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Project: Roma Ecological Assessment Report

Lots 1 & 2 SP186211

Project No. 221708 - 001

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Roma Ecological Assessment Report

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Appendices

1 Background

1.1 Project description

Santos Ltd (Santos) have commissioned Aurecon Australia Pty Ltd (Aurecon) to undertake ecological investigations of proposed areas of development for the Roma gas fields.

The Roma gas fields are located near the township of Roma and are characterised by undulating terrain with small elevated areas including the Thomby and Grafton Range. The dominant vegetation types within the Roma gas fields include Eucalypt and/or Brigalow woodlands, Blue grass or Mitchell grass downs, and smaller areas of White Cypress Pine and Mulga (Eddie 2007). The Roma gas fields are located within the Balonne River catchment.

Much of this area has been subject to cattle grazing and other agricultural practices, as well as previous development associated with the gas fields.

This report is specific to the proposed development areas listed below and shown in Figure 1.1:

- Corridors R5, R28, R31, R71, Grafton Range Trunkline
- Road corridor
- Geotechnical survey locations TP-R65, TP-R50, RM-36, TP-R37, TP-R38
- Well pad areas Roma046, Grafton Range 21

These areas are collectively referred to as the 'proposed development area', and are located entirely within Lots 1 and 2 SP186211. Note that the subject of this report is solely related to Lots 1 and 2 SP186211. Where survey areas overlap additional properties, these sites will be further addressed in the report relevant to those properties/lots.

1.2 Purpose of report

The aim of this report is to provide an ecological assessment of the proposed development areas located on Lots 1 and 2 SP186211 (Figure 1.1), and to identify areas and species of notable ecological or conservation value. This report does not make any recommendation regarding the development in relation to any Santos environmental authorities or other approvals.

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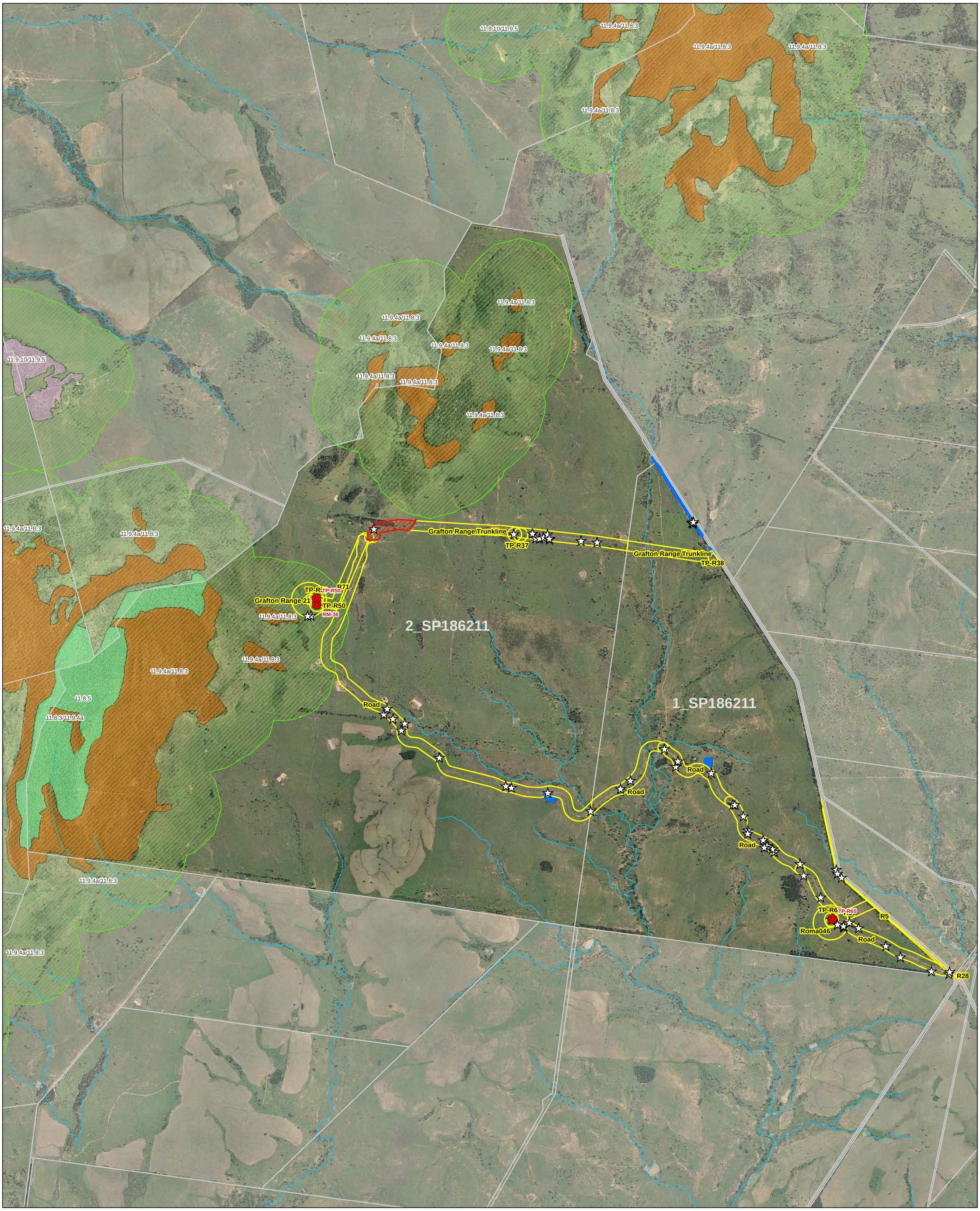

