and Vegetation for Tellus Holdings Sandy Ridge Operation, October 2022	(Western Botanical, 2022)
2024	Western Botanical	Vegetation Health and Monitoring of the Sandy Ridge Facility Phase 2, May 2024	(Western Botanical, 2024)

APPENDIX B: ENVIRONMENTAL WEED SPECIES DEFINED UNDER MS 1234

Species	Common name	Source	Report Sightings to
<i>Aerva javanica</i>	Kapok Bush	DBCA	DBCA
<i>Alternanthera philoxeroides</i>	Alligator Weed	WoNS	DPIRD
<i>Andropogon gayanus</i>	Gamba Grass	WoNS	DPIRD
<i>Annona glabra</i>	Pond Apple	WoNS	DPIRD
<i>Anredera cordifolia</i>	Madeira Vine	WoNS	DPIRD
<i>Asparagus aethiopicus</i>	Asparagus Fern	WoNS	DPIRD
<i>Asparagus asparagoides</i>	Bridal Creeper	WoNS,	DPIRD
<i>Asparagus declinatus</i>	Bridal Veil Creeper	WoNS	DPIRD
<i>Bryophyllum delagoense</i>	Mother of Millions	DBCA	DBCA
<i>Cabomba caroliniana</i>	Cabomba, Fanwort	WoNS	DPIRD
<i>Cenchrus setaceus</i>	Fountain Grass	DBCA	DBCA
<i>Chondrilla juncea</i>	Skeleton Weed	DPIRD	DPIRD
<i>Chrysanthemoides monilifera subsp. monilifera</i>	Boneseed	WoNS, DPIRD	DPIRD
<i>Chrysanthemoides monilifera subsp. rotundata</i>	Bitou Bush	WoNS	DPIRD
<i>Cryptostegia grandiflora</i>	Rubber Vine	WoNS, DPIRD	DPIRD
<i>Cylindropuntia imbricata</i>	Devil's Rope	DBCA	DBCA
<i>Cylindropuntia kleiniae</i>	Klein's Pencil Cactus	DBCA	DBCA
<i>Cylindropuntia rosea</i>	Hudson Pear	DBCA	DBCA
<i>Cylindropuntia tunicata</i>	Brown Spined Hudson Pear	DBCA	DBCA
<i>Cytisus scoparius</i>	English Broom	WoNS	DPIRD
<i>Datura ferox</i>	Fierce Thornapple	DBCA	DBCA
<i>Dolichandra unguis-cati</i>	Cat's Claw Creeper	WoNS	DPIRD
<i>Eichhornia crassipes</i>	Water Hyacinth	WoNS	DPIRD
<i>Eragrostis curvula</i>	African Lovegrass	DBCA	DBCA
<i>Galium tricornutum</i>	Three-horned Bedstraw	DPIRD	DPIRD
<i>Gazania linearis</i>	Gazania	DBCA	DBCA
<i>Genista linifolia</i>	Flax-leaved Broom	WoNS	DPIRD
<i>Genista monspessulana</i>	Montpellier Broom	WoNS	DPIRD
<i>Hymenachne amplexicaulis</i>	Hymenachne	WoNS	DPIRD
<i>Jatropha gossypifolia</i>	Bellyache Bush	WoNS	DPIRD
<i>Lantana camara</i>	Lantana	WoNS	DPIRD
<i>Limonium lobatum</i>	Winged Sea Lavender	DBCA	DBCA
<i>Lycium ferocissimum</i>	African Boxthorn	WoNS	DPIRD
<i>Mimosa pigra</i>	Mimosa	WoNS	DPIRD
<i>Moraea flaccida</i>	One-leaf Cape Tulip	DBCA	DBCA
<i>Nassella neesiana</i>	Chilean Needle Grass	WoNS	DPIRD
<i>Nassella trichotoma</i>	Serrated Tussock	WoNS	DPIRD
<i>Opuntia monacantha</i>	Prickly Pear species	DBCA	DBCA
<i>Opuntia elata</i>	Prickly Pear species	DBCA	DBCA
<i>Opuntia ficus-indica</i>	Prickly Pear species	DBCA	DBCA

