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Memorandum

To	Andrew Stannard	From	Aurecon C/o Jane Stark
Copy		Reference	225678
Date	6 August 2012	Pages (including this page)	6
Subject	Fairview Ecological Assessment – Addendum to Lot 20 on WT32 Report		

Mr Stannard,

This memorandum relates to the ground-truthing of a proposed development area, shown in Figure 1 as the 'area requiring RE confirmation'. An ecological investigation was conducted for the proposed development area on the 21 June 2012 by two Aurecon ecologists, Kellie Butler and Hayley Poole.

A report specific to proposed development areas within Lot 20 on WT32 has been previously prepared and submitted to Santos (Santos Fairview Lot 20 WT32 Ecological Assessment Report; Santos Document Reference 0020-GLNG-4-1.3-0032 and associated addendums). A Regional Ecosystem (RE) Amendment report has also been submitted and approved by Department of Natural Resources and Mines (DNRM) (formally DERM) for Lot 20 WT32 (Regional Ecosystem Amendment Report – Lot 20 on WT32, dated 26 October 2011).

This memorandum should be considered as an addendum to the report listed above. This memorandum is specific to the ecology of the area shown in Figure 1. For additional ecological information related to the proposed development that is in addition to that covered by this report, please refer to the appropriate lot-specific report.

General

The proposed development area is situated within a cleared corridor ranging from 60 to 125 m in width. This clearing extends up the side of a tableland, and most of the area is mapped as 'non-remnant' on the DEHP certified Regional Ecosystem (RE) Map. However, there are areas of 'endangered' RE 11.9.4a mapped either side of the cleared corridor. Due to the mapping scale, the boundary of the 'endangered' RE does not accurately reflect the extant vegetation communities present at this location, as the mapping extends into a section of the proposed development area which is devoid of 'remnant' vegetation (ie contained within the cleared corridor).

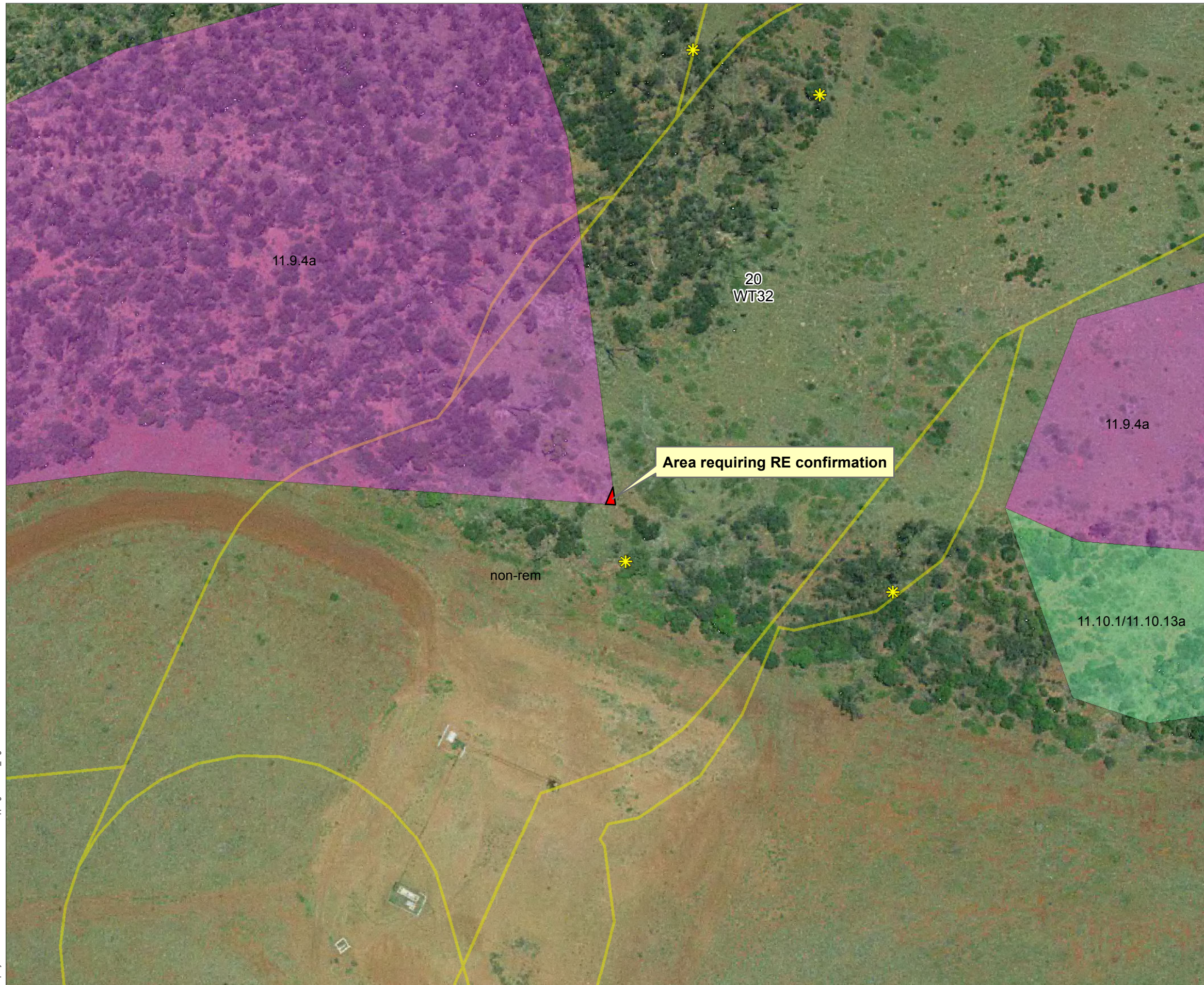
The proposed development area is located within a 'Category B' Environmentally Sensitive Area (ESA) due to the presence of a mapped 'endangered' RE.