Map by: PIC P:\GIS\Projects\215648_Fairview_Eco_Assessment\215648_Fairview_068.mxd 23/08/2011 17:33

Legend

- EVNT and Type A Species
- *Acacia harpophylla* (Includes Regrowth)
- Corridors - Ground Truth
- Geotech Borehole
- Cadastre
- Watercourse
- Area Not Assessed Due to Fire/Backburning

ESA Mapping (Including Buffer Areas)

- Category A
- Category B
- Category C

Regional Ecosystem (VM Act Status)

- Endangered - Dominant
- Endangered - Sub-dominant
- Of Concern - Dominant
- Of Concern - Sub-dominant
- Least Concern

Source:
Cadastre: DERM, 2011.
Regional Ecosystems: Version 6, The State of Queensland (Department of Environment and Resource Management), Nov 2009.

A1 scale: 1:19,000

0 125250 500 750 1,000 Meters

Date: 23/08/2011 Version: 1 Job No: 215648

Coordinate system: GDA_1994_MGA_Zone_55

Santos Upstream Ecological Assessment

Figure 1-1: Location of Proposed Pipeline Corridors Investigated

2 Methodology

2.1 Desktop methodology

The proposed development areas have been projected on to a range of maps provided by Santos. These maps include Regional Ecosystem (RE) Mapping (version 6.0; Department of Environment and Resource Management [DERM]), Environmentally Sensitive Areas (ESA) mapping, drainage mapping (DERM) and aerial photography. Where available ahead of time, these resources were reviewed to determine target areas for the field inspection. It is important to note that the RE classifications used in this report are based on the 'biodiversity status' of the vegetation and not the '*Vegetation Management Act 1999* (VM Act) status' of the vegetation. Note that figures created for this report are based on the official DERM mapping, which illustrates the VM Act status.

2.2 Field methodology

The proposed development areas were assessed by four (4) Aurecon ecologists (Cassandra Arkinstall, Bree Wilson, Sarah Stone and Sarah Glauert) between 20 May and 2 August 2011. These assessments were undertaken to assess the existing vegetation communities and habitat value of the areas proposed for clearing within the development areas as well as to verify the RE mapping as produced by DERM.

GIS environmental constraints layers (eg RE Mapping, ESA mapping) and high resolution aerial photography were uploaded onto a toughbook (C5 mobile clinical assistant CFT-001 – Motion computing), with an integrated GPS used to locate surveys areas. Handheld Garmin GPS units (GPS map 76) were also used during the field investigations. It should be noted that while efforts were made to ensure the GPS co-ordinates provided in this report are accurate, a margin of error approximately +/- 15 m is expected due to the limitations of the devices used and the recording environment.

The corridors were 100 m wide and the circular well pad areas had a radius of 175 m. Geotechnical survey locations were also assessed as part of the survey areas (a 50 m buffer zone around each survey location was assessed).

The ground-truthing of the proposed development areas included undertaking detailed flora species surveys including sampling of unknown flora, and recording all incidental fauna observations. All species known to be of conservation significance (ie endangered, vulnerable, near threatened) or of harvestable significance (eg Type A species) as listed under the provisions of the *Nature Conservation Act 1992* [NC Act] or endangered, vulnerable or rare species under the *Environment Protection and Biodiversity Conservation Act 1999* [EPBC Act]) were recorded using the toughbook.

A list of flora species observed within the proposed development areas has been included in Appendix A. Incidental fauna observations are provided in the relevant sections throughout this report.

3 Ecological assessment

3.1 Road Corridor & Grafton Range Trunkline

General

The proposed development area shown in Figure 1.1 includes both road and pipeline corridors, and geotechnical survey locations. The site is situated on gently undulating plains with silty soils. The majority of the proposed development area has been cleared for agricultural purposes, and stock grazing was noted at the time of the survey. An existing access track also traverses the length of the proposed development area.

A number of small patches of regrowth *Acacia harpophylla* (Brigalow) are located within and adjacent to the proposed development area (Figure 1.1), and paddock trees occur sporadically throughout the cleared areas.

The proposed development area is mapped as non-remnant on the DERM RE mapping, and field investigations confirmed the RE mapping as correct.

One section of the proposed development area is mapped as being contained within an ESA Category B buffer zone (buffer for RE 11.9.4a – 'Endangered' Biodiversity status). However the ESA is located approximately 300 m to the west of the development area.

Four (4) mapped watercourses occur within the proposed development area - three (3) 'stream order 1' and one (1) 'stream order 2'.

Floristics

The majority of the proposed development area has been extensively cleared for agricultural purposes and as such canopy and sub-canopy species persist only in small patches or as scattered paddock trees.

Three (3) small areas of *Acacia harpophylla* (Brigalow) regrowth are present within the proposed development area, as shown in Figure 1.1. The two (2) patches within the southern portion of the development area were co-dominated by *A. harpophylla* which had a height range of between 3-8 m. The linear corridor of *A. harpophylla* associated with the Grafton Range Trunkline and TP-R38 (in the north-east of the development area) contained Brigalow trees with an average height of 9 m (range 4-12 m).