Species	Common name	Source	Report Sightings to
<i>Opuntia microdasys</i>	Golden Bristle Cactus	DBCA	DBCA
<i>Opuntia stricta</i>	Common Prickly Pear	WoNS, DBCA	DPRID, DBCA
<i>Parkinsonia aculeata</i>	Parkinsonia	WoNS	DPIRD
<i>Parthenium hysterophorus</i>	Parthenium Weed	WoNS	DPIRD
<i>Phytolacca americana</i>	Pokeweed	DPIRD	DPIRD
<i>Pistia stratiotes</i>	Water Lettuce	DPIRD	DPIRD
<i>Praxelis clematidea</i>	Praxelis	DPIRD	DPIRD
<i>Prosopis spp.</i>	Mesquite	WoNS, DPIRD	DPIRD
<i>Rubus fruticosus aggregate</i>	Blackberry	WoNS	DPIRD
<i>Sagittaria platyphylla</i>	Delta Arrowhead	WoNS	DPIRD
<i>Salix spp. (excluding certain species)</i>	Willows	WoNS	DPIRD
<i>Salvinia molesta</i>	Salvinia	WoNS	DPIRD
<i>Senecio madagascariensis</i>	Fireweed	WoNS	DPIRD
<i>Solanum elaeagnifolium</i>	Silver Nightshade	WoNS	DPIRD
<i>Tamarix aphylla</i>	Athel Pine	WONS	DPIRD
<i>Ulex europaeus</i>	Gorse	WoNS, DPIRD	DPIRD
<i>Vachellia nilotica</i>	Prickly Acacia	WoNS	DPIRD
<i>Xanthium occidentale / Xanthium spp.</i>	Noogoora Burr	DPIRD	DPIRD
<i>Xanthium spinosum</i>	Bathurst Burr	DPIRD, DBCA	DPIRD, DBCA

Key:

- DBCA: Goldfields Region Priority Alert Weeds
- WoNS: Weeds of National Significance (WoNS), published by Weeds Australia under the Australian Weeds Strategy.
- DPIRD: Plants declared under Section 22(2) of Biosecurity and Agriculture Management Act 2007

Flora & Vegetation Management Plan – Sandy Ridge

Hazard	Pre-mitigated risk					Confidence in mitigation	Post-mitigated risks					Outcome
	Likelihood	Consequence	Risk ranking	Nature	Duration		Likelihood	Consequence	Risk ranking	Nature	Duration	
Unauthorised removal of vegetation	Almost certain	Minor	High	Adverse	Long term	Moderate	Almost certain	Minor	High	Adverse	Long term	Risk same
Unauthorised removal of vegetation of conservation significance (Priority Ecological Community)	Possible	Moderate	High	Adverse	Long term	Moderate	Rare	Moderate	Low	Adverse	Long term	Risk reduced
Unauthorised removal of flora species of conservation significance	Possible	Moderate	High	Adverse	Long term	Moderate	Unlikely	Moderate	Medium	Adverse	Long term	Risk reduced
Impacts on lands managed by DBCA	Possible	Moderate	Medium	Adverse	Long term	Moderate	Unlikely	Moderate	Low	Adverse	Long term	Risk reduced
Uptake of saline water used for dust suppression	Possible	Minor	Medium	Adverse	Temporary	Moderate	Rare	Minor	Low	Adverse	Temporary	Risk reduced
Uptake of saline water from potential water pipeline leaks within the former Jaurdi Pastoral Lease	Possible	Minor	Medium	Adverse	Temporary	Moderate	Unlikely	Minor	Low	Adverse	Temporary	Risk reduced
Introduction and spread of weeds	Likely	Minor	Medium	Adverse	Temporary	Moderate	Possible	Minor	Medium	Adverse	Temporary	Risk reduced
Transpiration of leachate from waste cell	Possible	Minor	Medium	Adverse	Permanent	Moderate	Rare	Minor	Low	Adverse	Permanent	Risk reduced
Vegetation association cumulative impacts	Possible	Minor	Medium	Adverse	Long term	Moderate	Unlikely	Minor	Low	Adverse	Long term	Risk reduced
Loss of regional habitat	Possible	Minor	Medium	Adverse	Long term	Moderate	Rare	Minor	Low	Adverse	Long term	Risk reduced
Loss of local habitat	Likely	Minor	Medium	Adverse	Long term	Moderate	Likely	Minor	Medium	Adverse	Long term	Risk same
Bush tucker consumption	Possible	Minor	Medium	Adverse	Permanent	Moderate	Rare	Minor	Low	Adverse	Permanent	Risk reduced