There are no mapped 'watercourses' located within the proposed development area. The closest mapped 'watercourse' ('stream order 1') is located approximately 480 m to the north-east.

Floristics

The vegetation within the proposed development area has been previously cleared, and is now dominated by a grassy groundcover with a scattered low shrub layer. The ground layer is represented by exotic pasture grasses and weeds (90%), with *Pennisetum ciliare* (Buffel grass) dominating the stratum. Other ground cover species included *Aristida queenslandica* (Wiregrass) and *Opuntia tomentosa* (Velvet Tree Pear), with an average total ground cover of approximately 80%. *Opuntia tomentosa* is a 'Class 2 pest' declared under the provisions of the *Land Protection (Pest and Stock Route Management) Act 2002* (LP Act).

The scattered low shrub layer included *Carissa ovata* (Current Bush), *Owenia acidula* (Emu Apple), *Alstonia constricta* (Bitter Bark), *Eremophila mitchellii* (False Sandalwood), *Acacia macradenia* (Zigzag



Legend

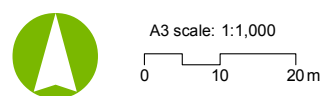
- Area requiring RE confirmation
- Type A's
- Upstream ground truth envt
- Regional Ecosystem (Biodiversity Status)**
- Endangered - Dominant
- Endangered - Sub-dominant
- Of Concern - Dominant
- Of Concern - Sub-dominant
- Not of Concern

Notes:

Date: 23/07/2012

Version: 1

Map by: Zonitara P:\Aurecon\215648 Santos\Mapping\20WT32_Figure 1-1.mxd 23/07/2012 09:57



Job No: 215648
Coordinate system: GDA 1994 MGA ZONE 55

Santos RE confirmation within Lot 20 on WT32

Figure 1: Area requiring RE confirmation

Wattle), *Clerodendrum parviflora* (Lolly Bush) and *Acalypha eremorum* (Turkey Bush). The shrub layer had a height range of 1 to 3.5 m, with an average height of about 1.5 m. The shrub layer was patchy with an average cover of approximately 25%. Photo 1 shows a photograph of the vegetation within the proposed development area.



Photo 1 Typical vegetation present within the proposed development area

The proposed development area is currently mapped as ‘endangered’ ‘remnant’ regional ecosystem 11.9.4a, which is not a true reflection of the extant vegetation. RE 11.9.4a is mapped either side of the proposed development area and this was determined to be correct, however the boundary of this RE extends into areas that have been subject to previous land clearing, including the proposed development area. Therefore a map showing the area confirmed to be ‘non-remnant’ vegetation in the field has been prepared to accompany this report, which is included as Figure 2. Figure 2 also shows an area that is being proposed as ‘remnant’ vegetation. This area is consistent with surrounding ‘remnant’ vegetation on high resolution aerial photography and contains previously recorded *Brachychiton rupestris* (8 m tall) and *Brachychiton australis* (13 m tall) trees. However, all areas proposed as ‘non-remnant’ and ‘remnant’ vegetation in Figure 2 are too small (less than 0.5 ha) to be addressed by a RE map amendment given the scale of mapping.