These areas of Brigalow regrowth may be analogous with regrowth vegetation greater than 15 years old. As such this vegetation has the potential to be considered characteristic of the threatened Brigalow ecological community and may therefore referrable under the provisions of the EPBC Act.

Generally, the canopy and sub-canopy strata within the proposed development area are very sparse (approximately 5% cover of the total area). The height range of the canopy and sub-canopy strata is 8-22 m and 4-6 m, respectively. Species present in the canopy stratum include *Eucalyptus populnea*

(Poplar box), *A. harpophylla*, *Brachychiton rupestris* (Narrow-leaved Bottle Tree), *Corymbia tessellaris* (Moreton Bay Ash), *Eucalyptus camaldulensis* (River Red Gum), *Eucalyptus melanophloia* (Silver-leaved Ironbark), and *Flindersia australis* (Crows Ash). The sub-canopy is dominated by *A. harpophylla*, with other species present including *Allocasuarina luehmannii* (Bulloak), *Geijera parviflora* (Wilga), *Eremophila mitchellii* (False Sandalwood), *Owenia acidula* (Emu Apple), and *Corymbia citriodora* (Lemon-scented Gum).

The ground cover layer within the proposed development area is relatively dense (approximately 70% cover), with an average height of 0.9 m. The cleared areas are dominated by *Pennisetum ciliare* (Buffel Grass), with *Heteropogon contortus* (Black Spear Grass) occurring as an associated species. The ground stratum within the *A. harpophylla* regrowth areas has a less dense cover of *P. ciliare,* and typically contains a range of native and non-native grasses/forbs and scattered shrubs (eg *Geijera parviflora, Carissa ovata, Apophyllum anomalum* and *Sida* species).

Forty-seven (47) Type A restricted plants (NC Act) were recorded within the proposed development area – the location of these species is provided in Table 3.1 and in Figure 1.1.

A list of flora species observed within the proposed development area is presented in Appendix A.

Table 3.1 Location of Type A Restricted Plants (*Nature Conservation Act 1992*)

Species	Easting (GDA 94, Zone 55J)	Northing (GDA 94, Zone 55J)
Brachychiton populneus	698639	7074835
Brachychiton populneus	697987	7075323
Brachychiton rupestris	697816	7075541
Brachychiton rupestris	698274	7075070
Brachychiton rupestris	698367	7075016
Brachychiton populneus	696532	7076633
Brachychiton populneus	696556	7076687
Brachychiton rupestris	696889	7076567
Brachychiton rupestris	697107	7076253
Brachychiton populneus	697126	7076249
Brachychiton rupestris	697212	7076135
Brachychiton rupestris	697257	7075995
Brachychiton rupestris	697255	7075962
Brachychiton rupestris	697409	7075898
Brachychiton rupestris	697779	7075657
Brachychiton populneus	697522	7075778
Brachychiton populneus	697502	7075807
Brachychiton rupestris	697461	7075831
Brachychiton rupestris	697448	7075839
Brachychiton rupestris	697420	7075823
Brachychiton populneus	695980	7076410

Species	Easting (GDA 94, Zone 55J)	Northing (GDA 94, Zone 55J)
Brachychiton rupestris	693610	7077157
Brachychiton rupestris	695585	7078894
Brachychiton rupestris	695746	7078881
Brachychiton rupestris	695269	7078911
Brachychiton rupestris	695097	7078968
Brachychiton populneus	695252	7076370
Brachychiton populneus	694887	7076422
Brachychiton populneus	694830	7076438
Brachychiton rupestris	693786	7076995
Brachychiton rupestris	693821	7077065
Brachychiton rupestris	693701	7077113
Brachychiton rupestris	693644	7077213
Brachychiton rupestris	695131	7078920
Brachychiton rupestris	695169	7078919
Brachychiton rupestris	695169	7078919
Brachychiton rupestris	695210	7078930
Brachychiton rupestris	695210	7078930
Brachychiton rupestris	695249	7078960
Brachychiton rupestris	695267	7078917
Brachychiton rupestris	698220	7075023
Brachychiton rupestris	698219	7075031
Brachychiton rupestris	698213	7075034
Brachychiton rupestris	698154	7075052
Brachychiton rupestris	698096	7075099
Brachychiton rupestris	699271	7074556
Brachychiton rupestris	699278	7074577

Habitat values

Twenty-three (23) incidental fauna species were recorded within the proposed disturbance area during field investigations, as listed in Table 3.2 below. The majority of the species recorded were ubiquitous bird species, with two (2) common macropods recorded within the development area. There are a number of farm dams located within close proximity to the development area which are likely to provide habitat and a source of water for a range of bird species.

Habitat features associated with the proposed development area include:

- Limited canopy cover suitable for shelter, foraging and perching
- Limited fissured/exfoliating tree bark
- Dense groundcover vegetation (ie grassy tussocks)

- Limited woody debris (ie fallen/felled timber, including hollow-bearing logs)
- Ephemeral watercourse habitat (including banks) and farm dams

The habitat value of the areas of *A. harpophylla* regrowth within the proposed development area is moderate overall, as it contains canopy suitable for perching and foraging and some woody debris. The regrowth is moderately complex in structure (canopy, sub-canopy, shrub and ground strata present), and has a moderate flora species diversity. These areas of regrowth are likely to support a range of native fauna, including avian fauna, small to medium sized mammals and reptiles.