It is considered likely that the proposed development area originally contained vegetation consistent with RE 11.9.4a prior to clearing.

No species of conservation significance under the provisions of the *Nature Conservation Act 1992* (NC Act) and/or the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) were identified within the proposed development area. There was a single Type A restricted plant specimen (*Brachychiton australis*) located approximately 12 m to the south-east of the proposed development area. The location of the identified *Brachychiton australis* is shown in Figure 1.

Habitat value

The habitat value of the proposed development area is considered to be low overall. The area has been subject to historic clearing and has had the canopy layer completely removed. The proposed development area does not contain any mature vegetation for perching and nesting purposes. Very little woody debris or leaf litter was present. However, there was a fairly dense ground cover including grassy tussocks, as well as some rocky crevices which could provide habitat for fauna such as reptiles and small mammals.

The nearby 'remnant' vegetation would provide a relatively higher habitat value, with an intact canopy cover suitable for shelter, foraging and perching.

Table 1 lists the fauna species which were observed during the ecological assessment.

Table 1 Incidental fauna species recorded at the proposed development area

Scientific Name	Common Name
<i>Corvus coronoides</i>	Australian Raven
<i>Manorina melanocephala</i>	Noisy Miner
<i>Aquila audax</i>	Wedge-tailed Eagle

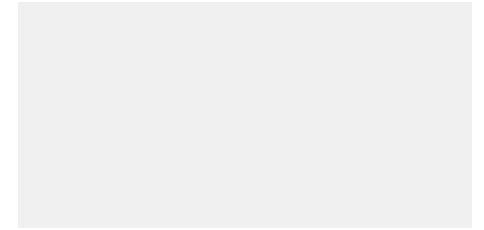
There was also evidence of macropods (ie presence of scats) in the area, which suggested that kangaroos and wallabies utilise the area. No conservation significant fauna species were recorded within the proposed development area.

Conclusion

The proposed development area is incorrectly mapped as 'endangered' 'remnant' regional ecosystem 11.9.4a. Figure 2 shows that the area is proposed as 'non-remnant' vegetation, which was confirmed in the field and has been documented in this report. The adjacent 'remnant vegetation' was found to be correctly mapped as RE 11.9.4a.



The ecological assessment found that the proposed development area has been disturbed due to a narrow corridor of historical clearing. The habitat value was considered low, due to the absence of canopy vegetation, fissured tree bark and hollow-bearing logs and stags, and only limited leaf litter and woody debris. The adjacent remnant vegetation would provide a much higher habitat value.

There were no conservation significant flora or fauna species recorded within the proposed development area. However, a Type A restricted plant (*Brachychiton australis*) was recorded within close proximity to the area (shown in Figure 1).








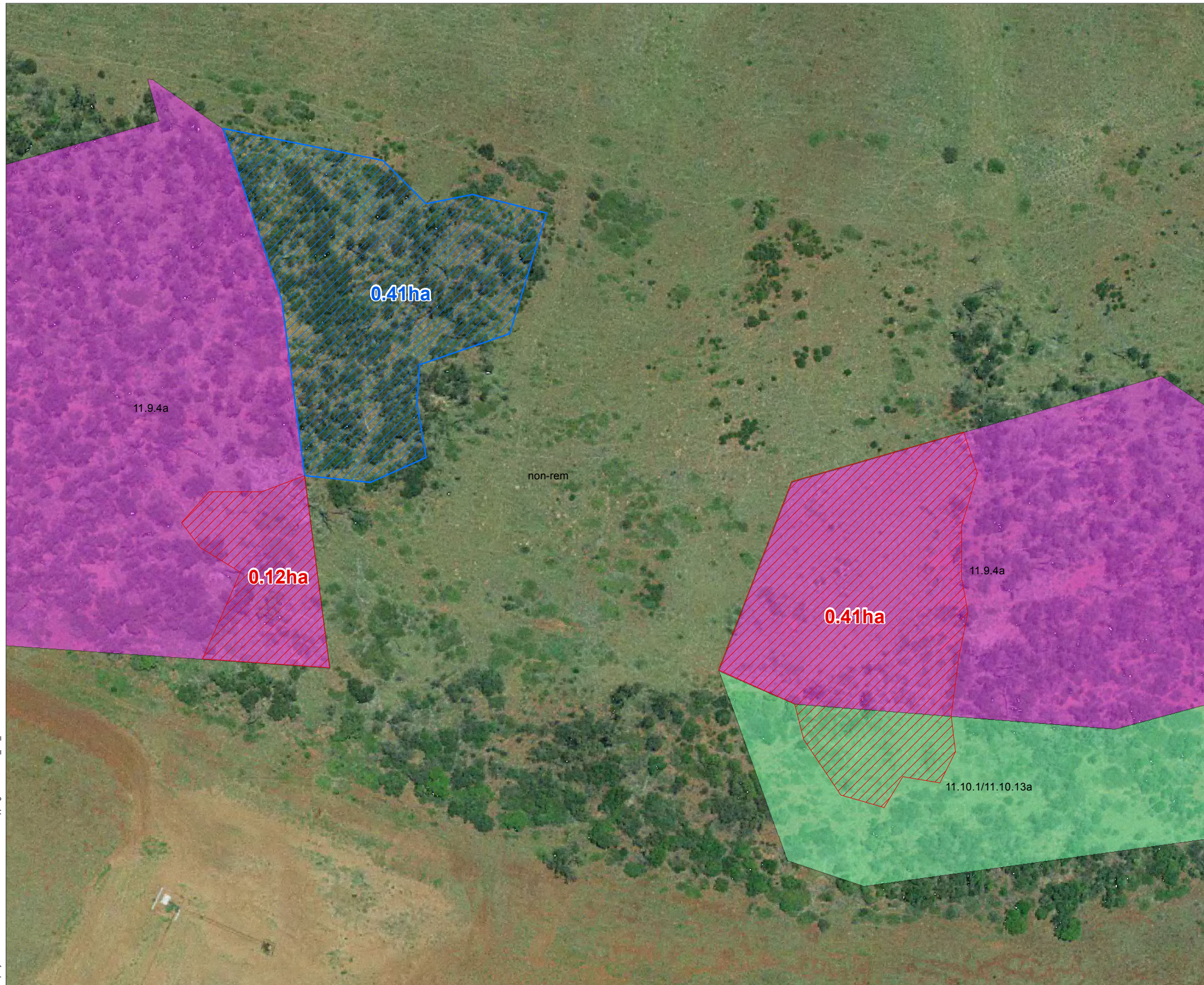
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RE Changes

-  Proposed remnant vegetation
-  Proposed non-remnant vegetation

Regional Ecosystem (Biodiversity Status)

-  Endangered - Dominant
-  Endangered - Sub-dominant
-  Of Concern - Dominant
-  Of Concern - Sub-dominant
-  Not of Concern



Notes: Cadastre DERM 2011,
Regional Ecosystems V6.1 (DERM)

Date: 11/07/2012

Version: 1

Map by: Moore NK P:\Aurecon\215648 Santos\Mapping\6CP908635_Re_Amendment.mxd 11/07/2012 14:09



A3 scale: 1:1,000
0 5 10 15 20m

Job No: 225678
Coordinate system: GDA 1994 MGA Zone 55

Attachment 1 Botanical Species List for the Proposed Development Area

Family Name	Scientific Name	Common Name	Notes
<i>Apocynaceae</i>	<i>Alstonia constricta</i>	Bitter Bark	
<i>Apocynaceae</i>	<i>Carissa ovata</i>	Currant Bush	
<i>Cactaceae</i>	<i>Opuntia tomentosa</i>	Velvety Tree Pear	Non-native, LP Act Class 2 Weed
<i>Capparaceae</i>	<i>Capparis lasiantha</i>	Native Orange	
<i>Euphorbiaceae</i>	<i>Acalypha eremorum</i>	Turkey Bush	
<i>Fabaceae - Mimosoideae</i>	<i>Acacia macradenia</i>	Zigzag Wattle	
<i>Lamiaceae</i>	<i>Clerodendrum parviflora</i>	Lolly Bush	
<i>Meliaceae</i>	<i>Owenia acidula</i>	Emu Apple	
<i>Myoporaceae</i>	<i>Eremophila mitchellii</i>	False Sandalwood	
<i>Poaceae</i>	<i>Aristida queenslandica</i>	Wire Grass	
<i>Poaceae</i>	<i>Pennisetum ciliare</i>	Buffel Grass	Non-native
<i>Proteaceae</i>	<i>Grevillea striata</i>	Beefwood	