Habitat value within the cleared/open areas is considered to be low overall. This is due to the lack of key habitat attributes (eg canopy/sub-canopy trees, woody debris, leaf litter). However, the dense groundcover potentially provides suitable foraging habitat for generalist species such as macropods and common birds of prey such as Kestrels (*Falco cenchroides*).

No EVNT fauna species under the EPBC Act or the NC Act were observed.

Table 3.2 Incidental fauna species recorded during field investigations of the Road Corridor and Grafton Range Trunkline

Common name	Scientific name
Birds	
Australian Magpie	*Cracticus tibicen*
Australian Wood Duck	*Chenonetta jubata*
Banded Lapwing	*Vanellus tricolor*
Black-faced Cuckoo-shrike	*Coracina novaehollandiae*
Cockatiel	*Nymphicus hollandicus*
Crested Pigeon	*Ocyphaps lophotes*
Galah	*Eolophus roseicapilla*
Kestrel	*Falco cenchroides*
Laughing Kookaburra	*Dacelo novaeguineae*
Little Pied Cormorant	*Microcarbo melanoleucos*
Magpie-lark	*Grallina cyanoleuca*
Noisy Miner	*Manorina melanocephala*
Pacific Black Duck	*Anas superciliosa*
Pale-headed Rosella	*Platycercus adscitus*
Pied Butcherbird	*Cracticus nigrogularis*
Red-winged Parrot	*Aprosmictus erythropterus*
Striated Pardalote	*Pardalotus striatus*
Sulfur-crested Cockatoo	*Cacatua galerita*
Torresian Crow	*Corvus orru*
Weebill	*Smicrornis brevirostris*
Willie Wagtail	*Rhipidura leucophrys*
Macropods	

Eastern Grey Kangaroo	*Macropus giganteus*
Pretty-face Wallaby	*Macropus parryi*

3.2 Corridor R71 & Well Pad Grafton Range 21

General

The proposed development area shown in Figure 1.1 includes a pipeline corridor, a well pad and geotechnical survey locations. The site is situated on the foothills of plateau (south-east facing foothills), and is gently sloped to the south-east. The development area has largely been cleared of vegetation with only scattered trees remaining.

The proposed development area is mapped as non-remnant on the DERM RE mapping, and field investigations confirmed the RE mapping as correct.

One section of the proposed development area is mapped as being contained within an ESA Category B buffer zone (buffer for RE 11.9.4a – 'Endangered' Biodiversity status). However the ESA is located approximately 30 m to the south-west of the development area.

There are no mapped watercourses within the proposed development area.

Floristics

The majority of the proposed development area has been extensively cleared for agricultural purposes and as such, canopy and sub-canopy species persist only as isolated paddock trees.

Generally, the canopy and sub-canopy strata within the proposed development area are very sparse (approximately 5% cover of the total area). The height range of the canopy and sub-canopy strata is 8-22 m and 4-6 m, respectively. Species present in the canopy stratum include *Eucalyptus populnea* (Poplar box), *A. harpophylla*, *Brachychiton rupestris* (Narrow-leaved Bottle Tree), *Eucalyptus melanophloia* (Silver-leaved Ironbark), and *Flindersia australis* (Crows Ash). The sub-canopy is dominated by *A. harpophylla*, with other species present including *Allocasuarina luehmannii* (Bulloak), *Geijera parviflora* (Wilga), *Eremophila mitchellii* (False Sandalwood), and *Owenia acidula* (Emu Apple).

The ground cover layer within the proposed development area is relatively dense (approximately 70% cover), with an average height of 0.9 m. The cleared areas are dominated by *Pennisetum ciliare* (Buffel Grass), with *Heteropogon contortus* (Black Spear Grass) occurring as an associated species. The development area also contains a range of native and non-native grasses/forbs and scattered shrubs (*Geijera parviflora, Carissa ovata, Apophyllum anomalum* and *Sida* species).

Two (2) Type A restricted plants (NC Act) were recorded within the proposed development area – the location of these species is provided in Table 3.3 and in Figure 1.1.

A list of flora species observed within the proposed development area is presented in Appendix A.

Table 3.3 Location of Type A Restricted Plants (*Nature Conservation Act 1992*)

Species	Easting (GDA 94, Zone 55J)	Northing (GDA 94, Zone 55J)
Brachychiton populneus	692847	7078143
Brachychiton rupestris	692881	7078145

Habitat values

Twenty-three (23) incidental fauna species were recorded within the broader development area (ie within Lots 1 and 2 SP186211) during field investigations, as listed in Table of Section 3.1 of this report.

The majority of the species recorded were ubiquitous bird species, with two (2) common macropods recorded within the development area. There are a number of farm dams located within close proximity to the development area which area likely to provide habitat and a water source for a range of bird species.

Habitat features associated with the proposed development area include:

- Limited canopy cover suitable for shelter, foraging and perching
- Limited fissured/exfoliating tree bark
- Dense groundcover vegetation (ie grassy tussocks)
- Limited woody debris (ie fallen/felled timber, including hollow-bearing logs)
- Ephemeral watercourse habitat (including banks) and farm dams

Habitat value within the cleared open areas is considered to be low overall. This is due to the lack of key habitat attributes present within the areas of regrowth. However, the dense groundcover potentially provides suitable foraging habitat for generalist species such as macropods and common birds of prey (eg Kestrels [*Falco cenchroides*]).

No EVNT fauna species under the EPBC Act or the NC Act were observed.

3.3 Corridor R31 & Well Pad Roma046

General

The proposed development area is located in the south-eastern corner of Lot 1 SP186211. The site is gently undulating, with a farm dam to the north of the development area. The soils are predominantly red silty-clays. The proposed development area has been extensively disturbed as a result of previous vegetation clearing and heavy grazing by stock. An existing access track also traverses the development area.

The development area is currently mapped as non-remnant vegetation on the DERM RE mapping (Figure 1.1). There are no ESAs mapped within the development area, or within a distance of 1 km to the proposed development area.

There are no watercourses mapped within the proposed development area, with the nearest watercourse located approximately 65 m to the north of the area. However an adjacent farm dam is located partially within the proposed development area (Figure 1.1).

Floristics

The proposed development area is located in a highly disturbed (ie heavily grazed) area, and has relatively low flora species diversity. The majority of the development area is dominated by *Pennisetum ciliare* (Buffel Grass) with the exception of the narrow corridor of mature vegetation retained adjacent to the road casement along the property boundary (Figure 1.1). Species recorded within the canopy and sub-canopy layers include *Brachychiton rupestris* (Narrow-leaved Bottle Tree), *Eucalyptus melanophloia* (Silver-leaved Ironbark), and *Allocasuarina luehmannii* (Bull Oak).

Five (5) *B. rupestris* trees were observed within the proposed disturbance area. This species is classed as a Type A restricted species under the provisions of the NC Act. The location of these trees is provided in Table 3.4, and on Figure 1.1.

With the exception of the observed Type A species, no other species protected under the provisions of the NC Act or the EPBC Act were observed within the proposed development area.

Table 3.4 Location of Type A Restricted Plants (*Nature Conservation Act 1992*)

Species	Easting (GDA 94, Zone 55J)	Northing (GDA 94, Zone 55J)
Brachychiton rupestris	698096	7075099
Brachychiton rupestris	698154	7075052
Brachychiton rupestris	698213	7075034
Brachychiton rupestris	698219	7075031
Brachychiton rupestris	698220	7075023

Habitat values

The habitat values of the proposed development area are considered to be very low. The area has been extensively disturbed by stock grazing and invasion of exotic pasture species. There are several isolated mature trees present within the development area and these may provide some foraging habitat and shelter for ubiquitous avian and arboreal fauna (including arboreal mammals).

A list of incidental fauna species recorded within the broader development area (ie within Lots 1 and 2 SP186211) during field investigations is Table 3.2 of Section 3.1 of this report.

3.4 Corridor R5 & R28

General

The proposed development area is located partially on Lot 1 SP186211, in the south-eastern corner adjacent to the existing road reserve ('The Bend Road'). The site is gently undulating with red silty-clays. A fence line and an existing access road traverse the length of the development area (Figure 1.1).

The development area is currently mapped as non-remnant vegetation on the DERM RE mapping. There are no ESAs mapped within the development area, with the closest situated more than 350 m to the north-east.

There is one (1) mapped 'stream order 1' watercourse that traverses the northern portion of Corridor R5.

Floristics

The proposed development occurs within a heavily disturbed landscape, characterised by *Eucalyptus populnea* (Poplar Box) regrowth with an understorey dominated by the exotic pasture, *Pennisetum ciliare* (Buffel Grass). Scattered shrubby growth includes *Geijera parviflora* (Wilga), *Eremophila mitchellii* (False Sandalwood) and *Alstonia constricta* (Bitter Bark). Where native vegetation has been retained, for example, along fence lines, increasing floristic diversity is present.

The proposed development area contains mature *Acacia harpophylla* (Brigalow), *Brachychiton populneus* (Kurrajong), *Brachychiton rupestris* (Narrow-leaved Bottle Tree), *E. populnea* and *Santalum lanceolatum* (Sandalwood), with a shrub layer of *Eremophila deserti* (Turkey Bush), *Carissa ovata* (Currant Bush), *Alectryon diversifolius* (Scrub Boonaree) and *Dodonaea viscosa* (Sticky Hopbush). The ground layer is sparse and consists of *Ancistrachne uncinulata* (Giant Spear Grass) and a range of other native grasses.

Five (5) Type A restricted plants were observed within the proposed disturbance area. These plants are protected under the provisions of the NC Act. Their locations are provided in Table 3.5 and on Figure 1.1.

With the exception of the observed Type A species, no other species protected under the provisions of the NC Act or the EPBC Act were observed within the proposed development area.

Table 3.5 Location of Type A Restricted Plants (*Nature Conservation Act 1992*)

Species	Easting (GDA 94, Zone 55J)	Northing (GDA 94, Zone 55J)
Brachychiton rupestris	699271	7074556
Brachychiton rupestris	699278	7074577
Brachychiton populneus	698194	7075521
Brachychiton populneus	698154	7075560
Brachychiton rupestris	698143	7075600

Habitat values

The habitat value of the proposed development area is considered to be low within the heavily disturbed areas, and moderate within patches of mature vegetation (ie adjacent to the road reserve). The area has been extensively disturbed by stock grazing and though the invasion of exotic pasture species. Isolated mature and semi-mature trees are present throughout the corridor alignment and these are likely to provide some habitat for avian and arboreal fauna.

An ephemeral watercourse traverses the development area, but limited riparian vegetation remains along the banks of this watercourse. The remainder of the area contained some woody debris and the remnant vegetation along the fence line is likely to provide some habitat for native fauna species. Traces of recent Short-beaked Echidna (*Tachyglossus aculeatus*) activity were evident within the mature vegetation, and several bird species were recorded within the development area at the time of field surveys.

No fauna species listed as threatened under the provisions of either the EPBC Act or the NC Act were detected. A list of incidental fauna species recorded within the broader development area (ie within Lots 1 and 2 SP186211) during field investigations is Table 3.2 of Section 3.1 of this report.

4 Conclusion

The proposed development areas occur within a highly disturbed landscape and are predominantly located within areas subject to historic vegetation clearing. Although the development areas are located within cleared areas, species of legislative significance were recorded at a number of locations (ie Type A restricted plants).

The proposed development area does not traverse any areas of remnant vegetation on the DERM RE mapping. No ESAs are mapped within the proposed development area, however the Grafton Range 21 well pad is located approximately 30 m from 'Endangered' RE (RE 11.9.4a/11.8.3 - ESA Category B).

A number of patches of *Acacia harpophylla* (Brigalow) regrowth are located within and adjacent to the proposed development area (Figure 1.1). The Brigalow within these patches may be consistent with Brigalow regrowth greater than 15 years old. These regrowth areas may potentially be considered characteristic of the EPBC threatened Brigalow ecological community and may therefore be referrable under the provisions of the EPBC Act.

Five (5) watercourses are mapped within the proposed development area. However, the riparian vegetation has been previously cleared and now only scattered trees and small patches of vegetation are retained along these watercourses.

Fifty-nine (59) Type A restricted plant species were observed within the proposed development area.

No species protected under the provisions of the EPBC Act were observed within the proposed development area during field investigations.

5 References

Eddie, C (2007) Field Guide to Trees and Shrubs of Eastern Queensland Oil and Gas Fields, First Edition, Santos Ltd, Adelaide.

Regional Ecosystem Mapping, Version 6.0, Queensland Government Department of Environment and Resource Management (DERM).

Appendix A
Flora Species List

Family Name	Scientific Name	Common Name	Notes	Road Corridor and Grafton Trunkline	Corridor R71 and Well Pad Grafton Range 21	Corridor R31 and Well Pad Roma046
Malvaceae	*Abutilon oxycarpum*	Chinese Lantern		x	x	
Fabaceae - Mimosoideae	*Acacia excelsa*	Ironwood		x	x	
Fabaceae - Mimosoideae	*Acacia harpophylla*	Brigalow		x	x	
Sapindaceae	*Alectryon diversifolius*	Scrub Boonaree		x	x	
Casuarinaceae	*Allocasuarina luehmannii*	Bull Oak		x	x	x
Apocynaceae	*Alstonia constricta*	Bitter Bark		x	x	x
Amaranthaceae	*Alternanthera nodiflora*	Common Joy Weed		x	x	
Myrsinaceae	*Anagallis arvensis*	Scarlet Pimpernel		x	x	
Capparaceae	*Apophyllum anomalum*	Warrior Bush		x	x	
Papaveraceae	*Argemone ochroleuca*	Mexican Poppy		x	x	
Poaceae	*Aristida calycina*	Dark Wiregrass		x	x	
Poaceae	*Aristida caput medusae*	Curly Head Wire Grass		x	x	x
Poaceae	*Aristida ingrata*	Purple Aristida				x
Poaceae	*Aristida jerichoensis*	Jericho Wire Grass		x	x	
Poaceae	*Aristida personata*	Spear Grass		x	x	
Sapindaceae	*Atalaya hemiglauca*	Whitewood		x	x	
Poaceae	*Austrostipa verticillata*	Slender Bamboo Grass		x	x	
Asteraceae	*Bidens pilosa*	Cobblers Pegs		x	x	
Poaceae	*Bothriochloa bladhii*	Forest Bluegrass				x
Poaceae	*Bothriochloa decipiens var.*	Pitted Bluegrass		x	x	

Family Name	Scientific Name	Common Name	Notes	Road Corridor and Grafton Trunkline	Corridor R71 and Well Pad Grafton Range 21	Corridor R31 and Well Pad Roma046
	decipiens					
Poaceae	*Bothriochloa ewartiana*	Desert Bluegrass		x	x	
Sterculiaceae	*Brachychiton australis*	Broad-leaf Bottle Tree	NC Act Type A Species	x	x	
Sterculiaceae	*Brachychiton populneus*	Kurrajong	NC Act Type A Species	x	x	
Sterculiaceae	*Brachychiton rupestris*	Narrow-leaved Bottle Tree	NC Act Type A Species	x	x	x
Asteraceae	*Brachycome dentata*	Lobe-seed Daisy		x	x	
Asteraceae	*Bracteantha bracteata*	Everlasting Daisy		x	x	
Pittosporaceae	*Bursaria spinosa*	Prickly Pine		x	x	
Cupressaceae	*Callitris glaucophylla*	White Cypress Pine		x	x	
Asteraceae	*Calotis cuneifolia*	Purple Burr Daisy		x	x	x
Asteraceae	*Calotis lappulacea*	Yellow Burr Daisy		x	x	x
Asteraceae	*Calotis multicaulis*	Woolly-head Burr Daisy		x	x	
Capparaceae	*Capparis lasiantha*	Native Orange		x	x	
Capparaceae	*Capparis loranthifolia*	Nipan, Wait-a-while		x	x	x
Capparaceae	*Capparis sepiaria*	Wild Caper Bush				x
Apocynaceae	*Carissa ovata*	Currant Bush		x	x	x
Euphorbiaceae	*Chamaesyce drummondii*	Caustic Weed		x	x	
Adiantaceae	*Cheilanthes sieberi*	Mulga Fern		x	x	x
Chenopodiaceae	*Chenopodium album*	Fat Hen		x	x	
Chenopodiaceae	*Chenopodium carinatum*	Keeled Goosefoot		x	x	
Chenopodiaceae	*Chenopodium desertorum*	Desert Goosefoot		x	x	

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Poaceae	*Chloris pectinata*	Comb Chloris		x	x	
Asteraceae	*Chrysocephalum apiculatum*	Yellow Buttons		x	x	x
Asteraceae	*Cirsium vulgare*	Spear Thistle, Black Thistle		x	x	
Rutaceae	*Citrus glauca*	Lime Bush				x
Asteraceae	*Conyza bonariensis*	Fleabane		x	x	
Myrtaceae	*Corymbia tessellaris*	Moreton Bay Ash		x	x	
Poaceae	*Cymbopogon refractus*	Barbwire Grass		x	x	x
Poaceae	*Cynodon dactylon*	Green Couch		x	x	x
Fabaceae - Faboideae	*Desmodium varians*	Tree Foil		x	x	
Phormiaceae	*Dianella caerulea*	Blue Flax-lily				
Phormiaceae	*Dianella longifolia*	Dianella				
Poaceae	*Dichanthium sericeum*	Queensland Blue Grass		x	x	x
Sapindaceae	*Dodonaea viscosa*	Sticky Hopbush		x	x	
Poaceae	*Eleusine indica*	Crow's-foot Grass				
Polygonaceae	*Emex australis*	Spiny Emex		x	x	
Poaceae	*Enteropogon acicularis*	Curly Windmill Grass				x
Poaceae	*Enteropogon ramosus*	Twirly Windmill Grass				x
Poaceae	*Eragrostis brownii*	Brown's Lovegrass		x	x	
Poaceae	*Eragrostis elastica*	Elastic Grass		x	x	
Poaceae	*Eragrostis fallax*	Tall Lovegrass		x	x	

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Poaceae	*Eragrostis lacunaria*	Tall Lovegrass		x	x	
Poaceae	*Eragrostis sororia*	Blue Eragrostis		x	x	
Myoporaceae	*Eremophila deserti*	Turkey Bush		x	x	
Myoporaceae	*Eremophila mitchellii*	False Sandalwood		x	x	
Poaceae	*Eriachne ciliata*	Slender Wanderrie		x	x	
Myrtaceae	*Eucalyptus camaldulensis*	River Red Gum		x	x	
Myrtaceae	*Eucalyptus melanophloia*	Silver-leaved Ironbark		x	x	x
Myrtaceae	*Eucalyptus populnea*	Poplar Box		x	x	
Cyperaceae	*Fimbristylis dichotoma*	Fimbristylis		x	x	x
Cyperaceae	*Fimbristylis nutans*	Star Sedge		x	x	
Rutaceae	*Flindersia australis*	Crow's Ash		x	x	
Rutaceae	*Geijera parviflora*	Wilga		x	x	x
Fabaceae - Faboideae	*Glycine clandestina*	Glycine		x	x	
Fabaceae - Faboideae	*Glycine tabacina*	Glycine		x	x	
Fabaceae - Faboideae	*Glycine tomentella*	Hairy Glycine		x	x	
Apocynaceae	*Gomphocarpus physocarpus*	Balloon Cotton Bush		x	x	
Amaranthaceae	*Gomphrena celosioides*	Gomphrena Weed				x
Goodeniaceae	*Goodenia glabra*	Smooth Goodenia		x	x	
Goodeniaceae	*Goodenia rotundifolia*	Goodenia		x	x	

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Goodeniaceae	*Goodenia strangfordii*	Goodenia		x	x	
Proteaceae	*Grevillea striata*	Beefwood		x	x	x
Poaceae	*Heteropogon contortus*	Black Spear Grass		x	x	x
Fabaceae - Faboideae	*Hovea planifolia*	Hovea		x	x	
Fabaceae - Faboideae	*Indigofera spicata*	Creeping Indigo, Purple Indigo		x	x	
Fabaceae - Faboideae	*Jacksonia scoparia*	Jacksonia		x	x	
Oleaceae	*Jasminum didymum subsp. racemosum*	Native Jasmine		x	x	x
Juncaceae	*Juncus polyanthemus*	Sharp Rush				x
Juncaceae	*Juncus usitatus*	Juncus		x	x	
Brassicaceae	*Lepidium sagittulatum*	Pepper Cress		x	x	
Lomandraceae	*Lomandra longifolia*	Lomandra		x	x	
Lomandraceae	*Lomandra multiflora*	Lomandra		x	x	
Solanaceae	*Lycium ferocissimum*	African Boxthorn		x	x	
Chenopodiaceae	*Maireana microphylla*	Small-leaf Bluebush		x	x	
Chenopodiaceae	*Maireana villosa*	Silky Bluebush		x	x	x
Malvaceae	*Malva parviflora*	Small-flowered Mallow		x	x	x
Malvaceae	*Malvastrum americanum*	Spiny Malvastrum		x	x	
Fabaceae - Faboideae	*Medicago polymorpha*	Burr Medic		x	x	x

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Poaceae	*Megathyrsus maximus var. maximus*	Green Panic		x	x	
Poaceae	*Melinis repens*	Red Natal		x	x	x
Myoporaceae	*Myoporum acuminatum*	Boobialla		x	x	
Fabaceae – Mimosoideae	*Neptunia glauca*	Neptunia		x	x	
Cactaceae	*Opuntia stricta*	Prickly Pear	LP Act Class 2 Weed	x	x	x
Cactaceae	*Opuntia tomentosa*	Velvety Tree Pear	LP Act Class 2 Weed	x	x	
Meliaceae	*Owenia acidula*	Emu Apple		x	x	
Oxalidaceae	*Oxalis stricta*	Yellow Wood Sorrel		x	x	
Poaceae	*Panicum decompositum*	Hairy Panic		x	x	x
Poaceae	*Panicum effusum*	Inquisitive Grass		x	x	
Poaceae	*Panicum simile*	Two-coloured Panic		x	x	
Poaceae	*Paspalidium caespitosum*	Brigalow Grass		x	x	
Poaceae	*Paspalidium distichum*	Water Couch		x	x	
Poaceae	*Pennisetum ciliare*	Buffel Grass		x	x	x
Picrodendraceae	*Petalostigma pubescens*	Quinine		x	x	
Thymelaeaceae	*Pimelea simplex*	Desert Rice-flower		x	x	
Pittosporaceae	*Pittosporum angustifolium*	Native Apricot		x	x	
Pittosporaceae	*Pittosporum spinescens*	Wallaby Apple				x
Pittosporaceae	*Pittosporum undulatum*	Pittosporum		x	x	
Plantaginaceae	*Plantago lanceolata*	Common Plantain		x	x	

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Portulacaceae	*Portulaca oleracea*	Pig Weed		x	x	
Portulacaceae	*Portulaca pilosa*	Hairy Pigweed		x	x	
Rubiaceae	*Psydrax odorata forma buxifolius*	Round Leaf Psydrax		x	x	
Asteraceae	*Pterocaulon sphacelatum*	Apple Bush		x	x	
Ranunculaceae	*Ranunculus lappaceus*	Australian Buttercup		x	x	
Ranunculaceae	*Ranunculus pentandrus*			x	x	
Polygonaceae	*Rumex brownii*	Swamp Dock		x	x	
Santalaceae	*Santalum lanceolatum*	Sandalwood		x	x	
Chenopodiaceae	*Sclerolaena birchii*	Galvanised Burr		x	x	x
Chenopodiaceae	*Sclerolaena muricata*	Black Roly-polly		x	x	
Malvaceae	*Sida acuta*	Spiny-head Sida		x	x	
Malvaceae	*Sida cordifolia*	Flannel Weed		x	x	
Malvaceae	*Sida rhombifolia*	Paddy's Lucerne		x	x	
Malvaceae	*Sida rohlenae*	Shrub Sida		x	x	
Malvaceae	*Sida subspicata*	Queensland Hemp		x	x	x
Solanaceae	*Solanum brownii*	Violet Nightshade		x	x	
Solanaceae	*Solanum chippendalei*	Bush Tomato		x	x	
Solanaceae	*Solanum nigrum*	Blackberry Nightshade				x
Solanaceae	*Solanum stelligerum*	Devil's Needles		x	x	
Asteraceae	*Sonchus oleraceus*	Sow Thistle		x	x	
Poaceae	*Sporobolus caroli*	Desert Sporobolus				x

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Poaceae	*Sporobolus creber*	Western Rat's Tail Grass		x	x	x
Asteraceae	*Tagetes minuta*	Stinking Rodger		x	x	
Fabaceae - Faboideae	*Tephrosia leptoclada*	Slender Pea		x	x	
Poaceae	*Themeda triandra*	Kangaroo Grass		x	x	x
Aizoaceae	*Trianthema triquetra*	Red Spinach		x	x	x
Poaceae	*Urochloa mosambicensis*	Urochloa		x	x	x
Scrophulariaceae	*Verbascum virgatum*	Twiggy Mullein		x	x	
Verbenaceae	*Verbena bonariensis*	Bunchy Verbena, Purple top Verbena		x	x	
Verbenaceae	*Verbena litoralis*	Tall Verbena		x	x	
Verbenaceae	*Verbena officinalis*	Common Verbena, Native Verbena				x
Verbenaceae	*Verbena tenuisecta*	Mayne's Curse		x	x	x
Fabaceae - Faboideae	*Vicia sp.*	Vetch		x	x	
Campanulaceae	*Wahlenbergia communis*	Large Bluebells		x	x	x
Campanulaceae	*Wahlenbergia gracilis*	Sprawling Bluebell		x	x	
Asteraceae	*Xanthium occidentale*	Noogoora Burr		x	x	
Asteraceae	*Xanthium spinosum*	Bathurst Burr		x	x	

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